ANNUAL REPORT OF THE COMMISSIONER OF PATENTS

VOL. 1 1857

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REPORT

OF THE

COMMISSIONER OF PATENTS

FOR THE YEAR 1857.

ARTS AND MANUFACTURES.

IN THREE VOLUMES.

VOLUME I.

U.S. Patent office

WASHINGTON:
JAMES B. STEEDMAN, PRINTER.
1858.

IN THE HOUSE OF REPRESENTATIVES,
April 28, 1858.

Resolved, That there be printed, for the use of the Members of the present House of Representatives, twenty thousand copies of the Mechanical portion of the Patent Office Report for the year 1857.

Attest:

J. C. ALLEN,
Clerk.

UNITED STATES PATENT OFFICE,
January 20, 1858.

SIR: As required by the 14th section of the act approved March 3, 1837, I have the honor to transmit herewith the Annual Report of this office for the year 1857, which I have to request may be laid before the Congress of the United States.

I have the honor to be, very respectfully, your obedient servant,

J. HOLT,
Commissioner of Patents.

Hon. JAMES L. ORR,
Speaker of the House of Representatives.

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REPORT

OF THE

COMMISSIONER OF PATENTS

FOR THE YEAR 1857.

UNITED STATES PATENT OFFICE,
January 20, 1858.

SIR: In compliance with the fourteenth section of the act entitled "An act in addition to the act to promote the progress of science and useful arts," approved March 3, 1837, I have the honor to submit the following report of the operations of this office during the year terminating the 31st of December, 1857.

No. 1.

Number of applications for patents	4,771
Number of patents granted (including designs, reissues, and additional improvements)	2,910
Number of caveats filed	1,010
Number of applications for extension of patents	21
Number of patents extended	11
Number of patents expired	572

Of the patents granted, there were:

To citizens of the United States	2,868
To subjects of Great Britain	24
To subjects of France	13
To subjects of other foreign nations	5
Total	2,910

The patents granted to citizens of the United States were distributed among the several States, Territories, &c., as follows:

New York	855	Wisconsin	31
Massachusetts	421	Alabama	27
Pennsylvania	314	Georgia	20
Ohio	235	Louisiana	20
Connecticut	161	North Carolina	14
Illinois	119	Tennessee	14
New Jersey	91	South Carolina	12
Indiana	60	Mississippi	11
Virginia	58	Iowa	11
Maryland	57	Delaware	10
Vermont	48	California	7
Missouri	44	Texas	5
New Hampshire	41	Arkansas	3
Kentucky	37	Minnesota	3
Rhode Island	36	Kansas	1
Michigan	35	United States army	2
District of Columbia	33		
Maine	32	Total	2,868

Notwithstanding the rapid decline in the business of the office during the months of October, November, and December, the aggregate number of patents for the year exceeded those of 1856 by four hundred and eight. This regularly progressive augmentation, which from year to year has been so long announced, is due alike to the inherent and irrepressible energy of the national mind, and to the admirable system by which it is excited and fostered. That system wisely avoids the laxity of European laws, which grant patents, as of course, on all applications, upon payment of the fees, and leave their value to be subsequently tested by the impoverishing process of protracted litigation. As decidedly, on the other hand, does it eschew that stern, unsympathizing, distrusting temper, which would receive the inventor as a stranger beneath the roof of this magnificent edifice, which has been reared at once as a monument to his genius, and as a depository of the trophies of his labors. That better policy, which adopts the happy medium between these two equally pernicious extremes, and which, while welcoming the inventor as a friend and patron, in that frank and free conference with him enjoined by law, kindly and anxiously sifts from his invention its minutest patentable features, is a policy essentially American in its origin and aims, and must be inflexibly maintained in the administration of this office so long as it remains faithful to the high mission with which it is charged. The restless activity which has distinguished the inventive genius of the country during the past year has been confined to no class or pursuit. Alike from the walks of science, the workshops of the mechanic, and the broad lands of the husbandman, inventions have come thronging to this office, demonstrating how completely the national intellect is emancipated from the shackles of the past, and with what intense zeal it is pursuing that career of glory which is open before it. While every part of the field of invention has been assiduously occupied, that relating to agriculture has proved most fruitful. Of the twenty-nine hundred and ten patents issued, four hundred and thirty-eight—cotton-gins, rice-cleaners, and fertilizers included—were for agricultural processes and implements. This is a most grateful feature in the year's operations; for, as the virtues of Cincinnatus have ever been found, like that illustrious patriot, at the plough, so every improvement in the arts and sciences, tending to develop the strength and advance the general prosperity of the tillers of the soil, is broadening and deepening those foundations on which, alike in calm and in storm, the republic must rely for its security.

The characteristics of the inventions of the past year have been decidedly utilitarian. But little attention seems to have been bestowed upon articles of mere luxury. The unceasing inquiry has been for agencies capable of yielding the largest amount of the elements of human comfort with the least possible expenditure of human labor. This is certainly a movement in the direction of the highest type of civilization; for until the masses of mankind shall have been relieved from the pressure of that ceaseless toil which renders life, in its weariness, but a reflection of the fabled tortures of Sisyphus, it will be in vain to expect, for the mental and moral nature of our race, more than the morning twilight of that development whose noonday splendors have been so long the dream and the hope of the philanthropist.

No. 2.

Statement of moneys received at the Patent Office during the year 1857.

Received on applications for patents, reissues, additional improvements, extensions, caveats, disclaimers, and appeals	$182,250 00
Received for copies, and for recording assignments	13,882 01
Total	196,132 01

No. 3.

Statement of expenditures from the patent fund during the year 1857.

For salaries	$82,711 23
For temporary clerks	43,236 80
For contingent expenses	47,107 58
For payment to judges in appeal cases	300 00
For refunding money paid into the treasury by mistake	206 50
For refunding money on withdrawals	38,019 98
Total	211,582 09

The above aggregates of receipts and expenditures accrued as follows:

	In the 1st quarter.	In the 2d quarter.	In the 3d quarter.	In the 4th quarter.	Total.
Receipts	$55,290 22	$60,783 08	$45,172 75	$34,886 04	$196,132 01
Expenditures	59,721 85	50,786 53	53,433 54	47,640 17	211,582 09
Excess of expenditures over receipts					15,450 08

The excess of the expenditures over the receipts of the past year admits of a satisfactory explanation. A large part of this excess is made up of $9,234 58, paid in the month of January, 1857, for stationery, parchment, and books purchased in 1856, and which—as the parchment and stationery had been consumed in the current business of the office—were properly chargeable to that year. During the first three quarters the receipts exhibit an average per quarter of $53,748; in the last quarter they suddenly declined to $34,886, showing a deficit for that brief period, as compared with the average, of $18,862. There is in this no evidence either of improvidence or of inability on the part of the office to maintain that self-sustaining character which it has always supported in legal estimation, and in fact. Had not the year 1857 been burdened with heavy pecuniary responsibilities belonging to 1856, and had the revenues continued for the last as during the previous quarters, instead of there being an excess of expenditure over the receipts, there would have been a surplus on hand of at least $12,646. It is scarcely necessary to add that the abrupt falling off in the business, and consequently in the revenues of the office, commencing in September and continuing throughout the last quarter, was a consequence of that financial revulsion whose baleful influences have been felt in all the business relations of life. Happily, this calamity, so disastrous for the moment, is rapidly passing away, and the return tide of prosperity, so confidently anticipated, will, no doubt, be fully shared by this office.

No. 4.

Statement of the condition of the patent fund.

Amount to the credit of the patent fund, January 1, 1857	$55,169 54
Amount paid in during the year	196,132 01
Total	251,301 55
Deduct amount of expenditures during the year	211,582 09
Leaving in the treasury, 1st of January, 1858	39,719 46

No. 5.

Table exhibiting the business of the office for seventeen years, ending December 31, 1857.

Years.	Applications filed.	Caveats. filed.	Patents issued.	Cash received.	Cash expended.
1841	847	312	495	$40,413 01	$23,065 87
1842	761	291	517	36,505 68	31,241 48
1843	819	315	531	35,315 81	30,776 96
1844	1,045	380	502	42,509 26	36,344 73
1845	1,246	452	502	51,076 14	39,395 65
1846	1,272	448	619	50,264 16	46,158 71
1847	1,531	533	572	63,111 19	41,878 35
1848	1,628	607	660	67,576 69	58,905 84
1849	1,955	595	1,070	80,752 78	77,716 44
1850	2,193	602	995	86,927 05	80,100 95
1851	2,258	760	869	95,738 61	86,916 93
1852	2,639	996	1,020	112,056 34	95,916 91
1853	2,673	901	958	121,527 45	132,869 83
1854	3,324	868	1,902	163,789 84	167,146 32
1855	4,435	906	2,024	216,459 35	179,540 33
1856	4,960	1,024	2,502	192,588 02	199,931 02
1857	4,771	1,010	2,910	196,132 01	211,582 09

It will be seen from this condensed exhibit that, with the exception of the very slight and momentary check experienced in the last quarter, the increase in the business of the office has been steady and uninterrupted. The inventive genius of the country, great as have been its efforts and attainments, has manifested none of the languor of exhaustion, nor testified any inclination for repose. Each discovery made, like a fire kindled in a dark place, while enlarging the horizon of science, has laid bare yet other and wider fields, to be traversed by its ever brightening pathway. In reviewing the triumphs of invention and discovery in every department of the arts and sciences for the last three quarters of a century, and in marking their beneficent influences in softening the asperities and exalting the dignity of human labor, there is abundant cause for heartfelt exultation. The blessings thus diffused are as universal as the air we breathe, and amid all the changes, social and political, to which we may be exposed, they will still endure, or will pass away only to give place to some higher and nobler fruit of the same indomitable genius which produced them. But while there is thus in the past so much to excite our pride, there is in the future yet more to excite our hopes. If that future is to be measured by the strides of that past, rapid as has been our advancement, it is but reasonable to infer that we have scarcely crossed the threshold of the temple of human knowledge; and magnificent as may seem the trophies we have treasured up, it would hardly be an exaggeration to say—to borrow the thought of the great Newton—that we have gathered as yet but a few pebbles and shells on the shore of that ocean of truth whose depths still lie unexplored before us.

With as much care and with as near an approach to strict accuracy as was possible, the table which follows has been prepared for the purpose of presenting a comparative view of the progress of inventions for a single year in the United States and in the other nations therein designated.

Country.	Patents granted in 12 months.	Population.
France	6,187	35,781,628
United States	2,910	23,191,918
Great Britain	2,115	27,511,447
Belgium	1,413	4,426,202
Austria	724	36,514,466
Sardinia	185	4,368,972
Saxony	116	1,828,732
Canada	100	1,842,265
Hanover	49	349,958
Prussia	48	16,923,721
Bavaria	45	4,519,546
Netherlands	43	3,203,232
Sweden	32	3,482,541
Wurtemburg	25	1,733,263
Russia	24	69,660,146
Brazil	4	4,750,000

As the strict examination of all inventions sought to be patented, which forms so prominent a feature in our system, does not prevail in the transatlantic governments referred to, a more correct estimate would be arrived at by comparing, not the patents issued, amounting to twenty-nine hundred and ten, but the number of applications, four thousand seven hundred and seventy-one, with the patents granted by the foreign governments during the same period of time. It is known that at least eight hundred and fifty-three, probably more, of the Belgian patents, were those of France and other foreign countries re-issued. Notwithstanding the fetters flung by imperial hands athwart the tides of French genius, they still obey the heroic impulses imparted to them by the revolution of 1790, and continue with equal daring and ease to change the forms of government and the fashion of the minutest articles of trade. It is in the light of the evening crepuscule of that revolution that French science still pursues its sublime career. In Russia, whose government is verging upon the thousandth year of its existence, in 1852, 1853, and 1854, but ninety-seven patents were issued, of which fifty-six only were granted to natives of the empire, being an average of about nineteen per annum, in a population of sixty-nine millions. For twelve months, ending November, 1857, the patents granted amounted to twenty-four, of which but thirteen were to natives of the country. Whilst that empire and the United States are the antipodes of each other in their political organizations, so do they present, developed in striking contrast, the results to which their respective political systems tend. That the intrepid and quenchless spirit of inquiry which seems inseparable from every throb of American life, and which, from year to year, is filling this office with the memorials of its achievements, is one of the boons of our republican institutions, may be affirmed without the hazard of contradiction. As the soil, when exposed to the sunshine and the shower, starts into life the germ of every flower and shrub and tree lurking beneath its surface, so acts the human soul when stimulated and kindled by the influences of well regulated political freedom. The above table, in its every line and lineament, palpitates with the demonstration of this great, and for us, most gratifying truth. In examining it, passing from our own favored land, we can but note that, as the light of liberty waxes dimmer and dimmer, so does the inventive genius flag and dull apace, until finally, amid the darkness of the political night which broods over eastern lands, it is utterly extinguished. Upon the mountain slopes of the far East may be seen narrow winding paths, in which, for uncounted centuries, the burden-bearing camel has been treading on precisely the same spot, until now his foot-print, distinct and deep, is worn far into the solid rock—a fitting symbol of the oriental mind, beneath the crushing incubus of oriental despotism.

Subjoined to this report will be found the usual catalogue of patents which expired during the past year; also, a classified summary of those issued during the same period, together with an alphabetical list of the patentees, followed by the drawings and by abridgments of the specifications, which under our laws not only illustrate the patent, but are part and parcel of it.

While the statutes organizing and regulating the action of this office constitute, perhaps, the best system of patent laws ever devised, still the experience of the last twenty years has disclosed various imperfections in their provisions, the more prominent of which, with the remedies proposed, I deem it proper, at this time, briefly to urge upon the attention of Congress.

In applications for the extension of patents and in interference cases a wide range of inquiry into matters of fact is often essential to the ends of justice. The existing laws furnish no means for compelling the attendance of witnesses, nor for obliging them to testify upon such issues. The interests bound up with these investigations are frequently of the greatest magnitude; and, as a consequence, refractory or mercenary men, availing themselves of this omission in the law, have refused to appear or give their depositions, except upon the payment of the most exorbitant sums by the parties claiming their testimony. Cases of this character, while working the most cruel hardship to individuals, have tended to bring the administration of the government into discredit, if not into contempt. No reason is perceived why the process of subpœna, freely allowed to all litigating their interests in the courts of the country, shall be withheld from the parties to these important and complicated controversies.

Whatever might be the capabilities of the Commissioner for physical and mental labor, it would be impossible for him to discharge the administrative duties of his office, and hear, in person, all the appeals brought before him from the decisions of examiners. The usage has hence grown up of referring the investigation of most of these appeals to a board, constituted for the occasion, consisting of two or more examiners, who make their report to the Commissioner. As these boards lack permanence, and from necessity, indeed, have been constantly changing, without a critical examination of each report by the Commissioner, (which is not practicable,) uniformity in action and in the assertion of principle cannot be maintained. To prevent in future that conflict, which has been so often deplored in the past, it has been recommended that there shall be appointed a permanent board of three examiners-in-chief, who shall be charged with the duty of hearing and determining upon all appeals from the judgment of the primary examiners. Such a tribunal would, no doubt, attain the end sought, and the members of it (should their appellate duties not fully occupy their time) could, by the Commissioner, be assigned labor in the classes requiring such assistance with much advantage to the public service.

In consequence of requiring models in applications for designs—a class of cases in which, for purposes of illustration, they are rarely needed, and in consequence of the retention by the office of the models in all rejected applications, the accumulation has been rapid, and threatens to prove a serious public inconvenience. A large number of these models, which occupy so much space in the building, are admitted to be valueless, and were they removed, and the drawings and specifications alone retained, no prejudice to any interest, public or private, could ensue. Should Congress think proper to invest the Commissioner with a discretionary authority over them, its judicious exercise would accomplish results much to be desired.

It will be observed, that of the $211,582 09 set forth as the aggregate expenditures of this office for the year 1857, $38,019 98 consisted of fees returned on applications withdrawn after examination and rejection. The necessity of a change in this feature of the existing law has been heretofore expressed, and is still felt with increasing force. Did the patent constitute the consideration for which the fee of thirty dollars is paid, it would be but reasonable that this sum, or a part of it, should be returned upon the abandonment of the claim. Such, however, is not the case. The consideration of the patent is the surrender of the invention to the public at the expiration of the fourteen years for which the monopoly is granted. The thirty dollars forms the compensation (and it is no more than a just one) for the labor bestowed by the office in the preparation and examination of the application. When, then, this has been performed, it is neither just nor expedient that the well-earned compensation for it should, in whole or in part, be withheld. A tariff of fees, which, while dividing the services required, provides that they shall be paid for, step by step, as they progress, has been proposed, and, it is hoped, will be favorably considered by Congress. This would be alike agreeable to the inventor and to the office, protecting, as it would, the former from the oppression of paying for any services not in fact rendered, and the latter from the injustice of performing any labor for which it is not remunerated.

It should be mentioned that, within the year just closed, applications have been filed for letters patent for several inventions alleged to be valuable, and to have been made by slaves of the southern States. As these persons could not take the oath required by the statute, and were legally incompetent alike to receive a patent and to transfer their interest to others, the applications were necessarily rejected. The matter is now presented to the consideration of Congress, that, in its wisdom, it may decide whether some modification of the existing law should not be made in order to meet this emergency, which has arisen, I believe, for the first time in the history of inventions in our country.

The defects developed by the practical operation of the laws intended to secure the rights of inventors suggest the propriety of their careful revision. At the expiration of his patent the inventor is bound to surrender to the public his invention, the fruit, it may be, of many years of anxious toil; and from this undertaking there is no possibility of escape. As an equivalent for this surrender, the government stands pledged to insure to him the full and peaceful fruition of his monopoly during its continuance; and this pledge constitutes one of the most solemn obligations of law and of honor. The compact thus entered into, distinct in its import, and reciprocally binding in its stipulations, is based upon the highest considerations recognized by law, and ought to be executed by the government with that scrupulous fidelity which should ever distinguish the strong when dealing with the weak. While, however, this species of property yields to none other in its national importance, and surpasses all others in the amount which it pays for the legal safeguards thrown around it, it is notorious that it enjoys but a precarious and incomplete protection. The more prominent of the causes conducing to this result are the helplessness of inventors as a class; the peculiarly exposed character of their interests to be defended; the universal impatience of legal restraints, as manifested in that lawlessness which so sadly mars the body of the times in which we live; and, lastly, the unskilful adjustment of subsisting instrumentalities to the performance of those duties of guardianship which the government has assumed upon itself. If the law relaxes the vigilance of its watch over the homestead of the citizen, he can take his stand at his own threshold, and with his own right arm beat back those who would invade it; but the rights of the inventor are coextensive with the limits of the republic, and may be assailed and despoiled at a thousand points in the same moment of time. The eyes of Argus would not suffice to discover, nor the arms of Briareus suffice to resist, the assaults of so omnipresent a foe as it is his lot to encounter. If, then, the faith which the government has plighted with him fails, he is utterly without shelter. This is no sketch of the imagination. Again and again have inventors, impoverished in fortune and broken in spirit, come to this office seeking the extension of their patents, and demonstrating by testimony that the fourteen years which should have been devoted to reaping the harvest of their labors were worse than wasted in harassing and ruinously expensive litigation in defence of their patented privileges. The insolence and unscrupulousness of capital, subsidizing and leading on its mercenary minions in the work of pirating some valuable invention held by powerless hands, can scarcely be conceived of by those not familiar with the records of such cases as I have referred to. Inventors, however gifted in other respects, are known to be confiding and thriftless; and being generally without wealth, and always without knowledge of the chicaneries of the law, they too often prove but children in those rude conflicts which they are called on to endure with the stalwart fraud and cunning of the world. It would certainly be practicable to affix a limit to this oppressive litigation, at least to that feature of it which calls in question the validity of the patent, while the sense of public justice would not be shocked by inflicting something more than a verdict in damages on wanton offenders of this class. It is admitted that the subject is embarrassed with difficulties, but it is believed that they are not insuperable. It is a principle of criminal jurisprudence that the penalty shall be proportioned, in its severity, to the temptations and facilities which exist for the commission of the crime. The principle is a sound one, and would justify legislation of unusual rigor in behalf of the down-trodden interests of inventors.

The existing laws authorize the granting of patents only to original inventors, their representatives and assignees. While the wisdom of the general principle thus asserted is undeniable, still certain facts connected with the condition of the arts and sciences in Europe would justify the inquiry, whether, if compatible with the Constitution, a solitary exception to the rule might not be advantageously allowed. It is well known that, for a long period of time, manufacturing processes of great value have existed beyond the Atlantic, but which have neither been patented nor described in any printed publication, nor introduced into public use. They have been and are still employed within the walls of well guarded manufactories, whose operatives, in entering the service, assume upon themselves obligations of secrecy. Thus, from generation to generation, a knowledge of these useful arts is clandestinely transmitted, and the world is oppressed by the burden of perpetual monopolies. The opinion is entertained that, if our laws could be so modified as to extend the shelter of a patent to these arts and inventions, by whomsoever revealed and introduced, many of them would find their way into the United States, and, perhaps, among the number, the most important of all, the hitherto concealed process for the manufacture of Russia sheet iron. That their introduction would be a national service, for which it would be competent to make a national remuneration, will hardly be controverted. Whether the constitutional scruples which exist can be so far overcome as to give to this remuneration the ordinary, and certainly the most effective form—that of letters patent—is a question which the magnitude of the interests involved renders worthy of the serious consideration of Congress.

While the fee paid for a patent by an American citizen is but thirty dollars, the sum of five hundred dollars is exacted from a British subject, and three hundred from the citizens and subjects of other foreign governments. This harsh, and, seemingly unwise, discrimination has formed the subject of earnest remonstrance on the part of my predecessors; but, weighty as are the objections which have been urged against its continuance, they have failed to attract the favorable notice of Congress. If the existing law can be regarded as having been adopted in a spirit of retaliation, its framers totally misconceived the European policy to which it was intended to respond. Careful inquiry enables me to state that, with the exception of Prussia, ours is the only nation known to distinguish, in granting patents, between the native born and foreign inventor. It is true, that the English, French and other transatlantic governments require the payment of patent fees, apparently enormous and oppressive, as compared with those paid here by American citizens; but exorbitant as these fees may seem, they are demanded alike of all, natives and foreigners. With those nations the patent laws are but measures of revenue; and as the administration of their peculiar political institutions involves the outlay of vast treasures, their revenue systems must be upon a correspondingly gigantic scale. With such governments, such measures may, perhaps, plead an absolute financial necessity in their justification, and they certainly carry with them not the slightest approach to that breach of national comity which our legislation appears so strangely intended to rebuke. But upon what principle can it be maintained that the government of the United States, boasting of the simplicity and cheapness of its administration, and of its entire disenthrallment from the political burdens of the Old World, shall imitate this solitary feature of transatlantic taxation? It may occur to those who do not look beyond the surface of this provision, that the exaction, being made upon the foreigner, is therefore a national gain; but this is manifestly a delusion. It is incontestably true, that, though paid by the foreigner in the first instance, on the issuing of his patent, he is ultimately reimbursed from the purse of the native consumer. Besides, of all taxes, it is the most odious; being a tax on knowledge, and upon the highest forms and noblest aims of human philanthropy. If other governments are so insensible to the dictates of an enlarged public policy, and so wanting in sympathy with the governed as to prefer, or so unfortunate as to feel constrained to resort to, imposts thus embarrassing the inventive genius of the age, shall we so far violate the convictions inseparable from our political faith and nurture as to follow in their footsteps? The people of the United States have a deep interest in all useful inventions, wherever and by whomsoever made, and their passage from land to land should be as free as the winds and sunshine of heaven.

Near half a century ago the government of the United States inaugurated the principle of reciprocity in the commercial intercourse of nations. It invited the concurrence of all other governments by offering to place their citizens and subjects on the same footing with the citizens of this country, provided like advantages were by them extended in return. With one exception, this principle is now engrafted upon every treaty regulating our commerce with Europe; and in introducing a new and brilliant epoch in our history, it has laid the axe to the root of that jealousy of strangers, so prevalent among the benighted Asiatics, and which, wherever found, is recognized as a lingering badge of barbarism. It is asked that this doctrine, so just in itself, and of which we are so justly proud, shall be embodied in our patent laws. Every European government, with the single exception stated, has placed American citizens on a footing of perfect equality with its own subjects, so far as its system of patent laws is concerned. In the presence of such a fact appealing to us, to uphold longer this obnoxious discrimination would be to insist that the strictly local and domestic legislation of other nations shall be adjusted to meet our peculiar views, or, what is yet more unreasonable, that the governments of those nations shall accord to our citizens privileges which they deny to their own. While recognizing it as our duty to be courteous and liberal, even upon the arena of trade, where human selfishness is most prone to prey upon the stranger, can we, without the grossest inconsistency, refuse to be so, on that broader and more elevated theatre of action, whose themes affect the advancement and happiness of the race, and where, at every moment, we are forced to acknowledge that the gain of other nations is our gain, and their loss is necessarily ours also?

Regarded from the lowest point of view, its bearing upon the finances of this office, the feature of the act of 1836, under discussion, has proved a failure. Excluding, as it does, multitudes of inventions which would otherwise be introduced, no doubt is entertained but that it yields a smaller amount of revenue than would the more moderate schedule of fees proposed in its stead.

The colonial government of Canada, treating, as is supposed, the act of 4th July, 1836, as aggressive in its spirit, responded by absolutely excluding American citizens from the benefits of its patent laws. In consequence, that vast country, affording one of the richest harvests of the world for the inventive genius of our fellow-citizens, remains closed against them. The people of Canada are scions of the same stock from which sprang the founders of our republic. They speak the same language, worship before the same altars, have the same forms of social and domestic life, and draw the inspirations alike of their literature and of their laws from the same high sources with ourselves. Along the borders of eight of the States of our confederacy, with but narrow intervening lakes and rivers, their territory extends; a colony, it is true, in its political aspects, but an empire in the greatness of the future which is dawning upon it. When we examine yet more closely the character and condition of that country, and realize how gigantic are the public works which pervade it, as so many pulsating arteries of trade and of travel, how exhaustless are its agricultural and mineral resources, and the elements of its manufacturing power, and how rapidly, with every wave of European immigration that breaks on our shores, its population is increasing, it is difficult to resist the conviction that we have everything to gain and nothing to lose by cultivating with these, our nearest neighbors, the most cordial and intimate relations. In 1853 the imports into Canada from the United States amounted to $11,782,145, and the imports into the United States from Canada, to $8,926,360. Under the benign influences of the reciprocity treaty which went into operation on the 11th September, 1854, the commerce between the two countries has rapidly increased, so that in 1856 the imports into Canada from the United States swelled to $22,704,508, and the imports into the United States from Canada, to $17,879,752. A more complete vindication of this

act of enlightened statesmanship than such a result presents could not be desired by its most earnest advocates. The observance of a lofty and generous policy in our intercourse with other nations must ever bear such fruit as this. There is every reason to believe that no disposition is felt on the part of the people or of the political authorities of Canada to continue longer the unpleasant and embarrassing relations with the United States to which their respective systems of patent laws have given rise. The bare introduction of a bill into the last Congress, proposing a repeal of the provision of the act of 1836, under examination, was at once followed by a corresponding movement on the part of the Canadian government, having for its object a removal of the existing restrictions upon American inventors. If this movement failed of its consummation, I am well assured it was only because the bill referred to failed to become a law. The highest considerations of public interest seem to require that Congress, regardless of mere national punctilio, shall frankly use its utmost endeavors to open to American inventors this attractive and remunerative field, from which, by an unhappy course of legislation, they have been so long excluded. Whether the Canadian estimate of the act of 1836 be just or not, it is certain that from its foundation the government of the United States has been unceasing in its efforts to liberalize and elevate the intercourse of nations, and that, in view of its antecedents, it can well afford to take the initiative and offer an example of liberality to the world, as it is unquestionably beneath its dignity and mission to follow an example of an opposite character, by whatever government or people it may be set.

The Patent Office, silent and unobtrusive in its course, connecting itself with none of the agitations of the day, and demanding nothing from the public treasury, asks only the assent of the national legislature to such an arrangement of its instrumentalities as shall secure the highest possible efficiency to its action. Beyond its mission of beneficence to all, it has no ambition to gratify, no triumph to achieve. The well-springs of its life are fed by contributions from the benefactors of our race; and it is in their name that this appeal, so often made and so long unheeded, is now respectfully, but most earnestly, renewed.

J. HOLT.

Hon. John C. Breckinridge,
Vice President of the United States.

ALPHABETICAL LIST OF PERSONS WHOSE PATENTS FOR INVENTIONS AND DISCOVERIES HAVE EXPIRED DURING THE YEAR 1857.

No.	Patentee.	Invention or discovery.	Class.
2977	Adams, William, and Artemus Hammond.	Iron, &c., punching holes in, machine for.	2
3291	Adams, William, and Artemus Hammond, assignees of Artemus Hammond.	Windlass, ship's	12
2981	Alden, Albert	Pen-holders	18
2912	Allen, Ethan	Engraving, machines for	18
3145	Allen, Horatio	Pipes, metal, determining the thickness of.	2
3348	Allen, Horatio	Stop-cocks in pipes under hydrostatic pressure, tapping and inserting.	11
3315	Allen, Horatio	Stops, elastic water, for checking the force or momentum of water in pipes.	11
3225	Anderson, J. J	Stoves, cooking	5
3049	Austine, George	Threshing-machines	1
3268	Armstrong, Martin N	Knives and forks, cleaning and polishing.	2
3146	Ashard, William K	Matches, friction	4
2926	Atwater, Stephen	Steam generator, portable	5
2978	Atwood, Charles	Hooks and eyes for fastening garments	21
	Avery, Latham Y. (See Rhoes Griffin.)		
3152	Aylesworth, Chadiah	Water-wheels	11
3139	Baer, Charles, and John Gouliart.	Manure making	1
5957	Bain, Alexander	Electricity, copying surfaces by	8
3279	Baker, Abraham	Water-wheels, inclined	11
	Ball, Sheldon X. (See George Eckler.)		
3371	Ballard, Charles A	Chairs, rocking	17
	Bancroft, Edward. (See Nathaniel Miller.)		
3026	Banning, Edmund P	Trusses	20
2996	Barber, Charles P	Shearing diamond figures of cloth, &c., method of.	3
	Barbour, Horace. (See Gleason, John and H. C., and White.)		
2905	Barnes, F. M	Flax and hemp, breaking	3
3165	Bartholomew, Daniel	Clapboards, sawing, machines for	14
3253	Bartlett, Nelson	Pens, fountain	18
3280	Barton, Gardner, jr	Doors, gates, &c., closing apparatus for	9
3302	Bates, Stephen	Baths, shower	20
3099	Beackley, John W	Trunks, travelling	16
3219	Beaman, William	Brooms, winding wire or twine on	17
2982	Bean, Benjamin W	Cloth of all kinds, sewing with a running stitch.	3
2944	Beardsley, Backus A	Bark mill	13
3310	Beckwith, Amasa B	Water-wheels	11
3001	Beebe, Lyman and James H	Straps, coupling, method of, as a substitute for a buckle.	16
3195	Belson, Richard W	Hinges, butt, casting	2
3113	Belson, Richard W	Stoves	5
3244	Bentley, Charles W	Boilers, tubular, constructing, for generating steam.	6
3040	Benton, H. P	Lamps, lard	5
2940	Bingham, James	Buckles, suspender	21

Persons whose patents for inventions have expired.

No.	Patentee.	Invention or discovery.	Class.
3259	Black, William	Ploughs	1
3017	Blake, Philos, Eli W., and John A.	Button, plate turn, for fastening cupboard and other doors.	2
	Blake, William. (See Henry N. Hooper, &c.)		
3008	Blanchard, Thomas	Turning or cutting irregular forms	14
2925	Boardman, William D	Hone or strap, razor	21
3118	Bookman, Thomas	Smut-machines	1
2983	Botts, Charles T	Straw-cutters	1
3267	Bourne, Henry	Gold washing, machine for	2
2965	Boynton, Charles B	Stoves, air-heating	5
3174	Boynton, John	Carding-engine	3
2920	Brandreth, Benjamin	Vegetable extracts, making	4
3249	Briggs, Cornelius	Extension tables	17
2956	Brooks, Ebenezer	Striker, blacksmiths', for forging iron	2
3241	Brown, Benjamin H	Steam engines, horizontal pistons and slide valves for.	6
2934	Brown, Edwin	Piano-fortes	18
3132	Brown, Lorenzo D	Tuyeres	2
3207	Brown, Thomas	Smut-machines	1
33[illegible]4	Bruce, David, jr	Type-casting machines	18
3168	Bryan, John P	Cane-cutters	1
3151	Bryan, John P	Cane-covers	22
3108	Buck, Henry A	Smut-machines	1
	Bucklin, James C. (See Wm. Tallman.)		
3288	Bullock, William	Presses, cotton and hay	12
3261	Burden, Henry	Horse-shoes, machine for making	2
3320	Burrall, Thomas D	Ploughs, wheel	1
3002	Bush, Oliver H. and Charles H	Gate, liquor	11
3307	Butler, Henry T., assignee of Laban Eddy.	Stoves, cooking	5
3205	Caldwell, John	Water-wheels	11
3391	Calvert, Francis A	Wool, combing	3
3120	Calvert, Francis A	Wool, picking and separating burrs from; also, applicable to ginning cotton.	3
	Calvert, Wm. W. (See George W. Lyman.)		
3192	Carr, William	Bread-making, constructing machines for.	17
	Carsley, William. (See George W. Towle.)		
16	Chaffee, Edwin M	Caoutchouc, application to cloths, &c	4
3087	Chambers, Josias	Presses, cotton	12
3238	Chickering, Jonas	Piano-fortes	18
3122	Chickering, Jonas, assignee of Rufus Perkins.	Hinges for piano-fortes, &c	2
3255	Clark, Oliver, and Wm. D Hillis.	Hoes to handles, attaching	1
3009	Clark, Patrick J	Lamps, lard	5
2974	Claude, Dennis, jr	Grain-separators	1
	Clezy, Geo. (See J. S. Eastman.)		
3277	Clow, Lewis E	Tuyeres	2
3140	Clowes, William	Bedsteads, sofa	17
3191	Cole, Ezekiel, administrator of Elijah Cole.	Electrifying-machine	8
3337	Coleman, John	Smut-machines	1
3131	Collins, Charles, assignee of James Pilbrow.	Steam engine, injet reacting rotary, improvements in the, and in the manner of connecting it with machinery to be propelled.	

Persons whose patents for inventions have expired.

No.	Patentee.	Invention or discovery.	Class.
2995	Collins Manufacturing Company, assignee of Elisha K. Root.	Steel tempering	2
3185	Colvin, Robert K	Hydrants, construction of	11
3066	Concklin, John C	Straw-cutters	1
3004	Cook, Harris	Net-gill, for catching fish	22
3314	Cooper, Alpheus	Stoves, cooking	5
3236	Coover, William	Pencils, tailors' marking	18
2968	Cope, Nathan	Steam engines, high pressure, mode of heating the supply water and carrying off the escape steam in.	6
3389	Corliss, George H	Sewing, machine for	16
3030	Cornelius, Robert	Lamps, lard	5
3028	Cornelius, Robert	Lamps, lard, with argand burners	5
3031	Cornelius, Robert	Oil feeders	5
3057	Coulter, John	Looms, mode of delivering warp in	3
	Cox, David B. (See Elias Johnson.)		
	Crawford, A. B. (See H Hizer.)		
2979	Creed, William	Wheels, railroad car, constructing	10
3209	Culp, George W. D. & Joseph	Winnowing machines	1
3062	Cunningham, R. P	Looms, power, mode of throwing shuttles in.	3
	Curran, David. (See Philip Havill.)		
2933	Curtis, John	Stoves, cooking	5
3104	Curtis, Samuel W	Clapboards, beveling the ends of	14
2939	Custer, Jacob D	Watches	8
	Dakin, Samuel D. (See Rutherford Moody.)		
3082	Davies, Thomas A	Hydrants	11
3015	Davis, Daniel, jr	Gilding, silvering, &c., in dead colors	18
3089	Davoll, William C	Speeder, double speeder, or fly frame, used in roving cotton, &c.	3
2942	Day, George L	Shingles, sawing, constructing machine for.	14
3134	De Crony, Nicolas H. I. F. Comte.	Steam engine, rotary, also applicable to pumps.	6
3148	Dederick, Levi	Hay presses	12
3293	Delaney, William	Smut and garlic machines	1
3065	Dennis, Jonathan, jr	Hats and bonnets	3
3365	Detmold, Christian E	Boilers, steam, &c., effecting combustion in furnaces and flues of.	6
3176	Detmold, Christian E	Furnaces, construction and heating of, for all kinds of metallurgic operations.	2
3297	Dodd, Robert J	Bougies, for strictures	20
2965	Dodge, Jonathan	Teeth, setting, artificial	20
2986	Defler, George	Bee-hives	1
3734	Donisthorpe, George E	Wool, combing	3
2973	Dougherty, John	Constructing canal boats, so that they can be transferred on railroad cars.	7
3385	Douglas, Beriah	Propelling vessels, endless chain paddles for.	7
3372	Douglas, Beriah	Salt, crystallizing	4
3056	Downs, John	Baskets for catching eels	22
2935	Downing, Frederick	Loom, power, for weaving plain cloth	3
3340	Drake, Eli P	Boot crimps	16
3702	Drayton, Thomas	Silvering looking-glasses	4
	Dudley, James B. (See Carlos G. Pressey.)		
3202	Duff, William	Boilers, steam, safety valves for	6

Persons whose patents for inventions have expired.

No.	Patentee.	Invention or discovery.	Class.
2971	Dumont, William	Smut-machines	1
2908	Dunham, Henry R.	Stop-cocks for hydrants	11
3344	Dunn, Arthur	Soaps and oils, purifying	4
3080	Dutton, John	Ice, accumulating	22
3266	Eastman, Joel S. (assignee of George Clesy.)	Ploughs	1
3199	Eaton, William, jr	Threshing-machines	1
3286	Ecklee, George, and Sheldon X. Ball.	Tailors' measures	21
	Eddy, Laben. (See Henry T. Butler.)		
3372	Eichar, Peter	Ploughs, double	1
3335	Eisenbrandt, Christian H	Coffins to be used in cases of doubtful death	22
3295	Elliot, Abial	Cannon balls, or shot, bomb shells, &c., mode of forming moulds for casting.	19
3376	Ellis, Charles	Spring, door, for closing doors	2
3058	Elmendorf, Reuben.	Stoves	5
3385	Elsegood, William H	Boots and shoes, soles of.	16
3269	Ely, Theodore	Burrs, cleaning, from wool, and seed from cotton.	3
3138	Emmitt, Pitner	Stoves, cooking	5
3088	Engle, William, and M. G. Kinney.	Smut-machines	1
	Esteale, John. (See Jacob Stroop.)		
3303	Evarts, Henry H.	Meat-cutters	17
3129	Everett, Horace	Propellers, submerged	7
3186	Eversole, Elijah H. and Cyrus	Steam-engine, pistons and stuffing-boxes of.	6
3367	Fahrney, Samuel	Garlic-machines	1
3105	Fairbanks, Thaddeus	Dust, metallic particles, &c, produced during the operation of grinding, method of removing or discharging the.	2
3100	Fairbanks, Thaddeus	Flues, furnaces, &c., machine for creating draught in.	5
3175	Farquhar, George	Scythe sneed	1
3072	Farrell, A. D.	Bedsteads, sofa	17
3364	Farrior, David, and D. P. J. Murphy.	Loom, weaving	3
3282	Faulkner, Peter	Vegetable elixir, for the cure of bronchitis, &c.	4
3059	Ferrel, William	Grate-bars	5
3338	Ferren, Ebenezer	Steam-engine, rotary	6
2911	Flannigan, Andrew	Marine railway	9
3166	Fletcher, Hannibal A.	Yarn, sizing, by steam	3
2954	Forbes, Horace D.	Constructing steam and other boats, &c., to prevent them from sinking when they come in collision with snags, sawyers, &c.	7
3107	Forbes, Horace D.	Steamboats, &c., bailing wheel for raising water from the hold of.	7
3355	Foster, William	Plane-stock, cast iron	14
3252	Foster, William	Veneers, cutting	14
2994	Fox, Gurdon	Furnaces, air-heating	5
3081	Franck, John	Glass, cooling and annealing ovens for	15
3127	Fraser, John	Seals, notarial	12
3181	French, Raymond	Augers	14
3149	Freymoyer, George	Smut-machines	1
3294	Fulk, David A., and L. B. Mc. Lain.	Fanning-mills	1

Persons whose patents for inventions have expired.

No.	Patentee.	Invention or discovery.	Class.
3052	Gallatin, Jeremiah	Ploughs	1
3370	Gardner, James P.	Sun-dials	8
3055	Gardner, John	Leather rollers	16
3292	Gardner, Smith	White lead, manufacture of	4
3386	Gates, William	Grain rakes	1
3331	Gaylord, Charles B.	Straw-cutters	1
2967	Gebhart, George	Bee-hives	1
	Geer, Gilbert. (See Elias Johnson.)		
3133	Gibbs, William P.	Arranging staircases in buildings	9
3392	Gibson, William	Machine for making horse shoes	2
3083	Gill, John W.	Feeding silk-worms	3
3282	Gillett, Jason C.	Cutting shingles	14
3047	Gilroy, C. G.	Loom for weaving figured fabrics	3
3094	Gleason, John and H. C., and Nelson D. White, assignees of Horace Barbour.	Feeding or delivering rollers of carding engines, arrangement of.	3
3357	Gleason, Sewall	Machines for making hats of leather, India rubber, &c.	16
2922	Godden, John	Breaking and cleaning flax and hemp	3
3073	Gold, Stephen J.	Lamps	5
2975	Goodrich, Reuben A.	Tuyeres	2
2959	Goodwin, Eben	Preparing chewing tobacco	4
2955	Goss, Chester	Grain-cradles	1
	Gouliart, John. (See Charles Baer.)		
3000	Graham, William	Sugar boilers	4
3360	Grant, Royal C.	Rotary steam-engine	6
3250	Graves, Jacob	Condensing or preparing cotton roving, &c., for spinning.	3
3214	Green, Joel	Cooking stoves	5
3339	Greenough, B. F.	Mode of using volatile oils for purposes of illumination.	4
3084	Greer, James	Cooking stoves	5
2952	Gregory, Clark H.	Grist mills	13
3007	Griffin, Rhesa, and Latham Y. Avery.	Salt boiler	4
3197	Grimes, William C.	Garlic-separators	1
	Griswold, G. S. F. (See L. E. Hicks.)		
3019	Guerin, Napoleon E.	Hatching chickens by artificial heat	22
3387	Guild, Joseph	Bedstead fastenings	17
3390	Guilford, Simeon	Bloomery forge employed in the manufacture of wrought iron.	2
	Guion, Peter C. (See Jno. L. W. Nelstone.)		
3121	Hall, Lewis A.	Generating heat by hydrogen gas	5
3332	Hall, Sylvester W.	Propelling vessels by the buoyancy of air in water acting against inclined surfaces.	7
3221	Hall, William	Locks for safes, bank vaults, &c.	2
3308	Hall, William	Locks or latches, door	2
3270	Hallam, Alexander	Portable screw-presses	12
3053	Hamilton, James	Machinery for sawing curvilinear and compound bevel.	14
3342	Hamilton, James	Saw mill, for sawing timber with a direct or compound bevel.	14
	Hammond Artemus. (See William Adams.)		

Persons whose patents for inventions have expired.

No.	Patentee.	Invention or discovery.	Class.
	Hammond, Artemus, and William Adams, assignees of A. Hammond. (See Adams.)		
	Harris, Joseph. (See Wesley McCoy.)		
3164	Hart, Albert D.	Cooking stoves	5
3274	Hart, Alexander H.	Coupling the forward axle of a four-wheel carriage with the reach and head block or rocker.	10
2941	Harvey, Thomas W.	Presses	12
3144	Havill, Philip, and David Curran.	Tanners' flesh blacking	4
3076	Hayward, J. H. and N. P.	Stoves with revolving ovens	5
3123	Heald, Levi	Self-setting head and tail block for saw mill.	14
3256	Heard, John T.	Distilling alcohol	4
3078	Helm, Henry	Smut-machines	1
3045	Hews, Geo., Richard C. Marsh, and Nathaniel W. Tileston.	Piano-fortes	18
2914	Heygel, Joseph	Smut-machines	1
3068	Hibbard, Harmon	Dyeing	4
3488	Hicks, L. E., assignor to L. E. F. Griswold.	Lamp alcohol for medicated vapor bath	5
3240	Higbie, S. C.	Hydrants	11
3010	Higbie, S. C.	Pumps	11
3071	Higgins, Uriah	Drill for drilling or boring rock, &c.	9
2977	Hill, Arundel	Latch or fastener for window shutters and blinds.	2
3245	Hill, Morton B.	Fire ladders	22
	Hillis, William D. (See Oliver Clark.)		
3136	Hizer, H., and A. B. Crawford	Threshing-machines	1
3264	Hobday, John	Ascertaining the centre of gravity and sailing trim of a vessel.	7
3038	Hodges, Alexander, agent of New England Screw Co., assignee of Cullen Whipple.	Removing the burrs from the undersides of the heads of wood screws.	2
3029	Hodges, Alexander, agent of New England Screw Co., assignee of Cullen Whipple.	Turning or shaving the heads of blanks for wood screws.	2
3362	Hollingsworth, John M. and Lyman.	Making paper	3
3011	Hopper, Samuel	Water-wheels	11
3048	Houghton, Luther	Rivets and nails for trunks and other purposes.	2
3333	Houghton, Thomas, and John F. Wallace.	Lard lamps	5
3301	Howard, Edward	Smut-machines	1
2946	Howard, Horace	Lard lamps	5
2970	Howe, John J.	Pins, machine for sticking, in rows in sheets of paper.	22
3379	Howell, Thomas D.	Bee-protectors	1
	Howell. (See Moorhead.)		
3363	Hull, A. A.	Straw-cutters	1
	Hummer, David. (See Cyrus Morey.)		
3358	Hunt, Salmon, administrator of Salmon Hunt.	Making wrought iron cannon	19
	Hunt, Walter. (See Robert B. Ruggles.)		

Persons whose patents for inventions have expired.

No.	Patentee.	Invention or discovery.	Class.
	Hunt, Walter. (See Jas. Thompson and Halsey Rogers.)		
3321	Hutchinson, James	Washing-machine	17
3177	Iggett, John	Bending metal plate for roofing houses, machinery for.	9
3263	Jarvis, George O	Apparatus for reducing dislocations	20
	Jennings, Samuel K. (See Sam'l W. Stockton)		
2980	Johnson, Henry	Breaking and scutching, or cleaning, flax and hemp.	3
3254	Johnson, Nancy M	Artificial freezers	4
3046	Johnson, Nelson	Penstocks for water-wheels	11
3306	Johnson, Salmon	Mop irons	17
3203	Jones, Alexander	Sweeping or cleaning	9
3101	Jones, Luther	Lard lamps	5
3091	Kelly, H H	Gin, saw, for ginning cotton	3
	Kellogg, George C. (See John C. Smith)		
3378	Kelsey, Horatio H. C	Valves for hydrants	11
3178	Kendall, Hartwell	Construction of cheese press	12
2907	Kenderdine, John E	Saw mills	14
3296	Kenner, Henry B	Cocoa grass, destroying	1
	Killam Hervey. (See Alvin Savage.)		
	Kinney, M. G. (See William Engle.)		
2963	Kinsley, Rodolphus, assignee of Samuel Noyes	Compound lever gravitating locks or latch for doors, &c.	2
3233	Kirk, Charles	Clocks	8
2972	Kirk, Josiah W	Fenders to protect boats against injury from snags and sawyers.	7
	Knight, William. (See William Norris.)		
3196	Klein, Joseph	Smut-machine	1
3298	Ladrange, Pierre E	Loom, knitting	3
3023	Laing, John	Pipes of lead and other soft metals, &c., machine for making.	2
30-6	Lamb, Seth	Cotton-presses	12
3231	Landis, John K	Straw-cutters	1
3022	Latta, Alexander B	Stirrups for the paddle-wheels of steam and other boats, machine for bending the.	2
3346	Latting, Waring	Umbrellas	21
2999	Lee, Frederick L	Smut-machines	1
2960	Leonard, William B	Presses	12
	Lloyd, C C. (See D. Stuart.)		
2993	Lindley, N. H., & Wm Perry	Churns	1
3020	Little, David	Disengaging horses from carriages	10
3343	Littlefield, Theodore L	Locks or latches, door	2
3190	Livingston, Robert M	Cotton, cleaning unginned	3
3033	Lull, Orrin	Smut-machines	1
3215	Luther, John	Coffee-mills	13
3198	Mallory, Samuel	Rut shears, for repairing and improving roads.	9
3369	Maltby, James	Rakes, horse	1
3374	Mann, Zadok H	Tuyeres	2
3108	Manning, William	Corn shellers	1
3212	Markham, John S., assignee of E. G. Matthews.	Vises	2

Persons whose patents for inventions have expired.

No.	Patentee.	Invention or discovery.	Class.
	Marsh & Tileston. (See Hews.)		
	Marsh. (See White.)		
3287	Marsh, Thomas J	Timber, fire-wood, &c., machine for cross-cutting.	14
3014	Martin, Edwin	Awl hafts	2
2947	Mason, John	Carding engines, machinery for making laps for feeding, &c.	3
3284	Mattson, Morris	Baths, medicated vapor	20
3069	May, Harvey H	Ploughs	1
3098	McConnell, William P	Boilers, steam, safety valves for	6
2929	McCoy, W., assignee of J. Harris.	Bee-hives	1
3309	McCrae, Gavin	Loom, weavers', for working any number of heddles.	3
3220	McCubben, Hugh	Twine and small cord, machinery for making various kinds of.	3
3373	McKnight, James L.	Crushers, corn and cob	1
	McLain. (See Fulk.)		
	McMahon. (See Perkins.)		
3204	McNair, Alexander H	Supporters, uterine	20
3328	McWhorter, James	Hoops, coopers', making out of split timber	14
2966	Merrick, Solyman, assignee of J. C. Terry.	Rack wrench	2
2930	Merry, Cornelius	Straw-cutters	1
3060	Mickles, Lovel G	Steamboats, preventing, from sinking	7
3344	Miller, Francis J	Stop-cocks	11
2923	Miller, James M	Grinding corn with the cob, mill for	13
3325	Miller, Joseph	Bee-hives	1
3377	Miller & Bancroft	Axles of railroad cars	10
3246	Miller, William D	Bee-hives	1
3278	Millholland, James	Spring for railroad cars	10
3329	Mitchell, Arthur	Washing-machines	17
3182	Mitchell, James K	Clover-hullers	1
3169	Mollineaux, James	Wagon boxes, moulds for casting	10
3167	Montgomery, Lee	Brick-machines	15
3351	Moody & Dakin	Dock, floating dry, method of working a, in connexion with a platform and basin, by means of which vessels can be raised and deposited on bed or railways, &c.	9
3352	Moore, James B	Ploughs	1
3193	Moore, John	Ploughs	1
2950	Moore, Wm. S	Lamps, lard	5
2953	Moorehead & Howell	Bee-hives	1
3161	Morey & Hummer	Tailors' measures	21
3187	Morgan, Amos	Drilling iron, &c., machine for	2
3070	Morgan, Griffith	Bolts, copper, uniting	2
3111	Morrill, Benjamin	Balances	12
3383	Morrill, Henry A	Steam-engines, valves for reversing the action of.	6
3276	Morris, James	Wheels, carriage, immersing in water, after putting on the hoop or tire.	10
3162	Morris, John	Bedsteads	17
3316	Morse, Samuel F. B	Pipes, metallic, introducing wire into	9
3432	Mott, Jordan L	Stoves, cooking	5
3247	Mottmiller, Gottlieb	Seed-planters	1
2949	Munger, Stiles	Water-wheels	11
	Murphy. (See Farrior.)		
3298	Mussey, Thomas	Streets, sweeping	9
3110	Nash, John	Ploughs	1

Persons whose patents for inventions have expired.

No.	Patentee.	Invention or discovery.	Class.
4714	Newall, Robert S	Metallic ropes	2
3135	Newell, Robert	Locks, construction of	2
3179	Newton, Daniel	Clapboards, sawing-machine for	14
3115	Newton, Philo S	Fire-arms, attached muzzle for	19
3218	Nock, Joseph	Leaf-holders	18
3188	Noe, Charles L	Hats and bonnets of horse hair	3
3210	Norcross, Jonathan	Saw-guides, mill	14
2951	Norris, Wm., assignee of S. Norris and W. Knight.	Carriages of locomotive steam-engines	10
3230	Noyes, Isaac	Salt making	4
	Noyes. (See Kingsley.)		
3034	Ogle, William	Ploughs	1
3024	Oliver, Thomas	Tailors' measures	21
	Ormsby. (See Ives.)		
2932	Osgood, Alfred	Carriages, four-wheeled, coupling	10
3041	Owen, Joseph P	Brick, machine for moulding	15
2936	Palmer, Augustus C	Hinges or butts for hanging and fastening window blinds and shutters.	2
2909	Palmer, Granville	Cars for removing gravel and earth on railroads.	10
3112	Parker, Eliphalet H	Scales, counter	12
3172	Parsons, Daniel H	Water-wheels	11
2937	Pearson, Michael	Life-preserver, for the use of steamboats, &c.	7
3384	Peck, Jeremiah	Vise, bench	2
3061	Peck, Orrin, & Noble	Metal, sheet, machinery for working	2
3130	Pendell, David L	Garments, measuring and cutting	21
3141	Pepple, Edmund	Bee-hives	1
3037	Perkins & McMahon	Wheels, cast iron, constructing, for locomotive steam-engines, cars, trucks, &c.	10
	Perkins. (See Chickering.)		
	Perry (See Lindley.)		
68	Phillips, Alonzo D	Matches, friction	4
	Pilbrow. (See Collins.)		
3283	Platt, Josiah	Grist-mill	13
2984	Plumbe, John, jr	Galvanic battery	8
3281	Pomeroy, Elisha M	Buttons, paper	21
2990	Pond, Moses	Ranges, cooking	5
3239	Pond, Moses	Stoves	5
3194	Post, Nathan	Collars, horse, constructing	16
3128	Postley, Charles	Stoves, cooking	5
3184	Pratt, Elijah	Sawing and planing by combining the plane with a saw.	14
3262	Pratt, Elijah	Saws, circular, manner of stiffening	2
3025	Pressey & Dudley	Corn-shellers	1
2962	Price, Francis	Grinding grain, &c., mills for	13
3317	Provost, W. F. & C. J	Presses, cotton	12
3222	Quatermass, R. A	Shingles, veneers, &c., machine for cutting	14
3137	Quigley, Thomas B	Ploughs	1
2992	Rand, Luke S	Horse-power for driving machinery	13
2938	Raymond, Lewis	Life boat	7
3334	Reeder, Charles	Steam-engines, air-pump used in low-pressure or condensing.	6
2919	Reeder, Jesse	Grain-cutters	1
3150	Reif, Christian	Threshing-machine	1
3142	Reinhardt, Charles C	Spurs	2
3051	Remington, John R	Cotton-presses	12
3095	Remington, John R	Bridges and other structures, increasing the effective strength of beams or rafters of wood or other materials used in.	9

Persons whose patents for inventions have expired.

No.	Patentee.	Invention or discovery.	Class.
2988	Rich, Joseph C	Bee-hives	1
3299	Rich, Joseph C	Washing-machine	17
3050	Richards, Edward	Extension tables	17
3322	Richards, Salmon	Horse-power, endless chain	13
3035	Richards, Samuel	Glass, flattening and annealing	15
3036	Richardson, Israel J	Straw-cutters	1
3229	Richardson, Israel J	Horse-power, portable	13
3039	Rider, A. K & W. S	Steam engines, rotary	6
	Ripley, E. (See Johnson *et al.*)		
3211	Robb, James	Stoves	5
3200	Robbins, Zenas C	Boilers, steam, constructing	6
2904	Robinson, Enoch	Knobs, door, method of attaching, to their spindles.	2
3183	Robinson, Pliny	Streets, sweeping	9
2958	Roebling, John A	Spark-arresters	6
	Rogers (See Thompson.)		
3313	Roney, Benjamin T	Stoves, cooking	5
	Root. (See Collins Manufacturing Company.)		
3341	Root, F. P	Grain-cleaners	1
3206	Rose, Henry	Lard lamps	5
3079	Rose, Jacob S	Breathing-tubes	20
3251	Ross, James P	Straw-cutters	1
3227	Ruggles, Robert B., assignee of W. Hunt.	Boots and shoes, soles of	16
3260	Rust, Samuel	Lamps	5
2906	Sage, Charles T	Hernia, cure of, by means of injections	20
2903	Sampson, Elnathan	Shingles, sawing	14
2902	Sanderson, Robert	Safes, &c., improvement in, to protect them from insects	17
3304	Sanford, James	Straw-cutters	1
3216	Sause, Edmund J	Plates, door	2
3350	Savage, Alvin, and H. Killam	Bellows, rotary	11
	Scholfield, Nathan	Water-wheels, steam-engines, &c., regulating the motions of.	11
2924	Scholfield, Nathan, Charles, and Edwin A.	Corn-shellers	1
3003	Schuyler, Robert	Propelling vessels by means of continuous streams of water.	7
	Searle. (See Thurston.)		
3154	Seguine, Bornt	Cotton, cleaning, before ginning	3
2918	Serrell, James E	Pipes, metallic, machinery and process of manufacturing.	2
3273	Sexton, Samuel B	Stoves, cooking	5
3102	Shaw, Luke	Dough, breaking, machine for	17
3242	Shepard, Benjamin	Stoves, cooking and air-heating	5
3109	Shepard, Martin H	Bags for separating elaine and stearine by pressure.	3
3265	Shryock & Underwood	Furnaces for steam boilers	6
3096	Shugert, John	Washing-machines	17
3189	Sickels, Frederick E	Steam-engines, valves of, opening and closing the.	6
3171	Sides, Henry C	Brakes for railroad cars, &c	10
3085	Simons, M. P., assignee of W. Thompson.	Daguerreotype pictures, coloring	18
3160	Sipperly, David N	Garments, cutting	21
3090	Sizer, Samuel D	Guns, stocking, and other purposes, method of attaching bits eccentrically to their arbors, to be used in machinery for.	19

Persons whose patents for inventions have expired.

No.	Patentee.	Invention or discovery.	Class.
	Skinner. (See Tilt.)		
3349	Smith, B. C	Paper, making cane hemp for making	3
	Smith. (See White & Marsh.)		
3173	Smith, Hervey	Salt, &c , manufacture of	4
2969	Smith & Kellogg	Cotton bats or laps, making	3
2907	Smith, John P.	Rules sliding	8
2948	Smith, Riley	Timber, &c., boring, machine for	14
3170	Smylie, Edward	Andirons, construction of	2
3336	Somerby, Rufus	Blow-pipes, table	11
3290	Sowle & Carsley	Whale blubber, machines for mincing	22
3021	Spalding, Samuel B	Stoves with elevated ovens	5
3353	Spencer, Robert	Saddle, spring	16
2961	Springsteed, R H	Drilling-machine	2
3258	Starr, James	Winnowing-machines	1
3271	Stearns, Daniel	Water-wheels	11
3366	Stephens, Henry K	Steam-engines, condenser of	6
3226	Stetson, Edward	Bells, house, hanging	17
3013	Stewart, James	Type casting	18
3097	Stewart, William B	Gin, saw, for ginning cotton	3
2943	Stewart, William N	Flax and hemp, breaking and cleaning	3
3223	Stillman, Alfred	Juices, saccharine, evaporating	4
2916	Stimpson, Herbert H	Stoves	5
2921	Stockton, Samuel W., assignee of S. K. Jennings.	Pessary for prolapsus uteri	20
3393	Street, James H	Propelling boats	7
3345	Street, John	Slates, artificial writing	4
3426	Stroop & Estdale	Box trap for catching animals	22
2917	Stuart & Lloyd	Hinges, casting	2
2927	Summers, Ralph	Smut-machines	1
2964	Summer, Palmer	Chimney cowls	5
10	Swift, Beriah	Dye woods, cutting and shaving	14
2915	Taylor, Henry R	Cradle-rockers	17
3064	Taylor, James	Stoves	5
2998	Teague, Abner	Ploughs	1
	Terry. (See Merrick.)		
2976	Terry, Silas B.	Lamps, lard	5
2987	Thatcher, John M.	Straw-cutters	1
3368	Thomas, Hopkins	Coal, breaking and screening	5
3330	Thomas, John E.	Stoves, cooking	5
3354	Thompson, Archibald	Mortising hubs, machinery for	14
	Thompson (See Simons)		
3305	Thompson & Rogers, assignee of W. Hunt.	Nails, tacks, &c., feeding nail and tack plates, &c., into machines for cutting.	2
3044	Thompson, William	Lamps, lard	5
3228	Thurber, Charles	Printing, machines for	18
3067	Thursby, John	Yarn, tarring	3
3163	Tibbals, Thaddeus, Henry, and Daniel.	Oakum, machinery for the manufacture of	3
	Tileston. (See Hews & Marsh.)		
2910	Tilghman, Richard A.	Chromic yellow, making	4
3155	Tilt & Skinner	Threads or cords, dressing or finishing worsted or other.	3
3381	Todd, Henry	Seed-planters	1
3243	Tomlinson, Harvey	Lamps, lard	5
3126	Tough, John S	Springs to carriages, manner of applying	10
3674	Troughton, Nicholas	Ores requiring washing, apparatus for separating or dressing.	2
3143	Turnbull, James	Boots, making	16

Persons whose patents for inventions have expired.

No.	Patentee.	Invention or discovery.	Class.
3125	Tuttle, W. & J. M., assignees of C. F. Voorhies.	Locks, door and other	2
	Underwood, S. (See Shryock.)		
3318	Vale, Gilbert	Globes	8
3388	Vanamberg, Isaac	Fences	9
2957	Van Antwerp, Peter	Churn-dashers	1
3300	Van Tuyl, David B.	Temperature, instruments for regulating	5
3147	Varney, George D.	Surveying instruments	8
	Voorhies. (See Tuttle)		
	Walker. (See Wilson.)		
3311	Walker, W. & M C	Ploughs	1
	Wallace. (See Houghton.)		
3180	Wallace, Thomas	Metal, preparing, for being manufactured into wire.	2
3359	Warner, Chauncey E	Veneers and other pieces of wood, cutting and straightening.	14
3116	Watchman, John	Iron, &c , sheet and plate, bending	2
3106	Waterman, Henry	Vessels, connecting the tiller with the rudder-head of.	7
3213	Waterman, Nathaniel	Bath, portable shower	20
3248	Watts, Benjamin F.	Tides and currents, representation of	7
3018	Webb, Joseph W.	Quilting-frames, couplings for	17
3043	Webb, Joseph W	Vegetable-cutters	17
2989	Wells, Philip	Water-wheels	11
3093	Whetstone & Guion	Fasteners, shutter	2
	Whipple. (See Hodges.)		
3289	White, Marsh & Smith	Supporters, abdominal	20
3094	White, N. D , and J. & H. C. Gleason, assignees of H. Barbour. (See Gleason)		
3006	Whitney, Otis	Presses, cotton	12
3356	Wiard, Thos	Ploughs, gangs of	1
2901	Wilbar, Zibeon	Spark-arresters	6
3075	Wilcox, Amander N	Spinning cotton, wool, &c , machine for	3
3032	Wilhelm, Chas	Lamps, lard	5
2991	Williams, John, jr	Screw-wrench	2
2945	Williamson, Stephen D	Boxes and other bodies, removing square and other prismatic.	22
3012	Wills, Harry A	Spikes, wrought-iron	2
3319	Wilson, Chas	Stop-cocks, connecting, for hydraulic presses.	11
	Wilson. (See Yale.)		
3231	Wilson, Ezekiel, assignee of J. C. Walker.	Boxes, &c., marking	22
3224	Wilson, James	Caboos, ship's	5
3103	Wilson, Jno. V	Trusses	20
2931	Wilson, William	Locks and keys	2
3201	Winans, Ross	Steam-engines, locomotive	6
3156	Winslow, Jno. F., assignee of W. Whitaker.	Hinges, butt; machine for forming the eyes of.	2
3217	Winslow & Osgood	Horse shoes, chain links, &c., machines for forming.	2
3159	Wood, Horace	Wagons and other carriages	10
3157	Woodin, John G	Roofing, metal, constructing, for houses	9
2928	Woodman, E G	Forts, iron, construction of	19
3361	Woodward, Moses S	Brakes, for retarding carriages in descending hills, &c.	10
3074	Woodworth, Arad	Brick-presses	15

Persons whose patents for inventions have expired.

No.	Patentee.	Invention or discovery.	Class.
3317	Wyeth, Nathaniel J.	Ice-cutters and markers	22
3323	Wyeth, Nathaniel J	Ice, cars and receiving platform for receiving blocks of.	22
3327	Wyeth, Nathaniel J.	Ice, machinery for elevating blocks of, &c.	22
3312	Yale & Wilson	Locks for doors, &c., combination safety.	2
3063	Yates, Peter	Pulleys, uncoupling and coupling, with their shafts.	13

ALPHABETICAL LIST OF PERSONS WHOSE PATENTS FOR DESIGNS HAVE EXPIRED DURING THE YEAR 1857.

No.	Patentees.	Designs.
273	Archer, E. S., and R. F. Warner	Chandeliers.
299	Archer, E. S., and R. F. Warner	Lamps.
268	Bacon, Lathrop S.	Stoves.
286	Bailey, Joel, and Russell Wheeler	Stoves.
330	Ballard, William	Railings, iron.
278	Bartlett, David L	Stoves.
307	Blanchard, Reuben J., assignor to Billings P. Learned & Geo. H Thatcher.	Stoves.
321	Blanchard, Reuben J., assignor to B. P. Learned & Geo. H. Thatcher.	Stove.
332	Blanchard, Reuben J, assignor to B. P. Learned & Geo. H. Thatcher.	Stoves.
285	Brownell, Asa C	Stoves.
287	Bryent, Walter	Umbrella stands.
305	Bryent, Walter	Bracket, cast-iron.
314	Bryent, Walter	Blower stand.
266	Conklin, James H., assignor to S. B. Sexton & Co.	Stoves.
272	Conklin, James H	Stoves.
302	Conklin, James H., and A. W. Jones, assignors to James McGregor, jr.	Stoves.
279	Crandall, Joshua, assignor to A. Cox & Co	Stoves.
297	Crandall, Joshua, assignor to E. Johnson & D. B. Cox	Stoves.
270	Cresson, W. P., David Stuart, and P. Seibert, assignors to W. P. Cresson.	Stoves.
271	Cresson, W. P., David Stuart, and P. Seibert, assignors to W. P. Cresson.	Stoves.
261	Cresson, Wm. P, David Stuart, and Peter Seibert, assignors to Wm. P. Cresson.	Stoves.
262	Cresson, Wm. P., David Stuart, and Peter Seibert, assignors to Wm. P. Cresson.	Stoves.
288	Davy, John T	Stoves, coal.
298	Doane, Calvin.	Stoves.
309	Donavan, Robert	Stoves.
329	Eddy, Laben	Stoves.
345	Gibbs, S. W., assignor to North, Harrison, & Co	Stoves.
337	Gleason, William B., assignor to Jas. Hartshorn and Winslow Ames.	Stoves.
336	Gordon, Chas. P & Geo. B.	Spoon-handles.
267	Green, Jeremiah D., and George Warren	Stoves.
280	Green, Jeremiah D., and George Warren	Stoves, cooking.
331	Haynes, C. Y.	Bas-relief of Henry Clay.
274	House, Samuel A	Stoves.
282	Hutchinson, James, assignor to D. A. E. & N. B. Powers.	Floor-cloth, printed.

Persons whose patents for designs have expired.

No.	Patentees.	Designs.
326	Jackson, James L	Grate-frame and fender.
300	Jewett, S. S., and F. H. Root	Stoves.
308	Jewett, Sherman S, and F. H. Root	Stoves.
325	Jones, Anthony W., assignor to Edward R. Brown	Stove.
313	King, John C	Bust of Daniel Webster.
260	Lamb, Joseph G., and Conrad Harris, assignors to Wm. C. Davis.	Stoves.
322	Lamb, Joseph G	Stove.
323	Lamb, Joseph G	Stove.
340	Lombard, Charles A	Stoves.
294	Owens, J. E., J. Ebert, and E G Dyer	Stoves.
303	Owens, J. E., J. Ebert, and E. G Dyer,	Stoves.
281	Palmer, P. A	Stoves.
289	Paul, Amos	Stoves.
304	Paul, Amos	Grate, portable.
290	Penniman, Elijah P	Stoves.
275	Peterson, Richard, David Stuart, and Peter Seibert, assignors to Richard Peterson	Stoves.
338	Pierce, Samuel, assignor to Johnson, Cox, & Fuller	Stoves.
283	Race, Washburn	Stoves.
295	Race, Washburn	Stoves.
291	Rathbone, John F	Stoves.
292	Rathbone, John F	Stoves.
306	Rathbone, John F	Stoves, coal.
301	Richmond, Apollos, assignor to A. C. Barstow & Co.	Stoves.
333	Richmond, Apollos, assignor to A. C. Barstow & Co.	Stoves.
310	Ring, George W., assignor to Johnson, Cox, & Fuller	Stove, parlor.
327	Ripley, Ezra, assignor to George W. Eddy	Stoves.
328	Ripley, Ezra, assignor to George W. Eddy	Stoves.
284	Root, D	Stoves.
334	Root, D	Stoves.
335	Royce, John S	Carriage plates.
269	Sanderson, Wm. L., assignor to Clute & Brothers	Stoves.
296	Sanderson, Wm. L	Stoves, cooking.
311	Sanderson, Wm. L., assignor to S. Cole and G. C. Mosher.	Stove.
324	Savery, William	Stove.
254	Sheperd, Henry L	Stoves.
259	Simmons, Peter J	Stoves.
339	Smith, Morris, and Benona S. Gleason	Stoves.
315	Tuttle, Charles T., and Jas. S. Baily	Register and ventilator, plates for.
316	Tuttle, Charles T., and Jas. S. Baily	Register and ventilator, plates for.
317	Tuttle, Charles T., and Jas. S. Baily	Register and ventilator, plates for.
318	Tuttle, Charles T., and Jas. S. Baily	Register and ventilator, plates for.
319	Tuttle, Charles T., and Jas. S. Baily	Register and ventilator, plates for.
320	Tuttle, Charles T, and Jas. S. Baily	Register and ventilator plates for.
263	Vose, Samuel D	Stoves.
264	Vose, Samuel D	Stoves.
265	Vose, Samuel D	Stoves.
277	Wager, James	Stoves.
293	Wager, James, David Pratt, and Volney Richmond	Stoves.
276	Warwick, Charles W., F. Leibrandt, J. G. Abbott, and A. Lawrence.	Furnace, portable.
312	Warnick, Charles W	Stoves.

CLASSIFIED LIST OF PATENTS FOR INVENTIONS AND DISCOVERIES THAT HAVE EXPIRED DURING THE YEAR 1857.

CLASS I.—AGRICULTURE, *including instruments and operations.*

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Bee-hives	Edmund Pepple	Canton, Ohio	June 24, 1843.
Bee-hives	George Dofler	Frederick, Md	Mar. 4, 1843.
Bee-hives	George Gebhart	Lebanon, Pa	Feb. 20, 1843.
Bee-hives	Joseph C. Rich	Penfield, N. Y	Mar. 4, 1843.
Bee-hives	Joseph Miller	Lexington, Ohio	Nov. 6, 1843.
Bee-hives	Westley McCoy, assignee of Joseph Harris	St. Clairsville, Ohio Belmont county, Ohio	Jan. 27, 1843.
Bee-hives	Wm. D. Miller	Mad River, Ohio	Sept 1, 1843.
Bee-hives	Wm. L. Moorhead and Thos. D. Howell	Zanesville, Ohio	Feb. 16, 1843.
Bee protectors	Thomas D. Howell	Zanesville, Ohio	Dec. 15, 1843.
Cane-cutters	John P. Bryan	Princeton, Ky	July 8, 1843.
Churns	N. H. Lindley and William Perry	Redding, Conn Bridgeport, Conn	Mar. 10, 1843.
Churn dashers	Peter Van Antwerp	Coeymans, N. Y	Feb. 16, 1843.
Clover-hullers	James K. Mitchell	Danville, Pa	July 20, 1843.
Cocoa grass, destroying	Henry B. Kenner	New Orleans, La	Oct. 6, 1843.
Corn-shellers	Charles G. Pressey and James B. Dudley	Andover, N. H	Mar. 30, 1843.
Corn-shellers	Nathan, Charles, and Edwin A. Scolfield	Norwich, Conn	Jan. 20, 1843.
Corn-shellers	William Manning	South Trenton, N. J	Aug. 4, 1843.
Fanning mills	David A. Fulk and Lazarus B. McLain	Hookstown, Pa New Lisbon, Ohio	Oct. 6, 1843.
Garlic-machines	Samuel Fahrney	Boonsboro', Md	Dec. 5, 1843.
Garlic-separators	William C. Grimes	York, Pa	July 26, 1843.
Grain-cleaners	F. P. Root	Sweden, N. Y	Nov. 15, 1843.
Grain-cradles	Chester Goss	Madrid, N. Y	Feb. 16, 1843.
Grain-cutters	Jesse Reeder	Alton, Ill	Jan. 20, 1843.
Grain-separators	Dennis Claude, jr	Annapolis, Md	Feb. 24, 1843.
Hoes to handles, attaching	Oliver Clark and William D. Hillis	Hudson, Ohio	Sept. 9, 1843.
Manure making	Charles Baer and John Gouliart	Baltimore, Md	June 24, 1843.
Ploughs	Abner Teague	Jackson, Tenn	Mar. 10, 1843.

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Ploughs	Harvey H. May	Galesburgh, Ill	May 2, 1843.
Ploughs	James B. Moore	Wilmington, Del	Nov. 24, 1843.
Ploughs	Jeremiah Gallatin	Manchester, Ohio	April 15, 1843.
Ploughs	J. S. Eastman, assignee of George Clezy	Baltimore, Md	Sept. 14, 1843.
Ploughs	John Moore	Lexington, Ky	July 22, 1843.
Ploughs	John Nash	Middlebury, Ohio	May 26, 1843.
Ploughs	Thomas B. Quigley	Mansfield, Ohio	June 14, 1843.
Ploughs	William Black	Scott county, Ill	Sept. 14, 1842.
Ploughs	William Ogle	Frederick, Md	April 6, 1843.
Ploughs	W. and M. C. Walker	Washingtonville, Pa	Oct. 26, 1843.
Ploughs	Peter Eichar	Wooster, Ohio	Dec. 5, 1843.
Ploughs, double	Thomas Wiard	East Avon, N. Y	Nov. 24, 1843.
Ploughs, gangs of	Thomas D. Burrall	Geneva, N. Y	Oct. 28, 1843; antedated Aug. 25, 1843.
Ploughs, wheel			
Rakes, grain	William Gates	Barre Centre, N. Y	Dec. 20, 1843.
Rakes, horse	James Maltby	North Branford, Conn	Dec. 5, 1843.
Seed-planters	Gottleib Mottmiller	Columbus, Ohio	Sept. 1, 1843.
Seed-planters	Henry Todd	Orford, N. H	Dec. 15, 1843.
Smut-machine	Joseph Klein	Lowhill, Pa	July 26, 1843.
Smut-machines	Edward Howard	Fredonia, N. Y	Oct. 12, 1843.
Smut-machines	Frederick L. Lee	Washington, N. Y	Mar. 10, 1843.
Smut-machines	George Freymoyer	Chichester, Pa	June 24, 1843.
Smut-machines	Henry A. Buck	Fredonia, N. Y	May 26, 1843.
Smut-machines	John Coleman	Blacklegs, Pa	Nov. 15, 1843.
Smut-machines	Joseph Heygel	Salisbury, Pa	Jan. 16, 1843.
Smut-machines	Orrin Lull	McConnelsville, Ohio	April 6, 1843.
Smut-machines	Ralph Summers	Seneca Falls, N. Y	Jan. 27, 1843.
Smut-machines	Thomas Bookman	Lexington district, S. C	June 3, 1843.
Smut-machines	Thomas Brown	Rome, N. Y	Aug. 4, 1843.
Smut-machines	William Dumont	Seneca Falls, N. Y	Feb. 24, 1843.
Smut-machines	William Engle and M. G. Kinney	Conyngham, Pa	May 19, 1843.
Smut-machines	William Delaney	Cornwall, N. Y	Oct. 6, 1843.
Smut and garlic-machines	A. A. Hull	Croton, N. Y	Dec. 4, 1843.
Straw-cutters	Charles S. Gaylord	Gaylord's Bridge, Conn	Nov. 6, 1843.
Straw-cutters	Charles T. Botts	Richmond, Va	Mar. 4, 1843.
Straw-cutters	Cornelius Merry	Ithaca, N. Y	Jan. 27, 1843.
Straw-cutters	Israel J. Richardson	New York	April 10, 1843.
Straw-cutters	James P. Ross	Lewisburg, Pa	Sept. 1, 1843; antedated June 1, 1843.

I.—*Expired patents for inventions.*

Inventions or discoveries.	Patentees	Residence.	Date of patent.
Straw-cutters	James Sanford	Redding, Conn	Oct. 12, 1843.
Straw cutters	John C. Concklin	Peekskill, N. Y	May 2, 1843.
Straw-cutters	John K Landis	East Hempfield, Pa	Aug. 26, 1843
Straw-cutters	John M. Thatcher	Milton, Pa	Mar. 4, 1843.
Scythe sneed	George Farquhar	Easton Pa	July 12, 1843.
Threshing-machines	Christian Reif	Hartleton, Pa	June 24, 1843.
Threshing-machines	George Anstine	Windsor, Pa	April 15, 1843.
Threshing-machines	H. Hizer and A. B. Crawford	Wooster, Ohio	June 14, 1843.
Threshing-machines	William Eaton, jr	Upper Alton, Ill	July 28, 1843.
Winnowing-machines	George W. D. and Joseph Culp	Allensville, Ind	Aug. 4, 1843.
Winnowing-machines	James Starr	New Lisbon, Ohio	Sept. 9, 1843.

CLASS II.—METALLURGY, *and manufaciure of metals, and instruments therefor.*

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Andirons, construction of	Edward Smylie	New York, N. Y	July 12, 1843.
Awl-hafts	Edwin Martin	Grafton, Mass	March 21, 1843.
Bolts, copper, uniting	Griffith Morgan	Onancock, Va	May 2, 1843.
Button, plate turn, for fastening cupboard and other doors.	Philos, Eli W., and John A. Blake	New Haven, Conn	March 21, 1843; antedated Feb. 27, 1843.
Drilling iron, &c., machine for	Amos Morgan	Wooster, Ohio	July 20, 1843.
Drilling-machine	R. H. Springsteed	Wooster, Ohio	Feb. 20, 1843.
Dust, metallic particles, &c., produced during the operation of grinding, method of removing or discharging the.	Thaddeus Fairbanks	St. Johnsbury, Vt	May 26, 1843.
Fasteners, shutter	John L. Whetstone and P. C. Guion	Cincinnati, Ohio	May 19, 1843.
Forge bloomery, employed in the manufacture of wrought iron.	Simeon Guilford	Lebanon. Pa	Dec. 27, 1843.
Furnaces, construction and heating of, for all kinds of metallurgic operations.	Christian E. Detmold	New York, N. Y	July 15, 1843.
Gold washing, machine for	Henry Bourne	Elberton, Ga.	Sept. 14, 1843.
Hinges, butt, casting	Richard W. Belson	Danville, Pa	July 26, 1843.
Hinges, butt, forming the eyes of, machine for	John F. Winslow, assignee of Welcome Whitaker	Troy, N Y Albany, N. Y	July 8, 1843.
Hinges, casting	David Stuart and Charles C Lloyd	Danville, Pa	Jan. 20, 1843.
Hinges for piano-fortes, &c	Jonas Chickering, assignee of Rufus Perkins	Boston, Mass	June 3, 1843.
Hinges or butts for hanging and fastening window blinds and shutters.	Augustus C. Palmer	Utica, N. Y	Jan. 27, 1843.
Hooks and eyes for fastening garments	Charles Atwood	Derby, Conn	Feb. 24, 1843.
Horse shoes, chain links, &c, machines for forming.	John F. Winslow and Thomas Osgood	Troy, N. Y	Aug. 11, 1843.
Horse shoes, machine for making	Henry Burden	Troy, N. Y	Sept. 14, 1843.
Horse shoes, machine for making	William Gibson	Troy, N. Y	Dec. 27, 1843.
Iron, &c, punching holes in, machine for	William Adams and A. Hammond	Boston, Mass	May 8, 1843.
Iron, sheet or plate, bending	John Watchman	Baltimore, Md	June 1, 1843.
Knives and forks, cleaning and polishing	Martin N. Armstrong	New York	Sept. 14, 1843.
Knobs, door, to their spindles, method of attaching.	Enoch Robinson	Boston, Mass	Jan. 10, 1843.
Latch or fastener for window shutters and blinds	Arundel Hill	Steubenville, Ohio	Feb. 24, 1843.
Locks and keys	William Wilson	Northampton, Mass	Jan. 27, 1843.
Locks, combination safety, for doors, &c	Linus Yale and Charles Wilson	Springfield, Mass	Oct. 20, 1843.
Locks, construction of	Robert Newell	New York, N. Y	June 14, 1843.
Locks, door and other	William & J. N. Tuttle, assignees of Chas. F. Voorhies.	Newark, N. J	June 9, 1843.
Locks for safes, bank vaults, &c	William Hall	Chelsea, Mass	Aug. 17, 1843.
Locks or latches, door	Theodore L Littlefield	Philadelphia, Penn	Nov. 21, 1843.
Lock or latch, door	William Hall	Chelsea, Mass	Oct. 18, 1843.
Locks or latch for doors, &c., compound lever gravitating.	Rhodolphus Kinsley, assignee of Samuel Noyes	Springfield, Mass Beverly, Mass	Feb. 20, 1843.
Metallic ropes	Robert S. Newall	Gateshead upon Tyne, England	Aug. 20, 1846; patented in England Mar. 6, 1843.
Metal, manufacture of	Arthur Wall	Poplar, Blackwall, England	Aug. 10, 1844; patented in England Nov. 18, 1843.

II.—*Expired patents for inventions.*

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Metal, preparing, for being manufactured into wire.	Thomas Wallace	Derby, Conn	July 20, 1843.
Metal, sheet, machinery for working	Orrin and Noble Peck	Southington, Conn	April 25, 1843.
Metal, bending (See Roofing, Class XIII.)			
Nails, tacks, &c., feeding nail and tack plates, &c., into machines for cutting.	James Thompson and Halsey Rogers, assignees of Walter Hunt.	New York, N. Y	Oct. 12, 1843.
Ores requiring washing, apparatus for separating or dressing.	Nicholas Troughton	Swansea, England	July 22, 1841; patented in England, June 23, 1843.
Pins, sticking into paper. (See Class XXII.)			
Pipes of lead and other soft metals, &c., machine for making.	John Laing	Bordentown, N. J	Mar. 30, 1843.
Pipes, metal, determining the thickness of.	Horatio Allen	New York	July 8, 1843; antedated June 29, 1843.
Pipes, metallic, machinery and process of manufacturing.	James E. Serrell	New York, N. Y	Jan. 20, 1843.
Plates, door	Edmond J. Sause	New York, N. Y	Aug. 11, 1843.
Rack wrench	Solyman Merrick, assignee of Jabez C. Terry.	Springfield, Mass	Feb. 20, 1843.
Rivets and nails for trunks, and other purposes.	Luther Houghton	Philadelphia, Penn	April 15, 1843.
Saws, circular, stiffening, manner of	Elijah Pratt	Washington county, N. Y	Sept. 14, 1843.
Screws, wood, removing the burrs from the under sides of the heads of	Alexander Hodges, agent of New England Screw Co., assignee of Cullen Whipple.	Providence, R. I	April 10, 1843.
Screws, wood, turning or shaving the heads of blanks for.	Alexander Hodges, agent of New England Screw Co., assignee of Cullen Whipple.	Providence, R. I	April 6, 1843.
Screw wrench	John Williams, jr	Salem, N. Y	Mar. 4, 1843.
Spikes, wrought iron	Harry A. Wills	Keeseville, N. Y	Mar. 21, 1843.
Spring, door, for closing doors	Charles Ellis	Boston, Mass	Dec 15, 1843.
Spurs, improvement in	Charles C. Reinhardt	Baltimore, Md	June 24, 1813.
Steel, tempering	Collins Manufacturing Company, assignee of Elisha K. Root.	Collinsville, Conn	Mar. 10, 1843.
Stirrups for the paddle-wheels of steam and other boats, machine for bending them.	Alexander B. Latta	Cincinnati, Ohio	Mar. 30, 1813.
Striker, blacksmiths', for forging iron	Ebenezer Brooks	Ridgeville, Va	Feb. 16, 1843.
Tuyeres	Reuben A. Goodrich	Milford, N. Y	Feb. 24, 1843.
Tuyeres	Lorenzo D. Brown	Lee, Mass	June 14, 1843.
Tuyeres	Lewis E. Clow	Montpelier, Vt	Sept. 23, 1843.
Tuyeres	Zadok H. Mann	Lowell, Mass	Dec. 15, 1843.
Type-casting. (See Class XVIII.)			
Vises	John S. Markham, assignee of E. G. Matthews.	Worcester, Mass	Aug. 11, 1843.
Vise, bench	Jeremiah Peck	Waterbury, Conn	Dec. 20, 1843.
Wire. (See Metal.)			

CLASS III.—MANUFACTURES OF FIBROUS AND TEXTILE SUBSTANCES, *including machines for preparing fibres of wool, cotton, silk, fur, paper, &c.*

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Bags, for separating elaine and stearine by pressure.	Martin H. Shepard	Cincinnati, Ohio	May 26, 1843.
Burrs, &c., picking, and separating from wool, also applicable to ginning cotton.	Francis A. Calvert	New York	June 3, 1843.
Burrs, cleaning, from wool, and seed from cotton, &c.	Theodore Ely	New York, N. Y	Sept. 14, 1843.
Carding engine	John Boynton	South Coventry, Conn	July 12, 1843, antedated Jan. 12, 1843.
Carding engines, feeding or delivering rollers of, arrangement of.	John and H. C. Gleason and N. D. White, assignees of Horace Barbour	Lowell, Mass West Boylston, Mass Lowell, Mass	May 19, 1843.
Carding engines, machinery for making laps for feeding, &c.	John Mason	Rochdale, Great Britain	Feb. 10, 1843.
Cloth of all kinds, sewing, with a running stitch.	Benjamin W. Bean	New York, N. Y	Mar. 4, 1843.
Cloth, shearing. (See Shearing.)			
Cotton bats or laps, making	John C. Smith and George C. Kellogg	New Hartford, Conn	Feb. 20, 1843.
Cotton, cleaning, before ginning	Borut Seguine	Alexandria, La	July 3, 1843.
Cotton, cleaning unginned	Robert M. Livingston	Mobile, Alabama	July 20, 1843.

IV.—*Expired patents for inventions.*

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Flax and hemp, breaking	F. M. Barnes	Lexington, Mo	Jan. 10, 1843.
Flax and hemp, breaking and cleaning	John Godden	Pittsburg, Iowa Territory	Jan. 20, 1843.
Flax and hemp, breaking and cleaning	William N. Stewart	May's Lick, Ky	Feb. 4, 1843.
Flax and hemp, breaking and scutching, or cleaning.	Henry Johnson	Maysville, Ky	Mar. 4, 1843.
Gin, saw, for ginning cotton	H. H. Kelley	Port Gibson, Miss	May 19, 1843.
Gin, saw, for ginning cotton	William B. Stewart	Cincinnati, Ohio	May 19, 1843.
Hats and bonnets	Jonathan Dennis, jr	Portsmouth, R. I	May 2, 1843.
Hats and bonnets of horsehair	Charles L. Noe	New York, N. Y	July 20, 1843.
Hats of leather. (See Class XVI.)			
Looms, knitting	Pierre E. Ladrange	Vignory, France	Oct. 16, 1844; patented in France, June 1, 1843.
Looms, mode of delivering warp in	John Coulter	Xenia, Ohio	April 25, 1843.
Looms, power, mode of throwing shuttles in	R. P. Cunningham	Pomfret, Conn	April 25, 1843.
Loom, power, for weaving plain cloth	Frederick Downing	Enfield, Mass	Jan. 27, 1843.
Loom, weaving	David Farrior and D. P. J. Murphy	Aberfoil, Ala	Dec. 4, 1843.
Loom for weaving figured fabrics	C. G. Gilroy	New York, N. Y	April 15, 1843.
Loom, weavers', for working any number of heddles.	Gavin McCrae	Baltimore, Md	Oct. 18, 1843.
Oakum, machinery for the manufacture of	Thaddeus Henry and Daniel Tibbals	Chatham, Conn	July 8, 1843.
Paper, making cane hemp for making	Barzillai C. Smith	Burlington, N. J	Nov. 21, 1843.
Paper making	John M. and Lyman Hollingsworth	Boston, Mass	Dec. 4, 1843.
Shearing diamond figures of cloths, &c., method of.	Charles P. Barber	Watervliet, N. Y	March 10, 1843.
Silk-worms, feeding	John W. Gill	Mount Pleasant, Ohio	May 12, 1843.
Spinning, condensing or preparing cotton roving, &c., for.	Jacob Graves	New Ipswich, N. H	Sept. 1, 1843.
Spinning cotton, wool, &c., machine for	Amander N. Wilcox	Milton, N. Y	May 8, 1843.
Speeder, double speeder, or fly frame, used in roving cotton, &c.	William C. Davoll	Fall River, Mass	May 19, 1843.
Sewing. (See Cloth.)			

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Threads or cords, worsted or other, dressing or finishing.	Benjamin B. Tilt and James Skinner	Roxbury, Mass	July 8, 1843.
Twine and small cord, machinery for making various kinds of.	Hugh McCubben	Petersburg, Va	Aug. 17, 1843.
Wool, combing	Francis A Calvert	New York, N. Y	Dec. 27, 1843.
Wool, combing	George E. Donisthorpe	Bradford, England	Sept. 11, 1844; patented in England Nov. 25, 1843.
Yarn, sizing, by steam	Hannibal A. Fletcher	Shelburne, Vt	July 8, 1843.
Yarn, tarring	John Thursby	Bushwick, N. Y	May 2, 1843.

CLASS IV.—CHEMICAL PROCESSES, MANUFACTURES, AND COMPOUNDS, *including medicine, dyeing, color making, distilling, soap and candle making, mortars, cements, &c.*

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Blacking, tanners' flesh	Philip Havill and David Curran	Roscoe, Ohio	June 24, 1843.
Caoutchouc, application to cloths, &c	Edwin M. Chaffee	Roxbury, Mass	Aug. 31, 1836.
Chrome yellow, making	Richard A. Tilghman	Philadelphia, Pa	Jan. 16, 1843.
Distilling alcohol	John T. Heard	Boston, Mass	Sept. 9, 1843.
Dyeing	Harmon Hibbard	Attica, N. Y	May 2, 1843.
Freezers, artificial	Nancy M. Johnson	Philadelphia, Pa	Sept. 9, 1843; antedated July 29.
Juices, saccharine, evaporating	Alfred Stillman	New York, N. Y	Aug. 17, 1843.
Matches, friction	Alonzo D. Phillips	Springfield, Mass	Oct. 24, 1836.
Matches, friction	William K. Ashard	New York, N. Y	June 24, 1843.
Oils, volatile, for the purposes of illumination, mode of using.	B. F. Greenough	Boston, Mass	Nov. 15, 1843.
Salt, &c., manufacture of	Hervey Smith	Salina, N. Y	July 12, 1843.
Salt boiler	R. Griffin and L. Y. Avery	Salina, N. Y	Mar. 21, 1843.
Salt, crystallizing	Beriah Douglas	Albany, N. Y	Sept. 23, 1843.
Salt, making	Isaac Noyes	Kanawha Saline, Va	Aug. 26, 1843.
Silvering looking-glasses	Thomas Drayton	Brighton, England	Aug. 12, 1844; patented in England Nov. 25, 1843.

IV.—*Expired patents for inventions.*

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Slates, artificial writing	John Street	Philadelphia, Pa	Nov. 21, 1843.
Soaps and oils, purifying	Arthur Dunn	Rotherhithe, England	Dec. 4, 1844; patented in England Nov. 9, 1843.
Sugar boilers	William Graham	St. Charles, La	Mar. 10, 1843.
Tobacco, chewing, preparing	Eben. Goodwin	New York, N. Y	Feb. 16, 1843.
Vegetable elixir, for the cure of bronchitis, &c.	Peter Faulkner	Rockville, Pa	Sept. 23, 1843.
Vegetable extracts, making	Benjamin Brandreth	New York, N. Y	Jan. 20, 1843.
White lead, manufacture of	Smith Gardner	New York, N. Y	Aug. 26, 1843.

CLASS V.—CALORIFICS, *comprising lamps, fire-places, stoves, grates, furnaces for heating buildings, cooking apparatus, preparation of fuel, &c.*

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Cabooses, ships'	James Wilson	New York, N. Y	Aug. 17, 1843; antedated Feb. 17, 1843.
Chimney cowls	Palmer Sumner	New York, N. Y.	Feb. 20, 1843.
Coal, breaking and screening	Hopkins Thomas	Beaver Meadow, Pa	Dec. 5, 1843.
Flues, furnaces, &c., machine for creating draught in.	Thaddeus Fairbanks	St. Johnsbury, Vt.	May 26, 1843.
Furnaces, air-heating	Gurdon Fox	Hartford, Conn	Mar. 10, 1843.
Grate bars	William Ferrell	Charleston, S. C	April 25, 1843.
Heat, generating, by hydrogen gas	Lewis A Hall	Newark, N. J	June 3, 1843; antedated June 1, 1843.
Lamp, alcohol, for medicated vapor bath	L. E Hicks, assignor to G. L. F. Griswold.	Middletown, Conn	Mar. 16, 1844; antedated Dec. 15, 1843.
Lamps	Samuel Rust	New York, N. Y	Sept. 14, 1843
Lamps	Stephen J. Gold	Cornwall, Conn	May 8, 1843.
Lamps, lard	Charles Wilhelm	Philadelphia, Pa	April 6, 1843.
Lamps, lard	H P. Benton	Norwalk, Ohio	April 10, 1843.
Lamps, lard	Harvey Tomlinson	Geneva, N. Y	Sept. 1, 1843.
Lamps, lard	Henry Rose	Rushville, Ill	Aug. 4, 1843.
Lamps, lard	Horace Howard	Wooster, Ohio	Feb. 10, 1843.
Lamps, lard	Luther Jones	Utica, N. Y	May 26, 1843.
Lamps, lard	Patrick J. Clark	Meriden, Conn	Mar 21, 1843.
Lamps, lard	Robert Cornelius	Philadelphia, Pa	April 6, 1843; antedated April 1, 1843.
Lamps, lard	Silas B. Terry	Plymouth, Conn	Feb. 24, 1843.
Lamps, lard	Thomas Houghton and John F. Wallace	Philadelphia, Pa	Nov. 15, 1843.
Lamps, lard	William S. Moore	Springfield, Ill	Feb. 10, 1843.
Lamps, lard	William Thompson	Cincinnati, Ohio	April 10, 1843.
Lamps, lard, with argand burners	Robert Cornelius	Philadelphia, Pa	April 6, 1843; antedated April 1, 1843.
Oil-feeders	Robert Cornelius	Philadelphia, Pa	April 6, 1843; antedated April 1, 1843.
Ovens. (See Stoves.)			
Ovens for cooling and annealing glass. (See Glass, Class XV.)			
Ranges, cooking	Moses Pond	Boston, Mass	Mar. 4, 1843.
Steam-generator, portable	Stephen Atwater	Rochester, N. Y	Jan. 20, 1843.
Stoves	James Robb	Lewistown, Pa	Aug. 4, 1843.
Stoves	James Taylor	Peekskill, N. Y	May 2, 1843.
Stoves	Reuben Elmendorf	Kingston, N. Y	April 25, 1843.
Stoves	Richard W. Belson	Danville, Pa	June 1, 1843.
Stoves, air-heating	Charles B. Boynton	Housatonic, Mass	Feb. 20, 1843.
Stoves, cooking	Albert D. Hart	Pittsfield, Mass	July 8, 1843.
Stoves, cooking	Alpheus Cooper	Danville, Pa	Oct. 25, 1843.
Stoves, cooking	Benjamin T. Roney	Milton, Pa	Oct. 25, 1843.
Stoves, cooking	Charles Postley	New York, N. Y	June 9, 1843.
Stoves, cooking	Henry T. Butler, assignee of Laban Eddy	Taunton, Mass	Oct. 18, 1843.
Stoves, cooking	J. J. Anderson	Putnam, Ohio	Aug. 17, 1843.
Stoves, cooking	James Greer	Dayton, Ohio	May 12, 1843.
Stoves, cooking	Joel Green	Rochester, N Y	Aug. 11, 1843.
Stoves, cooking	John Curtis	Auburn, N. Y	Jan. 27, 1843.
Stoves, cooking	Pitner Emmitt	York, Pa	June 14, 1843.
Stoves, cooking	Samuel B. Sexton	Baltimore, Md	Sept. 23, 1843.

V.—*Expired patents for inventions.*

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Stoves, cooking	John E. Thomas	Albany, N Y	Nov. 6, 1843.
Stoves, cooking	Jordan L. Mott	New York, N. Y	Feb. 12, 1844; antedated Dec. 1, 1843.
Stoves, cooking and air-heating	Benjamin Shepard	Boston, Mass	Sept. 1, 1843.
Stoves with elevated ovens	Samuel B. Spaulding	Brandon, Vt	Mar. 30, 1843.
Stoves	Herbert H. Stimpson	Boston, Mass	Jan. 20, 1843.
Stoves, hot-air	Moses Pond	Boston, Mass	Sept. 1, 1843.
Stoves with revolving ovens	J. H. & N. P. Hayward	Baltimore, Md	May 8, 1843.
Temperature, instruments for regulating	David B. Van Tuyl	Dayton, Ohio	Oct. 12, 1843.

CLASS VI.—STEAM AND GAS ENGINES, *including boilers and furnaces therefor, and parts thereof.*

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Boilers, steam, &c, effecting combustion in furnaces and flues of.	Christian E. Detmold	New York	Dec. 4, 1843.
Boiler, steam, constructing	Zenas C. Robbins	St. Louis, Mo	July 28, 1843.
Boilers, steam, safety-valves for	William Duff	Baltimore, Md	July 28, 1843.
Boilers, steam, safety-valves for	William P. McConnell	Washington, D. C	May 19, 1843.
Boilers, tubular, constructing, for generating steam.	Charles W. Butler	Baltimore, Md	Sept. 1, 1843.
Furnaces for steam-boilers	Gideon Shryock and Samuel Underwood	Louisville, Ky	Sept. 14, 1843.
Spark-arresters	John A. Roebling	Saxonburg, Penn	Feb. 16, 1843.
Spark-arresters	Zibeon Wilbur	Allegheny, Penn	Jan. 10, 1843.
Steam-engines, air-pump used in low-pressure or condensing.	Charles Reeder	Baltimore, Md	Nov. 15, 1843.
Steam-engines, condenser of	Henry K. Stephens	Cincinnati, Ohio	Dec. 4, 1843.
Steam-engines, high-pressure, mode of heating the supply water and carrying off the escape steam in.	Nathan Cope	Hanover, Ohio	Feb. 20, 1843.
Steam-engines, horizontal, pistons and slide-valves for.	Benjamin H Brown	Philadelphia, Penn	Sept. 1, 1843.
Steam-engine, injet reacting rotary, improvements in the.	Charles Collins, assignee of James Pilbrow	Kidderminster, England Tottingham Green, England	June 14, 1843.
Steam-engines, locomotive	Ross Winans	Baltimore, Md	July 28, 1843.
Steam-engines, pistons and stuffing-boxes of	Elijah H. and Cyrus Eversole	St. Louis, Mo	July 20, 1843.
Steam-engines, rotary	Alexander K. and William S. Rider	New York, N. Y	April 10, 1843.
Steam-engine, rotary	Ebenezer Ferren	Haverhill, N. H	Nov. 15, 1843.
Steam-engine, rotary	Royal C. Grant	Pomeroy, Ohio	Dec. 4, 1843.
Steam-engines, rotary, also applicable to pumps	Nicolas H. J. F. Comte de Crouy	England	June 14, 1843.
Steam-engines, valves for reversing the action of	Henry A. Morrill	Boston, Massachusetts	Dec. 20, 1843.
Steam-engines, valves of, opening and closing the.	Frederick E. Sickels	New York	July 20, 1843.

CLASS VII.—NAVIGATION AND MARITIME IMPLEMENTS, *comprising all vessels for conveyance on water, their construction, rigging, and propulsion, diving-dresses, life-preservers, &c.*

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Constructing canal boats so that they can be transferred on railroad cars.	John Dougherty	Philadelphia, Pa	Feb. 24, 1843.
Constructing steam and other boats to prevent them from sinking when they come in collision with snags, sawyers, &c.	Horace D Forbes	New York, N. Y	Feb. 16, 1843.
Fender to protect boats against injury from snags and sawyers.	Josiah W. Kirk	Philadelphia, Pa	Feb. 24, 1843.
Life-boat	Lewis Raymond	New York, N. Y	Feb. 4, 1843.
Life-preserver for the use of steamboats, &c	Michael Pearson	Newburyport, Mass	Jan. 27, 1843.
Propelling boats	James H. Street	Philadelphia, Pa	Dec. 27, 1843.
Propellers, submerged	Horace Everett	Windsor, Vt.	June 9, 1843.
Propelling vessels by means of continuous streams of water.	Robert Schuyler	New York, N. Y	March 17, 1843.

VII.—*Expired patents for inventions.*

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Propelling vessels by the buoyancy of air in water acting against inclined surfaces.	Sylvester W. Hall	Troy, N. Y.	Nov 6, 1843.
Propelling vessels, paddles for, endless chain	Beriah Douglas	Albany, N. Y.	Sept. 28, 1843.
Steamboats, &c., bailing wheel for raising water from the hold of.	Horace D. Forbes	New York, N. Y.	May 26, 1843.
Steamboats, preventing, from sinking	Lovel G. Mickles	New York	April 25, 1843.
Tides and currents, representation of	Benjamin F. Watts	Fort Gaines, Ga.	Sept. 1, 1843.
Vessel, ascertaining the centre of gravity and sailing trim of a.	John Hobday	Portsmouth, Va.	Sept. 14, 1843.
Vessels, connecting the tiller with the rudder-head of.	Henry Waterman	Bath, Me.	May 26, 1843.

CLASS VIII.—MATHEMATICAL, PHILOSOPHICAL, AND OPTICAL INSTRUMENTS, *including clocks, chronometers, &c.*

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Clocks	Charles Kirk	Bristol, Conn.	Aug. 26, 1843.
Electricity, copying surfaces by	Alexander Bain	London, England	Dec. 5, 1843; patented in England May 2, 1843.
Electrifying machine	Ezekiel Cole, administrator of Elijah Cole, deceased.	Richmond, Ohio	July 22, 1843.
Galvanic batteries	John Plumbe, jr.	Boston, Mass.	March 4, 1843.
Globes	Gilbert Vale	New York, N. Y.	Oct. 28, 1843.
Rules, sliding	John P. Smith	New York, N. Y.	Jan. 16, 1843.
Sun-dials	James P. Gardner	Columbia, Tenn.	Dec. 5, 1843.
Surveying instruments	George D. Varney	Newbury, Mass.	June 24, 1843.
Watches	Jacob D. Custer	Norristown, Pa.	Feb. 4, 1843.

CLASS IX.—CIVIL ENGINEERING AND ARCHITECTURE, *comprising works on rail and common roads, bridges, canals, wharves, docks, rivers, weirs, dams, and other internal improvements, buildings, roofs, &c.*

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Bridges and other structures, increasing the effective strength of beams or rafters of wood or other materials used in.	John R. Remington	Lowndes county, Ala.	May 19, 1843.
Dock, floating dry, method of working a, in connexion with a platform and basin, by means of which vessels can be raised and deposited on bed or railways, &c.	Rutherford Moody, and Samuel D. Dakin	New York, N. Y.	Nov. 24, 1843.
Doors, gates, &c., closing apparatus for	Gardner Barton, jr	Waterford, N. Y.	Sept. 23, 1843.
Drill for drilling or boring rock	Uriah Higgins	Boston, Mass.	May 2, 1843.
Fences	Isaac Vanamberg.	Watertown, N. Y.	Dec. 20, 1843.
Marine railway	Andrew Flannigan	Baltimore, Md.	Jan 16, 1843.
Pipes, metallic, introducing wire into	Samuel F. B. Morse	New York	Oct. 25, 1843.
Roofing, metal, constructing, for houses	John G. Woodin	Cincinnati, Ohio	July 8, 1843.
Roofing houses, machinery for bending metal plates for.	John Iggett	Albany, N. Y.	July 15, 1843.
Rut shears for repairing and improving roads	Samuel Mallory	Alexander, N. Y.	July 26, 1843.
Staircases in buildings, arranging	William P. Gibbs	Boston, Mass.	June 14, 1843.
Staircases, sweeping or cleaning	Alexander Jones	New York, N. Y.	July 28, 1843.
Streets, sweeping	Pliny Robinson	Leonardsville, N. Y	July 20, 1843.
Streets, sweeping	Thomas Mussey	New London, Conn	Oct. 12, 1843; antedated June 17, 1843.

CLASS X.—LAND CONVEYANCE, *comprising carriages, cars, and other vehicles used on roads, and parts thereof.*

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Axles of railroad cars	Nathaniel Miller and Edward Bancroft	Franklin, Mass. Providence, R. I.	Dec. 15, 1843.
Brakes for railroad cars, &c.	Henry C. Sides	Baltimore, Md.	July 12, 1843.
Brakes for retarding carriages in descending hills, &c.	Moses S. Woodward	Marshallton, Pa.	Dec. 4, 1843.
Carriages, disengaging horses from	David Little	Gettysburg, Pa.	March 30, 1843.
Carriages, four-wheeled, coupling	Alfred Osgood	Charlestown, Ohio.	Jan. 27, 1843.
Carriage, four-wheel, coupling the forward axle of a, with the reach and head block or rocker.	Alexander H. Hart	Chagrin Falls, Ohio	Sept. 23, 1843.
Carriages of locomotive steam-engines	William Norris, assignee of Septimus Norris and William Knight.	Philadelphia, Pa	Feb. 10, 1843.
Cars for removing gravel and earth on railroads	Granville Palmer	Greenbush, N. Y.	Jan. 16, 1843.
Springs to carriages, manner of applying	John S. Tough	Baltimore, Md.	June 9, 1843.
Springs for railroad cars	James Millholland	Baltimore, Md.	Sept. 23, 1843
Wagons and other carriages	Horace Wood	Greenwich, N. Y.	July 8, 1843.
Wagon boxes, moulds for casting	James Mollineaux	Northampton, Pa.	July 12, 1843.
Wheels, carriage, immersing, in water after putting on the hoop or tire.	James Morris	Bloomfield, N. J.	Sept. 23, 1843.
Wheels, cast iron, for locomotive steam-engines, cars, trucks, &c., constructing.	Thatcher Perkins and William McMahon	Baltimore, Md.	April 10, 1843.
Wheels, railroad car, constructing	William Creed	Boston, Mass.	Feb. 24, 1843.

CLASS XI.—HYDRAULICS AND PNEUMATICS, *including water-wheels, wind-mills, and other implements operated on by air or water, or employed in the raising and delivery of fluids.*

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Air-pump in low-pressure engines. (See Class VI.)			
Bellows, rotary	Alvin Savage and Hervey Killam	Scottsville, N. Y	Nov. 24, 1843.
Blow-pipes, table	Rufus Somerby	Louisville, Ky	Nov. 15, 1843.
Boring. (See Pipes.)			
Gates, liquor	Oliver H. and Charles H. Bush	Fall River, Mass	Mar. 30, 1843.
Hydrants	S. C. Higbie	Oppenheim, N. Y	Sept. 1, 1843.
Hydrants	Thomas A. Davis	New York, N. Y	May 12, 1843.
Hydrants, construction of	Robert K. Colvin	Columbia, Pa	July 20, 1843.
Hydrants, valves for	Horatio H. C. Kelsey	New York, N. Y	Dec. 15, 1843.
Pumps	S. C. Higbie	Oppenheim, N. Y	Mar. 21, 1843.
Stop cocks	Francis Joseph Miller	New York	Nov. 21, 1843.
Stop-cocks, connecting, for hydraulic presses	Charles Wilson	New York, N. Y	Oct. 28, 1843.
Stop-cocks for hydrants	Henry R. Dunham	New York, N. Y	Jan. 10, 1843.
Stop-cocks in pipes under hydrostatic pressure, tapping and inserting.	Horatio Allen	New York, N. Y	Nov. 21, 1843.
Stops, elastic water, for checking the force or momentum of water in pipes.	Horatio Allen	New York, N. Y	Oct 25, 1843.
Water-wheels	Amasa B. Beckwith	Bath, N. Y	Oct. 20, 1843.
Water-wheels	Chadiah Aylesworth	Bainbridge, N. Y	June 24, 1843.
Water-wheels	Daniel H. Parsons	Chester, Ohio	July 12, 1843.
Water-wheels	Daniel Stearns	Rome, N. Y	Sept. 14, 1843.
Water-wheels	John Caldwell	Northfield, Mass	Aug. 4, 1843.
Water-wheels	Samuel Hopper	Lewistown, Pa	Mar. 23, 1843; antedated Mar. 21, '43.
Water-wheels	Stiles Munger	Shawanyunk, N. Y	Feb. 10, 1843.
Water-wheels	Philip Wells	Milford, Mich	Mar. 4, 1843.
Water-wheels, inclined	Abraham Baker	Dalton, Ohio	Sept. 23, 1843.
Water-wheels, penstocks for	Nelson Johnson	Triangle, N. Y	April 15, 1843.
Water-wheels, steam-engines, &c., regulating the motion of.	Nathan Scholfield	Norwich, Conn	May 17, 1836.

CLASS XII.—LEVER, SCREW, AND OTHER MECHANICAL POWER, *as applied to pressing, weighing, raising, and moving weights.*

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Balances	Benjamin Morrill	Boscawen, N. H	May 26, 1843.
Presses	William B. Leonard	Mattawan Works, N. Y	Feb. 20, 1843.
Press, cheese, construction of	Hartwell Kendall	Danby, Vt	July 15, 1843.
Presses, cotton	John R. Remington	Montgomery, Ala	April 15, 1843
Presses, cotton	Josias Chambers	Alexandria, La	May 19, 1843
Presses, cotton	Otis Whitney	Augusta, Me	Mar. 17, 1843.
Presses, cotton	Seth Lamb	New York, N. Y	May 12, 1843.
Presses, cotton	William F. and Charles J. Provost	Barnwell District, S. C	Nov. 21, 1843.
Presses	Thomas W. Harvey	New York, N. Y	Feb. 4, 1843.
Presses, cotton and hay	William Bullock	Jersey City, N. J	Sept. 28, 1843.
Presses, portable screw	Alexander Hallam	New Orleans, La	Sept. 14, 1843.
Presses, hay	Levi Dederick	Kinderhook, N. Y	June 24, 1843.
Scales, counter	Eliphalet H. Parker	Bucksport, Me	May 26, 1843.
Seals, notarial	John Fraser	New York, N. Y	June 9, 1843.
Windlass, ship's	William Adams and Artemas Hammond, assignees of Artemas Hammond.	Boston, Mass	Oct. 6, 1843.

CLASS XIII.—GRINDING-MILLS AND MILL-GEARING, *including grain mills, mechanical movements, and horse-powers.*

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Bark-mill	Backus A. Beardsley	Sangerfield, N. Y	Feb. 4, 1843.
Coffee-mills	John Luther	Warren, R. I	Aug. 11, 1843.
Grinding corn with the cob, mill for	James M Miller	Mobile, Ala	Jan. 20, 1843.
Grinding grain, &c., mills for	Francis Price	New York, N. Y	Feb. 20, 1843.
Grist-mills	Clark B. Gregory	Danbury, Conn	Feb 16, 1843.
Grist-mill	Josiah Platt	Weston, Conn	Sept. 28, 1843.
Horse-power for driving machinery	Luke S. Rand	Townshend, Vt	Mar. 4, 1843.
Horse-power, endless chain	Salmon, Richards	East Poultney, Vt	Oct. 28, 1843
Horse-power, portable	Israel J. Richardson	New York, N. Y	Aug 26, 1843.
Pulleys, coupling and uncoupling with their shafts.	Peter Yates	Milwaukie, Wis	April 25, 1843.

CLASS XIV.—LUMBER, *including machines and tools for preparing and manufacturing, such as sawing, planing, mortising, shingle and stave, carpenters' and coopers' implements.*

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Augers	Raymond French	Derby, Conn	July 20, 1843.
Clapboards, beveling the ends of	Samuel W. Curtis	Stoughton, Mass	May 26, 1843.
Clapboards, sawing, machines for	Daniel Bartholomew	Wolcott, Vt	July 8, 1843.
Clapboards, sawing, machines for	Daniel Newton	Dalton, N. H	July 20, 1843.
Dye-woods, cutting and shaving	Beriah Swift	Washington, N. Y	Aug. 10, 1836.
Hoops, coopers', making out of split timber	James McWhorter	Brookville, Ind	Nov. 6, 1843.
Irregular forms, turning or cutting	Thomas Blanchard	Boston, Mass	Mar. 21, 1843.
Mortising hubs, machinery for	Archibald Thompson	Ridgeville, Md	April 25, 1843.
Plane stock, cast iron	William Foster	Washington, D. C	Nov. 24, 1843.
Saw-guides, mill	Jonathan Norcross	Eatonton, Ga	Aug. 4, 1843.
Sawing and planing, by combining the plane with a saw.	Elijah Pratt	North Granville, N. Y	July 20, 1843.
Sawing, curvilinear and compound level, machinery for.	James Hamilton	New York, N Y	April 15, 1843.
Saw-mills	John E. Kenderdine	Lumberton, Pa	Mar. 10, 1843.
Saw-mill, self-setting head and tail block for	Levi Heald	Bartlett, Ohio	June 3, 1843.
Saw-mill for sawing timber with a direct or compound bevel.	James Hamilton	New York, N. Y	Nov. 21, 1843.
Shingles, cutting	Jason C. Gillett	Bloomfield, Mich	Dec. 20, 1843.
Shingles, sawing	Elnathan Sampson	Piermont, N. H	Jan. 10, 1843.
Shingles, sawing, constructing machine for	George L. Day	Union, N. Y	Feb. 4, 1843.
Shingles, veneers, &c., machine for cutting	Robert A. Quartermass	Auburn, Mich	Aug. 17, 1843.
Timber, &c., boring machine for	Riley Smith	Towanda, Pa	Feb. 10, 1843.
Timber, fire-wood, &c., cross-cutting machine for.	Thomas J. Marsh	Liberty, Ind	Sept. 28, 1843.
Veneers, cutting	William Foster	New York, N. Y	Sept. 1, 1843.
Veneers, cutting and straightening, and other pieces of wood.	Chauncey E. Warner	New York, N. Y	Dec. 4, 1843.

CLASS XV.—STONE AND CLAY MANUFACTURES, *including machines for pottery, glass-making, brick-making, dressing and preparing stone, cements, and other building materials.*

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Brick-machines	Lee Montgomery	Tunnel, Md	July 8, 1843.
Brick-machine for moulding	J. Parsons Owen	Upper Alton, Ill	April 10, 1843.
Brick-presses	Arad Woodworth	Worcester, Mass	May 8, 1843.
Glass, cooling and annealing, ovens for	John Franck	Milville, N. J	May 12, 1843.
Glass, flattening and annealing	Samuel Richards	Philadelphia, Penn	April 6, 1843.
Slates, artificial. (See Class IV.)			

CLASS XVI.—LEATHER, *including tanning and dressing, manufacture of boots, shoes, saddlery, harness, &c.*

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Boot-crimps	Eli P. Drake	Troy, N. Y	Nov. 15, 1843.
Boots and shoes, soles of	Robt. B Ruggles, assignee of Walter Hunt	New York, N. Y	Aug. 17, 1843.
Boots and shoes, soles of	William H. Elsegood	Philadelphia, Penn	Dec. 20, 1843.
Boots, making	James Turnbull	Philadelphia, Penn	June 21, 1843.
Collars, horse, constructing	Nathan Post	Madrid, N. Y	July 22, 1843.
Leather, India rubber, &c, machines for making hats of.	Sewall Gleason	New York, N. Y	Nov. 24, 1843.
Leather rollers	John Gardner	Petersburg, Va	April 25, 1843.
Saddles, spring	Robert Spencer	New York, N. Y	Nov. 21, 1843.
Sewing cloth. (See Class III.)			
Sewing, machine for	George H. Corliss	Greenwich, N. Y	Dec. 27, 1843.
Straps, coupling, method of, as a substitute for a buckle.	Lyman & J. H. Beebe	Penfield, N. Y	Mar. 10, 1843.
Trunks, travelling	John W. Beackley	Philadelphia, Penn	May 26, 1843.

CLASS XVII.—HOUSEHOLD FURNITURE, *machines and implements for domestic purposes, including washing-machines, bread and cracker-machines, feather-dressing, &c.*

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Bedsteads	John Morris	Derby, Conn	July 8, 1843.
Bedstead fastenings	Joseph Guild	Cincinnati, Ohio	Dec. 20, 1843.
Bedsteads, sofa	Alexander D. Farrell	New York, N. Y	May 2, 1843.
Bedsteads, sofa	William Clowes	Hartwood, N. Y	June 24, 1843.
Bells, house, hanging	Edward Stetson	New Bedford, Mass	Aug. 17, 1843.
Bread, making, constructing machines for	William Carr	Bath, Maine	July 22, 1843.
Brooms, winding wire or twine on	William Beaman	Salem, N. J	Aug. 17, 1843.
Chairs, rocking	Charles A. Ballard	Boston, Mass	Dec. 5, 1843.
Cradle-rockers	Henry R. Taylor	Roxbury, Mass	Jan. 16, 1843.
Dough, breaking, machine for	Luke Shaw	Bath, Maine	May 26, 1843.
Extension tables	Cornelius Briggs	Roxbury, Mass	Sept. 1, 1843.
Extension tables	Edward Richards	New York, N. Y	April 15, 1843.
Meat-cutters	Harry H. Evarts	Mount Morris, N. Y	Oct. 12, 1843.
Mop irons	Salmon Johnson	Lee, N. Y	Oct 18, 1843.
Quilting frames, couplings for	Joseph W. Webb	Mount Morris, N. Y	Mar. 30, 1843.
Safes, &c, to protect them from insects	Robert Sanderson	Athens, Ohio	Jan. 10, 1843.
Vegetable-cutters	Joseph W. Webb	Mount Morris, N. Y	April 10, 1843.
Washing machine	Arthur Mitchell	Aberdeen, Ohio	Nov. 6, 1843.
Washing-machine	James Hutchinson	Martinsburg, Va	Oct. 28, 1843.
Washing-machine	John Shugert	Elizabeth, Pa.	May 19, 1843; antedated May 1, 1843.
Washing-machine	Joseph C. Rich	Penfield, N. Y	Oct. 12, 1843; antedated April 3, 1843.
Washing-machine. (See Class III, Rags.)			

CLASS XVIII.—ARTS POLITE, FINE, AND ORNAMENTAL, *including music, painting, sculpture, engraving, books, paper, printing, binding, jewelry, &c.*

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Daguerreotype pictures, coloring	Montgomery P. Simons, assignee of Warren Thompson.	Philadelphia, Penn	May 12, 1843.
Engraving, machines for	Ethan Allen	Grafton, Mass	Jan. 16, 1843.
Gilding, silvering, &c., in dead colors	Daniel Davis, jr	Boston, Mass	Mar. 21, 1843.
Leaf-holders	Joseph Nock	Washington city, D. C.	Aug. 11, 1843.
Pencils, tailors' marking	William Coover	Erie, Penn.	Aug 26, 1843.
Pen-holders	Albert Alden	Barre, Mass	Mar. 4, 1843.
Pens, fountain	Nelson Bartlett	Canajoharie, N. Y	Sept. 9, 1843.
Piano-fortes	Edwin Brown	Boston, Mass	Jan. 27, 1843.
Piano-fortes	George Hews and Richard C. Marsh, and Nath'l W. Tileston	Boston, Mass. Dorchester, Mass	April 10, 1843.
Piano-fortes	Jonas Chickering	Boston, Mass.	Sept. 1, 1843.
Printing, machines for	Charles Thurber	Worcester, Mass	Aug. 26, 1843.
Type-casting machines	David Bruce, jr	Williamsburg, Long Island, N. Y.	Nov. 6, 1843.
Type-casting	James Stewart	New York, N. Y	Mar. 21, 1843.

CLASS XIX.—FIRE-ARMS AND IMPLEMENTS OF WAR, *and parts thereof, including the manufacture of shot and gunpowder.*

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Cannon balls or shot, bomb-shells, &c., casting, mode of forming moulds for.	Abiel Elliott	Philadelphia, Penn	Oct. 6, 1843.
Cannon, wrought iron, making	Salmon Hunt, administrator of Salmon Hunt	Wolcottville, Conn. Torrington, Conn.	Nov. 24, 1843.
Fire-arms, attached muzzle for	Philo S. Newton	Hartford, Conn.	June 1, 1843.
Forts, iron, construction of	E. G. Woodman	Lowell, Mass.	Jan. 27, 1843.
Guns, stocking, and other purposes, method of attaching bitts eccentrically to their arbors, to be used in machinery for.	Samuel D. Sizer	Springfield, Mass.	May 19, 1843.

CLASS XX.—SURGICAL AND MEDICAL INSTRUMENTS, *including trusses, dental instruments, bathing apparatus, &c.*

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Baths, medicated vapor	Morris Mattson	Boston, Mass	Sept. 28, 1843.
Baths, shower	Stephen Bates	Dedham, Mass	Oct. 12, 1843.
Bath, shower, portable	Nathaniel Waterman	Boston, Mass	Aug. 11, 1843.
Bougies for strictures	Robert J. Dodd	Philadelphia, Penn	Oct. 6, 1843.
Breathing tubes	Jacob S. Rose	Philadelphia, Penn	May 8, 1843.
Dislocations, reducing, apparatus for	George O. Jarvis	Portland, Conn	Sept. 14, 1843.
Hernia, cure of, by means of injections	Charles T. Sage	New York, N. Y	Jan. 10, 1843.
Pessaries for prolapsus uteri	Samuel W. Stockton, assignee of Samuel K Jennings.	Baltimore, Md	Jan. 20, 1843.
Supporters, abdominal	Joseph White, Seymour N. Marsh, and Henry Smith.	Canajoharie, N. Y	Sept. 28, 1843.
Supporters, uterine	Alexander H. McNair	Philadelphia, Penn	July 28, 1843.
Teeth, setting artificial	Jonathan Dodge	New York, N. Y	Mar. 4, 1843.
Trusses	Edmund P. Banning	Pittsburg, Penn	April 6, 1843.
Trusses	John V. Wilson	New Haven, Conn	May 26, 1843.

CLASS XXI.—WEARING APPAREL, *articles for the toilet, &c., including instruments for manufacturing.*

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Buckles, suspender	James Bingham	Philadelphia, Penn	Feb. 4, 1843.
Buttons, paper	Elisha M. Pomeroy	Wallingford, Conn	Sept. 23, 1843; reissued Nov. 24, 1843.

XXI.—*Expired patents for inventions.*

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Garments, cutting	David N. Sipperly	Troy, N. Y	July 8, 1843.
Garments, measuring and cutting	David L. Pendell	Gilboa, N. Y	June 14, 1843.
Hone or strap, razor	Wm. D. Boardman	Rensselaerville, N. Y	Jan. 20, 1843.
Hooks and eyes for fastening garments	Charles Atwood	Derby, Conn	Feb. 24, 1843.
Tailors' measures	Cyrus Morey and David Hummer	McArthurstown, Ohio	July 8, 1843.
Tailors' measures	George Ecklee and Sheldon X. Ball	Flint Creek, N. Y	Sept. 28, 1843.
Tailors' measures	Thomas Oliver	New York, N. Y	Mar. 30, 1843.
Umbrellas	Waring Latting	New York, N. Y	Nov. 21, 1843.

CLASS XXII.—MISCELLANEOUS.

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Baskets for catching eels	John Downs	Belleport, N. Y	April 25, 1843.
Boxes, &c., marking	Ezekiel Wilson, assignee of Jonathan C. Walker.	Concord, N. H	Aug. 26, 1843.
Boxes and other bodies, removing square and other prismatic.	Stephen D. Williamson	Anderson, Ohio	Feb. 4, 1843.
Box trap for catching animals	Jacob Stroop and John Esteale	Allegheny, Pa	Nov. 6, 1843.
Cane-coverers	John P. Bryan	Princeton, Ky	June 24, 1843.
Chickens, hatching, by artificial heat	Napoleon E. Guerin	New York, N. Y	Mar. 30, 1843.
Coffins to be used in cases of doubtful death	Christian H Eisenbrandt	Baltimore, Md	Nov. 15, 1843.
Fire ladders	Morton B. Hill	Fairfield, Ohio	Sept. 1, 1843.
Ice, accumulating	John Dutton	Aston, Pa	May 8, 1843.
Ice, cars and receiving platform for receiving blocks of.	Nathaniel J. Wyeth	Cambridge, Mass	Oct. 28, 1843.
Ice-cutters and markers	Nathaniel J. Wyeth	Cambridge, Mass	Oct. 25, 1843.
Ice, machinery for elevating blocks of, &c	Nathaniel J. Wyeth	Cambridge, Mass	Nov. 6, 1843.
Net, gill, for catching fish	Harris Cook	Haddam, Mass	Mar 17, 1843.
Pins, machine for sticking, in rows, in sheets of paper.	John J. Howe	Derby, Conn	Feb. 24, 1843.
Whale blubber, mincing, machines for	Geo. W. Sowle and William Carsley	New Bedford, Mass	Oct. 6, 1843.

ALPHABETICAL LIST OF PATENTS FOR DESIGNS THAT HAVE EXPIRED DURING THE YEAR 1857.

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Bas-relief of Henry Clay	C. Y. Haynes	Philadelphia, Pa	Nov. 12, 1850.
Blower stand	Walter Bryent	Boston, Mass	Sept. 24, 1850.
Bracket, cast iron	Walter Bryent	Boston, Mass	Aug. 13, 1850.
Bust of Daniel Webster	John C. King	Boston, Mass	Sept. 17, 1850.
Carriage plates	John S. Royce	Cuylerville, N. Y	Nov. 19, 1850.
Chandeliers	E. S. Archer & R. F. Warner	Philadelphia, Pa	Mar. 19, 1850.
Floor-cloth, painted	James Hutchinson, assignor to D. A. E. & N. B Powers	Troy, N. Y Lansingburg, N. Y	May 14, 1850.
Furnace, portable	C. W. Warnick, F. Leibrandt, J. G. Abbott, and A. Lawrence.	Philadelphia, Pa	Mar. 26, 1850.
Grate frame and fender	James L Jackson	New York, N. Y	Oct. 15, 1850.
Grate, portable	Amos Paul	New Market, N. H	July 22, 1850.
Lamps	E S. Archer & R. F. Warner	Philadelphia, Pa	July 9, 1850.
Railings, iron	William Ballard	New York, N. Y	Oct. 29, 1850.
Register and ventilator, plates for	Chas. T. Tuttle & James S. Bailey	Williamsburg, N Y	Sept. 24, 1850.
Register and ventilator, plates for	Chas. T. Tuttle & James S. Bailey	Williamsburg, N. Y	Sept. 24, 1850.
Register and ventilator, plates for	Chas. T. Tuttle & James S. Bailey	Williamsburg, N. Y	Sept. 24, 1850.
Register and ventilator, plates for	Chas. T. Tuttle & James S Bailey	Williamsburg, N. Y	Sept 24, 1850.
Register and ventilator, plates for	Chas. T. Tuttle & James S. Bailey	Williamsburg, N. Y	Sept. 24, 1850.
Register and ventilator, plates for	Chas. T. Tuttle & James S. Bailey	Williamsburg, N. Y	Sept. 24, 1850.
Spoon-handles	Charles P. and George B. Gordon	Boston, Mass	Nov. 19, 1850.
Stoves	Henry L. Sheperd	Dayton, Ohio	Jan. 8, 1850.
Stoves	Peter J. Simmons	Troy, N. Y	Feb. 5, 1850.

Expired patents for designs.

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Stoves	Joseph G. Lamb and Conrad Harris, assignors to Wm. C. Davis.	Cincinnati, Ohio	Feb. 5, 1850.
Stoves	Wm. P. Cresson, David Stuart, and Peter Seibert, assignors to Wm. P. Cresson.	Philadelphia, Pa	Feb. 5, 1850.
Stoves	Wm. P. Cresson, David Stuart, and Peter Seibert, assignors to Wm. P. Cresson.	Philadelphia, Pa	Feb. 5, 1850.
Stoves	James H. Conklin, assignor to S. B. Sexton & Co	Peekskill, N. Y Baltimore, Md	Feb. 19, 1850.
Stoves	Jeremiah D. Green and George Warren	Troy, N. Y	Feb. 19, 1850.
Stoves	Wm. L. Sanderson, assignor to Clute & Brothers.	Schenectady, N. Y	Feb. 26, 1850.
Stoves	W. P. Cresson, David Stuart, and P. Seibert, assignors to W. P. Cresson.	Philadelphia, Pa	Mar. 12, 1850.
Stoves	W. P. Cresson, David Stuart, and P. Seibert, assignors to W. P. Cresson.	Philadelphia, Pa	Mar. 12, 1850.
Stoves	James H. Conklin	New York, N. Y	Mar. 12, 1850.
Stoves	Samuel A. House	Mechanicsville, N. Y	Mar. 26, 1850.
Stoves	James Wager	Troy, N. Y	April 2, 1850.
Stoves	Joshua Crandall, assignor to A. Cox & Co.	Troy, N. Y	April 9, 1850.
Stoves	David L. Bartlett	Baltimore, Md	April 9, 1850.
Stoves	P. A. Palmer	Le Roy, N. Y	April 30, 1850.
Stoves	Washburn Race	Seneca Falls, N. Y	May 14, 1850.
Stoves	D. Root	Cincinnati, Ohio	May 21, 1850.
Stoves	Asa C. Brownell	Providence, R. I	May 28, 1850.
Stoves	Joel C Bailey and Russell Wheeler	Utica, N. Y	May 28, 1850.
Stoves	Amos Paul	New Market, N. H	June 11, 1850.
Stoves	Elijah P. Penniman	Rochester, N. Y	June 18, 1850.
Stoves	John F. Rathbone	Albany, N. Y	June 18, 1850.
Stoves	John F. Rathbone	Albany, N. Y	June 18, 1850.
Stoves	James Wager, David Pratt, and Volney Richmond.	Troy, N. Y	June 18, 1850.
Stoves	J. E. Owens, J. Ebert, and E. G. Dyer	Hamilton, Ohio	June 25, 1850.
Stoves	Washburn Race	Seneca Falls, N. Y	June 25, 1850.
Stoves	Joshua Crandall, assignor to E. Johnson and D. B. Cox.	Troy, N. Y	July 2, 1850.
Stoves	Calvin Doane	Braintree, Mass	July 9, 1850.
Stoves	S. S. Jewett and F. H. Root	Buffalo, N. Y	July 9, 1850.
Stoves	Apollos Richmond, assignor to A. C. Barstow & Co.	Providence, R. I	July 16, 1850.
Stoves	James H. Conklin and A. W. Jones, assignors to James MacGregor, jr.	Wilton, N. Y	July 22, 1850.
Stoves	Job E. Owens, Jacob Ebert, and E. G. Dyer	Hamilton, Ohio	July 22, 1850.
Stoves	Reuben J. Blanchard, assignor to Billings P. Learned and George H. Thatcher.	Albany, N. Y	Aug. 13, 1850.
Stoves	Sherman S. Jewett and F. H. Root	Buffalo, N. Y	Aug. 13, 1850.
Stoves	Robert Donavan	Pittsburg, Penn	Aug. 20, 1850.
Stoves	Charles W. Warnick	Philadelphia, Pa	Aug. 27, 1850.
Stoves	William L. Sanderson, assignor to S. Cole and G. C. Masher.	Troy, N. Y	Aug. 27, 1850.
Stoves	Joseph G. Lamb	Cincinnati, Ohio	Sept 24, 1850.
Stoves	Joseph G Lamb	Cincinnati, Ohio	Sept. 24, 1850.
Stoves	William Savery	New York, N Y	Sept. 24, 1850.
Stoves	Reuben J. Blanchard, assignor to B. P. Learned and George H. Thatcher.	Albany, N. Y	Sept. 24, 1-50.
Stoves	Anthony W. Jones, assignor to Edward R. Brown.	Albany, N. Y	Oct. 1, 1850.
Stoves	Ezra Ripley, assignor to George W. Eddy	Waterford, N. Y	Oct 22, 1850.
Stoves	Ezra Ripley, assignor to George W. Eddy	Waterford, N. Y	Oct. 22, 1850.
Stoves	Laben Eddy	Taunton, Mass	Oct. 29, 1850.
Stoves	Reuben J. Blanchard, assignor to B. P. Learned and George H. Thatcher.	Troy, N. Y	Nov. 12, 1850.
Stoves	Apollos Richmond, assignor to A. C. Barstow & Co.	Providence, R. I	Nov. 12, 1850.
Stoves	D. Root	Cincinnati, Ohio	Nov. 12, 1850.
Stoves	William B. Gleason, assignor to James Hartshorn and Winslow Ames	Boston, Mass Nashua, N. H	Nov. 26, 1850.
Stoves	Samuel Pierce, assignor to Johnson, Cox & Fuller.	Troy, N. Y	Dec. 3, 1850.
Stoves	Morris Smith and Benona S. Gleason	Le Roy, N. Y	Dec. 3, 1850.
Stoves	Charles A. Lambard	Augusta, Me	Dec. 10, 1850.

Expired patents for designs.

Inventions or discoveries.	Patentees.	Residence.	Date of patent.
Stoves	S. W. Gibbs, assignor to North, Harrison, & Co	Albany, N. Y Philadelphia, Penn	Jan. 21, 1851; antedated December 31, 1850.
Stoves, coal	John T. Davy	Troy, N. Y	June 4, 1850.
Stoves, coal	John F. Rathbone	Albany, N. Y	Aug. 13, 1850.
Stoves, cooking	Jeremiah D. Green and George Warren	Troy, N. Y	April 16, 1850.
Stoves, cooking	William L. Sanderson	Troy, N. Y	June 25, 1850.
Stove, parlor	George W Ring, assignor to Johnson, Cox, & Fuller.	Troy, N. Y	Aug. 27, 1850.
Umbrella-stands	Walter Bryent	Boston, Mass	June 4, 1850.

ALPHABETICAL LIST OF PERSONS TO WHOM PATENTS FOR INVENTIONS OR DISCOVERIES, AND FOR DESIGNS, HAVE BEEN GRANTED DURING THE YEAR 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
17356	Abbé, Alanson	Corset, spinal	May 26, 1857	XX.
	Abbott & Lawrence. (See Smith, Brown & Sailor, assignors.)			
	Abbott & Lawrence. (See Smith, Brown & Sailor, assignors.)			
	Abeel & Winne. (See S. W. Gibbs, assignor.)			
	Accelerating Fire-arms Company. (See Lyman, Azel, assignor.)			
16779	Ackley, John T	Engines, steam, stop-motions for	Mar. 10, 1857	VI.
16676	Adams, Calvin	Locks, door, right and left hand, keeper for	Feb. 24, 1857	II.
	Adams, Charles H., *et al.* (See Fairbank, S. D., assignor)			
17658	Adams, Henry W	Lamps, fountain	June 30, 1857	V.
	Adams, Samuel, and George R. Clark. (See Clark & Adams.)			
18125	Adams, Sandford	Coal-sifters	Sept. 8, 1857	V.
17187	Adams, William N	Screw-cutting machines	May 5, 1857	II.
18373	Addison, Edward R	Locomotives, exhaust regulator for	Oct. 13, 1857	VI.
18176	Ager, Wilson	Rice, hulling, machines for	Sept. 15, 1857	XIII.
18177	Ager, Wilson	Rice, cleaning, machines for	Sept. 15, 1857	XIII.
18374	Ager, Wilson	Rice, cleaning, machines for	Oct. 13, 1857	XIII.
18725	Aiken, Walter	Knitting-machines	Dec. 1, 1857	III.
17547	Akins, Henry S	Ploughs, reversible mould boards for	June 16, 1857	I.
18665	Akins, William H., and Joseph C. Burritt, assignors to Wait T. Huntington and Hervey Platts.	Clock, calendar	Nov. 17, 1857	VIII.
18127	Alden, D. R	Planters, corn	Sept. 8, 1857	I.
17250	Alden, G. W	Car-wheels, railroad, wrought iron plate	May 12, 1857	X.
18175	Alden, Timothy	Type setting and distributing machine	Sept. 15, 1857	XVIII.
18126	Aldrich, Cyrus C	Planters, seed	Sept. 8, 1857	I.
18491	Aldridge, Thomas and John	Furnaces	Oct. 27, 1857	V.
16518	Alexander, Eliza	Sewing-machines	Feb. 3, 1857	III.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
17861	Alexander, Thomas J. (No. 1)	Saws, circular, method of driving	July 28, 1857	XIV.
17860	Alexander, Thomas J. (No. 2)	Sawing-machines, feeding arrangement for	July 28, 1857	XIV.
17659	Alger, Charles C	Furnace, smelting	June 30, 1857	II.
	Allard, D. N. (See Ormiston, John, assignor.)			
16458	Allcroft, John, and Thomas Mighten	Gauges, steam and pressure	Jan. 27, 1857	VI.
	Allen & Ivens: (See Ivens, Edmund M., assignor.)			
17912	Allen, Andrew	Looms, power	Aug. 4, 1857	III.
16128	Allen, E G., assignor to Henry O. Allen	Gauges, steam-pressure	Jan. 20, 1857	VI.
18526	Allen, E G., assignor to Henry O. Allen	Gauges, steam-pressure	Oct. 27, 1857	VI.
16367	Allen, Ethan	Fire-arms	Jan. 13, 1857	XIX.
17862	Allen, Ethan	Wind-mills, &c., governor for regulating the work of	July 28, 1857	XI.
18836	Allen, Ethan	Fire-arms, revolving	Dec. 15, 1857	XIX.
18492	Allen, H. R	Seeding-machines	Oct. 27, 1857	I.
18128	Allen, Horace R	Planters, corn	Sept. 8, 1857	I.
18837	Allen, Horatio	Valve-gear of steam-engines, cut-off	Dec. 15, 1857	VI.
442	Allen, John	Teeth, mineral, setting	Mar. 24, 1857	Reissue.
16781	Allen, John F	Engines, steam, cut-offs of	Mar. 10, 1857	VI.
16957	Allen, Samuel S	Harvesters	April 7, 1857	I.
18006	Allen, Z	Mills, &c., tubular shafting for	Aug. 18, 1857	XIII.
16707	Allender, John	Ships' blocks, for sustaining friction rollers in	Mar. 3, 1857	VII.
17477	Allerton, R. G	Blotter	June 9, 1857	XVIII.
18666	Allison, John	Cane, sugar, machines for covering	Nov. 24, 1857	I.
	Allstatter, *et al.* (See Long, Black & Allstatter.)			
16634	Altman, Jonathan	Gun-lock, hair-triggered, self-setting	Feb. 17, 1857	XIX.
	American Hoop Machine Company. (See Sawyer, Sylvester, assignor.)			
	American Hoop Machine Company. (See Sawyer, Sylvester, assignor.)			
	American Iron Railway Company. (See Carpenter, Hiram, assignor.)			
	American Pin Company. (See Fowler, Thaddeus, assignor.)			
18422	Ames, Nathan, assignor to himself and Edmund Brown.	Graters	Oct. 13, 1857	XVII.
17357	Amsden, Amory	Mowing and reaping machines	May 26, 1857	I.
18531	Anderson, A. G	Kilns, lime	Nov. 3, 1857	XV.
19009	Anderson, Alexander	Potato-diggers	Dec. 29, 1857	I.
16520	Anderson, Edward H	Cars, railroad, safety coupling for	Feb 3, 1857	X.
16519	Anderson, Jonathan R	Excavating and dredging machine	Feb 3, 1857	IX.
16625	Anderson, S. J., and N. Richardson	Chairs, extension	Feb. 17, 1857	XVII.
17863	Andrews, A. F	Fuse-making machine	July 28, 1857	XIX.
16784	Andrews, Emanuel	Saws, machine for grinding	Mar. 10, 1857	XIV.
17774	Andrews, Emanuel	Saws, gauging and filing, machine for	July 14, 1857	XIV.
	Andrews, Joel W.	Bricks, burning	Mar. 9, 1857	Extension.
17251	Andrews, R. Snowden	Gas, heating and cooking by, apparatus for	May 12, 1857	V.
18566	Andrus, C. H., assignor to Squire Lee	Sewing-machines	Nov. 3, 1857	III
16901	Andrus, Elliot	Ploughs	Mar. 31, 1857	I.
18888	Apperly, James, and William Clissold	Fibrous substances for spinning, machinery for preparing.	Dec. 22, 1857	III.
17773	Archer, Robert	Chairs, railroad, machine for making	July 14, 1857	X.
16573	Armstrong, Joseph	Leather, stuffing	Feb. 10, 1857	XVI.
18178	Arnold, Aaron	Mill, grinding	Sept. 15, 1857	XIII.
18316	Arnold, Alonzo C	Hat-bodies, forming and hardening, machine for	Oct. 6, 1857	III.
440	Arnold, Charlotte, administratrix, and Peter U. Morgan, administrator, of John Arnold, deceased, and George G Bishop, assignors to the Union Manufacturing Company.	Cloth, web for, machine for forming the, of wool, hair, or other suitable substance, without spinning or weaving.	Mar. 17, 1857	Reissue.
16867	Arnold, James P	Cordage machines	Mar. 24, 1857	III.
17310	Arnold, James P	Cordage machines	May 19, 1857	III.
16636	Arnold, Leonard	Planters, seed	Feb. 17, 1857	I.
17311	Arthur, Robert	Portfolios	May 19, 1857	XVIII.
18129	Ashcroft, E. H	Gauges, steam-pressure tubes for	Sept. 8, 1857	VI.
	Ashcroft, R, and A. C. Martin. (See Martin & Wambaugh.)			
	Ashmead, Rogers Sperry, and Hurlbut. (See Leroy S. White, assignor.)			
	Athearu, Eustis, Barker, and Halvorson. (See Halvorson Halvor.)			
18667	Atherton, Nathan	Valves, slide, for steam-engines	Nov. 24, 1857	VI.
17548	Atkeson, Charles W	Evaporators, brine	June 16, 1857	IV.
17358	Atkinson, Charles, and G. S. Manning	Vehicles, construction of	May 26, 1857	X.

Patentees of inventions and designs, 1857.

No.	Names of patentee.	Invention or discovery.	Date.	Class.
17412	Atterbury, Thomas B	Lock, door	June 2, 1857	II.
	Atwater and Bristol Manufacturing Company. (See Gee, William V., assignor.)			
17176	Atwater, Bryant	Sewing-machines	May 5, 1857	III.
468	Atwood, Anson	Car-wheels, cast iron	June 9, 1857	Reissue.
497	Atwood, Anson (B)	Car-wheels, cast iron	Sept. 22, 1857	Reissue; division.
498	Atwood, Anson (C)	Car-wheels, cast iron	Sept. 22, 1857	Reissue; division.
17068	Aubin, N	Gas-retorts, closing	April 21, 1857	IV.
17614	Aubin, N	Gas-generators	June 23, 1857	IV.
18076	Augspurger, John	Corn stubble, &c., machines for cutting on ground, preparatory to ploughing.	Sept. 1, 1857	I.
	Austin, L. B., and J. R. Pierce (See Pierce & Austin.)			
18369	Averill, D. R., assignor to himself, Jas. F. Davis, and Henry Twitchell.	Threshing cylinders, method of balancing	Oct. 6, 1857	I.
17864	Avery, George S	Bridges, &c., segmented truss for	July 28, 1857	IX.
17069	Avery, John, jr	Steam traps for relieving steam pipes of water	April 21, 1857	VI.
17252	Avery, Otis and Z. W	Balance, self-indicating	May 12, 1857	XII.
17865	Ayer, James C	Pill-machines	July 28, 1857	IV.
16868	Aylsworth, Norman	Casting railway car-wheels	Mar. 24, 1857	II.
	Ayres, Samuel P. (See Bramwell, William, assignor.)			
18031	Ayres, Wm. W	Filter	Aug. 25, 1857	XI.
16822	Babbitt, B. T	Enema-giving apparatus	Mar. 17, 1857	XX.
18838	Babbe, Juan S. L., and Amos H. Ray	Dovetails, adjustable gauge for	Dec. 15, 1857	XIV.
16625	Babcock, Darius, assignor to himself and Thomas Harrop.	Vehicles, springs for, arrangement of	Feb. 10, 1857	X.
18269	Bachelder, James H	Sawing-machines, circular, method of holding and setting the log in.	Sept. 29, 1857	XIV.
17956	Bacheller, William	Mowing-machines	Aug. 11, 1857	I.
17720	Bachman, George W	Husking corn, machines for	July 7, 1857	I.
	Bacon, S. T. (See Smith, Edward N., assignor.)			
	Badger, L. W., and D. W. Gitchell, assignors to the Seamless Garment Manufacturing Company. (See Gitchell & Badger, assignors.)			
16368	Badger, William	Planters, cotton seed	Jan. 13, 1857	I.
17133	Baeder, Charles	Whips, raw-hide, method of manufacturing	April 28, 1857	XVI.
17714	Baier, Ludwig, assignor to Joseph Lippincott and William C. Barr.	Locks	June 30, 1857	II.
18493	Bailey, Amon	Feather-dressing machine	Oct. 27, 1857	XVII.
18375	Bailey, Charles P	Car-seats, railroad	Oct. 13, 1857	X.
17549	Bailey, Franklin L	Printing-press, card	June 16, 1857	XVIII.
17615	Bailey, Franklin L	Printing-press	June 23, 1857	XVIII.
17070	Bailey, Gilbert L	Door-spring	April 21, 1857	II.
16712	Bailey, Leonard	Stamp, hand	Mar. 3, 1857	XVIII.
17253	Bailey, R. P	Signal-lamps	May 12, 1857	VIII.
	Bailey, Stephen A., and R. Wheeler. (See Wheeler and Bailey.)			
18077	Baillau, Philipe	Vehicles, two-wheeled, thills for	Sept. 1, 1857	X.
18623	Baird, James R	Bells, apparatus for ringing	Nov. 17, 1857	XXII.
18117	Baker, George W., assignor to himself and Abijah French.	Cap-carriers, percussion	Sept. 1, 1857	XIX.
18007	Baker, H. H	Planing-cutters, rotary	Aug. 18, 1857	XIV.
16670	Baker, J. G., jr., assignor to J. G. Baker, jr., and Charles Bradfield.	Boot-crimping machines	Feb. 17, 1857	XVI.
16906	Baker, J. B	Cultivators, corn	Mar. 31, 1857	I.
18376	Baker, Nathaniel E	Sash-supporters	Oct. 13, 1857	IX.
17866	Baker, Samuel N	Lathe, automatic, for turning irregular forms	July 28, 1857	XIV.
17957	Baker, William	Lubricator, automatic, for railroad car-wheels	Aug. 11, 1857	XII.
	Bald & Cousland. (See Seropyan, Christopher D., assignor.)			
16959	Baldwin, Smith	Boilers, steam	April 7, 1857	VI.
18788	Ball, E., assignor to himself and John Butter	Mowing-machines	Dec. 1, 1857	I.
18624	Ball, Jesse	Straw-cutters	Nov 17, 1857	I.
496	Ball, Jonathan	Water-pipes, coating	Sept. 15, 1857	Reissue.
	Ball, Jonathan	Pipes, water, coating	Dec 1, 1857	Extension.
894	Ball, Thomas	Bust of Napoleon Bonaparte	June 9, 1857	Design.
18569	Ball, Thomas C	Window-blind slats, round tenons or, device for forming.	Nov. 10, 1857	IX.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
918	Ball, William	Medallions of Franklin to mark pens and pen-holders	July 21, 1857	Design.
16960	Ballou, Ransom, jr., and Benjamin F. Hooper	Curtain fixtures, window	April 7, 1857	XVII.
	Ballou, Ransom, jr. (See Hooper, Benjamin F., assignor.)			
18229	Baltzby, John W., and Wm. Hobson	Harvesters, grain and grass, cutting apparatus for	Sept. 22, 1857	I.
463	Bancroft, Edward, deceased, J. Bancroft, executor of.	Mills, hanging shafts in	May 12, 1857	Reissue.
18726	Banks, Joseph	Ploughs	Dec. 1, 1857	I.
	Banta, *et al.* (See Foster & Banta, assignors.)			
	Banta, J. J. and J. H. (See Foster, Banta, & Banta.)			
	Banta, J. J. and J. H. (See Foster, J. T.)			
17776	Baptis, Edward	Pen and pencil case	July 14, 1857	XVIII.
18718	Barden, John S., assignor to himself and Aaron W. Rockwood.	Pumping-engines, steam	Nov. 24, 1857	XI.
168[illegible]9	Barker, Abel	Pumps, rotary	Mar. 24, 1857	XI.
	Barker, Halvorson, Athearu & Eustis. (See Halvorson, Halvor, assignor.)			
16961	Barker, Samuel	Process for treating moss for mattresses	April 7, 1857	IV.
17015	Barkley, James	Hemp brakes	April 7, 1857	III.
	Barnes, Augustus, and O. W. Stow. (See Stow & Barnes.)			
	Barnes, C., and F. C. La Croix. (See La Croix & Barnes.)			
	Barnes, E. R., and James B. Blakslee. (See Blakslee & Barnes.)			
	Barr & Lippincott. (See Baier, Ludwig, assignor.)			
17824	Barrett, E. E.	Printing-presses, inking rollers for	July 21, 1857	XVIII.
18947	Barrett, E. E.	Stamps, hand	Dec. 29, 1857	XVIII.
17134	Barrett, J. F.	Harvesting-machines	April 28, 1857	I.
17135	Barrett, J. F.	Grain, binding, apparatus for	April 28, 1857	I.
18946	Barrett, William	Straw-cutters	Dec. 29, 1857	I
923	Barry, Thomas	Stoves, Vesuvian	Aug. 25, 1857	Design.
924	Barry, Thomas	Stoves, superior	Aug. 25, 1857	Design.
925	Barry, Thomas	Stoves, Polar	Aug. 25, 1857	Design.
926	Barry, Thomas	Stoves, farm	Aug. 25, 1857	Design.
927	Barry, Thomas	Stoves, home	Aug. 25, 1857	Design.
928	Barry, Thomas	Stoves, centurion	Sept. 1, 1857	Design.
939	Barry, Thomas	Stoves, column	Feb. 17, 1857	Design.
872	Barstow, A. C.	Stoves, wood	April 14, 1857	Design.
881	Barstow, A. C.	Stoves, for the plates of	Dec. 15, 1857	Design.
968	Barstow, A. C.	Stoves, laundry	Dec. 15, 1857	Design.
17825	Barthof, Abraham	Sewing-machines, feeding motion for	July 21, 1857	III.
18948	Bartholomew, D. B.	Sawing-machines, gearing for feed-rollers in	Dec. 29, 1857	XIV.
	Bartlett & Snell. (See Snell, D. W., and Stephen S. Bartlett.)			
	Bartlett, S. S., and Daniel W. Snell. (See Snell & Bartlett.)			
	Bartlett, Stephen S., and Daniel W. Snell. (See Snell & Bartlett.)			
	Bartlett, William H. C., and William Kemble. (See Kemble & Bartlett.)			
18669	Bartol, Barnabas H.	Screwing tubes in vacuum pans	Nov. 24, 1857	II.
18670	Barton, G. L., and A. E. Roberts	Forks, hay and manure	Nov. 24, 1857	I.
	Basford, Thomas W., and G. Sprenkel. (See Sprenkel & Basford.)			
17660	Bassett, Joel R.	Bolts and rivets, machine for making	June 30, 1857	II.
18668	Batchelder, John M., and Luther L. Smith	Printing, engraved metal plates for, preparation of	Nov. 24, 1857	XVIII.
18230	Batchelder, W. W.	Gas-burners	Sept. 22, 1857	V.
18171	Batcheller, L. B., assignor to West, Canfield, & Co.	Washboards, wooden, method of manufacturing	Sept. 8, 1857	XIV.
16577	Batchelor, J. M.	Sleighs, attaching thills to, mode of	Feb. 10, 1857	X.
18271	Bate, John J.	Lard-rendering kettles	Sept. 29, 1857	IV.
18270	Bate, John J., and Francis S. Low	Composition for covering meats	Sept. 29, 1857	IV.
18272	Bates, Henry	Gauges, steam-pressure	Sept. 29, 1857	VI.
18568	Bates, Henry	Projectiles	Nov. 10, 1857	XIX.
16958	Bates, Horatio	Spikes, clinching, mode of	April 7, 1857	II.
17188	Bates, N. R.	Stuffing-boxes	May 5, 1857	XI.
17413	Bates, William A.	Sleeve-fasteners	June 2, 1857	XXI.
17778	Battelle, William	Nail-plate holder	July 14, 1857	II.
	Battin, Joseph	Coal, breaking, machine for	Sept. 24, 1857	Extension.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
17616	Batty, Thomas	Sails, top, means for reducing	June 23, 1857	VII.
18179	Bauman, N.	Bolt, flour	Sept. 15, 1857	XIII.
18032	Beach, M. S	Printing-presses, machine for wetting and cutting paper for.	Aug. 25, 1857	XVIII.
18377	Beach, M. S	Chair for pews, folding	Oct. 13, 1857	XVII.
17360	Beach, Sylvester W	Carriage-hubs	May 26, 1857	X.
18273	Beach, Waldron	Oysters, opening, apparatus for.	Sept. 29, 1857	XXII.
17359	Beals, Fordyce	Fire-arms, revolving	May 26, 1857	XIX.
16578	Bean, John	Separators, grain mills, &c., extension hoppers for	Feb. 10 1857	I.
16521	Beardsley, A. M	Saws, filing	Feb 3, 1857	II.
18378	Beardsley, A. M	Saw-filer	Oct. 13, 1857	XIV.
	Beardsley, Amenzo W., and W. Robinson. (See Robinson, William.)			
16349	Beardsley, Daniel S., assignor to himself and John D. Umberfield.	Stoves, cooking, ships'	Jan. 6, 1857	V.
	Beattie, A. G., and G. F. S. Zimmerman. (See Zimmerman & Beattie.)			
	Becker, A. E., and L. Londinsky. (See Londinsky, Leon, assignor.)			
18728	Becker, Christopher	Surveying-level	Dec. 1, 1857	VIII.
16962	Beckers, Alexander	Steriocopic pictures, apparatus for exhibiting	April 7, 1857	XVIII.
	Beckley, J., and W. H. Carver. (See Carver & Beckley.)			
18625	Bedell, David	Husking corn, device for	Nov. 17, 1857	I.
17478	Beebe, Lyman, and George F. Smith	Railroad bars, machine for repairing	June 9, 1857	IX.
18671	Beecher, Lewis W	Churn	Nov. 24, 1857	I.
16522	Beemer, Levi	Planters, seed	Feb. 3, 1857	I.
18797	Beers, Benjamin	Churns	Dec. 8, 1857	I.
18494	Beers, Sidney A.	Railways, construction of	Oct. 27, 1857	IX.
886	Beesley, Jacob, and E. J. Delany, assignors to Cresson, Stuart, and Peterson.	Stoves, cooking	May 19, 1857	Design.
901	Beesley, Jacob, and E. J. Delany, assignors to Cresson, Stuart, and Peterson.	Stoves	June 23, 1857	Design.
18071	Behn, Henry, assignor to himself and Thomas Sewell	Sewing-machines	Aug. 25, 1857	III.
18880	Behn, Henry, assignor to himself and Thomas Sewell.	Sewing-machines	Dec. 15, 1857	III
18317	Beitzell, Henry	Drills, grain	Oct. 6, 1857	I.
16710	Belcher, Charles D	Sewing-machines	Mar. 3, 1857	III.
17826	Bell, Thomas	Vessels, raising sunken, arrangement of camels for.	July 21, 1857	VII.
18319	Belleville, Julian F., assignor to Robert Murphy	Steam-generators	Oct. 6, 1857	VI.
18729	Bellinger, Elizabeth	Fuel. composition	Dec. 1, 1857	V.
18318	Bellows, E. H	Brick-press	Oct. 6, 1857	XV.
	Bellows, E. H., and G. J. Washburn. (See Washburn & Bellows.)			
17414	Belson, R. W	Skates	June 2, 1857	XXII.
18727	Benckert, James M	Speed-indicators	Dec. 1, 1857	XIII.
909	Bendix, John E., assignor to S. B. Sexton & Co.	Stove-fronts, grate or	July 7, 1857	Design.
17479	Benjamin, George	Bit in the brace, holding, devices for	June 9, 1857	XIV.
	Bennett, Asa, and S. R. Tenney. (See Tenney & Bennett.)			
18078	Bennett, Edwin	Cans, sealing	Sept. 1, 1857	XVII.
	Bennett, Edwin, *et al.* (See Morrow, J. H., assignor.)			
17071	Bennett, Isaac K.	Yokes, ox	April 21, 1857	I.
	Bennett, Joseph B. (See Allen, Lapham, assignor.)			
17661	Bennett, S.	Boilers, riveting, machine for	June 30, 1857	VI.
16369	Bennett, Seneca H.	Fence, field	Jan. 13, 1857	IX.
16459	Bennett, William	Radiators for fire-places, grates, and Franklin stoves	Jan. 27, 1857	V.
17361	Bennett, William	Griddles	May 26, 1857	XVII.
	Benson, Ruberts & Crumbie. (See Ruberts & Crumbie, assignors.)			
18429	Berdan, Hiram	Ovens, bakers'	Oct. 20, 1857	V.
18180	Berdan, Hiram	Dough, kneading	Sept. 15, 1857	XVII.
18949	Berendorf, Joseph F	Cans, oil	Dec. 29, 1857	XII.
	Bergen, Peter G. (See Davis, Merwin.)			
16576	Bergner, Theodore	Envelopes, machine for making	Feb. 10, 1857	XVIII.
17480	Bergner, Theodore	Books, rounding and backing, machine for	June 9, 1857	XVIII.
16427	Berlew, Daniel	Sashes, &c., making, method of	Jan. 13, 1857	XIV.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
876	Bernhard, Joseph, assignor to J. Bernhard, J. Hendermeyer, and L. Gansz.	Soda-water apparatus	Mar. 24, 1857	Design.
18485	Bertola, Joseph A., assignor to himself and John Stagg.	Amalgamators	Oct. 20, 1857	II.
18789	Bertola, Joseph A., assignor to himself and John Stagg.	Ores of gold and silver, treatment of	Dec. 1, 1857	II.
18130	Betts, C. P. S.	Metal, sheet, machine for cutting figures out of	Sept. 8, 1857	II.
17254	Bevard, William	Shingle-cutter, rotary	May 12, 1857	XIV.
18379	Beverly, Charles F.	Wood, bending, machine for	Oct. 13, 1857	XIV.
	Bicknell, D. C. (See Turbell, F., assignor.)			
17482	Bigelow, Charles	Pipe, stove, machine for grooving	June 9, 1857	II.
16370	Bigelow, E. B.	Looms for weaving pile fabrics double	Jan. 13, 1857	III.
432	Bigelow, E. B.	Looms for weaving pile fabrics	Feb. 24, 1857	Reissue.
461	Bigelow, E. B.	Looms for weaving Brussels carpets, &c.	May 5, 1857	Reissue.
17189	Bigelow, E. B.	Looms for weaving pile fabrics	May 5, 1857	III.
	Bigelow, E. B. (See Bryant, Mertoun C., assignor).			
18320	Bigelow, E. B.	Looms, power, for weaving wire cloth	Oct. 6, 1857	III.
436	Bigelow, Erastus B.	Looms for weaving pile fabrics	March 17, 1857	Reissue.
	Bigelow, L. R., A. Robbins, and A. Shewman. (See Robbins, Shewman & Bigelow.)			
18532	Bill, Henry W.	Engine, steam, arrangement of feed water-pipe in the bed of a.	Nov. 3, 1857	VI.
17663	Bingham, Edward B.	Paper, machines for making	June 30, 1857	III.
17415	Binny, William W.	Hydrant	June 2, 1857	XI.
16783	Bishop, George G.	Cloth, felt, manufacture of	March 10, 1857	III.
	Bishop, George G. (See Arnold, C., and P. U. Morgan, administrators.)			
17072	Bishop, Gilbert	Veneers, cutting-knife for	April 21, 1857	XIV.
17190	Bishop, Gilbert	Veneers, machine for cutting	May 5, 1857	XIV.
17958	Bishop, Gilbert	Veneer-machine, rotary	Aug. 11, 1857	XIV.
17481	Bishop, Samuel C.	Insulated wire, machines for covering with lead or other ductile metal.	June 9, 1857	VIII.
18131	Bishop, Samuel C.	Telegraphic wires, insulated, enclosed in metallic tubing.	Sept. 8, 1857	VIII.
17191	Bishop, Sherlock H.	Carriages, adjustable pole for	May 5, 1857	X.
16429	Bishop, William B.	Sewing-machines, guides for	Jan. 20, 1857	III.
16460	Bishop, George W.	Stone-grooving machines	Jan. 27, 1857	XV.
17662	Bishop, George W.	Pavements, iron, for streets	June 30, 1857	IX.
17913	Bissell, Levi	Locomotives, trucks for	Aug. 4, 1857	VI.
17777	Black, George G.	Ploughs, cultivator	July 14, 1857	I.
18231	Black, Joseph F.	Grain, binding, machine for	Sept. 22, 1857	I.
	Black, Peter, *et al.* (See Long, Black, & Allstatter.)			
	Blackstone, M. G., and C. P. Garlick. (See Garlick & Blackstone.)			
18950	Blair, John C.	Cars, railroad; springs for	Dec. 29, 1857	X.
18266	Blake, Henry D., assignor to W. H. Warren	Wrench	Sept. 22, 1857	II.
16430	Blake, John S.	Paper-making, machinery for	Jan. 20, 1857	III.
6963	Blakeslee, C.	Road-scraper	April 7, 1857	IX.
6823	Blakslee, James B., and E. R. Barnes	Hat-bodies, felting, machinery for	March 17, 1857	III.
860	Blanchard, Abner J.	Stoves, upright	Jan. 6, 1857	Design.
16433	Blandy, Alfred A.	Teeth, artificial	Jan. 20, 1857	XX.
16708	Blandy, Alfred A.	Teeth, artificial, casting plates for	March 3, 1857	XX.
16784	Blandy, Alfred A.	Teeth, artificial, of alloys, casting plates for	March 10, 1857	XX.
17617	Blatner, Eugene	Whips, raw-hide, machines for polishing	June 23, 1857	XVI.
18431	Blinn, John L.	Wagon-wheels, mode of constructing the tires of	Oct. 20, 1857	X.
18033	Bliss, Elihu	Watch-keys, combination of, with finger-rings	Aug. 25, 1857	XVIII.
	Bliss, J. W., and Thomas L. Calkins. (See Calkins, Thomas L., assignor.)			
17416	Bliss, Jeremy W.	Garments, fastening for	June 2, 1857	XXI.
	Bliss, W. R., and E. Howe, jr. (See Howe & Bliss.)			
17136	Blittkowski	Fire-arms	April 28, 1857	XIX.
18079	Bloodgett, Andrew J.	Rakes	Sept. 1, 1857	I.
17483	Blood, Asa	Stove, steam-heating	June 9, 1857	V.
17959	Blood, Asa, sr.	Dredging-machine	Aug. 11, 1857	IX.
18118	Blood, Asa, sr., and R. W. Brown	Stores, &c., in case of fire, mode of removing	Sept. 1, 1857	IX.
18951	Blood, Benjamin F.	Furnaces	Dec. 29, 1857	V.
16461	Bloodgood, John H.	Felting, bats for, machines for forming	Jan. 20, 1857	III.
17137	Bloomer, Charles G.	Lockets, &c., mode of constructing	April 28, 1857	XVIII.
	Bly, Douglass, *et al.* (See Nicholas & Bly.)			
18080	Boardman, Byron	Wiring blind-rods, machine for	Sept. 1, 1857	II.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
	Boardman, Luther	Spoons, polishing	Dec. 10, 1857	Extension.
16592	Boeklen, Reinhold	Planters, seed	Feb. 10, 1857	I.
17192	Bogle, Robert	Boats for duck-shooting	May 5, 1857	VII.
17044	Bolles, Jesse N., assignor to M. W. Bolles	Boring artesian wells, apparatus for	April 14, 1857	IX.
16637	Bolles, L. M., and W. G. Smith	Photographic camera box	Feb. 17, 1857	XVIII.
18798	Bonham, J. H	Planters, corn	Dec. 8, 1857	I.
889	Bonte, A. P. C	Picture-frames	May 26, 1857	Design.
16709	Boorn, Samuel	Compositions for shuttle-drivers	Mar. 3, 1857	IV.
17193	Boorn, Samuel	Looms, picker, motion for	May 5, 1857	III.
16905	Booth, John	Drying cylinders, steam	Mar. 31, 1857	XV.
18034	Booth, Joseph	Hat-bodies, manufacturing, machinery for	Aug. 25, 1857	III.
18181	Booth, Joseph	Hat-bodies, machine for hardening	Sept. 15, 1857	III.
18430	Booth, Samuel	Coal-sifters	Oct. 20, 1857	V.
18132	Boothroyd, Joseph	Car-coupling, railroad, reversible	Sept. 8, 1857	X.
18380	Borda, E., and David Glover	Coal, separating slate and other foreign substances from, machine for.	Oct. 13, 1857	V.
17721	Borlace, Edward	Metal separator	July 7, 1857	II.
18035	Borrman, William	Cans, method of hermetically sealing	Aug. 25, 1857	XVII.
	Borroughs, J. F., and D. A. Webster. (See Webster and Borroughs.)			
	Borrowscale, John, *et al.* (See Chamberlain, D. H., assignor.)			
17017	Bosenbury, Jonas	Boring-machine	April 7, 1857	XIV.
	Boston Faucet Company. (See D. N. B. Coffin, jr., assignor.)			
17255	Bosworth, Charles F	Sewing-machines, stitch for	May 12, 1857	III.
17484	Bosworth, Charles F	Apples, paring and quartering, machines for	June 9, 1857	XVII.
17954	Boudreaux, L	Cleaning and carding moss	Aug. 4, 1857	III.
18172	Bour, James, assignor to Charles Parlange	Saccharine evaporator	Sept. 8, 1857	IV.
18672	Bourne, William O	Ore-separator	Nov. 24, 1857	II.
	Bowman, T. B. (See Lachicotte and Bowman.)			
17073	Boyd, A. F	Liquors on tap, method of excluding air from	April 21, 1857	XI.
16371	Boyd, Samuel	Hoes, manufacture of	Jan. 13, 1857	II
18495	Boyers, Jacob, and D. S. Greer	Sowing seed broadcast, machines for	Oct. 27, 1857	I.
16523	Boyers, Jacob	Wagons, couplings for	Feb. 3, 1857	X.
17074	Boyle, James E	Faucets, waste-way in	April 21, 1857	XI.
	Boyle, James E., and G. P Perrini (See Perrini and Boyle.)			
17550	Brabyn, John L	Laths for buildings	June 16, 1857	IX.
16462	Bradbury, Samuel	Hedges, trimming, machines for	Jan. 27, 1857	I.
18081	Bradford, Charles K	Thread, spooling, machines for	Sept. 1, 1857	III.
16903	Bradford, George S	Yarns, manufacturing, from mixed cotton and wool	Mar. 31, 1857	III.
17775	Bradish, Theodore H. and James P	Teeth, artificial, fastening, to the metallic plate	July 14, 1857	XX.
16679	Bradley, Christopher C	Iron kettles, cast, grinding the inner surface of	Feb. 24, 1857	II.
16331	Bradley, Cornall	Valves for steam-engines	Jan. 6, 1857	VI.
16461	Bradley, R. P.	Shearing sheep, machines for	Jan. 27, 1857	I.
	Bradley, W. L., L. W Hubbard, and N. L Bradley. (See Chinquini, Pietro, assignor.)			
452	Bradshaw, John A., assignor to Joseph P. Martin	Sewing-machines	April 14, 1857	Reissue.
453	Bradshaw, John A, assignor to Joseph P. Martin	Sewing-machines	April 14, 1857	Reissue.
	Brainard, A. H and C. H. (See Willmott, William W., assignor)			
17538	Bramwell, William, assignor to Samuel P. Ayres	Hydrants, incasing, method of	June 9, 1857	XI.
	Brand, C. C. (See Sibley, Rufus, assignor.)			
17312	Brand, Christopher C	Projectiles	May 19, 1857	XIX.
17251	Brantingham, Mathias F	Barracks, portable	May 12, 1857	IX.
17257	Brauer, Louis	Car-brakes, railroad bumper	May 12, 1857	IX.
17664	Braugh, John	Blast-blower	June 30, 1857	XI.
16372	Brayton, Robert	Dies	Jan. 13, 1857	II.
17914	Brayton, Robert	Nut-machines	Aug. 4, 1857	II.
	Breinig, J. and D. E., *et al.* (See Gattman, Isaac, assignor.)			
16575	Brettell, Francis S., and Joseph B. Frisbie	Fire-arms	Feb. 10, 1857	XIX.
16785	Brickley, John F	Pump-lifting, converting a, into a sectional forcing pump, and *vice versa*.	Mar. 10, 1857	XI.
17551	Bridge, James	Hatchways, safety attachment for	June 26, 1857	IX.
18889	Bridwell, H. L	Washing-machine	Dec. 22, 1857	XVII.
18182	Briggs, Edward T	Window-sash, mode of sustaining	Sept. 15, 1857	IX.
16574	Briggs, J. C	Melodeons	Feb. 10, 1857	XVIII.
18790	Briggs, Joseph W, assignor to Judson A. Lazell	Harness-traces, device for fastening	Dec. 1, 1857	XVI.
17362	Briggs, Silas P	Planter, hand seed	May 26, 1857	I.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
17417	Briggs, Silas P	Mowing-machines	June 2, 1857	I.
16525	Brigham, Otis and Seth	Anvils	Feb. 3, 1857	II.
17485	Broad, Asa O	Band-fastening, metallic, for bales, &c	June 9, 1857	XII.
	Brokaw, Warder, and Child. (See Harding, Thomas, assignor.)			
18070	Brokaw, J. W., assignor to Warder, Brokaw, & Child	Harvesters, automatic, rakes for	Aug. 25, 1857	I.
18833	Brokaw, J. W., and Thomas Harding, assignors to Warder, Brokaw, & Child.	Reaping and mowing machines	Dec. 8, 1857	I.
890	Bronson, Willis S	Furnaces	May 26, 1857	Design.
18673	Brooks, S. P	Piano-fortes	Nov. 24, 1857	VIII.
16324	Broughton, John	Door-springs	Jan. 6, 1857	II.
16464	Broughton, John	Sash-fastener	Jan. 27, 1857	II.
17258	Broughton, John	Planters, corn	May 12, 1857	I.
	Brown, Alexander H., and A. B. Gray. (See Gray & Brown.)			
	Brown & Smith, assignors to Leibrant, McDowell, & Co (See Smith & Brown.)			
	Brown & Smith, assignors to Leibrant, McDowell, & Co (See Smith & Brown.)			
	Brown & Smith, assignors to Leibrant, McDowell, & Co. (See Smith & Brown.)			
	Brown & Smith, assignors to Wolf, Moore, & Co. (See Smith, G., & H Brown.)			
	Brown, Smith, & Read, assignors to Leibrant, McDowell, & Co. (See Smith, Brown, & Read, assignors.)			
	Brown, Smith, & Read, assignors to Leibrant, McDowell, & Co. (See, Smith, Brown, & Read, assignors.)			
	Brown, Smith, & Sailor, assignors to Abbott & Lawrence. (See Smith, Brown, & Sailor, assignors.)			
	Brown, E., S. M. Buckingham, *et al.* (See Van Gieson, William, assignor.)			
	Brown, Edmund. (See Ames, Nathan, assignor.)			
	Brown, Elbridge, and Ira Gill. (See Gill, Ira, assignor.)			
18443	Brown, George K	Huskers, corn	Oct. 13, 1857	I.
508	Brown, George W	Planters, seed	Nov. 10, 1857	Reissue.
	Brown, H., G. Smith, and S. H. Sailor, assignors to Abbott & Lawrence. (See Smith, Brown, & Sailor, assignors.)			
17313	Brown, Harvey	Lumber, pieces of, arrangement of devices for dressing	May 19, 1857	XIV.
18570	Brown, Harvey	Sawing-machine	Nov. 10, 1857	XIV.
425	Brown, Isaac	Saws, reciprocating, mode of driving	Feb. 3, 1857	Reissue.
	Brown, Isaac, and M. W. St John. (See St. John & Brown.)			
17486	Brown, J. S	Cart, self-loading	June 9, 1857	X.
16524	Brown, J., assignor to Joseph Kent	Lamps, lard	Feb. 3, 1857	V.
16463	Brown, James S	Speeders	Jan. 27, 1857	III.
17259	Brown, John C., and John P. Derby	Roasting meat, apparatus for	May 12, 1857	V.
16964	Brown, John L	Shingle machine	April 7, 1857	XIV.
17722	Brown, Josiah, jr	Bridges, truss	July 7, 1857	IX.
18731	Brown, L. & A. C	Rakes, hay	Dec. 1, 1857	I.
18381	Brown, Morgan W	Candle-making, preparing fats for	Oct. 13, 1857	IV.
	Brown, R. W., and Asa Blood. (See Blood, sr., & Brown.)			
18082	Brown, W. D	Coal-sifters	Sept. 1, 1857	V.
16678	Browne, J. D	Hinges	Feb. 24, 1857	II.
515	Brownfield, Thomas	Carriages, wheels for	Dec. 15, 1857	Reissue.
863	Bruce, George	Printing-types	Jan. 6, 1857	Design.
940	Bruce, George	Type	Sept. 8, 1857	Design.
17309	Bruce, James A., assignor to president and directors of Maryland Portable Gas Company.	Gas-generators	May 12, 1857	IV.
16677	Bruen, John H	Planters, hand seed	Feb. 24, 1857	I.
17260	Bruen, John H	Planters, seed	May 12, 1857	I.
18952	Bruen, John H	Fences, portable field, method of connecting the panels of.	Den. 29, 1857	IX.
18133	Brumlin, Ludwig	Verdigris, processes for manufacturing	Sept. 8, 1857	IV.
18799	Brunswick, John M	Billiard-table cushions	Dec. 8, 1857	XXII.
18674	Bryan, John	Rolling-mills, application of hot water to journals of.	Nov. 24, 1857	II.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
16965	Bryant, Joel	Winches, hoisting, for shipboard	April 7, 1857	VII.
448	Bryant, Joel	Gaüges, carpenters'	April 14, 1857	Reissue.
17552	Bryant, Joel	Hydrant	June 16, 1857	XI.
17553	Bryant, Joel	Plane-bench, stock for	June 16, 1857	XIV.
175	Bryant, Joel	Winches, hoisting, for shipboard	Aug. 11, 1857	Add'l imp't.
475	Bryant, Mertoun C., assignor to E. B. Bigelow	Looms for weaving piled fabrics	June 30, 1857	Reissue.
18385	Bryson, Robert	Huskers, corn	Oct. 13, 1857	I.
16904	Buchanan, Robert C., (bvt. lieut. colonel)	Boat, portable	Mar. 31, 1857	VII.
18382	Buck, Isaac N	Churn-dashers	Oct. 13, 1857	I.
	Buckingham, S. M., *et. al.* (See Van Geiron, W. H., assignor.)			
17915	Buckman, Ira, jr	Gun, walking-stick	Aug. 4, 1857	XIX.
	Buffalo Eagle Iron Works Company. (See Dunbar & Robertson, assignors.)			
17419	Bullard, S. M	Hinge, door	June 2, 1857	II.
	Bullard, William A., *et al.* (See Griggs, George S., assignor.)			
18800	Bullock, Chester	Mowing-machines, cutting apparatus of	Dec. 8, 1857	I.
18953	Bullock, William H	Locomotives, arrangement of deflecting plates and spark-receiver in.	Dec. 29, 1857	VII.
17827	Bundy, Galusha J	Potatoes, planting, machine for	July 21, 1857	I.
18274	Bunker, Charles J	Life-preservers	Sept. 29, 1857	VII.
18954	Bunnell, Isaac S	Potato-diggers	Dec. 29, 1857	I.
17665	Burden, Henry	Horse-shoes, machine for making	June 30, 1857	II.
17418	Burdick, Jason L	Printing-presses	June 2, 1857	XVIII.
	Burditt, Riley, and D. L. Sprague. (See Sprague & Burditt.)			
16786	Burditt, Riley, and Hatsel P. Green	Melodeons	Mar. 10, 1857	XVIII.
17195	Burge, J. H. H and William J	Splint apparatus, surgical	May 5, 1857	XX.
	Burgee, S. F., and H. N. Gambrill. (See Gambrill & Burgee.)			
	Burgee. S. F., and H. N. Gambrill. (See Gambrill & Burgee.)			
18839	Burger, Timothy P	Casters for furniture	Dec. 15, 1857	XVII.
17076	Burgess, Simeon	Heaters, cask	April 21, 1857	V.
17018	Burgin, John F	Cooler for wine, beer, and other liquids in barrels	April 14, 1857	V.
17723	Burnhaus, Denzlow	Pasteboard, &c., machine for cutting	July 7, 1857	III.
17420	Burk, Francis	Fibre of banana, plantain, aloe, &c, machinery for preparing the.	June 2, 1857	III.
874	Burleigh, M. C	Stove-doors	Mar. 10, 1857	Design.
	Burnap, W. H. (See Chester, Benjamin, assignor)			
17075	Burnett, William B	Fences, portable field, method of clamping and unclamping panels of.	April 21, 1857	IX.
175[illegible]	Burnham, E. G., assignor to himself and Henry A. Chapin.	Cocks, basin, &c., valvular arrangement for	June 9, 1857	XI.
16373	Burnham, James S	Pumps	Jan. 13, 1857	XI.
16713	Burnham, Joseph W	Sewing-machines	Mar. 3, 1857	III.
17261	Burnside, Ambrose E	Fire-arms, windage in, mode of overcoming the.	May 12, 1857	XIX.
17127	Burr, Samuel J., assignor to himself and H. F. Read.	Fluid-metre	April 21, 1857	XI.
17019	Burrell, Samuel R	Slates, school	April 14, 1857	XXII.
16787	Burridge, Thomas H	Drills, rock	Mar. 10, 1857	IX.
	Burritt, Joseph C., and William H. Aikins, assignors. (See Aikins & Burritt, assignors.)			
	Burroughs, G. F., and D. A. Webster. (See Webster & Burroughs.)			
18232	Burt, George E., and Abram and George F. Wright.	Horse-powers	Sept. 22, 1857	XIII.
	Burt, Henry	Knitting-machines	Sept. 24, 1857	Extension.
16638	Burt, Henry, and James T. Hedden	Hames, machine for making	Feb. 17, 1857	II.
18801	Burton, John W., and George Pye	Hemp, flax, and other fibrous material, mode of treating.	Dec. 8, 1857	III.
16714	Bushnell, Henry	Hammers, trip	Mar. 3, 1857	II.
16680	Bussell, Erastus T	Syringe, cauterizing	Feb. 24, 1857	XX.
	Buswell, Eckler & Co. (See Pease, Henry, assignor.)			
	Buswell, Eckler & Co. (See Pease, Henry, assignor.			
18183	Butcher, William and William A	Paint, India rubber	Sept. 15, 1857	IV.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
	Butler & McNish. (See McNish, Henry L., assignor.)			
	Butler, Alonzo, and N. C. Harris. (See Harris & Butler.)			
	Butler, David C. (See McNish, H. L., assignor.)			
18497	Butler, E , and George M. Peck	Butter-workers	Oct. 27, 1857	I.
18184	Butler, John	Gas-generators	Sept. 15, 1857	IV.
17020	Butler, Thomas B	Felt-cloth, crossing the fibres of wool in making, machinery for.	April 14, 1857	III.
17487	Butler, Thomas B	Felt-cloth, manufacturing, machinery for	June 9, 1857	III.
17628	Butler, Thomas B., (No. 1)	Felt-cloth, machines for manufacturing	July 21, 1857	III.
16571	Butler, W. S., assignor to Butler, Sugden, & Co.	Pistols	Feb. 3, 1857	XIX.
18185	Butt, Ze	Excavators	Sept. 15, 1857	IX.
17314	Butt, Ze	Truck, hand	May 19, 1857	X.
18383	Butt, Ze	Trucks, self-dumping, arrangement of	Oct. 13, 1857	IX.
	Butter, John, *et al.* (See Ball, E., assignor.)			
	Butterfield, G. F., and D. Lovejoy. (See Lovejoy & Butterfield.)			
17021	Butterfield, Merano	Sugar, preparation of, called "table manna"	April 14, 1857	IV.
17603	Butterfield, William, and Bradford Stetson, assignors to themselves and Elmer Townsend.	Boot-counters, skiving, machine for	June 16, 1857	XVI.
18496	Butts, O. J	Rice, brushing, machine for	Oct. 27, 1857	XIII.
18384	Byard, Moses	Churns	Oct. 13, 1857	I.
16711	Byron, George Hunt	Pen and pencil-holder	Mar. 3, 1857	XVIII.
16326	Cady, William	Sawing-machines, cross-cut	Jan. 6, 1857	XIV.
17022	Cahill, John H	Furnaces, hot-air	April 14, 1857	V.
18083	Cahoon, Charles W	Seeding-machines	Sept. 1, 1857	I.
16374	Cairns, W. and J	Blacking-boxes, implement for holding	Jan. 13, 1857	XXII.
	Caldicott, Thomas F. (See Warrall, Thomas D., assignor.)			
	Caldicott. Thomas F. (See Gladwin, Porter A., assignor.)			

No.	Name of patentee.	Invention or discovery.	Date.	Class.
16869	Calkins, Thomas L., assignor to himself and J. W. Bliss.	Combs	Mar. 17, 1857	XXI
18955	Callagan, John	Jacks, lifting	Dec. 29, 1857	XII.
16526	Calvert, F. A., and C. G. Sargent	Cotton, cleaning, machines for	Feb. 3, 1857	III.
	Cambridge, P. C , and D. M. Cummings. (See Cummings & Cambridge.)			
18233	Camp, Mortimer M	Boats, life	Sept. 22, 1857	VII.
	Campbell & Ross. (See Ross, Benjamin, and John C. Campbell.)			
17077	Campbell, Augustine	Chimney-dampers	April 21, 1857	V.
485	Campbell, Edward	Journal-box, glass	Aug. 25, 1857	Reissue.
18314	Campbell, Ethan, assignor to W. P. Page and Edward F. Hodges.	Propelling apparatus, marine	Sept. 29, 1857	VII.
18620	Campbell, Samuel, assignor to John C. Whitin	Warps, dressing, machinery for	Nov. 10, 1857	III.
16327	Campbell, Tristram, and Henry B Poorman	Bullet-moulds	Jan. 6, 1857	XIX.
	Campbell, W. P., and James T. Henry. (See Henry & Campbell.)			
17363	Canby, Samuel	Grain scourers and separators	May 26, 1857	XIII.
	Canfield, West & Co. (See Batcheller, L. B.)			
18036	Canfield, Sheldon	Umbrellas and parasols	Aug. 25, 1857	XXI.
16564	Cannon, Mary Ann, assignor to New York and Brooklyn Brass Company.	Brass-kettle machine	Feb. 3, 1857	II.
17196	Carhart, Jeremiah	Melodeons, &c., swells for	May 5, 1857	XVIII.
484	Carhart, Jeremiah	Musical, instruments, reed	Aug. 25, 1857	Reissue.
17867	Carle, Ira	Compositions, tanning	July 28, 1857	IV.
16870	Carleton, Albert S	Cotton flannel	Mar. 24, 1857	III.
	Carleton, William. (See Dexter, Henry, assignor.)			
18322	Carlisle, Charles	Packing wool, machine for	Oct. 6, 1857	XII.
16769	Carlton, Isaac, assignor to John Wybird	Lamps, locomotive and other, reflectors for	Mar. 3, 1857	V.
17355	Carney, Nathaniel B., assignor to J. R. Livingston, Chas. H. Haswell, and Russell C. Root, trustees.	Looms	May 19, 1857	III.
17491	Carpenter, Calvin, jr	Horse-shoe nails, machine for making	June 9, 1857	II.
17916	Carpenter, D. H	Burners, vapor	Aug. 4, 1857	V.
18676	Carpenter, E. B , and E N. Merriam	Melodeons, &c., coupling for	Nov. 24, 1857	XVIII.
16898	Carpenter. Hiram, assignor to American Iron Railway Company.	Railroads	Mar. 24, 1857	IX.
18037	Carpenter, John	Blind-slats, device for piercing, to receive the staples	Aug. 25, 1857	IX.
18791	Carpenter, Simmons W., assignor to William W. Woodsworth.	Gas-retorts, cleaning	Dec. 1, 1857	IV.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
17194	Carpenter, Stephen D.	Printing subscribers' names on newspapers, machine for.	May 5, 1857	XVIII.
18802	Carroll, James	Planters, seed	Dec. 8, 1857	I.
18321	Carsley, Hiram	Stove cover stands	Oct. 6, 1857	V.
18186	Carver, William H., and J. Beckley	Roofing, mastic	Sept. 15, 1857	IX.
18187	Caryl, A. H.	Mowing-machines	Sept. 15, 1857	I.
18188	Caryl, A. H.	Reaping-machines, raking attachment for	Sept. 15, 1857	I.
18730	Case, Jarvis	Seeding-machines	Dec. 1, 1857	I.
18803	Case, Jarvis	Ploughs	Dec. 8, 1857	I.
18432	Case, John, and Isaac Soules	Furnaces	Oct. 20, 1857	V.
	Cassell & Galbraith. (See Vedder, N. S., assignor.)			
18675	Castle, O. L.	Arithmometer for adding	Nov. 24, 1857	VIII.
18572	Cavendy, Edward	Latitude at sea, approximate method of determining	Nov. 10, 1857	VIII.
18571	Cawthra, Joseph	Husker, corn	Nov. 10, 1857	I.
17492	Cawthron, William L.	Railroad switch lock	June 9, 1857	IX.
	Chamberlain & Co. (See Young, Elias, assignor.)			
17554	Chamberlain, D. H.	Leather, &c., splitting ridged, hoop knife for	June 16, 1857	XVI.
18719	Chamberlain, D. H., assignor to himself and John Borrowscale.	Lamps, vapor-burning	Nov. 24, 1857	V.
17724	Chamberlain, Dexter H.	Steering apparatus	July 7, 1857	VII.
17493	Chamberlin, M. C.	Wagon-brake, self-acting	June 9, 1857	X.
18386	Chamberlin, M. C.	Wagon-brake	Oct. 13, 1857	X.
16718	Chamberlin, Nathan L.	Press, hand printing	Mar. 3, 1857	XVIII.
18533	Chambers, Cyrus, jr.	Folding paper, machines for	Nov. 3, 1857	XVIII.
16720	Chambers, Edward G.	Shears, sheep	Mar. 3, 1857	I.
17023	Chandeler, Thomas A.	Pendulum levels or inclinometers	April 14, 1857	VIII.
17355	Channing, William F., and Moses G. Farmer, assignors to William F. Channing.	Telegraph for cities, electro-magnetic fire-alarm	May 19, 1857	VIII.
17494	Chapin, George L.	Mitre-box	June 9, 1857	XIV
	Chapin, Henry A., *et al.* (See Burnham, E. G., assignor.)			
18439	Chapin, William A.	Sowing seed broadcast, machines for	Oct. 20, 1857	I.
	Charlton & Ells. (See Ells & Charlton.)			
18387	Charpic, P. F.	Fire-arms, hair-triggers for	Oct. 13, 1857	XIX.
948	Chase, Ira, jr., (2)	Brackets, shelf	Oct. 13, 1857	Design.
949	Chase, Ira, jr., (1)	Brackets, shelf	Oct. 13, 1857	Design.
958	Chase, Ira, jr., (3)	Brackets, shelf	Oct. 20, 1857	Design.
957	Chase, Ira, jr.	Borders, grave	Oct. 20, 1857	Design.
18732	Chase, Joel	Sewing-machines	Dec. 1, 1857	III.
18498	Chase, John K.	Jars, &c., metallic screw cap for	Oct. 27, 1857	XVII.
	Chase, North, and North. (See S. W. Gibbs.)			
	Chase, North, and North. (See N. S. Vedder.)			
	Chase, North, and North. (See Vedder, N. S., assignor.)			
	Chase, North, and North. (See Vedder, N. S., assignor.)			
17262	Chase, O. R. and S. E.	Lozenges, machines for making	May 12, 1857	XX.
16512	Chatman, Alfred F., assignor to A. F. Chatman and J. Pecare.	Door-spring	Jan. 27, 1857	II.
16824	Cheney, John L.	Looms, power	Mar. 17, 1857	III.
	Chesbrough *et al.* (See Coon, David, assignor.)			
16465	Chesher, Tenison	Water-wheels, direct horizontal, method of inserting the buckets in the shafts of.	Jan. 27, 1857	XI.
17024	Chesnut, John S.	Jack, lifting	April 14, 1857	XII.
18941	Chester, Benjamin, assignor to W. H. Burnap	Belting, mode of	Dec. 22, 1857	XIII.
17666	Chester, J. H.	Radiator, portable steam, for heating apartments.	June 30, 1857	V.
16565	Chichester, Lewis S., assignor to Henry G. Evans.	Cotton-gins	Feb. 3, 1857	III.
17819	Chichester, Lewis S., assignor to Henry G. Evans.	Cotton, cleaning	July 14, 1857	III.
17725	Chicken, William	Button-holes, instruments for cutting	July 7, 1857	XXI.
17495	Chilcott, John	Ovens, bakers'	June 9, 1857	V.
477	Chilcott, John, and Robert Snell	Boots and shoes, cutting out the uppers of, method of.	July 7, 1857	Reissue.
	Child, Warder, & Brokaw. (See Harding, Thomas, assignor.)			
	Child, Warder, & Brokaw. (See Brokaw & Harding, assignors.)			
862	Chinnock, Charles	Clock-case fronts	Jan. 6, 1857	Design.
17618	Chipman, Willard A.	Plane-irons in their stocks, method of holding and adjusting.	June 23, 1857	XIV.
16682	Choate, Warren C., and Charles N. Tyler	Gas, hydrogen and wood, combining	Feb. 24, 1857	IV.
18038	Chubb, Thomas J.	Ore, separating	Aug. 25, 1857	II.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
18085	Chubb, Thomas J	Ore-separator	Sept. 1, 1857	II.
18388	Chubb, Thomas J	Ore-separator	Oct 13, 1857	II.
	Church, F. H. (See Steffe, Horton, & Currie, assignors.)			
	Church, Harvey. (See Mathews, E. S., assignor.)			
18956	Churchman, Thomas C	Washing-machine	Dec. 29, 1857	XVII.
916	Chinquini, Pietro	Clock-cases	Oct. 6, 1857	Design.
935	Chinquini, Pietro	Clock-case front	Aug. 25, 1857	Design.
946	Chinquini, Pietro, assignor to W. D. Bradley, W. Hubbard, and N. L. Bradley.	Clock-cases	Oct. 6, 1857	Design.
17667	Clark, A. T	Mills, flouring, distributing apparatus of	June 30, 1857	XIII.
481	Clark, Alfred T	Mills, flouring, distributing apparatus of	Aug. 4, 1857	Reissue.
16350	Clark, Benjamin, assignor to E. L. Ferguson and C. B. Clark.	Tables, extension	Jan. 6, 1857	XVII.
18733	Clark, Charles B	Tables, extension	Dec. 1, 1857	XVII.
18191	Clark, Edwin	Mill-stones, hanging	Sept. 15, 1857	XIII.
18234	Clark, Edwin	Mill-stone drivers, bearings for	Sept. 22, 1857	XIII.
17869	Clark, Everard M	Smut-machines	July 28, 1857	XIII.
17189	Clark, George H	Beds, invalid	Sept. 15, 1857	XVII.
16788	Clark, Hiram	Harvesters	Mar. 10, 1857	I.
18135	Clark, H. M	Wrench	Sept. 8, 1857	II.
18574	Clark, James M	Mills, flouring, distributing apparatus of	Nov. 10, 1857	XIII.
	Clark, L. J., *et al.* (See Fountain, Jas. L., assignor.)			
18119	Clark, Oliver, assignor to Aaron H. Pinney	Scythes to snathes, mode of attaching	Sept. 1, 1857	I.
17422	Clark, Patrick	Engines, steam, packing-pistons and stuffing-boxes of	June 2, 1857	VI.
17489	Clark, Patrick	Pasteboard or paper, machines for drying	June 9, 1857	III.
173	Clark, Patrick	Engines, steam, packing-pistons and stuffing-boxes of	July 28, 1857	Add'l imp't.
17917	Clark, Patrick	Paper, machines for making	Aug. 4, 1857	III.
18235	Clark, Patrick	Engines, steam, metallic packing-rings for	Sept. 22, 1857	VI.
16966	Clark, Sylvanus S	Window-blinds, folding	April 7, 1857	IX.
17726	Clark, Thomas	Water, &c., flow of, through pipes, chamber to effect uniformity of.	July 7, 1857	XI.
17221	Clark, W. A., S. D. Porter, and W. D. Simpson	Mill-stones, method of hanging	June 2, 1857	XIII.
17868	Clark, William N	Auger-handle, fastening	July 28, 1857	XIV.
18190	Clark, William N	Paper-pulp, from ivory, making	Sept. 15, 1857	III.
18627	Clark, William N	Door-guard, elastic	Nov. 17, 1857	IX.
16719	Clarke, E. E	Boxes, pasteboard for, machine for cutting	Mar. 3, 1857	XXII.
17348	Clarke, George P, assignor to himself and William M. Littell.	Valves, safety, arrangement of, within steam-boilers.	May 19, 1857	VI.
16902	Clarke, George R, and Samuel Adams	Delineator, grade	Mar. 31, 1857	VIII.
	Clary, John, and David O. Paige. (See Paige & Clary.)			
18626	Clay, Edward C	Telegraphic fire-alarm apparatus, device in	Nov. 17, 1857	III.
16721	Clemens, S. A	Harvesters	Mar. 3, 1857	I.
17078	Clement, N. S	Awl-haft	April 21, 1857	II.
18326	Clement, William T	Scythes to snathes, mode of attaching	Oct. 6, 1857	I.
18887	Clements, Moses, deceased, William T. Clements, administrator of	Straw-cutters	Dec. 15, 1857	I.
	Clinkard, H. R, and G. Gilmour. (See Gilmour, George, assignor.)			
	Clissold, William, and James Apperly. (See Apperly & Clissold.)			
18440	Clock, Jesse M	Wind-wheels, vane for	Oct. 20, 1857	XI.
18804	Clow, Charles, Abram, and Charles N	Forks, agricultural	Dec. 8, 1857	I.
17555	Clute, Nicholas	Harvesters	June 16, 1857	I.
	Coan, W. L., and C. D. Kellogg. (See Kellogg & Coan.)			
18192	Coates, Abraham, and Samuel M. Perry	Ships' pumps	Sept. 15, 1857	VII.
17364	Coates, Elias F	Metal, cutting and bending sheet, machine for	May 26, 1857	II.
18134	Coates, Sanders	Gas-retorts	Sept. 8, 1857	IV.
16466	Cobb, Samuel	Corpse-preservers	Jan. 27, 1857	XXII.
16861	Coburn, Francis S., assignor to W. W. Messer and George F. Gray.	Printing-press, hand	Mar. 17, 1857	XVIII.
16527	Cochran, Alexander M	Window-blinds	Feb. 3, 1857	IX.
16945	Cochrane, James	Fluid-metre	Mar. 31, 1857	XI.
17185	Cochrane, John W	Gauges for casks	April 28, 1857	VIII.
18084	Coes, Aury G	Straw-cutters	Sept. 1, 1857	I.
	Coeyman, J., and C. J. Halstead. (See Halstead & Coeyman.)			
162	Coffin, David N. B., jr	Filter	April 14, 1857	Add'l mp't.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date	Class.
17488	Coffin, David N. B., jr	Carpet-fastenings	June 9, 1857	XVII.
18323	Coffin, David N. B., jr	Curtain-rollers	Oct. 6, 1857	XVII.
17315	Coffin, David N. B., jr., and Henry D. Stover	Planing-machines, dogging lumber in, devices for	June 9, 1857	XIV.
17604	Coffin, David, jr., assignor to Boston Faucet Company.	Faucet	June 16, 1857	XI.
16825	Coffin, Isaac N	Lamps, lard	Mar. 17, 1857	V.
18434	Coggeshall, W. T	Stove and furnace grate	Oct. 20, 1857	V.
18959	Coggeshall, William, and B. B. Warner	Seeding-machines	Dec. 29, 1857	I.
	Coggeshall, William T. (See Dean, Daniel H., assignor.)			
963	Coggeshall, William T	Stoves	Nov. 3, 1857	Design.
	Colburn, Charles C., and T. L. Smith. (See Smith & Colburn.)			
17669	Colby, Curtius	Excavator, earth	June 30, 1857	IX.
17870	Cole, Calvin	Pendulum-levels, adjustment applied to	July 28, 1857	VIII.
164	Cole, Charles N	Gate, farm	June 9, 1857	Add'l imp't.
17201	Cole, Ezra	Fence, portable field	May 5, 1857	IX.
17365	Cole, James E	Sails, top, means for reefing	May 26, 1857	VII.
17780	Cole, James E	Ships, rigging of	July 14, 1857	VII.
18324	Cole, Jeremiah S., and Harley Stone	Saw-filing machine	Oct. 6, 1857	XIV.
16967	Cole, R. H	Rivets, making, machine for	April 7, 1857	II.
17197	Cole, R. H	Nut-machines	May 5, 1857	II.
17556	Cole, R. H	Axe-polls, machine for making	June 16, 1857	II.
18499	Cole, R. H	Nut-machine	Oct. 27, 1857	II.
18534	Cole, R. H	Bolts, machine for making	Nov. 3, 1857	II.
17202	Cole, Solomon	Gates, method of opening and closing by approaching vehicles.	May 5, 1857	IX.
17619	Coleman, Ezra	Mill, grinding	June 23, 1857	XIII.
17918	Coleman, S. T. J., and J. W. Sibbet	Vehicles, coupling of thills to	Aug. 4, 1857	X.
18629	Collen, John B	Brick-machine	Nov. 17, 1857	XV.
18193	Collender, H. W	Bolts, sockets for	Sept. 15, 1857	II.
18805	Collender, H. W	Billiard-table cushions	Dec. 8, 1857	XXII.
16681	Coller, Isaac H	File-cutting machine	Feb. 24, 1857	II.
18435	Collier, Henry M	Car-brakes, railroad, rubbers of	Oct. 20, 1857	X.
17871	Collins, E. K	Staves, method of sawing, from the bolt, and dressing their edges simultaneously.	July 28, 1857	XIV.
18679	Collins, E. K	Shingles, machine for cutting, from the bolt	Nov. 24, 1857	XIV.
	Collins, Owen, and John Dunley. (See O'Brien, John, assignor.)			
16715	Collins, Richard	Washing-machines	Mar. 3, 1857	XVII.
18389	Collyer, Robert H	Paper pulp from beet and other refuse, preparing	Oct. 13, 1857	III.
16683	Colt, Samuel	Fire-arms, many-chambered rotating-breech	Feb. 24, 1857	XIX.
16716	Colt, Samuel	Fire-arms, lubricating, mode of	Mar. 3, 1857	XIX.
18678	Colt, Samuel	Fire-arms, many-chambered rotating-breech	Nov. 24, 1857	XIX.
18630	Colton, Francis	India rubber springs for upholstering purposes	Nov. 17, 1857	XVII.
18436	Colville, Thomas L., and Samuel Shepherd	Threshing-machine for beating off pea-nuts from the vines.	Oct. 20, 1857	I.
16375	Colvin, Enoch	Knitting-machines	Jan. 13, 1857	III.
16968	Comfort, Samuel, jr	Harvesters, cutting apparatus for	April 7, 1857	I.
18437	Comfort, Samuel, jr	Harvesters, rakes for	Oct. 20, 1857	I.
16579	Comins, R	Truss-frames, shoes for	Feb. 10, 1857	IX.
16530	Compton, Homer	Harness-hames, fastenings for	Feb. 3, 1857	XVI.
873	Comstock, Allen	Stoves, cooking	Mar. 10, 1857	Design.
17025	Conklin, Isaac H	Harvesters, raking attachment for	April 14, 1857	I.
	Conklin, J. L., and E. W. Whitehead. (See Whitehead & Conklin.)			
17557	Conroy, Edward	Cork-machine	June 16, 1857	XXII.
17727	Conroy, Edward	Blow-pipe, alcohol	July 7, 1857	V.
18325	Cook, A. M	Corn-sheller	Oct. 6, 1857	I.
18957	Cook, Cyrus E	Saws, clamp for setting	Dec. 29, 1857	XIV.
16467	Cook, G. & D	Carriage-tops, calash	Jan. 27, 1857	X.
16528	Cook, George & David	Carriages, adjustable seats for	Feb. 3, 1857	X.
18680	Cook, George W	Spoke-machine	Nov. 24, 1857	XIV.
17424	Cook, Julius M	Lock	June 2, 1857	II
16529	Cook, Peter	Veneers, machine for cutting	Feb. 3, 1857	XIV.
17542	Cook, Robert, assignor to himself and Samuel Norton.	Horse-shoe nails, machine for forging	June 9, 1857	II.
17263	Cook, Thomas	Match-splints, cutting, machines for	May 12, 1857	XXII.
17316	Cook, Thomas	Matches, dipped, machine for gathering and depositing.	May 19, 1857	XXII.
17670	Cooke, W. E	Uterine supporters	June 30, 1857	XX.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
17668	Cooley, Anthony	Whiffletree-hook	June 30, 1857	X.
17406	Coon, David, assignor to himself and B. F. Chesbrough.	Burglars' alarms	May 26, 1857	XXII.
18236	Coon, Simeon	Burglars' alarms	Sept. 22, 1857	XXII.
16639	Cooper, John H	Gas-regulators	Feb. 17, 1857	IV.
17671	Cooper, John H	Gas-regulators	June 30, 1857	IV.
18008	Cooper, John H	Gas-regulators	Aug. 18, 1857	IV.
	Cooper, Peter (See Rich, Obadiah, assignor.)			
17672	Cooper, William	Horse-shoe	June 30, 1857	II.
	Cope, Ezra, and S. H. Whitaker. (See Whitaker & Cope.)			
18438	Cope, M. Y. & T. J	Wagon, dumping	Oct. 20, 1857	X.
483	Copeland, Josiah, assignor to Abraham Thayer, assignor to Josiah M. Read, assignor to Josiah Copeland.)	Boot-crimps	Aug. 11, 1857	Reissue.
17264	Corbin & Marlett	Honey, artificial	May 12, 1857	XXII.
18958	Corley, Simeon	Coats, instrument for draughting	Dec. 29, 1857	XXI.
17423	Corliss, George H	Pumping apparatus, steam	June 2, 1857	XI.
18136	Corliss, George H	Engines, steam, metallic packing for pistons of	Sept. 8, 1857	VI.
17079	Cornelius, Robert	Gas-regulators	April 21, 1857	IV.
17317	Cornelius, Robert	Gas-regulators	May 19, 1857	IV.
441	Cornell, J. B	Vault-covers	Mar. 24, 1857	Reissue.
17138	Cornell, John B	Pavement, side-walk	April 28, 1857	XIX.
17198	Cornell, John B. (No. 1)	Vault-cover	May 5, 1857	IX.
17199	Cornell, John B. (No. 2)	Vault-covers	May 5, 1857	IX.
18677	Cornell, John B	Roofing, metallic, for subterranean vaults	Nov. 24, 1857	IX.
17318	Cornwall, George, 2d	Hats, &c., heating straw braid for, method of	May 19, 1857	III.
17200	Cotton, George W	Engines, steam, metal packed pistons for	May 5, 1857	VI.
	Cousland & Ball. (See Seropyan, Christopher D., assignor.)			
18228	Covert, H. W	Locks	Sept. 15, 1857	II.
18573	Cowdon, John	Earth-moving machine	Nov. 10, 1857	IX.
16717	Cowles, E. P. & J. A	Churns	Mar. 3, 1857	I.
18628	Cox, John, and Reuben Newton	Harvesting-machine	Nov. 17, 1857	I.
479	Cox, Samuel A., deceased, assignor to Sawyer & Hall, assignors to New York Wrought Iron Railroad Chair Co.	Chairs, railway, bending the lips of wrought iron, machine for.	July 14, 1857	Reissue.
16364	Cramer, James P., assignor to Hiram Cramer, assignor to James P. Cramer.	Cultivator teeth	Jan. 6, 1857	I.
16789	Crane, George R	Harvesting grain, machines for	Mar. 10, 1857	I.
	Crane, John E., and P. Putnam. (See Putnam and Crane.)			
17080	Crane, Thomas	Planters, hand seed	April 21, 1857	I.
16468	Crangle, George	Brick machine, rotary	Jan. 27, 1857	XV.
17203	Crangle, George	Brick machine, rotary	May 5, 1857	XV.
16553	Crannell, John W	Carriages	Jan. 6, 1857	X.
16531	Crannell, John W	Forge, smiths'	Feb. 3, 1857	II.
18681	Crary, James	Shingle machine	Nov. 24, 1857	XIV.
18575	Crawshaw, John	Hoisting apparatus for bricks, &c	Nov. 10, 1857	XII.
17026	Creager, Jonathan	Sawing shingles, machine for	April 14, 1857	XIV.
	Creighton, Joseph K. and A. C. Smith. (See Smith and Creighton.)			
	Cresson, Stuart, and Peterson. (See Beesley and Delany, assignors.)			
	Cresson, Stuart, and Peterson. (See Beesley and Delany, assignors.)			
914	Cridge, E. J	Stoves, parlor	July 14, 1857	Design.
18195	Critcherson, John	Street sweeping, machines	Sept. 15, 1857	XXII.
18881	Critcherson, John, assignor to John Warren	Seeding machines	Dec. 15, 1857	I.
456	Critchlow, Alfred P., assignor to A. P. Critchlow & Co.	Picture cases, hinge for	April 21, 1857	Reissue.
18275	Croasdale, William	Stable, horse's, cribs of	Sept. 29, 1857	IX.
	Crockett, E., and J. Marland. (See Marland and Crockett.)			
	Crompton, William, assignor to M. A. Forbush and George Crompton.)	Looms, figure or fancy power	Aug. 28, 1857	Disclaimer.
17205	Crook, Charles	Reaping and mowing machines	May 5, 1857	I.
18486	Crooker, George R., assignor to George G. Martin	Fire-arms, repeating, mode of priming	Oct. 20, 1857	XIX.
17319	Croome, William	Printing in colors, mode of	May 19, 1857	XVIII.
18500	Crosby, Heman, jr	Umbrellas, cane	Oct. 27, 1857	XXI.
17204	Crosby, Jeremiah M	Door bolt	May 5, 1857	II.

Patentees of inventions and designs; 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
17490	Crosby, Jeremiah M	Doors, catch for	June 9, 1857	II.
458	Crosby, Pearson	Saw mills for resawing boards and other timber	April 28, 1857	Reissue.
18039	Crosby, Pearson	Saw teeth, setting-swage for	Aug. 28, 1857	XIV.
16352	Crossman, A. B	Rudders	Jan. 6, 1857	VII.
17872	Crossman, C. P	Scythes, tempering, machine for	July 28, 1857	II.
16532	Croy, John J	Spokes, tool for tenoning	Feb. 3, 1857	XIV.
	Crumbie and Ruberts, assignors to Benson *et al.* (See Ruberts and Crumbie, assignors.)			
16325	Culbertson, James	Mill, grinding	Jan. 6, 1857	XIII.
	Culin, Isaac V., and J. B. Sutherland, *et al.* (See Driver, Samuel, assignor.)			
18631	Culver, Stephen	Carpet fastener	Nov. 17, 1857	XVII.
17265	Cumming, David	Horse shoes	May 12, 1857	II.
16704	Cumming, D., jr., assignor to D. Cumming, sr.	Boats, steam, shoving-poles for	Feb. 24, 1857	VII.
	Cummings, Goodwin, and Hawkins. (See Hawkins, Goodwin, and Cummings.)			
18535	Cummings, D. W., and P. C. Cambridge, jr	Mortising-machines, chisels in, method of reversing the.	Nov. 3, 1857	XIV.
	Cummings, E. P., and A. Williams. (See Williams and Cummings.)			
16470	Cummings, George M	Clamp for soldering spectacles	Jan. 27, 1857	II.
18194	Cummings, George M	Spectacle-bows, machine for expanding	Sept. 15, 1857	VIII.
18682	Cummings, James G	Ploughs	Nov. 24, 1857	I.
18190	Cunningham, Robert P	Clocks	Dec. 22, 1857	VIII.
18891	Curtey, Edwin A	Tables, extension	Dec. 22, 1857	XVII.
	Currie, Horton, & Steffe, assignors to Church. (See Steffe, Horton, & Currie, assignors.)			
	Currie, John, *et al.* (See Steffe, Horton, & Currie.)			
18536	Currier, John W., and James M. Thompson	Curtain fixtures	Nov. 3, 1857	XVII.
16469	Currier, Lewis F	Hulling rice, machines for	Jan. 27, 1857	I
	Curry, Elias, and James Vandolah. (See Vandolah & Curry.)			

No.	Name of patentee.	Invention or discovery.	Date.	Class.
17728	Curtis, Amasa	Grain separators	July 7, 1857	XIII.
17425	Curtis, John J	Sawing machine, scroll	June 2, 1857	XIV.
17206	Curtis, Joseph T	Omnibus coffer	May 5, 1857	X.
16432	Cushing, E. G	Water-wheel, centre-vent	Jan. 20, 1857	XI.
17207	Cushing, E. G	Straw cutters	May 5, 1857	I.
16790	Cushman, Joseph	Wire-rope, machinery for making	Mar. 10, 1857	II.
18632	Cushman, Lewis H	Clothes-clamp	Nov. 17, 1857	XVII.
18137	Custer, Christian	Grain, &c., drying, machine for	Sept. 8, 1857	XIII.
16871	Custer, J. D	Lubricating under pressure, method of	Mar. 24, 1857	XII.
	Cutler, William D. (See Fuller, William S., assignor.)			
18840	Daggett, David P	Cultivators	Dec. 15, 1857	I.
18806	Dale, John D	Planing machine	Dec. 8, 1857	XIV.
16356	Dalton, Thomas L	Anchors	Jan. 6, 1857	VII.
17781	Dana, Charles H	Churns	July 14, 1857	I.
	Danner, John, *et al.* (See Miller & Kailey, assignors.)			
16355	Daniels, E	Tanning hides	Jan. 6, 1857	XVI.
17426	Daniels, Reuben	Water-wheel	June 2, 1857	XI.
18390	Daniels, Reuben	Harvesters	Oct. 13, 1857	I.
17873	Darby, George, and James E. Young	Planing machines, shell-roller bed for	July 28, 1857	XIV.
18327	Darling, Samuel	Squares, metallic, manufacture of	Oct. 6, 1857	VIII.
	Darling, Samuel, and William Strange. (See Strange & Darling.)			
16376	Davenport, Joseph T	Rails, fixed, arrangement of, as a substitute for railroad switches.	Jan. 13, 1857	IX.
16908	David, V. R	Lock	Mar. 31, 1857	II.
16956	Davidson, Charles H. and Herman E., assignors to Charles H. Davidson.	Syringe, enema	Mar. 31, 1857	XX.
	Davis, B., and A. A. Roberts. (See Roberts & Davis.)			
	Davis, George N., and Israel P. Nelson. (See Nelson, Israel P., assignor.)			
	Davis, George N., and Thomas J. Mayall. (See Mayall, Thomas J., assignor.)			
17919	Davis, J. A.	Stoves, coal	Aug. 4, 1857	V.
	Davis, James F., H. Twitchell, and D. R. Averill. (See Averill, D. R., assignor.)			
18960	Davis, John	Sawing hand-rails or stair-wreaths, machine for	Dec. 29, 1857	XIV.
16826	Davis, John C., and William Miller	Printing press, rotary	Mar. 17, 1857	XVIII.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
18423	Davis, Joseph, assignor to himself and Royal Southwick.	Carding-machines	Oct. 13, 1857	III.
18567	Davis, Merwin, assignor to Peter G. Bergen	Printing-presses	Nov. 3, 1857	XVIII.
16684	Davis, Rhoda	Cans and bottles, sealing, elastic cap for	Feb. 24, 1857	XVII.
17027	Davis, Robert W. and Daniel	Jack, lifting	April 14, 1857	XII.
18391	Davis, S. E	Twine-reels	Oct. 13, 1857	III.
	Davis, W., and James E. Serrell. (See Serrell & Davis.)			
16969	Davis, Washington F	Sails, reefing	April 7, 1857	VII.
18892	Day, J. C	Nut-machine	Dec. 22, 1857	II.
18683	Day, Joseph C	Boats, ferry, means for stopping and starting	Nov. 24, 1857	VII.
18576	Day, Justus	Beans, machine for pulling	Nov. 10, 1857	I.
18537	Day, Samuel S	Door-knobs, roses for	Nov. 3, 1857	II.
16626	Deacon, Edward, assignor to John Warrin	Fishing-rod reels	Feb. 10, 1857	XXII.
18088	Deal, Peter, and James Greenman	Staves, sawing, machine for	Sept. 1, 1857	XIV.
17540	Dean, Daniel H., assignor to Wm. T. Coggeshall	Grates, fire, or linings of fire pots	June 9, 1857	V.
17028	De Buffon, Benjamin N	Filtering liquids, apparatus for	April 14, 1857	XI.
16471	Decamp, Michael	Grain-separators	Jan. 27, 1857	XIII.
17081	Decker, John	Planters, hand seed	April 21, 1857	I.
18841	Decker, Levi	Billiard-table cushions	Dec. 15, 1857	XXII.
17029	De Forrest, T. B	India-rubber hose, machinery for manufacturing	April 14, 1857	IV.
	Degener, F. O., and George P. Gordon. (See Gordon and Degener.)			
18086	Degraw, Henry N	Bottles, washing, machine for	Sept. 1, 1857	XXII.
18501	Deihm, John R., and Jasper Snell	Coal, breaking, machines for	Oct. 27, 1857	V.
	Delany & Beesley, assignors to Cresson, Stuart, & Peterson. (See Beesley & Delany.)			
	Delany, E. J, and J. Beesley, assignors to Cresson, Stuart, & Peterson. (See Beesley & Delaney, assignors.)			
18030	De La Peyrouse, L. L. A. Elise, assignor to M. J. A. Guiet.	Tanning liquids	Aug. 18, 1857	IV.
18882	Demary, Newcomb, jr., assignor to James Yates	Snow-plough	Dec. 15, 1857	X.
18392	Deming, Timothy	Hones, artificial	Oct. 13, 1857	XV.
	Denn, Charles S., and Powell Griscom. (See Griscom & Denn.)			
16722	Dennis, Paul	Potato-diggers	Mar. 3, 1857	I.
16328	Derby, J. Perley	Studs, bosom	Jan. 6, 1857	XXI.
16533	Derby, John P	Shirt-bosom studs	Feb. 3, 1857	XXI.
16640	Derby, John P	Pins, bosom	Feb. 17, 1857	XXI.
16872	Derby, John P	Studs, shirt	Mar. 24, 1857	XXI.
16909	Derby, John P	Buttons, sleeve	Mar. 31, 1857	XXI.
	Derby, John P., and J. G. Brown. (See Brown & Derby.)			
16472	Derby, Lyman	Tailors' measures	Jan. 27, 1857	XXI.
16723	De Sendzimir, Joseph	Windwheels, method of suspending in self-revolving or adjusting frames.	Mar. 3, 1857	XI.
	De Vaughan, Samuel, and W. P. Wood. (See Hedge, assignor.)			
18040	Devlan, P. S	Brick-machines	Aug. 25, 1857	XV.
18807	Devlin, John	Sewing thimbles	Dec. 8, 1857	III.
18621	Dewey, H. N., assignor to B. L. Hill & Co	Quilting frame	Nov. 10, 1857	XVII.
16954	Dewey, Henry L., assignor to H. L. Dewey and L. W. Newton.	Plane-stocks, carpenters', machine for cutting the throats of	Mar. 31, 1857	XIV.
19005	De Witt, E. H., assignor to himself and Butler N. Strong.	Sawing-machines	Dec 29, 1857	XIV.
	De Witt, R. V., jr. (See Newbury, F. D., assignor.)			
919	Dexter, Henry, assignor to William Carleton	Statue of General Warren	Aug. 4, 1857	Design.
18502	De Yampert, T. J	Press, steam cotton	Oct. 27, 1857	XII.
16910	De Zeng, Henry L	Bullet-mould	Mar. 31, 1857	XIX.
18138	Dick, James M	Wheels, carriage, tires of, mode of tightening	Sept. 8, 1857	X.
18633	Dickson, Alexander	Washing-machine	Nov. 17, 1857	XVIII.
17960	Dillaway, Hiram	Glassware holders	Aug. 11, 1857	XV.
18139	Dillman, Andrew	Corn shellers	Sept. 8, 1857	I.
16377	Dimick, Horace E	Ordnance, rifling, mode of	Jan. 13, 1857	XIX.
17139	Diss, Leger	Locks	April 28, 1857	II.
	Dobyns, T. J. (See Silvey, Joseph C., assignor.)			
	Dodenhoff, I., and J. P. Green. (See Green and Dodenhoff.)			
17729	Dodenhoff, Israel	Harvesters, corn	July 7, 1857	I.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
18009	Dodenhoff, Israel	Harvesters, raking apparatus for	Aug. 18, 1857	I.
17730	Dodge, Joseph B	Window-frame box	July 7, 1857	IX.
17920	Dodge, Josiah	Cannon, mode of discharging	Aug. 4, 1857	XIX.
18087	Dodge, Levi	Hatchet-heads, swaging, machine for	Sept. 1, 1857	II.
16580	Dodson, Elisha B	Powder, gun	Feb. 10, 1857	IV.
18141	Dolph, George C	Mowing-machines	Sept. 8, 1857	I.
18538	Dolson, William H	Paints, oil, mixing and grinding, apparatus for	Nov. 3, 1857	IV.
18808	Doolittle, Zina	Hubs, boring machine for	Dec. 8, 1857	XIV.
18893	Doolittle, Zina	Carriage-hubs, band-portions of machine for turning.	Dec. 22, 1857	XIV.
18328	Dorr, Albert	Packing wool, machine for	Oct. 6, 1857	XII.
16907	Dorr, James A., Ira Hersey, and Edward G. Oldfield.	Brick-machines	Mar. 31, 1857	XV.
18658	Doster, Herman A., assignor to himself and Smith A. Skinner.	Husker, corn	Nov. 17, 1857	I.
	Doster, Herman A., *et al.* (See Skinner, Smith A.)			
18503	Doty, William	Fruit-gatherers	Oct 27, 1857	I.
17498	Dowd, Elihu	Grain-separators	June 9, 1857	XIII.
	Dougherty, H., and J. P. Miller. (See Miller and Dougherty.)			
	Douglas, A , jr., *et al.* (See Niles, Peter H.)			
17082	Douglas, Alexander	Bustles	April 21, 1857	XXI.
	Douglas, Alfred, jr. (See Peter H. Niles.)			
18961	Douglass, George	Car, railroad, or carriage springs	Dec. 29, 1857	X.
17605	Dow, George W., assignor to himself and Walter F. French.	Bed-bottom spring	June 16, 1857	XVII.
181	Doyle, Thomas J	Winnowers	Dec. 15, 1857	Add'l imp't.
17141	Drake, D. T	Mortising the stiles for blind slats, machine for	April 28, 1857	XIV.
	Drake, Flanders, and Fox. (See Flanders, Drake, and Fox.)			
	Draper, George, and W. W. Dutcher. (See Dutcher and Draper.)			
17320	Driggs, Spencer B	Piano-forte actions	May 19, 1857	XVIII.
17497	Driscoll, J. B	Roofing-machines	June 9, 1857	IX.
18424	Driver, Samuel, assignor to himself, Isaac V. Culin, and J. B. Sutherland.	Bomb-shell	Oct. 13, 1857	XIX.
17140	Dufresne, A. Henry	Steel and other metals, gilding and ornamenting	April 28, 1857	II.
18010	Dugdale, Edward	Furnaces, grate-bars of	Aug. 18, 1857	V.
17030	Dugdale, Thomas A	Washing-machines	April 14, 1857	XVII.
18720	Dugdale, Thomas A., assignor to himself and Geo. Taylor	Washing-machines	Nov. 24, 1857	XVII.
920	Dulley, J. J., and Russell Mann, assignors to Geo. W. Eddy.	Stoves	Aug. 4, 1857	Design.
17715	Dunbar, Robert, and John F. Robertson, assignors to the Buffalo Eagle Iron Works Company.	Capstans, ships'	June 30, 1857	VII.
18237	Dunham, Isaac A	Boot and shoe soles, edge-planes for trimming	Sept. 22, 1857	XVI.
18238	Dunham, John G	Reaping and mowing-machines	Sept. 22, 1857	I.
969	Dunklee, B. W	Stoves	Dec. 15, 1857	Design.
	Dunklee, Henry, and H. Kelsea. (See Kelsea, H., assignor.)			
16378	Dunkley, Joseph	Wind-wheels, automatic, regulator for	Jan. 13, 1857	XI.
486	Dunkley, Joseph	Wind-wheels, automatic, regulator for	Aug. 25, 1857	Reissue.
	Dunley, John, and Owen Collins. (See O'Brien, John, assignor.)			
17558	Dunning, D. S	Bed, invalid, elevators	June 16, 1857	XVII.
17321	Dupont, Lammot	Gunpowder	May 19, 1857	XIX.
16354	Durand, Francois	Looms	Jan. 6, 1857	III.
	Durgin, C. A., and Joseph Thomas. (See Thomas, Joseph, assignor.)			
	Durgin, Charles A., *et al.* (See La Baw, George W., assignor.)			
454	Dutcher, Warren W	Looms	April 21, 1857	Reissue.
17559	Dutcher, Warren W	Looms, roller-temple for	June 16, 1857	III.
17267	Dutcher, W. W., and George Draper	Looms, hook-temples for	May 12, 1857	III.
17496	Dutcher, William R	Rope-machines	June 9, 1857	III.
18577	Dwight, Timothy	Railways, rails for	Nov. 10, 1857	IX.
17673	Dyar, Harrison Gray	Telegraphs, electric	June 30, 1857	VIII.
16770	Dyar, Nathan A., assignor to N. A. Dyar and S. D. Woodbury.	Roofing-materials, mastic	Mar. 3, 1857	IX.
16379	Dyott, M. B	Lamps, fluid-burning	Jan. 13, 1857	V.
16473	Eads, James B	Blasting rocks under water, apparatus for	Jan. 27, 1857	IX.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
17500	Eames, Lovett	Hub-blocks for the lathe, machine for preparing	June 9, 1857	XIV.
18196	Earl, Charles H	Bridges	Sept. 15, 1857	IX.
18578	Eastman, J. L.	Locomotive boilers, attaching steam-gauges to	Nov. 10, 1857	VI.
17560	Eastman, Joseph L.	Gauge, pressure	June 16, 1857	VI.
17561	Eaton, A. K	Iron, cast, making malleable	June 16, 1857	II.
17562	Eaton, A. K.	Compound, depilating, for hides	June 16, 1857	IV.
17142	Eaton, Bowen	Steam-cylinders, arrangement of ports in	April 28, 1857	VI.
17208	Ebbert, Peter S	Locomotives, heating, feed-water apparatus of	May 5, 1857	VI.
18894	Eberly, David	Ploughs, shovel	Dec. 22, 1857	I.
	Eckler, Buswell, & Co. (See Pease, Henry, assignor.)			
	Eckler, Buswell, & Co. (See Pease, Henry, assignor.)			
	Eddy, George W. (See Dulley & Mann, assignors.)			
16357	Eddy, Henry	Stalls for horses, mode of constructing	Jan. 6, 1857	IX.
	Edgarton, H., and G. W. Walton. (See Walton & Edgarton.)			
17782	Edmonds, Alexander	Lathe, automatic	July 14, 1857	XIV.
16911	Edwards, Edwin	Shingle-machine, rotary	Mar. 31, 1857	XIV.
	Eggers, Selmar, and Julius Grudchos. (See Grudchos & Eggers.)			
16725	Eggleston, Philander	Sawing-mill, circular	Mar. 3, 1857	XIV.
16474	Eggleston, Jeresiah D.	Bee-hives, feed-boxes of	Jan. 27, 1857	I.
18895	Eiberweiser, John	Press, wine and cider	Dec. 22, 1857	XII.
18962	Eidlitz, Leopold	Safes, burglar-proof	Dec. 29, 1857	II.
16380	Eliaers, Augustus	Stair-cases	Jan. 13, 1857	IX.
18239	Eliaers, Augustus	Port-folio or music stands	Sept. 22, 1857	XVIII.
18721	Elliot, David, assignor to himself and Isaac White.	Washing-machine	Nov. 24, 1857	XVII.
16581	Elliot, William H.	Printing-stamp	Feb. 10, 1857	XVIII.
16593	Elliot, William H.	Valve-throttle of marine engines, arrangement of means for controlling the.	Feb. 10, 1857	VI.
16641	Elliot, William H.	Printing-stamp	Feb. 17, 1857	XVIII.
18963	Elliott, J. B.	Lightning-rods, devices for attaching	Dec. 29, 1857	VIII.
16953	Ellis, Joel A. H., assignor to Joel Woodbury as trustee.	Wooden slats, &c., form or mould on which, are made into baskets.	Mar. 31, 1857	XIV.
18970	Ellis, Joel A. H., assignor to Joel Woodbury as trustee.	Baskets, construction of	April 7, 1857	XXII.
16534	Ellis, Seth C.	Tenons on blind slats, machine for cutting	Feb. 3, 1857	XIV.
18276	Ellis, William M. and Jonas B.	Boilers, steam	Sept. 29, 1857	VI.
17366	Ellithorp, Solomon B.	Sewing-machines	May 26, 1857	III.
17032	Ells, Josiah	Fire-arms, revolving	April 14, 1857	XIX.
17143	Ells, Josiah	Fire-arms	April 28, 1857	XIX.
18140	Ells, J. W., and James Charlton	Planters, seed	Sept. 8, 1857	I.
18329	Ellsworth, Marcus E.	Reaping and mowing machines	Oct. 6, 1857	I.
	Ely, A. B. (See Whipple, Milton D., assignor.)			
	Ely, A. B. (See Whipple, Milton D., assignor.)			
	Ely, Alfred B. (See Whipple, Milton D., assignor.)			
17031	Emerson, James	Ship-sails, reefing	April 14, 1857	VII.
17367	Emerson, Ralph, jr.	Harvesting-machines, tongue and caster plate for	May 26, 1857	I.
17144	Emert, E.	Drills, seed	April 28, 1857	I.
17499	Emery, Charles E.	Printing-press, card	June 9, 1857	XVIII.
17731	Emery, William, jr.	Husking corn, machine for	July 7, 1857	I.
17620	Erdle, Jacob	Saw-set	June 23, 1857	XIV.
18684	Erdle, Jacob	Saws, filing, machine for	Nov. 24, 1857	II.
17921	Erdmann, John F. W.	Planes, smoothing, stock for	Aug. 4, 1857	XIV.
15329	Ernst, John G.	Fire-hook	Jan. 6, 1857	V.
17783	Espy, Mills B.	Cans, &c., bottles, device for sealing	July 14, 1857	XVII.
16873	Esterly, George	Harvesting-machines	Mar. 4, 1857	I.
16971	Esterly, George	Reaping-machines	April 7, 1857	I.
17209	Estlack, Thomas	Vessels, ice-cutting attachment to	May 5, 1857	VII.
	Eustis, Halvorson, Barker, and Athearu. (See Halvorson, Halvor.)			
17145	Evans, George M.	Planters, seed	April 28, 1857	I.
	Evans, Henry G. (See Chichester, Lewis S., assignor.)			
	Evans, Henry G. (See Chichester, Lewis S, assignor.)			
16724	Evans, James	Car-wheel, railway, making tire for	Mar 3, 1757	X.
18685	Evans, Stockton H., and L. Gentsch	Skates	Nov. 24, 1857	XXII.
17501	Evans, William	Melodeons	June 9, 1857	XVIII.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date	Class.
17563	Evarts, James M.	Screw-cutter	June 16, 1857	II.
	Everett, H., and C. L. Rehn. (See Rehn & Everett.)	Washing-machines	Aug. 25, 1857	XVII.
18041	Everitt, Hiram F.	Washing-machines	Aug. 25, 1857	XVII.
17621	Faas, Anthony	Baskets, fastening handles to	June 23, 1857	XXII.
17622	Fairbanks, Horatio	Burners, vapor	June 23, 1857	V.
18089	Fairbanks, Leonard O.	Saw-clamp	Sept. 1, 1857	XIV.
	Fairbanks, R. G., and S. R. Wilmot. (See Wilmot and Fairbanks.)			
18792	Fairbanks, S. D., assignor to himself and Charles H. Adams.	Knitting-machine	Dec. 1, 1857	III.
16381	Fairbanks, T.	Scales, platform	Jan. 13, 1857	XII.
445	Fairbanks, Thaddeus	Scales, platform	Mar. 31, 1857	Reissue.
18441	Falck, A. R. E., and Paul Stoerger	Leather, &c., striping, machine for	Oct. 20, 1857	XVI.
17322	Fallon, John	Printing-machines, calico, blanket for	May 19, 1857	XVIII.
	Farley, H. W., and J. H. Freeman, assignors. (See Freeman & Farley, assignors.)			
16828	Farmer, M. G., and A. F. Woodman	Telegraphic repeaters	Mar. 17, 1857	VIII.
	Farmer, Moses G., and William F. Channing. (See Channing & Farmer.)			
16535	Farnham, D. P.	Wells, raising water from, self-operating device for tilting buckets in.	Feb. 3, 1857	XI.
18042	Farrar, William B., and Jonathan H.	Tables, self-waiting	Aug. 25, 1857	XVII.
17874	Fay, Lucian	Roofs, sheet-metal, machine for seaming	July 28, 1857	IX.
17922	Fay, Lucius N., and William Mason	Window-blinds, mode of opening and closing	Aug. 4, 1857	IX.
17923	Fay, Lucius N., and William Mason	Window-blinds, slats of, device for operating	Aug. 4, 1857	IX.
17961	Fee, William R.	Hulling cotton seed, machines for	Aug. 11, 1857	I.
17953	Feger, D. H., assignor to himself and Daniel Shepherd.	Cars, railroad, pedestal for	Aug. 4, 1857	X.
	Felthousen, R. B., and William Gage. (See Gage & Felthousen.)			
	Felthousen, Richard B., and William Gage. (See Gage & Felthousen.)			
16791	Fenn, Dennis E.	Gates, farm, device for raising or lowering, to allow them to open over obstacles.	Mar. 10, 1857	IX.
17033	Fenn, William A.	Hats, felt, brims of, machines for forming the	April 14, 1857	III.
17083	Fenn, William A.	Hat-bodies, blocking, machines for	April 21, 1857	III.
18896	Fenner, Nicholas A.	Hinges, casting	Dec. 2, 1857	II.
	Ferguson, D. M., and G. L. Kelty. (See Lloyd, Daniel, assignor.)			
	Ferguson, E. L., and L. B. Clark. (See Clark, Benjamin, assignor.)			
17323	Ferguson, Levi	Looms, shuttle, motion for	May 19, 1857	III.
17924	Ferguson, Robert	Boilers, steam	Aug. 4, 1857	VI.
18539	Ferguson, Robert	Vessels, unloading, apparatus for	Nov. 3 1857	VII.
16320	Fernald, James	Filters, method of attaching, to supply-pipes	Jan. 6, 1857	XI.
17829	Ferry, William M., jr.	Sawing-mill	July 21, 1857	XIV.
18793	Fetter, George, assignor to himself and Edward Jones	Sewing-machines	Dec. 1, 1857	III.
17146	Field, Charles H.	Engraving designs on watch and locket cases, &c., machine for.	April 28, 1857	XVIII.
16792	Field, Edmund	Key-holes, escutcheon for	Mar. 10, 1857	II.
16827	Field, George B. and Benjamin F.	Walls of buildings, mode of veneering the	Mar. 17, 1857	IX.
16536	Fields, W., and S. Gerhard	Hydrant	Feb. 3, 1857	XI.
	Filley, Newberry, & Co. (See Vedder, N. S., assignor.)			
16728	Fink, Albert	Bridge-trusses	Mar. 3, 1857	IX.
16382	Finkle, Milton	Sewing-machines	Jan. 13, 1857	III.
	Fish, Henry D., and A. Holbrook. (See Holbrook & Fish.)			
17784	Fisher, Adam	Washing-machines	July 14, 1857	XVII.
17368	Fisher, Chandler	Curtain-rollers	May 26, 1857	XVII.
17962	Fisher, Lewis	Water-closets	Aug. 11, 1857	IX.
18580	Fisher, Samuel	Stoves for burning tan, sawdust, &c.	Nov. 10, 1857	V.
	Fiske, Orin W. (See Weeks, Asa, assignor.)			
16383	Fitch, Sanford E., and Theodore Sharp	Mill, grinding, flour-bolt as applied to	Jan. 13, 1857	XII.
17963	Fitts, Benaiah	Planing-machines, arrangement of feed-rollers for	Aug. 11, 1857	XIV.
17324	Fitts, Bradley	Violins	May 19, 1857	XVIII.
	Fitts, Robert B. (See Mihan, Patrick, assignor.)			
	Fitts, Robert B. (See Mihan, Patrick, assignor.)			

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
17270	Fitzgerald, Daniel	Houses, portable, mode of constructing	May 12, 1857	IX.
	Flanders, A., and A. M. Gould. (See Gould & Flanders.)			
18394	Flanders, Wooster A., and James B. Drake, and A. M. Fox.	Saw-mill	Oct. 13, 1857	XIV.
16358	Fletcher, Robert H	Valves, slide, of steam-engines, operating	Jan. 6, 1857	VI.
18197	Fletcher, Robert H	Valves of steam-engines, operating	Sept. 15, 1857	VI.
18240	Flowers, Andrew B. J	Harvesters	Sept. 22, 1857	I.
17854	Floyd, James R., assignor to Theodore C. Kibbe	Retort-covers	July 21, 1857	IV.
16671	Floyd, Thomas, assignor to T. Floyd and G. H. Merklein.	Sash-fastener	Feb. 17, 1857	II.
	Floyd, William, and John Tilton. (See Tilton & Floyd.)			
17034	Focht, George	Bucket, hoisting, for coal, &c	April 14, 1857	XII.
18540	Focht, George	Hoisting-buckets	Nov. 3, 1857	XII.
18277	Folwell, John T	Jewelry, fastenings for	Sept. 29, 1857	XVIII.
	Forbush, M. A., and George Crompton. (See Crompton, William, assignor.)			
	Force, D. N., and D. E. Rugg. (See Rugg, Datus E., assignor.)			
	Force, D. N., and S. W. Warren. (See Warren, S. W., assignor.)			
18686	Ford, Elias T	Harvester rake	Nov. 24, 1857	I.
17785	Ford, William P	Mattresses	July 14, 1857	XVII.
	Fordyce, John, and George Hall. (See Hall & Fordyce.)			
18442	Forney, D. P	Cultivators, cotton	Oct. 20, 1857	I.
18330	Forshee, William J	Cultivators	Oct. 6, 1857	I.
17925	Forsythe, F. R	Cultivator-teeth	Aug. 4, 1857	I.
18090	Foster, Elbridge	Life-preserving berths for steam and other vessels	Sept. 1, 1857	VII.
943	Foster, George B	Gas-burners, shade for	Sept. 22, 1857	Design.
16537	Foster, George P	Forging gun-lock springs	Feb. 3, 1857	II.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
18842	Foster, Isaac C	Water, lifting, machinery for	Dec. 15, 1857	XI.
18443	Foster, J. T	Sawing-machine	Oct. 20, 1857	XIV.
16874	Foster, J. T., J. J. Banta, and J. H. Banta	Doors, windows, &c., weather-strips for	Mar. 24, 1857	IX.
16972	Foster, J. T., J. J. Banta, and J. H. Banta	Chairs, sofas, and other articles, forming spiral springs for.	April 7, 1857	XVII.
18832	Foster, James D., and H. C. Foster, and John Q. Miller.	Boats, ice-breaking	Dec. 8, 1857	VII.
16860	Foster, John T., and Jacob J. Banta, assignors to themselves and James H. Banta.	Gun, muzzle-loading, piston for	Mar. 17, 1857	XIX.
16672	Foster, Junius, assignor to J. Herbold, George Kuhn, and Junius Foster.	File-machine	Feb. 17, 1857	XV.
16775	Foster, Junius, assignor to Herbold, George Kuhn, and Junius Foster.	Iron, swaging, machine for	Mar. 3, 1857	II.
18659	Fountain, James L., assignor to himself, L. J. Clark, B. McKenney, and C. M. Fountain.	Harvesters, cutting apparatus for	Nov. 17, 1857	I.
	Fournier, F. B. (See Kinman & Fournier, assignors.)			
18425	Fournier, F. B., and D. Hinman, assignors to themselves and I. Munroe.	Boilers, steam, water-indicator for	Oct. 13, 1857	VI.
17084	Fowler, Henry W	Rope, making, machines for	April 21, 1857	III.
16475	Fowler, Henry A	Hames, fastenings for	Jan. 27, 1857	XVI.
18043	Fowler, Thaddeus	Pin-sticking machine	Aug. 25, 1857	II.
18831	Fowler, Thaddeus, assignor to the American Pin Company.	Pins-sticking machine	Dec. 8, 1857	II.
	Fox, Flanders, & Drake. (See Flanders, Drake, & Fox.)			
16726	Frampton, James H	Harvesting standing corn, machines for	Mar. 3, 1857	I.
18504	Francis, Samuel W	Printing-machine	Oct. 27, 1857	XVIII.
	Francisco & Weimer. (See Weimer & Francisco.)			
18579	Franklin, Albert	Seeding-machines	Nov. 10, 1857	I.
17786	Franklin, Alvin	Planters, corn	July 14, 1857	I.
17268	Frazer, Kasson	Bridle-bits, connecting the cheek piece to the mouth piece of, method of.	May 12, 1857	XVI.
18734	Frederick, Abram C	Mechanical movements for regulating the action of a fly-wheel on the working parts of machinery connected with it.	Dec. 1, 1857	XIII.
18174	Freeman, Edmund L., assignor to himself and J. and G. Lord & Co.	Cultivator-teeth	Sept. 8, 1857	I.
18505	French, A. J. and J. A	Corn, ears of, severing from the stalks, machines for.	Oct. 27, 1857	I.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
16829	French, E. F	Bill-holder	Mar. 17, 1857	XVIII.
17269	French, E. F	Corn-huskers	May 12, 1857	I.
	French, Walter F., and G. W. Dow. (See Dow, G W., assignor.)			
	Frisbee, Joseph B., and F. S. Brettell. (See Brettell & Frisbee.)			
16913	Frye, Jesse	Ploughs, prairie	Mar. 31, 1857	I.
16912	Frye, Jesse	Plough, gang	Mar. 31, 1857	I.
17010	Fuller, William S, assignor to William D. Cutler	Fences, iron, method of constructing	April 7, 1857	IX.
16727	Fulton, James	Chronometer-escapements	Mar. 3, 1857	VIII.
16973	Fuzzard, William	Hat-bodies, felting, machines for	April 7, 1857	III.
18444	Gaar, Abram	Grain-separators, screens for	Oct. 20, 1857	XIII.
17564	Gage, Charles W	Butter-workers	June 16, 1857	I.
17732	Gage, William, and R. B. Felthousen	Core, dry sand	July 7, 1857	II.
18964	Gage, William, and R. B. Felthousen	Cores, dry sand	Dec. 29, 1857	II.
18581	Gaget, A. A	Music, &c., apparatus for holding	Nov. 10, 1857	XVIII.
	Galbraith & Cassell. (See Vedder, N. S., assignor.)			
	Galbreath, John H. (See Justice & Galbreath.)			
17964	Gale, Alanson	Mowing-machines	Aug. 11, 1857	I.
17885	Gale, W. S., assignor to Peter Poillon	Steam-tight, means for rendering joints	July 21, 1857	VI.
17733	Gallager, Mahlon J	Gun-locks, self-priming	July 7, 1857	XIX.
17271	Gallagher, C. B	Engines, steam, semi-rotative	May 12, 1857	VI.
888	Gallaher, John S., jr	Churns, egg-beaters, &c	May 19, 1857	Design.
18965	Galusha, W. M., and D. W. Safford	Wash-boards	Dec. 29, 1857	XVII.
509	Gambrill, H. N., and S. F. Burgee	Carding-machines	Nov. 17, 1857	Reissue.
18124	Gambrill, Horatio N., and Singleton F. Burgee	Carding-engines	Sept. 1, 1857	III.
17830	Gamotis, Laurent, and Sabin Martin	Acid sulphite of lime, apparatus for making	July 21, 1857	IV
	Grantz, Bernhard, & Hendermeyer. (See Bernhard, Joseph, assignor.)			
16794	Gardiner, Perry G	Steel-plates, machine for shearing	Mar. 10, 1857	II.
16793	Gardiner, Perry G	Steel-springs, coiling, machine for	Mar. 10, 1857	II.
16915	Gardiner, Perry G	Car-springs, railway, machine for creasing plates for	Mar. 31, 1857	X.
16916	Gardiner, Perry G	Car-springs, railway, from mandrel, machine for disengaging.	Mar. 31, 1857	X.
18945	Gardiner, Samuel, jr	Gas, mode of lighting, by electricity	Dec. 22, 1857	V.
17502	Gardiner, Smith	Nails, wrought, machine for making	June 9, 1857	II.
18120	Gardner, Eleazar S., assignor to Smith, Gould, & Co.	Lathes, sliding-rest for	Sept. 1, 1857	XIV.
	Gardner, G. A. (See Hope, John D., assignor.)			
	Gardner, George A. (See Jenks & Gardner, assignors.)			
	Gardner, George A. (See Lemuel P. Jenks, assignor.)			
18538	Gardner, G. W	Stove-grates, shaker-bars of	Feb. 3, 1857	V.
	Gardner, Henry F., *et al.* (See Willmott, William W., assignor.)			
18541	Gardner, John	Candy-twisting machine	Nov. 3, 1857	XXII.
16675	Garlick, C. P., and M. G. Blackstone	Fences, field, the panels of, mode of securing to each other.	Feb. 17, 1857	IX.
17210	Garlick, Isaac D	Fences, portable field, panels of, method of uniting and sustaining the.	May 5, 1857	IX.
16946	Garlick, John T	Bedsteads and sofas, life-preserving	Mar. 31, 1857	XVII.
17211	Garlington, Thomas C	Ploughs	May 5, 1857	I.
17272	Garvey, Benjamin	Sewing, needles for	May 12, 1857	III.
18687	Gass, Jacob, assignor to himself and George Mowton.	Coal, slating, machines for	Nov. 24, 1857	V.
16539	Gaston, J. C	Sewing grain and fertilizers, machines for	Feb. 3, 1857	I.
17674	Gates, Asa D	Gas-burners	June 30, 1857	V.
17325	Gates, J. R	Grain, cleaning, machines for	May 19, 1857	XIII.
	Gates, James W. (See John W. Perry, assignor.)			
16331	Gates, Russell W	Tire, upsetting, machine for	Jan. 6, 1857	II.
16476	Gatting, Richard J	Fallowing land, machines for	Jan. 27, 1857	I.
	Gattman, Isaac. (See Monnier, Alfred, assignor.)			
18794	Gattman, Isaac, assignor to himself and J. & D. E. Breinig.	Paint, vehicle	Dec. 1, 1857	IV
	Gault, John, and Joshua Gray. (See Joshua Gray, assignor.)			
18011	Gaylord, E. L	Metal plates, machine for bending	Aug. 18, 1857	II.
18542	Gaylord, E. L	Metal plates, machine for bending	Nov. 3, 1857	II.
16366	Gedney, G. W. B	Pumps	Jan. 6, 1857	XI.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
494	Gee, William V., assignor to the Atwater and Bristol Manufacturing Company, assignors to the Nashawannuck Manufacturing Company.	Looms	Sept. 15, 1857	Reissue.
420	Geinsendorff, G. W. and J. C.	Axle-box rollers	Jan. 13, 1857	Reissue.
18735	Geiss, Jacob, and Jacob Brosius	Seeding-machines	Dec. 1, 1857	I.
16477	Genhart, Henrich	Fire-arms, repeating	Jan. 27, 1857	XIX.
	Gentsch, L., and Stockton L. Evans. (See Evans and Gentsch.)			
18331	George, A. M	Huskers, corn	Oct. 6, 1857	I.
	George, A. M, and E. W. Scott (See Scott and George.)			
	Gerhard, S., and W. Fields. (See Fields and Gerhard.)			
18332	Gerrish, Harlan P.	Husker, corn	Oct. 6, 1857	I.
16685	Gesner, Ernest	Cloth, napping, gig-mills for	Feb. 24, 1857	III.
18044	Getty, Henry	Berths, ships'	Aug. 25, 1857	VII.
18091	Getty, Henry	Faucets, device for locking	Sept. 1, 1857	XI.
18241	Gibbs, Edmund	Steam-heating apparatus	Sept. 22, 1857	V.
16434	Gibbs, James E. A	Sewing-machines	Jan. 20, 1857	III.
16642	Gibbs, James E. A	Bench-clamp, carpenters'	Feb. 17, 1857	XIV.
16914	Gibbs, James E. A	Sewing-machines	Mar. 31, 1857	III.
17427	Gibbs, James E. A	Sewing-machines	June 2, 1857	III.
18739	Gibbs, Joshua	Cultivators	Dec. 1, 1857	I.
895	Gibbs, S. W	Stoves	June 16, 1857	Design.
899	Gibbs, S. W., assignor to North, Chase, & North	Stoves, cooking	June 23, 1857	Design.
908	Gibbs, S. W., assignor to Rathbone & Co. (A)	Stoves	July 7, 1857	Design.
906	Gibbs, S. W, assignor to Rathbone & Co. (B)	Stoves	July 7, 1857	Design.
907	Gibbs, S. W., assignor to Rathbone & Co. (D)	Stoves	July 7, 1857	Design.
912	Gibbs, S. W., assignor to Rathbone & Co. (C)	Stoves	July 7, 1857	Design.
913	Gibbs, S. W, assignor to Rathbone & Co. (E)	Stoves	July 14, 1857	Design.
941	Gibbs, S. W., assignor to Winne & Abeel	Stoves, sad-iron	Sept. 8, 1857	Design.
921	Gibbs, S. W., assignor to Young & Brother	Stoves	Aug. 4, 1857	Design.
	Gibbs, Volney, and Rockwell Hazen. (See Hazen & Gibbs.)			
18809	Gibson, Abram J	Life-preservers	Dec. 8, 1857	VII
	Gibson, William L. (See Stevens, Lafayette.)			
	Gibson, William L (See Stevens, Lafayette, assignor.)			
	Gilbert, Charles. (See Maguire, Read & Wright, assignors.)			
18142	Gilbert, Joseph G	Lamps, vapor	Sept. 8, 1857	V.
18242	Gilbert, Philander	Wagons, loading logs on, apparatus for	Sept. 22, 1857	X.
16974	Gilbert, Richard	Pumps, rotary	April 7, 1857	XI.
16830	Giles, Alonzo M	Gas-generators	Mar. 17, 1857	IV.
16426	Gill, Ira, assignor to Ira Gill and Elbridge Brown.	Hat-bodies, machinery for forming	Jan. 13, 1857	III.
17326	Gill, W. Y	Mill-stones, redressing, machines for	May 19, 1857	XIII.
18333	Gill, W. Y	Planters, seed	Oct. 6, 1857	I.
18198	Gillett, George	Easels, painters'	Sept. 15, 1857	XVIII.
18354	Gilman, Jesse	Sawing shingles, machine for	Oct. 6, 1857	XIV.
17085	Gilmour, George	Shackle-blocks, messenger	April 21, 1857	VII.
16821	Gilmour, George, assignor to George Gilmour and H R. Clinkard.	Anchor, second shackle	Mar. 10, 1857	VII.
17965	Gilstrap, Jesse M.	Plane-bit, machine for whetting	Aug. 11, 1857	XIV.
18487	Gitchell, D. W., and L. W. Badger, assignor to Seamless Garment Manufacturing Company.	Felt-garments, seamless, manufacturing	Oct. 20, 1857	III.
17541	Gladwin, Porter A., assignor to himself and Thos. F. Caldicott.	Plane, hand, tonguing and grooving	June 9, 1857	XIV.
17831	Glascock, James B	Harrows, rotating	July 21, 1857	I.
17035	Gleason, E. P	Gas-burners	April 14, 1857	V.
18740	Gleason, Edward	Castors, bottle, revolving	Dec. 1, 1857	XVII.
17734	Glover, Almon B	Nuts, tapping, machine for	July 7, 1857	II.
	Glover, David, and E. Borda. (See Borda & Glover.)			
18741	Glover, Joseph H	Mill-stones, balance irons for	Dec. 7, 1857	XIII.
16831	Goddard, Kingston	Hinge	Mar. 17, 1857	II.
17147	Goddard, Kingston	Ink-stands	April 28, 1857	XVIII.
179	Goddard, Kingston	Ink-stands	Nov. 3, 1857	Add. imp't.
18583	Godfrey, B. D.	Boots and shoes, water-proof soles and heels for	Nov. 10, 1857	XVI.
16583	Godfrey, E K	Razor-strops	Feb. 10, 1857	XXI.
18012	Godley, Sidney	Stoves, cooking	Aug. 18, 1857	V.
17735	Going, Stephen	Joiner's ploughs, device for securing the stock to the guide rods of.	July 7, 1857	XIV.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
18810	Goldsmith, H.	Piano-fortes	Dec. 8, 1857	XVIII.
18199	Gomez, Edwin, and William Mills	Compositions, safety-fuse	Sept. 15, 1857	IV.
17736	Goodell, Joseph H	Veneers, machines for straightening	July 7, 1857	XIV.
18543	Goodin, James, jr	Iron, smoothing	Nov. 3, 1857	XVII.
18013	Goodman, Charles S.	Skirts, ladies', hoops for	Aug. 18, 1857	XXI.
	Goodspeed, Sawin, & Minott. (See Sawin, Goodspeed, & Minott.)			
16729	Goodwin, Firman	Planters, seed	Mar. 3, 1857	I.
18582	Goodwin, Firman	Fruit-gatherers	Nov. 10, 1857	I.
	Goodwin, J. W., M. C. Hawkins, and J. Cummings. (See Hawkins, Goodwin, & Cummings)			
18545	Gordon, George P.	Printing-presses	Nov. 3, 1857	XVIII.
17565	Gordon, George P., and Frederick O. Degener	Motion for preserving rolling contact, &c.	June 16, 1857	XIII.
16478	Gordon, James W. W	Vaccinating instrument	Jan. 27, 1857	XX.
16479	Gordon, James W. W	Lancet, spring	Jan. 27, 1857	XX.
	Gore, David, and Samuel L. Kingston. (See Kingston & Gore.)			
17212	Gorham, Jackson	Ploughs, construction of	May 5, 1857	I.
18544	Gorham, Jackson	Violin attachment	Nov. 3, 1857	XVIII.
	Goss, Charles H., and Heber G. Seekins. (See Seekins & Goss.)			
	Gould, Smith, & Co. (See Gardner, E. S., assignor.)			
18334	Gould, A. M , and A. Flanders	Planters, seed	Oct. 6, 1857	I.
17273	Gould, John C	Nail-plate feeder	May 12, 1857	II.
18584	Gould, Samuel A	Husker, corn	Nov. 10, 1857	I.
16437	Goulding, John	Carpet and rugs, double pile, manufacture of	Jan. 20, 1857	III.
17966	Gowdy, J. B., and J. A. Welsh	Hominy-mills	Aug. 11, 1857	XIII.
18447	Graham, Alden	Husker, corn	Oct. 20, 1857	I.
17875	Graham, Henry H	Spark-arresters	July 28, 1857	VI.
18736	Granberg, C. P	Harvesters, rake for	Dec. 1, 1857	I.
18737	Granger, R. D	Stoves, cooking	Dec. 1, 1857	V.
18200	Grant, John C	Window-sash, mode of operating	Sept. 15, 1857	IX.
16480	Grant, Robert	Process for making illuminating gas	Jan. 27, 1857	IV.
17967	Graves, Nathaniel S	Curtain fixtures	Aug. 11, 1857	XVII.
	Gray, Andrew B. (See Kennish, William, assignor.)			
16333	Gray, Andrew B., and Alexander H. Brown	Vessels, velocimeters for	Jan. 6, 1857	VII.
	Gray, George F., and W.W. Messer. (See Coburn, Francis S.)			
17213	Gray, Horace	Engines, locomotive	May 5, 1857	VI.
16832	Gray, James A	Piano-forte action	Mar. 17, 1857	XVIII.
18446	Gray, John R	Ploughs, steam	Oct. 20, 1857	I.
18689	Gray, Joseph	Ditching, &c., levelling instrument for	Nov. 24, 1857	IX.
16566	Gray, Joshua, assignor to Joshua Gray and John Gault.	Sewing-machines	Feb. 3, 1857	III.
17926	Gray, William H	Looms, power, let-off motion of	Aug. 4, 1857	III.
	Green & Wilson. (See Wilson, James, C. Green and W. Wilson, jr.)			
	Green, Wilson, & Wilson. (See Wilson, William, jr., assignor)			
16332	Green, Charles	Mortising-machine	Jan. 6, 1857	XIV.
	Green, Hatsel P. (See Burditt & Green.)			
17088	Green, J. P., and T. Dodenhoff	Harvesting-machines, automatic rakes for	April 21, 1857	I.
16541	Green, Jacob	Furnaces, puddling	Feb. 3, 1857	II.
16540	Green, Oliver C	Drills, seed	Feb. 3, 1857	I.
18688	Green, Oliver C	Drills, seed, measuring apparatus of	Nov. 24, 1857	I.
17089	Green, Plymon B.	Planters, hand seed	April 21, 1857	I.
17086	Greene, Charles A	Lamps, burners of fluid-burning	April 21, 1857	V.
18143	Greene, J. Durell	Cartridges for breech loading fire-arms	Sept. 8, 1857	XIX.
18634	Greene, J. Durell	Fire-arms, breech-loading	Nov. 17, 1857	XIX.
16348	Greene, Joseph D., and Edward Ivens, assignors to Joseph D. Greene.	Furnaces, air-heating	Jan. 6, 1857	V.
17087	Greenhalgh, James, sr	Tea kettles, &c	April 21, 1857	XVII.
	Greenman, James, and P. Deal. (See Deal & Greenman.)			
	Greenwood, M., & Co. (See Meyer, Julius, assignor.)			
	Greenwood, M., & Co (See Meyer, Julius, assignor.)			

Patentees of inventions and designs, 1857.

No.	Name of Patentee.	Invention or discovery.	Date.	Class.
	Greer, D. S, and Jacob Boyer. (See Boyer & Greer.)			
16435	Gregg, George	Sawing-machine	Jan. 20, 1857	XIV.
	Gregory, I. W., *et al.* (See Watson, W. C., assignor)			
	Gregory, Ira W, *et al.* (See Watson, William C, assignor.)			
17428	Griffen, Isaac	Potato-diggers	June 2, 1857	I.
18738	Griffen, John	Rolling beams, pile for	Dec. 1, 1857	II.
18897	Griffith, B. L	Boilers, steam, arrangement of air tubes in fire-boxes of.	Dec. 22, 1857	VI.
17016	Griffiths, Robert	Propellers	April 14, 1857	VII.
18966	Griggs, George S	Locomotive engine wheels	Dec. 29, 1857	VI.
18883	Griggs, George S., assignor to himself and William A. Bullard.	Furnaces, locomotive	Dec. 15, 1857	V.
18445	Grinnell, Benjamin F	Wristband-fasteners	Oct. 20, 1857	XXI.
18635	Griscom, Powell, and Charles S. Denn	Kilns, lime	Nov. 17, 1857	XV.
16875	Griswold, George W	Pumps, rotary	Mar. 24, 1857	IX.
430	Griswold, V. W	Photographic pictures, bituminous ground for	Feb. 24, 1857	Reissue.
17036	Gritzner, M. C, assignor to M. J. Gritzner	Printing-press, engraved plate	April 14, 1857	XVIII.
16643	Gross, A. P	Saws, circular, device for allowing, to play laterally, independently of their shafts.	Feb. 17, 1857	XIV.
18636	Gross, Henry	Tables, extension	Nov. 17, 1857	XVII.
18335	Grover, Manassah	Ploughs	Oct. 6, 1857	I.
17995	Grover, Manassah, assignor to himself and H. H. Seely.	Mills, winnowing	Aug. 11, 1857	XII.
17370	Grudchos, Julius, and Selmar Eggers	Bomb-lance	May 26, 1857	XIX.
18448	Guard, Chauncey H	Wheelwright-machine	Oct. 20, 1857	X.
	Guernsey, Samuel B. (See Wilmot, Samuel R.)			
	Guiet, M. J. A. (See Lippman, Isaie, assignor.)			
	Guiet, M. J. A. (See De La Peyrouse, L. L. A. Elise, assignor.)			

17787	Guile, Ezekiel	Rope-machines	July 14, 1857	III.
465	Guion, Peter C	Cowl or draught-accelerator for steamers	May 26, 1857	Reissue.
17927	Gumaer, Samuel	Harvesters	Aug. 4, 1857	I.
18690	Gundlach, Philip M	Drills, seed	Nov. 24, 1857	I.
17369	Guseman, W. D	Wagon-couplings	May 26, 1857	X.
16673	Gusman, Lewis B., assignor to L. B. Gusman and H. W. and H. Safford.	Curtain fixtures	Feb. 17, 1857	XVII.
17623	Gustine, Francis	Engine, &c, steam, vane governor for	June 23, 1857	VI.
17148	Haasz, Daniel F	Pianos, grand action for	April 28, 1857	XVIII.
17371	Hackett, Joseph	Stoves, cooking	May 26, 1857	V.
17570	Hackman, Henry, jr	Traps, animal	June 16, 1857	XXII.
17037	Haering, Robert	India rubber, vulcanizing	April 14, 1857	IV.
17214	Haering, Robert	Gutta percha, process for purifying	May 5, 1857	IV.
16543	Hagaman, Washington G	Hat-bodies, felt, machines for forming	Feb. 3, 1857	III.
18145	Haines, Joel	Planters, hand seed	Sept. 8, 1857	I.
18843	Haines, Joseph C	Planters, seed, tubes for	Dec. 15, 1857	I.
17429	Haldeman, D	Sowing seed broadcast, machines for	June 2, 1857	I.
16644	Hale, Moses H., and Samuel Horton	Chimney-cowl	Feb. 17, 1857	V.
17216	Hale, Robert	Belting, India rubber, machine for making	May 5, 1857	XIII.
17215	Hale, Robert	Locomotives, exhaust of, means for directing	May 5, 1857	VI.
17675	Hale, Robert	Steam, oily particles held in suspension by, apparatus for separating the.	June 30, 1857	VI.
	Hale, Robert. (See Kimball, John, assignor.)			
	Hall & Sawyer. (See Cox, Samuel A., deceased, assignor)			
17038	Hall, Alexander	Bit, expansion	April 14, 1857	XIV.
18587	Hall, David E	Cultivators	Nov. 10, 1857	I.
16542	Hall, George	Sowing seed broadcast, machines for	Feb. 3, 1857	I.
18967	Hall, George	Sawing shingles, machine for	Dec. 29, 1857	XIV.
18898	Hall, George, and John Fordyce	Washing-machine	Dec. 22, 1857	XVII.
18844	Hall, Harvey	Mill, corn and cob	Dec. 15, 1857	XIII.
18970	Hall, James	Tool for turning journals	Dec. 29, 1857	II.
16438	Hall, John B	Photographic pictures, treating	Jan. 20, 1857	XVIII.
17091	Hall, John M	Cultivator, cotton	April 21, 1857	I.
16919	Hall, John S	Carriage, steam	Mar. 31, 1857	X.
17430	Hall, John S	Ploughs	June 2, 1857	I.
17833	Hall, Jonathan	Planing-machines, &c., feed rollers for	July 21, 1857	XIV.
18393	Hall, Joseph	Planters, seed	Oct. 13, 1857	I.
18243	Hall, Joseph L	Locks	Sept. 22, 1857	II.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
18395	Hall, Joshua E	Barns, stables, &c., apparatus for, for rescuing horses and other stock from fire.	Oct. 13, 1857	IX.
16481	Hall, Samuel	Metal, sheet, cutting	Jan. 27, 1857	II.
18311	Hall, Samuel	Metallic bars, machine for cutting	Oct. 8, 1857	II.
	Hall, Samuel, and Edward Paye. (See Paye & Hall.)			
17928	Halliwell, William, and Levi Osborn	File-cutting machine	Aug 4, 1857	II.
17090	Halsey, James O	Gas, illuminating, portable, apparatus for generating	April 21, 1857	IV.
16951	Halstead, C. J., and J. Coeyman, assignors to Deckers, Godin, & Halsted.	Gas-regulator	Mar. 31, 1857	IV.
17181	Halvorson, Halvor, assignor to himself, E. H. Barker, J. F. Athearu, and William T. Eustis.	Oils, purifying	April 28, 1857	IV.
16384	Hamblen, Lewis A	Lamps, locomotive	Jan. 13, 1857	V.
	Hamblin & Johnson. (See Johnson, Charles H., assignor.)			
	Hamblin & Johnson. (See Johnson, Charles H., assignor.)			
18637	Hamer, W. W	Mill, grinding, flour distributing bolt for	Nov. 17, 1857	XIII.
17624	Hamilton, Edward	Valvular arrangement for faucets, &c	June 23, 1857	XI.
18201	Hammer, A	Breweries, cooler for	Sept. 15, 1857	IV.
17672	Hammer, Adolph	Steam boiling apparatus	May 26, 1857	VI.
17968	Hammer, Adolph	Brewer's boiler	Aug 11, 1857	IV.
17676	Hammond, Henry D	Harvesters	June 30, 1857	I.
18045	Hammond, William M	Washing-machines	Aug. 25, 1857	XVII.
17092	Hampton, Wade W	Hemp-brakes	April 21, 1857	III.
16975	Hanchett, James H	Wheel, current and paddle	April 7, 1857	XI.
18449	Hand, Thomas B	Gates, farm, mode of closing	Oct. 20, 1857	IX.
18969	Handcock, Armigel W	Vessels, mooring	Dec. 29, 1857	VII.
17952	Hankey, Anthony, and Francis Stiles, jr., assignors to themselves and Frederick S. Taylor.	Knives, grinding, machine for	Aug. 4, 1857	II.
18845	Hanley, James	Sewing and other machines, mechanical movement for	Dec. 15, 1857	III.
	Hanney, P., *et al.* (See Smith, Wm. M., assignor.)			

No.	Name of patentee.	Invention or discovery.	Date.	Class.
1[illegible]44	Hannen, Henry	Process of making white lead	Sept. 22, 1857	IV.
	Hanson, Smith, & Richardson. (See Smith, Hanson, & Richardson.)			
16686	Hanson, Thomas	Water, supplying the upper stories of houses with, apparatus for.	Feb. 24, 1857	XI.
16544	Hansor, James	Gas-generating apparatus	Feb. 3, 1857	IV.
16591	Hansor, James	Gas-making process	Feb. 10, 1857	IV.
17546	Harbour, R. R	Brick-presses	June 9, 1857	XV.
17274	Hardeman, J. L	Hemp-brakes	May 12, 1857	III.
18638	Hardeman, John L	Hemp-cutter	Nov. 17, 1857	III.
18899	Hardenberg, Jacob E	Potato-diggers	Dec. 22, 1857	I.
18336	Hardin, A. J	Ploughs, hill-side	Oct. 6, 1857	I.
16835	Hardin, Ancel J	Trusses, hernial	Mar. 17, 1857	XX.
17431	Harding, F. G	Block for blacking boots and shoes	June 2, 1857	XXII.
	Harding, Thomas, and J. W. Brokaw, assignors. (See Brokaw & Harding, assignors.)			
17350	Harding, Thomas, assignor to Warder, Brokaw, & Child.	Mowing-machines	May 19, 1857	I.
16334	Hardy, Anson	Shears, rotary	Jan. 6, 1857	II.
18506	Hardy, Anson, and George A. Rollins	Shears, rotary	Oct. 27, 1857	II.
16918	Harmon, J. W	Composition for floor-cloths	Mar. 31, 1857	IV.
18279	Harmon, Joseph W	Oils, factitious	Sept. 29, 1857	IV.
16582	Harnist, Peter	Reapers, raking, attachment for	Feb. 10, 1857	I.
	Harper, S., *et al.* (See Olendorf, Tripp, & Harper.)			
17677	Harpold, Henry	Saw-mills, adjustable fender-posts for	June 30, 1857	XIV.
18639	Harrington, A. W	Sewing-machines	Nov. 17, 1857	III.
17997	Harris, Benjamin, T., assignor to John McKillop	Time of attendance of workmen, marking-machines for.	Aug. 11, 1857	VIII.
896	Harris, Conrad, and Paul W. Zoiner	Stoves, coal, cooking, No. 1	June 23, 1857	Design.
897	Harris, Conrad, and Paul W. Zoiner	Stoves, wood, parlor, No. 2	June 23, 1857	Design.
898	Harris, Conrad, and Paul W. Zoiner	Stoves, dining-room, No. 3	June 23, 1857	Design.
17508	Harris, Daniel	Sewing-machines	June 9, 1857	III.
17571	Harris, Daniel	Sewing-machines	June 16, 1857	III.
17553	Harris, Horace	Pockets, safety	June 16, 1857	XXI.
17877	Harris, James S	Mop-heads	July 28, 1857	XVII.
17678	Harris, John K	Harvesting-machines	June 30, 1857	I.
18337	Harris, Norman, and Alonzo Butler	Curry-combs	Oct. 6, 1857	II.
17572	Harris, R. S	Rudders	June 16, 1857	VII.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
16483	Harrison, James, jr	Springs, coiled, machine for making	Jan. 27, 1857	II.
17217	Harrison, James, jr	Pumps, chain	May 5, 1857	XI.
18144	Harrison, Richard B	Railroads, cross-ties of, machine for ramming under the	Sept. 8, 1857	IX.
17625	Harrison, William H	Pumps	June 23, 1857	XI.
17823	Harrison, William H	Saws, two circular, mode of cutting tenons by, oblique to shaft.	July 14, 1857	XIV.
	Harrop & Babcock. (See Babcock, Darius, assignor)			
18092	Hart, George	Traps, animal	Sept. 1, 1857	XXII.
18743	Hart, George W	Car, dumping	Dec. 1, 1857	X.
16920	Hart, R	Hinge	March 31, 1857	II.
18971	Hart, Wm	Tongs, blacksmiths'	Dec. 29, 1857	II.
17834	Hartnett, John M	Locomotives, coal-burning, arrangement of means for regulating the fires of.	July 21, 1857	VI.
17876	Haseltine, George	Metals, punching and sharpening, machine for	July 28, 1857	II.
	Haskell & Whipple. (See Hutchinson, James, assignor.)			
16917	Haskell, Alanson and William P	Shoe-lasts, machine for manufacturing	March 31, 1857	XVI.
17567	Hassell, Joseph	Lamps, solar	June 9, 1857	V.
18846	Hassler, J. J. S	Planters, corn	Dec. 15, 1857	I.
	Haswell, Livingston, & Root. (See Carny, N. B.)			
18968	Hatch, Royal	Bedsteads, spring bottom for	Dec. 29, 1857	XVII.
17737	Hathaway, John H	Wrench	July 7, 1857	II.
17506	Hauck, George	Carriage-brakes	June 9, 1857	X.
437	Haussknecht, Gustavus L	Carriages, running-gear of	March 17, 1857	Reissue.
16584	Havell, Henry	Hoes, mode of attaching the eyes to the blades of	Feb. 10, 1857	I.
18278	Havens, Robert T	Roofing cements, preparing	Sept. 29, 1857	IX.
18093	Haviland, James	Harvesting-machines, method of operating the cutters of.	Sept. 1, 1857	I.
	Havner, J. W. (See Richardson, T. M , assignor)			
17626	Haw, John	Sawing machines, picker	June 23, 1857	XIV.
18812	Hawkes, Charles W	Printing-press	Dec. 8, 1857	XVIII.
18901	Hawkins, Ezekiel C	Photographs and other pictures, mode of treating	Dec. 22, 1857	XVIII.
17822	Hawkins, Henry J	Lubricator	July 14, 1857	XII.
18847	Hawkins, Moses C., Jacob W. Goodwin, and James Cummings.	Valve-cock, spring	Dec. 15, 1857	VI.
18900	Hawley, A. W	Cultivators	Dec. 22, 1857	I.
17832	Haworth, G. D	Harvesters, corn	July 21, 1857	I.
16834	Haworth, Wade H	Collars, horse, machines for stiffening	March 17, 1857	XVI.
16833	Hayden, Isaac	Cotton, wool, fur, and other fibrous materials, cleaning and separating, machinery for.	March 17, 1857	III.
17929	Hayden, Isaac	Bobbins for roving and stubbing	Aug. 4, 1857	III.
18742	Hayden, Isaac	Cotton, cleaning, long trunks for	Dec. 1, 1857	III.
17574	Hayes, Augustus A	Gas-generators, construction of	June 16, 1857	IV.
16482	Hayes, George E	Teeth, artificial	Jan. 27, 1857	XX.
18848	Hayward, Nelson	Millstones, dress of	Dec. 15, 1857	XIII.
17275	Hazelton, John	Planters, seed	May 12, 1857	I.
17738	Hazen, Rockwell, and Volney Gibbs	Tire, upsetting	July 7, 1857	II.
16795	Hearn, George W	Saw-mill dogs, method of operating	March 10, 1857	XIV.
18280	Heaton, John D	Hydraulic engine	Sept. 29, 1857	XI.
18546	Hebbard, Alonzo	Pitchers, water-cooling	Nov. 3, 1857	XVII.
16439	Heberling, George	Grain-separators	Jan. 20, 1857	XIII.
18723	Hecker, John, and William Hotine, assignors to John Hecker.	Dough, kneading, machine for feeding the flour, mixing the materials, and.	Nov. 24, 1857	XVII.
	Hedden, J. T., and Henry Burt. (See Burt & Hedden.)			
435	Hedge, Lemuel, assignor to George W. Hedge, assignor to W. P. Wood and Samuel DeVaughan.	Saw-mills	March 10, 1857	Reissue.
18396	Heick, John B	Huskers, corn	Oct. 13, 1857	I.
18849	Heick, John B	Egg-beaters	Dec. 15, 1857	XVII.
17857	Heilmann, J., assignor to Ignatius Sturn	Pins, diaper	July 21, 1857	XXI.
507	Heilmann, J , assignor to Ignatius Sturn	Diaper-pin	Nov. 10, 1857	Reissue.
18691	Heintzelman, Samuel P	Horses, &c , across rivers, method of floating	Nov. 24, 1857	XXII.
17878	Heistand, C. J	Mortising-chisel	July 28, 1857	XIV.
	Held, L , and C. Poppenhusen. (See Poppenhusen & Held.)			
17931	Held, Ludwig	Ivory, factitious	Aug. 4, 1857	IV.
17039	Hemington, James	Furnaces, feeding fuel to, apparatus for	April 14, 1857	V.
16645	Hendryx, Isaiah J	Air-blast, generating, method of	Feb. 17, 1857	XI.
18507	Henley, William	Water-wheel	Oct. 27, 1857	XI.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery	Date.	Class.
17856	Henlings, Joseph, assignor to himself, W. H. Lawson, and B. M. Henlings.	Potatoes, machines for digging	July 21, 1857	I.
16440	Henry, E. T.	Die for making spikes	Jan. 20, 1857	II.
18972	Henry, James T., and W. P. Campbell	Closets, water	Dec. 29, 1857	IX.
18744	Henry, John	Printing-press	Dec. 1, 1857	XVIII.
16796	Henwood, John.	Lubricators for steam-engine cylinders	Mar. 10, 1857	XII.
	Herbold, J., George Kuhn, and J. Foster. (See Foster, Junius, assignor.)			
	Herbold, J., George Kuhn, and J. Foster. (See Foster, Junius, assignor.)			
	Herendeen, Robinson, & Sheldon. (See Robinson, Herendeen, & Sheldon.)			
18245	Hermann, Isaac	Bracelets, &c., safety-clasp for	Sept. 22, 1857	XVIII.
18973	Herpers, Ferdinand J	Balance for detecting counterfeit money	Dec. 29, 1857	XII.
18094	Herring, Edward	Stills, spirit	Sept. 1, 1857	IV.
17930	Herron, Abial C	Sewing-machines	Aug. 4, 1857	III.
18585	Hersee, William	Mattresses, chairs, &c., springs for	Nov. 10, 1857	XVII.
	Hersey, Ira. (See Dorr, Hersey, & Oldfield.)			
17505	Hersey, Ira, and James H. Van Riper	Clay-pulverizers	June 9, 1857	XV.
17218	Hett, Andrew	Violin attachment	May 5, 1857	XVIII.
16921	Heulings, Abram	Harvesters, corn	Mar. 31, 1857	I.
17327	Hewit, Silas	Pumps	May 19, 1857	XI.
17790	Hewit, Silas	Churns	July 21, 1857	I.
	Hewitt, Samuel.	Hay-press	Dec. 14, 1857	Extension.
17328	Heyser, John H., and Edward M. Mobley	Harvesters, grain and grass	May 19, 1857	I.
17373	Heywood, Bennett Johns	Ink-stands	May 26, 1857	XVIII.
17955	Hibbard, Harmon	Skins and furs, tawing and coloring	Aug. 4, 1857	IV.
17276	Hibsch, George	Propeller-blades	May 12, 1857	VII.
18902	Hickok, Samuel	Bedstead-slats	Dec. 22, 1857	XVII.
16587	Hicks, Charles	Caps, percussion, machine for ramming	Feb. 10, 1857	XIX.
16646	Hicks, Charles	Caps, percussion, machine for varnishing	Feb. 17, 1857	XIX.
16797	Hicks, William Cleveland	Fire-arms, breech-loading, nipples for discharging or withdrawing cartridges from.	Mar. 10, 1857	XIX.
16590	Hildebrand, John	Planters, seed	Feb. 10, 1857	I.
18397	Hildreth, George W.	Ploughs, gang	Oct. 13, 1857	I.
	Hill, B. L., & Co., assignees of H. N. Dewey, assignor.			
18282	Hill, Benjamin B	Bit-holder	Sept. 29, 1857	XIV.
17040	Hill, Levi L	Metals, coating, with silver	April 14, 1857	II.
	Hill, Luther, *et al.* (See Tripp, Seth D., assignor.)			
18146	Hill, Porter, and Charles E. Jones	Straw-cutters	Sept. 8, 1857	I.
18692	Hill, Thomas	Arithmometer	Nov. 24, 1857	VIII.
18040	Hinckley, Charles H	Trunks, mail-bags, &c., method of rendering the mouths of, water-tight.	Aug. 25, 1857	XVI.
18281	Hinckley, Charles H	Coating hose-pipe	Sept. 29, 1857	IV.
	Hinckley, D. B., and G. H. Reynolds. (See Reynolds, George H., assignor.)			
	Hinckley, D. B., *et al.* (See Reynolds, George H., assignor.)			
	Hindermeyer, Bernhard, and L. Gansz (See Bernhard, Joseph, assignor.)			
17569	Hinds, Peter	Bedsteads	June 16, 1857	XVI.
16647	Hinkley, Benjamin	Bedsteads, folding	Feb. 17, 1857	XVII.
17504	Hinkley, Benjamin	Camp-tents, frame for	June 9, 1857	XX.
18450	Hinkley, P	Planters, seed	Oct. 20, 1857	I.
	Hinman & Fourrier, assignors to themselves and Munroe. (See Fourrier & Hinman.)			
16545	Hinman, David	Stone, dressing and polishing, machines for	Feb. 3, 1857	XV.
17349	Hinman, David, and F. B. Fournier, assignors to themselves and R. J. Parker.	Vessels, speed of, apparatus for indicating the, and depth of water.	May 19, 1857	VII.
18588	Hintz, John C	Turning spiral forms, machine for	Nov. 10, 1857	XIV.
18745	Hintz, John C	Sawing bevelled curves, machine for	Dec. 1, 1857	XIV.
18693	Hitchings, A. E.	Boilers for heating buildings	Nov. 24, 1857	V.
17093	Hoagland, A	Hydrant	April 21, 1857	XI.
17835	Hoagland, A	Sewing-machines, tension apparatus for	July 21, 1857	III.
17788	Hoagland, George H	Engines, steam, pistons for setting out the packing of.	July 14, 1857	VI.
17836	Hoagland, George H	Bells, signal or alarm	July 21, 1857	XXII.
16687	Hoard, John W	Slates, making	Feb. 24, 1857	XV.
	Hobart, Anson, *et al.* (See Washburn, George J., assignor.)			

Patentees of inventions and designs, 1857.

No.	Name of patentee	Invention or discovery.	Date.	Class.
	Hobson, William, and J. W. Baltzly. (See Baltzly & Hobson.)			
18447	Hochstrasser, Henry	Telegraph-bells, attaching wire to	Sept. 8, 1857	VIII.
16385	Hockman, J	Brick-machines	Jan. 13, 1857	XV.
17374	Hodge, Samuel F	Ore-crushing machine	May 26, 1857	II.
17219	Hodges, David	Tenoning, adjustable bed and gauge to regulate	May 5, 1857	XIV.
	Hodges, Edward F., and W. P Page. (See Campbell, Ethan, assignor.)			
17149	Hodgkinson, George, and Theodore F. Randolph	Books, blank, machine for cutting indexes to	April 28, 1857	XVIII.
16799	Hodgson, Thomas	Stone, fire-proof	Mar 10, 1857	XV.
462	Hoe, Richard M	Metallic surfaces, particularly saw-plates, machinery for grinding and polishing.	May 5, 1857	Reissue.
18589	Hoe, Richard M	Printing-presses, feeding paper to	Nov. 10, 1857	XVIII.
18640	Hoe, Richard M	Printing-presses, fly-frames of, mode of operating	Nov. 17, 1857	XVIII.
18338	Hoffman, Henry	Bronzing liquids	Oct. 6, 1857	IV.
17932	Hoffner, Peter	Screws, cutting	Aug. 4, 1857	II.
16866	Hogle, Sidney S	Harrows	Mar. 17, 1857	I.
18974	Hoke, Jacob	Timber, hewing, guide-gauge for	Dec. 29, 1857	XIV.
17150	Holbrook, Amos, and Henry D. Fisk	Locks, chronometric	April 28, 1857	II.
17933	Holbrook, Peter	Sugar-boilers	Aug. 4, 1857	IV.
16798	Holley, George W	Iron, cast, enamelling	Mar. 10, 1857	II.
16836	Holloway, Cornelius, assignor to James D. Maney	Harvesters	May 17, 1857	I.
17820	Holly, Birdsill, assignor to Silsby, Mynderse, & Shoemaker.	Pumps	July 14, 1857	XI.
17568	Holly, S. T	Planters, seed	June 16, 1857	I.
499	Holly, Solomon T	Planters, seed	Sept. 22, 1857	Reissue.
17329	Holmes, Edward, & Britain	Washboards, machine for making	May 19, 1857	XIV.
18398	Holmes, Edward, & Britain	Ditching-machines	Oct. 13, 1857	IX.
16633	Holmes, Ezra S	Husking corn, machine for	Feb. 10, 1857	I.
17567	Holmes, James G	Chairs for invalids	June 16, 1857	XVII.
16774	Holmes, John B., assignor to John R. Pratt	Capstans, ships'	Mar. 3, 1857	VII.
16773	Holmes, John B., assignor to John R. Pratt	Ship's steering apparatus	Mar. 3, 1857	VII.

171[illegible]	Holmes, John B., assignor to John B. Holmes and John R. Pratt	Anchor-trippers	April 28, 1857	VII.
18095	Holmes, Richard C	Boats, surf and life	Sept. 17, 1857	VII.
16731	Holt, Horace	Stamp, hand	Mar. 3, 1857	XVIII.
16837	Holt, Horace	Printing-presses	Mar. 17, 1857	XVIII.
18451	Hood, Bold R	Carriage-springs	Oct. 20, 1857	X.
	Hood, John M. (See Seely, Samuel J., assignor.)			
	Hooper & Ballou (See Ballou & Hooper.)			
17996	Hooper, Benjamin F., assignor to himself and Ransom Ballou, jr.	Shearing and punching, press for	Aug. 11, 1857	II.
17304	Hope, John D, assignor to G. A. Gardner	Drills, rock	May 12, 1857	IX.
18641	Hopkins, J. R, assignor to himself and Gustavus F. Sargent.	Steamers, pilot-bells on, mechanism for operating	Nov. 17, 1857	VI.
476	Hopkins, Lansing E., assignor to James S. Taylor, Hiram L. Sturdevant, and Elijah Sturdevant.	Hat-bodies, machines for manufacturing	June 30, 1857	Reissue.
18023	Horsford, E. N	Treating cotton and linen waste	Sept. 15, 1857	IV.
16977	Horstman, William J	Fringes, cutting, machine for	April 7, 1857	III.
	Horton, H. B., and F. Thrasher. (See Thrasher & Horton)			
	Horton, Henry B., and Francis Thrasher. (See Thrasher & Horton.)			
	Horton, James, *et al.* (See Steffe, Horton, & Currie.)			
	Horton, Samuel, and Moses H. Hale. (See Hale & Horton.)			
	Horton, Steffe, & Currie, assignors to Church. (See Steffe, Horton, & Currie, assignors.)			
18339	Hotchkiss, A. A. and A	Rakes	Oct. 6, 1857	I.
18903	Hotchkiss, Andrew	Snow-plough, railroad	Dec. 22, 1857	X.
17248	Hotchkiss, James, and William H Schofield, assignors to themselves and William R. King.	Brick-machines	May 5, 1857	XV.
	Hotine, William, and John Hecker, assignors. (See Hecker & Hotine, assignors.)			
16839	Hough, Alman V., and Richard W. Jones	Brick-machines	Mar. 17, 1857	XV.
17094	Houghton, H	Carding-machines	April 21, 1857	III.
16585	Houghton, Thomas B	Planters, seed	Feb. 10, 1857	I.
	Houlton; William, jr., and H. D. Mears. (See Mears & Houlton.)			
	Houlton, William, jr., and H. D. Mears. (See Mears & Houlton.)			

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
16386	House, Royal E	Gates, device by which persons approaching may open	Jan. 13, 1857	IX.
16947	Houston, William H	Type, composing and distributing, machine for	Mar. 31, 1857	XVIII.
18283	Howard, Charles A	Gate, approach-opening	Sept. 29, 1857	IX.
17837	Howard, George C	Shovel, spade, or dung-fork handles	July 21, 1857	I.
868	Howard, James L	Stoves, railroad car	Jan 27, 1857	Design.
16589	Howard, Lewis P	Paddle-wheels, feathering	Feb. 10, 1857	VII.
18202	Howard, Lewis P	Paddle-wheels, feathering	Sept. 15, 1857	VII.
17375	Howard, William H	Looms	May 26, 1857	III.
16838	Howarth, John	Fibrous materials, method of cleansing	Mar. 17, 1857	III.
17679	Howe, E., jr., and W. R. Bliss	Sewing-machines	June 30, 1857	III.
16436	Howe, Elias jr	Sewing-machines	Jan. 20, 1857	III.
17879	Howe, F W	Engines, &c., governor for	July 28, 1857	VI.
18453	Howe, George	Piano-forte action	Oct. 20, 1857	XVIII.
18340	Howell, Charles	Reaping and mowing machines, guard-finger for	Oct. 6, 1857	I.
18452	Howell, David	Bending flanges on boiler-heads, machine for	Oct. 20, 1857	II.
17330	Howell, Edward	Photographs from glass to paper, process for removing.	May 19, 1857	XVIII.
500	Howell, Edward	Photographs from glass to paper, process for removing.	Sept. 22, 1857	Reissue.
17041	Howell, J. R	Water-wheels, adjustable buckets to the shafts of, method of attaching.	April 14, 1857	XI.
	Hoyt, Henry T., *et al.* (See Williams, Thomas W., assignor.)			
18904	Hubbard, George W	Sewing-machines	Dec. 22, 1857	III.
17376	Hubbard, Gilbert	Carriage, horse and shafts from a, apparatus for discharging a.	May 26, 1857	X.
16517	Hubbard, Guy H, deceased, Clarissa A. Hubbard, administratrix of.	Apples, paring and slicing, machines for	Jan. 27, 1857	XVII.
16442	Hubbard, M. G	Harvesters, cutters for	Jan. 20, 1857	I.
16441	Hubbard, M. G	Harvesters	Jan. 20, 1857	I.
426	Hubbard, M. G	Reapers, raking-attachment for	Feb. 3, 1857	Reissue.
16840	Hubbard, M. G	Harvesters	Mar. 17, 1857	I.
17151	Hubbard, M. G	Harvester-frames	April 28, 1857	I.
17280	Hubbard, M. G. (No. 3)	Harvesters	May 12, 1857	I.
17277	Hubbard, M. G. (No. 2)	Harvesters	May 12, 1857	I.
17575	Hubbard, M. G	Harvesters, cutting apparatus of	June 16, 1857	I.
16484	Hubbard, Moses G	Harvesters	Jan 27, 1857	I.
17606	Hubbard, Samuel C., assignor to Charles C. Hubbard.	Measures, lineal, machines for graduating	June 16, 1857	VIII.
	Hubbard, W. W. L., and N. L. Bradley. (See Chinquini, Pietro.)			
	Hubbell, Roberts, & Wood. (See Wood, and Hubbell, & Roberts.)			
16546	Huey, William	Shingle-machine	Feb. 3, 1857	XIV.
17377	Huffer, Abraham	Washing-machines	May 26, 1857	XVII.
18642	Huffer, Abraham	Washing-machine	Nov. 17, 1857	XVII.
18284	Hughes, Amos P	Musical instruments, reed-stops for	Sept 29, 1857	XVIII.
18148	Hughes, D. W	Planters, corn	Sept. 8, 1857	I.
17278	Hughes, Henry	Presses for cotton, &c	May 12, 1857	XII.
16586	Hull, Addison	Sewing-machines, guide for	Feb. 10, 1857	III.
17095	Hall, Alonzo G	Medicinal agents, means for inhaling	April 21, 1857	XX.
17789	Hulskamp, G. Henry	Piano-fortes	July 14, 1857	XVIII.
17838	Hulskamp, G. Henry	Piano-fortes, metallic bridge for	July 21, 1857	XVIII.
18149	Humaston, J. P	Telegraphic-signals, transmitting, machines for punching paper fillets for.	Sept. 8, 1857	VIII.
18747	Humberger, Adam	Harvesters, corn	Dec. 1, 1857	I.
17576	Hummell, Peter E	Leather, scouring and setting, machines for	June 16, 1857	XVI.
16923	Humphrey, John	Clothes-pins, slats in, machine for cutting	Mar. 31, 1857	XVII.
18268	Humphrey, John, assignor to himself and Amos E. Perry.	Lathes for manufacture of clothes-pins, &c	Sept. 22, 1857	XIV.
17152	Humphrey, S. Dwight	Photographic pictures, engraving, &c., preparation of.	April 28, 1857	XVIII.
16978	Hunt, James G	Gate-post, attachable to any panel of its corresponding field fence.	April 7, 1857	IX.
474	Hunt, James G	Fence, portable field	June 30, 1857	Reissue.
	Hunt, N., *et al.* (See Niles, Peter H., assignor.)			
18096	Hunt, Stephen R	Harvesters, raking device for	Sept. 1, 1857	I.
	Huntington & Co., Thurston, & Ward. (See Thurston, Stephen, assignor.)			
	Huntington, Wait T., and Henry Piatts. (See Atkins & Burritt, assignors.)			

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
16588	Hurd, Alvin	Hats, felt, method of surfacing	Feb. 10, 1857	III.
17279	Hurd, Julius C	Process of treating raw cotton	May 12, 1857	IV.
	Hurlbut, Rogers, Sperry, & Ashmead. (See White, Leroy S., assignor.)			
16924	Hurst, Abraham R	Husking corn, machine for	Mar. 31, 1857	I.
17969	Huse, Samuel	Capstans, ships'	Aug. 11, 1857	VII.
16648	Huson, Edgar	Wagons, gearing for	Feb. 17, 1857	X.
449	Hussey, ~~Obed. (A)~~	Reaping-machines	April 14, 1857	Reissue.
450	Hussey, Obed. (B)	Reaping-machines	April 14, 1857	Division re-issue.
451	Hussey, Obed. (C)	Reaping-machines	April 14, 1857	Division re-issue.
	Hustace, William, and William E. Treadwell. (See Treadwell & Hustace.)			
16732	Hutchins, Charles	Axes, making, machines for	Mar. 3, 1857	II.
875	Hutchinson, James, assignor to J. E. Whipple, and Stephen E. Haskell.	Oil-cloths, floor	Mar. 10, 1857	Design.
18905	Huyett, William G	Corn-stalks, machine for cutting and grinding	Dec. 22, 1857	I.
16922	Hyams, Hyam Jacob	Gas-metres, dry	Mar. 31, 1857	IV.
18850	Hyatt, Valentine	Rakes, horse	Dec. 15, 1857	I.
16485	Hyde, Edward G	Auricle, acoustic	Jan. 27, 1857	XX.
915	Hyde, James R	Stoves, cooking	July 14, 1857	Design.
18586	Hyde, James R	Stoves, cooking	Nov. 10, 1857	V.
17503	Hyde, Joseph, and William Stearns	Valves, puppet, method of guiding and cushioning	June 9, 1857	XI.
18643	Hyndman, W. G	Forge, portable	Nov. 17, 1857	II.
18590	Ingles, Joseph	Drills, grain	Nov. 10, 1857	I.
17577	Ingersoll, Charles B	Ploughs	June 16, 1857	I.
16443	Ingersoll, J. O. M	Apples, paring, machine for	Jan. 20, 1857	XVII.
18014	Ingersoll, Jared O. M	Buttons, metal, manufacturing	Aug. 18, 1857	XXI.
882	Ingraham, Elias	Clock cases	April 14, 1857	Design.
970	Ingraham, Elias	Clock fronts	Dec. 22, 1857	Design.
18508	Ingraham, Hanford	Planters, corn	Oct. 27, 1857	I
18748	Irwin, John	Seats, standard for	Dec. 1, 1857	XVII.
17739	Irwin, Joseph	Harvesters, cutting apparatus for	July 7, 1857	I.
17740	Isham, Henry	Locks	July 7, 1857	II.
17065	Ivens, Edmund M., assignor to E. M. Ivens and L. H. Allen.	Mines, winding machinery for	April 14, 1867	IX.
	Ivers, Edward, and Joseph D. Greene (See Greene & Ivers, assignors to Greene.)			
17096	Jackson, George R	Vault covers	April 21, 1857	IX.
17097	Jackson, George R	Vaults, ventilating, method of	April 21, 1857	IX.
	Jackson, George R	Vault-covers	April 22, 1857	Disclaimer.
18851	Jackson, George R	Vault-light covers	Dec. 15, 1857	IX.
18097	Jackson, James W., and L. W. Burchinal	Carriage-wheels, hub for	Sept. 1, 1857	X.
	Jackson, M. W, and W. H. Woodin. (See Steffe, Horton, & Currie, assignors.)			
18975	Jackson, Silas E. and Morgan P	Mowing-machines	Dec. 29, 1857	I.
18976	Jackson, Silas E. and Morgan P	Mowing-machines	Dec. 29, 1857	I.
18150	Jackson, W. R	Car-brake, railroad, automatic	Sept. 8, 1857	X.
16567	Jacobs, Lydia, administratrix of Amos Jacobs, deceased.	Washing-machines	Feb. 3, 1857	XVII.
18852	James, Charles C	Seeding-machines	Dec. 15, 1857	I.
18694	Jane, Reuben	Boats, canal, attaching paddle-wheels to	Nov. 24, 1857	VII.
16841	Jarboe, J. W	Photographic plate-vice	Mar. 17, 1857	XVIII.
17378	Jarratt, W. A	Shingle-machine	May 26, 1857	XIV.
17880	Jay, J. M	Mortising and boring machine	July 28, 1857	XIV.
17220	Jayne, Joseph W	Brick-machines	May 5, 1857	XV.
17098	Jefferies, Aaron	Kiln, lime	April 21, 1857	XV.
917	Jenkins, Henry, assignor to the New York Wire Railing Company.	Railings, iron	July 21, 1857	Design.
18151	Jenkins, J. V			
18695	Jenkins, John D	Shearing-machines, sheep	Sept. 8, 1857	I.
	Jenkins, Richard, and E. W. Stephens. (See Stephens & Jenkins.)	Washing-machine	Nov. 24, 1857	XVII.
18285	Jenks, Edward A., and John Underwood	Sewing-machines	Sept. 29, 1857	III.
17766	Jenks, Lemuel P., and George A. Gardner, assignors to George A. Gardner.	Drilling, rock, machines	July 7, 1857	IX.
17765	Jenks, Lemuel P., assignor to G. A. Gardner	Drilling, rock, machines	July 7, 1857	IX.
16925	Jennings, R. S	Carriage-tops	Mar. 31, 1857	X.
17680	Jennings, R. S	Carriage-top	June 30, 1857	X.
883	Jerome, Chauncey	Clock-case fronts	April 14, 1857	Design.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date	Class.
959	Jerome, Samuel B.	Clock-cases	Oct. 20, 1857	Design.
16360	Jewett, Benjamin W.	Legs, artificial	Jan. 6, 1857	XX.
18399	Jewett, Stanley A.	Melodeons	Oct. 13, 1857	XVIII.
16335	Jillson, C	Traps, animal, manufacture of	Jan. 6, 1857	XXII.
18205	Jillson, C	Wire, pointing, machine for	Sept. 15, 1857	II.
18204	Jillson, Julius A., and Henry Whinfield	Fibrous and textile substances, method of treating, in a vacuum for cleansing purposes.	Sept. 15, 1857	III.
17741	Jocelyn, Albert H.	Electrotype-plates, method of backing	July 7, 1857	XVIII.
17792	Johns, William B. (U. S. A.)	Cartridges, shot	July 14, 1857	XIX.
16387	Johnson, A. F	Sewing-machines	Jan. 13, 1857	III.
18814	Johnson, Almer	Propellers	Dec. 8, 1857	VII.
18906	Johnson, Asa	Rolling cornice, machine for	Dec. 22, 1857	II.
17331	Johnson, Asa, assignor to himself, Henry Link, and William Higbie.	Roofs, &c., sheet metal on, mode of fastening	May 19, 1857	IX.
467	Johnson, Charles H.	Gas-burners	June 2, 1857	Reissue.
17132	Johnson, Charles H., assignor to C. H. Johnson and J. G. Hamblin.	Gas-burners, argand	April 21, 1857	V.
16820	Johnson, Charles H., assignor to Charles H. Johnson and James G. Hamblin.	Gas-cocks, spigots of, device by which the, may be lubricated on their seats.	Mar. 10, 1857	V.
17839	Johnson, Elmore	Troughs, hog	July 21, 1857	I.
	Johnson, F. G. (See Whitmore, M. J., assignor)			
16486	Johnson, Frank G.	Fence-posts, method of constructing	Jan. 27, 1857	IX.
17681	Johnson, Frank G.	Lock, permutation	June 30, 1857	XI.
17791	Johnson, Isaac G.	Furnaces, iron, use of coal-tar in	July 14, 1857	V.
	Johnson, J., and C. Tompkins. (See Tompkins & Johnson.)			
17281	Johnson, James A.	Bedsteads, folding	May 12, 1857	XVII.
18454	Johnson, Jesse	Cotton-cleaners	Oct. 20, 1857	III.
16842	Johnson, Michael H.	Rope manufacture	Mar. 17, 1857	III.
17042	Johnson, Nelson	Boilers, steam	April 14, 1857	VI.
18813	Johnson, S., and L. Johnson, jr.	Harvesters	Dec. 8, 1857	I.
17627	Johnson, William L.	Stoves, mode of constructing	June 23, 1857	IX.

No.	Name of patentee.	Invention or discovery.	Date	Class.
18286	Johnston, William	Cork-sole stuff	Sept. 29, 1857	IV.
—	Jones, Charles E., and Porter Hill. (See Hill & Jones.)			
17970	Jones, Edward C.	Carriages, steam, steering apparatus of	Aug. 11, 1857	X.
18749	Jones, Edward C.	Ploughs, gang	Dec. 1, 1857	I.
	Jones, Edward, *et al.* (See Fetter, George, assignor.)			
18015	Jones, Francis H.	Eye-shading apparatus	Aug. 18, 1857	XX.
	Jones, J. H. (See Patterson, Andrew, assignor.)			
18907	Jones, J. M.	Printing-presses, hand	Dec. 22, 1857	XVIII.
16359	Jones, James	Measuring boards, instrument for	Jan. 6, 1857	VIII.
	Jones, Richard W., and A. V. Hough. (See Hough & Jones.)			
17742	Jones, Samuel F.	Fences, field, panels of, method of connecting the	July 7, 1857	IX.
16388	Jones, William	Forks, hay	Jan. 13, 1857	I.
18047	Jones, William	Forks, hay and manure	Aug. 25, 1857	I.
	Jordan, J. H., *et al.* (See Merryman, John M., assignor.)			
472	Jordan, William A.	Ferry-boats, line, or flying bridges, means for guiding	June 16, 1857	Reissue.
433	Josyln, B. F.	Fire-arms, breech-loading	Mar. 3, 1857	Reissue.
16733	Joslyn, B. F.	Wrench, screw	Mar. 3, 1857	II.
16843	Joslyn, B. F.	Apples, paring; machines for	Mar. 17, 1857	XVII.
16844	Joslyn, B. F	Wrench, screw	Mar. 17, 1857	II.
16487	Jourda, John P	Vessels, sunken, raising	Jan. 27, 1857	VII.
	Judd, Chas. G. (See Ketcham, Charles, assignor.)			
17099	Judd, Oliver B	Saw-set	April 21, 1857	XIV.
17153	Judd, Oliver B.	Saw-gummer	April 28, 1857	XIV.
18908	Juengst, George	Dynamometer	Dec. 22, 1857	VIII.
18455	Junge, Adolph	Threshing-machine, endless apron of	Oct. 20, 1857	I.
17221	Justice, H. L., and John H. Galbreath	Planters, corn seed	May 5, 1857	I.
17222	Kaefer, Matthaus	Motion, transmitting	May 5, 1857	XIII.
18696	Kahnweiler, David	Chair, rocking, ventilating	Nov. 24, 1857	XVII.
	Kailey, J., and J. H. Miller, assignors to themselves and J. Danner. (See Miller & Kailey, assignors.)			
169	Keech, J., and S. Stilwell	Winnowing-machines	July 7, 1857	Add'l imp't.
17282	Keeler, J. F.	Bed-bottoms	May 12, 1857	XVII.
	Keene, G. W., *et al.* (See Whitmore, Nathaniel, assignor.)			

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
17154	Keiler, Levi	Pumps, atmospheric	April 28, 1857	XI.
16488	Keith, Edwin	Gins, cotton	Jan. 27, 1857	III
17155	Keith, Edwin	Cotton-gins, saw, brushes of	April 28, 1857	III.
17283	Keller, John C.	Stoves, coal	May 12, 1857	V.
18911	Kellogg, C. D., and W. S. Coan	Doors, glass knobs for	Dec. 22, 1857	II.
16979	Kellogg, Daniel J.	Photographic trays	April 7, 1857	XVIII.
17223	Kellogg, Hiram	Grain, cutting and binding, machines for	May 5, 1857	I.
18853	Kellogg, Hiram	Seeding-machines	Dec. 15, 1857	I.
16595	Kellogg, W. W.	Sash-fastener	Feb. 10, 1857	II.
16632	Kellogg, Daniel, and William Livingston	Window-blinds	Feb. 10, 1857	IX.
18458	Kelly, James Q.	Harpoons	Oct. 20, 1857	VII.
18815	Kelly, Samuel	Bee-hives	Dec. 8, 1857	I.
16444	Kelly, William	Furnace, blast	Jan. 20, 1857	II.
17628	Kelly, William	Iron, manufacture of	June 23, 1857	II.
505	Kelly, William	Iron, manufacture of	Nov. 3, 1857	Reissue.
18910	Kelly, William	Iron, refining	Dec. 22, 1857	II.
16926	Kelsey, Albert	Bee-hives	Mar. 31, 1857	I.
	Kelty, Gibbons L., and D. M. Ferguson. (See Lloyd, Daniel, assignor.)			
18456	Kemble, William, and William H. C. Bartlett	Lamps, shades for	Oct. 20, 1857	V.
16876	Kendall, Franklin B.	Saw-mills, double carriages in, method of operating.	Mar. 24, 1857	XIV.
17840	Kendall, Franklin B.	Sawing-mill	July 21, 1857	XIV.
17284	Kendall, Hartwell	Blacksmith's striker	May 12, 1857	II.
17156	Kendall, Thomas, sr.	Propelling-wheels, submerged	April 28, 1857	VII.
17043	Kennedy, David H.	Tanning hides, composition for	April 14, 1857	XVI.
	Kennedy, E., and J. H. Newman, *et al.* (See Freeman & Farley, assignors.)			
17629	Kennedy, James G.	Sawing-mill	June 23, 1857	XIV.
17432	Kennedy, Michael	Saws, hand, gauge-attachment for	June 2, 1857	XIV.
17306	Kennish, William, assignor to Andrew B. Gray	Excavator, sub-marine	May 12, 1857	IX.
	Kent, Joseph. (See Brown, J. S., assignor.)			
16594	Kent, Joseph C.	Process of smelting zinc iron-ore	Feb. 10, 1857	IV.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
18909	Kenyon, William	Screw-cutting machine	Dec. 22, 1857	II.
16980	Kepler, Israel	Smut-machines	April 7, 1857	XIII.
17044	Kerr, James	Fire-arms, many-chambered breech, rammer for	April 14, 1857	XIX.
18912	Ketcham, A. R.	Hydraulic valve	Dec. 22, 1857	XI.
17285	Ketcham, George P.	Mortising chisel	May 12, 1857	XIV.
18697	Ketcham, Joshua and John Waterman	Harvesters, bean	Nov. 21, 1854	I.
17305	Ketcham, Charles, assignor to C. G. Judd	Planters, seed	May 12, 1857	I.
466	Ketchum, William F.	Harvesters, grass	June 2, 1857	Reissue.
18816	Kyser, Edward S.	Vessels, securing hatches of	Dec. 8, 1857	VII.
	Kibb, Theodore C. (See Floyd, James R., assignors.)			
421	Kidd, Whitten	Bonnet-fronts, moulds for pressing	Jan. 13, 1857	Reissue.
16800	Kilburn, E. and A. and C.	Chair-seats, solid wooden, machine for forming the curved surface of.	Mar. 10, 1857	XIV.
17128	Killmer, Robert, and Joshua Williams, assignors to Robert Killmer.	Blacksmith's butteris	April 21, 1857	II.
17509	Kilpatrick, E. N.	Wheelwright's machine	June 9, 1857	X.
18152	Kimball, John	Boots and shoes, lasting, machine for	Sept. 8, 1857	XVI.
18315	Kimball, John, assignor to Robert Hale	Locomotives, tanks for	Sept. [illegible], 1857	VI.
	King, G. C., *et al.* (See Lewis, Charles N., assignor.)			
	King, George C. (See Lewis, Charles N., assignor.)			
18457	King, J. S.	Nail-machine	Oct. 20, 1857	II.
17100	King, Thomas	Stoves, cooking	April 21, 1857	V.
	King, William R. (See Hotchkiss and Schofield, assignors.)			
18342	Kingsbery, Sanford	Corn, shucking and shelling, machine for	Oct. 6, 1857	I.
18343	King, Samuel L. and David Gore	Ploughs, gang	Oct. 6, 1857	I.
	Kinsley, Edward G., and M. W. Stevens. (See Stevens and Kinsley.)			
16389	Kinsley, Rodolphus	Presses	Jan. 13, 1857	XII.
17793	Kipp, Charles T., and John Lawrenson	Cars, hand, applying fly-wheel to	July 14, 1857	X.
18287	Kirby, Josiah	Bungs, machine for cutting	Sept. 29, 1857	XIV.
	Kite, James, and William Needham. (See Needham and Kite.)			
18977	Kittinger, Levi	Mortising-machines, device for throwing into and out of gear the tool of.	Dec. 29, 1857	XIV.
182	Klein, Ferdinand	Skates	Dec. 22, 1857	Add'l imp't.
16845	Kline, Calvin	Ships, magnetic needle on, mode of compensating the local attraction of the.	Mar. 17, 1857	VII.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
18016	Kling, Magnus	Powder, percussion	Aug. 18, 1857	XIX.
	Klink, John J. and William Vogt. (See Vogt and Klink.)			
16981	Knapp, A. H	Lamp-burners	April 7, 1857	V.
861	Knapp, John H	Pencil-cases, ever-pointed	Jan. 6, 1857	Design.
17379	Knauer, Christian	Yarn or thread, reels for	May 26, 1857	III.
17157	Knauer, Isaiah	Harvesters	April 28, 1857	I.
17434	Knight, James	Life-preservers	June 2, 1857	VII.
16777	Knight, Tristram D	Boards to uniform thicknesses, machine for reducing and smoothing.	Mar. 3, 1857	XIV.
17433	Knowles, L. J	Faucet	June 2, 1857	XI.
18048	Knowles, L. J	Steam-pressure regulator	Aug. 25, 1857	VI.
16596	Knowles, Lucius J	Boilers, steam, safety-indicators for	Feb. 10, 1857	VI.
16734	Knowles, Lucius J	Shuttles, weavers'	Mar. 3, 1857	III.
17743	Knowles, Lucius J	Belt-shifter for machinery	July 7, 1857	XIII.
18592	Knowles, Lucius J	Jack-lifting	Nov. 10, 1857	XII.
17971	Knowlton, David	Capstans, ships'	Aug. 11 1857	VII.
16927	Koch, Louis	Pasteboard, making, machines for	Mar. 31, 1857	III.
16928	Koch, Louis	Pasteboard, pressing water out of, machinery for	Mar. 31, 1857	III.
17510	Kohler, John B	Stoves, coal	June 9, 1857	V.
17881	Kolb, Charles F	Breastpins, mode of fastening	July 28, 1857	XVIII.
	Kolman, A., and Elias Schneider. (See Schneider & Kolman)			
18400	Krouse, F W. A	Cars, &c., railroad, implement for sealing	Oct. 13, 1857	X.
	Krenkle, K (See Maurer, William, assignor.)			
16489	Kuhn, Anthony	Harps, keyed	Jan. 27, 1857	XVIII.
	Kuhn, George, J. Foster, and J. Herbold. (See Foster, Junius, assignor.)			
	Kuhn, George, J. Foster, and J. Herbold. (See Foster, Junius, assignor)			
17934	Kurtz, Ernst L	Horses, device for protecting the necks of, from flies.	Aug. 4, 1857	XXII.
17380	Kuschke, Robert, and P. Merkel	Planters, corn	May 26, 1857	I.
18219	La Baw, George W., assignor to himself and Charles A Durgin.	Sails, reefing and furling, arrangement of means for.	Sept. 15, 1857	VII.
17882	Lachicotte, P. R., and T B. Bowman	Rice, cleaning, machines for	July 28, 1857	XIII.
17101	La Croix, F. C., and Chauncey Barnes	Sails, reefing	April 21, 1857	VII.
17045	Lafetra, D H and H. A	Harvesters, raking attachment for	April 7, 1857	I.
18049	Laidley, T. T. S. (U. S. A)	Projectile for rifled cannon	Aug. 25, 1857	XIX.
17935	Laidley, Theodore T. S. (U. S. A.)	Projectiles for rifled cannon	Aug. 4, 1857	XIX.
17685	Lamb, Salem T	Harvesters, self-acting rakes for	June 30, 1857	I.
17794	La Mothe, B. J	Car seats, railroad	July 14, 1857	X.
18206	Lamson, David A. J	Belt-tool	Sept. 15, 1857	II.
	Landenberger, Martin. (See Vickerstaff, Joseph)			
16597	Landes, Jacob	Planters, seed	Feb. 10, 1857	I.
	Landy, James, *et al.* (See Page, John F.)			
17286	Lane, Benjamin, J	Plane, joiner's	May 12, 1857	XIV.
18751	Lane, George W , and William N. Manning	Melodeons, &c , pedal-base for	Dec. 1, 1857	XVIII.
18750	Lane, John, jr	Ploughs	Dec. 1, 1857	I.
18622	Lapham, Allen, assignor to himself and Joseph B. Bennett.	Lard-rendering kettles	Nov. 10, 1857	IV.
	Lark, George, and H. Schreiner, jr. (See Schreiner, Henry, jr., assignor)			—
18072	Larkin, Samuel, assignor to The Wheeler and Wilson Manufacturing Co.	Sewing-machines	Aug. 25, 1857	III.
18459	Lash, John S	Ploughs	Oct. 20, 1857	I.
17332	Lashbrooks, James	Plane, joiner's	May 19, 1857	IV.
17683	Lasher, Daniel	Steam pistons, metallic packing for	June 30, 1857	VI.
16982	Latham, Joseph B	Staging-brackets, arrangement of	April 7, 1857	IX.
17744	Lathbury, E. T	Sewing-machines	July 7, 1857	III.
17972	Latta, A B	Lubricator, automatic, for railroad car axles	Aug. 11, 1857	XII.
18460	Latta, A. B	Steam generators	Oct. 20, 1857	VI
18752	Latta, A. B	Car-wheels, railroad	Dec. 1, 1857	X.
16337	Laubach, J. J	Metal, sheet, forming joints of	Jan. 6, 1857	II.
18913	Law, Lorenzo D	Planters, cotton seed	Dec. 22, 1857	I.
	Lawrence & Abbott. (See Smith, Brown, & Sailor, assignors.)			
	Lawrence & Abbott. (See Smith, Brown, & Sailor, assignors.)			
	Lawrenson, John, and Charles T. Kipp. (See Kipp & Lawrenson)			
18978	Lawson, James	Seeding-machines	Dec. 29, 1857	I.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
17936	Lawson, O. L., and A. A. Starr	Gas-regulator stop-cock	Aug. 4, 1857	IV.
	Lawson, W. H., *et al.* (See Henlings, Joseph.)			
18547	Lawton, John L.	Saws, scroll, method of operating	Nov. 3, 1857	XIV.
18914	Layton, John E	Scythes, tempering, furnace for	Dec. 22, 1857	II.
	Lazell, Judson A. (See Briggs, Joseph W, assignor.)			
18817	Lazelle, William H	Sewing-machine	Dec. 8, 1857	III.
18915	Lazelle, William H	Sewing-machines	Dec. 22, 1857	III.
159	Leach, James O	Looms	Mar. 3, 1857	Add'l imp't.
17405	Learned, S. D., assignor to A C. Learned	Printing-presses	May 26, 1857	XVIII.
18818	Leclair, Francis	Lamps	Dec. 8, 1857	V.
16735	Lee, Caleb	Reaping-machines, rakes for	Mar. 3, 1857	I.
17308	Lee, Elisha	Printing, painting, &c, canvas for, method of preparing.	May 12, 1857	XVIII.
18819	Lee, Francis D	Vessels, life and treasure, buoy, for arrangement of	Dec. 8, 1857	VII.
18698	Lee, Joel	Ploughs, gang	Nov. 24, 1857	I.
18820	Lee, Joel	Ploughs	Dec. 8, 1857	I.
18821	Lee, Joel	Planters, seed	Dec. 8, 1857	I.
	Lee, Squire. (See Andrus, C. H.)			
17102	Lefebvre, L. H	Bathing-apparatus	April 21, 1857	XX.
17578	Lefferts, John W	Stoves, foot	June 16, 1857	V.
18153	Lefler, J. George	Carriages, wear-iron for	Sept. 8, 1857	X.
18980	Legare, James M	Cotton, plastic, preparing, for moulding purposes	Dec. 29, 1857	IV.
17579	Legg, L. W. & E. D	Ploughs	June 16, 1857	I.
	Leibrant, McDowell, & Co. (See Smith, Brown, & Read.)			
	Leibrant, McDowell, & Co. (See Smith, Brown, & Read.)			
	Leibrant, McDowell, & Co. (See Smith & Brown, assignors.)			
	Leibrant, McDowell, & Co. (See Smith & Brown, assignors.)			

No.	Name of patentee.	Invention or discovery.	Date.	Class.
	Leibrant, McDowell, & Co. (See Smith & Brown, assignors.)			
17381	Leigh, John	Compositions, sizing, for yarns, paper, &c	May 26, 1857	IV.
16736	Leitch, Robert	Cock, basin	Mar. 3, 1857	XI.
18753	Lenzmann, Charles	Banding-machine	Dec. 1, 1857	XIII.
16688	Leonard, Andrew	Casting skeins for wagons	Feb. 24, 1857	II.
16983	Leopold, Otto G	Liquid-metre	April 7, 1857	XI.
18644	Lewis, Charles N	Husker, corn	Nov. 17, 1857	I.
17653	Lewis, Charles N, assignor to George C. King	Pumps, air-chamber to, method of attaching	June 21, 1857	XI.
18660	Lewis, Charles N., assignor to himself and G. C. King.	Pumps, ventilating-attachment to be applied to	Nov. 17, 1857	XI.
17103	Lewis, Mark M	Hair, curling, instrument for	April 21, 1857	XXI.
17841	Lewis, Norman A	Planters, corn	July 21, 1857	I.
16948	Lewis, Samuel S	Gold, washing, machine for	Mar. 31, 1857	II.
16737	Lewis, William	Husking corn, machines for	Mar. 3, 1857	I.
16738	Lewis, William & William H	Photographic plate-holder	Mar. 3, 1857	XVIII.
16490	Lieurner, Charles T	Rail, compound, for railroads	Jan. 27, 1857	IX.
	Lightcap, S., and N. C. Sherman. (See Sherman & Lightcap.)			
17883	Lighter, S. K., and James A. Morrell	Roofing, mastic, compositions	July 28, 1857	IX.
18608	Lilley, James M	Surveying and calculating areas, instrument for	Nov. 10, 1857	VIII.
16649	Lillie, Samuel, jr	Brick-press	Feb. 17, 1857	XV.
17287	Lindner, Edward	Cartridges	May 12, 1857	XIX.
17382	Lindner, Edward	Fire-arms	May 26, 1857	XIX.
16801	Lindsay, George	Hydraulic jack	Mar. 10, 1857	XI.
18289	Lindsay, William H	Gas-burners	Sept. 29, 1857	V.
18916	Lindsey, Hosea	Pumps	Dec. 22, 1857	XI.
18288	Lindsley, Isaac	Diamonds, &c., setting	Sept. 29, 1857	XVIII.
18917	Lindsley, Isaac	Wood, carving, machine for	Dec. 22, 1857	XIV.
16650	Linnell, Eber H	Vessels, extra top-sail yards to, attaching	Feb. 17, 1857	VII.
17471	Lippman, Issie, assignor to M. J. A. Guiet	Leather and hides, process of splitting	June 2, 1857	XVI.
	Lippincott, Joseph. and William C. Barr. (See Baier Ludwig, assignor.)			
18461	Lister, Samuel C., and James Warburton	Yarns, cotton, manufacture of	Oct. 20, 1857	III.
	Little, Harvey, and James Oliver. (See Oliver & Little.)			
16365	Little, Samuel H	Hemp-brakes	Jan. 6, 1857	III.
	Livingston, Haswell, & Root. (See Karney, N. B, assignor.)			

Patentees of inventions and designs, 1857.

No	Name of patentee.	Invention or discovery.	Date.	Class.
	Livingston, William, and Daniel Kelly. (See Kelly & Livingston.)			
495	Lloyd, Daniel, assignor to Gibbons L. Kelty and Dudley M. Ferguson.	Window-shades, apparatus for stencilling	Sept. 15, 1857	Reissue.
17630	Lloyd, Levi B	Boring-machines, device for feeding and limiting the depth of hole in.	June 23, 1857	XIV.
18918	Lloyd, Thomas J	Metal tubes, implements for cutting	Dec. 22, 1857	II.
	Lockle, Charles, and Samuel J. Smith. (See Smith & Lockle.)			
18290	Lockwood, W. J	Hame-tug fastening	Sept. 29, 1857	XVI.
16336	Loewenberg, Henry	Trunks, travelling	Jan. 6, 1857	XVI.
18262	Loewenberg, Henry	Fire-escape ladder	Sept. 22, 1857	XXII.
17470	Londinsky, Leon, assignor to L. Londinsky and A. E. Becker.	Irons, sad, holders for	June 2, 1857	XVII.
17796	Long, D. W	Car-doors, &c., seal for	July 14, 1857	X.
18754	Long, J. M., Peter Black, and Robert Allstatter	Harvesters, finger-bars for	Dec. 1, 1857	I.
18981	Long, John	Harvesters	Dec. 29, 1857	I.
17842	Longacre, George M	Furnaces, bagasse	July 21, 1857	V.
16689	Longking, Joseph	Photographic glass holder	Feb. 2, 1857	XVIII.
18462	Longshore, Samuel C	Harvesters, swathing apparatus for	Oct. 20, 1857	I.
18050	Loomis, Justin	Washing-machines	Aug. 25, 1857	XVII.
18207	Lord, Samuel	Spoke-machine	Sept. 15, 1857	XIV.
18979	Lothrop, Horace A	Hoes	Dec. 29, 1857	I.
18509	Lovejoy, Daniel, and George F. Butterfield	Grinding and polishing machine	Oct. 27, 1857	II.
17435	Loveless, C. B	Gas generators, feeding	June 2, 1857	IV.
16846	Lovewell, Sewell K	Fire-arms	Mar. 17, 1857	XIX.
	Low, Francis S., and John J. Bate. (See Bate & Low.)			
17288	Lowe, Sylvanus V	Boilers, steam, boring flue-sheets of, machine for	May 12, 1857	VI.
17795	Lownds, Samuel	Hemp-drawing machines	July 14, 1857	III.
	Lowrie, J., and William Pearce. (See Pearce & Lowrie.)			
17383	Lowthorp, Francis C	Hydro-dynamic machine for testing of materials	May 26, 1857	XI.
17684	Lowthorp, Francis C	Bridges, iron truss frames for	June 30, 1857	IX.
18548	Lowthorp, Francis C	Bridges, &c., iron truss frames for	Nov. 3, 1857	IX.
17158	Luce, C. O	Street-sprinkler	April 28, 1857	XXII.
18344	Luce, C. O	Planters, seed	Oct. 6, 1857	I.
16491	Ludlum, Matthias	Boat, life	Jan. 27, 1857	VII.
17580	Ludlum, S. Y	Railroad snow excavators	June 16, 1857	IX.
17686	Ludwig, Matthias	Sawing-machine for felling trees	June 30, 1857	XIV.
18173	Lufkin, C. M., assignor to Norris Lufkin	Harvesters	Sept. 8, 1857	I.
18098	Lund, George D	Sawing-mills, feed and gigging movement for	Sept. 1, 1857	XIV.
180	Lyford, Zebulon	Chairs, portable	Dec. 8, 1857	Add'l imp't.
16568	Lyman, Azel, assignor to Accelerating Fire-arms Co.	Fire-arms, accelerating	Feb. 3, 1857	XIX.
17973	Macdonald, John C	Faucets, &c., valvular arrangement in	Aug. 11, 1857	XI.
18051	Mackenzie, Philip W	Furnaces, cupola	Aug. 25, 1857	II.
17159	Mackey, H. N	Churns	April 28, 1857	I.
18463	Magruder, C. B	Ploughs	Oct. 20, 1857	I.
910	Maguire, J., Joseph A. Read, and Duncan Wright, assignors to Charles Gilbert.	Stoves, cooking	July 14, 1857	Design.
18345	Mahan, J. W	Bench, joiner's	Oct. 16, 1857	XIV.
17333	Main, William H	Journals of shafts, axles, &c., friction rollers for	May 19, 1857	XIII.
16847	Males, Samuel	Mill, cider, convertible	Mar. 17, 1857	XIII.
17104	Mallary, G. H	Shingle-machine	April 21, 1857	XIV.
18017	Maltby, Philo	Saws, dressing, machine for	Aug. 18, 1857	XIV
17689	Maltby, Sidney	Valve gear for steam-engines	June 30, 1857	VI.
	Maney, James B., *et al.* (See Holloway C., assignor.)			
17289	Mann, George, jr	Elevators, grain, clearing guard for	May 12, 1857	XII.
17797	Mann, Howard	Cultivators	July 14, 1857	I.
	Mann, Russell, and J. J. Dulley, assignors to Eddy. (See Dulley & Mann.)			
	Manning, G. S., and Charles Atkinson. (See Atkinson & Manning.)			
17687	Manning, Joseph S	Harvesters, automatic rake for	June 30, 1857	I.
	Manning, William N. (See Lane, George W.)			
17845	Manny, John P	Harvesters, cutting apparatus for	July 7, 1857	I.
17798	Manny, John P	Harvesters, raking apparatus for	July 14, 1857	I.
17779	Manny, John P	Harvesters	July 14, 1857	I.
18510	Manny, John P	Mowing-machines	Oct. 27, 1857	I.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
16985	Manny, P	Harvesters	April 7, 1857	I.
16445	Manny, Pells	Harvesters	Jan. 20, 1857	I.
16984	Manny, Pells	Harvesters	April 7, 1857	I.
18052	Manny, Pells	Harvesters, cutting apparatus of	Aug. 25, 1857	I.
16390	Maranville, H	Balance for detecting counterfeit coin	Jan. 13, 1857	XII.
18983	Marcellus, Abraham	Mowing-machines, track clearers for	Dec. 29, 1857	I.
16986	March, Rinehart P	Carriage-springs, arrangement of	April 7, 1857	X.
17858	Marchant, Henry A., assignor to Edward D Marchant.	Photography	July 21, 1857	XVIII.
18756	Marcus, Tobias	Planters, cane	Dec. 1, 1857	I.
	Maring, Leonard S	Hubs, wheel, cutter for boring	June 16, 1857	Add'l imp't.
18346	Markham, Daniel, and Austin S	Seeding-machines	Oct. 6, 1857	I.
17164	Marland, J., and E. Crockett	Cop-tubes	April 28, 1857	III.
	Marlett and Corbin. (See Corbin and Marlett.)			
18511	Marsh, John W	Sewing-machines	Oct. 27, 1857	III.
16391	Marsh, William W	Press, oil	Jan 13, 1857	XII.
17161	Marsh, William W	Presses, oil, securing and guiding the boxes of	April 28, 1857	XII.
16674	Marshall, Alonzo, assignor to Benjamin Marsh	Can, varnish	Feb. 17, 1857	XXII.
17160	Marshall, Benjamin	Last-holders, revolving	April 28, 1857	XVI.
16547	Marshall, Chester P	Fan-blower	Feb. 3, 1857	I.
18921	Marshall, Edward	Saw-set	Dec. 22, 1857	II.
17183	Marshall, Moses, assignor to Richard Ball and Charles H. Ballard.	Mortising-machines, method of reversing the chisels of	April 28, 1857	XIV.
18512	Marshall, Simeon	Shingle-machine	Oct. 27, 1857	XIV.
17511	Marshall, William C., and Horace W. Smith	Faucets, basin	June 9, 1857	XI.
	Marshall, William P., *et al.* (See Shattuck, David, assignor.)			
893	Marshbank, John D	Stoves, cook's	June 2, 1857	Design.
17224	Marston, John P	Cloth, turning the edges, of machine for	May 5, 1827	III.
17386	Marston, W. W	Fire arms, repeating	May 26, 1857	XIX.
16690	Martien, J. G	Iron and steel, manufacture of	Feb. 24, 1857	II.
18942	Martin, A. C., and M. M. Wombaugh, assignors to A. C. Martin and R. Ashcroft.	Sawing-machinery, circular, method of governing the cut of.	Dec. 22, 1857	XIV.
	Martin, George G. (See Crooker, George R., assignor.)			
	Martin, Jefferson T., administrator of Parkinson. (See Parkinson, William, deceased.)			
	Martin, Joseph P. (See Bradshaw, John A., assignor.)			
	Martin, Joseph P. (See Bradshaw, John A., assignor)			
18919	Martin, Lewis	Engines, steam, feed water attachment to	Dec. 22, 1857	VI.
17385	Martin, Pierre	Ore-washer	May 26, 1857	II.
	Martin, Sabin. (See Gamotis & Martin)			
17108	Martratt, Cornelius	Presses, &c., hay, method of securing the doors of	April 21, 1857	XII.
18053	Marwick, Charles E	Capstans, ship's	Aug. 25, 1857	VII.
17974	Mary, Nicholas, sr	Dyeing machines, silk	Aug. 11, 1857	IV.
16600	Mascher, John F	Daguerreotype cases, &c., process of ornamenting	Feb. 10, 1857	XVIII.
17800	Mascher, John F	Breast pins, spiral catch for	July 14, 1857	XVIII.
	Mason, Henry W. (See Taft, George C., assignor)			
	Mason, Henry, jr., and George C. Taft. (See Taft & Mason.)			
17437	Mason, John L	Screws of thin metal, manufacturing	June 2, 1857	II.
16877	Mason, Samuel	Brooms, clamps for	Mar. 24, 1857	XVII.
	Mason, William, and L. N. Fay. (See Fay & Mason)			
	Mason, William, and L. N. Fay. (See Fay & Mason)			
17975	Massey, G B	Ships, the depth of water in, instruments for indicating	Aug. 11, 1857	VII.
18854	Massey, James	Presses, cotton and hay	Dec. 15, 1857	XII.
16740	Massey, John	Husking-corn, machines for	Mar. 3, 1857	I.
17103	Masury, John W	Canisters, metallic, for putting up paints, &c	April 28, 1857	XXII.
16627	Mathews, Elbridge G., assignor to Harvey Church	Dove-tails and their grooves, machine for cutting	Feb 10, 1857	XIV.
17162	Mathiot, George	Photographic baths and pans, mode of constructing	April 28, 1857	XVIII.
18208	Matoon, George	Looms, harness for	Sept. 15, 1857	III.
18822	Matthew, David	Boilers. steam	Dec. 8, 1857	VI.
17688	Matthews, George	Printing-ink	June 30, 1857	XVIII.
18549	Mattison, James H	Barrels, chamfering and crozing, method of	Nov. 3, 1857	XIV.
18121	Mattison, William, assignor to John C. Whitin	List-speeders, condensers for	Sept. 1, 1857	III.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
879	Maurer, William, assignor to K. Krenkle	Bedsteads, legs and posts of	Mar. 31, 1857	Design.
18593	Maxson, John	Hinge, spring	Nov. 10, 1857	II.
18099	Maxson, William P., and J. E. B	Sack-fastener	Sept. 1, 1857	XIII.
17443	Maxwell, James R	Fluid-metre	June 2, 1857	XI.
17884	May, Ethelred	Spark-arresters	July 28, 1857	VI.
17165	May, George T	Vessels, sails and rigging of	April 28, 1857	VII.
16492	May, John M	Windmills, self-regulating	Jan. 27, 1857	XI.
17468	Mayall, Thomas J., assignor to himself and George N. Davis	Looms, pickers for	June 2, 1857	III.
17166	Mayes, Josiah	Washing-machines	April 28, 1857	XVII.
18426	Mayfield, W. D, assignor to himself and S. D. Porter	Vehicles, detaching horses from, mode of	Oct. 13, 1857	X.
18100	Mayhew, Ira	Chimney-caps	Sept. 1, 1857	V.
17469	Mayhew, Oscar F., assignor to W. H. Weeks and O F. Mayhew.	Hominy-machines	June 2, 1857	XXII.
16691	Maynard, Edward	Horse-shoes, calk for	Feb 24, 1857	II.
16988	Maynard, Richard F	Mills, corn and cob	April 7, 1857	XIII.
16987	Maynard, Richard F	Mills, sectional corn and cob, securing the legs of	April 7, 1857	XIII.
17937	Mayo, William S	Window-blind slat-holders	Aug. 4, 1857	IX.
17046	McCafferty, Robert	Boilers, steam, to prevent incrustations in	April 14, 1857	VI.
16446	McCallum, D C	Bridges	Jan. 20, 1857	IX.
18122	McCauley, Wm. M., assignor to J. N. McIntire	Car-seats, railroad, head rest for	Sept. 1, 1857	X.
17746	McCausland, Alexander	Paper cop-tubes	July 7, 1857	III.
17105	McClain, Galen B	Irons, smoothing	April 21, 1857	XVII.
18757	McClellan, Henry M	Bee-hives	Dec. 1, 1857	I.
17107	McClelland, J. A	Forceps, dental	April 21, 1857	XX.
	McClelland, John and Linus Stewart. (See Stewart and McClelland.)			
18758	McCollum, John	Dough, machine for rolling	Dec. 1, 1857	XVII.
17886	McConnel, John L	Projectiles for smooth-bored guns	July 28, 1857	XIX.
17436	McConnell, J. E	Boilers, locomotive	June 2, 1857	VI.
177	McConnell, James E	Boilers, locomotive	Oct. 6, 1857	Add. imp.
	McCormick, Cyrus H	Reaping machines	Nov. 18, 1857	Disclaimer.
17438	McCormick, J. B	Harvesting hemp, machines for	June 2, 1857	I.
18699	McCormick, J. J., and George Crossingham	Painters' striping instrument	Nov. 24, 1857	XVIII.
17047	McCurdy, James S	Bedsteads, wardrobe or bureau	April 14, 1857	XVII.
17439	McCutcheon, Robert	Churns, atmospheric	June 2, 1857	I.
	McDowell & Co. (See Smith and Brown, assignors.)			
	McDowell & Co. (See Smith and Brown, assignors.)			
	McDowell & Co. (See Smith and Brown, assignors.)			
	McDowell & Co. (See Smith, Brown, and Read, assignors.)			
	McDowell & Co. (See Smith, Brown, and Read, assignors.)			
16802	McElroy, Charles A	Carriage-springs, arrangement of	March 10, 1857	X.
	McFall, Wiler, and Sturges. (See Wiler, Sturges, and McFall.)			
17566	McGaffey, Ives W	Planters, corn	June 16, 1857	I.
16742	McGeorge, H. D	Shingle machine	March 3, 1857	XIV.
18550	McGhan, Francis	Closets, water	Nov. 3, 1857	IX.
17335	McGill, George W	Gate, approach-opening	May 19, 1857	IX.
17885	McGregor, John	Kilns, lime	July 28, 1857	XV.
16848	McHenry, John	Gas-burners, construction of	March 17, 1857	V.
16598	McIlroy, G. R	Fence adaptable to uneven ground	Feb. 10, 1857	IX.
17227	McIlroy, George R	Pocket-safes or fastenings	May 5, 1857	XXI.
	McIntire, J. N. (See McCauley, William M., assignor.)			
17690	McIntosh, John	Harvesters, raking attachment for	June 30, 1857	I.
17388	McKay, Gordon	Printing presses, registering apparatus for	May 26, 1857	XVIII.
	McKenney, B., *et al.* (See Fountain, James L., assignor.			
17106	McKenzie, A	Square, mitre-square, and bevel combined	April 21, 1857	XIV.
	McKillop, John. (See Harris, Benjamin T., assignor.)			
482	McKinlay, Peter	Hullers, rice	Aug. 11, 1857	Reissue.
17803	McLean, Donald	Trap-hook, self-setting	July 14, 1857	XXII.
17938	McMakin, James	Window-blinds, device for operating	Aug. 4, 1857	IX.
18223	McMurtry, John, assignor to Daniel Wiehl	Sash-balance, cog-gear, mode of controlling	Sept. 15, 1857	IX.
17691	McNamara, David S	Harvesters	June 30, 1857	I.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
428	McNary, William H	Hosiery, manufacture of	Feb. 17, 1857	Reissue.
18123	McNish, H. L., assignor to himself and David C. Butler.	Staves, crossing and chamfering, machine for	Sept. 1, 1857	XIV.
17130	McNish, Henry L., assignor to H. L. McNish and D. C. Butler.	Stave-machine	April 21, 1857	XIV.
18884	McWilliams, Robert, assignor to himself and Adam J. Frederick.	Cars, railroad, journal boxes for	Dec. 15, 1857	X.
16929	Meacham, George A	Planters, seed	Mar. 31, 1857	I.
17801	Mears, Henry D., and William Houlton, jr	Cars, &c., railroad, freight seal for	July 14, 1857	X.
17802	Mears, Henry D., and William Houlton, jr	Cars, &c., railroad, freight seal for	July 14, 1857	X.
18922	Mefford, David M	Huskers, corn	Dec. 22, 1857	I.
17387	Mellier, M. A., and Charles	Paper-pulp, making	May 26, 1857	III.
17249	Mellish, Henry, assignor to Charles Pope	Wooden boxes, cylindrical, cutters for turning	May 5, 1857	XIV.
16392	Mendenhall, Stephen C	Looms, hand	Jan. 13, 1857	III.
	Merkel, P., and Robert Kuschke. (See Kuschke & Merkel.)			
	Merklein, G. H., and Thomas Floyd. (See Floyd, Thomas, assignor.)			
18594	Merriam, W. W	Boots and shoes, patterns for cutting out the uppers of.	Nov. 10, 1857	XVI.
16878	Merrill, Ira	Stone into regular forms, machine for breaking slabs or blocks of.	Mar. 24, 1857	XV.
18401	Merrill, James H	Projectiles for rifled ordnance	Oct. 13, 1857	XIX.
18855	Merry, Cornelius	Carriage-wheels, hubs of	Dec. 15, 1857	X.
19006	Merryman, John M., assignor to J. M. Merriman and J. H. Jordan.	Paint-compound	Dec. 29, 1857	IV.
18263	Messenger, W. F., and Henry Rehahn	Cooler	Sept. 22, 1857	XVII.
17048	Messer, Daniel W	Cups, molasses	April 14, 1857	XVII.
	Messer, W. W., and George Gray. (See Coburn, Francis S., assignor.)			
	Messer, William W., and J. Taggart. (See Taggart, John, assignor.)			

No.	Name of patentee.	Invention or discovery.	Date.	Class.
17226	Methven, Daniel and Angus A	Sawing-mills, self-reversing, feed motion for	May 5, 1857	XIV.
16692	Mettam, Charles	Pavements, iron	Feb. 24, 1857	IX.
944	Meyer, Julius, assignor to M. Greenwood & Co	Shovels and tongs, stands to hold. (B)	Sept. 29, 1857	Design.
945	Meyer, Julius, assignor to M. Greenwood & Co	Shovels and tongs, stands to hold. (A)	Sept. 29, 1857	Design.
18101	Meyer, William	Bath, shower, apparatus	Sept. 1, 1857	XX.
18920	Miamay, Eugene	Fuel, artificial	Dec. 22, 1857	V.
18291	Middleton, Samuel	Boots and shoes without seam, manufacture of the uppers of.	Sept. 29, 1857	XVI.
18464	Miffleton, Daniel	Grain-cradles	Oct. 20, 1857	I.
	Migeon, Henry. (See Mourier & Velent, assignors.)			
	Mighten & Allcroft. (See Allcroft & Mighten.)			
17608	Mihan, Patrick, assignor to himself and Robert B. Fitts.	Stoves, gas	June 16, 1857	V.
17767	Mihan, Patrick, assignor to himself and Robert B. Fitts.	Stove, gas	July 7, 1857	V.
16741	Miles, Purches	Curtain-rollers	Mar. 3, 1857	XVII.
16989	Miles, Purches	Curtain fixtures, window	April 7, 1857	XVII.
18402	Miles, Thomas	Sawing given curvatures, device for guiding the logs in.	Oct. 13, 1857	XIV.
16739	Milks, Charles R	Roofing-compounds, mastic	Mar. 3, 1857	IX.
17227	Millar, John C., and C. N. Tyler	Cloth, napping, machinery for	May 5, 1857	III.
17440	Miller, A. C	Sowing seed broadcast, machines for	June 2, 1857	I.
18760	Miller, David L	Jacks, lifting	Dec. 1, 1857	XII.
17512	Miller, E. T	Trees by hand, felling, machine for	June 9, 1857	IX.
18347	Miller, George P., and Hugh Dougherty	Iron, melting and refining	Oct. 6, 1857	II.
18759	Miller, Harvey	Egg-beaters	Dec. 1, 1857	XVII.
17607	Miller, J. H., and J. Kailey, assignors to themselves and John Danner.	Gauges, steam-pressure	June 16, 1857	VI.
16930	Miller, John	Planters, corn	Mar. 31, 1857	I.
	Miller, John Q., and J. D. & H. C. Foster. (See Foster, Foster, & Miller.)			
16651	Miller, Michael J	Gas-retort	Feb. 17, 1857	IV.
18403	Miller, Thomas	Carriages, shafts and poles to, mode of fastening	Oct. 13, 1857	X.
18349	Miller, William	Baths, shower, appendages to	Oct. 6, 1857	XX.
	Miller, William, and John C. Davis. (See Davis & Miller.)			
16601	Millerd, G. B.	India-rubber cloth, preparing	Feb. 10, 1857	IV.
16602	Milligan, Julia M	Abdominal supporters	Feb. 10, 1857	XX.
493	Milligan, Julia M	Abdominal supporters	Sept. 15, 1857	Reissue.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
18856	Mills, Samuel	Seeding-machines	Dec. 15, 1857	I.
	Mills, William, and E. Gomez. (See Gomez & Mills.)			
17334	Minder, J. D.	Sewing-thread, warps, and yarns, machinery for dressing.	May 19, 1857	III.
18645	Mingay, Edward	Pitchers for molasses, &c.	Nov. 17, 1857	XVII.
18514	Minor, William	Bands for cotton-bales, &c., metallic fastening for	Oct. 27, 1857	XII.
	Minott, Sawin, & Goodspeed. (See Sawin, Goodspeed, & Minott.)			
16743	Mitchel, William H.	Types, composing, machines for	Mar. 3, 1857	XVIII.
18264	Mitchel, William H.	Types, distributing, machine for	Sept. 22, 1857	XVIII.
17384	Mitchell, James	Wind-wheel	May 26, 1857	XI.
18018	Mitchell, James	Car-brake, railroad	Aug. 18, 1857	X.
18348	Mitchell, James	Locomotives, cow-catcher for	Oct. 6, 1857	VI.
18404	Mitchell, James	Digging-machine	Oct. 13, 1857	IX.
17631	Mitchell, Thomas	Brush-handles, machine for finishing	June 23, 1857	XVII.
17441	Mitchell, V. N.	Horses' hoofs, paring, implement for	June 2, 1857	II.
18292	Mix, E. M. and J. E.	Burglars' alarms	Sept. 29, 1857	XXII.
18512	Mix, G. J.	Spoons, iron, making	Oct. 27, 1857	XVII.
480	Mix, William, assignor to Charles Parker	Spoons, wire-strengthened, method of making	Aug. 4, 1857	Reissue.
	Mobley, Edward M., and J. H. Heyser. (See Heyser & Mobley.)			
17581	Moehlman, Frederick	Sowing grain in drills, machines for	June 16, 1857	I.
18596	Moeser, Henry	Ploughing-machines	Nov. 10, 1857	I.
18761	Moffitt, John R.	Grain-separators	Dec. 1, 1857	XIII.
17336	Monnier, Alfred	Ores, zinc, apparatus for reducing	May 19, 1857	II.
17976	Monnier, Alfred	Acid, sulphuric, manufacture of	Aug. 11, 1857	IV.
502	Monnier, Alfred	Acid, sulphuric, manufacture of.	Oct. 6, 1857	Reissue.
17011	Monnier, Alfred, assignor to himself and Isaac Gattman.	Retort, construction of a	April 7, 1857	IV.
16628	Monroe, Edwin P., assignor to Gilbert H. Scribner.	Clocks, calendar	Feb. 10, 1857	VIII.
18154	Monson, Charles	Gas-tubes, extension	Sept. 8, 1857	IV.
16447	Montgomery, Joseph and James	Winnowing-machines	Jan. 20, 1857	I
18795	Moody, James S., assignor to T. F. and J. F. Randolph.	Printing-machine, card	Dec. 1, 1857	VIII.
	Moore, Wolf, & Co. (See Smith & Brown, assignors.)			
16931	Moore, A. C.	Bits in their stocks, mode of securing	Mar. 31, 1857	XIV.
16932	Moore, Albert	Hubs while being bored, centering and holding, method of.	Mar. 31, 1857	XIV.
18823	Moore, Charles	Sewing-machines	Dec. 8, 1857	III.
18551	Moore, G. H.	Excavators, rotary	Nov. 3, 1857	IX.
18943	Moore, George R., assignor to himself and Charles G. Sargent.	Sawing-machines, cross-cut	Dec. 22, 1857	XIV.
17693	Moore, J. A., and A. H. Patch	Mowers and reapers combined, frame for	June 30, 1857	I.
17692	Moore, James	Fence	June 30, 1857	IX.
	Morgan & Smith. (See Rice, Benjamin F.)			
	Morgan & Thompson. (See Thompson, W. H., and E. P. Morgan.)			
	Morgan & Withrell. (See Withrell & Morgan.)			
17908	Morgan, A. E., assignor to himself, D. Todd, and John B. Weddle.	Latch, gate	July 28, 1857	II.
	Morgan, Dayton S., *et al.* (See Seymour, William H., assignor.)			
	Morgan, Dayton S., *et al.* (See Seymour, William H., assignor.)			
	Morgan, Dayton S., *et al.* (See Seymour, William H., assignor.)			
16448	Morgan, James G.	Hydrant	Jan. 20, 1857	XI.
16933	Morgan, John E.	Harrows	Mar. 31, 1857	I.
	Morgan, Peter U. (See Arnold, C., and P. U. Morgan, administrators,)			
	Morrell, James A., and S. K. Lighter. (See Lighter & Morrell.)			
	Morrill, Jacob, *et al.* (See Shattuck, David, assignor.)			
18465	Morrill, Oscar F.	Burner, air and vapor.	Oct. 20, 1857	V.
16603	Morris, Edward	Pumps, chain	Feb. 10, 1857	XI.
16338	Morris, Evan	Hats	Jan. 6, 1857	III.
18923	Morrison, J. R.	Mill, grinding	Dec. 22, 1857	XIII.
16393	Morrison, Robert J.	Harvesting-machines, cutting-apparatus for	Jan. 13, 1857	I.
158	Morrison, Robert J.	Harvesting-machines	Jan. 20, 1857	Add'l imp't.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
17514	Morrison, William	Fence, portable	June 9, 1857	IX.
17066	Morrow, John H., assignor to himself and Edwin Bennett.	Photographic purposes, baths for.	April 14, 1857	XVIII.
17513	Morse, Albert W	Doors, hanging, mode of.	June 9, 1857	IX.
17543	Morse, Jedediah, assignor to Ruggles Power Press Manufacturing Company.	Printing-presses, power	June 9, 1857	XVIII.
18527	Morse, Jedediah, assignor to Ruggles Power Press Manufacturing Company.	Printing-presses, hand	Oct. 27, 1857	XVIII.
18700	Morton, John W	Corn-shellers	Nov. 24, 1857	I.
16572	Moseley, Thomas W. H	Bridge	Feb. 3, 1857	IX.
18595	Moss, Lucien.	Fire-plugs.	Nov. 10, 1857	XI.
17167	Motley, Thomas	Letters for signs, &c., mode of constructing	April 28, 1857	XVIII.
431	Mott, J. L	Caldron and furnace combined, mode of constructing a, for the use of agriculturists and others.	Feb. 24, 1857	Reissue.
18722	Mott, Jordan L , and William Tabele, assignors to the J. L. Mott Iron Works.	Chairs, rotary	Nov. 24, 1857	XVII.
18054	Moultrie, William	Furnaces, hot-air, water vessels for imparting humidity to hot-air and vapor draught to the grate bars of.	Aug. 25, 1857	V.
16771	Mourier, E , and T. F. E. Vellent, assignors to Henry Migeon.	Alloys, fluxes for treating	Mar. 3, 1857	IV
	Mower, Samuel. (See Wells, Parker, assignor.)			
17442	Mowry, A. L	Car-wheels, cast iron	June 2, 1857	X.
17290	Muckelt, Robert, and William Rigby	Engraving cylinders, machine for	May 12, 1857	XVIII.
950	Muller, Nicholas, (A)	Clock-fronts	Oct. 13, 1857	Design.
951	Muller, Nicholas, (B)	Clock-fronts	Oct. 13, 1857	Design.
16599	Mulley, Jeremiah W	Reaping and mowing machines	Feb. 10, 1857	I.
18982	Mumma, Jacob	Seed-drills	Dec. 29, 1857	I.
16849	Munck, Valentine	Staves, tapering, machine for planing	Mar. 17, 1857	XIV.
17802	Munger, L. F.	Locks	July 14, 1857	II.
	Munroe, J., *et al.* (See Fournier & Hinman, assignors.)			
17337	Murdoch, Richard	Carriages, running gear of	May 19, 1857	X.
17291	Martineddu, Antoine	Powder, blasting	May 12, 1857	IV.
17389	Mushet, Robert	Iron and steel, manufacture of	May 26, 1857	II.
16772	Myers, Lewis B. and Henry A., assignors to themselves and Isaac Myers.	Seeding-machines	Mar. 3, 1857	I.
	Mynderse, Silsby, & Shoemaker. (See Holly, Birdsill, assignor.)			
	Nashawannuck Manufacturing Co. (See Painter, Franklin, assignor.)			
	Nashawannuck Manufacturing Co. (See Gee, William V.)			
18857	Nathans, Horace A	Flexomanus	Dec. 15, 1857	XVIII.
18293	Naughten, James	Water, oily matter from, apparatus for separating	Sept. 29, 1857	XI.
18597	Naughten, James	Bread, machine for cutting	Nov. 10, 1857	XVII.
16449	Nave, B. F	Brick-machines	Jan. 20, 1857	XV.
18762	Neal, Daniel B	Planters, seed	Dec. 1, 1857	I.
	Neal, Daniel B., and B. H. Pearson. (See Pearson & Neal.)			
18224	Near, Jasper J., assignor to Near & Vandusen	Saw-filer	Sept. 15, 1857	II.
18924	Needham, A A	Casting car-wheels	Dec. 22, 1857	II
16361	Needham, O H	Milking-shields	Jan. 6, 1857	XX.
16548	Needham, Otis, & Wales	Walls, pisé work, boxes for	Feb. 3, 1857	IX.
17978	Needham, William, and James Kite	Press, filtration, for expressing liquids from substances.	Aug. 11, 1857	XII.
18246	Neil, James	Saddles, riding, stirrups for	Sept. 22, 1857	XVI.
16863	Nelson, Israel P., assignor to Israel P. Nelson and George N. Davis.	Fireman's mask and respirator	Mar. 17, 1857	XXII.
17109	Nelson, Mortimer	Casting, moulds for	April 21, 1857	II.
18763	Nesen, Joseph E	Drills, rock	Dec. 1, 1857	IX.
18350	Nettleton, W. H., and Charles Raymond	Sewing-machines	Oct. 6, 1857	III.
18661	Nettleton, W. H., Charles Raymond, and A. Hatch, assignors to W. H. Nettleton.	Clock-movements, machine for turning pillars for	Nov. 17, 1857	VIII.
17049	Nettleton, Wilford H., and Charles Raymond, assignors to Henry E. Fickett.	Sewing-machine	April 14, 1857	III.
	Newberry, Filley, & Co. (See Vedder, N. S., assignor.)			
171	Newbury, Frederick D	Fire-arms	July 14, 1857	Add'l imp't.
16629	Newbury, Frederick D., assignor to H. V. De Witt, jr.	Bullets, patching, mode of	Feb. 10, 1857	XIX.

Patentees of inventions and designs, 1857.

No.	Name of patentee	Invention or discovery.	Date.	Class.
161	Newbury, F. D., assignor to R. V. De Witt, jr	Fire-arms	Mar. 31, 1857	Add'l imp't.
16803	Newbury, Thompson	Screws, cutting, machine for	Mar. 10, 1857	II.
18552	Newell, William	Coffee, cleaning and polishing, method of	Nov. 3, 1857	XXII.
18764	Newkirk, Jacob	Kilns, lime	Dec. 1, 1857	XV.
	Newman, J. H., and E. Kennedy, *et al.* (See Freeman & Farley, assignors)			
16990	Newman, Joseph	Piano-fortes, sound-board of	April 7, 1857	XVIII.
18351	Newman, Nelson	Sod-cutters	Oct. 6, 1857	I.
18646	Newton, Alexander S	Wooden boxes, turning, machine for	Nov. 17, 1857	XIV.
16804	Newton, Daniel	Metal, sheet, roller for bending	Mar. 10, 1857	II.
	Newton, L. W., and H. S. Dewey. (See Henry S. Dewey, assignor.)			
17887	Newton, Orrin	Door-knobs, spindle for	July 28, 1857	II.
18294	Newton, Orrin	Spikes	Sept. 29, 1857	II.
	Newton, Reuben, and John C. Cox. (See Cox & Newton.)			
	New York and Brooklyn Brass Co. (See Cannon, Mary Ann.)			
	New York Wire Railing Company. (See Jenkins, Henry, assignor.)			
	New York Wrought Iron Railroad Chair Co. (See Cox, Samuel A., assignor to Sawyer & Hall, assignors.)			
17888	Nicholas R. H., and Douglass Bly	Legs, artificial	July 28, 1857	XX.
	Nicholas, Jacob, jr., and W. H. Skinner. (See Skinner, Smith, assignor.)			
16549	Nichols, James R	Soda fountains, apparatus for containing and dispensing syrups for.	Feb. 3, 1857	XXII.
16805	Nichols, Oldin	Plane, carpenter's	Mar. 10, 1857	XIV.
423	Nichols, William E	Cord-making, machine for	Jan. 20, 1857	Reissue.
17444	Nicholson, Henry C	Churns	June 2, 1857	I.
17338	Nicol, Andrew	Water, raising, apparatus for, valvular arrangement in.	May 19, 1857	IX.
16605	Nicolson, Samuel	Rail for street railroads	Feb. 10, 1857	IX.
17654	Niles, Peter H., assignor to himself and Alfred Douglas, jr.	Water-metre	June 23, 1857	XI.
16705	Niles, Peter H., assignor to himself, N. Hunt, R. C. Webster, and A. Douglas, jr.	Turning tapering sticks, device to operate the mandrel cutters in.	Feb. 24, 1857	XIV.
17110	Nippes, Albert S	Saws, grinding	April 21, 1857	XIV.
17977	Norcross, James W	Sails, top-reefing	Aug. 11, 1857	VII.
	Nordyke, Wiggins, & Strawbridge. (See Wiggins & Nordyke, &c.)			
18466	Nordyke, E. and A. H	Caster and fan, automatic	Oct. 20, 1857	XVII.
18984	Norris, James A	Cars, &c., railroad, journal boxes for	Dec. 29, 1857	X.
18701	Norris, Robert, and Frederick Peters	Pendulum-quadrant	Nov. 24, 1857	VIII.
18467	Norris, William George	Boilers, steam	Oct. 20, 1857	VI.
	North, Chase, & North. (See Gibbs, S. W., assignor.)			
	North, Chase, & North. (See Vedder, N. S., assignor.)			
	North, Chase, & North. (See Vedder, N. S., assignor.)			
	North, Chase, & North. (See Vedder, N. S., assignor.)			
17050	North, John	Paper, drying and pressing, machine for	April 14, 1857	III.
464	North, John	Paper, drying and pressing, machine for	May 19, 1857	Reissue.
	North, Reuben, and John Wood. (See Wood & North.)			
	Norton, Treadwell, & Perry. (See Pratt, Samuel F., assignor.)			
17445	Norton, E. L	Leather shoe-binding, manufacturing	June 2, 1857	XVI.
17747	Norton, M. P	Locks, sash	July 7, 1857	II.
	Norton, Samuel, and Robert Cook. (See Cook, Robert, assignor.)			
	Noyes & Remson. (See Remson, Henry R., assignor.)			
18598	Nute, Andrew T	Trees, mode of protecting, from canker worms, &c.	Nov. 10, 1857	I.
16604	Nutting, Mighill	Boilers, steam, gauges and water regulators for	Feb. 10, 1857	VI.
17168	Nutting, Rufus	Wind-mill	April 28, 1857	XI.
17805	Nutting, Rufus	Carriages, mode of constructing	July 14, 1857	X.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
18885	O'Brien, John, assignor to Owen Collins and John Dunley.	Dampers, grate	Dec. 15, 1857	V.
18295	Odion, Thomas	Fire, buildings from, apparatus to protect	July 28, 1857	XXII, IX.
17909	Ogborn, Harrison, and George Taylor, assignors to Harrison Ogborn.	Cultivators	July 28, 1857	I.
16493	Okey, Joseph B	Lath-machine	Jan. 27, 1857	XIV.
	Oldfield, Dorr, & Henry. (See Dorr, Henry, & Oldfield.)			
18985	Olds, Franklin	Mills, grinding	Dec. 29, 1857	XIII.
16991	Oldendorf. G. J., E. R. Tripp, and S. Harper	Jack, trimming	April 7, 1857	II.
17694	Oliver, James, and Henry Little	Chilling plough-shares	June 30, 1857	II.
17051	Oliver, Stephen, jr	Boot and shoe heels	April 7, 1857	XVI.
18599	Olmstead, Kingsley R	Tanning mills, lateral feed motion for	Nov. 10, 1857	XVI.
17979	O'Neil, John K	Bathing-apparatus	Aug. 11, 1857	XX.
17052	Oram, Zachariah	Boats, ice-breaking	April 14, 1857	VII.
16706	Ordway, John M., assignor to Roxbury Color and Chemical Manufactory.	Silicates, alkaline, preparing	Feb. 24, 1857	IV.
16879	O'Reilly, Philip	Acid, nitric, apparatus for making	Mar. 24, 1857	IV.
17476	Ormiston, John, assignor to D. N. Allard	Ploughs	June 2, 1857	I.
17169	Ormsby, Waterman L	Wood, splitting, machine for	April 28, 1857	XIV.
16394	Orr, James F	Cotton-gins	Jan. 13, 1857	III.
16550	Orr, James F	Planters, cotton-seed	Feb. 3, 1857	I.
	Osborn, Levi, and William Halliwell. (See Halliwell & Osborn.)			
427	Osborn, William	Bonnets and bonnet-frames, machines for pressing	Feb 17, 1857	Reissue.
16652	Osgood, Jason C	Excavating rock, machinery for	Feb. 17, 1857	IX.
16992	Osgood, Jason C	Vessels, &c., hawse-holes, for	April 7, 1857	VII.
17228	Osgood, Robert R., assignor to J. C. Osgood	Ships' hawse-holes	May 5, 1857	VII.
16395	Ostrander, William	Tubes, tapering, machines for rolling	Jan. 13, 1857	II.
18468	Otis, E. Graves	Plough, steam	Oct. 20, 1857	I.
	Otis, George W., and A. J. Smith. (See Smith, Amos J., assignor.)			

17111	Packard, Manley	Spoke-shaves, knives of, method of adjusting and holding the.	April 21, 1857	XIV.
17889	Page, C. D	Kilns, lime	July 28, 1857	XV.
17808	Page, Charles G	Door-bolts, cylindrical-locking	July 14, 1857	II.
17843	Page, Charles G	Door-bolts, cylindrical	July 21, 1857	II.
16606	Page, Ezekiel	Sawing-machines, arrangement of devices for suspending and adjusting sticks in.	Feb. 10, 1857	XIV.
	Page, H. W. (See Waymoth, A. D., assignor.)			
17859	Page, John F., assignor to himself and James Landy.	Spark-arresters	July 21, 1857	VI.
18858	Page, Thomas B	Fence, field, portable	Dec. 15, 1857	IX.
	Page, W. P., and Edward F. Hodges. (See Campbell, Ethan, assignor.)			
18765	Paige, David O., and John Clary	Seeding-machines	Dec. 1, 1857	I.
18515	Paine, Henry M	Car-springs, railroad	Oct. 27, 1857	X.
17799	Paine, Hiram E	Boring-machines, mortise, device for feeding the cutter intermittently in.	July 14, 1857	XIV.
17404	Painter, Franklin, assignor to the Nashawannuck Manufacturing Co.	Looms	May 26, 1857	III.
17446	Painter, M. & C	Mill-stones, feeding grain to	June 2, 1857	XIII.
	Palmer & Skilton. (See Whitaker, Welcome, assignor.)			
16569	Palmer, J. F., assignor to S. W. Palmer	Plane, joiner's	Feb. 3, 1857	XIV.
16693	Palmer, Jason J	Boilers, steam	Feb. 24, 1857	VI.
18986	Palmer, Oliver	Pumps, rotary	Dec. 29, 1857	XI.
18209	Park, Jesse K	Tracing-muslin, composition for preparing	Sept. 15, 1857	XVIII.
	Parker, Charles. (See Mix, William, assignor.)			
16752	Parker, E. F., and J. Smead	Tin pans, manufacture of	Mar. 3, 1857	XVII.
429	Parker, George W	Clothes-pins, machine for making	Feb. 17, 1857	Reissue.
16993	Parker, J. J	Apples, paring, machines for	April 7, 1857	XVII.
18296	Parker, J J	Corn-shellers	Sept. 29, 1857	I.
16396	Parker, James	Nipple-shield	Jan. 13, 1857	XX.
16744	Parker, Jonathan	Card-cylinders, machine for grinding	Mar. 3, 1857	III.
	Parker, R. J., *et al.* (See Hinman & Fournier, assignors.)			
17994	Parkinson, William, deceased, J. T. Martin, administrator of.	Lancets, spring	Aug. 11, 1857	XX.
17390	Parks, Stephen	Brick machines	May 26, 1857	XV.
	Parlange, Charles. (See Bour, Joseph, assignor.)			

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
	Parsons, Lewis H. (See Wood, S. W., assignor.)			
16607	Parsons, Luther M	Stoves, ventilating	Feb. 10, 1857	V.
16494	Parry, M. L	Presses, cotton	Jan. 27, 1857	XII.
17447	Partz, August F. W	Hydraulic blast-generator	June 2, 1857	XI.
17448	Partz, August F. W	Vapor and gases, apparatus for condensing, and for evaporating liquids.	June 2, 1857	IV.
	Patch, A. H., and J. A. Moore. (See Moore & Patch)			
17611	Patterson, Andrew, assignor to J. H. Jones	Locks and latches, keeper for	June 16, 1857	II.
18405	Patterson, N. A	Harvesters	Oct. 13, 1857	I.
18155	Patton, William	Lock, sash	Sept. 8, 1857	II.
18406	Paull, Joseph	Ore-washer	Oct. 13, 1857	II.
18156	Paye, Edward, and Samuel Hall	Nuts, forging, machines for	Sept. 8, 1857	II.
18703	Payson, Joseph R	Sash-balance, arrangement in	Nov. 24, 1857	IX.
18210	Peabody, Francis	Wind-wheels, velocity of, method of regulating the	Sept. 15, 1857	XI.
18247	Peacock, David C	Sleeve-fastener	Sept. 22, 1857	XXI.
504	Pearce, Henry	Cordage machinery	Nov. 3, 1857	Reissue.
17114	Pearce, William, and John Lowrie	Cars, railroad, mode of dumping	April 21, 1857	X.
18407	Pearson, Benjamin H., and Daniel B. Neal	Washing-machines	Oct. 13, 1857	XVII.
17292	Pearson, Charles F	Bench-strip, joiners'	May 12, 1857	XIV.
18488	Pease, Henry, assignor to Eckler, Buswell, & Co	Pumps, rotary	Oct. 20, 1857	XI.
17768	Pease, H., assignor to himself, Eckler, Buswell, & Co.	Pumps	July 7, 1857	XI.
	Pecare, J., and A. F. Chatman. (See Chatman, Alfred F., assignor.)			
18987	Peck, Charles A	Door-springs	Dec. 29, 1857	II.
18600	Peck, Ezra	Ploughs, digging	Nov. 10, 1857	I.
	Peck, Geo. M., and E. Butler. (See Butler & Peck.)			
17411	Peck, Milo	Presses, drop	May 26, 1857	XII.
18647	Peckham, George R	Cake-cutter	Nov. 17, 1857	XVII.
	Peckham, George, and J. G. Wolvin. (See Wolvin, John G., assignor.)			
	Peckham, John S., and Merritt. (See Vedder, N. S., assignor.)			
17633	Peevy, Joseph, and A. Sanborn	Ships' windlasses	June 23, 1857	VII.
18553	Penberthy, Samuel	Tires, method of expanding	Nov. 3, 1857	II.
18211	Pennington, John C	Valve-gear for oscillating steam-engines	Sept. 15, 1857	VI.
18766	Penniston, G. W	Presses, cotton and hay	Dec. 1, 1857	XII.
17053	Penniston, George W	Presses, cotton, self-releasing doors of	April 14, 1857	XII.
18267	Pennock, Samuel, assignor to himself and M. Pennock.	Harvesters	Sept. 22, 1857	I.
17890	Penrose, Washington H	Carpets, fastenings for	July 28, 1857	XVII.
17582	Pepper, William T	Planters, corn	June 16, 1857	I.
18408	Perkins, Russell B	Hammers, machine for making	Oct. 13, 1857	II.
18517	Perkins, Russell B	Spoons, iron, making	Oct. 27, 1857	XVII.
16551	Perkins, Samuel M	Planters, corn	Feb. 3, 1857	I.
17940	Perley, Charles	Ships, compound capstans for	Aug. 4, 1857	VII.
17632	Perini, George P., and James E. Boyle	Hydrants	June 23, 1857	XI.
	Perry, Norton, and Treadwell. (See Pratt, Samuel F., assignor.)			
	Perry, Amos E., *et al.* (See Humphrey, John, assignor.)			
18925	Perry, Horatio O	Valves of steam-engines, giving motion to	Dec. 22, 1857	VI.
17610	Perry, John W., assignor to James W. Gates	Preparing liquid rose-pink	June 16, 1857	IV.
18019	Perry, Julius	Metal plates, machine for bending	Aug. 18, 1857	II.
18516	Perry, Philander	Brake, railroad, operating	Oct. 27, 1857	X.
	Perry, Samuel M., and Abraham Coates. (See Coates & Perry.)			
17293	Perry, Stuart	Locks	May 12, 1857	II.
17939	Perry, Stuart	Key	Aug. 4, 1857	II.
18157	Perry, Stuart	Bolt for safes	Sept. 8, 1857	II.
	Peters, Frederick, and Robert Norris. (See Norris & Peters.)			
17980	Peters, Jacob	Sausage-cutters	Aug. 11, 1857	XVII.
	Peterson, Cresson, & Stuart. (See Beesley & Delany, assignors.)			
	Peterson, Cresson, & Stuart. (See Beesley & Delany, assignors.)			
18926	Pevey, Abiel	Gas-retorts, casting	Dec. 22, 1857	IV.
17054	Pfaff, John	Flutes	April 14, 1857	XVIII.
18767	Phelan, Michael	Car-wheels, railroad	Dec. 1, 1857	X.
18927	Phelps, George M	Governors for machinery	Dec. 22, 1857	XIII.
	Phelps, James	Washing-machines for cleaning rags	Nov. 9, 1857	Extension.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
18102	Phelps, Orson C	Sewing-machines	Sept. 1, 1857	III.
17583	Phillips, Benjamin L	Valve connexions for steam-engines	June 16, 1857	VI.
17844	Phillips, G. B	Wrench, hand	July 21, 1857	II.
17515	Phillips, Henry A	Watch and locket rims, constructing	June 9, 1857	XVIII.
18702	Phillips, J. H	Cheese, curing and storing, shelving for	Nov. 21, 1857	I.
16450	Phillips, L. D	Hose-coupling	Jan. 20, 1857	XI.
18980	Phillips, L. D	Grain, binding, machine for	Dec. 29, 1857	I.
	Phinney, George H., and William H. Walton. (See Walton & Phinney.)			
17807	Phleger, Leonard	Kilns, lime	July 14, 1857	XV.
16451	Pichler, Emil R	Vaults, reflectors for	Jan. 20, 1857	IX.
16653	Pickford, Henry	Skates, fastening, mode of	Feb. 17, 1857	XXII.
	Pickford, Henry, and W. Whiting. (See Whiting & Pickford.)			
17635	Pierce, Edward	Enamelling iron-pipes and hollow-ware	June 23, 1857	IV.
17634	Pierce, Hiram	Knife-blades, machine for straightening	June 23, 1857	II.
18602	Pierce, J. R., and L. B. Austin	Lantern, signal	Nov. 10, 1857	V.
18055	Pierce, Samuel	Ranges, cooking	Aug. 25, 1857	V.
18297	Pierce, Samuel	Stoves, cooking, ranges, &c., apparatus for roasting on.	Sept. 29, 1857	V.
18859	Pierce, Samuel	Stoves, cooking	Dec. 15, 1857	V.
17636	Pike, William G., and Isaac R. Scott	Boiler-furnaces, steam, safety apparatus for regulating.	June 23, 1857	VI.
17229	Pinder, Charles	Wrenches	May 5, 1857	II.
16694	Pine, James	Cordage-machines	Feb. 24, 1857	III.
16552	Pine, Robert G	File-blanks, grinding, machine for	Feb. 3, 1857	II.
	Pinney, Aaron. (See Clark, Oliver, assignor.)			
18158	Pinney, Abner H	Scythe-snathes	Sept. 8, 1857	I.
16746	Pitman, Erasmus M	Staves, bevelling and jointing, machine for	Mar. 3, 1857	XIV.
18648	Pitt, Thomas J	Gas-metre indicator	Nov. 17, 1857	IV.
16768	Pitts, Fountain E	Fire-places and grates, back-plates for	Mar. 3, 1857	V.
17891	Plaisted, Charles C	Bit-brace for boring obliquely to the axis of the stock.	July 28, 1857	XIV.
	Platt, Lewis C. (See Tripp, Leemon A., assignor.)			
16630	Platt, William S., assignor to W. S. Alfred and Clark M. Platt.	Tubes, seamless, making	Feb. 10, 1857	II.
	Platts, Hervey, and Wait T. Huntington. (See Akins & Burritt, assignors.)			
18352	Plumer, William	Drilling-machine, rock-cutting and	Oct. 6, 1857	IX.
	Poillon, Peter. (See Gale, William S., assignor.)			
18298	Pointon, Philip	Pottery-ware, machines for manufacturing	Sept. 29, 1857	XV.
17981	Pollock, Allan	Gas-generators	Aug. 11, 1857	IV.
16495	Pollock, David	Ore-cleaner	Jan. 27, 1857	II.
18409	Pomeroy, E. G	Process of coating iron	Oct. 13, 1857	IV.
16553	Pomeroy, Norman W	Lubricator	Feb. 3, 1857	XII.
16739	Pomroy, Josiah B	Saws, circular, method of adjusting to any required dish.	Jan. 6, 1857	XIV.
16747	Pond, Charles F	Steam, generating	Mar. 3, 1857	VI.
16994	Pond, Charles L	Paper-ruling machines	April 8, 1857	III.
17113	Pond, Joseph F., and Charles L	Washing-machines	April 21, 1857	XVII.
17892	Ponton, John	Vessels, sunken, mode of raising	July 28, 1857	VII.
17[illegible]94	Poore, Townsend	Coal-cracker	May 12, 1857	V.
	Poorman & Campbell. (See Campbell & Poorman.)			
	Pope, Charles. (See Mellish, Henry, assignor.)			
16955	Poppenhusen, Conrad, and C. F. E. Simon, assignors to Conrad Poppenhusen.	Knives, table, making	Mar. 31, 1857	II.
17295	Poppenhusen, Conrad, and Ludwig Held	India rubber, devulcanizing	May 12, 1857	IV.
17769	Porter, Henry W., assignor to Samuel G. Porter	Bit-brace	July 7, 1857	XIV.
18353	Porter, P	Elevators, extension	Oct. 6, 1857	XII.
17230	Porter, Rufus	Weighing-machines, automatic grain, buckets of	May 5, 1857	XII.
516	Porter, Rufus	Weighing-machine, grain, automatic	Dec. [illegible], 1857	Reissue.
	Porter, S. D. (See Mayfield, W. D., assignor.)			
	Porter, S. D., W. A. Clark, and W. D. Simpson. (See Clark, Porter, & Simpson.)			
17449	Potter, Charles, jr	Printing-presses, oscillating	June 2, 1857	XVIII.
17339	Potts, Albert	Battery, centrifugal	May 19, 1857	XIX.
17982	Potts, Albert	Cars, railway, safety-tops for	Aug. 11, 1857	X.
18159	Potts, Albert	Signals for steamboats	Sept. 8, 1857	VIII.
17296	Power, Thomas E	Piano-forte, bridge	May 12, 1857	XVIII.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
18103	Powers, John H.	Gas-regulators	Sept. 1, 1857	IV.
17806	Pratt, Daniel	Cotton-gins	July 14, 1857	III.
	Pratt, J. R., and J. B Holmes. (See Holmes, John B., assignor.)			
	Pratt, John R. (See Holmes, John B., assignor.)			
	Pratt, John R. (See Holmes, John B., assignor.)			
16934	Pratt, Lucien E.	Yarn for dyeing and scouring, preparing	Mar. 31, 1857	III.
16745	Pratt, S. F.	Sewing-machine	Mar. 3, 1857	III.
16554	Pratt, Samuel F.	Sewing-machines	Feb. 3, 1857	III.
864	Pratt, Samuel F., assignor to Treadwell, Perry, & Norton.	Stove, parlor	Jan. 13, 1857	Design.
18704	Pratt, William	Lamps, safety	Nov. 24, 1857	V.
18601	Prendergast, John	Harness-buckles	Nov. 10, 1857	XVI.
18248	Prentiss, George A.	Axles with friction rollers, journals of	Sept. 22, 1857	X.
18410	Prescott, Jedediah	Cotton-gin feeders	Oct. 13, 1857	III.
	President and Directors of Maryland Portable Gas Company. (See Bruce, James A., assignor.)			
18056	Pretsch, Paul	Printing, photo-galvano-graphic, process for	Aug. 25, 1857	XVIII.
16654	Price, Joshua C.	Car-coupling, railroad, self-disengaging	Feb. 17, 1857	X.
17231	Price, Robert	Photographic grounds for wood engravers, varnish to prepare.	May 5, 1857	XVIII.
18578	Price, Thomas J.	Washing-machine	Oct. 27, 1857	XVII.
18768	Prime, Bradley L.	Planters, corn	Dec. 1, 1857	I.
18860	Prosser, T. T.	Saw-mill, portable	Dec. 15, 1857	XIV.
18861	Prosser, Thomas	Condensers, surface	Dec. 15, 1857	VI.
17845	Prosser, Wellington	Car-coupling, railroad	July 21, 1857	X.
16397	Provines, William	Excavators	Jan. 13, 1857	IX.
18299	Provost, Charles J	Bands of cotton-bales, &c., metallic fastenings for	Sept. 29, 1857	XII.
18300	Pullman, N.	Harnesses, awning-frames for horses attachable to	Sept. 29, 1857	XVI.
17112	Pumort, H. F.	Sawing-machine	April 21, 1857	XIV.
18212	Putnam, Perry, and John E. Crane	Tenoning-machine	Sept. 15, 1857	XIV.
443	Putnam, Silas S.	Window-curtain fixtures	Mar. 31, 1857	Reissue.
	Pye, George, and John W. Burton. (See Burton & Pye.)			
16806	Pyfer, Philip M.	Cars, railroad, method of preventing dust, &c., from entering the windows of.	Mar. 10, 1857	X
18411	Quigly, John	Vessels, means for flooding	Oct. 13, 1857	VII.
18057	Quinn, Emmett	Boring-machine	Aug. 25, 1857	XIV.
18705	Race, Washburn	Pump-packings	Nov. 24, 1857	XI.
	Radley, John B., *et al.* (See Zepfel, Joseph, assignor.)			
18990	Rague, John F.	Car-coupling, railroad	Dec. 29, 1857	X.
16996	Rains, Samuel	Fence, field	April 7, 1857	IX.
16880	Ralston, Andrew	Lanterns, pocket	Mar. 24, 1857	V.
16807	Ramsay, George M.	Spades, steam	Mar. 10, 1857	I.
16608	Ramsay, P. A.	Stamp, hand	Feb. 10, 1857	XVIII.
17516	Ramsden, Robert	Pump, rotary	June 9, 1857	XI.
16398	Randall, David F	Lamps, burning-fluid, construction of	Jan. 13, 1857	V.
17115	Randall, Henry L.	Hat-bodies, felting, machine for	April 21, 1857	III.
17232	Randall, Louis B.	Sleighs and cutters	May 5, 1857	X.
16610	Randall, Silas G.	Planters, seed	Feb. 10, 1857	I.
17450	Randall, Silas G.	Planters, seed	June 2, 1857	I.
16995	Randle, William	Musical instruments, strings for	April 7, 1857	XVII.
	Randolph & Hodgkinson. (See Hodgkinson & Randolph.)			
	Randolph, T. F., and J. F. (See Moody, James, assignor.)			
929	Ransom, S. H.	Stoves, (Northern Light)	Aug. 25, 1857	Design.
930	Ransom, S. H.	Stoves, (Crescent)	Aug. 25, 1857	Design.
931	Ransom, S. H.	Stoves, (Peruvian)	Aug. 25, 1857	Design.
932	Ransom, S. H.	Stoves, (Ocean)	Aug. 25, 1857	Design.
933	Ransom, S. H.	Stoves, (Evening Star)	Aug. 25, 1857	Design.
934	Ransom, S. H.	Stoves, (Snow-Bird)	Aug. 25, 1857	Design.
	Rathbone & Co. (A.) (See Gibbs, S. W., assignor.)			
	Rathbone & Co. (B.) (See Gibbs, S. W., assignor.)			
	Rathbone & Co. (C.) (See Gibbs, S. W., assignor.)			
	Rathbone & Co (D.) (See Gibbs, S. W., assignor.)			
	Rathbone & Co (E.) (See Gibbs, S. W., assignor.)			
18469	Raub, D. Christian	Stoves, coal	Oct. 20, 1857	V.
	Ray, A. H., and J. S. L. Babbs. (See Babbs & Ray.)			

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
	Raymond, Charles, and W. H. Nettleton. (See Nettleton & Raymond.)			
18058	Raymond, Lewis	Bending-machine	Aug. 25, 1857	II.
	Read, Maguire, & Wright, assignors to Gilbert. (See Maguire, Read, & Wright.)			
	Read, Smith, & Brown, assignors to Leibrant, McDowell, & Co. (See Smith, Brown, & Read, assignors.)			
	Read, Smith, & Brown, assignors to Leibrant, McDowell, & Co. (See Smith, Brown, & Read, assignors.)			
	Read, Calvin D., and John T. Whitaker. (See Whitaker & Read.)			
	Read, Henry F., *et al.* (See Burr, Samuel J., assignor.)			
17233	Read, John B	Fire-arms	May 5, 1857	XIX.
18707	Read, John B	Projectile for fire-arms	Nov. 24, 1857	XIX.
	Read, Josiah M. (See Copeland, Josiah, assignor.)			
17451	Read, W. T. B	Harvesters	June 2, 1857	I.
17517	Rebstock, L., and N. Reimel	Fans, automatic	June 9, 1857	XVII.
167	Redmund, Owen	Spoke and axe-helve machine	June 30, 1857	Add'l imp't.
17055	Reed, George P	Watches	April 14, 1857	VIII.
510	Reed, George P	Watches	Nov. 14, 1857	Reissue.
17893	Reed, John A	Valves and passages to the cylinders of steam-engines, arrangement of.	July 28, 1857	VI.
16655	Reeder, William S	Saws, circular; device to allow end play, independent of the driving shaft.	Feb. 17, 1857	XIV.
18412	Reeder, William S	Mill-shafting, &c., elastic coupling for	Oct. 13, 1857	XIII.
17894	Reese, Adam R	Harvesters, guard-fingers for	July 28, 1857	I.
17637	Reese, John, and Charles N. Tyler	Lantern for lighting street gas	June 23, 1857	V.
17696	Reese, John, and Charles N. Tyler	Lanterns, street	June 30, 1857	V.
16496	Reeve, John F	Pen, writing	Jan. 27, 1857	XVIII.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
952	Rehn, C. L., and H. Everett	Keys, metal	Oct. 13, 1857	Design.
16882	Reid, L	Processes for preparing fertilizers	Mar. 24, 1857	IV.
18706	Reimann, H	Cigar-lighters, machine for making	Nov. 24, 1857	XXII.
18160	Reisig, William	Mixtures, wash, for woollens, &c	Sept. 8, 1857	IV.
	Remington, Samuel. (See Sayre, Charles W., assignor.)			
17012	Remsen, Henry R., assignor to H. R. Remsen and W. J. Noyes.	Castings, cleaning, mill for	April 9, 1857	II.
	Renwick, E. S. (See Wagner, J. Z. A., assignor.)			
	Resor, W., & Co. (See John C. Smith, assignor.)			
17748	Resor, William	Stoves, cooking	July 7, 1857	V.
17297	Reuthe, Frederick	Traps for animals	May 12, 1857	XXII.
18301	Reyman, J. B	Fences, wire, construction of	Sept. 29, 1857	IX.
16570	Reynolds, George H., assignor to G. H. Reynolds and D. B. Hinckley.	Valves, cut-off, operating, of steam engines	Feb. 3, 1857	VI.
17716	Reynolds, George H., assignor to himself and D. B. Hinckley.	Shaftings, &c., strap pillow-block for	June 30, 1857	XIII.
16399	Reynolds, J. A	Auger, tubular	Jan. 13, 1857	XIV.
18944	Reynolds, O. L., assignor to H. F. Snow	Washboards, stiles of, machine for cutting zig-zag grooves in the.	Dec. 22, 1857	XIV.
16748	Reynolds, Rensselaer	Clutch, centrifugal friction	Mar. 3, 1857	XIII.
16881	Reynolds, Samuel	Water-wheel	Mar. 24, 1857	XI.
18769	Rible, John H	Harvesters, corn	Dec. 1, 1857	I.
17184	Rice, Benjamin F., assignor to H. R. Smith and C. H. Morgan.	Paper bags, &c., machines for making	April 28, 1857	XVIII.
17638	Rice, Luther O	Carriages, central draught-joint of	June 23, 1857	X.
18724	Rich, Obadiah, assignor to Peter Cooper	Preparing glue stock	Nov. 24, 1857	IV.
17655	Richards, Ira A., assignor to Silas Stevans	Screws, cutting taps and dies for	June 23, 1857	II.
18059	Richards, Samuel	Glass furnaces	Aug. 25, 1857	XV.
	Richardson, Hanson, & Smith. (See Smith, Hanson, & Richardson.)			
953	Richardson, N. P., and William W. Stevens	Stoves, six-plate	Oct. 13, 1857	Design.
954	Richardson, N. P., and William W. Stevens	Stoves	Oct. 13, 1857	Design
17584	Richardson, Sylvanus	Planters, corn	June 16, 1857	I.
18663	Richardson, T. M., assignor to himself and J. W. Havner.	Steering apparatus	Nov. 17, 1857	VII.
17846	Rickart, Alexander	Carriage-hubs, method of turning	July 21, 1857	X.
16749	Riethmuller, J. Christian	Locks	Mar. 3, 1857	II.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
	Rigby, William, and Robert Muckelt. (See Muckelt & Rigby)			
18708	Riggs, J. W	Trusses	Nov. 24, 1857	XX.
18928	Righter, John	Cultivators	Dec. 22, 1857	I.
439	Rillieux, Norbert	Sugar-works	Mar. 17, 1857	Reissue.
	Rillieux, Norbert	Sugar-works	Aug. 19, 1857	Extension.
17116	Ripley, E	Mills, grinding	April 21, 1857	XIII.
16997	Ripley, Ezra	Wrench	April 7, 1857	II.
17013	Ritchie, Henry, assignor to himself, Samuel C. Thompson, and G. W. Westerfield.	Lock, car	April 7, 1857	II.
16497	Ritter, Samuel S	Trusses, hernia	Jan. 27, 1857	XX.
16695	Robbins, Archibald, Alanson Shewman, and Lawson R. Bigelow.	Saw-filer	Feb. 24, 1857	II.
17170	Robbins, Ira	Saw-mills, head blocks of, method of cutting	April 28, 1857	XIV.
17392	Robbins, Louis S	Compound, fertilizing	May 26, 1857	IV.
16611	Robbins, Martin	Planters, corn	Feb. 10, 1857	I.
17391	Roberts, A. A , and B. Davis	Cultivators, cotton	May 26, 1857	I.
16612	Roberts, Cyrus	Horse-powers, attaching the arms of	Feb. 10, 1857	XIII.
	Roberts, Hubbell, & Wood. (See Wood, Hubbell, and Roberts.)			
18709	Roberts, William E	Scissors-sharpener	Nov. 24, 1857	XXII.
	Robertson & Dunbar, assignors to the Buffalo Eagle Iron Works Co. (See Dunbar & Robertson, assignors.)			
18862	Robertson, C. H	Presses, cheese	Dec. 15, 1857	XII.
16778	Robertson, Daniel M	Screws, pointing and threading	Mar. 3, 1857	II.
16850	Robertson, T. J. W	Sewing-machines	Mar. 17, 1857	III.
18249	Robertson, T. J. W	Stamp, hand	Sept. 22, 1857	XVIII.
18470	Robertson, T. J. W	Sewing-machines	Oct. 20, 1857	III.
18520	Robertson, Thomas A	Cultivators	Oct. 27, 1857	I.
16609	Robertson, Thomas J. W	Sewing-machines	Feb. 10, 1857	III.
460	Robie, Jacob C	Turn-tables	May 5, 1857	Reissue.
17234	Robinson, Charles	Stair-steps, arrangement of	May 5, 1857	IX.
17695	Robinson, Charles	Bedstead slats, suspending elastic loop for	June 30, 1857	XVII.
18772	Robinson, of, Eli, John	Planters, seed	Dec. 1, 1857	I.
18519	Robinson, John S., Levi Herendeen, and George Sheldon.	Chair, railroad	Oct. 27, 1857	X.
17056	Robinson, William	Kilns, lime	April 14, 1857	XV.
18929	Robinson, William	Vegetable-cutters	Dec. 22, 1857	XVII.
16452	Robinson, William, assignor to himself and Amenzo W. Beardsley.	Cordage machines, laying tops for	Jan. 20, 1857	III.
18060	Robjohn, Thomas	Inkstand	Aug. 25, 1857	XVIII.
17639	Rockwell, James N	Axes, &c., hardening	June 23, 1857	II.
	Rockwood, Aaron W., *et al.* (See Barden, John S., assignor)			
16656	Rode, Rufus	Boat-oars	Feb. 17, 1857	VII.
17518	Rodeboy, George W	Saws, circular, shield and guide for	June 9, 1857	XIV.
16751	Rodier, Louis C	Washing-machines	Mar. 3, 1857	XVII.
17983	Roe, E. R	Car-brakes, railroad, mechanism for operating	Aug. 11, 1857	X.
	Rogers, Sperry, Ashmead, & Hurlbert. (See White, Leroy S., assignor.)			
	Rogers, Augustus, and J. R. Wendt. (See Wendt, John R.)			
18521	Rogers, Caleb B	Mortising-machines, chisel in, device for reversing the.	Oct. 27, 1857	XIV.
17749	Rogers, Charles D	Harvesters, scroll-wheel for	July 7, 1857	I.
17452	Rogers, David B.	Shovels, making, machine for	June 6, 1857	II.
18104	Rogers, Thomas J	Planters, cotton-seed	Sept. 1, 1857	I.
16998	Rohan, D	Window-shutters, mode of arranging and operating	April 7, 1857	IX.
18105	Rohrman, Joseph H.	Lanterns	Sept. 1, 1857	V.
18863	Roland, Enoch N	Lubricating oil-cups	Dec. 15, 1857	XII.
16400	Roland, Isaac S	Gates, farm, method of hanging	Jan. 13, 1857	IX.
172	Rolland, Jean Louis	Dough, kneading, machines for	July 21, 1857	Add'l imp't.
18991	Rollin, Daniel G	Springs, volute, machine for making	Dec. 29, 1857	II.
	Rollins, George A., and A. Hardy. (See Hardy & Rollins.			
	Root, Livingston, & Haswell. (See Carney, N. B., assignor)			
16613	Root, John B.	Engines, steam, rotary	Feb. 10, 1857	VI.
18989	Root, John B	Engines, steam, rotary	Dec. 29, 1857	VI.
17393	Root, M C	Pipe, stove, machine for making	May 26, 1857	II.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
18554	Root, M. C	Doors, windows, &c., iron shutters for	Nov. 3, 1857	IX.
18522	Roper, S H.	Sewing-machines	Oct. 27, 1857	III.
16750	Roraback, Isaac	Soap-mixture	Mar. 3. 1857	IV.
17640	Rose, Timothy	Candlesticks	June 23, 1857	V.
17298	Rosefield, Charles Adolphus	Pens, fountain	May 12, 1857	XVIII.
16614	Ross, Benjamin, and John C. Campbell	Roofing, metallic	Feb 10, 1857	IX.
16809	Ross, J. P.	Valve-gear of direct-action steam-engines	Mar. 10, 1857	VI.
16808	Ross, James M.	Breastpins, guard for	Mar. 10, 1857	XVIII.
16851	Ross, James M.	Car-wheels for railroads, cast-iron	Mar. 17, 1857	X.
	Ross, Robert, and Hosea Willard. (See Willard & Ross.)			
17895	Roth, J A.	Paper-stuff, treating	July 28, 1857	III.
17519	Roth, Julius A.	Lamp-black, making	June 9, 1857	IV.
17809	Routt, A. P.	Draining-machine	July 14, 1857	IX.
17299	Rowand, A. H.	Books, binding	May 12, 1857	XVIII.
17697	Rowe, David	Corn, green, mode of preserving	June 30, 1857	XVII.
18604	Rowe, Philip C.	Trees, mode of protecting, from canker-worms, &c.	Nov. 10, 1857	I.
18770	Rowe, Spencer	Brooms, machine for making	Dec. 1, 1857	XVII.
17896	Rowlands, M. T.	Drilling rock, machines for	July 29, 1857	IX.
	Roxbury Color and Chemical Manufactory. (See Ordway, John M., assignor.)			
18864	Roy, John	Press, steam cotton	Dec. 15, 1857	XII.
17394	Royce, William A.	Gaseous bodies, machinery for compressing	May 26, 1857	XI.
18225	Ruberts, Barnabas, and Alexander Crumbie, assignors to themselves and John Benson.	Valves, steam, arrangement of passages and means for working, by the direct action of steam.	Sept. 15, 1857	VI.
18771	Rudisill, Joseph	Saddles, riding	Dec. 1, 1857	XVI.
17472	Rugg, Datus E., assignor to himself and Dexter N. Force.	Boilers, steam, water-gauges for	June 2, 1857	VI.
	Ruggles, S. P., Power-press Manufacturing Company. (See Morse, Jedediah, assignor.)			
18603	Russell, E.	Seeding-machines	Nov. 10 1857	I
	Russell, Isaac D. (See Waterman, C., administratrix.)			
	Russell, Isaac D., and C. Waterman, administratrix. (See Waterman & Russell.)			
	Russell, Isaac D., and Cornelia Waterman, administratrix of Stephen Waterman, deceased.	Sawing off logs, machine for	May 19, 1857	Extension.
18930	Russell, S. J	Clothes racks	Dec. 22, 1857	XVII.
17351	Russell, W. G., assignor to himself and William Sewell.	Lantern and oil-can combined	May 19, 1857	V.
	Saben, John P. (See Tolman, Thomas.)			
	Safford, B. W., and W. M Galusha. (See Galusha & Safford.)			
	Safford, H. W. and H., *et al.* (See Gusman, Lewis B., assignor.)			
17717	Sage, William, assignor to Henry Sage.	Sewing-machines	June 30, 1857	III.
	Sailor, Smith, & Brown, assignors to Abbott & Lawrence. (See Smith, Brown, & Sailor, assignors.			
	Sailor, Brown, & Smith, assignors to Abbott & Lawrence. (See Smith, Brown, & Sailor, assignors.)			
17395	Saladee, C. W.	Bit for cutting out cylindrical plugs of wood	May 26, 1857	XIV.
18106	Saladee, C. W	Carriage-tops, mode of adjusting	Sept. 1, 1857	X.
18865	Saladee, C. W	Vehicles, bracing springs of	Dec. 15, 1857	X.
17586	Salomon, John C., jr	Condensing apparatus for salt and gases	June 16, 1857	IV.
	Sanborn, A., and Joseph Peevy. (See Peevy & Sanborn.)			
16615	Sanders, B. D	Mill-stones, facing of, instruments for facilitating the	Feb. 10, 1857	XIII.
18523	Sanders, B. D	Bee-hives	Oct. 27, 1857	I.
16754	Sanders, Benjamin B.	Candle-mould machines	Mar. 3, 1857	IV.
455	Sanford, D. W. C	Refrigerators	April 21, 1857	Reissue.
17340	Sanford, Samuel T.	Printing, stencil-plate	May 19, 1857	XVIII.
	Sargent, C. G., and F. A Calvert. (See Calvert & Sargent.)			
	Sargent, Charles G., *et al.* (See Moore, George R., assignor.)			
16852	Sargent, Rufus W.	Lamps, fluid, burner of burning	Mar. 17, 1857	V.
16453	Sarven, James D	Timber, bending, machines for	Jan. 20, 1857	XIV.
17520	Sarven, James D	Carriage-wheel	June 9, 1857	X.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
16853	Savage, Elliott	Metal, sheet, machine for cutting and bending	Mar. 17, 1857	II.
18873	Sawin, John, D. J. Goodspeed, and John H. Minott.	Chairs, infantine exercising	Dec. 15, 1857	XVII.
16657	Sawtell, John N	Spinning-flyers, manufacturing	Feb. 17, 1857	III.
	Sawyer & Hall. (See Cox, Samuel A., deceased, assignor.)			
17750	Sawyer, Charles B	Stoves, air-heating	July 7, 1857	V.
17014	Sawyer, Joseph and Sylvester, assignors to the American Hoop Machine Company.	Hoop poles, splitting, machine for	April 7, 1857	XIV.
16513	Sawyer, Sylvester, assignor to American Hoop Machine Company.	Planing hoops, machine for	Jan. 27, 1857	XIV.
18471	Sayre, Charles H., assignor to Samuel Remington and Charles H. Sayre.	Cultivator-teeth	Oct. 20, 1857	I.
18073	Sayre, Charles H., assignor to himself and Samuel Remington.	Cultivators	Aug. 25, 1857	I.
16935	Schaffer, John	Capstans, steamboat	Mar. 31, 1857	VII.
488	Schaffer, John	Steamboats, capstans for	Aug. 25, 1857	Reissue.
17453	Scharer, John F	Die-stock	June 2, 1857	II.
17642	Schenkl, John P	Fire-arms, breech-loading	June 23, 1857	XIX.
17812	Schilling, Gustav	Pianos, wrest-pin for	July 14, 1857	XVIII.
18773	Schmitt, Charles C	Workboxes	Dec. 1, 1857	XVII.
16658	Schnebly, William and Thomas	Harvesting grain and grass, machines for	Feb. 17, 1857	I.
18710	Schneider, Elias, and A. Kolman	Coffee-roasters	Nov. 24, 1857	XVII.
17522	Schneider, G C	Screw-chasers, hob for cutting	June 9, 1857	II.
17898	Schnepf, Charles	Planters, corn	July 28, 1857	I.
	Schofield & Hotchkiss. (See Hotchkiss & Schofield)			
18061	Scholfield, Edwin A	Looms	Aug. 25, 1857	III.
17847	Scholfield, N	Governor for water, steam, and other power	July 21, 1857	VI.
16819	Scholfield, N., and W. W. Wight, assignors to Nathan Scholfield.	Bomb for killing whales	Mar. 10, 1857	XIX.
18824	Scholfield, Nathan	Bomb-lance, cushion for wings of	Dec. 8, 1857	XIX.
18866	Scholfield, Nathan	Projectiles, shells and other, fuses of	Dec. 15, 1857	XIX
478	Scholfield, Nathan, and William W. Wight, assignor to Nathan Scholfield.	Bomb for killing whales	July 14, 1857	Reissue.
17588	Schooley, John C	Refrigerators	June 16, 1857	XVII.
18020	Schooley, John C	Inhaling apparatus	Aug. 18, 1857	XX.
17821	Schreiner, Henry, jr., assignor to H. Schreiner, jr., and George Lark, assignors to Henry Schreiner, jr.	Cultivators	July 14, 1857	I.
17897	Schroeder, R E	Carpets fastenings for	July 28, 1857	XVII.
17523	Scott, E. W., and A. M. George	Nail-machine	June 9, 1857	II.
	Scott, Isaac R., and William G. Pike. (See Pike & Scott)			
16883	Scotton, Stephen	Sawing-machine, cross-cut, portable	Mar 24, 1857	XIV.
17454	Scotton, Stephen	Sawing-machine, portable cross-cut	June 2, 1857	XIV.
17171	Scoville, Thaddeus S	Planing hoops, machines for	April 28, 1857	XIV.
	Scribner, Gilbert H. (See Monroe, Edwin P., assignor.)			
17524	Scrimgeour, James	Boots, manufacture of	June 9, 1857	XVI.
17521	Scriven, G. R	Saws, circular, method of adjusting obliquely to their shaft.	June 9, 1857	XIV.
18161	Scroggs, John A	Chisel, mortising	Sept. 8, 1857	XIV.
18107	Seaman, Andrew	Boats, canal, tow-lines of, means for attaching whiffletrees to the.	Sept. 1, 1857	VII.
	Seamless Garment Manufacturing Co. (See Gitchell & Badger, assignors.)			
	Seavy, Eben. (See Weeks, Daniel P., assignor.)			
18868	Seekins, H. G., and H G. Seekins, jr	Warmers, feet	Dec. 15, 1857	V.
17757	Seekins, Heber G., and Charles H. Goss	Jack, lifting	July 7, 1857	XII.
	Seely, H. H. (See Grover, Manasseh, assignor.)			
16696	Seely, John	Dry docks, floating sectional	Feb. 24, 1857	IX.
18555	Seely, Samuel J	Lock gates, canal	Nov. 3, 1857	IX.
17941	Seely, Samuel J., assignor to John M. Hood	Nails, forging, machine for	Aug. 4, 1857	II.
457	Selby, James	Drill, seed	April 21, 1857	Reissue.
16340	Selden, L. K	Umbrellas, folding	Jan. 6, 1857	XXI.
17235	Seitz, Henry	Stoves, close or open	May [illegible], 1857	V.
17587	Sellers, Coleman	Stamp, postage, and label sticker	June 16, 1857	XVIII.
17641	Sellers, William	Boring mills	June 23, 1857	II.
18775	Sellers, William	Bolts, threading, machine for	Dec. 1, 1857	II.
17236	Sellers, William and Coleman	Shafting, coupling for	May 5, 1857	XIII.
18021	Selpho, William	Hands, artificial, construction of	Aug. 18, 1857	XX.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
18062	Sergeant, Isaac A	Washing-machines	Aug. 25, 1857	XVII.
17473	Seropyan, Christopher D., assignor to William Cousland and J. D. Bald.	Bank-notes, &c., to prevent counterfeiting of	June 2, 1857	XVIII.
18869	Serrell, James E., and W Davis	Life-preservers	Dec. 15, 1857	VII.
	Sewell, Thomas. (See Behn, Henry, assignor.)			
	Sewell, Thomas, *et al.* (See Behn, Henry, assignor.)			
	Sewell, William, *et al.* (See Russell, W. G., assignor.)			
16999	Seymour, E L	Gold-separator	Aug. 7, 1857	II.
16776	Seymour, E. L., assignor to J. C. and Charles Wright, H. J. Green, and E. L. Seymour.	Alarm, nautical	Mar. 4, 1857	VII.
17172	Seymour, Henry A	Steel plates, tempering	April 28, 1857	II.
18774	Seymour, Pierpoint	Lime and other fertilizers, machine for spreading	Dec. 1, 1857	I.
511	Seymour, William H., assignor to himself and Dayton S Morgan.	Harvesters, grain and grass	Dec. 1, 1857	Reissue.
512	Seymour, William H., assignor to himself and Dayton S. Morgan	Harvesters, grain and grass	Dec. 1, 1857	Reissue and division,(B.)
513	Seymour, William H., assignor to himself and Dayton S. Morgan.	Harvesters, grain and grass	Dec. 1, 1857	Reissue and division,(C.)
	Sexton, S. B , & Co. (See Bendix, John E., assignor.)			
16402	Shaerer, John	Hub-borer	Jan. 13, 1857	XIV.
170	Shaerer, John	Hub-borer	July 14, 1857	Add'l imp't.
17849	Shannon, Thomas E	Cultivators, cotton and cane	July 21, 1857	I.
17811	Shannon, William T	Trap, fly	July 14, 1857	XXII.
16498	Shares, Daniel W	Harrows	Jan. 27, 1857	I.
16493	Sharp, Reuben W	Planing shingles or tapering pieces, machinery for	Jan. 13, 1857	XIV.
	Sharp, Theodore, and S. E. Fitch (See Fitch & Sharp.)			
18355	Sharp, Thomas	Ploughs	Oct. 6, 1857	I.
434	Shattuck, A. D	Carding-engines	Mar 10, 1857	Reissue.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
18664	Shattuck, David, assignor to himself, John S. Shattuck, Jacob Morrill, and William Marshall.	Street-sweeping machines	Nov. 17, 1857	XXII.
18607	Shaw, David E	Husking-palm	Nov. 10, 1857	I.
17698	Shaw, Jacob, jr	Fire-arms	June 30, 1857	XIX.
174 5	Shaw, John	Boots and shoes, heels of, heel-cutter for cutting out	June 2, 1857	XVI.
16401	Shaw, Joseph	Cultivator, cotton	Jan. 13, 1857	I.
16753	Shaw, Malcom	Projectiles	Mar. 3, 1857	XIX.
16659	Shaw, Nathaniel H	Shoe-pegs, splitting machine for	Feb. 17, 1857	XVI.
17117	Shaw, Palmer	Harness-saddles	April 21, 1857	XVI.
18108	Shaw, William F	Irons, smoothing	Sept. 1, 1857	XVII.
18993	Sheidley, H. O	Mill, cider	Dec. 29, 1857	XIII.
	Sheldon & Smith. (See Vedder, N. S., assignor.)			
	Sheldon, Robinson, & Herendeen. (See Robinson, Herendeen, & Sheldon.)			
18870	Sheldon, Harmon A	Pumps	Dec. 15, 1857	XI.
18992	Shelton, A. C., and Byron Tuttle	Carriage-tops, joints for	Dec. 29, 1857	X.
860	Shepard, Charles J	Ranges, cooking	Feb. 10, 1857	Design.
16757	Shepard, Charles J	Pavements, cast-iron	Mar. 3, 1857	IX.
17456	Shepard, Charles J	Ranges, cooking	June 2, 1857	V.
	Shepherd, Daniel, *et al*: (See Feger, D. H , assignor.)			
18931	Shepherd, Forrest	Globe, apparatus for illustrating conic sections and the lines of the	Dec. 22, 1857	VIII.
18302	Shepherd, Samuel	Stemming and polishing pea nuts, method of	Sept. 29, 1857	I.
	Shepherd, Samuel, and Thomas L. Colville. (See Colville & Shepherd.)			
17942	Sherman, N. C , and S. Lightcap	Harvesters	Aug. 4, 1857	I.
18356	Sherman, Sylvester J	Hot-air regulators	Oct. 6, 1857	V.
18162	Sherwood, John P	Locks	Sept. 8, 1857	II.
17669	Sherwood, William	Gates, farm, mode of opening and closing	June 30, 1857	IX.
17848	Shetter, Solomon	Hoes, garden	July 21, 1857	I.
	Shewman, A., A. Robbins, & L. R. Bigelow. (See Robbins, Shewman, & Bigelow.)			
17984	Shilling, Jesse	Mash-cooling machines	Aug. 11, 1857	IV.
18867	Shipley, John	Winnowing machines	Dec. 15, 1857	I.
	Shoemaker, Silsby, & Mynderse. (See Holly, Birdsill, assignors.)			
17751	Shoenberger, Edwin F	Shaft-coupling	July 7, 1857	X.
936	Sholl, G. W., and Charles Stewart	Brick, ornamental design for	Aug. 25, 1857	Design.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
	Sibbet, J. W., and S. T. J. Coleman. (See Coleman & Sibbet.)			
17173	Sibley, Rufus	Bomb-lances	April 28, 1857	XIX.
17407	Sibley, Rufus, assignor to Christopher C. Brand	Projectile for killing whales	May 26, 1857	XIX.
18063	Sickels, Gerard	Engines, rotary steam, packing of	Aug. 25, 1857	VI.
16884	Sickles, Theophilus E	Cars, railroad, steam brakes for	Mar. 24, 1857	X.
18413	Siemers, Peter	Hominy-machines	Oct. 13, 1857	XXII.
16755	Sigourney, John M	Projectiles for rifled cannon	Mar. 3, 1857	XIX.
	Silsby, Mynderse, & Shoemaker. (See Holly, Birdsill, assignor.)			
16511	Silvy, Joseph C, assignor to T. J. Dobyns	Pens, fountain	Feb. 3, 1857	XVIII.
17810	Simmons, George W. and George H	Cans, oil	July 14, 1857	XII.
17643	Simmons, James H	Valves, cylindrical throttle, for steam-engines	June 23, 1857	VI.
	Simon & Poppenhusen. (See Poppenhusen & Simon.)			
18303	Simon, Conrad	Hemp-brakes	Sept. 29, 1857	III.
16555	Simonds, Warren A	Life preservers	Feb. 3, 1857	VII.
18109	Simonds, Warren A	Gas-generators, portable	Sept. 1, 1857	IV.
17396	Simpson, James E	Vessels' keels, apparatus for examining	May 26, 1857	VII.
16864	Simpson, Michael H	Wool, combing, machinery for	Mar. 17, 1857	III.
	Simpson, W. D., W. A. Clark, and S. D. Porter. (See Clark, Porter, & Simpson.)			
	Singer, Isaac M. (See Vaughan, assignor to Trott, assignor to Singer.)			
18994	Sisson, Henry T	Port-folios	Dec. 29, 1857	XVIII.
18556	Skaggs, N. J	Carriage-wheels, tires on, mode of tightening	Nov. 3, 1857	X.
	Skilton & Palmer. (See Whitaker, Welcome, assignor.)			
18472	Skinner, Chancey D., and Dennis Tryon	Fire-arms, breech-loading	Oct. 20, 1857	XIX.
18304	Skinner, Henry	Locomotives, &c., window for	Sept. 29, 1857	VI.
18414	Skinner, Salmon	Gas-generators	Oct. 13, 1857	IV.
18489	Skinner, Smith, assignor to William H. Skinner and Jacob Nicholas, jr.	Washing-machine	Oct. 20, 1857	XVII.
	Skinner, Smith A. (See Doster, Herman A., assignor.)			
18662	Skinner, Smith A., assignor to himself and Herman A. Doster.	Husker, corn	Nov. 17, 1857	I.
18776	Skinner, William W	Ploughs	Dec. 1, 1857	I.
17700	Slater, Hugh	Wagons, brake for	June 30, 1857	X.
17899	Slawson, John B	Boxes, receiving, for passengers' fares	July 28, 1857	X.
16936	Sloan, William D	Forms, irregular, turning, automatic lathe for	Mar. 31, 1857	XIV.
18305	Sloan, William D	Drilling and milling machine	Sept. 29, 1857	XIV.
18932	Smart, C. W	Gate, farm, approach-opening	Dec. 22, 1857	IX.
17311	Smart, Luther T	Blind-slats, compressing the ends of, machine for	May 19, 1857	XIV.
17589	Smead, E. A	Metal pans, sheet, bending	June 16, 1857	II.
17590	Smead, E. A	Tin pans, wiring	June 16, 1857	II.
	Smead, J., and E. F. Parker. (See Parker & Smead.)			
18712	Smethurst, Aaron	Locomotive engines, arrangement of cylinders and their connexions for.	Nov. 24, 1857	VI.
	Smith & Sheldon. (See Vedder, N. S., assignor.)			
	Smith & Morgan. (See Rice, Benjamin F., assignor)			
	Smith, Gould & Co. (See Gardner, E. S., assignor.)			
18252	Smith, A. C., and Joseph K. Creighton	Saws, filing and setting, machine for	Sept. 22, 1857	XIV.
16404	Smith, Alfred E	Axles, mail, and hubs, mode of constructing	Jan. 13, 1857	X.
16489	Smith, Alfred E	Axle-boxes	Jan. 27, 1857	X.
16661	Smith, Alfred E	Axles, hubs on, mode of securing	Feb. 17, 1857	X.
17770	Smith, Amos J., assignor to himself and George W. Otis	Bit or drill-holder	July 7, 1857	XIV.
18251	Smith, B. C	Pavements, iron or other, mode of connecting or disconnecting the blocks of.	Sept. 22, 1857	IX.
17057	Smith, Daniel C	Portmonnaies, lock and clasp for	April 14, 1857	XVIII.
17703	Smith, Daniel C	Harvesters, raking apparatus for	June 30, 1857	I.
17752	Smith, David A	Whiffletrees	July 7, 1857	X.
18359	Smith, E. Harry	Sewing-machines	Oct. 6, 1857	III.
18605	Smith, E. Harry	Sewing-machines	Nov. 10, 1857	III.
17352	Smith, Edward N., assignor to S. T. Bacon	Paper, folding, machines for	May 19, 1857	III.
17300	Smith, Edward Q	Planing chair-seats, machine for	May 12, 1857	XIV.
17397	Smith, F. J	Planters, corn	May 26, 1857	I.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
	Smith, Francis N	Corn-shellers	May 26, 1857	Extension.
967	Smith, G., and H. Brown, assignors to Wolf, Moore, & Co.	Stoves, cooks'	Dec. 8, 1857	Design.
956	Smith, G., H. Brown, and J. A. Read, assignors to Leibrant, McDowell, & Co.	Stoves, cooking	Oct. 13, 1857	Design.
955	Smith, G., H. Brown, and J. Read, assignors to Leibrant, McDowell, & Co.	Stoves	Oct. 13, 1857	Design.
891	Smith, G , H Brown, and S. H. Sailor, assignors to J. G. Abbott and A. Lawrence.	Stoves	May 26, 1857	Design.
962	Smith, Garretson, and Henry Brown, assignors to Leibrant, McDowell, & Co.	Stoves	Oct. 20, 1857	Design.
961	Smith, Garretson, and Henry Brown, assignors to Leibrant, McDowell, & Co.	Stoves, parlor	Oct. 20, 1857	Design.
960	Smith, Garretson, and Henry Brown, assignors to Leibrant, McDowell, & Co.	Stoves, cooking	Oct. 20, 1857	Design.
942	Smith, Garretson, Henry Brown, Samuel H. Sailor, assignors to J. G. Abbott and A. Lawrence.	Stoves	Sept. 8, 1857	Design.
	Smith, George F., and Lyman Beebe (See Beebe & Smith.)			
17644	Smith, Gilbert	Fire-arms, breech-loading	June 23, 1857	XIX.
17702	Smith, Gilbert	Cartridges	June 30, 1857	XIX.
17701	Smith, H. B	Mortising-machine	June 30, 1857	XIV.
17001	Smith, H S., Elijah Hanson, and M. S. Richardson.	Boxes, cylindrical, machine for manufacturing	April 7, 1857	XIV.
	Smith, H. W., and William C. Marshall. (See Marshall & Smith.)			
18357	Smith, Henry T	Bed-bottoms, spring	Oct. 6, 1857	XVII.
18649	Smith, Isaac L., and Charles C. Colburn	Butter-worker	Nov. 17, 1857	I.
18524	Smith, J D	Planters, seed	Oct. 27, 1857	I.
16341	Smith, James	Doors, windows, &c., weather-strips for	Jan. 6, 1857	IX.
18711	Smith, James D	Multiplying numbers, machine for	Nov. 24, 1857	VIII.
16810	Smith, Jared W	Fluid-gates or faucets	March 10, 1857	XI.
965	Smith, John C., assignor to W. Resor & Co	Stoves	July 7, 1857	Design.
18022	Smith, John E	Telegraph-repeaters	Aug. 18, 1857	VIII.
17704	Smith, John W	Gas-generators	June 30, 1857	IV.
18415	Smith, Jonathan	Saw-filer	Oct. 13, 1857	XIV.
16660	Smith, Joseph	Harness for horses	Feb. 17, 1857	XVI.
17754	Smith, Joseph M	Rollers, drawing, covering for	July 7, 1857	III.
17354	Smith, Joseph S	Hinge, spring	May 19, 1857	II.
18650	Smith, Lewis	Belting-machine, fastening for	Nov. 17, 1857	XIII.
	Smith, Luther L., and J. M. Bachelder. (See Batchelder & Smith.)			
	Smith, Luther L., and J. M. Bachelder. (See Batchelder & Smith.)			
16885	Smith, Norman	Ships' windlass, operating	Mar. 24, 1857	VII.
17525	Smith, Phinehas	Ships, steering apparatus for	June 9, 1857	VII.
16457	Smith, R. H	Cement, roofing	Jan. 20, 1857	XV.
17058	Smith, Richard L	Car-brakes, railroad	April 14, 1857	X.
18777	Smith, Riley	Clothes-wringer	Dec. 1, 1857	XVII.
18995	Smith, Riley	Presses, cotton	Dec. 29, 1857	XII.
18557	Smith, Samuel J	Printing-press, hand	Nov. 3, 1857	XVIII.
17753	Smith, Samuel J., and Charles Loekle	Press, embossing and printing	July 7, 1857	XVIII.
17002	Smith, Samuel N	Ships' steering apparatus	April 7, 1857	VII.
16454	Smith, Samuel R	Sawing-machines, feeding lumber laterally in, method of.	Jan. 20, 1857	XIV.
	Smith, W. G., and L. M. Bolles. (See Bolles & Smith.)			
18358	Smith, W. H	Husker, corn	Oct. 6, 1857	I.
17307	Smith, William M., assignor to himself and P. Hannay.	Press, copying	May 12, 1857	XVIII.
16405	Snell, Daniel W., and S. S. Bartlett	Looms	Jan. 13, 1857	III.
489	Snell, Daniel W., and Stephen S. Bartlett	Looms	Sept. 1, 1857	Reissue.
176	Snell, Daniel W., and Stephen S. Bartlett	Looms	Oct. 6, 1857	Add'l imp't.
	Snell, Jasper, and John R. Deihm. (See Deihm & Snell.)			
	Snell, Robert, and John Chilcott. (See Chilcott & Snell.)			
18778	Sniff, W	Sausage-machine	Dec. 1, 1857	XVII.
	Snow, H. F. (See Reynolds, O. L., assignor.)			
17000	Somerville, William	Syringer, veterinary	April 7, 1857	XX.
18306	Somerville, William	Horse-shoes, attaching elastic soles to	Sept. 29, 1857	II.
17174	Soule, Samuel W	Excavator	April 28, 1857	IX.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
	Soules, Isaac, and John Case. (See Case & Soules.)			
	Southwick, Royal. (See Davis, Joseph, assignor.)			
17756	Spear, James	Stove, railroad car	July 7, 1857	V.
18779	Spear, James R.	Hoops, metallic clasps for	Dec. 1, 1857	XII.
16937	Spencer, David B.	Steam-ploughs	Mar. 31, 1857	I.
16416	Spencer, Oded	Fences, field, base or support of	Jan. 13, 1857	IX.
16566	Spencer, Robert	Saddles, riding, ladies'	Feb. 3, 1857	XVI.
	Sperry, Rodgers, Ashmead, & Hurlbut. (See White, Leroy S., assignor.)			
16697	Spiller, Joseph D	Saw-set	Feb. 24, 1857	XIV.
17755	Sprague, D. L., and Riley Burditt	Melodeon attachment	July 7, 1857	XVIII.
	Sprague, J. A., and Charles Tinker. (See Tinker & Sprague.)			
18606	Spratt, James	Candlestick	Nov. 10, 1857	V.
18933	Sprenkel, G., and Thomas W Basford	Engines and pumps, oscillating, arrangement of	Dec. 22, 1857	VI.
	S. P. Ruggles, Power-press Manufacturing Co. (See Morse, Jedediah, assignor)			
18360	Squire, William C.	Seed-sowing machines	Oct. 6, 1857	I.
	S. Stow, Manufacturing Co. (See Wright, John, assignor.)			
17718	Stacy, M. E, assignor to W. John Way	Valves, arrangement of, in steam cylinders	June 30, 1857	VI.
17900	Stafford, Stephen	Hemp-brakes	July 28, 1857	III.
	Stagg, John, and J. A. Bertola. (See Bertola, Joseph A., assignor)			
17119	Stamp, T.	Water-wheel, current	April 21, 1857	XI.
18934	Stanard, H. T.	Fence, field, portable	Dec. 22, 1857	IX.
17985	Stanford, Otis W	Mills, grain dress of, grinding surfaces for	Aug. 11, 1857	XIII.
18609	Stanley, Horatio	Ploughs	Nov. 10, 1857	I.
	Starr, A. A., and O. L. Lawson. (See Lawson & Starr.)			
18163	Stauffer, William	Mills, grinding	Sept. 8, 1857	XIII.
18871	Stealy, Thomas J	Harvesters, mode of supporting reels for	Dec. 15, 1857	I.
17237	Stearns, Charles	Process of preparing green sand marl as a fertilizer of lands.	May 5, 1857	IV.
	Stearns, William, and J. Hyde. (See Hyde, Jos., and William Stearns.)			
17342	Stebbins, Erastus	Faucet basin	May 19, 1857	XI.
16950	Steer, James B.	Brushes, paint, manufacture of.	Mar. 31, 1857	XVII.
885	Steffe, Jacob, James Horton, and John Currie, assignors to F. H. Church.	Stoves	May 5, 1857	Design.
972	Steffe, Jacob, James Horton, and John Currie, assignors to M. W. Jackson and W. H. Woodin.	Stove, cooking	Dec. 22, 1857	Design.
17238	Steinway, Henry, jr	Piano-forte action	May 5, 1857	XVIII.
18825	Stenton, R. S	Ploughs	Dec. 8, 1857	I.
17986	Stephens, Daniel	Kilns, lime	Aug. 11, 1857	XV.
18023	Stephens, Edward W., and Richard Jenkins	Rail, railroad	Aug. 18, 1857	IX.
16854	Stephens, Osborn E.	Sawing-machines, circular, portable reciprocating	Mar. 17, 1857	XIV.
16811	Stephens, William	Watchmakers' lathe, chuck for	Mar. 10, 1857	XVIII.
	Stetson & Butterfield, assignors to themselves and Townsend. (See Butterfield & Stetson, assignors.)			
17705	Stetson, Charles T.	Harvesters	June 30, 1857	I.
	Stevens, Edgar M. (See Wells, William, assignor.)			
17175	Stevens, Lafayette	Tenoning blind slats, machine for	April 28, 1857	XIV.
18370	Stevens, Lafayette, assignor to William L. Gibson.	Boring-machines, wood	Oct. 6, 1857	XIV.
18872	Stevens, Lafayette, assignor to William L. Gibson.	Boring-machine	Dec. 15, 1857	XIV.
18473	Stevens, Martin W., and Edward G. Kinsley	Husking-machines, corn	Oct. 20, 1857	I.
	Stevens, Silas. (See Richards, Ira A.)			
	Stevens, William W., and N. P. Richardson. (See Richardson & Stevens)			
	Stevens, William W., and N. P. Richardson. (See Richardson & Stevens.)			
870	Stevenson, J. E.	Stoves, cooking	Feb. 10, 1857	Design.
	Stewart, Charles, and G. W. Sholl. (See Sholl & Stewart.)			
18110	Stewart, George S.	Stair-railings, circular, instruments for drawing the curve of.	Sept. 1, 1857	IX.
16952	Stewart, Linus, and John McClelland, assignors to McClelland & McClelland.	Printing from engraved plates, machine for	Mar. 31, 1857	XVIII.
18024	Stewart, P. P.	Stoves, cooking, bakers for	Aug. 18, 1857	V.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
18361	Stickney, Ancil	Corn-sheller	Oct. 6, 1857	I.
17526	Stiles, D. A.	Paper-file	June 9, 1857	XVIII.
	Stiles, Francis. (See Hankey & Stiles, assignors.)			
	Stilwell, S., and J. Keech. (See Keech & Stilwell.)			
17301	Stimpson, J. Henry	Tools, soldering, heating by gas	May 12, 1857	II.
16557	Stimpson, James	Joining boxes, &c., method of	Feb. 3, 1857	XIV.
18362	Stinson, William H.	Stoves, coal	Oct. 6, 1857	V.
18416	St. John, M. W., and Isaac Brown	Street-sweepers	Oct. 13, 1857	XXII.
18213	St. John, Roswell H	Watchmakers' lathe	Sept. 15, 1857	XVIII.
18780	Stock, John	Photographic plate-holder	Dec. 1, 1857	XVIII.
17645	Stoddard, William	Plane-irons in their stocks, mode of securing and adjusting.	June 23, 1857	XIV.
18826	Stoddard, William	Alarm, pocket-book	Dec. 8, 1857	XXII.
	Stoerger, P., and A. R. E. Falck. (See Falck & Stoerger.)			
	Stone, Harley, and J. S. Cole. (See Cole & Stone.)			
18558	Stone, Reuben W.	Carriage-tops, joints of	Nov. 3, 1857	X.
16408	Stoner, Augustus	Felloes in wheels, mode of tightening	Jan. 13, 1857	X.
16886	Stoner, Augustus	Dredging, grappling or, machine	Mar. 24, 1857	IX.
17176	Stoner, Augustus	Sack-holder, self-adjusting	April 28, 1857	XXII.
183	Stoner, Augustus	Sack-holder, self-adjusting	Dec. 22, 1857	Add'l imp't.
18613	Storm, William M.	Steam, anhydrous, generating	Nov. 10, 1857	VI.
17343	Stover, Henry D.	Planing-cutters, rotary	May 19, 1857	XIV.
18713	Stow, O. W., and Augustus Barnes	Snuffers, candle	Nov. 24, 1857	XVII.
16758	Strait, Hiram	Husking corn, machines for	Mar. 3, 1857	I.
17118	Strait, Hiram	Lubricator	April 21, 1857	XII.
16407	Strange, Emerson C.	Sawing hoops, machine for	Jan. 13, 1857	XIV.
18265	Strange, William, and Samuel Darling	Pencil-sharpeners	Sept. 22, 1857	XVIII.
16887	Stratton, Richard A.	Mangles	Mar. 24, 1857	XVII.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
	Strawbridge, Nordyke, & Wiggins. (See Wiggins, Nordyke, & Strawbridge.)			
16938	Streeter, Abel W	Bit-stocks, method of constructing	Mar. 31, 1857	XIV.
	Strong, Butler, *et al.* (See De Witt, E. H, assignor.)			
18827	Strong, Stephen H.	Planters, potato	Dec. 8, 1857	I.
	Stuart, Cresson, & Peterson. (See Beesley & Delany, assignors)			
	Stuart, Cresson, & Peterson. (See Beesley & Delany, assignors.)			
16756	Stuart, Homer H.	Hydraulic engines, supply and discharge valves of, method of operating the.	Mar. 3, 1857	XI.
	Sturdevants and James S. Taylor. (See Hopkins, Lansing E., assignor.)			
	Sturges, Wiler, & McFall. (See Wiler, Sturges, & McFall.)			
17239	Sturges, Richard Ford	Printing fabrics, rollers orcylinders for, mode of constructing.	May 5, 1857	XVIII.
16949	Sturgis, Columbus F.	Paper-pulp, manufacture of	Mar. 31, 1857	III.
	Sturn, Ignatius. (See Heilmann, J., assignor.)			
	Sturn, Ignatius (See Heilmann, J., assignor.)			
18427	Sturtevant, B. F, assignor to Elmer Townsend	Lasting pincers	Oct. 13, 1857	XVI.
17544	Sturtevant, B. F., assignor to himself and Elmer Townsend.	Boots and shoes, pegging, machines for	June 9, 1857	XVI.
17998	Sturtevant, Benjamin F., assignor to himself and Elmer Townsend.	Boots and shoes, machines for pegging	Aug. 11, 1857	XVI.
	Sugden, Butler, & Co. (See Butler, William S., assignor.)			
18307	Suggett, Isaac	Lamp, hydro-carbon vapor	Sept. 29, 1857	V.
17850	Sullivan, Jonathan L.	Straw-cutters	July 21, 1857	I.
18714	Summers, Joseph	Cultivators	Nov. 24, 1857	I.
18935	Suter, Frederick	Books, machine for turning the leaves of	Dec. 22, 1857	XVIII.
	Sutherland, Joel B., I. V. Culin, *et al.* (See Driver, Samuel, assignor.			
17591	Sutter, Joseph	Ploughs, gang	June 16, 1857	I.
18559	Sutton, Noah	Pumps	Nov. 13, 1857	XI.
18252	Swan, J. H	Car seats, railroad	Sept. 22, 1857	X.
18253	Swartz, Abram S.	Bridge, trussed	Sept. 22, 1857	IX.
17592	Swartz, George W	Boats, propeller canal	June 16, 1857	VII.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
17943	Swartz, George W	Propeller-blade	Aug. 4, 1857	VII.
17585	Swartz, Samuel	Valve-gear of steam-engines	June 16, 1857	VI.
18996	Swift, Richard	Harness-saddles	Dec. 29, 1857	XVI.
	Tabele, William, and Jordan L. Mott. (See Mott & Tabele, assignors.)			
17944	Taft, George C	Drill, self-feeding	Aug. 4, 1857	II.
17609	Taft, George C., and Henry W. Mason	Wrench, screw	June 16, 1857	II.
16900	Taft, George C., assignor to Henry W. Mason	Drill-shaft, feeding	Mar. 24, 1857	II.
18025	Taft, Timothy F	Shears for cutting metal	Aug. 18, 1857	II.
17595	Taggart, Alonzo	Excavating-machines	June 16, 1857	IX.
16855	Taggart, John	Mowing-machines	Mar. 17, 1857	I.
17129	Taggart, John, assignor to himself and William W. Messer.	Potato diggers	April 21, 1857	I.
16888	Taplin, John A	Saw-mill dogs	Mar. 24, 1857	XIV.
17910	Tarbell, F., assignor to himself and D. C. Bicknell	Sash-fastener	July 28, 1857	II.
18474	Tarver, Samuel	Saw-mill, reciprocating	Oct. 20, 1857	XIV.
17758	Tavnay, T. V	Gold washer and amalgamator	July 7, 1857	II.
18111	Taylor, Charles	Casting bearings in iron wheels	Sept. 1, 1857	II.
17706	Taylor, Daniel, assignor to himself and H. A. Chambers.	Journal boxes for shafting, &c., manufacture of	June 30, 1857	XIII.
	Taylor, Frederick S., *et al.* (See Hankey & Stiles, jr., assignors.)			
	Taylor, George, *et al.* (See Dugdale, Thomas A., assignor.)			
	Taylor, George, *et al.* (See Ogborn & Taylor.)			
	Taylor, James S., and Sturdevants. (See Hopkins, Lansing E, assignor.)			
17646	Taylor, John F	Rice, cleaning, machines for	June 23, 1857	XIII.
17707	Teachout, James	Die-stock	June 30, 1857	II.
16343	Teal, Andrew	Railroads, metallic cross-ties and chairs for, as a new manufacture.	Jan. 6, 1857	IX.
18828	Tenney, S. R., and Asa Bennett	Shingles	Dec. 8, 1857	XIV.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
	Terry, Harriet V., administratrix of William D. Terry, deceased.	Pavement, cast iron	July 9, 1857	Extension.
17813	Tetlow, James	Metal, cutting, machine for	July 14, 1857	II.
18614	Tewksbury, A. J	Last-holders	Nov. 10, 1857	XVI.
	Thayer, Abraham. (See Copeland, Josiah, assignor.)			
17901	Thickins, R. W	Apples, paring and slicing, machines for	July 28, 1857	XVII.
18475	Thom, David K.	Ploughs.	Oct. 20, 1857	I.
18254	Thomas, Chauncey	Carriage-prop	Sept. 22, 1857	X.
17003	Thomas, George W	Road-scraper	April 7, 1857	IX.
16862	Thomas, Joseph, assignor to Joseph Thomas and Charles A. Durgin.	Baby-walkers	Mar. 17, 1857	XXII.
16759	Thomas, Leopold	Door-springs.	Mar. 3, 1857	II.
18476	Thomas, Nathaniel	Apple-slicer	Oct. 20, 1857	XVII.
17344	Thomas, William	Jack, lifting	May 19, 1857	XII.
18664	Thomas, William P	Fence for poultry yards.	Aug. 25, 1857	IX.
16617	Thomason, H	Planters, seed	Feb. 10, 1857	I.
17527	Thompson, Edward P	Mop-head	June 9, 1857	XVII.
18214	Thompson, George	Alkalies, boxes for preserving	Sept. 15, 1857	IV.
16939	Thompson, George W	Stoves for railway cars	Mar. 31, 1857	V.
16342	Thompson, James H	Reapers, raking attachment for	Jan. 6, 1857	I.
	Thompson, James M., and J. W. Currier. (See Currier & Thompson.)			
17987	Thompson, John A	Filter.	Aug. 11, 1857	XI.
16409	Thompson, Joseph	Planters, seed	Jan. 13, 1857	I.
446	Thompson, Moses.	Furnaces for burning wet fuel	Mar. 31, 1857	Reissue.
18874	Thompson, Moses	Furnaces, bagasse	Dec. 15, 1857	V.
	Thompson, S. C., and G. W. Westerfield. (See Ritchie, Henry, assignor.)			
17177	Thompson, Thomas	Wadding, winding, machine for	April 28, 1857	III.
163	Thompson, William H., and Eustis P. Morgan	Hatches for warehouses, safety	April 14, 1857	Add'l imp't.
17593	Thomson, Archibald	Water, method of elevating, by compressed air	June 16, 1857	XI.
17708	Thomson, James, and William P. Wakelee	Coloring yarn in the bobbin	June 30, 1857	IV.
17240	Thomson, Sardis	Clothes pounder	May 5, 1857	XVII.
18363	Thorn, Joseph W	Picking cotton in the field, machines for	Oct. 6, 1857	I.
16760	Thornton, Thomas F	Melodeons	Mar. 3, 1857	XVIII.
18308	Thrasher, Francis, and Henry B. Horton	Gates, vertico-lateral folding, method of opening and closing.	Sept. 29, 1857	IX.
18611	Thrasher, Francis, and Henry B. Horton	Window-sash	Nov. 10, 1857	IX.
18612	Thrasher, John	Hubs for boring, clamp for centering	Nov. 10, 1857	IX.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
18997	Troop, H. N	Engines, steam, governor for	Dec. 29, 1857	VI.
947	Thulemeyer, Gottfried	Coal-scuttles	Oct. 6, 1857	Design.
17647	Thurber, Charles	Caligraphs	June 23, 1857	XVII.
17408	Thurston, Stephen, assignor to himself, Marcus L. Ward, and Huntington & Co.	Boot and shoe soles, India rubber, gutta-percha, and other, machines for cutting.	May 26, 1857	XVI.
18026	Tibbets, Joseph V	Hot-air registers	Aug. 18, 1857	V.
16812	Tidey, M B	Sewing-machines, circular table gauge for	Mar. 10, 1857	XIV.
16889	Tidey. M. B	Plane, carpenters'	Mar. 24, 1857	XIV.
17457	Tidgewell, James and William	Printer's composing-stick	June 2, 1857	XVIII.
16500	Tillinghast, William T	Printers, composing stick for	Jan. 27, 1857	XVIII.
16761	Tilton, John, and William Floyd	Fire-arms, portable	Mar. 3, 1857	XIX.
	Tilton, W. B., and E. P. Torrey. (See Torrey & Tilton.)			
18560	Timby, Theodore R	Barometer	Nov. 3, 1857	VIII.
964	Timby, Theodore R	Barometer cases	Nov. 10, 1857	Design.
17945	Tinker, Charles, and J. A. Sprague	Harvesters	Aug. 4, 1857	I.
18417	Titus, S. H., and O. Des Granges	Pavement, cellular iron	Oct. 13, 1857	IX.
16410	Toan, John S	Planters, corn	Jan. 13, 1857	I.
17902	Tobias, J. C	Collars, horse, machine for stuffing	July 28, 1857	XVI.
	Todd, D., *et al.* (See Morgan, A. E., assignor.)			
17121	Tolhurst, George W	Harrows	April 21, 1857	I.
17594	Tolle, Micajah	Plough, cultivator	June 16, 1857	I.
18886	Tolman, Thomas, assignor to John P. Saben	Mattresses, ventilating	Dec. 15, 1857	XVII.
16412	Tolman, Thomas J	Planes, size of the mouth in, method of adjusting the	Jan. 13, 1857	XIV.
17120	Tompkins, C., and J. Johnson	Bobbins, conical, machinery for winding	April 21, 1857	III.
17596	Tompkins, James	Smut-machine	June 16, 1857	XIII.
16411	Tonks, Alfred	Fire-arms, locks for	Jan. 13, 1857	XIX.
18164	Torry, E. P., and W. B. Tilton	Door-spring	Sept. 8, 1857	II.
18715	Toulmin; Alfred F	Brake, railroad, automatic	Nov. 24, 1857	X.
18065	Toulmin, John	Shears, vibrating	Aug. 25, 1857	XVIII.
16558	Tower, Ambrose	Pump	Feb. 3, 1857	XI.
18027	Towne, Lauriston	Chains, curb, machine for twisting	Aug. 18, 1857	II.
18490	Towne, Lauriston	Chain-machine	Oct. 20, 1857	II.
	Townsend, Elmer. (See Sturtevant, Benjamin F., assignor.)			
	Townsend, Elmer. (See Sturtevant, B. F., assignor.)			
	Townsend, Elmer, *et al.* (See Butterfield & Stetson, assignors.)			
17946	Trabin, J., and C. Voebel	Staves, &c., machine for bevelling	Aug. 4, 1857	XIV.
17241	Traphagen, Helen C	Skirts, ladies'	May 5, 1857	XXI.
17528	Traxler, Peter	Stump-extractor	June 9, 1857	IX.
	Treadwell, Norton, & Perry. (See Pratt, Samuel F., assignor.)			
16455	Treadwell, John G	Stoves, cooking	Jan. 20, 1857	V.
487	Treadwell, William E., and William Hustace, executors of Ephraim Treadwell, deceased.	Ovens	Aug 25, 1857	Reissue.
16890	Trescot, George F	Vessels, rigging	Mar. 24, 1857	VII.
18610	Tripp, Charles	Mill, grinding	Nov. 10, 1857	XIII.
	Tripp, E. R., *et al.* (See Olendorf, Tripp, & Harper.)			
15528	Tripp, Leemon A., assignor to Lewis C. Platt	Brushes, machine for making	Oct. 27, 1857	XVII.
15170	Tripp, Seth D , assignor to himself and Luther Hill.	Boots and shoes, pegging, machines for	Sept. 8, 1857	XVI.
18418	Tromley, Michael	Fire-arms, lock for	Oct. 13, 1857	XIX.
	Trott, Benjamin. (See Vaughan, John G., assignor.)			
18165	True, Daniel E	Churns	Sept. 8, 1857	I.
18936	Truesdell, William H	Churn	Dec. 22, 1857	I.
18112	Trowbridge, George N	Lathes, socket-coupling for	Sept. 1, 1857	XIV.
	Tryon, Dennis, and C. D. Skinner. (See Skinner & Tryon.)			
17242	Tryon, Henry	Door-sill and door-strip, arrangement of	May 5, 1857	IX.
160	Tucker, Hiram	Bed-bottoms, spring	June 9 1857	Add'l imp't.
16344	Tuerlingx, James	Time-pieces, maintaining power for	Jan. 6, 1857	VIII.
17302	Tufts, Seth G	Fence, portable field	May 12, 1857	IX.
18215	Turl, John	Sugar-houses, drip-pots for	Sept. 15, 1857	IV.
17409	Turl, John, assignor to Samuel Turl	Sugar-moulds, tips for	May 26, 1857	IV.
18255	Turner, D. C	Engines, rotary steam	Sept. 22, 1857	VI.
17458	Turner, Jonathan T	Filing saws for cotton-gins, machine for	June 2, 1857	II.
16616	Tuttle, Edward A	Wind-wheel, self adjusting	Feb. 10, 1857	XI.
	Twitchell, H., and J. F. Davis, and D. R. Averill. (See Averill, D. R., assignor.)			

Patentees of inventions and designs, 1857.

N	Name of patentee.	Invention or discovery.	Date.	Class.
	Tyler, Charles N., and John C. Millar. (See Millar & Tyler.)			
	Tyler, Charles N., and W. C. Choate. (See Choate & Tyler.)			
	Tyler, Charles N., and John Reese. (See Reese & Tyler.)			
	Tyler, Charles N., and John Reese (See Reese & Tyler.)			
	Umberfield, John D. (See Beardsley, Daniel S, assignor.)			
17398	Underhill, Robert F	Grooves and slots, machine for cutting	May 26, 1857	II.
	Underwood, John, and Edward A. Jenks. (See Jenks & Underwood.)			
	Union Manufacturing Company. (See Arnold, C., and P U Morgan, administrators.)			
	Union Stove Company. (See Wilson, Daniel, assignor)			
17947	Upfield, William	Boot-trees	Aug. 4, 1857	XVI.
16941	Urmy, Jesse	Harvesters, raking apparatus for	Mar. 31, 1857	I.
18615	Urmy, Jesse	Railroads, revolving snow-excavators for	Nov. 10, 1857	X.
17759	Ustick, Stephen	Brick-machines	July 7, 1857	XV.
18166	Ustick, Stephen	Brick-machines	Sept. 8, 1857	XV.
18477	Utter, John H	Printing-press	Oct. 20, 1857	XVIII
	Vallent & Mourier. (See Mourier & Vallent, assignors to Migeon.)			
17760	Van Anden, William	File-cutting machine	July 7, 1857	II.
16662	Vandegrift, Andrew J	Boilers, steam, feed-water apparatus to	Feb. 17, 1857	VI.
17459	Van De Mark, Charles	Fences, portable, method of uniting the panels of	June 2, 1857	IX.
18565	Vandenhove, Henry F	Bedsteads, folding iron	Nov. 3, 1857	XVII.
18781	Vanderwerken, Henry G	Cars and carriages by horse-power, propelling	Dec. 1, 1857	X.
18829	Vanderwerken, Henry G	Reaping and mowing machines	Dec. 8, 1857	I.
16698	Van Derzee, Cornelius	Separators, grain, and straw carriers	Feb. 24, 1857	I.
18937	Vandolah, James, and Elias Curry	Churn	Dec. 22, 1857	I.
18256	Van Doren, Isaac	Harvesters, rakes for	Sept. 22, 1857	I.
	Vandusen and Near. (See Near, Jasper J., assignor.)			
19007	Van Gieson, William H., assignor to himself, S. W. Buckingham, and E. Brown.	Nails, covering the heads of	Dec. 29, 1857	II.
16501	Van Hagen, Isaac	Cans, oil	Jan. 27, 1857	XII.
16502	Van Horn, Abner	Core-boxes	Jan. 27, 1857	II.
17529	Van Pelt, Hiram	Road-scraper	June 9, 1857	IX.
	Van Riper, James H., and Ira Hersey. (See Hersey and Van Riper.)			
17243	Vansands, Horace	Blind-fastenings	May 5, 1857	II.
17709	Van Vleck, C	Compounds, resinous, for covering hams	June 30, 1857	IV.
18651	Vaughan, Jacob	Saws, hand, method of adjusting to circular stocks	Nov. 17, 1857	XIV.
16425	Vaughan, John G., assignor to Benjamin Trott, assignor to Isaac M. Singer.	Lathing and plastering, mode of	Jan. 13, 1857	IX.
18364	Vedder, Albert A	Lubricating carriage-axles	Oct. 6, 1857	XII.
877	Vedder, N. S, assignor to Galbraith & Cassel	Stoves, radiator	Mar. 24, 1857	Design.
865	Vedder, N. S., assignor to Newberry, Filley, & Co.	Stoves, cooking	Jan. 13, 1857	Design.
900	Vedder, N. S., assignor to North, Chase, & North.	Stoves	June 23, 1857	Design.
911	Vedder, N. S., assignor to North, Chase, & North.	Stoves	July 14, 1857	Design.
938	Vedder, N. S., assignor to North, Chase, & North.	Stoves	Sept. 1, 1857	Design.
878	Vedder, N. S., assignor to John S. and Merritt Peckham.	Stoves, cooking	Mar. 24, 1857	Design.
884	Vedder, N. S, assignor to Smith & Sheldon	Stove, cooking, plates of a	April 14, 1857	Design.
866	Vedder, N. S., assignor to Wolf & Warren	Stoves, cook	Jan. 27, 1857	Design.
867	Vedder, N. S., assignor to Wolf & Warren	Stoves, parlor cook	Jan. 27, 1857	Design.
18478	Vick, R. A	Cultivator, cotton	Oct. 20, 1857	I.
17612	Vickerstaff, Joseph, assignor to Martin Landinberger.	Fabrics, knitted	June 16, 1857	III.
	Voebel and Trahin. (See Trahin & Voebel.)			
17345	Vogt, William, and John J. Klink	Stud or button, shirt	May 19, 1857	XXI.
902	Vose, Samuel D	Stove ornaments	July 7, 1857	Design.
903	Vose, Samuel D.	Stove ornaments	July 7, 1857	Design.
904	Vose, Samuel D	Stove ornaments	July 7, 1857	Design.
17004	Wade, R. M	Car-brakes, railroad	April 7, 1857	X.
18653	Wadsworth, H. N	Tooth-brushes	Nov. 17, 1857	XVII.
17999	Wagner, I. Z. A., assignor to P. H. Watson, assignor to E. S. Renwick.	Bricks, moulding, machines for	Aug. 11, 1857	XV.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date	Class.
17761	Wait, F A	Pens, metallic	July 7, 1857	XVIII.
	Wakelee, W. P., and James Thompson. (See Thompson & Wakelee.)			
18652	Wakeley, William	Drills, self-feeding	Nov. 17, 1857	I.
16813	Wakeman, Zalmon B	Coaches, tongues of, mode of supporting the	Mar. 10, 1857	X.
18875	Walker, F. R	Boilers, steam	Dec. 15, 1857	VI.
17903	Wallace, John	Engines, steam, oscillating	July 28, 1857	VI.
17005	Wallwork, Milton	Rope, making, machinery for	April 7, 1857	III.
18828	Walsh, Cornelius and Zachariah, assignors to Cornelius Walsh.	Nails, trunk, machine for polishing the heads of	Oct. 13, 1857	II.
17530	Walsh, John C	Gas-burners	June 12, 1857	V.
18372	Walsh, Zachariah, assignor to Cornelius Walsh	Metal caps for nail heads, machine for cutting	Oct. 6, 1857	II.
17762	Walton, George W., and Henry Edgarton	Lathes for beaded work, mode of operating radial cutters in.	July 7, 1857	XIV.
17711	Walton, John	Condensing liquids in gas main pipes	June 30, 1857	IV.
422	Walton, William H	Carding-engines, cleaning the top flats of	Jan. 13, 1857	Reissue.
490	Walton, William H	Carding-engines	Sept. 1, 1857	Reissue.
18257	Walton, William H., and George H. Phinney	Carding-engines	Sept. 22, 1857	III.
16414	Walworth, Caleb C	Screw-feeding gear	Jan. 13, 1857	II.
16663	Walworth, Caleb C	Pipe, gas, machine for fitting	Feb. 17, 1857	II.
17851	Wands, John B	Roofing compositions	July 21, 1857	IX.
16856	Wappenstein, J	Seals, metallic	Mar. 19, 1857	XVIII.
	Warburton, James, and Samuel C. Lister. (See Lister & Warburton.)			
18817	Ward, A F	Engines, &c., steam governors of	July 14, 1857	VI.
16503	Ward, James N	Fire-arms, flint-lock, mode of altering, to percussion	Jan. 27, 1857	XIX.
18876	Ward, James N	Bayonet-fastening	Dec. 15, 1857	XIX.
18716	Ward, L. F	Planters, seed	Nov 24, 1857	I.
18999	Ward, L. F	Planters, seed	Dec. 29, 1857	I.
	Ward, M. L., S. Thurston, and Huntington & Co. (See Thurston, Stephen, assignor.)			
	Ward, Seth	Saddles, riding	Jan. 6, 1857	XVI.
18782	Ward, W. H	Moulding shells, machine for	Dec. 1, 1857	II.
18479	Ward, William E	Spading land, machine for	Oct. 20, 1857	I.
18616	Ward, William H	Bullet-machine	Nov. 10, 1857	XIX.
16621	Warden, William R	Vessels, water in the holds of, apparatus for indicating the height of.	Feb. 10, 1857	VII.
	Warder, Brokaw, & Child. (See Harding, Thomas.)			
	Warder, Brokaw, & Child. (See Brokaw, John W., assignor.)			
	Warden, Brokaw, & Child. (See Brokaw & Harding, assignors.)			
16814	Wardwell, C. P. S	Sawing, circular, machine	March 10, 1857	XIV.
17536	Wardwell, C. P. S	Hoops, cheese	June 9, 1857	XII.
17125	Wardwell, Charles P. S	Pipes, &c., clay, machines for forming	April 21, 1857	XV.
17597	Wardwell, Jeremy B	Mowing-machines	June 16, 1857	I.
17948	Warlick, Noah	Bath, shower, apparatus	Aug. 4, 1857	XX.
18480	Warlick, Noah	Ploughs	Oct. 20, 1857	I.
17904	Warner, James	Fire-arms	July 28, 1857	XIX.
	Warner, W. H. (See Blake, Henry D.)			
	Warren & Wolfe. (See Vedder, N. S., assignor.)			
	Warren & Wolfe. (See Vedder, N. S., assignor.)			
18365	Warren, A. F	Pen, fountain	Oct. 6, 1857	XVIII.
17905	Warren, Charles	Boot and shoe soles, trimming the edges of, edge planes for.	July 28, 1857	XVI.
	Warren, John. (See Critcherson, John, assignor.)			
16815	Warren, Samuel D	Grain-cradles	March 10, 1857	I.
17656	Warren, Sylvester W., assignor to himself and Dexter N. Force.)	Steam-whistles	June 23, 1857	VI.
	Warren, John. (See Deacon, Edward, assignor.)			
18216	Warring, Charles B	Gas-apparatus, illuminating	Sept. 15, 1857	IV.
16816	Washburn, Carver	Hoop-pole machines, method of operating the splitting knife in.	March 10, 1857	XIV.
17131	Washburn, G. T., and C. H. Bellows, assignors to themselves and C. Washburn.	Brick-machines	April 21, 1857	XV.
18226	Washburn, G. T., assignor to himself and Anson S. Hobart.	Brick-machines	Sept. 15, 1857	XV.
18564	Waterhouse, John	Wool on the pelt, burring, machinery for	Nov. 3, 1857	III.
	Waterman, C., administratrix, and J. D. Russell. (See Russell & Waterman.)			

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
438	Waterman, Cornelia, administratrix of the late Stephen Waterman, and assignee of Isaac D. Russell, joint inventor and patentee.	Sawing off logs, machine for	March 17, 1857	Reissue.
469	Waterman, Cornelia, administratrix of the late Stephen Waterman and Isaac D. Russell.	Ships' blocks	June 9, 1857	Reissue.
	Waterman, John, and Joshua Ketcham. (See Ketcham & Waterman.)			
965	Waters, Elisha	Match-boxes	Nov. 17, 1857	Design.
18998	Waters, Elisha	Head-rests	Dec. 29, 1857	X.
18113	Watrous, James A	Eave-troughs, apparatus for suspending	Sept. 1, 1857	IX.
18419	Watrous, James A	Sacks, &c., string-fastening for	Oct. 13, 1857	XIII.
18877	Watrous, Richard N	Drawing-knife	Dec. 15, 1857	XIV.
16622	Watrous, William H	Wool-cleaning machines	Feb. 10, 1857	III.
16413	Watson, David	Reaping and mowing machines	Jan. 13, 1857	I.
16763	Watson, David	Harvesters	March 3, 1857	I.
	Watson, P. H. (See Wagner, J. T. A., assignor.)			
18834	Watson, W. C., assignor to himself and George H. Wooster.	Sewing-machines	Dec. 8, 1857	III.
18000	Watson, W. C., assignor to himself, G. H Wooster, and J. W. Gregory.	Sewing-machines	Aug. 11, 1857	III.
18371	Watson, William C, assignor to himself, George H. Wooster, and Ira W. Gregory.	Sewing-machines	Oct. 6, 1857	III.
506	Watt, George	Ploughs	Nov. 10, 1857	Reissue.
17710	Watt, William	Starch from maize	June 30, 1857	IV.
17771	Watters, Thomas, assignor to himself and Stephen Sherlock.	Stoves, gas	July 7, 1857	V.
17399	Wattles, Otis H	Tanning-apparatus	May 26, 1857	XVI.
	Way, W John. (See Stacy, M. E, assignor.)			
18001	Waymoth, A. D., assignor to himself and H. W Page.	Turning spools, machines for	Aug. 11, 1857	XIV.
17810	Weatherington, Melyn	Tenon-cutters, round, method of adjusting, to certain fixed sizes.	July 14, 1857	XIV.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
16699	Webb, John W	Cotton-gins, manufacturing ribs for	Feb. 24, 1857	III.
17906	Webber, Elbridge	Shingle-machine	July 28, 1857	XIV.
17763	Webber, Ira J	Car-brakes, railroad, method of applying	July 7, 1857	X.
18938	Webber, William, jr., and John Webber	Harvesters	Dec. 22, 1857	I.
16764	Weber, Joseph	Hulling and scouring wheat, &c., machines for	Mar. 3, 1857	I.
18481	Webster, D. A., and G. F. Burroughs	Castings, core-spindle for	Oct. 20, 1857	II.
	Webster, R. C., *et al.* (See Niles, Peter H., assignor.)			
18654	Webster, Thomas K.	Key for door-locks	Nov. 17, 1857	II.
16559	Webster, William	Window-sashes, hanging	Feb. 3, 1857	IX.
16564	Webster, William	Boilers, steam, damper-regulators for	Feb. 17, 1857	VI.
	Weddle, John B, *et al.* (See Morgan, A. E., assignor.)			
18835	Weed, Charles, assignor to himself and Stephen B. Cram.	Vessels, steering-apparatus for	Dec. 8, 1857	VII.
	Weeks & Mayhew. (See Mayhew, O. F., assignor)			
18003	Weeks, Asa, assignor to himself and Orin W. Fiske.	Auger-bit, expanding	Aug. 11, 1857	XIV.
18002	Weeks, Daniel P., assignor to himself and Eben Seavey.	Furnaces, hot-air	Aug. 11, 1857	V.
17535	Weeks, James F	Paper, folding, machines for	July 7, 1857	XVIII.
16415	Weild, William	Loom, power	Jan. 13, 1857	III.
16515	Weimer, P. L., and S. P Francisco, assignors to S P Francisco.	Valve of steam-hammers, operating	Jan 27, 1857	V.
473	Weis, Joseph	Mills, flouring	June 16, 1857	Reissue.
16560	Weissenborn, H.	Furnaces, blast	Feb. 3, 1857	II.
17949	Welling, Will am M	Ivory, factitious	Aug. 4, 1857	IV.
16504	Wellman, George	Carding-engines, the top flats of, machinery for stripping.	Jan. 27, 1857	III.
16942	Wellman, Marion J	Baby-jumper	Mar. 31, 1857	XXII.
17988	Wells, D G	Gauges, steam	Aug. 11, 1857	VI
17124	Wells, Hiram	Cans, oil	April 21, 1857	XII.
17537	Wells, Hiram	Saw-mill blocks, automatic	June 9, 1857	XIV.
18217	Wells, Lemuel	Cartridges, ball	Sept. 15, 1857	XIX.
18227	Wells, Parker, assignor to Samuel Mower	Boot and shoe sole cutter	Sept. 15, 1857	XVI.
17400	Wells, Thomas S	Sewing-machines	May 26, 1857	III.
18879	Wells, William, assignor to Edgar L. Stevens	Boots and shoes, pegging, machines for	Dec. 15, 1857	XVI.
	Welsh, J. A., and J. B. Gowdy. (See Gowdy & Welsh)			

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
16631	Wendt, John R., assignor to J. R. Wendt and Augustus Rogers	Metallic beads, manufacture of	Feb. 10, 1857	II.
16346	Wentworth, Henry S	Wind-mills, self-regulating wind-indicator for	Jan. 6, 1857	XI.
17465	Werner, Charles F	Gas-generators, wood	June 2, 1857	IV.
18218	Werner, J Robert	Photographic cameras, diaphragms for	Sept. 15, 1857	XVIII.
16665	Wesson, William D	Telegraphs, electric	Feb. 17, 1857	VIII.
	West, Canfield, & Co. (See Batcheller, L. B., assignor.)			
	West, Henry B., *et al.* (See Wilson, H. F., assignor.)			
18309	West, J. D	Pumps	Sept. 29, 1857	XI.
491	West, James	Roofing-composition	Sept. 8, 1857	Reissue.
174	Westbrook, Leonardo	Stereotype-compositions, gutta-percha	July 28, 1857	Add'l imp't.
17464	Westcott, Amos	Door-bolt	June 2, 1857	II.
	Westerfield, G. W., and S. C. Thompson. (See Ritchie, Henry, assignor.)			
17989	Westlake, William	Kettle, tea	Aug. 11, 1857	V.
18939	Wetherell, Lorin	Cultivators	Dec. 22, 1857	I.
16362	Wetherill, Samuel	Processes for reducing zinc ores	Jan. 6, 1857	IV.
17598	Wetmore, J. W	Vessels, means for propelling, in shoal water	June 16, 1857	VII.
	Wheeler & Wilson Manufacturing Company. (See Larkin, Samuel, assignor.)			
17006	Wheeler, C. H	Curtain rollers, fixtures for	April 7, 1857	XVII.
17059	Wheeler, C. H	Curtain-fixtures	April 14, 1857	XVII.
16505	Wheeler, E	Metal, forging, machines for	Jan. 27, 1857	II.
16506	Wheeler, Elbridge	Clamping-machine	Jan. 27, 1857	II.
18115	Wheeler, Elbridge	Metals, forging, machine for	Sept. 1, 1857	II.
18940	Wheeler, Elbridge	Horse-shoes, bending, machine for	Dec. 22, 1857	II.
16765	Wheeler, Norman W	Valves for steam-engines, operating	Mar. 3, 1857	VI.
18258	Wheeler, Norman W	Valve-gear for oscillating steam-engines	Sept. 22, 1857	VI.
887	Wheeler, Russell, and Stephen A. Bailey	Stoves	May 19, 1857	Design.

	Whinfield, Henry, and J. A. Jillson. (See Jillson & Whinfield.)			
	Whipple & Haskell. (See Hutchinson, James, assignor.)			
16416	Whipple, Carlyle	Saws, reciprocating, method of hanging and operating.	Jan. 13, 1857	XIV.
17244	Whipple, Cullen	Wool, combing, machines for	May 5, 1857	III.
16817	Whipple, Heman	Squares, carpenters', machines for stamping figures on.	Mar. 10, 1857	XIV.
16857	Whipple, Heman	Squares, carpenters', machines for graduating	Mar. 17, 1857	XIV.
16865	Whipple, Milton D., assignor to A. B. Ely	Fibrous materials, combing, machines for	Mar. 17, 1857	III.
18796	Whipple, Milton D, assignor to A. B. Ely	Cloth, shearing, machine for	Dec. 1, 1857	III.
18529	Whipple, Milton D, assignor to Alfred B. Ely	Spinning flax and hemp, machinery for	Oct. 27, 1857	III.
17648	Whitaker, Harry	Boilers, steam	July 14, 1857	VI.
17466	Whitaker, Isaac N	Corn, ears of, hand implement for severing the butts and separating husks from.	June 2, 1857	I.
17990	Whitaker, John T., and Calvin D. Reed	Reaping and mowing machines, finger-bar for	Aug. 11, 1857	I.
16507	Whitaker, S. H	Nut-machines	Jan. 27, 1857	II.
18259	Whitaker, S. H.	Nut-machine	Sept. 22, 1857	II.
17534	Whitaker, Samuel H	Nut-machine.	June 9, 1857	II.
17401	Whitaker, S. H., and Ezra Cope	Valve, safety, thermo-pneumatic	May 26, 1857	XI.
18516	Whitaker, Welcome, assignor to Henry S. Palmer and Julius A. Skilton.	Vermin-destroyer	Jan. 27, 1857	XXII.
	White, Isaac, *et al.* (See Elliot, David, assignor.)			
18891	White, James M	Axles, hubs to, mode of attaching	Mar. 24, 1857	X.
17475	White, Leroy S., assignor to S. S. Rogers, E. W. Sperry, James H. Ashmead, and Edmund Hurlbut.	Dies for punching fork tines	June 2, 1857	II.
17911	White, Lewis, assignor to himself and Elihu P. White.	Curtain-rollers, fixtures for	July 28, 1857	XVII.
17533	White, Patrick	Boilers, steam, damper-regulators for	June 9, 1857	VI.
18482	White, T. W	Planters, cotton-seed	Oct. 20, 1857	I.
18550	Whitehall, Nicholas, assignor to N. & A. S. Whitehall.	Cultivators	Oct. 27, 1857	I.
17599	Whitehead, E. W. and J. L. Conklin	Gas generators	June 16, 1857	II.
17402	Whitehead, Jesse	Planters, seed	May 26, 1857	I.
17467	Whitehead, Jesse	Furrows in land, water, machines for dressing	June 2, 1857	I.
18878	Whitehead, Lewis	Curtain-fixtures	Dec. 15, 1857	XVII.
18420	Whiteley, Edward	Boilers, steam, water-gauges for	Oct. 13, 1857	VI.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
	Whitin, John C. (See Mattison, William, assignor.)			
	Whitin, John C. (See Campbell, Samuel, assignor.)			
16392	Whiting, William, and Henry Pickford	Locks	Mar. 24, 1857	II.
17815	Whiting, William, and Henry Pickford	Locks	July 14, 1857	II.
16562	Whiting, William A	Shingle-machine	Feb. 3, 1857	XIV.
16418	Whitmore, M. J., assignor to himself and F. G. Johnson.	Clock, calendar	Jan. 13, 1857	VIII.
16363	Whitmore, Nathaniel, assigner to himself and G. W. Keene.	Tubes, cap, making	Jan. 6, 1857	II.
17992	Whitney, Baxter D	Wooden surfaces, planed, machines for smoothing	Aug. 11, 1857	XIV.
17818	Whitney, Ethan	Bedsteads, bureau	July 14, 1857	XVII.
17991	Whitney, Joel	Squares, try, adjustment for	Aug. 11, 1857	VIII.
17814	Whiton, E. F	Centering-machine	July 14, 1857	II.
16417	Whittemore, D. H	Apples, paring and slicing, machines for	Jan. 13, 1857	XVII.
16666	Whittemore, David H	Apples, paring, machines for	Feb. 17, 1857	XVII.
18563	Whittier, Charles	Engines, &c., steam, vane-governor for	Nov. 3, 1857	VI.
18310	Whorf, Sylvanus H	Lasts, hollow metallic	Sept. 29, 1857	XVI.
16419	Wickersham, John B	Iron fences, method of fastening the rails of, in the posts	Jan. 13, 1857	II.
16762	Wickersham, John B	Cars, railroad, guide-wheels for	Mar. 3, 1857	X.
17460	Wickersham, John B	Bedsteads, folding	June 2, 1857	XVII.
17461	Wickersham, John B	Hat-stands	June 2, 1857	XVII.
18068	Wickersham, William. (A)	Sewing-machines	Aug. 26, 1857	III.
18069	Wickersham, William. (B)	Sewing-machines	Aug. 26, 1857	III.
178	Weeks, Loren J	Straw-cutters	Oct. 13, 1857	Add'l imp't.
18311	Wiegand, S. L	Valves of steam-engines, operating the variable eccentrics for.	Sept. 29, 1857	VI.
	Wiehl, Daniel. (See McMurtry, John, assignor.)			
18075	Wiggins, C. Pyle, A. H. Nordyke, and B. Strawbridge.	Paper, folding, machines for	Aug. 25, 1857	XVIII.
	Wight, W W., and N. Scholfield. (See Scholfield & Wight, assignors.)			

No.	Name of patentee.	Invention or discovery.	Date.	Class.
	Wight, William W., and N. Scholfield. (See Scholfield & Wight, assignors.)			
16422	Wilber, William	Pressing, oil, machinery	Jan. 13, 1857	XII.
16509	Wilber, William	Hulling and separating cotton-seed, machine for	Jan. 27, 1857	
16508	Wilber, William	Mills for tempering oleaginous seeds	Jan. 27, 1857	I.
18367	Wilber, William	Pressing, oil, machinery	Oct. 6, 1857	XII.
17060	Wilcox, Dutee	Studs, shirt	April 14, 1857	XXI.
16420	Wilcox, O. D	Legs, artificial	Jan. 13, 1857	XX.
18618	Wilcox, Stephen, jr	Printing-presses	Nov. 10, 1857	XVIII.
17122	Wilcox, William	Surge or cable springs	April 21, 1857	VII.
	Wilder, Benjamin G., assignor to Daniel Fitzgerald.	Safes, fire-proof, chests, &c	May 30, 1857	Extension.
18421	Wiler, J. W., S B. Sturges, and G. McFall	Carriage, hose	Oct. 13, 1857	X.
18167	Wilkes, Samuel	Furnace, blast	Sept. 8, 1857	II.
18114	Wilkins, John N	Saw-teeth, planing, machine for	Sept. 1, 1857	XIV.
16667	Willard, H. A	Vegetables, cutting, machine for	Feb. 17, 1857	XVII.
18366	Willard, Hosea	Planters, seed	Oct. 6, 1857	I.
18562	Willard, Hosea, and Robert Ross	Harvesters	Nov. 3, 1857	I.
17245	Williams, A., and E. P. Cummings	Locks	May 5, 1857	II.
17403	Williams, Albert	Gauge, compound	May 26, 1857	XIV.
503	Williams, Irvin A	Lamp, locomotive	Oct 27, 1857	Reissue.
	Williams, J., and R. Killmer. (See Killmer & Williams.)			
16532	Williams, John H	Wheels, setting tires on, machine for	June 9, 1857	X.
17410	Williams, Thomas W., assignor to himself and Henry T. Hoyt.	Axles, nuts on, securing	May 26, 1857	X.
17061	Williams, W. L	Wood, splitting, machines for	April 14, 1857	XIV.
18260	Williamson, George	Diving apparatus	Sept. 22, 1857	VII.
17600	Willis, James	Umbrellas and parasols	June 16, 1857	XXI.
18074	Willmott, William W., assignor to himself and Amos H. and Charles H. Brainard.	Boot-crimps	Aug. 25, 1857	XVI.
17067	Willmott, William W., assignor to himself and Henry F Gardner.	Boot-trees	April 14, 1857	XVI.
17462	Willoughby, J. D	Plough-clevis	June 2, 1857	I.
971	Willoughby, James D	Plough-springs, &c., trade-marks on	Dec. 22, 1857	Design.
17719	Willson, H. F., assignor to himself and Henry B. West.	Sawing-apparatus, cross-cut	June 30, 1857	XIV.
17303	Wilman, Louis	Soap substitute for scouring woollens	May 12, 1857	IV.
18261	Wilmot, S. R	Trap, fly	Sept. 22, 1857	XXII.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
424	Wilmot, Samuel R	Sawing-machines, portable steam	Jan 27, 1857	Reissue.
16668	Wilmot, Samuel R	Valves of steam-engines, operating	Feb. 17, 1857	VI.
447	Wilmot, Samuel R	Sawing-machines, cross-cut, portable steam	April 7, 1857	Reissue. (Division.)
17601	Wilmot, Samuel R., and R. G. Fairbanks	Sawing-machine, portable steam	June 16, 1857	XIV.
17474	Wilmot, Samuel R., assignor to Samuel B. Guernsey	Door-bolts	June 2, 1857	II.
	Wilson & Wheeler Manufacturing Company. (See Larkin, Samuel, assignor.)			
18784	Wilson, Abel	Lanterns, gas-lighting	Dec. 1, 1857	V.
16818	Wilson, Abner P	Wind wheels, self-regulating	Mar. 10, 1857	XI.
17650	Wilson, Charles	Excavating tunnels, machines for	June 23, 1857	IX.
871	Wilson, Daniel, assignor to Union Stove Company.	Stoves, parlor cooking	Feb. 10, 1857	Design.
16943	Wilson, J. C., and T. G	Wind-mills, sails or vanes of, method of feathering the.	Mar. 31, 1857	XI.
17062	Wilson, J. C., and T. G	Threshing grain in the field, machines for	April 14, 1857	I.
19123	Wilson, J. C., and T. G	Harvesters	April 21, 1857	I.
16944	Wilson, James, Charles Green, and William Wilson, jr.	Gunpowder keg	Mar. 31, 1857	XIX.
18004	Wilson, William, jr., assignor to Wilson, Green, & Wilson, jr.	Press, drop	Aug. 11, 1857	XII.
17764	Wimmer, William	Hedges, trimming, machines for	July 7, 1857	I.
471	Winans, Ross and Thomas	Locomotive-tenders	June 16, 1857	Reissue.
470	Winans, Ross and Thomas	Locomotive fire-box	June 16, 1857	Reissue.
17712	Winans, Thomas	Valves, slide, for steam engines	June 30, 1857	VI.
17178	Winch, Corydon	Railroad chair machine	April 28, 1857	IX.
18717	Winder, Caleb B	Planters, seed	Nov. 24, 1857	I.
17007	Winder, Daniel	Printers' composing-sticks	April 7, 1857	XVIII.
16669	Winder, Daniel K	Water, raising, method of	Feb. 17, 1857	XI.
17463	Winder, Daniel K	Printing-presses	June 2, 1857	XVIII.
19000	Windhausen, F	Locomotive engines for producing increased adhesion to the rails when required.	Dec. 29, 1857	VI.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
18525	Winger, Jacob G	Scrapers, cotton	Oct. 27, 1857	I.
	Winne & Abeel. (See Gibbs, S. W., assignor.)			
16624	Winne, Simon P	Sawing, re, lumber, machine for	Feb. 10, 1857	XIV.
17649	Winslow, Charles	India rubber cloth, elastic, repairing	June 23, 1857	IV.
17950	Winslow, Charles	Cloth, elastic gore	Aug. 4, 1857	III.
492	Winslow, Charles	Cloth, elastic gore	Sept. 15, 1857	Reissue.
17179	Winslow, John A	Skates	April 28, 1857	XXII.
17063	Winslow, Lorenzo	Axles, hubs to, mode of attaching	April 14, 1857	X.
18783	Winston, Robert B	Ploughs	Dec. 1, 1857	I.
16421	Winter, A	Saws, "muley," method of hanging, guiding, and adjusting.	Jan. 13, 1857	XIV.
16623	Wisner, Joel	Railroads, locomotive cow-catchers for	Feb. 10, 1857	IX.
18483	Wisner, Joel	Washing-machine	Oct. 20, 1857	XVII.
17008	Witherell, Ransom	Chair, invalid	April 7, 1857	XVII.
18785	Withers, A. Quarles	Cultivators	Dec. 1, 1857	I.
16940	Withrell, S. J., and E. P. Morgan	Engines, shaping	March 31, 1857	VI.
16893	Witting, F. W	Wind-wheels, sails of, mode of regulating velocity and furling the.	March 24, 1857	XI.
16766	Wolcott, A and A. S	Liquors, aging, devices for	March 3, 1857	IV.
	Wolf & Warren. (See Vedder, N. S., assignor.)			
	Wolf & Warren. (See Vedder, N. S., assignor.)			
	Wolf, Moore, & Co. (See Smith & Brown, assignors.)			
17346	Wolfe, H. R	Saws, circular, device for allowing play to the arbors of.	May 19, 1857	XIV.
18168	Woliston, Philip N	Washing-machines	Sept. 8, 1857	XVII.
17613	Wolvin, John G., assignor to himself and George Peckham.	Vault, ventilating, and platform-light	June 16, 1857	IX.
	Wombaugh, M. M., and A. C. Martin. (See Martin & Wombaugh.)			
16895	Wood, A. W	Wind-wheels, velocity of, method of regulating	March 24, 1857	XI.
18067	Wood, Abram	Washing-machines	Aug. 25, 1857	XVII.
18220	Wood, Adam	Brewers' coolers	Sept 15, 1857	IV.
17993	Wood, George H	Stone and glass, polishing, machines for	Aug. 11, 1857	XV.
18561	Wood, George H	Drills, rock	Nov. 3, 1857	IX.
16563	Wood, Jason S	Stump-extractor	Feb. 3, 1857	IX.
18619	Wood, John, and Reuben North	Ploughs, sub-soil	Nov. 10, 1857	I.
16858	Wood, Joseph	Rope or cordage, unmaking, machines for	March 17, 1857	III.
16423	Wood, Loftis	Stove-thimbles or deck-irons	Jan. 13, 1857	V.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
880	Wood, Robert	Railings, iron	April 7, 1857	Design.
17772	Wood, S. W., assignor to Lewis H. Parsons	Rakes, hay	July 7, 1857	I.
892	Wood, Thomas H., Henry S. Hubbell, and John E. Roberts.	Stoves, cooking	June 2, 1857	Design.
	Wood, W. P, and Samuel DeVaughan. (See Hedge, assignor.)			
16618	Wood, Walter A, (A)	Harvesting-machines	Feb. 10, 1857	I.
16619	Wood, Walter A., (B)	Harvesting-machines	Feb. 10, 1857	I.
16620	Wood, Walter A., (C)	Harvesting-machines	Feb 10, 1857	I.
19001	Wood, Walter A, (1)	Harvesters	Dec. 29, 1857	I.
19002	Wood, Walter A., (2)	Harvesters	Dec. 29, 1857	I.
16561	Wood, William	Brick-machines	Feb. 3, 1857	XV.
17907	Wood, William	Shingle-machines, method of feeding the bolt in	July 28, 1857	XIV.
168	Wood, William P	Sawing-machine	June 23, 1857	Add'l imp't.
18066	Woodard, Stephen	Sawing-machines, cross-cut, method of clamping logs in.	Aug. 25, 1857	XIV.
18028	Woodbury, Daniel	Horse-powers, portable	Aug. 18, 1857	XIII.
444	Woodbury, James A	Planing-machines	March 31, 1857	Reissue.
	Woodbury, Joel. (See Ellis, Joel A H., assignor.)			
	Woodbury, S. D., and N. A. Dyar. (See Dyar, Nathan A., assignor.)			
	Woodin, W. H., and M W. Jackson. (See Steffe, Horton, & Currie, assignors.)			
16511	Wooding, Erastus D	Seeding-machines	Jan. 27, 1857	I.
	Woodman, A. F., and M. G. Farmer. (See Farmer & Woodman.)			
18787	Woodman, Horace	Carding-machines, cleaning the top cards of, machinery for.	Dec. 1, 1857	III.
514	Woodman, Horace	Carding-machines, cleaning top cards of	Dec. 8, 1857	Reissue.
16347	Woodruff, George P	Buckles	Jan. 1, 1857	XVI.
17126	Woodville, John	Bolting-cloths to reels, mode of attaching	April 21, 1857	XIII.
17852	Woodville, John	Vessels, shot-holes in, means for stopping	July 21, 1857	VII

No.	Name of patentee.	Invention or discovery.	Date.	Class.
16700	Woodward, David A	Camera, solar	Feb. 24, 1857	XVIII.
17602	Woodward, Edward F	Skirts, ladies'	June 16, 1857	XXI.
501	Woodward, Edward F	Skirts, ladies'	Sept. 29, 1857	Reissue.
18484	Woodward, John A	Smut-machines	Oct. 20, 1857	XIII.
16510	Woodworth, Thomas J	Vessels, masts in the decks of, supporting	Jan. 27, 1857	VII.
	Woodworth, William W. (See Carpenter, Simmons W., assignor.)			
16894	Woolston, George F	Sawing-machine, circular	Mar. 24, 1857	XIV.
	Wooster, G. H., *et al.* (See Watson, W. C., assignor.)			
	Wooster, George H, *et al.* (See Watson, W. C., assignor.)			
	Wooster, George H., *et al.* (See Watson, William C., assignor.)			
18617	Wootton, John	Nail, horse-shoe, machine	Nov. 10, 1857	II.
18655	Wootton, John E	Gauges, steam-pressure	Nov. 17, 1857	VI.
18786	Wootton, John E	Locomotives, driving-box for	Dec. 1, 1857	VI.
17531	Worcester, Edward J	Wrench	June 9, 1857	II.
17247	Worden, Leonard J	Axles, hubs to, mode of securing	May 5, 1857	X.
17951	Worrall, Thomas D	Plane, joiners'	Aug. 4, 1857	XIV.
937	Worrall, Thomas D	Stoves	Aug. 25, 1857	Design.
18312	Worrall, Thomas D	Planes, joiners', method of attaching adjustable handles to.	Sept. 29, 1857	XIV.
17657	Worrall, Thomas D, assignor to himself and Thomas F. Caldicott, assignors to Thomas F. Caldicott.	Plane, bench	June 23, 1857	XIV.
16702	Worthen, W. E	Lathings, metallic	Feb. 24, 1857	IX.
16767	Worthen, W. E	Roof, metallic	Mar. 3, 1857	IX.
18830	Worthington, William S	Salt-pans, construction of	Dec. 8, 1857	IV
17713	Wray, Leonard	Cane-juice, defecating	June 30, 1857	IV.
	Wright, Maguire, & Read. (See Maguire, Read, & Wright, assignors.)			
	Wright, Abram, and George F. and George E. Burt. (See Burt & Wright.)			
16701	Wright, Benjamin	Separators, grain, method of hanging the seives in	Feb. 24, 1857	I.
18116	Wright, Elexus	Pipe-coupling	Sept. 1, 1857	II.
16424	Wright, G. F. S.	Saws, circular, method of mounting and grinding	Jan. 13, 1857	XIV.
18029	Wright, George	Spinning, self-acting mules for	Aug. 18, 1857	III.
16456	Wright, John, assignor to Stow Manufacturing Company.	Metal, sheet, machine for bending	Jan. 20, 1857	II.

Patentees of inventions and designs, 1857.

No.	Name of patentee.	Invention or discovery.	Date.	Class.
17240	Wright, L. M	Wheels, turbine, method of operating the gate of	May 5, 1857	XI.
18005	Wright, Martin Luther	Teeth, porcelain, setting	Aug. 11, 1857	XX.
17009	Wright, William	Pumps, working, method of	April 7, 1857	XI.
	Wyberd, John. (See Carlton, Isaac, assignor.)			
17651	Wykes, J. W	Photographs on glass, background for	June 23, 1857	XVIII.
19003	Wynkoop, Francis G	Pumps	Dec. 29, 1857	XI.
18313	Wythes, William W	Measuring cloth, machines for	Sept. 29, 1857	VIII.
18169	Yale, Linus	Lock, pad	Sept. 8, 1857	II.
	Yates, Jas. (See Demary, Newcomb, jr., assignor.)			
18221	Yost, Christian	Reaping-machines, raking-attachment for	Sept. 15, 1857	I.
	Young & Brother. (See Gibbs, S. W., assignor.)			
17347	Young, C. M	Shingle-machine	May 19, 1857	XIV.
19008	Young, Charles T., assignor to himself and Henry Crowther.	Bedstead, steam spring	Dec. 29, 1857	XVII.
922	Young, Elias	Stoves, cooking	Aug. 4, 1857	Design.
966	Young, Elias, assignor to Chamberlain & Company.	Stoves, cooks'	Dec. 1, 1857	Design.
18656	Young, George, jr	Husking of corn, machine for facilitating the	Nov. 17, 1857	I.
18223	Young, James E	Shingles, method of manufacturing	Sept. 15, 1857	XIV.
	Young, James E., and George Darby. (See Darby & Young.)			
19004	Young, William A	Pumps, rotary	Dec. 29, 1857	XI.
17180	Youry, H. D	Washing-machines	April 28, 1857	XVII.
17545	Zepfel, Joseph, assignor to Joseph Zepfel and John B. Radley.	Carpet-bags	June 9, 1857	XVI.
18657	Zimmerman, G. F. S., and A. Beattie	Hemp-brakes	Nov. 17, 1857	III.
16897	Zimmerman, William	Smut-machines	Mar. 24, 1857	XIII.
17853	Zimmerman, William	Grain-separators	July 21, 1857	XIII.
18368	Zimmerman, William	Wind-mill	Oct. 6, 1857	XI.
	Zoiner, Paul W., and Conrad Harris. Zoiner, Paul W., and Conrad Harris Zoiner, Paul W., and Conrad Harris. } (See Harris & Zoiner.)			

CLASSIFIED LIST OF PATENTS FOR INVENTIONS AND DISCOVERIES GRANTED DURING THE YEAR 1857.

CLASS I.—AGRICULTURE, *including implements and operations.*

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
18576	Beans, machine for pulling	Justus Day	Murray, N. Y	Nov. 10, 1857.
16926	Bee-hives	Albert Kelsey	Westport, Mo	Mar. 31, 1857.
18523	Bee-hives	B. D. Sanders	Holliday's Cove, Va	Oct. 27, 1857.
18757	Bee-hives	Henry M. McClellan	York, Pa	Dec. 1, 1857.
18815	Bee-hives	Samuel Kelly	Washington, D. C	Dec. 8, 1857.
16474	Bee-hives, feed-boxes of	Jeresiah D. Egleston	Canaan, Conn	Jan. 27, 1857.
18649	Butter-worker	Isaac L. Smith and Charles C. Colburn	Burlington, Vt	Nov. 17, 1857.
17564	Butter-workers	Charles W. Gage	Homer, N. Y	June 16, 1857.
18497	Butter-workers	E. Butler and George M. Peck	Pompey, N. Y	Oct. 27, 1857.
18666	Cane, sugar, machines for covering	John Allison	Parish of St. Martin, La	Nov. 24, 1857.
18702	Cheese, curing and storing, shelving for	J. H. Phillips	Colebrook, Ohio	Nov. 24, 1857.
18671	Churn	Lewis W. Beecher	Avon, N. Y	Nov. 24, 1857.
18936	Churn	William H. Truesdell	Elgin, Ill	Dec. 22, 1857.
18937	Churn	James Vandolah and Elias Carry	Dillsborough, Ind	Dec. 22, 1857.
18382	Churn-dashers	Isaac N. Buck	Elgin, Ill	Oct. 13, 1857.
16717	Churns	E. P. & J. A. Cowles	Oakfield, N. Y	Mar. 3, 1857.
17159	Churns	H. N. Mackey	Morgantown, Va	April 28, 1857.
17444	Churns	Henry C. Nicholsen	Mount Washington, Ohio	June 2, 1857.
17781	Churns	Charles H. Dana	West Lebanon, N. H	July 14, 1857.
17790	Churns	Silas Hewit	Seneca Falls, N. Y	July 14, 1857.
18165	Churns	Daniel E. True	Lake Village, N. H	Sept. 8, 1857.
18384	Churns	Moses Byard	Milan, Ind	Oct. 13, 1857.
18797	Churns	Benjamin Beers	New Fairfield, Conn	Dec. 8, 1857.
17439	Churns, atmospheric	Robert McCutcheon	Towanda, Pa	June 2, 1857.
18505	Corn, ears of, from the stalks, machines for severing.	A. J. & J. A. French	Franklin, Vt	Oct. 27, 1857.
17466	Corn, ears of, hand implement for severing the butts and separating husks from.	Isaac N. Whitaker	Pecatonica, Ill	June 2, 1857.
18326	Corn-sheller	A. M. Cook	Millford, Mass	Oct. 6, 1857.
18361	Corn-sheller	Ancil Stickney	Concord, N. H	Oct. 6, 1857.

I.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
18139	Corn-shellers	Andrew Dillman	Plainfield, Ill	Sept. 8, 1857.
18296	Corn-shellers	J. J. Parker	Marietta, Ohio	Sept. 29, 1857.
18700	Corn-shellers	John W. Morton	Brunswick, Ohio	Nov. 24, 1857.
18342	Corn, shucking and shelling, machine for	Sanford Kingsbery	Carrollton, Ga	Oct. 6, 1857.
18905	Corn-stalks, machine for cutting and grinding	W. G. Huyett	Williamsburg, Pa	Dec. 22, 1857.
18076	Corn stubble, &c., machines for cutting, on ground preparatory to ploughing.	John Augspurger	Trenton, Ohio	Sept. 1, 1857.
16401	Cultivator, cotton	Joseph Shaw	Richland, Ga	Jan. 13, 1857.
17091	Cultivator, cotton	John M Hall	Warrenton, Ga	April 21, 1857.
16364	Cultivator-teeth	James P. Cramer, assignor to Hiram Cramer, assignor to James P. Cramer.	Schuylersville, N. Y	Jan. 6, 1857.
17925	Cultivator-teeth	F. R Forsyth	Cape Vincent, N. Y	Aug. 4, 1857.
18174	Cultivator-teeth	Edmund L. Freeman, assignor to himself and J. & G. Lord & Co.	Brownsville, N. Y	Sept. 8, 1857.
18471	Cultivator-teeth	Charles H. Sayre, assignor to himself and Samuel Remington	Utica, N. Y Ilion, N. Y	Oct. 20, 1857.
17821	Cultivators	Henry Schreiner, jr., assignor to H. Schreiner, jr, and George Lark, assignors to Henry Schreiner, jr.	Perrysburg, Pa	July 14, 1857.
17797	Cultivators	Howard Mann	San Francisco, Cal	July 14, 1857.
17909	Cultivators	Harrison, Ogborn, and George Taylor, assignors to Harrison Ogborn.	Greensfork, Wayne co., Ind	July 28, 1857.
18073	Cultivators	Charles H. Sayre, assignor to himself and Samuel Remington.	Utica, N. Y	Aug. 25, 1857.
18330	Cultivators	William J. Forshee	Indianapolis, Ind	Oct. 6, 1857.
18520	Cultivators	Thomas A. Robertson	Friendship, Md	Oct. 27, 1857.
18530	Cultivators	Nicholas Whitehall, assignor to N. & A. L. Whitehall.	Rob Roy, Ind	Oct. 27, 1857.
18587	Cultivators	David E. Hall	Abingdon, Ill	Nov. 10, 1857.
18714	Cultivators	Joseph Summers	Raleigh, Va	Nov. 24, 1857.
18785	Cultivators	A. Quarles Withers	Redbanks, Miss	Dec. 1, 1857.
18739	Cultivators	Joshua Gibbs	Newark, Ohio	Dec. 1, 1857.
18840	Cultivators	David P. Daggett	Palmyra, N. Y	Dec. 15, 1857.
18900	Cultivators	A. W. Hawley	Milan, Ohio	Dec. 22, 1857.
18928	Cultivators	John Righter	Clarksburg, Va	Dec. 22, 1857.
18939	Cultivators	Lorin Wetherell	Worcester, Mass	Dec. 22, 1857.
16906	Cultivators, corn	John B. Baker	Onondaga, N. Y	Mar. 31, 1857.
17391	Cultivators, cotton	A. A. Roberts and B. Davis	La Grange, Ga	May 26, 1857.
18442	Cultivators, cotton	D. P. Forney	Jacksonville, Ala	Oct 20, 1857.
18478	Cultivators, cotton	R. A. Vick	Byhalia, Miss	Oct. 20, 1857.
17849	Cultivators, cotton and cane	Thomas E. Shannon	Woodville, Miss	July 21, 1857.
18317	Drills, grain	Henry Beitzell	Centreville, Ind	Oct. 6, 1857.
18590	Drills, grain	Joseph Ingels	Bentonville, Ind	Nov. 10, 1857.
16540	Drills, seed	Oliver C. Green	Wooster, Ill	Feb 3, 1857.
17144	Drills, seed	E. Emmert	Franklin Grove, Ill	April 28, 1857.
18690	Drills, seed	Philip M. Gundlach	Belleville, Ill	Nov. 24, 1857.
18688	Drills, seed, measuring apparatus of	Oliver C. Green	Dublin, Ind	Nov. 24, 1857.
18652	Drills, self-feeding	William Wakeley	Homer, N. Y	Nov 17, 1857.
16476	Fallowing land, machines for	Richard J. Gatling	Indianapolis, Ind	Jan. 27, 1857.
16547	Fan-blower	Chester P. Marshall	Fitchburg, Mass	Feb. 3, 1857.
	Fertilizers, processes for preparing. (See Class IV, letter P.)			
	Fertilizing compound. (See Class IV, letter C)			
18804	Forks, agricultural	Charles, Abram, and Charles N. Clow	Port Byron, N. Y	Dec. 8, 1857.
16388	Forks, hay	William Jones	Speedsville, N. Y	Jan. 13, 1857.
18047	Forks, hay and manure	William Jones	Speedsville, N. Y	Aug. 25, 1857.
18670	Forks, hay and manure	G L. Barton and A. E Roberts	Albany, N. Y	Nov. 24, 1857.
18503	Fruit-gatherers	William Doty	South Hartford, N. Y	Oct. 27, 1857.
18582	Fruit-gatherers	Firman Goodwin	Astoria, N. Y	Nov. 10, 1857.
17467	Furrows in land, water, machines for dressing	Jesse Whitehead	Manchester, Va	June 2, 1857.
17135	Grain, binding, apparatus for	J. F Barrett	North Granville, N. Y	April 28, 1857.
18231	Grain, binding, machine for	Joseph F. Black	Lancaster, Ill,	Sept. 22, 1857.
18988	Grain, binding, machines for	L. D. Phillips	Chicago, Ill	Dec. 29, 1857.
16815	Grain-cradles	Samuel D. Warren	Lebanon, Ala	Mar. 10, 1857.
18464	Grain-cradles	Daniel Miffleton	King George C. H., Va	Oct. 20, 1857.
17223	Grain, cutting and binding, machines for	Hiram Kellogg	McHenry, Ill	May 5, 1857.
16498	Harrows	Daniel W. Shares	Hamden, Conn	Jan. 27, 1857.
16866	Harrows	Sidney S. Hogle	York, Ohio	Mar. 17, 1857.
16933	Harrows	John E. Morgan	Deerfield, N. Y	Mar. 31, 1857.
17121	Harrows	George W. Tolhurst	Cleveland, Ohio	April 21, 1857.

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No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
17831	Harrows, rotating	James B. Glasscock	Fancy Brook, Ill	July 21, 1857.
17151	Harvester-frames	M. G. Hubbard	Penn Yan, N. Y	April 28, 1857.
18686	Harvester-rake	Elias T. Ford	Batavia, N. Y	Nov. 24, 1857.
16441	Harvesters	M. G. Hubbard	Penn Yan, N. Y	Jan. 20, 1857.
16445	Harvesters	Pells Manny	Waddam's Grove, Ill	Jan. 20, 1857.
16484	Harvesters	Moses G. Hubbard	Penn Yan, N. Y	Jan. 27, 1857.
16763	Harvesters	David Watson	Newark, N. J	Mar. 3, 1857.
16721	Harvesters	S. A. Clemens	Rockford, Ill	Mar. 3, 1857.
16730	Harvesters	Lewis W. Harris	Waterville, N. Y	Mar. 3, 1857.
16788	Harvesters	Hiram Clark	Rochester, N. Y	Mar. 10, 1857.
16840	Harvesters	M. G. Hubbard	Penn Yan, N. Y	Mar. 17, 1857.
16836	Harvesters	Cornelius Holloway, assignor to James D. Maney.	Petersburg, Va	Mar. 17, 1857.
16957	Harvesters	Samuel S. Allen	Bristol, Pa	April 7, 1857.
16985	Harvesters	P. Manny	Waddam's Grove, Ill	April 7, 1857.
16984	Harvesters	Pells Manny	Waddam's Grove, Ill	April 7, 1857.
17123	Harvesters	J. C. & T. G. Wilson	Cedar Hill, Texas	April 21, 1857.
17157	Harvesters	Isaiah Knauer	Valley Forge, Pa	April 28, 1857.
17277	Harvesters. (No. 3.)	M. G. Hubbard	Penn Yan, N. Y	May 12, 1857.
17280	Harvesters. (No. 2.)	M. G. Hubbard	Penn Yan, N. Y	May 12, 1857.
17451	Harvesters	W. T. B. Read	Alton, Ill	June 2, 1857.
17555	Harvesters	Nicholas Clute	Dunnsville, N. Y	June 16, 1857.
17676	Harvesters	Henry D. Hammond	Batavia, N. Y	June 30, 1857.
17691	Harvesters	David S. McNamara	North Hoosick, N. Y	June 30, 1857.
17705	Harvesters	Charles T. Stetson	Amherst, Mass	June 30, 1857.
17779	Harvesters	John P. Manny	Rockford, Ill	July 14, 1857.
17942	Harvesters	N. C. Sherman and S. Lightcap	Hazle Green, Wis	Aug. 4, 1857.
17945	Harvesters	Charles Tucker and J. A. Sprague	Mantua, Ohio	Aug. 4, 1857.
17927	Harvesters	Samuel Gumaer	Chicago, Ill	Aug. 4, 1857.
18173	Harvesters	C. M. Lufkin, assignor to Norris Lufkin	Acworth, N. H	Sept. 8, 1857.
18267	Harvesters	Samuel Pennock, assignor to himself and M. Pennock.	Kennett's Square, Pa	Sept. 22, 1857.
18240	Harvesters	Andrew B. J. Flowers	Greenfield, Ind	Sept. 22, 1857.
18390	Harvesters	Reuben Daniels	Woodstock, Vt	Oct. 13, 1857.
18405	Harvesters	N. A. Patterson	Kingston, Tenn	Oct. 13, 1857.
18562	Harvesters	Hosea Willard and Robert Ross	Vergennes, Vt	Nov. 3, 1857.
18813	Harvesters	S. Johnson and L. Johnson, jr	Avon, N. Y	Dec. 8, 1857.
18938	Harvesters	William Webber, jr., and John Webber.	Rockton, Ill	Dec. 22, 1857.
19001	Harvesters. (No. 1.)	Walter A. Wood	Hoosick Falls, N. Y	Dec. 29, 1857.
19002	Harvesters. (No. 2.)	Walter A. Wood	Hoosick Falls, N. Y	Dec 29, 1857.
18981	Harvesters	John Long	Massillon, Ohio	Dec. 29, 1857.
17687	Harvesters, automatic rake for	Joseph S. Manning	Philadelphia, Pa	June 30, 1857.
18070	Harvesters, automatic rakes for	John W. Brokaw, assignor to Warder, Brokaw, & Child.	Springfield, Ohio	Aug. 25, 1857.
18697	Harvesters, bean	Joshua Ketcham and John Waterman	Orangeport, N. Y	Nov. 24, 1857.
16921	Harvesters, corn	Abram Heulings	Philadelphia, Pa	Mar. 31, 1857.
17729	Harvesters, corn	Israel Dodenhoff	Bloomington, Ill	July 7, 1857.
17832	Harvesters, corn	G. D. Haworth	Mechanicsburg, Ill	July 21, 1857.
18747	Harvesters, corn	Adam Humberger	Somerset, Ohio	Dec. 1, 1857.
18769	Harvesters, corn	John H. Rible	Somerset, Ohio	Dec. 1, 1857.
16442	Harvesters, cutters for	M. G. Hubbard	Penn Yan, N. Y	Jan. 20, 1857.
16968	Harvesters, cutting apparatus for	Samuel Comfort, jr	Morrisville, Pa	April 7, 1857.
17745	Harvesters, cutting-apparatus for	John P. Manny	Rockford, Ill	July 7, 1857.
17739	Harvesters, cutting-apparatus for	Joseph Irwin	Frankfort, Ohio	July 7, 1857.
18659	Harvesters, cutting-apparatus for	James L. Fountain, assignor to himself, L. J. Clark, B. McKenney, and C. M. Fountain.	Rockford, Ill	Nov. 17, 1857.
17575	Harvesters, cutting apparatus of	M. G. Hubbard	Penn Yan, N. Y	June 16, 1857.
18052	Harvesters, cutting-apparatus of	Pells Manny	Waddam's Grove, Ill	Aug. 25, 1857.
18754	Harvesters, finger-bars for	J. M. Long, Peter Black, and Robert Allstatter.	Hamilton, Ohio	Dec. 1, 1857.
17328	Harvesters, grain and grass	John H. Heyser and Edward M. Mobley.	Hagerstown, Md	May 19, 1857.
18229	Harvesters, grain and grass, cutting-apparatus for.	John W. Baltzly and William Hobson	Paris, Ill	Sept. 22, 1857.
17894	Harvesters, guard-fingers for	Adam R. Reese	Phillipsburg, N. Y	July 28, 1857.
18871	Harvesters, mode of supporting reeds for	Thomas T. Stealy	Middlebourne, Va	Dec. 15, 1857.
18736	Harvesters, rake for	C. P. Granberg	Geneva, Ill	Dec 1, 1857.
18256	Harvesters, rakes for	Isaac Van Doren	Somerville, N. J	Sept. 22, 1857.
18437	Harvesters, rakes for	Samuel Comfort, jr	Morrisville, Pa	Oct. 20, 1837.
16941	Harvesters, raking-apparatus for	Jesse Urmy	Wilmington, Del	Mar. 31, 1857.
17703	Harvesters, raking-apparatus for	Daniel C. Smith	Tecumseh, Mich	June 30, 1857.

I.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
17798	Harvesters, raking-apparatus for	John P. Manny	Rockford, Ill	July 14, 1857.
18009	Harvesters, raking apparatus for	Israel Dodenhoff	Bloomington, Ill	Aug. 18, 1857.
17025	Harvesters, raking-attachment for	Isaac H. Conklin	Rockford, Ill	April 14, 1857.
17045	Harvesters, raking-attachment for	D. W. and H. A. Lafetra	Eatontown, N. J	April 14, 1857.
17690	Harvesters, raking-attachment for	John McIntosh	Geneva, Ill	June 30, 1857.
18096	Harvesters, raking-device for	Stephen R. Hunter	Cortlandt, N. Y	Sept. 1, 1857.
17749	Harvesters, scroll-wheel for	Charles R. Rogers	Utica, N. Y	July 7, 1857.
17685	Harvesters, self acting rakes for	Salem T. Lamb	New Washington, Ind	June 30, 1857.
18462	Harvesters, swathing-apparatus for	Samuel C. Longshore	Lahaska, Pa	Oct. 20, 1857.
16789	Harvesting grain, machine for	George R. Crane	Caldwell, N. J	Mar. 10, 1857
16658	Harvesting grain and grass, machines for	William and Thomas Schnebly	Hackensack, N. J	Feb. 17, 1857.
17438	Harvesting hemp, machines for	J. B. McCormick	Versailles, Ky	June 2, 1857.
18628	Harvesting-machine	John C. Cox and Reuben Newton	Greenville, N. C	Nov. 17, 1857.
16618	Harvesting-machines, (A)	Walter A. Wood	Hoosick Falls, N. Y	Feb. 10, 1857.
16619	Harvesting-machines, (B)	Walter A. Wood	Hoosick Falls, N. Y	Feb. 10, 1857.
16620	Harvesting-machines, (C)	Walter A. Wood	Hoosick Falls, N. Y	Feb. 10, 1857.
16873	Harvesting machines	George Esterly	Heart Prairie, Wis	Mar. 24, 1857.
17134	Harvesting-machines	J. F. Barrett	North Granville, N. Y	April 28, 1857.
17678	Harvesting-machines	John K. Harris	Allensville, Ind	June 30, 1857.
17088	Harvesting-machines, automatic rakes for	J. P. Green and J. Dodenhoff	Bloomington, Ill	April 21, 1857.
16393	Harvesting-machines, cutting-apparatus for	Robert J. Morrison	Richmond, Va	Jan. 13, 1857.
18093	Harvesting-machines, method of operating the cutters of.	James Haviland	Milton, N. Y	Sept. 1, 1857.
17367	Harvesting-machines, tongue and castor-plate for.	Ralph Emerson, jr	Rockford, Ill	May 26, 1857.
16726	Harvesting standing corn, machines for	James H. Frampton	Hopewell, Ohio	Mar. 3, 1857.
16462	Hedges, trimming, machines for	Samuel Bradbury	Griggsville, Ill	Jan. 27, 1857.
17764	Hedges, trimming, machines for	William Wimmer	Billingsville, Ind	July 7, 1857.
18979	Hoes	Horace A. Lothrop	Sharon, Mass	Dec. 29, 1857.
17848	Hoes, garden	Solomon Shetter	Allegheny, Pa	July 21, 1857.
16764	Hulling and scouring wheat, &c, machines for	Joseph Weber	Braysville, Ind	Mar. 3, 1857.
16509	Hulling and separating cotton-seed, machine for.	William Wilber	New York, N. Y	Jan. 27, 1857.
17961	Hulling cotton-seed, machines for	William R. Fee	Cincinnati, Ohio	Aug. 11, 1857.
	Hulling rice. (See Class XIII, letter R.)			
16469	Hulling rice, machines for	Lewis F. Currier	Portland, Me	Jan. 27, 1857.
18332	Husker, corn	Harlan P. Gerrish	Sandoval, Ill	Oct. 6, 1857.
18358	Husker, corn	W. H. Smith	Newport, R. I	Oct. 6, 1857.
18447	Husker, corn	Alden Graham	Roxbury, Mass	Oct. 20, 1857.
18571	Husker, corn	Joseph Cawthra	Rochester, N. Y	Nov. 10, 1857.
18584	Husker, corn	Samuel A. Gould	Seneca Falls, N. Y	Nov. 10, 1857.
18658	Husker, corn	Herman A. Doster, assignor to himself and Smith A. Skinner.	Bethlehem, Pa	Nov. 17, 1857.
18662	Husker, corn	Smith A. Skinner, assignor to himself and Herman A. Doster.	Lawrence, Mass	Nov. 17, 1857.
18644	Husker, corn	Charles N. Lewis	Seneca Falls, N. Y	Nov. 17, 1857.
17269	Huskers, corn	E. F. French	Franklin, Vt	May 12, 1857.
18331	Huskers, corn	A. M. George	Nashua, N. H	Oct. 6, 1857.
18396	Huskers, corn	John B. Heich	Cincinnati, Ohio	Oct. 13, 1857.
18385	Huskers, corn	Robert Bryson	Schenectady, N. Y	Oct. 13, 1857.
18133	Huskers, corn	George K. Brown	Moultonborough, N. H	Oct. 20, 1857.
18922	Huskers, corn	David M Mefford	Perrysburg, Ohio	Dec. 22, 1857.
16737	Husking corn	William Lewis	Seneca Falls, N. Y	Mar. 3, 1857.
18625	Husking corn, device for	David Bedell	Seneca Falls, N. Y	Nov. 17, 1857.
16633	Husking corn, machines for	Ezra S. Holmes	Lockport, N. Y	Feb. 10, 1857.
16758	Husking corn, machines for	Hiram Strait	Covington, Ky	Mar. 3, 1857.
16740	Husking corn, machines for	John Massey	Buffalo, N. Y	Mar. 3, 1857.
16924	Husking corn, machines for	Abraham R. Hurst	New Cumberland, Pa	Mar. 31, 1857.
17731	Husking corn, machines for	William Emery, jr	Chester, Ill	July 7, 1857.
17720	Husking corn, machines for	George W. Bachman	Clifton Springs, N. Y	July 7, 1857.
18473	Husking machines, corn	Martin W. Stevens and Edward G. Krisley.	Stoughton, Mass	Oct. 20, 1857.
18656	Husking of corn; machine for facilitating the	George Young, jr	Saratoga Springs, N. Y	Nov. 17, 1857.
18697	Husking-palm	David E. Shaw	South Salem, Ohio	Nov. 10, 1857.
18774	Lime and other fertilizers, machine for spreading.	Pierpont Seymour	East Bloomfield, N. Y	Dec. 1, 1857.
17693	Mowers and reapers, combined frame for	J. A Moore and A. H. Patch	Louisville, Ky	June 30, 1857.
17357	Mowing and reaping machines	Amory Amsden	Rochester, N. Y	May 26, 1857.
16855	Mowing-machines	John Taggart	Roxbury, Mass	Mar. 17, 1857.

I.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
17355	Mowing-machines	Thomas Harding, assignor to Warder, Brokaw, & Child.	Springfield, Ohio	May 19, 1857.
17417	Mowing-machines	Silas P. Briggs	Saratoga Springs, N. Y	June 2, 1857.
17597	Mowing-machines	Jeremy B. Wardwell	Methuen, Mass	June 16, 1857.
17964	Mowing-machines	Alanson Gale	Poughkeepsie, N. Y	Aug. 11, 1857.
17956	Mowing-machines	William Bacheller	West Newberry, Mass	Aug. 11, 1857.
18141	Mowing-machines	George C. Dolph	West Andover, Ohio	Sept. 8, 1857.
18187	Mowing-machines	A. H. Caryl	Sandusky, Ohio	Sept. 15, 1857.
18510	Mowing-machines	John P. Manny	Rockford, Ill	Oct. 27, 1857.
18788	Mowing machines	E. Ball, assignor to himself and John Butler.	Canton, Ohio	Dec. 1, 1857.
18975	Mowing-machines	Silas E. and Morgan P. Jackson	Booneville, N. Y	Dec. 29, 1857.
18976	Mowing-machines	Silas E. and Morgan P. Jackson	Booneville, N. Y	Dec. 29, 1857.
18800	Mowing-machines, cutting-apparatus of	Chester Bullock	Jamestown, N. Y	Dec 8, 1857.
18983	Mowing-machines, track-clearers for	Abraham Marcellas	Amsterdam, N. Y	Dec 29, 1857.
18363	Picking cotton in the field, machines for	Joseph W. Thorn	Courtland, Ala	Oct. 6, 1857.
17362	Planter, hand seed	Silas P. Briggs	Saratoga Springs, N. Y	May 26, 1857.
18756	Planters, cane	Tobias Marcus	New York, N. Y	Dec. 1, 1857.
16410	Planters, corn	John S. Toan	Venice, N. Y	Jan 13, 1857.
16551	Planters, corn	Samuel M. Perkins	Fort Hill, Ill	Feb. 3, 1857.
16611	Planters, corn	Martin Robbins	Cincinnati, Ohio	Feb. 10, 1857.
16930	Planters, corn	John Miller	Bucyrus, Ohio	Mar. 31, 1857.
17258	Planters, corn	John Broughton	New York, N. Y	May 12, 1857.
17397	Planters, corn	F. J. Smith	Four Corners, Ohio	May 26, 1857.
17380	Planters, corn	Robert Kuschke and P. Merkel	St. Louis, Mo	May 26, 1857.
17582	Planters, corn	William T. Pepper	Rising Sun, Ind	June 16, 1857.
17584	Planters, corn	Sylvanus Richardson	Jericho, Vt	June 16, 1857.
17566	Planters, corn	Ives W. McGaffey	Buffalo, N. Y	June 16, 1857.
17786	Planters, corn	Alvin Franklin	Genoa Cross Roads, Ohio	July 14, 1857.
17841	Planters, corn	Norman A. Lewis	Glenn's Falls, N. Y	July 21, 1857.
17898	Planters, corn	Charles Schnepf	Lancaster, Pa	July 28, 1857.
18140	Planters, corn	D. W. Hughes	New London, Mo	Sept. 8, 1857
18127	Planters, corn	D. R. Alden	Unionville, Ohio	Sept. 8, 1857.
18128	Planters, corn	Horace R. Allen	Athens, Ohio	Sept. 8, 1857.
18508	Planters, corn	Hanford Ingraham	Naples, N. Y	Oct. 27, 1857.
18768	Planters, corn	Bradley L. Prime	Hamilton, Ohio	Dec. 1, 1857.
18798	Planters, corn	J. H. Bonham	Elizabethtown, Ohio	Dec. 8, 1857.
18846	Planters, corn	J. J. S. Hassler	Ripley, Va	Dec. 15, 1857.
16368	Planters, cotton-seed	William Badger	Memphis, Tenn	Jan. 13, 1857.
16550	Planters, cotton-seed	James F. Orr	Orrville, Ala	Feb. 3, 1857.
17221	Planters, cotton-seed	H. L. Justice and John H. Galbreath	Goodlettsville, Tenn	May 5, 1857.
18109	Planters, cotton-seed	Thomas J. Rogers	Cassville, Ga	Sept. 1, 1857.
18482	Planters, cotton-seed	T. W. White	Milledgeville, Ga	Oct. 20, 1857.
18913	Planters, cotton-seed	Lorenzo D. Law	Henderson, Ga	Dec. 22, 1857.
16677	Planters, hand seed	John H. Bruen	Penn Yan, N. Y	Feb. 24, 1857.
17089	Planters, hand seed	Plymon B. Green	Chicago, Ill	April 21, 1857.
17081	Planters, hand seed	John Decker	Sparta, N. J	April 21, 1857.
17080	Planters, hand seed	Thomas Crane	Fort Atkinson, Wis	April 21, 1857.
18145	Planters, hand seed	Joel Haines	West Middleburg, Ohio	Sept. 8, 1857.
18827	Planters, potato	Stephen H Strong	Brunswick, Ohio	Dec. 8, 1857.
16409	Planters, seed	Joseph Thompson	Durhamville, N. Y	Jan. 13, 1857.
16522	Planters seed	Levi Beemer	Libertyville, N. J	Feb. 3, 1857.
16590	Planters, seed	John Hildebrand	East Berlin, Pa	Feb. 10, 1857.
16617	Planters, seed	H. Thomason	Lafayette, Ind	Feb. 10, 1857.
16585	Planters, seed	Thomas B. Houghton	Bloomington, Ill	Feb. 10, 1857.
16610	Planters, seed	Silas G. Randall	Rockford, Ill	Feb. 10, 1857.
16597	Planters, seed	Jacob Landes	Selma, Ohio	Feb. 10, 1857.
16592	Planters, seed	Reinhold Boeklen	Jersey City, N. J	Feb. 10, 1857.
16636	Planters, seed	Leonard Arnold	Janesville, Wis	Feb. 17, 1857.
16729	Planters, seed	Firman Goodwin	Astoria, N. Y	Mar. 3, 1857.
16929	Planters, seed	George A. Meacham	New York, N. Y	Mar. 31, 1857.
17145	Planters, seed	George M. Evans	Pittsburg, Pa	April 28, 1857.
17385	Planters, seed	Charles Ketcham, assignor to Charles G. Judd	Penn Yan, N. Y	May 12, 1857.
17275	Planters, seed	John Hazelton	Oxford, N. H	May 12, 1857.
17260	Planters, seed	John H. Bruen	Penn Yan, N. Y	May 12, 1857.
17402	Planters, seed	Jesse Whitehead	Manchester, Va	May 26, 1857.
17450	Planters, seed	Silas G. Randall	Dixon, Ill	June 2, 1857.
17568	Planters, seed	S. T. Holly	Rockford, Ill	June 16; reissued Sept. 22, 1857.
18126	Planters, seed	Cyrus C. Aldrich	Faribault, Min	Sept. 8, 1857.

I.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
18140	Planters, seed	J. W. Ells and James Charlton	Pittsburg, Pa	Sept. 8, 1857.
18334	Planters, seed	A. M. Gould and A. Flanders	Cambria, N. Y	Oct. 6, 1857.
18344	Planters, seed	C. O Luce	Brandon, Vt	Oct. 6, 1857.
18366	Planters, seed	Hosea Willard	Vergennes, Vt	Oct. 6, 1857.
18333	Planters, seed	W. Y. Gill	Henderson, Ky	Oct. 6, 1857.
18393	Planters, seed	Joseph Hall	Honey Cut, Ala	Oct. 13, 1857.
18450	Planters, seed	P. Hinkley	Charleston, Ill	Oct. 20, 1857.
18525	Planters, seed	J D. Smith	Lancaster, Ohio	Oct. 27, 1857.
18716	Planters, seed	L. F. Ward	Marathon, N. Y	Nov. 24, 1857.
18717	Planters, seed	Caleb B. Winder	North Lewisburg, Ohio	Nov. 24, 1857.
18772	Planters, seed	John Robinson, of Eli	Sharpston, Md	Dec. 1, 1857.
18762	Planters, seed	Daniel B. Neal	Mount Gilead, Ohio	Dec. 1, 1857.
18821	Planters, seed	Joel Lee	Galesburg, Ill	Dec. 8, 1857.
18802	Planters, seed	James Carroll	Laporte, Ohio	Dec. 8, 1857.
18999	Planters, seed	L. F. Ward	Marathon, N. Y	Dec. 29, 1857.
18843	Planters, seed, tubes for	Joseph C. Haines	Dublin, Ind	Dec. 15, 1857.
17462	Plough-clevis	J. D Willoughby	Pleasant Hall, Pa	June 2, 1857.
17594	Plough, cultivator	Micajah Tolle	Newport, Ky	June 16, 1857.
18596	Ploughing-machines	Henry Moeser	Pittsburg, Pa	Nov. 10, 1857.
16901	Ploughs	Elliott Andrus	Geneva, N. Y	Mar. 31, 1857.
17211	Ploughs	Thomas C. Garlington	La Fayette, Ala	May 5, 1857.
17476	Ploughs	John Ormiston, assignor to D. N. Allard	Centre Township, Ohio	June 2, 1857.
17430	Ploughs	John S. Hall	West Manchester, Pa	June 2, 1857.
17577	Ploughs	Charles B. Ingersoll	Morris, Ill	June 16, 1857.
17579	Ploughs	L. W. and E. D. Legg	Speedsville, N. Y	June 16, 1857.
18335	Ploughs	Manasseh Grover	Clyde, Ohio	Oct. 6, 1857.
18355	Ploughs	Thomas Sharp	Nashville, Tenn	Oct. 6, 1857.
18463	Ploughs	C. B. Magruder	Thomasville, Ga	Oct. 20, 1857.
18475	Ploughs	David K. Thom	Marshall county, Tenn	Oct. 20, 1857.
18430	Ploughs	Noah Warlick	Lafayette, Ala	Oct. 20, 1857.
18459	Ploughs	John S. Lash	Carlisle, Pa	Oct. 20, 1857.
18609	Ploughs	Horatio Stanly	Greene, Pa	Nov. 10, 1857.
18682	Ploughs	James G. Cummings	Columbus, Miss	Nov. 24, 1857.
18776	Ploughs	Wm. W. Skinner	Davenport, Iowa	Dec. 1, 1857.
18750	Ploughs	John Lane, jr	Lockport, Ill	Dec. 1, 1857.
18726	Ploughs	Joseph Banks	Dadeville, Ala	Dec. 1, 1857.
18783	Ploughs	Robert B. Winston	Richmond, Va	Dec. 1, 1857.
18820	Ploughs	Joel Lee	Galesburg, Ill	Dec. 8, 1857.
18803	Ploughs	Jarvis Case	Springfield, Ill	Dec. 8, 1857.
18825	Ploughs	R. S. Stenton	New York, N. Y	Dec. 8, 1857.
17212	Ploughs, construction of	Jackson Gorham	Bairdstown, Ga	May 5, 1857.
17777	Ploughs, cultivator	George G. Black	Crossinville, Ohio	July 14, 1857.
18600	Ploughs, digging	Ezra Peck	Deer Park, N. Y	Nov. 10, 1857.
16912	Ploughs, gang	Jesse Frye	Springfield, Ill	Mar. 31, 1857.
17591	Ploughs, gang	Joseph Sutter	St Louis, Mo	June 16, 1857.
18343	Ploughs, gang	Samuel L. Kingston and David Gore	Plainview, Ill	Oct. 6, 1857.
18397	Ploughs, gang	George W. Hildreth	Lockport, N. Y	Oct. 13, 1857.
18698	Ploughs, gang	Joel Lee	Galesburg, Ill	Nov. 24, 1857.
18749	Ploughs, gang	Edward C. Jones	Pittsburg, Pa	Dec. 1, 1857.
18336	Ploughs, hill-side	A I. Hardin	Shelby, N. C	Oct. 6, 1857.
16913	Ploughs, prairie	Jesse Frye	Springfield, Ill	Mar. 31, 1857.
17547	Ploughs, reversible, mould-boards for	Henry S. Akins	Berkshire, N. Y	June 16, 1857.
18894	Ploughs, shovel	David Eberly	Waynesville, Ohio	Dec. 22, 1857.
16937	Ploughs, steam	David B. Spencer	Parkersburg, Va	Mar 31, 1857.
18446	Ploughs, steam	John R. Gray	Fair Play, Wis	Oct. 20, 1857.
18468	Ploughs, steam	E. Graves Otis	Yonkers, N. Y	Oct. 20, 1857.
18619	Ploughs, sub-soil	John Wood and Reuben North	Rochester, Wis	Nov. 10, 1857.
16722	Potato-diggers	Paul Dennis	Stillwater, N. Y	Mar. 3, 1857.
17129	Potato-diggers	John Taggart, assignor to himself and William M. Messer.	Roxbury, Mass	April 21, 1857.
17428	Potato-diggers	Isaac Griffin	Saratoga county, N. Y	June 2, 1857.
18899	Potato-diggers	Jacob E. Hardenbergh	Fultonville, N. Y	Dec. 22, 1857.
18954	Potato-digging	Isaac S. Bunnell	Montrose, Pa	Dec. 29, 1857.
19009	Potato-digging	Alexander Anderson	Markham, Canada	Dec 29, 1857.
17856	Potatoes, machines for digging	Joseph Heulings, assignor to himself, W. H Lawson, and B. M. Heulings.	Philadelphia, Pa	July 21, 1857.
17827	Potatoes, planting, machines for	Galusha J. Bundy	Lyndon, Vt	July 21, 1857.
18079	Rakes	Andrew J. Blodgett	Newport, N. H	Sept. 1, 1857.
18339	Rakes	A. A. & A. Hotchkiss	Sharon Valley, Conn	Oct. 6, 1857.
17772	Rakes, hay	S. W. Wood, assignor to Lewis H. Parsons.	Washington, D. C	July 7, 1857.

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No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
18731	Rakes, hay	L. A. C. Brown	Sparta, Ill	Dec. 1, 1857.
18850	Rakes, horse	Valentine Hyatt	Westfield, Ohio	Dec. 15, 1857.
16342	Reapers, raking-attachment for	James H. Thompson	Newark, N. J	Jan. 6, 1857.
16582	Reapers, raking-attachment for	Peter Harnist	Marinetown, Ill	Feb. 10, 1857.
16413	Reaping and mowing machines	David Watson	Newark, N. J	Jan. 13, 1857.
16599	Reaping and mowing machines	Jeremiah W. Mulley	Amsterdam, N. Y	Feb. 10, 1857.
17205	Reaping and mowing machines	Charles Crook	New Hope, Pa	May 5, 1857.
18238	Reaping and mowing machines	John G. Dunham	Raritan, N. J	Sept. 22, 1857.
18329	Reaping and mowing machines	Marcus E. Ellsworth	Hudson, Ohio	Oct. 6, 1857.
18829	Reaping and mowing machines	Henry G. Vanderwerken	Greenbush, N. Y	Dec. 8, 1857.
18833	Reaping and mowing machines	J. W. Brokaw and Thomas Harding, assignors to Warder, Brokaw, & Child.	Springfield, Ohio	Dec. 8, 1857.
17990	Reaping and mowing machines, finger-bar for.	John T. Whitaker and Calvin D. Reed	St. Charles, Ill	Aug. 11, 1857.
18340	Reaping and mowing machines, guard-finger for.	Charles Howell	Cleveland, Ohio	Oct. 6, 1857.
16971	Reaping-machines	George Esterly	Heart Prairie, Wis	April 7, 1857.
16735	Reaping-machines, raker for	Caleb Lee	Knox Township, Ohio	Mar. 3, 1857.
18188	Reaping-machines, raking attachment for	A. H. Caryl	Sandusky, Ohio	Sept. 15, 1857.
18221	Reaping-machines, raking-attachment for	Christian Yost	Leacock, Pa	Sept 15, 1857.
18525	Scrapers, cotton	Jacob G. Winger	Vicksburg, Mis	Oct. 27, 1857.
18158	Scythe-snathes	Abner H. Pinney	Columbus, Ohio	Sept. 8, 1857.
18119	Scythes to snathes, mode of attaching	Oliver Clark, assignor to Aaron H. Pinney.	Henrietta, Ohio	Sept. 1, 1857.
18326	Scythes to snathes, mode of attaching	William T. Clement	Shelburne Falls, Mass	Oct. 6, 1857.
18982	Seed-drills	Jacob Mumma	Harrisburg, Pa	Dec. 29, 1857.
16511	Seeding-machines	Erastus D. Wooding	Dixon, Ill	Jan. 27, 1857.
16772	Seeding-machines	Lewis B. & Henry A. Myers, assignors to themselves and Isaac Myers.	Massillon, Ohio	Mar. 3, 1857.
18083	Seeding-machines	Charles W. Cahoon	Brooklyn, N. Y	Sept. 1, 1857.
18346	Seeding-machines	Daniel & Austin S. Markham	Monmouth, Ill	Oct. 6, 1857.
18492	Seeding-machines	H. R Allen	Nelsonville, Ohio	Oct. 27, 1857.
18579	Seeding-machines	Albert Franklin	Genoa Cross Roads, Ohio	Nov. 10, 1857.
18603	Seeding-machines	E. Russell	Coatesville, Pa	Nov. 10, 1857
18730	Seeding-machines	Jarvis Case	Springfield, Ill	Dec. 1, 1857.
18735	Seeding-machines	Jacob Geiss and Jacob Brosius	Belleville, Ill	Dec. 1, 1857.
18765	Seeding-machines	David O. Page and John Clary	Dayton, Ohio	Dec. 1, 1857.
18853	Seeding-machines	Hiram Kellogg	McHenry, Ill	Dec. 15, 1857.
18856	Seeding-machines	Samuel Mills	New Castle, Ohio	Dec. 15, 1857.
18852	Seeding-machines	Charles C. James	Dayton, Ohio	Dec. 15, 1857.
18881	Seeding-machines	John Cretcherson, assignor to John Warren.	Boston, Mass	Dec. 15, 1857.
18959	Seeding-machines	William Coggeshall and B. B. Warner	Massillon, Ohio Wadsworth, Ohio	Dec. 29, 1857.
18978	Seeding-machines	James Lawson	Lawrence, Mass	Dec. 29, 1857.
18360	Seed-sowing machines	William C. Squier	Rockford, Ill	Oct. 6, 1857.
16698	Separators, grain, and straw-carriers	Cornelius Van Derzee	Albany, N. Y	Feb. 24, 1857.
16701	Separators, grain, method of hanging the sieves of.	Benjamin Wright	Hudson, Mich	Feb. 24, 1857.
16578	Separators, grain-mills, &c., extension hoppers for.	John Bean	Hudson, Mich	Feb. 10, 1857.
18151	Shearing-machines, sheep	J. V. Jenkins	Jackson, Mich	Sept. 8, 1857.
16461	Shearing sheep, machines for	R. P. Bradley	Cuyahoga Falls, Ohio	Jan. 27, 1857.
16720	Shears, sheep	Edward G. Chambers	Bucyrus, Ohio	March 3, 1857.
17837	Shovel, spade, or dung-fork handles	George C. Howard	Hardwick, Mass	July 21, 1857.
18351	Sod-cutters	Nelson Newman	Springfield, Ill	Oct. 6, 1857
16539	Sowing grain and fertilizers, machines for	J. C. Gaston	Reading, Ohio	Feb. 3, 1857.
17581	Sowing grain in drills, machines for	Frederick Moehlmann	Belleville, Ill	June 16, 1857.
16542	Sowing seed broadcast, machines for	George Hall	Morgantown, Va	Feb. 3, 1857.
17429	Sowing seed broadcast, machines for	D. Haldeman	Morgantown, Va	June 3, 1857.
17440	Sowing seed broadcast, machines for	A. C. Miller	Morgantown, Va	June 2, 1857.
18439	Sowing seed broadcast, machines for	William A. Chapin	St. Johnsbury, Vt	Oct. 20. 1857.
18495	Sowing seed broadcast, machines for	Jacob Boyer and D. S. Greer	Granville, Va	Oct. 27, 1857.
16807	Spades, steam	George M. Ramsay	New York, N. Y	March 10, 1857.
18479	Spading land, machine for	William E. Ward	Port Chester, N. Y	Oct. 20, 1857.
18302	Stemming and polishing pea-nuts, method of.	Samuel Shepherd	Nashua, N. H	Sept. 29, 1857.
17207	Straw-cutters	E. G. Cushing	Dryden, N. Y	May 5, 1857.
17850	Straw-cutters	Jonathan L. Sullivan	Lexington, N. C	July 21, 1857.
18084	Straw-cutters	Aury G. Coes	Worcester, Mass	Sept. 1, 1857.
18146	Straw-cutters	Porter Hill and Charles E. Jones	Millport, N. Y	Sept. 8, 1857.
18624	Straw-cutters	Jesse Ball	Barnesville, Ohio	Nov. 17, 1857.
18887	Straw-cutters	Moses Clements, deceased, William T. Clements, administrator of.	Worcester, Mass	Dec. 15, 1857.

I.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
18946	Straw-cutters	William Barrett	Stephentown, N. Y	Dec. 29, 1857.
18369	Threshing-cylinders, method of balancing	D R. Averill, assignor to himself, James F. Davis, and Henry Twitchell.	Pulaski, N. Y	Oct. 6, 1857.
17062	Threshing grain in the field, machines for	J. C. and T. G. Wilson	Cedar Hill, Texas	April 14, 1857.
18436	Threshing-machine for beating off pea-nuts from their vines.	Thomas L. Colville and Samuel Shepherd.	Nashua, N. H	Oct. 20, 1857.
18455	Threshing-machines, endless aprons of	Adolph Junge	Belleville, Ill	Oct. 20, 1857.
18598	Trees, mode of protecting, from canker-worms, &c.	Andrew F. Nute	Roxbury, Mass	Nov. 10, 1857.
17839	Troughs, hog	Elmore Johnson	Winchester, Mass	July 21, 1857.
16447	Winnowing-machines	Joseph and James Montgomery	Baltimore, Md	Jan. 20, 1857.
18867	Winnowing-machines	John Shipley	Princeton, Wis	Dec. 15, 1857.
17071	Yokes, ox	Isaac K. Bennett	Narrows, Pa	April 21, 1857.

CLASS II.—METALLURGY, *and manufacture of metals, and instruments therefor.*

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
18485	Amalgamators	Joseph A. Bertola, assignor to himself and John Stagg.	New York, N. Y	Oct. 20, 1857.
16525	Anvils	Otis and Seth Brigham	Fitchburg, Mass	Feb. 3, 1857.
	Auger-handle fastenings. (See Class XIV, letter A.)			
17078	Awl-haft	N. S. Clement	Worcester, Mass	April 21, 1857.
17556	Axe-polls, machine for making	R. H. Cole	St. Louis, Mo	June 16, 1857.
17732	Axes, making, machines for	Charles Hutchins	East Douglass, Mass	Mar. 3, 1857.
17639	Axes, &c., hardening	James N. Rockwell	Napanock, N. Y	June 23, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
18206	Belt-tool	David A. J. Lamson	Cherry Valley, Mass	Sept. 15, 1857.
18452	Bending flanges on boiler-heads, machine for	David Howell	Louisville, Ky	Oct. 20, 1857.
18058	Bending-machine	Lewis Raymond	New York, N. Y	Aug. 25, 1857.
17128	Blacksmith's butteris	Robert Killmer and Joshua Williams, assignors to Robert Killmer.	Newtown, Pa	April 21, 1857.
17284	Blacksmith's striker	Hartwell Kendall	East Dorset, Vt	May 12, 1857.
17243	Blind-fastenings	Horace Vansands	Middletown, Conn	May 5, 1857.
18157	Bolt for safes	Stuart Perry	Newport, N. Y	Sept. 8, 1857.
17660	Bolts and rivets, machine for making	Joel R. Bassett	Cincinnati, Ohio	June 30, 1857.
18534	Bolts, machine for making	R. H. Cole	St. Louis, Mo	Nov. 3, 1857.
18193	Bolts, socket for	H. W. Collender	New York, N. Y	Sept. 15, 1857.
18775	Bolts, threading machine for	William Sellers	Philadelphia, Pa	Dec. 1, 1857.
	Boring flue-sheets of steam-boilers, machine for. (See Class VI, letter B.)			
17641	Boring-mills	William Sellers	Philadelphia, Pa	June 23, 1857.
16564	Brass-kettle machine	Mary Ann Cannon, administratrix of John Cannon, assignor to New York and Brooklyn Brass Company	Warren, R. I New York, N. Y	Feb. 3, 1857.
18111	Casting bearings in iron wheels	Charles Taylor	Little Falls, N. Y	Sept. 1, 1857.
18481	Casting, core-spindle for	D. A. Webster and G. F. Burroughs	New York, N. Y	Oct. 20, 1857.
18924	Casting car-wheels	A. A. Needham	Rockford, Ill	Dec. 20, 1857.
17109	Casting, moulds for	Mortimer Nelson	New York, N. Y	April 21, 1857.
16864	Casting railway car-wheels	Norman Aylsworth	Rochester, N. Y	Mar. 24, 1857.
16688	Casting skeins for wagons	Andrew Leonard	Kenosha, Wis	Feb. 24, 1857.
17012	Castings, cleaning, mill for	Henry B. Remsen, assignor to H. R. Remsen and W. J. Noyes.	Albany, N. Y	April 7, 1857.
17814	Centering-machine	E. F. Whiton	West Stafford, Conn	July 14, 1857.
18490	Chain-machine	Lauriston Towne	Providence, R. I	Oct. 20, 1857.
18027	Chains, curb, machine for twisting	Lauriston Towne	Providence, R. I	Aug. 18, 1857.
17694	Chilling plough-shares	James Oliver and Harvey Little	South Bend, Ind	June 30, 1857.
16470	Clamp for soldering spectacles	George N. Cummings	Hartford, Conn	Jan. 27, 1857.
16506	Clamping-machine	Elbridge Wheeler	Marlboro', Mass	Jan. 27, 1857.
16502	Core-boxes	Abner Van Horn	New York, N. Y	Jan. 27, 1857.
17732	Cores, dry sand	William Gage and R. B. Felthousen	Buffalo, N. Y	July 7, 1857.
18964	Cores, dry sand	William Gage and R. B. Felthousen	Buffalo, N. Y	Dec. 29, 1857.
	Coupling, hose. (See Class XI, letter H)			
18337	Currycombs	Norman C. Harris and Alonzo Butler	Poultney, Vt	Oct. 6, 1857.
16440	Die for making spikes	E. T. Henry	Scranton, Pa	Jan. 20, 1857.
17453	Die stock	John F. Scharer	New York, N. Y	June 2, 1857.

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No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
17707	Die-stock	James Teachout	Waterford, N. Y	June 30, 1857.
16372	Dies	Robert Brayton	Buffalo, N. Y	Jan. 13, 1857.
17475	Dies for punching fork-tines	Leroy S. White, assignor to S. S. Rogers, E. W. Sperry, James H. Ashmead, and Edmund Hurlbut.	Hartford, Conn	June 2, 1857.
17204	Door-bolt	Jeremiah M. Crosby	Norwalk, Ohio	May 5, 1857.
17464	Door-bolt	Amos Westcott	Syracuse, N. Y	June 2, 1857.
17474	Door-bolts	Samuel R. Wilmot, assignor to Samuel B. Guernsey.	Watertown, Conn	June 2, 1857.
17843	Door-bolts, cylindrical	Charles G. Page	Washington, D. C	July 21, 1857.
17808	Door-bolts, cylindrical, locking	Charles G. Page	Washington, D. C	July 14, 1857.
	Door-guard, elastic. (See Class IX, letter D.)			
18537	Door-knobs, rose for	Samuel S. Day	New York, N. Y	Nov. 3, 1857.
17887	Door-knobs, spindle for	Orrin Newton	Pittsburg, Pa	July 28, 1857.
16512	Door-spring	Alfred F. Chatman, assignor to A. F. Chatman and J. Pecaré.	New York, N. Y	Jan. 27, 1857.
17070	Door spring	Gilbert L. Bailey	Portland, Me	April 21, 1857.
18164	Door-spring	E. P. Torrey and W. B. Tilton	New York, N. Y	Sept. 8, 1857.
18987	Door-spring	Charles A. Peck	New York, N. Y	Dec. 29, 1857.
16324	Door-springs	John Broughton	Chicago, Ill	Jan. 6, 1857.
16759	Door-springs	Leopold Thomas	Allegheny City, Pa	Mar. 3, 1857.
17490	Doors, catch for	Jeremiah W. Crosby	Norwalk, Ohio	June 9, 1857.
18911	Doors, glass knobs for	C. D. Kellogg and William M. Coan	Boston, Mass	Dec. 22, 1857.
17944	Drill, self-feeding	George C. Taft	Worcester, Mass	Aug. 4, 1857.
16900	Drill-shaft, feeding	George C. Taft, assignor to Henry W. Mason.	Worcester, Mass	Mar. 24, 1857.
16552	File-blanks, grinding, machine for	Robert G. Pine	Newark, N. J	Feb. 3, 1857.
16681	File-cutting machine	Isaac H. Collur	Poughkeepsie, N. Y	Feb. 24, 1857.
17760	File-cutting machine	William Van Auden	Poughkeepsie, N. Y	July 7, 1857.
17928	File-cutting machine	William Halliwell and Levi Osborne	Poughkeepsie, N. Y	Aug. 4, 1857.
17458	Filing saws for cotton-gins, machine for	Jonathan T. Turner	Bridgewater, Mass	June 2, 1857.
18643	Forge, portable	W. G. Hyndman	Cincinnati, Ohio	Nov. 17, 1857.
16531	Forge, smiths'	John W. Crannell	Olivet, Mich	Feb. 3, 1857.
16537	Forging gun-lock springs	George P. Foster	Bristol, R. I	Feb. 3, 1857.
16444	Furnace, blast	William Kelly	Eddyville, Ky	Jan. 20, 1857.
18167	Furnace, blast	Samuel Wilkes	Hammondsville, Ohio	Sept. 8, 1857.
17659	Furnace, smelting	Charles C. Alger	Newburg, N. Y	June 30, 1857.
16560	Furnaces, blast	H. Weissenborn	New York, N. Y	Feb. 3, 1857.
18051	Furnaces, cupola	Philip W. Mackenzie	Jersey City, N. J	Aug. 25, 1857.
16541	Furnaces, puddling	Jacob Green	Philadelphia, Pa	Feb. 3, 1857.
16999	Gold-separator	E. L. Seymour	New York, N. Y	April 7, 1857.
17758	Gold-washer and amalgamator	T. V. Tavnay	San Francisco, Cal	July 7, 1857.
16948	Gold, washing, machine for	Samuel S. Lewis	San Juan, Cal	Mar. 31, 1857.
18509	Grinding and polishing machine	Daniel Lovejoy and George F. Butterfield	Lowell, Mass	Oct. 27, 1857.
17398	Grooves and slots, machine for cutting	Robert F. Underhill	Indianapolis, Ind	May 26, 1857.
16638	Hames, machine for making	Henry Burt and James T. Hedden	Newark, N. J	Feb. 17, 1857.
18408	Hammers, machine for making	Russell B. Perkins	Meriden, Conn	Oct. 13, 1857.
16714	Hammers, trip	Henry Bushnell	New Haven, Conn	Mar. 3, 1857.
18087	Hatchet-heads, swaging, machine for	Levi Dodge	Cohoes, N. Y	Sept. 1, 1857.
16831	Hinge	Kingston Goddard	Philadelphia, Pa	Mar. 17, 1857.
16920	Hinge	R. Hart	Marietta, Ohio	Mar. 31, 1857.
17419	Hinge, door	S. M. Bullard	Holliston, Mass	June 2, 1857.
17354	Hinge, spring	Joseph S. Smith	New York, N. Y	May 26; antedated March 12, 1857.
18593	Hinge, spring	John Maxson	De Ruyter, N. Y	Nov. 10, 1857.
16678	Hinges	J. D. Browne	Cincinnati, Ohio	Feb. 24, 1857.
18896	Hinges, casting	Nicholas A. Fenner	Providence, R. I	Dec. 22, 1857.
16371	Hoes, manufacture of	Samuel Boyd	New York, N. Y	Jan. 13, 1857.
16584	Hoes, mode of attaching the eyes to the blades of.	Henry Havell	Newark, N. J	Feb. 10, 1857.
17672	Horse-shoe	William Cooper	Brooklyn, N. Y	June 30, 1857.
17542	Horse-shoe nails, machine for forging	Robert Cook, assignor to himself and Samuel Norton.	South Abington, Mass	June 9, 1857.
17491	Horse-shoe nails, machine for making	Calvin Carpenter, jr	Providence, R. I	June 9, 1857.
17265	Horse-shoes	David Cumming	Sorrel Horse, Pa	May 12, 1857.
18306	Horse-shoes, attaching elastic soles to	William Somerville	Buffalo, N. Y	Sept. 29, 1857.
18940	Horse-shoes, bending, machine for	Elbridge Wheeler	Marlboro', Mass	Dec. 22, 1857.
16691	Horse-shoes, calk for	Edward Maynard	Williamsburg, N. Y	Feb. 24, 1857.
17665	Horse-shoes, machine for making	Henry Burden	Troy, N. Y	June 30, 1857.
17441	Horse-hoofs, paring, implement for	V. N. Mitchell	Concord, N. C	June 2, 1857.
16690	Iron and steel, manufacture of	J. G. Martien	Newark, N. J	Feb. 24, 1857.

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No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
17389	Iron and steel, manufacture of	Robert Mushet	Coleford, England	May 26, 1857; England, Sept. 22, 1856.
16798	Iron, cast, enamelling	George W. Holley	Niagara, N. Y	Mar. 10, 1857.
17561	Iron, cast, making malleable	A. K. Eaton	New York, N. Y	June 16, 1857.
	Iron fences, method of constructing. (See Class IX, letter F.)			
16419	Iron fences, method of fastening the rails of, in the posts.	John B. Wickersham	New York, N. Y	Jan. 13, 1857.
16679	Iron kettles, cast, grinding the inner surface of.	Christopher C. Bradley, jr	Syracuse, N. Y	Feb. 24, 1857.
17628	Iron, manufacture of	William Kelly	Lyon county, Ky	June 23; reissued Nov. 3, 1857.
18347	Iron, melting and refining	George P. Miller and Hugh Dougherty	Lancaster, Pa	Oct. 6, 1857.
18910	Iron, refining	William Kelly	Lyon county, Ky	Dec. 22, 1857.
	Iron spoons, making. (See Class XVII, letter S.			
	Iron spoons, making. (See Class XVII, letter S.			
16775	Iron, swaging, machine for	Junius Foster, assignor to J. Herbold, George Kuhn, and Junius Foster.	Brooklyn, N. Y	Mar. 3, 1857.
16991	Jack, trimming	G. J. Olendorf, E. B. Tripp, and S. Harper	Cooperstown, N. Y	April 7, 1857.
17939	Key	Stuart Perry	Newport, N. Y	Aug. 4, 1857.
18654	Key for door-locks	Thomas K. Webster	Lawrence, Mass	Nov. 17, 1857.
17792	Key-holes, escutcheon for	Edmund Field	Greenwich, Conn	Mar. 10, 1857.
17634	Knife-blades, machine for straightening	Hiram Pierce	Claremont, N. H	June 23, 1857.
17952	Knives, grinding, machine for	Anthony Hankey and Francis Styles, jr., assignors to themselves and Frederick S Taylor.	Leicester, Mass	Aug. 4, 1857.
16955	Knives, table, making	Conrad Poppenhusen and C. F. E. Simon, assignors to Conrad Poppenhusen.	College Point, N. Y	Mar. 31, 1857.
17908	Latch, gate	A. E. Morgan, assignor to himself, D. Todd, and John B. Weddle.	Poughkeepsie, N. Y	July 28, 1857.
16908	Lock	V. B. David	Newark, Ill	Mar. 31, 1857.
17424	Lock	Julius M. Cook	Hinsdale, N. Y	June 2, 1857.
17013	Lock, car	Henry Ritchie, assignor to himself, Samuel C. Thompson, and G. W. Westerfield.	Newark, N. J	April 7, 1857.
17412	Lock, door	Thomas B. Atterbury	Pittsburg, Pa	June 2, 1857.
18169	Lock, pad	Linus Yale	Newport, N. Y	Sept. 8, 1857.
17681	Lock, permutation	Frank G. Johnson	Brooklyn, N. Y	June 30, 1857.
	Lock, railroad switch. (See Class IX, letter R.)			
17747	Lock, sash	M. P. Norton	Troy, N. Y	July 7, 1857.
18155	Lock, sash	William Patton	Towanda, Pa	Sept. 8, 1857.
16749	Locks	J. Christian Riethmuller	Pittsburg, Pa	Mar. 3, 1857.
16892	Locks	William Whiting and Henry Pickford	Boston, Mass	Mar. 24, 1857.
17139	Locks	Leger Diss	Ilion, N. Y	April 28, 1857.
17245	Locks	A. Williams and E. P. Cummings	Philadelphia, Pa	May 5, 1857.
17293	Locks	Stuart Perry	Newport, N. Y	May 12, 1857.
17714	Locks	Ludwig Baier, assignor to Joseph Lippincott and William C. Barr.	Pittsburg, Pa	June 30, 1857.
17740	Locks	Henry Isham	New Britain, Conn	July 7, 1857.
17815	Locks	William Whiting and Henry Pickford	Boston, Mass	July 14, 1857.
17804	Locks	L. F. Munger	Le Roy, N. Y	July 14, 1857.
18162	Locks	John P. Sherwood	Fort Edward, N. Y	Sept. 8, 1857.
18228	Locks	H. W. Covert	Rochester, N. Y	Sept. 15, 1857.
18243	Locks	Joseph L. Hall	Cincinnati, Ohio	Sept. 22, 1857.
17611	Locks and latches, keeper for	Andrew Patterson, assignor to J. H. Jones	Birmingham, Pa	June 16, 1857.
17150	Locks, chronometric	Amos Holbrook and Henry D. Fish	Milford, Mass	April 28, 1857.
16676	Locks, door, right and left hand, keeper for	Calvin Adams	Oak Hill, N. Y	Feb. 24, 1857.
18372	Metal caps for nail-heads, machine for cutting	Zachariah Walsh, assignor to Cornelius Walsh.	Newark, N. J	Oct. 6, 1857.
17813	Metal, cutting, machine for	James Tetlow	Salem, Mass	July 14, 1857.
17364	Metal, cutting and bending sheet, machine for	Elias F. Coates	Mystic Bridge, Conn	May 26, 1857.
16505	Metal, forging, machines for	E. Wheeler	Feltonville, Mass	Jan. 27, 1857.
17589	Metal pans, sheet, bending	E. A. Smead	Tioga, Pa	June 16, 1857.
18019	Metal plates, machine for bending	Julius Perry	Plymouth Hollow, Conn	Aug. 18, 1857.
18011	Metal plates, machine for bending	E. L. Gaylord	Terryville, Conn	Aug. 18, 1857.
18582	Metal plates, machine for bending	E. L. Gaylord	Terryville, Conn	Nov 3, 1857.
	Metal roofs, sheet, machine for seaming. (See Class IX, letter R.)			
17721	Metal-separator	Edward Borlase	Bristol, Conn	July 7, 1857.
16481	Metal, sheet, cutting	Samuel Hall	New York, N. Y	Jan. 27, 1857.
16337	Metal, sheet, forming joints of	J. J. Laubach	Easton, Pa	Jan. 6, 1857.

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No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
16456	Metal, sheet, machine for bending	John Wright, assignor to the Stow Manufacturing Company.	Plantsville, Conn	Jan. 20, 1857.
16853	Metal, sheet, machine for cutting and bending	Elliot Savage	East Berlin, Conn	Mar. 17, 1857.
18130	Metal, sheet, machine for cutting figures out of	C. P. S. Betts	New York, N. Y	Sept. 8, 1857.
16804	Metal, sheet, roller for bending	Daniel Newton	Southington, Conn	Mar. 10, 1857.
18918	Metal tubes, implement for cutting	Thomas J. Lloyd	Pottsville, Pa	Dec. 22, 1857.
18811	Metallic bars, machine for cutting	Samuel Hall	New York, N. Y	Dec. 8, 1857.
16631	Metallic beads, manufacture of	John R. Wendt, assignor to J. R. Wendt and Augustus Rogers.	Boston, Mass	Feb. 10, 1857.
	Metallic screw-cap for jars, &c. (See Class XVII, letter J.)			
17040	Metals, coating, with silver	Levi L. Hill	Hudson, N. Y	April 14, 1857.
18115	Metals, forging, machine for	Elbridge Wheeler	Feltonville, Mass	Sept. 1, 1857.
17876	Metals, punching and shaping, machine for	George Haseltine	Washington, D. C	July 28, 1857.
18782	Moulding shells, machine for	W. H. Ward	Auburn, N. Y	Dec. 1, 1857.
18617	Nail, horse-shoe, machine	John Wootton	Boonton, N. J	Nov. 10, 1857.
17523	Nail-machine	E. W. Scott and A. M. George	Lowell, Mass	June 9, 1857.
18457	Nail-machine	J. S. King	Raynham, Mass	Oct. 20, 1857.
17273	Nail-plate feeder	John C. Gould	Boonton, N. J	May 12, 1857.
17778	Nail-plate holder	William Battelle	New Castle, Pa	July 14, 1857.
19007	Nails, covering the heads of	William H. Van Gieson, assignor to himself, S. M. Buckingham, and E. Brown.	Waterbury, Conn	Dec. 29, 1857.
17941	Nails, forging, machine for	Samuel J. Seely, assignor to John M. Hood.	New York, N. Y	Aug. 4, 1857.
18428	Nails, trunk, machine for polishing the heads of.	Cornelius and Zachariah Walsh, assignors to Cornelius Walsh.	Newark, N. J	Oct. 13, 1857.
17502	Nails, wrought, machine for making	Smith Gardiner	New York, N. Y	June 9, 1857.
17534	Nut-machine	Samuel H. Whitaker	Cincinnati, Ohio	June 9, 1857.
18259	Nut-machine	S. H. Whitaker	Cincinnati, Ohio	Sept. 22, 1857.
18499	Nut-machine	R. H. Cole	St. Louis, Mo	Oct. 27, 1857.
18892	Nut-machine	J. C. Day	Jersey City, N. J	Dec. 22, 1857.
16507	Nut-machines	S. H. Whitaker	Cincinnati, Ohio	Jan. 27, 1857.
17197	Nut-machines	R. H. Cole	St. Louis, Mo	May 5, 1857.
17914	Nut-machines	Robert Brayton	Buffalo, N. Y	Aug. 4, 1857.
18156	Nuts, forging, machine for	Edward Paye and Samuel Hall	New York, N. Y	Sept. 8, 1857.
17734	Nuts, tapping, machine for	Almon B. Glover	Birmingham, Conn	July 7, 1857.
16495	Ore-cleaners	David Pollock	Lancaster, Pa	Jan. 27, 1857.
17374	Ore-crushing machine	Samuel F. Hodge	Detroit, Mich	May 26, 1857.
18038	Ore, separating	Thomas J. Chubb	New York, N. Y	Aug. 25, 1857.
18085	Ore-separator	Thomas J. Chubb	New York, N. Y	Sept. 1, 1857.
18388	Ore-separator	Thomas J. Chubb	New York, N. Y	Oct. 13, 1857.
18672	Ore-separator	William C. Bourne	New York, N. Y	Nov. 24, 18 7.
17385	Ore-washer	Pierre P. Martin	Paris, France	May 26, 1857; France, May 13, 1856.
18406	Ore-washer	Joseph Paull	Clifton, Mich	Oct. 13, 1857.
18789	Ores of gold and silver, treatment of	Joseph A. Bertola, assignor to himself and John Stagg.	New York, N. Y	Dec. 1, 1857.
17336	Ores, zinc, apparatus for reducing	Alfred Monnier	Camden, N. J	May 19, 1857.
18043	Pin-sticking machine	Thaddeus Fowler	Waterbury, Conn	Aug. 25, 1857.
18831	Pins on paper, sticking, machine for	Thaddeus Fowler, assignor to the American Pin Company.	Waterbury, Conn	Dec. 8, 1857.
18116	Pipe-coupling	Elizur Wright	Boston, Mass	Sept. 1, 1857.
16663	Pipe, gas, machine for fitting	Caleb C. Walworth	Boston, Mass	Feb. 17, 1857.
17482	Pipe, stove, machine for grooving	Charles Bigelow	Hastings, Min	June 9, 1857.
17393	Pipe, stove, machine for making	M. C. Root	Toledo, Ohio	May 26, 1857.
	Rivetting boilers, machine for. (See Class VI, letter B.)			
16967	Rivets, making, machine for	R. H. Cole	St. Louis, Mo	April 7, 1857.
18738	Rolling beams, pile for	John Griffin	Phœnixville, Pa	Dec. 1, 1857.
18906	Rolling cornice, machine for	Asa Johnson	Cairo, N. Y	Dec. 22, 1857.
18674	Rolling-mills, application of hot water to journals of.	John Bryan	Covington, Ky	Nov. 24, 1857; England, Sept. 4, 1857.
18962	Safes, burglar-proof	Leopold Eidlitz	New York, N. Y	Dec 29, 1857.
16464	Sash-fastener	John Broughton	Chicago, Ill	Jan. 27, 1857.
16595	Sash-fastener	W. W. Kellogg	Lynn, Mass	Feb. 10, 1857.
16671	Sash-fastener	Thomas Floyd, assignor to T. Floyd and G. H. Merklein.	Chambersburg, Pa	Feb. 17, 1857.
17910	Sash-fastener	F. Tarbell, assignor to himself and D. C. Bicknell.	Boston, Mass	July 28, 1857.
	Saw-clamp. (See Class XIV.)			
16695	Saw-filer	Archibald Robbins, Alanson Shewman, and Lawson R. Bigelow.	Watkins, N. Y	Feb. 24, 1857.

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No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
18224	Saw-filer	Jasper J. Near, assignor to Near & Vandusen.	Oneida, N. Y	Sept. 15, 1857.
	Saw-filer. (See Class XIV, letter S.)			
	Saw-filer. (See Class XIV, letter S.)			
	Saw-filing machine. (See Class XIV, letter S.)			
	Saw-teeth, planing, machines for. (See Class XIV.)			
	Saws, clamp for setting. (See Class XIV.)			
16521	Saws, filing	A. M. Beardsley	Constantine, Mich	Feb. 3, 1857.
	Saws, filing and setting, machine for. (See Class XIV, letter S.)			
18684	Saws, filing, machine for	Jacob Erdle	West Bloomfield, N. Y	Nov. 24, 1857.
	Saws, gauging and filing, machine for. (See Class XIV.)			
17522	Screw-chasers, hob for cutting	G. C. Schneider	Washington, D. C	June 9, 1857.
17563	Screw-cutter	James M. Evarts	Westville, Conn	June 16, 1857.
18909	Screw-cutting machine	William Kenyon	Steubenville, Ohio	Dec. 22, 1857.
17187	Screw-cutting machines	William N. Adams	Olmsted, Ohio	May 5, 1857.
16414	Screw-feeding gear	Caleb C. Walworth	Boston, Mass	Jan. 13, 1857.
18669	Screwing tubes in vacuum pans	Barnabas H. Bartol	Philadelphia, Pa	Nov. 24, 1857.
17932	Screws, cutting	Peter Hoffner	Rising Sun, Ind	Aug. 4, 1857.
16803	Screws, cutting, machine for	Thompson Newbury	Taunton, Mass	Mar. 10, 1857.
17655	Screws, cutting, taps and dies for	Ira A. Richards, assignor to Silas Stevens	East Brookfield, Mass	June 23, 1857.
17437	Screws of thin metal, manufacturing	John L. Mason	New York, N. Y	June 2, 1857.
16778	Screws, pointing and threading	Daniel M. Robertson	Manchester, N. H	Mar. 3, 1857.
18914	Scythes, tempering, furnace for	John E. Layton	Pittsburg, Pa	Dec. 22, 1857.
17872	Scythes, tempering, machine for	C. P. Crossman	Warren, Mass	July 28, 1857.
17996	Shearing and punching, press for	Benjamin F. Hooper, assignor to himself and Ransom Ballou, jr.	Albany, N. Y	Aug. 11, 1857.
18025	Shears for cutting metal	Timothy H. Taft	Worcester, Mass	Aug. 18, 1857.
16334	Shears, rotary	Anson Hardy	Dorchester, Mass	Jan. 6, 1857.
18506	Shears, rotary	Anson Hardy and George A. Rollins	Boston, Mass Nashua, N. H	Oct. 27, 1857.
17452	Shovels, making, machines for	David B. Rogers	Pittsburg, Pa	June 2, 1857.
	Spectacle-bows, machine for expanding. (See Class VIII, letter S.)			
18294	Spikes	Orrin Newton	Pittsburg, Pa	Sept. 29, 1857.
16958	Spikes, clinching, mode of	Horatio Bates	New York, N. Y	April 7, 1857.
16483	Springs, coil, machine for making	James Harrison, jr	New York, N. Y	Jan. 27, 1857.
18991	Springs, volute, machine for making	Daniel G. Rollin	New York, N. Y	Dec. 29, 1857.
16794	Steel plates, machine for shearing	Perry G. Gardiner	New York, N. Y	Mar. 10, 1857.
17172	Steel plates, tempering	Henry A. Seymour	Bristol, Conn	April 28, 1857.
16793	Steel springs, coiling, machine for	Perry G. Gardiner	New York, N. Y	Mar. 10, 1857.
17140	Steel and other metals, gilding and ornamenting.	A. Henry Dufresne	Paris, France	April 28, 1857; France, May 14, 1856.
17590	Tin pans, wiring	E. A. Smead	Tioga, Pa	June 16, 1857.
17738	Tire, upsetting	Rockwell Hazen and Volney Gibbs	Homer, Mich	July 7, 1857.
16331	Tires, upsetting, machine for	Russell W. Gates	Homer, Mich	Jan. 6, 1857.
18555	Tires, method of expanding	Samuel Penberthy	Chicago, Ill	Nov. 3, 1857.
	Tires on carriage-wheels, mode of tightening. (See Class X, letter C.)			
	Tires on wheels, machine for setting. (See Class X, letter W.)			
18971	Tongs, blacksmiths'	William Hart	Mayville, Wis	Dec. 29, 1857.
18970	Tool for turning journals	James Hall	New Haven, Conn	Dec. 29, 1857.
17301	Tools, soldering, heating, by gas	J. Henry Stimpson	Boston, Mass	May 12, 1857.
16363	Tubes, cap, making	Nathaniel Whitmore, assignor to himself and G. W. Keene.	Somerville, Mass Lynn, Mass	Jan. 6, 1857.
16630	Tubes, seamless, making	William S. Platt, assignor to W. S. Alfred and Clark M. Platt.	Waterbury, Conn	Feb. 10, 1857.
16895	Tubes, tapering, machine for rolling	William Ostrander	New York, N. Y	Jan. 13, 1857.
18205	Wire, pointing, machine for	C. Jillson	Worcester, Mass	Sept. 15, 1857.
16790	Wire-rope, machinery for making	Joseph Cushman	Racine, Wis	Mar. 10, 1857.
18080	Wiring blind-rods, machine for	Byron Boardman	Norwich, Conn	Sept 1, 1857.
16997	Wrench	Ezra Ripley	Troy, N. Y	April 7, 1857.
17531	Wrench	Edward J. Worcester	Worcester, Mass	June 9, 1857.
17737	Wrench	John H. Hathaway	Millbury, Mass	July 7, 1857.
18135	Wrench	H. M. Clark	New Britain, Conn	Sept. 8, 1857.
18266	Wrench	Henry D. Blake, assignor to W. H. Warner	New Hartford, Conn	Sept. 22, 1857.
17844	Wrench, hand	G. B. Phillips	Albany. N. Y	July 21, 1857.

II.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
16733	Wrench, screw	B. F. Joslyn	Worcester, Mass	Mar. 3, 1857.
16844	Wrench, screw	B. F. Joslyn	Worcester, Mass	Mar. 17, 1857.
17609	Wrench, screw	George C. Taft, assignor to Henry W. Mason.	Worcester, Mass	June 16, 1857.
17229	Wrenches	Charles Pinder	Lowell, Mass	May 5, 1857.

CLASS III.—MANUFACTURES OF FIBROUS AND TEXTILE SUBSTANCES, *including machines for preparing fibres of wool, cotton, silk, fur, paper, &c.*

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
17120	Bobbins, conical, machinery for winding	C. Tompkins and J. Johnson	Troy, N. Y	April 21, 1857.
17929	Bobbins for roving and stubbing	Isaac Hayden	Lawrence, Mass	Aug. 4, 1857.
16744	Card-cylinders, machinery for grinding	Jonathan Parker	Biddeford, Me	Mar. 3, 1857.
18124	Carding-engines	Horatio N. Gambrill and Singleton F. Burgee.	Woodbury, Md	Sept. 1; England April 14, 1857.
18257	Carding-engines	William H. Walton and George H. Phinney	New York, N. Y Brooklyn, N. Y	Sept. 22, 1857.
16504	Carding-engines, the top flats of, machinery for stripping.	George Wellman	Lowell, Mass	Jan. 27, 1857.
17094	Carding-machines	H. Houghton	Somers, Conn	April 21, 1857.
18423	Carding machines	Joseph Davis, assignor to himself and Royal Southwick.	East Wilton, N. H	Oct. 13, 1857.
18787	Carding-machines, cleaning the top cards of, machinery for.	Horace Woodman	Biddeford, Me	Dec. 1, 1857.
16437	Carpets and rugs, double pile, manufacture of	John Golding	Worcester, Mass	Jan. 20, 1857.
17954	Cleaning and carding moss	L. Boudreaux	Thibodeaux, La	Aug. 4, 1857.
16783	Cloth, felt, manufacture of	George G. Bishop	Norwalk, Conn	Mar. 10, 1857.
17950	Cloth, gore, elastic	Charles Winslow	Lynn, Mass	Aug. 4; reissued Sept. 15, 1857.
16685	Cloth, napping, gig-mills for	Ernest Gessner	Due, Saxony	Feb. 24, 1857.
17227	Cloth, napping, machinery for	John C. Millar and C. N. Tyler	Susquehannah county, Pa	May 5, 1857.
18796	Cloth, shearing, machine for	Milton D. Whipple, assignor to A. B. Ely	Charlestown, Mass	Dec. 1, 1857.
17224	Cloth, turning the edges of, machines for	John P. Marston	Charlestown, Mass	May 5, 1857.
17164	Cop-tubes	J. Marland and E Crockett	Lawrence, Mass	April 28, 1857.
16694	Cordage-machines	James Pine	Hoosick Falls, N. Y	Feb. 24, 1857.
16867	Cordage-machines	James P. Arnold	Louisville, Ky	Mar. 24, 1857.
17310	Cordage-machines	James P. Arnold	Louisville, Ky	May 19, 1857.
16452	Cordage-machines, laying tops for	William Robinson, assignor to himself and Amenzo W. Beardsley.	Warsaw, N. Y	Jan. 20, 1857.
18454	Cotton-cleaners	Jesse Johnson	Hempstead county, Ark	Oct. 20, 1857.
17819	Cotton-cleaning	Lewis S. Chichester, assignor to Henry G. Evans.	New York, N. Y	July 14, 1857.
18742	Cotton-cleaning, long trunks for	Isaac Hayden	Lawrence, Mass	Dec. 1, 1857.
16526	Cotton-cleaning, machines for	F. A. Calvert and C. G. Sargent	Lowell, Mass	Feb. 3, 1857.
16870	Cotton flannel	Albert S. Carleton	Clinton, Mass	Mar. 24, 1857.
18410	Cotton-gin feeders	Jedediah Prescott	Rockford, Ill	Oct. 13, 1857.
16394	Cotton-gins	James F. Orr	Orrville, Ala	Jan. 13, 1857.
16488	Cotton-gins	Edwin Keith	Bridgewater, Mass	Jan. 27, 1857.
16565	Cotton-gins	L. S. Chichester, assignor to H. G. Evans	New York, N. Y	Feb. 3, 1857.
17806	Cotton-gins	Daniel Pratt	Prattville, Ala	July 14, 1857.
	Cotton-gins, machine for filing saws for. (See Class II, letter F.)			
16699	Cotton-gins, manufacturing ribs for	John W Webb	Cotton Valley, Ala	Feb. 24, 1857.
17155	Cotton-gins, saw, brushes of	Edwin Keith	Bridgewater, Mass	April 28, 1857.
16833	Cotton, wool, fur, and other fibrous materials, cleaning and separating, machinery for.	Isaac Hayden	Lawrence, Mass	Mar. 17, 1857.
17612	Fabrics, knitted	Joseph Vickerstaff, assignor to Martin Laudenberger.	Philadelphia, Pa	June 16, 1857.
17020	Felt-cloth, crossing the fibres of wool in making machinery for.	Thomas B. Butler	Norwalk, Conn	April 14, 1857.
17828	Felt-cloth, machines for manufacturing	Thomas B. Butler	Norwalk, Conn	July 21, 1857.
17487	Felt-cloth, manufacturing, machinery for	Thomas B. Butler	Norwalk, Conn	June 9, 1857.
18487	Felt garments, seamless, manufacturing	D. W. Gitchell and L. W. Badger, assignors to the Seamless Garment Manufacturing Company.	Matteawan, N. Y	Oct. 20, 1857.

III.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
16431	Felting, bats for, machines for forming	John H. Bloodgood	New York, N. Y	Jan. 20, 1857.
17420	Fibre of banana, plaintain, aloe, &c., machinery for preparing the.	Francis Burke	British West Indies	June 2, 1857; England, July 14, 1855.
18204	Fibrous and textile substances, method of treating, in a vacuum for cleansing purposes.	Julius A. Jillson and Henry Whinfield	Poughkeepsie, N. Y	Sept. 15, 1857.
16865	Fibrous materials, combing-machines for	Milton D. Whipple, assignor to A. B. Ely.	Charlestown, Mass	Mar. 17, 1857.
16838	Fibrous materials, method of cleansing	John Howarth	Salem, Mass	Mar. 17, 1857.
18888	Fibrous substances for spinning, machinery for preparing.	James Apperly and William Clissold	Dudbridge, England	Dec. 22, 1857; England, Dec. 4, 1856.
18801	Flax, hemp, and other fibrous material, mode of treating.	John W. Burton and George Pye	Eye, England Ipswich, England	Dec. 8, 1857; England, Mar. 20, 1856.
16977	Fringes, cutting, machines for	William J. Horstmann	Philadelphia, Pa	April 7, 1857.
6543	Hat-bats, felt, machines for forming	Washington G. Hagaman	Philadelphia, Pa	Feb. 3, 1857.
17083	Hat-bodies, blocking, machines for	William A. Fenn	New Milford, Conn	April 21, 1857.
16823	Hat-bodies, felting, machinery for	James Blakslee and E R. Barnes	Newtown, Conn	Mar. 17, 1857,
16973	Hat-bodies, felting, machines for	Wiliam Fuzzard	Cambridgeport, Mass	April 7, 1857.
17115	Hat-bodies, felting, machines for	Henry L. Randall	Roxbury, Conn	April 21, 1857.
18316	Hat-bodies, forming and hardening, machines for.	Alonzo C. Arnold	Norwalk, Conn	Oct. 6, 1857.
16426	Hat-bodies, machinery for forming	Ira Gill, assignor to Ira Gill and Elbridge Brown.	Walpole, Mass	Jan. 13, 1857.
18181	Hat-bodies, machines for hardening	Joseph Booth	Newark, N. J	Sept. 15, 1857.
18034	Hat-bodies, manufacturing, machinery for	Joseph Booth	Newark, N. J	Aug. 25, 1857.
16338	Hats	Evan Morris	Philadelphia, Pa	Jan. 6, 1857.
17033	Hats, felt, brims of, machines for forming the.	William A. Fenn	New Milford, Conn	April 14, 1857.
16588	Hats, felt, method of surfacing	Alvin Hurd	Danville, Conn	Feb. 10, 1857.
17318	Hats, &c., treating straw braid for, method of.	George Cornwall, 2d	Milford, Conn	May 19. 1857.
16365	Hemp-brakes	Samuel H. Little	St. Louis, Mo	Jan. 6, 1857.
17015	Hemp-brakes	James Barkley	St. Louis, Mo	April 7, 1857.
17092	Hemp-brakes	Wade W. Hampton	Winchester, Va	April 21, 1857.
17274	Hemp-brakes	J. L. Hardeman	Arrow Rock, Mo	May 12, 1857.
17900	Hemp-brakes	Stephen Stafford	Carroll county, Mo	July 28, 1857.
18303	Hemp-brakes	Conrad Simon	Louisville, Ky	Sept. 29, 1857.
18657	Hemp-brakes	G. F. S. Zimmerman and A. Beattie	St. Joseph, Mo	Nov. 17, 1857.
18638	Hemp-cutter	John L. Hardeman	Arrow Rock, Mo	Nov. 17, 1857.
17795	Hemp-drawing machines	Samuel Lownds	Brooklyn, N. Y	July 14, 1857.
16375	Knitting-machines	Enoch Colvin	Poultney, Vt	Jan. 13, 1857.
18725	Knitting-machines	Walter Aiken	Franklin, N. H	Dec. 1, 1857.
18792	Knitting-machines	S. D. Fairbanks, assignor to himself and Charles H. Adams.	Cohoes, N. Y	Dec. 1, 1857.
18121	List-speeders, condensers for	William Matteson, assignor to John C. Whitin.	Northbridge, Mass	Sept. 1, 1857.
16415	Loom, power	William Weild	Manchester, England	Jan. 13, 1857; England, Mar. 7, 1855.
16354	Looms	François Durand	Paris, France	Jan. 6, 1857.
16405	Looms	Daniel W. Snell and S. S. Bartlett	Woonsocket, R. I	Jan. 13, 1857; reissued Sept. 1, 1857; additional improvement Oct. 6, 1857.
17353	Looms	Nathaniel B. Carney, assignor to J. R Livingston, Charles H. Haswell, and Russell C. Root, trustees.	New York, N. Y	May 19, 1857.
17375	Looms	William H. Howard	Philadelphia, Pa	May 26, 1857.
17404	Looms	Franklin Painter, assignor to the Nashawannuck Manufacturing Company.	East Hampton, Mass	May 26, 1857.
18061	Looms	Edwin A. Scholfield	Westerly, R. I	Aug. 25, 1857.
17189	Looms for weaving pile-fabrics	E. B. Bigelow	Boston, Mass	May 5, 1857.
16370	Looms for weaving pile-fabrics double	E. B Bigelow	Boston, Mass	Jan. 13, 1857.
16392	Looms, hand	Stephen C. Mendenhall	Richmond, Ind	Jan. 13. 1857.
18208	Looms, harness for	George Matoon	Chicopee Falls, Mass	Sept. 15, 1857.
17267	Looms, hook-temples for	W. W. Dutcher and George Draper	Milford, Mass	May 12, 1857.
17193	Looms, picker-motion for	Samuel Boorn	Lowell, Mass	May 5, 1857.
17468	Looms, pickers for	Thomas J. Mayall, assignor to himself and George N. Davis.	Roxbury, Mass	June 2, 1857.
16824	Looms, power	John L. Cheney	Lowell, Mass	Mar. 17, 1857.
17912	Looms, power	Andrew Allen	Wilmington, Del	Aug. 4, 1857.
18320	Looms, power, for weaving wire cloth	E. B. Bigelow	Clinton, Mass	Oct. 6, 1857.
17926	Looms, power, set-off motion of	William H. Gray	Dover, N H	Aug. 4, 1857.
17559	Looms, roller-temple for	Warren W. Dutcher	Milford, Mass	June 16, 1857.
17323	Looms, shuttle-motion for	Levi Ferguson	Lowell, Mass	May 19, 1857.
17746	Paper cop-tubes	Alexander McCausland	Providence, R. I	July 7, 1857.

III.—*List of patents for inventions*, 1857.

Nos.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
17050	Paper, drying and pressing, machine for	John North	Middletown, Conn.	April 14, 1857; reissued May 19, 1857.
17352	Paper-folding, machines for	Edward N. Smith, assignor to S. T. Bacon.	Springfield, Mass	May 19, 1857.
17663	Paper, machines for making	Edward B. Bingham	Brooklyn, N. Y	June 30, 1857.
17917	Paper, machines for making	Patrick Clark	Rahway, N. J	Aug. 4, 1857.
16430	Paper-making, machinery for	John S. Blake	Claremont, N. H	Jan. 20, 1857.
18389	Paper-pulp, from beet and other refuse, preparing.	Robert H. Collyer	Camden, N. J	Oct. 13, 1857.
18190	Paper-pulp from ivory, making	William N. Clark	Chester, Conn	Sept. 15, 1857.
17387	Paper pulp, making	M. A. Charles Mellier	Paris, France	May 26, 1857; France, Aug. 7, 1854; England, Oct. 26, 1855.
16949	Paper-pulp, manufacture of	Columbus F. Sturgis	Carlowville, Ala	Mar. 31, 1857.
16994	Paper-ruling machines	Charles L. Pond	Buffalo, N. Y	April 7, 1857.
17895	Paper-stuff, treating	J. A. Roth	Philadelphia, Pa	July 28, 1857.
16927	Pasteboard, making, machines for	Louis Koch	New York, N. Y	Mar. 31, 1857.
17489	Pasteboard or paper, machines for drying	Patrick Clark	Rahway, N. J	June 9, 1857.
16928	Pasteboard, pressing water out of, machinery for.	Louis Koch	New York, N. Y	Mar. 31, 1857.
17723	Pasteboard, &c., machine for cutting	Denslow Burhans	Burlington, Iowa	July 7, 1857.
17754	Rolls, drawing, covering for	Joseph M. Smith	Manchester, N. H	July 7, 1857.
17496	Rope-machines	William R. Dutcher	Lansingburg, N. Y	June 9, 1857.
17787	Rope-machines	Ezekiel Guile	St. Louis, Mo	July 14, 1857.
17005	Rope, making, machinery for	Milton Wallwork	Hoosick Falls, N. Y	April 7, 1857.
17084	Rope, making, machines for	Harvey W. Fowler	Hoosick Falls, N. Y	April 21, 1857.
16842	Rope-manufacture	Michael H. Johnson	St. Louis, Mo	Mar. 17, 1857.
16858	Rope or cordage, unmaking, machines for	Joseph Wood	Brooklyn, N. Y	Mar. 17, 1857.
	Rope-wire, machinery for making.—(See Class II, letter W.)			
18845	Sewing and other machines, mechanical movement for.	James Hanley	New York, N. Y	Dec. 15, 1757.
16745	Sewing-machine	S. F. Pratt	Roxbury, Mass	Mar. 3, 1857.
17186	Sewing-machines	Bryan Atwater	Berlin, Conn	May 5, 1857.
17930	Sewing-machines	Abial C. Herron	Remsen, N. Y	Aug. 4, 1857.
16382	Sewing-machines	Milton Finkle	New York, N. Y	Jan. 13, 1857.
16387	Sewing-machines	A. F. Johnson	Boston, Mass	Jan. 13, 1857.
16434	Sewing-machines	James E. A. Gibbs	Mill Point, Va	Jan. 20, 1857.
16436	Sewing-machines	Elias Howe, jr	Brooklyn, N. Y	Jan. 20, 1857; England July 26, 1848.
16566	Sewing-machines	Joshua Gray, assignor to Joshua Gray and John Gault.	Boston, Mass	Feb. 3, 1857.
16554	Sewing-machines	Samuel F. Pratt	Roxbury, Mass	Feb. 3, 1857.
16518	Sewing-machines	Eliza Alexander	New York, N. Y	Feb. 3, 1857.
16609	Sewing-machines	Thomas J. W. Robertson	New York, N. Y	Feb. 10, 1857.
16713	Sewing-machines	Joseph W. Burnham	Hartford, Conn	Mar. 3, 1857.
16710	Sewing-machines	Charles D. Belcher	Charleston, S. C	Mar. 3, 1857.
16850	Sewing-machines	T. J. W. Robertson	New York, N. Y	Mar. 17, 1857.
16914	Sewing-machines	James E. A. Gibbs	Mill Point, Va	Mar 31, 1857.
17049	Sewing-machines	Willford H. Nettleton and Charles Raymond, assignors to Henry E. Fickett.	Bristol, Conn	April 14, 1857.
17366	Sewing-machines	Solomon B. Ellithorp	New York, N. Y	May 26, 1857.
17400	Sewing-machines	Thomas S. Wells	Utica, N. Y	May 26, 1857.
17427	Sewing-machines	James E. A. Gibbs	Mill Point, Va	June 2, 1857.
17508	Sewing-machines	Daniel Harris	Boston, Mass	June 9, 1857.
17571	Sewing-machines	Daniel Harris	Boston, Mass	June 16, 1857.
17717	Sewing-machines	William Sage, assignor to Henry Sage	Durham Centre, Conn	June 30, 1857.
17679	Sewing-machines	E Howe, jr., and W. B. Bliss	Boston, Mass	June 30, 1857.
17744	Sewing-machines	E. T. Lathbury	Buffalo, N. Y	July 7, 1857.
18000	Sewing-machines	W. C. Watson, assignor to himself, G. H. Wooster, and J. W. Gregory.	New York, N. Y	Aug. 11. 1857.
18071	Sewing-machines	Henry Behn, assignor to himself and Thomas Sewell.	New York, N. Y	Aug. 25, 1857.
18068	Sewing-machines, (A.)	William Wickersham	Boston, Mass	Aug. 25, 1857; England, Dec. 29, 1854.
18069	Sewing-machines, (B)	William Wickersham	Boston, Mass	Aug. 25, 1857; England, Dec 29, 1854.
18072	Sewing-machines	Samuel Larkin, assignor to the Wheeler & Wilson Manufacturing Co.	Bridgeport, Conn	Aug. 25, 1857.
18102	Sewing-machines	Orson C. Phelps	Rochester, N. Y	Sept. 1, 1857.
18285	Sewing-machines	Edward A. Jenks and John Underwood	Lowell, Mass	Sept. 29, 1857.

III.—*List of patents for inventions, 1857.*

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
18371	Sewing-machines	William C. Watson, assignor to himself, George H. Wooster, and Ira W. Gregory.	New York	Oct. 6, 1857.
18350	Sewing-machines	W. H. Nettleton and Charles Raymond	Bristol, Conn	Oct. 6, 1857.
18359	Sewing-machines	E. Harry Smith	New York, N. Y	Oct. 6, 1857.
18470	Sewing-machines	T. J. W. Robertson	New York, N. Y	Oct. 20, 1857.
18511	Sewing-machines	John W. Marsh	Oxford, Mass	Oct. 27, 1857.
18522	Sewing-machines	S. H Roper	Roxbury, Mass	Oct. 27, 1857.
18566	Sewing-machines	C. H. Andrus, assignor to Squire Lee	Goshen, N. Y	Nov. 3, 1857.
18605	Sewing-machines	E. Harry Smith	New York, N. Y	Nov. 10, 1857.
18639	Sewing-machines	N. W. Harrington	Jamestown, N. Y	Nov. 17, 1857.
18732	Sewing-machines	Joel Chase	New York, N. Y	Dec. 1, 1857.
18793	Sewing-machines	George Fetter, assignor to himself and Edward Jones.	Philadelphia, Pa	Dec. 1, 1857.
18817	Sewing-machines	William H. Lazelle	New York, N. Y	Dec. 8, 1857.
18834	Sewing-machines	W. C. Watson, assignor to himself and George H. Wooster.	New York, N. Y	Dec. 8, 1857.
18823	Sewing-machines	Charles Moore	Buffalo, N. Y	Dec. 8, 1857.
18880	Sewing-machines	Henry Behn, assignor to himself and Thos. Sewell.	New York, N. Y	Dec. 15, 1857.
18915	Sewing-machines	William H. Lazelle	New York, N. Y	Dec. 22, 1857.
18904	Sewing-machines	George W. Hubbard	West Meriden, Conn	Dec. 22, 1857.
17825	Sewing-machines, feed-motion for	A. B. M. Bartholf	New York, N. Y	July 21, 1857.
16129	Sewing-machines, guides for	William B. Bishop	Brooklyn, N. Y	Jan. 20, 1857.
16586	Sewing-machines, guides for	Addison Hull	Brooklyn, N. Y	Feb. 10, 1857.
17255	Sewing-machines, stitch for	Charles F. Bosworth	Petersham, Mass	May 12, 1857.
17835	Sewing-machines, tension apparatus for	A. Hoagland	Jersey City, N. J	July 21, 1857.
17272	Sewing, needles for	Benjamin Garvey	New York, N. Y	May 12, 1857.
18807	Sewing-thimbles	John Devlin	Philadelphia, Pa	Dec. 8, 1857.
17334	Sewing-thread, warps and yarns, machinery for dressing.	J. D. Minder	Killingly, Conn	May 19, 1857.
16734	Shuttles, weavers'	Lucius J. Knowles	Warren, Mass	Mar. 3, 1857.
16463	Speeders	James S. Brown	Pawtucket, Mass	Jan. 27, 1857.
18529	Spinning flax and hemp, machinery for	Milton D. Whipple, assignor to Alfred B. Ely.	Charlestown, Mass	Oct. 27, 1857.
16657	Spinning-flyers, manufacturing	John N. Sawtell	Lowell, Mass	Feb. 17, 1857.
18029	Spinning, self-acting mules for	George Wright	Grafton, Mass	Aug. 18, 1857.
18081	Thread, spooling, machines for	Charles K. Bradford	Lynn, Mass	Sept. 1, 1857.
18391	Twine-reels	S. E. Davis	Waterbury, Conn	Oct. 13, 1857.
17177	Wadding, winding, machines for	Thomas Thompson	Niverville, N. Y	April 28, 1857.
18620	Warps, dressing, machinery for	Samuel Campbell, assignor to John C. Whitin.	Whitestown, N. Y	Nov. 10, 1857.
16622	Wool-cleaning machines	William H. Watrous	Brooklyn, N. Y	Feb. 10, 1857.
16864	Wool-combing, machinery for	Michael H. Simpson	Boston, Mass	Mar. 17, 1857; antedated Sept. 17, 1856.
17244	Wool-combing, machines for	Cullen Whipple	Providence, R. I	May 5, 1857.
18564	Wool on the pelt, burring, machinery for	John Waterhouse	Little Falls, N. Y	Nov. 3, 1857.
	Yarn, coloring, in the bobbin. (See Class IV, letter C.)			
16934	Yarn for dyeing and scouring, preparing	Lucien E. Pratt	South Kingston, R. I	Mar. 31, 1857.
17379	Yarn or thread, reels for	Christian Knauer	Pittsburgh, Pa	May 26, 1857
18461	Yarns, cotton, manufacture of	Samuel C. Lister and James Warburton	Bradford, England	Oct. 20, 1857; England, Nov. 23, 1855.
16903	Yarns, manufacturing, from mixed cotton and wool.	George S. Bradford	Sand Lake, N. Y	Mar. 31, 1857.
	Yarns, paper, &c., sizing compositions for. (See Class IV, letter C.)			

CLASS IV.—CHEMICAL PROCESSES, MANUFACTURES, AND COMPOUNDS, *including medicines, dyeing, color-making, distilling, soap and candle making, mortars, cements, &c.*

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
16879	Acid, nitric, apparatus for making	Philip O'Reilly	Providence, R. I	Mar. 24, 1857.
17830	Acid sulphate of lime, apparatus for making	Laurent Gamotis and Sabin Martin	New Orleans, La	July 21, 1857.
17976	Acid, sulphuric, manufacture of	Alfred Monnier	Camden, N. J	Aug. 11, 1857; reissued Oct. 6, 1857.
18214	Alkalies, boxes for preserving	George Thompson	East Tarentum, Pa	Sept. 15, 1857.

IV.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
16771	Alloys, fluxes for testing	E. Mourier and T. F. E. Vallent, assignors to Henry Migeon	Paris, France New York, N. Y	Mar. 3, 1857 ; France, Dec. 30, 1854.
18201	Breweries, coolers for	A. Hammer	Reading, Pa.	Sept. 15, 1857.
17968	Brewers' boilers	Adolph Hammer	Reading, Pa.	Aug. 11, 1857.
18220	Brewers' coolers	Adam Wood	Pittsburg, Pa	Sept. 15, 1857.
18338	Bronzing-liquid	Henry Hoffman	New York, N. Y	Oct. 6, 1857.
17713	Cane-juice, defecating	Leonard Wray	London, England	June 30, 1857 ; Belgium, June 20, 1854.
18381	Candle-making, preparing fats for	Morgan W. Brown	Buffalo, N. Y	Oct. 13, 1857.
16754	Candle-mould machines	Benjamin D. Sanders	Holliday's Cove, Va	Mar 3, 1857.
18281	Coating hose-pipe	Charles H. Hinckley	Stonington, Conn	Sept 29, 1857.
17708	Coloring yarn in the bobbin	James Thompson and William P. Wakelee	New Hartford, N. Y	June 30, 1857.
16918	Composition for floor-cloths	J. W. Harmon	Brooklyn, N. Y	Mar. 31, 1857.
	Composition for preparing tracing-muslin. (See Class XVIII, letter T.)			
18270	Compositions for covering meats	John J. Bate and Francis S. Low	Brooklyn, N. Y	Sept. 29, 1857.
16709	Compositions for shuttle-drivers	Samuel Boorn	Lowell, Mass	Mar. 3, 1857.
	Compositions, mastic roofing. (See Class IX, letter R.)			
18199	Compositions, safety-fuse	Edwin Gomez and William Mills	New York, N. Y	Sept. 15, 1857.
17381	Compositions, sizing, for yarns, paper, &c.	John Leigh	Manchester, England	May 26, 1857.
17867	Compositions, tanning	Ira Carle	Kingston, Pa	July 28, 1857.
17562	Compound, depilating, for hides	A. K. Eaton	New York, N. Y	June 16, 1857.
17392	Compound, fertilizing	Louis S. Robbins	Brooklyn, N. Y	May 26, 1857.
17709	Compounds, resinous, for covering hams	C. Van Vleck	Macomb, Ill	June 30, 1857.
17586	Condensing-apparatus for salt and gases	John C. Fr. Salomon	Baltimore, Md	June 16, 1857.
17711	Condensing liquids in gas main-pipes	John Walton	Louisville, Ky	June 30, 1857.
18286	Cork-sole stuff	William Johnston	Brooklyn, (E. D.,) N. Y	Sept. 29, 1857.
18980	Cotton, plastic, preparing, for moulding purposes.	James M. Legare	Aiken, S. C.	Dec. 29, 1857.
17974	Dyeing-machines, silk	Nicholas Mary, sen.	Philadelphia, Pa	Aug. 11, 1857.
17635	Enamelling iron pipes and hollow-ware	Edward Pierce	Philadelphia, Pa	June 23, 8517.
17548	Evaporators, brine	Charles W. Atkeson	Henderson, Ky	June 16, 1857.
18216	Gas apparatus, illuminating	Charles B. Warring	Poughkeepsie, N. Y	Sept. 15, 1857.
16544	Gas generating apparatus	James Hansor	Wandsworth road, England	Feb. 3, 1857 ; England, Mar. 21, 1854.
16830	Gas-generator	Alonzo M. Giles	Boston, Mass	Mar. 17, 1857.
17309	Gas-generators	James A. Bruce, assignor to President and Directors of Maryland Portable Gas Co.	Baltimore, Md	May 12, 1857.
17599	Gas-generators	E. M. Whitehead and J. L. Conklin	Newark, N. J	June 16, 1857.
17614	Gas-generators	N. Aubin	Albany, N. Y	June 23, 1857.
17704	Gas-generators	John W. Smith	Washington, D. C	June 30, 1857.
17981	Gas-generators	Allen Pollock	Washington, D. C	Aug. 11, 1857.
18184	Gas-generators	John Butler	Brooklyn, N. Y	Sept. 15, 1857.
18414	Gas-generators	Salmon Skinner	Yonkers, N. Y	Oct. 13, 1857.
17574	Gas-generators, construction of	Augustus A. Hayes	Boston, Mass	June 16. 1857.
17435	Gas-generators, feeding	C. B. Loveless	Syracuse, N. Y	June 2, 1857.
18109	Gas generators, portable	Warren A. Simonds	Boston, Mass	Sept. 1, 1857.
17465	Gas-generators, wood	Charles F. Werner	New York, N. Y	June 2, 1857.
16682	Gas, hydrogen and wood, combining	Warren C. Choate, and Charles N. Tyler	Washington, D. C	Feb. 24, 1857.
17090	Gas, illuminating, portable apparatus for generating.	James O. Halsey	Essex county, N. J	April 21, 1857.
16591	Gas-making process	James Hansor	Wandsworth road, England	Feb. 10, 1857 ; England, April 21, 1856.
18648	Gas-meter indicator	Thomas I. Pitt	New York, N. Y	Nov. 17, 1857.
16922	Gas-meters, dry	Hyam Jacob Hyams	Stanhope street, Hampstead road, England.	Mar. 31, 1857 ; England, Feb. 16, 1856.
17936	Gas-regulator, stop-cock	O. L. Lawson, and A. A. Starr	New York, N. Y	Aug. 4, 1857.
16639	Gas-regulators	John H. Cooper	Philadelphia, Pa	Feb. 17, 1857.
16951	Gas-regulators	C. J. Halstead, and J. Coeyman, assignors to Decker, Godine, and Halstead.	New York, N. Y	Mar. 31, 1857.
17079	Gas-regulators	Robert Cornelius	Philadelphia, Pa	April 21, 1857.
17317	Gas-regulators	Robert Cornelius	Philadelphia, Pa	May 19, 1857.
17671	Gas-regulators	John H. Cooper	Philadelphia, Pa	June 30, 1857.
18008	Gas regulators	John H. Cooper	Philadelphia, Pa	Aug. 15, 1857.
18103	Gas-regulators	John P. Powers	Newark, N. J	Sept. 1, 1857.
16651	Gas-retort	Michael J. Miller	St. Louis, Mo	Feb. 17, 1857.
18134	Gas-retorts	Saunders Coates	New York, N. Y	Sept. 8, 1857.
18926	Gas-retorts, casting	Abiel Pevey	Lowell, Mass	Dec. 22, 1857.
18791	Gas-retorts, cleansing	Simmons W. Carpenter, assignor to Wm. W. Woodworth.	Yonkers, N. Y	Dec. 1, 1857.

IV.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of Patent.
17068	Gas-retorts, closing	N. Aubin	Albany, N. Y	April 21, 1857.
18154	Gas-tubes, extension	Charles Monson	New Haven, Conn	Sept. 8, 1857.
17214	Gutta-percha, process for purifying	Robert Haering	New York, N. Y	May 5, 1857.
17649	India-rubber cloth, elastic, preparing	Charles Winslow	Lynn, Mass	June 23, 1857.
16601	India-rubber cloth, preparing	G. B. Millerd	Colchester, Conn	Feb. 10, 1857.
17295	India-rubber, devulcanizing	Conrad Poppenhusen, and Ludwig Held	Brooklyn, N. Y	May 12, 1857; antedated April 1, 1857.
17029	India-rubber hose, machinery for manufacturing	T. B. DeForest	Birmingham, Conn	April 14, 1857.
17037	India-rubber, &c., vulcanizing	Robert Haering	New York, N. Y	April 14, 1857.
17931	Ivory, factitious	Ludwig Held	Brooklyn, N. Y	Aug. 4, 1857.
17949	Ivory, factitious	William M. Welling	New York, N. Y	Aug. 4, 1857.
17519	Lampblack, making	Julius A. Roth	Philadelphia, Pa	June 9, 1857.
18271	Lard-rendering kettles	John J. Bate	Brooklyn, N. Y	Sept. 29, 1857.
18622	Lard-rendering kettles	Allen Lapham, assignor to himself and Joseph B. Bennett.	Brooklyn, N. Y	Nov. 10, 1857.
16766	Liquors, aging, devices for	A. & A. S. Wolcott	East Bloomfield, N. Y	Mar. 3, 1857.
	Lubricator. (See Class XII.)			
17984	Mash-cooling machines	Jesse Shilling	Troy, Ohio	Aug. 11, 1857.
18160	Mixtures, wash, for woollens, &c	William Reising	Astoria, N. Y	Sept. 8, 1857.
18279	Oils, factitious	Joseph W. Harmon	Elizabethtown, N. J	Sept. 29, 1857.
17181	Oils, purifying	Halvor Halvorson, assignor to himself, E. H. Baker, J. F. Athearn, & W. T. Eustis.	Cambridge, Mass	April 28, 1857.
19006	Pain-compound	John M. Merryman, assignor to J. M. Merryman and J. H. Jordan.	Logansport, Indiana	Dec. 29, 1857.
18183	Paint, india-rubber	William & William A. Butcher	Philadelphia, Pa	Sept. 15, 1857.
18794	Paint-vehicle	Isaac Gattman, assignor to himself, and J. & D. E. Breinig.	Philadelphia, Pa	Dec. 1, 1857.
18538	Paints, oil, mixing and grinding, apparatus for	William H. Dolson	New York, N. Y	Nov. 3, 1857.
17865	Pill-machines	James C. Ayer	Lowell, Mass	July 28, 1857.
17291	Powder, blasting	Antoine Murtineddu	Marseilles, France	May 12, 1857.
16580	Powder, gun	Elisha B. Dodson	Reading, Pa	Feb. 10, 1857.
18724	Preparing glue-stock	Obadiah Rich, assignor to Peter Cooper	Cambridge, Mass	Nov. 24, 1857.
17610	Preparing liquid rose-pink	John W. Perry, assignor to Jas. W. Gates	Boston, Mass	June 16, 1857.
	Preparing paper-pulp from beet and other refuse. (See Class III, letter P.)			
16480	Process for making illuminating-gas	Robert Grant	Brooklyn, N. Y	Jan. 27, 1857.
18409	Process of coating iron	E. G. Pomeroy	Philadelphia, Pa	Oct. 13, 1857.
18244	Process of making white lead	Henry Hannen	Dubuque, Iowa	Sept. 22, 1857.
17237	Process of preparing green sand marl as a fertilizer of lands.	Charles Stearns	New York, N. Y	May 5, 1857.
16594	Process of smelting zinc-iron ore	Joseph C. Kent	Cooper Iron Works, N. J	Feb. 10, 1857.
17279	Process of treating raw cotton	Julius C. Hurd	Medway, Mass	May 12, 1857.
16882	Processes for preparing fertilizers	L. Reid	Barren Island, N. Y	Mar. 24, 1857.
16362	Processes for reducing zinc ores	Samuel Wetherill	Bethlehem, Pa	Jan. 6, 1857.
16961	Processes for treating moss for mattresses	Samuel Barker	New York, N. Y	April 7, 1857.
17011	Retort, construction of a	Alfred Monnier, assignor to himself, and Isaac Gattman.	Camden, N. J	April 7, 1857.
17854	Retort-covers	James R. Floyd, assignor to Theodore C. Kibbe.	New York, N. Y	July 21, 1857.
18172	Saccharine evaporators	Joseph Bour, assignor to Chas. Parlange	Forbach, France	Sept. 8, 1857.
18830	Salt-pans, construction of	William S. Worthington	Newtown, N. Y	Dec. 8, 1857.
16706	Silicates, alkaline, preparing	John M. Ordway, to Roxbury Color Chemical Manufactory.	Roxbury, Mass	Feb. 24, 1857.
17955	Skins and furs tanning and coloring	Harmon Hibbard	Henrietta, N. Y	Aug. 4, 1857.
16750	Soap-mixture	Isaac Romback	Shreveport, La	Mar. 3, 1857.
17303	Soap-substitute for scouring woolens	Louis Wilman	Worcester, Mass	May 12, 1857.
17710	Starch from maize	William Watt	Belfast, Ireland	June 30, 1857.
18094	Stills, spirit	Edward Herring	Walton on Thames, England	Sept. 1, 1857.
17933	Sugar-boilers	Peter Holbrook	Whitingham, Vt	Aug. 4, 1857.
18215	Sugar-houses, drip-pots for	John Turl	New York, N. Y	Sept. 15, 1857.
17409	Sugar-moulds, tips for	John Turl, assignor to Samuel Turl	New York, N. Y	May 26, 1857.
17021	Sugar, preparation of, called "table-manna"	Merano Butterfield	Indianapolis, Ind	April 14, 1857.
18030	Tanning-liquids	L. L. A. Elise de la Perouse, assignor to M. J. A. Guiet.	Paris, France	Aug. 18, 1857.
18203	Treating cotton and linen waste	E. N. Horsford	Cambridge, Mass	Sept. 15, 1857.
17448	Vapors and gases, apparatus for condensing, and for evaporating liquids.	August F. W. Partz	New York, N. Y	June 2, 1857.
18133	Verdigris, processes for manufacturing	Ludwig Brumlen	Hoboken, N. J	Sept. 8, 1857.

CLASS V.—CALORIFICS, *comprising lamps, fire-places, stoves, grates, furnaces for heating buildings, cooking-apparatus, preparation of fuel, &c.*

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
	Blast, air, method of generating (See Class XI, letter A.)			
17727	Blow-pipe, alcohol	Edward Conway	Dayton, Ohio	July 7, 1857.
18693	Boilers for heating buildings	A. E. Hitchings	New York, N. Y	Nov. 24, 1857.
18465	Burner, air and vapor	Oscar F. Morrill	Boston, Mass	Oct. 20, 1857.
17622	Burners, vapor	Horatio Fairbanks	South Brookfield, Mass	June 23, 1857.
17916	Burners, vapor	D. H. Carpenter	Wallingford, Conn	Aug. 4, 1857.
17640	Candlesticks	Timothy Rose	Cortlandville, N. Y	June 23, 1857.
18606	Candlesticks	James Spratt	Cincinnati, Ohio	Nov. 10, 1857.
18100	Chimney-caps	Ira Mayhew	Albion, Mich	Sept. 1, 1857.
16644	Chimney-cowl	Moses H. Hale and Samuel Horton	Newburyport, Mass	Feb. 17, 1857.
17077	Chimney-dampers	Augustine Campbell	Philadelphia, Pa	April 21, 1857.
18501	Coal-breaking, machines for	John R Deihm and Jasper Snell	Pottsville, Pa	Oct. 27, 1857.
17294	Coal-cracker	Townsend Poore	Carbondale, Pa	May 12, 1857.
18380	Coal, separating slate and other foreign substances from, machine for.	E. Borda and David Glover	Woodside, Pa	Oct. 13, 1857.
18082	Coal-sifters	William D. Brown	Weymouth, Mass	Sept. 1, 1857.
18125	Coal-sifters	Sanford Adams	Boston, Mass	Sept. 8, 1857.
18439	Coal-sifters	Samuel Booth	New York, N. Y	Oct. 20, 1857.
18687	Coal, slating, machines for	Jacob Gass, assignor to himself and George Mowton.	Trevorton, Pa	Nov. 24, 1857.
17018	Cooler for wine, beer, and other liquids in barrels.	John F. Burgin	Northumberland, Pa	April 14, 1857.
18885	Dampers, grate	John O'Brien, assignor to Owen Collins and John Dunley.	New York, N. Y	Dec. 15, 1857.
16905	Drying-cylinders, steam	John Booth	Pawtucket, R. I	Mar. 31, 1857.
	Drying grain, &c., machine for. (See Class XIII, letter G.)			
16329	Fire-hook	John G. Ernst	Harrisburg, Pa	Jan. 6, 1857.
16768	Fire-places and grates, back-plates for	Fountain E. Pitts	Nashville, Tenn	Mar. 3, 1857.
18920	Fuel, artificial	Eugene Miannay	New York, N. Y	Dec. 22, 1857.
18729	Fuel, composition	Elizabeth Bellinger	Mohawk, N. Y	Dec. 1, 1857.
18432	Furnaces	John Case and Isaac Soules	Amsterdam, N. Y	Oct. 20, 1857.
18491	Furnaces	Thomas and John Aldridge	Hudson, N. J	Oct. 27, 1857.
18951	Furnaces	Benjamin F. Blood	Port Jackson, N. Y	Dec. 29, 1857.
16348	Furnaces, air-heating	Joseph D. Green and Edward Ivers, assignors to Joseph D. Greene.	Philadelphia, Pa	Jan. 6, 1857.
17842	Furnaces, bagasse	George M. Longacre	New Orleans, La	July 21, 1857.
18874	Furnaces, bagasse	Moses Thompson	New York, N. Y	Dec. 15, 1857.
17039	Furnaces, feeding fuel to, apparatus for	James Hemington	Richmond, Ind	April 14, 1857.
	Furnaces, glass. (See Class XV, letter G.)			
18010	Furnaces, grate bars of	Edward Dugdale	Burlington, N. J	Aug. 18, 1857.
17022	Furnaces, hot-air	John H. Cahill	Philadelphia, Pa	April 14, 1857.
18002	Furnaces, hot-air	Daniel P. Weeks, assignor to himself and Eben Seavey.	Boston, Mass	Aug. 11, 1857.
18054	Furnaces, hot-air, water-vessels for imparting humidity to, and vapor-draft to the grate bars of.	William Moultrie	New York, N. Y	Aug. 25, 1857.
17791	Furnaces, iron, use of coal-tar in	Isaac G. Johnson	Spuyten Duyvel, N. Y	July 14, 1857.
18883	Furnaces, locomotive	George S. Griggs, assignor to himself and William A. Bullard	Roxbury, Mass	Dec. 15, 1857.
17132	Gas-burner, argand	Charles H. Johnson, assignor to C. H. Johnson and J. G. Hamblin.	Boston, Mass	April 21, 1857.
17035	Gas-burners	E. P. Gleason	Providence, R. I	April 14, 1857.
17530	Gas-burners	John C. Walsh	Lockport, N. Y	June 9, 1857.
17674	Gas-burners	Asa B. Gates	Binghamton, N. Y	June 30, 1857.
18230	Gas burners	W. W. Batchelder	New York, N. Y	Sept. 22, 1857.
18289	Gas-burners	William H. Lindsay	Brooklyn, N. Y	Sept. 29, 1857.
16848	Gas-burners, construction of	John McHenry	Cincinnati, Ohio	Mar. 17, 1857.
16820	Gas-cocks, spigots of, device by which the, may be lubricated in their seats.	Charles H. Johnson, assignor to Charles H. Johnson and James G. Hamblin.	Boston, Mass	Mar. 10, 1857.
17251	Gas, heating and cooking by, apparatus for	R. Snowden Andrews	Baltimore, Md	May 12, 1857.
18945	Gas, mode of lighting, by electricity	Samuel Gardiner, jr	New York, N. Y	Dec. 22, 1857.
17540	Grates, fire, or linings of fire-pots	Daniel H. Dean, assignor to William T. Coggeshall.	Lowell, Mass	June 9, 1857.
	Griddles. (See Class XVII)			
17076	Heaters, cask	Simeon Burgess	Wayne, Pa	April 21, 1857.
18026	Hot-air registers	Joseph V. Tibbetts	New York, N. Y	Aug. 18, 1857.
18356	Hot-air registers	Sylvester J. Sherman	New York, N. Y	Oct. 6, 1857.
17989	Kettle, tea	William Westlake	Milwaukie, Wis	Aug. 11, 1857.

V.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
16981	Lamp-burners	A. H. Knapp	Medford, Mass	April 7, 1857.
18307	Lamp, hydro-carbon vapor	Isaac Suggitt	Providence, R. I	Sept. 29, 1857.
18818	Lamps	Francis Leclair	New York, N. Y	Dec. 8, 1857.
17086	Lamps, burning-fluid, burners of	Charles A. Greene	Philadelphia, Pa	April 21, 1857.
16398	Lamps, burning-fluid, construction of	David F. Randall	Chicopee, Mass	Jan. 13, 1857.
16852	Lamps, fluid, burner of burning	Rufus W. Sargent	Philadelphia, Pa	Mar. 17, 1857.
16379	Lamps, fluid, burning	M. B. Dyott	Philadelphia, Pa	Jan. 13, 1857.
17658	Lamps, fountain	Henry W. Adams	New York, N. Y	June 30, 1857.
16524	Lamps, lard	J. S. Brown, assignor to Joseph Kent	Washington, D. C	Feb. 3, 1857.
16825	Lamps, lard	Isaac N. Coffin	Washington, D. C	Mar. 17, 1857.
16384	Lamps, locomotive	Lewis A. Hamblen	Chicago, Ill	Jan. 13, 1857.
16769	Lamps, locomotive and other, reflectors for	Isaac Carleton, assignor to John Wyberd	Brooklyn, N. Y	Mar. 3, 1857.
18704	Lamps, safety	William Pratt	Baltimore, Md	Nov. 24, 1857; antedated May 24, 1857.
18456	Lamps, shades for	William Kemble and William H. C. Bartlett	West Point, N. Y New York, N. Y	Oct. 20, 1857.
	Lamps, signal. (See Class VIII, letter S.)			
17507	Lamps, solar	Joseph Hassell	Brooklyn, N. Y	June 9, 1857.
18142	Lamps, vapor	Joseph G. Gilbert	New York, N. Y	Sept. 8, 1857.
18719	Lamps, vapor-burning	D. H. Chamberlain, assignor to himself and John Borrowscale.	West Roxbury, Mass	Nov. 24, 1857.
17637	Lantern for lighting street gas	John Reese and Charles N. Tyler	Washington, D. C	June 23, 1857.
18602	Lantern, signal	J. R. Pierce and L. B. Austin	Oswego, N. Y	Nov. 10, 1857.
17351	Lantern and oil-can, combined	W. G. Russell, assignor to himself and William Sewell.	New York, N. Y	May 19, 1857.
18105	Lanterns	Joseph H. Rohrman	Philadelphia, Penn	Sept. 1, 1857.
18784	Lanterns, gas-lighting	Abel Wilson	Philadelphia, Penn	Dec. 1, 1857.
16880	Lanterns, pocket	Andrew Ralston	West Middletown, Penn	Mar. 24, 1857.
17696	Lanterns, street	John Reese and Charles N. Tyler	Washington, D. C	June 30, 1857.
17495	Ovens, bakers'	John Chilcott	Brooklyn, N. Y	June 9, 1857.
18429	Ovens, bakers'	Hiram Berdan	New York, N. Y	Oct. 20, 1857.
17666	Radiator for heating apartments, portable steam.	J. H. Chester	Cincinnati, Ohio	June 30, 1857.
16459	Radiators for fire-places, grates, and Franklin stoves.	William Bennett	New York, N. Y	Jan. 27, 1857.
17456	Ranges, cooking	Charles J. Shepard	Brooklyn, N. Y	June 2, 1857.
18055	Ranges, cooking	Samuel Pierce	Troy, N. Y	Aug. 25, 1857.
17259	Roasting meat, apparatus for	John G. Brown and John P. Derby	South Reading, Mass	May 12, 1857.
18241	Steam heating apparatus	Edmund Gibbs	Madison, Wis	Sept. 22, 1857.
17750	Stove, air heating	Charles B. Sawyer	Fitchburg, Mass	July 7, 1857.
18321	Stove-cover stands	Hiram Carsley	Lynn, Mass	Oct. 6, 1857.
17767	Stove, gas	Patrick Mihan, assignor to himself and Robert B Fitts.	Boston, Mass	July 7, 1857.
16538	Stove grates, shaker-bars of	G. W. Gardner	Troy, N. Y	Feb 3, 1857.
17756	Stove, railroad car	James Spear	Philadelphia, Penn	July 7, 1857.
17483	Stove, steam-heating	Asa Blood	Norfolk, Va	June 9, 1857.
16423	Stove-thimbles or deck-irons	Loftis Wood	New York, N. Y	Jan. 13, 1857.
18434	Stove and furnace grate	W. T. Coggeshall	Fall River, Mass	Oct. 20, 1857.
17235	Stoves, close or open	Henry Seitz	St. Mary's, Va	May 5, 1857.
17283	Stoves, coal	John C. Keller	Philadelphia, Penn	May 12, 1857.
17510	Stoves, coal	John B. Kohler	Philadelphia, Penn	June 9, 1857.
17919	Stoves, coal	J. A. Davis	Syracuse, N. Y	Aug. 4, 1857.
18362	Stoves, coal	W. H. Stinson	Baltimore, Md	Oct. 6, 1857.
18469	Stoves, coal	D. Christian Raub	Davenport, Iowa	Oct. 20, 1857.
16455	Stoves, cooking	John G. Treadwell	Albany, N. Y	Jan. 20, 1857.
17100	Stoves, cooking	Thomas King	West Farms, N. Y	April 21, 1857.
17371	Stoves, cooking	Joseph Hackett	Louisville, Ky	May 26, 1857.
17748	Stoves, cooking	William Resor	Cincinnati, Ohio	July 7, 1857.
18012	Stoves, cooking	Sidney Godley	Lockport, N. Y	Aug. 18, 1857.
18586	Stoves, cooking	James R. Hyde	Troy, N. Y	Nov. 10, 1857.
18737	Stoves, cooking	R. D. Granger	Philadelphia, Penn	Dec. 1, 1857.
18859	Stoves, cooking	Samuel Pierce	Troy, N. Y	Dec. 15, 1857.
18024	Stoves, cooking, bakers for	P. P. Stewart	Troy, N. Y	Aug. 18 1857.
18297	Stoves, cooking, ranges, &c., apparatus for roasting on.	Samuel Pierce	Troy, N. Y	Sept. 29, 1857.
16349	Stoves, cooking, ship's	Daniel S. Beardsley, assignor to himself and John D. Umberfield.	New Haven, Conn	Jan. 6, 1857.
17578	Stoves, foot	John W. Lefferts	Brooklyn, N. Y	June 16, 1857.
18580	Stoves for burning tan, saw-dust, &c	Samuel Fisher	Canton, Mass	Nov. 10, 1857.
16939	Stoves for railway cars	George W. Thompson	Bordentown, N. J	Mar. 31, 1857.

V.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
17608	Stoves, gas	Patrick Mihan, assignor to himself and Robert B Fitts.	Boston, Mass	June 16, 1857.
17771	Stoves, gas	Thomas Watters, assignor to himself and Stephen Sherlock.	Boston, Mass	July 7, 1857.
16607	Stoves, ventilating	Luther M. Parsons	Waukau, Wis	Feb. 10, 1857.
	Valve, safety, thermo-pneumatic. (See Class XI, letter V.)			
18868	Warmer, feet	H. G. Seekins and H. G. Seekins, jr.	Elyria, Ohio	Dec. 15, 1857.

CLASS VI.—STEAM AND GAS ENGINES, *including boilers and furnaces therefor, and parts thereof.*

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
17636	Boiler furnaces, steam, safety apparatus for regulating.	William G. Pike and Isaac R. Scott	Waltham, Mass	June 23, 1857.
	Boiler-heads, machine for bending flanges on. (See Class II, letter B.)			
17436	Boilers, locomotive	J E. McConnell	Wolverton, England	June 2, 1857; England, Dec. 2, 1856; additional improvement Oct. 3, 1857.
17661	Boilers, riveting, machine for	S Bennett	New Orleans, La	June 30, 1857.
16693	Boilers, steam	Jason J Palmer	Flushing, N. Y	Feb. 24, 1857.
16959	Boilers, steam	Smith Baldwin	St. Louis, Mo	April 7, 1857.
17042	Boilers, steam	Nelson Johnson	Jasper, N. Y	April 14, 1857.
17648	Boilers, steam	Harry Whitaker	Buffalo, N. Y	June 23, 1857.
17924	Boilers, steam	Robert Ferguson	New Orleans, La	Aug. 4. 1857.
18276	Boilers, steam	William M. & Jonas B. Ellis	Washington, D. C	Sept. 29, 1857.
18467	Boilers, steam	William George Norris	Philadelphia, Pa	Oct. 20, 1857.
18822	Boilers, steam	David Matthew	Philadelphia, Pa	Dec. 8, 1857.
18875	Boilers, steam	F. R. Walker	Tully, Mo	Dec. 15, 1857.
18897	Boilers, steam, arrangement of air-tubes in fire-boxes of.	R. S. Griffith	Hazleton, Pa	Dec. 22, 1857.
17288	Boilers, steam, boring flue sheets of, machine for.	Sylvanus V. Lowe	Reading, Pa	May 12, 1857.
16664	Boilers, steam, damper-regulators for	William Webster	Morrisania, N. Y	Feb. 17, 1857.
17533	Boilers, steam, damper regulators for	Patrick White	Brooklyn, N. Y	June 9, 1857.
16662	Boilers, steam, feed-water apparatus to	Andrew J. Vandegrift	Delaware, Ohio	Feb. 17, 1857.
16604	Boilers, steam, gauges and water-regulators for	Mighill Nutting	Portland, Me	Feb. 10, 1857.
17046	Boilers, steam, to prevent incrustations in	Robert McCafferty	Lancaster, Pa	April 14. 1857.
16596	Boilers, steam, safety-indicators for	Lucius J. Knowles	Warren, Mass	Feb. 10, 1857.
17472	Boilers, steam, water-gauges for	Datus E. Rugg, assignor to himself and Dexter N. Force.	New York, N. Y	June 2, 1857.
18420	Boilers, steam, water-gauges for	Edward Whitely	Boston, Mass	Oct. 13, 1857.
18425	Boilers, steam, water-indicators for	F. B. Fournier and D Hinman, assignors to themselves and I. Munroe.	Berea, Ohio	Oct. 13, 1857.
18861	Condensers, surface	Thomas Prosser	New York, N. Y	Dec. 15, 1857; England, Oct 31, 1854.
	Engine-cylinders, steam-lubricators for. (See Class XII, letter L.)			
18532	Engine, steam, arrangement of feed-water pipe in the bed of a.	Henry W. Bill	Cuyahoga Falls, Ohio	Nov. 3, 1857.
18933	Engines and pumps, oscillating, arrangement of	G. Sprenkel and Thomas W. Basford	Harrisonburg, Va	Dec. 22, 1857.
17213	Engines, locomotive	Horace Gray	Boston, Mass	May 5, 1857.
18255	Engines, rotary steam	D. C. Turner	Aztalan, Wis	Sept. 22, 1857.
18063	Engines, rotary steam, packing of	Gerard Sickels	Brooklyn, N Y	Aug. 25, 1857.
16940	Engines, shaping	Withrell & Morgan	Biddeford, Me	Mar. 31, 1857.
16781	Engines, steam, cut-offs of	John F. Allen	New York, N. Y	Mar. 10, 1857.
18919	Engines, steam, feed-water attachments to	Lewis Martin	New York, N. Y	Dec. 22, 1857.
18997	Engines, steam, governor for	H. N. Throop	Pultneyville, N. Y	Dec. 29, 1857.
17200	Engines, steam, metal-packed pistons for	George W. Colton	St. Louis, Mo	May 5, 1857.
18136	Engines, steam, metallic packing for pistons of	George H. Corliss	Providence, R. I	Sept. 8, 1857.
18235	Engines, steam, metallic packing-rings for	Patrick Clark	Rahway, N. J	Sept. 22, 1857; additional improvement July 28, 1857.
17903	Engines, steam, oscillating	John Wallace	Pitsburg, Pa	July 28, 1857.

VI.—*List of patents for inventions.*

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
17422	Engines, steam, packing-pistons and stuffing-boxes of.	Patrick Clark	Rahway, N. J	June 2, 1857.
17788	Engines, steam, pistons for, setting out the packing of.	George H. Hoagland	Port Jervis, N. Y	July 14, 1857.
16613	Engines, steam, rotary	John B. Root	Buffalo, N. Y	Feb. 10, 1857.
18989	Engines, steam, rotary	John B. Root	Youngstown, N. Y	Dec. 29, 1857.
17271	Engines, steam, semi-rotative	C. B. Callagher	Allegheny City, Pa	May 12, 1857.
16779	Engines, steam, stop motions for	John T. Ackley	Philadelphia, Pa	Mar. 10, 1857.
17879	Engines, &c., governor for	F. W. Howe	Newark, N. J	July 28, 1857.
17817	Engines, &c., steam, governors of	A. F. Ward	Louisville, Ky	July 14, 1857.
17623	Engines, &c., steam, vane-governor for	Francis Gustine	Medford, Mass	June 23, 1857.
18563	Engines, &c., steam, vane-governor for	Charles Whittier	Roxbury, Mass	Nov. 3, 1857.
17560	Gauge, pressure	Joseph L. Eastman	Boston, Mass	June 16, 1857.
17988	Gauges, steam	D. G. Wells	New York, N. Y	Aug. 11, 1857.
16428	Gauges, steam-pressure	E. G. Allen, assignor to Henry O. Allen	Boston, Mass	Jan. 20, 1857.
17607	Gauges, steam-pressure	J. H. Miller and J. Kailey, assignors to themselves and John Danner.	Canton, Ohio	June 16, 1857.
18272	Gauges, steam-pressure	Henry Bates	New London, Conn	Sept 29, 1857.
18526	Gauges, steam-pressure	E. G. Allen, assignor to Henry O Allen	Boston, Mass	Oct. 27, 1857.
18655	Gauges, steam-pressure	John E. Wootton	Philadelphia, Pa	Nov. 17, 1857.
18129	Gauges, steam-pressure, tubes for	E. H. Ashcroft	Boston, Mass	Sept. 8, 1857.
16458	Gauges, steam and pressure	John Allcroft and Thomas Mighten	New York, N. Y	July 27, 1857.
17847	Governor for water, steam, and other power	N. Scholfield	Norwich, Conn	July 21, 1857.
18578	Locomotive-boilers, attaching steam-gauges to	J. L. Eastman	Boston, Mass	Nov. 10, 1857.
13348	Locomotive cow-catchers	James Mitchell	Osceola, Iowa	Oct. 6, 1857.
18966	Locomotive engine-wheels	George S. Griggs	Roxbury, Mass	Dec. 29, 1857.
18712	Locomotive engines, arrangement of cylinders and their connexions for.	Aaron Smethurst	Philadelphia, Pa	Nov. 24, 1857.
19000	Locomotive engines for producing increased adhesion to the rails when required.	E. Windhausen	Duderstadt, Hanover	Dec. 29, 1857.
	Locomotive furnaces. (See Class V, letter F.)			
17834	Locomotives, coal-burning, arrangement of means for regulating the fire of.	John M. Hartnett	Waukegan, Ill	July 21, 1857.
18953	Locomotives, arrangement of deflecting plates and spark-receiver in.	William H. Bullock	Boston, Mass	Dec. 29, 1857.
18786	Locomotives, driving-box for	John E. Wootton	Philadelphia, Pa	Dec. 1, 1857.
17215	Locomotives, exhaust of, means for directing	Robert Hale	Roxbury, Mass	May 5, 1857.
18373	Locomotives, exhaust regulator for	Edward R. Addison	Baltimore, Md	Oct. 13, 1857.
17208	Locomotives, heating feed-water apparatus of	Peter S. Ebbert	Chicago, Ill	May 5, 1857.
18315	Locomotives, tank for	John Kimball, assignor to Robert Hale	Concord, N. H	Sept. 29, 1857.
17913	Locomotives, trucks for	Levi Bissell	New York, N. Y	Aug. 4, 1857.
18304	Locomotives, &c., window for	Henry Skinner	Fulton, N. Y	Sept. 29, 1857.
17859	Spark-arresters	John F. Page, assignor to himself and James Landy.	Philadelphia, Pa	July 21, 1857.
17884	Spark-arresters	Ethelred May	Boston, Mass	July 28, 1857.
17875	Spark-arresters	Henry H. Graham	Patterson, N. J	July 28, 1857.
18613	Steam, anhydrous, generating	William M. Storm	New York, N. Y	Nov. 10, 1857.
17372	Steam-boiling apparatus	Adolph Hammer	Reading, Pa	May 26, 1857.
	Steam-carriages, steering apparatus of. (See Class X, letter C.)			
17142	Steam cylinders, arrangement of ports in	Bowen Eaton	Roanoke, Ind	April 28, 1857.
16747	Steam, generating	Charles F. Pond	Hartford, Conn	Mar. 3, 1857.
18319	Steam-generators	Julien F. Belleville, assignor to Robert Murphy.	Nancy, France	Oct. 6, 1857.
18460	Steam-generators	A. B. Latta	Cincinnati, Ohio	Oct. 20, 1857.
17675	Steam, oily particles held in suspense by, apparatus for separating the.	Robert Hale	Roxbury, Mass	June 30, 1857.
17683	Steam-pistons, metallic packing for	Daniel Lasher	Brooklyn, N. Y	June 30, 1857.
18048	Steam-pressure regulator	L. J. Knowles	Warren, Mass	Aug. 25, 1857.
	Steam-pumping apparatus. (See Class XI, letter P.)			
17855	Steam-tight, means for rendering joints	William S. Gale, assignor to Peter Poillon	New York, N. Y	July 21, 1857.
17069	Steam-traps for relieving steam-pipes of water	John Avery, jr	Lowell, Mass	April 21, 1857.
17656	Steam-whistles	Sylvester W. Warren, assignor to himself and Dexter N. Force.	Brooklyn, N. Y	June 23, 1857.
18641	Steamers pilots' bells on, mechanism for operating.	J. R. Hopkins, assignor to himself and Gustavus F. Sargent.	Lincoln, Me	Nov. 17, 1857.
18847	Valve cock, spring	Moses C. Hawkins, Jacob W. Goodwin, and James Cummings.	Erie, Pa	Dec. 15, 1857.
17583	Valve-connexions for steam-engines	Benjamin L. Phillips	Providence, R. I	June 16, 1857.

VI.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
18211	Valve-gear for oscillating steam-engines	John C. Pennington	Patterson, N. J	Sept. 15, 1857.
18258	Valve-gear for oscillating steam engines	Norman W. Wheeler	New York, N. Y	Sept. 22, 1857.
17689	Valve-gear for steam-engines	Sidney Maltby	Dayton, Ohio	June 30, 1857.
16809	Valve-gear of direct-action steam-engines	J. P. Ross	Lewisburg, Pa	Mar. 10, 1857.
17585	Valve-gear of steam-engines	Samuel Swartz	Buffalo, N. Y	June 16, 1857.
18837	Valve-gear of steam-engines, cut-off	Horatio Allen	New York, N. Y	Dec. 15, 1857.
16515	Valve of steam-hammers, operating	P. L. Weimer and S. P. Francisco, assignors to S. P. Francisco.	Reading, Pa	Jan. 27, 1857.
16593	Valve, throttle, of marine engines, arrangement of means for controlling the.	William H. Elliott	Plattsburg, N. Y	Feb. 10, 1857.
17718	Valves, arrangement of, in steam-cylinders	M. E. Stacy, assignor to W. John Way	Flemington, Ga	June 30, 1857.
16570	Valves, cut-off, operating, of steam-engines	George H. Reynolds, assignor to G. H. Reynolds and D. B. Hinckley.	Medford, Mass	Feb. 3, 1857.
17643	Valves, cylindrical throttle, for steam-engines	James H. Simmons	Erwin, N. Y	June 23, 1857.
16351	Valves for steam-engines	Bornall Bradley	Manchester, Va	Jan. 6, 1857.
16765	Valves for steam-engines, operating	Norman W. Wheeler	Cincinnati, Ohio	Mar. 3, 1857.
18925	Valves of steam-engines, giving motion to	Horatio O. Perry	Buffalo, N. Y	Dec. 22, 1857.
16668	Valves of steam-engines, operating	Samuel R. Wilmot	Watertown, Conn	Feb. 17, 1857.
18197	Valves of steam-engines, operating	Robert H. Fletcher	Brooklyn, N. Y	Sept. 15, 1857.
18311	Valves of steam-engines, operating the, variable eccentrics for.	S. L. Wiegand	Philadelphia, Pa	Sept. 29, 1857.
17348	Valves, safety, arrangement of, within steam-boilers.	George P. Clarke, assignor to himself and William M. Littell.	Newark, N. J	May 19, 1857.
17712	Valves, slide, for steam-engines	Thomas Winans	Baltimore, Md	June 30, 1857.
18667	Valves, slide, for steam-engines	Nathan Atherton	Philadelphia, Pa	Nov. 24, 1857.
16358	Valves, slide, operating, of steam-engines	Robert H. Fletcher	Brooklyn, N. Y	Jan. 6, 1857.
18225	Valves, steam, arrangement of passages and means for working, by the direct action of steam.	Barnabas Roberts and Alexander Crumbie, assignors to themselves and John Benson.	Brooklyn, N. Y	Sept. 15, 1857.
17893	Valves and passages to the cylinders of steam-engines, arrangement of.	John A. Reed	Jersey city, N. J	July 28, 1857.

CLASS VII.—NAVIGATION AND MARITIME IMPLEMENTS, *comprising all vessels for conveyance on water, their construction, rigging, and propulsion, diving-dresses, life-preservers, &c.*

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
16776	Alarm, nautical	E. L. Seymour, assignor to J. C. and Charles Wright, H. I. Green, and E. L. Seymour.	New York, N. Y	Mar. 3, 1857.
16821	Anchor, shackle, second	George Gilmour, assignor to G. Gilmour and H. R. Clinkard.	Chelsea, Mass	Mar. 10, 1857.
17182	Anchor-trippers	John B. Holmes, assignor to John B. Holmes and John R. Pratt.	New York, N. Y	April 28, 1857.
16356	Anchors	Thomas L. Dalton	New York, N. Y	Jan. 6, 1857.
18044	Berths, ships'	Henry Getty	Brooklyn, N. Y	Aug. 25, 1857.
16656	Boat-oars	Rufus Rode	Manchester, Pa	Feb. 17, 1857.
16904	Boat, portable	Robert C. Buchanan	Baltimore, Md	Mar. 31, 1857.
18694	Boats, canal, attaching paddle-wheels to	Reuben Jane	Otsego, N. Y	Nov. 24, 1857.
18107	Boats, canal, tow-lines of, means for attaching whiffle-trees to the.	Andrew Seaman	Amsterdam, N. Y	Sept. 1, 1857.
18683	Boats, ferry, means for stopping and starting	Joseph C. Day	Jersey City, N. J	Nov. 24, 1857.
17192	Boats for duck-shooting	Robert Bogle	Rock Hall, Md	May 5, 1857.
17052	Boats, ice-breaking	Zachariah Oram	Camden, N. J	April 7, 1857.
18832	Boats, ice-breaking	James D. and H. C. Foster and John Q. Miller.	Springfield, Ohio	Dec. 8, 1857.
16491	Boat, life	Matthias Ludlum	Essex, N. Y	Jan. 27, 1857.
18233	Boats, life	Mortimer M. Camp	New Haven, Conn	Sept. 22, 1857.
17592	Boats, propeller canal	George W. Swartz	Buffalo, N. Y	June 16, 1857.
16704	Boats, steam, shoving-poles for	D. Cummings, jr., assignor to D. Cummings, sen.	Mobile, Ala	Feb. 24, 1857.
18095	Boats, surf and life	Richard C. Holmes	Cape May county, N. J	Sept. 1, 1857.
16774	Capstans, ships'	John B. Holmes, assignor to John R. Pratt	New York, N. Y	Mar. 3, 1857.
17715	Capstans, ships'	Robert Dunbar and John F. Robertson, assignors to the Buffalo Eagle Iron Works Co.	Buffalo, N. Y	June 30, 1857.
17971	Capstans, ships'	David Knowlton	Camden, Me	Aug. 11, 1857.
17969	Capstans, ships'	Samuel Huse	New York, N. Y	Aug. 11, 1857.

VII.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
18053	Capstans, ships'	Charles E. Marwick	Portland, Me	Aug. 25, 1857.
16935	Capstans, steamboat	John Schaffer	Manchester, Pa	Mar. 31, 1857.
18260	Diving-apparatus	George Williamson	Brooklyn, N. Y	Sept. 22, 1857.
18458	Harpoons	James Q. Kelly	Sag Harbor, N. Y	Oct. 20, 1857.
16555	Life-preservers	Warren A. Simonds	Boston, Mass	Feb. 3, 1857.
17434	Life-preservers	James Knight	New York, N. Y	June 2, 1857.
18274	Life-preservers	Charles J. Bunker	New York, N. Y	Sept. 29, 1857.
18809	Life-preservers	Abraham J Gibson	Worcester, Mass	Dec. 8, 1857.
18869	Life-preservers	James E. Serrell and William Davis	New York, N. Y	Dec. 15, 1857.
18090	Life-preserving berths for steam and other vessels.	Elbridge Foster	Hartford, Conn	Sept. 1, 1857.
16589	Paddle-wheels, feathering	Lewis T. Howard	Smith's Mills, Miss	Feb. 10, 1857.
18202	Paddle-wheels, feathering	Lewis T Howard	Smith's Mills, Miss	Sept. 15, 1857.
17943	Propeller-blade	George W. Swartz	Buffalo, N. Y	Aug. 4, 1857.
17276	Propeller-blades	George Hibsch	Buffalo, N. Y	May 12, 1857.
17017	Propellers	Robert Griffiths	London, England	April 7, 1857; England, Sept. 13, 1849.
18814	Propellers	Abner Johnson	Buffalo, N. Y	Dec. 8, 1857.
18314	Propelling-apparatus, marine	Ethan Campbell, assignor to W. P. Page and Edward F. Hodges.	Boston, Mass	Sept. 29, 1857.
17156	Propelling-wheels, submerged	Thomas Kendall, sen	San Francisco, Cal	April 28, 1857.
16352	Rudders	A. B. Crossman	Huntington, N. Y	Jan. 6, 1857.
17572	Rudders	R. S. Harris	Galena, Ill	June 16, 1857.
16969	Sails, reefing	Washington F. Davis	Winthrop, Mass	April 7, 1857.
17101	Sails, reefing	F. C. La Croix and Chauncey Barnes	New York, N. Y	April 21, 1857.
18219	Sails, reefing and furling, arrangement of means for.	George W. La Baw, assignor to himself and Charles A. Durgin.	Jersey City, N. J	Sept. 15, 1857.
17616	Sails, top, means for reducing	Thomas Batty	Brooklyn, N. Y	June 23, 1857.
17365	Sails, top, means for reefing	James E. Cole	New York, N. Y	May 26, 1857.
17977	Sails, top, reefing	James W. Norcross	Boston, Mass	Aug. 11, 1857.
18085	Shackle-blocks, messenger	George Gilmour	Chelsea, Mass	April 21, 1857.
16965	Ship-board, hoisting-winches for	Joel Bryant	Brooklyn, N. Y	April 7, 1857; additional improvement Aug. 11, 1857.
16707	Ships' blocks, for sustaining friction-rollers in	John Allender	New London, Conn	Mar. 3, 1857.
17940	Ships, compound capstans for	Charles Perley	New York, N. Y	Aug. 4, 1857.
17228	Ships' hawse-holes	Robert R. Osgood, assignor to J. C. Osgood	Troy, N. Y	May 5, 1857.
16845	Ships, magnetic needle on, mode of compensating the local attraction of the.	Calvin Kline	New York, N. Y	Mar. 17, 1857.
18192	Ships' pumps	Abraham Coates and Samuel M. Perry	New York, N. Y Brooklyn, N. Y	Sept. 15, 1857.
17780	Ships, rigging of	James E. Cole	Brooklyn, N. Y	July 7, 1857.
17031	Ships' sails, reefing	James Emerson	Worcester, Mass	April 14, 1857.
16773	Ships' steering-apparatus	John B. Holmes, assignor to John R. Pratt	New York, N. Y	Mar. 3, 1857.
17002	Ships' steering-apparatus	Samuel N. Smith	New York, N. Y	April 7, 1857.
17525	Ships, steering-apparatus for	Phinehas Smith	Patchogue, N Y	June 9, 1857.
17975	Ships, the depth of water in, instruments for indicating.	G. B. Massey	Mobile, Ala	Aug. 11, 1857.
16885	Ship's windlass, operating	Norman Smith	Stonington, Conn	Mar. 24, 1857.
17633	Ships' windlasses	Joseph Peevy and A. Sanborn	Bangor, Me	June 23, 1857.
	Signals for steamboats. (See Class VIII, letter S.)			
17724	Steering-apparatus	Dexter H. Chamberlain	West Roxbury, Mass	July 7, 1857.
18663	Steering-apparatus	T. M. Richardson, assignor to himself and J. W. Havner.	Searsport, Me	Nov. 17, 1857.
17122	Surge or cable springs	William Wilcox	East Hartford, Conn	April 21, 1857.
16650	Vessels, extra top-sail yards to, attaching	Eber H. Linnell	Orleans, Mass	Feb. 17, 1857.
17209	Vessels, ice-cutting, attachments to	Thomas Estlack	Philadelphia, Pa	May 5, 1857.
17396	Vessels' keels, apparatus for examining	James E. Simpson	East Boston, Mass	May 26, 1857.
18819	Vessels, life and treasure buoy for, arrangement of.	Francis D. Lee	Charleston, S. C	Dec. 8, 1857.
16510	Vessels, masts in the decks of, supporting	Thomas J. Woodworth	Salem, N. J	Jan. 27, 1857.
18411	Vessels, means for flooding	John Quigly	Saugerties, N. Y	Oct. 13, 1857.
17598	Vessels, means for propelling, in shoal water	J. W. Wetmore	Erie, Pa	June 16, 1857.
18969	Vessels, mooring	Armigel W. Handcock	Allegan county, Mich	Dec. 29, 1857.
17826	Vessels, raising sunken, arrangement of camels for.	Thomas Bell	Bellport, N. Y	July 21, 1857; England, April 16, 1856.
16890	Vessels, rigging	George F. Trescot	Charleston, S. C	Mar. 24, 1857.
17165	Vessels, sails and rigging of	George T. May	Tompkinsville, N. Y	April 28, 1857.
18816	Vessels, securing hatches of	Edward S. Keyser	New York, N. Y	Dec. 8, 1857.

VII.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
17852	Vessels, shot holes in, means for stopping	John Woodville	Chillicothe, Ohio	July 21, 1857.
17349	Vessels, speed of, apparatus for indicating the, and depth of water.	David Hinman and T. F. Fournier, assignors to themselves and R. J. Parker.	Beria, Ohio	May 19, 1857.
18835	Vessels, steering-apparatus for	Charles Weed, assignor to himself and Stephen B. Cram.	Boston, Mass	Dec. 8, 1857.
17892	Vessels, sunken, mode of raising	John Ponton	New York, N. Y	July 28, 1857.
16487	Vessels, sunken, raising	John P. Jourda	New York, N. Y	Jan. 27, 1857.
18539	Vessels, unloading, apparatus for	Robert Ferguson	New Orleans, La	Nov. 3, 1857.
16333	Vessels, velocimeters for	Andrew B. Gray and Alexander H. Brown	Washington, D. C	Jan. 6, 1857.
16621	Vessels, water in the holds of, apparatus for indicating the height of.	William B. Warden	Boston, Mass	Feb. 10, 1857.
16992	Vessels, &c., hawse-holes for	Jason C. Osgood	Troy, N. Y	April 7, 1857.

CLASS VIII.—MATHEMATICAL, PHILOSOPHICAL, AND OPTICAL INSTRUMENTS, *including clocks, chronometers, &c.*

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
18692	Arithmometer	Thomas Hill	Waltham, Mass	Nov. 24, 1857.
18675	Arithmometer for adding	D. L. Castle	Upper Alton, Ill	Nov. 24, 1857.
18560	Barometer	Theodore R. Timby	Medina, N. Y	Nov. 3, 1857.
16727	Chronometer-escapements	James Fulton	Louisville, Ky	March 3, 1857.
18661	Clock-movements, machine for turning pillars for.	W. H. Nettleton, Charles Raymond, and A. Hatch, assignors to W. H. Nettleton.	Bristol, Conn	Nov. 17, 1857.
18890	Clocks	Robert P. Cunningham	Eastford, Conn	Dec. 22, 1857.
16418	Clocks, calendar	M. J. Whitmore, assignor to himself and F. G. Johnson.	Potsdam, N. Y	Jan. 13, 1857.
16628	Clocks, calendar	Edwin P. Monroe, assignor to Gilbert H. Scribner.	Albany, N. Y	Feb. 10, 1857.
18665	Clocks, calendar	William H. Akins and Joseph C. Burritt, assignors to Wait T. Huntington and Hervey Platt.	Berkshire, N. Y Ithaca, N. Y	Nov. 10, 1857.
16902	Delineators, grade	George R. Clark and Samuel Adams	Antioch, Cal	Mar 31, 1857.
18908	Dynamometer	George Juengst	New York, N. Y	Dec. 22, 1857.
17185	Gauges for casks	John W. Cochrane	New York, N. Y	April 28, 1857.
18931	Globe, apparatus for illustrating conic sections and the lines of the.	Forrest Shepherd	New Haven, Conn	Dec. 22, 1857.
17481	Insulated wire, machines for covering, with lead or other ductile metal.	Samuel C. Bishop	New York, N. Y	June 9, 1857.
18572	Latitude at sea, approximate, method of determining.	Edward Cavendy	New York, N. Y	Nov. 10, 1857.
18963	Lightning-rods, device for attaching	J. B. Elliott	Philadelphia, Pa	Dec. 29, 1857.
17606	Measures, lineal, machines for graduating	Samuel C. Hubbard, assignor to Charles C. Hubbard.	Middletown, Conn	June 16, 1857; antedated Dec. 16, 1856.
16359	Measuring boards, instrument for	James Jones	Rochester, N. Y	Jan. 6, 1857.
18313	Measuring cloth, machines for	William W. Wythes	St. Clair, Pa	Sept. 29, 1857.
18711	Multiplying numbers, machine for	James D. Smith	Brantingham, N. Y	Nov. 24, 1857.
17870	Pendulum-levels, adjustments applied to	Calvin Cole	Tarrytown, N. Y	July 28, 1857.
17023	Pendulum-levels or inclinometers	Thomas A. Chandler	Rockford, Ill	April 14, 1857.
18701	Pendulum-quadrant	Robert Norris and Frederick Peters	New York, N. Y	Nov. 24, 1857.
17253	Signal-lamps	R. P. Bailey	Niagara, N. Y	May 12, 1857.
18159	Signals for steamboats	Albert Potts	Philadelphia, Pa	Sept. 8, 1857.
18194	Spectacle-bows, machine for expanding	George N. Cummings	Hartford, Conn	Sept. 15, 1857.
	Square, mitre-square, and level combined. (See Class XIV, letter S.)			
	Squares, carpenters', machines for graduating. (See Class XIV, letter S.)			
	Squares, carpenters', machines for stamping figures on. (See Class XIV, letter S.)			
18327	Squares, metallic, manufacture of	Samuel Darling	Bangor, Me	Oct. 6, 1857.
17991	Squares, try-adjustment for	Joel Whitney	Winchester, Mass	Aug. 11, 1857.
18728	Surveying-level	Christopher Becker	Brooklyn, N. Y	Dec. 1, 1857.
18608	Surveying and calculating areas, instrument for.	James M. Lilley	Greenville, Va	Nov. 10, 1857.
17355	Telegraph for cities, electro-magnetic fire-alarm.	William F. Channing and Moses G. Farmer, assignors to William F. Channing.	Boston, Mass Salem, Mass	May 19, 1857.
18022	Telegraph-repeaters	John E. Smith	Troy, N. Y	Aug. 18, 1857.
18626	Telegraphic fire-alarm apparatus, device in	Edward C. Clay	Boston, Mass	Nov. 17, 1857.

VIII.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
16828	Telegraphic-repeaters	M. G. Farmer and A. F. Woodman	Salem, Mass	Mar. 17, 1857.
18149	Telegraphic signals, transmitting, machines for punching paper fillets for.	J. P. Humaston	New Haven, Conn	Sept. 8, 1857.
18131	Telegraphic wires, insulated, enclosed in metallic tubing.	Samuel C. Bishop	New York, N. Y	Sept. 8, 1857.
18147	Telegraph, bell, attaching wires to	Henry Hochstrasser	Philadelphia, Pa	Sept. 8, 1857.
16665	Telegraphs, electric	William D. Wesson	Chillicothe, Ohio	Feb. 17, 1857.
17673	Telegraphs, electric	Harrison Gray Dyar	New York, N. Y	June 30, 1857.
17997	Time of attendance of workmen, marking, machines for.	Benjamin T. Harris, assignor to John McKillop.	Brooklyn, N. Y	Aug. 11, 1857.
16344	Time-pieces, maintaining power for	James Tuerlingx	New York, N. Y	Jan. 6, 1857.
17055	Watches	George P. Reed	Waltham, Mass	April 14, 1857; reissued Nov. 24, 1857.

CLASS IX.—CIVIL ENGINEERING AND ARCHITECTURE, *comprising works on rail and common roads, bridges, canals, wharves, docks, rivers, weirs, dams, and other internal improvements, buildings, roofs, &c.*

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
18395	Barns, stables, &c., apparatus for, for rescuing horses and other stock from fire.	Joshua E. Hall	Cleveland, Ohio	Oct. 13, 1857.
17256	Barrack, portable	Matthias F. Brantingham	Sangamon county, Ill	May 12, 1857.
	Blasting-powder. (See Class IV, letter P.)			
16473	Blasting rocks under water, apparatus for	James B. Eads	St. Louis, Mo	Jan. 27, 1857.
18037	Blind slats, device for piercing, to receive the staples.	John Carpenter	Stonington, Conn	Aug. 25, 1857.
17064	Boring artesian wells, apparatus for	Jesse N. Bolles, assignor to M. W. Bolles.	Philadelphia, Pa	April 14, 1857.
16572	Bridge	Thomas W. H. Mosely	Covington, Ky	Feb. 3, 1857.
18253	Bridge, trussed	Abram S. Swartz	Buffalo, N. Y	Sept. 22, 1857.
16728	Bridge-trusses	Albert Fink	Parkersburg, Pa	Mar. 3, 1857.
16446	Bridges	D. C. McCallum	Oswego, N. Y	Jan. 20, 1857.
18196	Bridges	Charles H. Earle	Green Bay, Wis	Sept. 15, 1857.
17684	Bridges, iron truss-frames for	Francis C. Lowthorp	Trenton, N. J	June 30, 1857.
17722	Bridges, truss	Josiah Brown, jr	Buffalo, N. Y	July 7, 1857.
18548	Bridges, &c., iron truss-frames for	Francis C. Lowthorp	Trenton, N. J	Nov. 3, 1857.
17864	Bridges, &c., segmented truss for	George S. Avery	Lewisboro', N. Y	July 28, 1857.
17962	Closets, water	Lewis Fisher	Buffalo, N. Y	Aug. 11, 1857.
18550	Closets, water	Francis McGhan	Washington, D. C	Nov. 3, 1857.
18972	Closets, water	James T. Henry and William P. Campbell	Philadelphia, Pa	Dec. 29, 1857.
18404	Digging-machine	James Mitchell	Osceola, Iowa	Oct. 13, 1857.
18398	Ditching-machines	Edward and Britain Holmes	Buffalo, N. Y	Oct. 13, 1857.
18689	Ditching, &c., levelling instrument for	Joseph Gray	Raymond, Miss	Nov. 24, 1857.
18627	Door-guard, elastic	William N. Clark	Chester, Conn	Nov. 17, 1857.
17242	Door-sill and door-strip, arrangement of	Henry Tryon	Steuben, Pa	May 5, 1857.
17513	Doors, hanging, mode of	Albert W. Morse	Eaton, N. Y	June 9, 1857.
18554	Doors, windows, &c., iron shutters for	M. C. Root	Toledo, Ohio	Nov. 3, 1857.
16341	Doors, windows, &c., weather-strips for	James Smith	Cleveland, Ohio	Jan. 6, 1857.
16874	Doors, windows, &c., weather-strips for	J. T. Foster, J. J. Banta, and J. H. Banta	Jersey City, N. J	Mar. 24, 1857.
17809	Draining-machine	A. P. Routt	Somerset, Va	July 14, 1857.
16886	Dredging, grappling or, machine	Augustus Stoner	Mount Joy, Pa	Mar. 24, 1857.
17959	Dredging-machines	Asa Blood, sr	Norfolk, Va	Aug. 11, 1857.
18352	Drilling machine, rock-cutting and	William Plumer	Boston, Mass	Oct. 6, 1857.
17766	Drilling, rock, machines	Lemuel P. Jenks and George A. Gardner, assignors to George A. Gardner.	New York, N. Y	July 7, 1857.
17765	Drilling, rock, machines	Lemuel P. Jenks, assignor to George A. Gardner.	Boston, Mass	July 7, 1857; antedated Jan. 7, 1857.
17896	Drilling rock, machines for	M. T. Rowlands	Pittston, Pa	July 28, 1857.
16787	Drills, rock	Thomas H. Burridge	St. Louis, Mo	Mar. 10, 1857.
17304	Drills, rock	John D. Hope, assignor to G. A. Gardner	Niagara Falls, N. Y	May 12, 1857.
18561	Drills, rock	George H. Wood	Green Bay, Wis	Nov. 3, 1857.
18763	Drills, rock	Joseph E. Nesen	New York, N. Y	Dec. 1, 1857.
18573	Earth-moving machine	John Cowdon	New Orleans, La	Nov. 10, 1857.
18113	Eave-troughs, apparatus for suspending	James A. Watrous	Green Spring, Ohio	Sept. 1, 1857.
16519	Excavating and dredging machine	Jonathan R. Anderson	Chicago, Ill	Feb. 3, 1857.
17595	Excavating-machines	Alonzo Taggart	Warrenton, Mo	June 16, 1857.
16652	Excavating rock, machines for	Jason C. Osgood	Troy, N. Y	Feb. 17, 1857.

IX.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
17650	Excavating tunnels, machines for	Charles Wilson	Springfield, Mass	June 23, 1857.
17174	Excavator	Samuel W. Soule	St. Louis, Mo	April 28, 1857.
17669	Excavator, earth	Curtius Colley	Wilson, N. Y	June 30, 1857.
17306	Excavator, sub-marine	William Kennish, assignor to Andrew B. Gray.	Brooklyn, N. Y	May 12, 1857.
16397	Excavators	William Provines	Columbia, Mo	Jan. 13, 1857.
18185	Excavators	Z. Butt	Lincolnton, N. C	Sept. 15, 1857.
18551	Excavators, rotary	G. H. Moore	Rochester, N. Y	Nov. 3, 1857.
17692	Fence	James Moore	Pittsburg, Pa	June 30, 1857.
16598	Fence, adaptable to uneven ground	G. R. McIlroy	Covington, Ky	Feb. 10, 1857.
16369	Fence, field	Seneca H. Bennett	Belleville, Pa	Jan. 13, 1857.
16996	Fence, field	Samuel Rains	Litwalton, Va	April 7, 1857.
18858	Fence, field, portable	Thomas B. Page	Laurel, Ohio	Dec. 15, 1857.
18934	Fence, field, portable	H. T. Stanard	Wayne, Mich	Dec. 22, 1857.
18064	Fence for poultry yards	William P. Thomas	Whitewater, Ind	Aug. 25, 1857.
17514	Fence, portable	William Morrison	Carlisle, Pa	June 9, 1857.
17201	Fence, portable field	Ezra Cole	Fairhaven, Mich	May 5, 1857.
17302	Fence, portable field	Seth G. Tufts	Mainville, Ohio	May 12, 1857.
16486	Fence-posts, method of constructing	Frank G. Johnson	Brooklyn, N. Y	Jan. 27, 1857.
16406	Fences, field, base or support for posts of	Oded Spencer	Jacksonburg, Ohio	Jan. 13, 1857.
17742	Fences, field, panels of, method of connecting the.	Samuel F. Jones	Milford, Ind	July 7, 1857.
16675	Fences, field, the panels of, mode of securing to each other.	C. P. Garlick and M. G. Blackstone	Mainville, Ohio	Feb. 3, 1857.
17010	Fences, iron, method of constructing	William S. Fuller, assignor to William D. Cutler.	Milbury, Mass	April 7, 1857.
17075	Fences, portable field, method of clamping and unclamping panels of.	William B. Burnett	Lyons, N. Y	April 21, 1857.
18952	Fences, portable field, method of connecting the panels of.	John H. Bruen	Elmira, N. Y	Dec. 29, 1857.
17210	Fences, portable field, panels of, method of uniting and sustaining the.	Isaac D. Garlick	Lyons, N. Y	May 5, 1857.
17459	Fences, portable, method of uniting the panels of.	Charles Van De Mark	Oaks Corners, N. Y	June 2, 1857.
18301	Fences, wire, construction of	J. B. Reyman	Bloomington, Ill	Sept. 29, 1857.
17335	Gate, approach-opening	George W. McGill	Buffalo, N. Y	May 19, 1857.
18283	Gate, approach-opening	Charles A. Howard	Pontiac, Mich	Sept. 29, 1857.
18932	Gate, approach-opening farm	C. W. Smart	Watertown, N. Y	Dec. 29, 1857.
16978	Gate-post attachable to any panel of its corresponding field fence.	James G. Hunt	Cincinnati, Ohio	April 7, 1857.
16386	Gates, device by which persons approaching may open.	Royal E. House	Binghampton, N. Y	Jan. 13, 1857.
16791	Gates, farm, devices for raising or lowering, to allow them to open over obstacles.	Dennis E. Fenn	Tallmadge, Ohio	Mar. 10, 1857.
16400	Gates, farm, method of hanging	Isaac S. Roland	West Earl, Pa	Jan. 13, 1857.
18449	Gates, farm, mode of closing	Thomas B. Hand	Madison, Ind	Oct. 20, 1857.
17699	Gates, farm, mode of opening and closing	William Sherwood	Beloit, Wis	June 30, 1857.
17202	Gates, method of opening and closing, by approaching vehicles.	Solomon Cole	Rochester, N. Y	May 5, 1857.
18308	Gates, vertico-lateral folding, method of opening and closing.	Francis Thrasher and Henry B. Horton	Akron, Ohio	Sept. 29, 1857.
17551	Hatchways, safety-attachment for	James Bridge	Augusta, Me	June 16, 1857.
17270	Houses, portable, mode of constructing	Daniel Fitzgerald	New York, N. Y	May 12, 1857.
16425	Lathing and plastering, mode of	John G. Vaughan, assignor to Benjamin Trott, assignor to Isaac M. Singer	Middleboro', Mass New York, N. Y	Jan. 13, 1857.
16702	Lathings, metallic	W. E. Worthen	New York, N. Y	Feb. 24, 1857.
17550	Laths for buildings	John L. Brabyn	New York, N. Y	June 16, 1857.
18555	Lock-gates, canal	Samuel J. Seely	New York, N. Y	Nov. 3, 1857.
17065	Mines, winding machinery for	Edmund M. Ivens, assignor to E. M. Ivens and L. H. Allen.	Tamaqua, Pa	April 14, 1857.
18417	Pavement, cellular, iron	S. H. Titus and O. Des Granges	St. Louis, Mo	Oct. 13, 1857.
17138	Pavement, side-walk	John B. Cornell	New York, N. Y	April 28, 1857.
16757	Pavements, cast iron	Charles J. Shepard	Brooklyn, N. Y	Mar. 3, 1857.
16692	Pavements, iron	Charles Mettam	New York, N. Y	Feb. 24, 1857.
17662	Pavements, iron, for streets	George W. Bishup	Brooklyn, N. Y	June 30, 1857.
18251	Pavements, iron or other, mode of connecting or disconnecting the blocks of.	B. C. Smith	Burlington, N. J	Sept. 22, 1857.
16490	Rail, compound, for railroads	Charles T. Liernur	Mobile, Ala	Jan. 27, 1857.
16605	Rail for street railroads	Samuel Nicolson	Boston, Mass	Feb. 10, 1857.
17478	Railroad bars, machine for repairing	Lyman Beebe and George F. Smith	Michigan City, Ind	June 9, 1857.

IX.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
17178	Railroad-chair machine	Corydon Winch	Jersey City, N. J	April 28, 1857.
18023	Rail, railroad	Edward W. Stephens and Richard Jenkins.	Covington, Ky	Aug. 18, 1857.
17580	Railroad snow-excavators	S. Y. Ludlum	Oyster Bay, N. Y	June 16, 1857.
17492	Railroad switch-lock	William L. Cawthron	Harper's Ferry, Va	June 9, 1857.
16898	Railroads	Hiram Carpenter, assignor to American Iron Railway Company.	New York, N. Y	Mar. 24, 1857.
18144	Railroads, cross-ties of, machine for ramming under the.	Richard B. Harrison	Vicksburg, Miss	Sept. 8, 1857.
16623	Railroads, locomotive cow-catchers for	Joel Wisner	Aurora, N. Y	Feb. 10, 1857.
16343	Railroads, metallic cross-ties and chairs for, as a new manufactnre.	Andrew Teal	Aurora, Ill	Jan. 6, 1857.
16376	Rails, fixed, arrangement of, as a substitute for railroad switches.	Joseph T. Davenport	Augusta, Ga	Jan. 13, 1857.
18494	Railways, construction of	Sidney A. Beers	Brooklyn, N. Y	Oct. 27, 1857.
18577	Railways, rails for	Timothy Dwight	New Haven, Conn	Nov. 10, 1857.
17003	Road-scraper	George W. Thomas	North Kingston, R. I	April 7, 1857.
16963	Road-scraper	C. Blakeslee	Ashtabula, Ohio	April 7, 1857.
17529	Road-scraper	Hiram Van Pelt	Bath, N. Y	June 9, 1857.
16767	Roof, metallic	W. E. Worthen	New York, N. Y	Mar. 3, 1857.
	Roofing-cements. (See Class XV, letter C.)			
18278	Roofing-cements, preparing	Robert T. Havens	Casstown, Ohio	Sept. 29, 1857.
17851	Roofing-compositions	John B. Wands	Chicago, Ill	July 21, 1857.
16739	Roofing-compounds, mastic	Charles R. Milks	Detroit, Mich	Mar. 3, 1857.
17497	Roofing-machines	J. B. Driscole	Knoxville, Tenn	June 9, 1857.
18186	Roofing, mastic	William H. Carver and J. Beckley	Covington, Ky Cincinnati, Ohio	Sept. 15, 1857.
17883	Roofing, mastic, compositions	S. K. Lighter and James A. Morrell	Hamilton, Ohio	July 28, 1857.
16770	Roofing-materials, mastic	Nathan A. Dyar, assignor to N. A. Dyar and S. D. Woodbury.	Lynn, Mass	Mar. 3. 1857.
16614	Roofing, metallic	Benjamin Ross and John C. Campbell	Syracuse, N. Y	Feb. 10, 1857.
18677	Roofing, metallic, for subterranean vaults	John B. Cornell	New York, N. Y	Nov. 24, 1857.
17874	Roofs, sheet-metal, machine for seaming	Lucian Fay	Cincinnati, Ohio	July 28, 1857.
17331	Roofs, &c., sheet-metal on, mode of fastening.	Asa Johnson, assignor to himself, Henry Link, and William Higbie.	Cairo, N. Y	May 19, 1857.
18703	Sash-balance, arrangement in	Joseph R. Payson	Covington, Ky	Nov. 24, 1857.
18223	Sash-balance, cog-gear, mode of controlling	John McMurtry; assignor to Daniel Wiehl.	Fayette county, Ky	Sept. 15, 1857.
18376	Sash-supporter	Nathaniel E. Baker	Holyoke, Mass	Oct. 13, 1857.
18275	Stables, horses', cribs of	William Croasdale	Hartsville, Pa	Sept. 29, 1857.
16982	Staging-brackets, arrangement of	Joseph B. Latham	Phœnixville, Conn	April 7, 1857.
16380	Staircases	Augustus Eliaers	Boston, Mass	Jan. 13, 1857.
18110	Stair-railings, circular, instruments for drawing the curve of.	George S. Stewart	Meadville, Pa	Sept. 1, 1857.
17234	Stair-steps, arrangement of	Charles Robinson	Cambridgeport, Mass	May 5, 1857.
16357	Stalls for horses, mode of constructing	Henry Eddy	North Bridgewater, Mass	Jan. 6, 1857.
17627	Stoves, mode of constructing	William L. Johnson	Patonsville, Tenn	June 23, 1857.
18118	Stoves, &c., in case of fire, mode of removing.	Asa Blood, sr., and R. W. Brown	Norfolk, Va Washington, D. C	Sept. 1, 1857.
16563	Stump-extractor	Jason S. Wood	Washington, N. J	Feb. 3, 1857.
17528	Stump-extractor	Peter Traxler	Scottsburg, N. Y	June 9, 1857.
17512	Trees by hand, felling, machine for	E. T. Miller	Chelsea, Mass	June 9, 1857.
18383	Trucks, self-dumping, arrangement of	Z. Butt	Lincolnton, N. C	Oct. 13, 1857.
16579	Truss-frames, shoes for	R. Comyns	Troy, N. Y	Feb. 10, 1857.
17198	Vault-cover. (No. 1.)	John B. Cornell	New York, N. Y	May 5, 1857.
17199	Vault-covers. (No. 2.)	John B. Cornell	New York, N. Y	May 5, 1857.
17096	Vault-covers	George R. Jackson	Rye, N. Y	April 21; disclaimer April 22, 1857.
18851	Vault-light covers	George R. Jackson	New York, N. Y	Dec. 15, 1857.
17613	Vault, ventilating, and platform-light	John G. Wolvin, assignor to himself and George Peckham.	New York, N. Y	June 16, 1857.
16451	Vaults, reflectors for	Emil R. Pichler	Boston, Mass	Jan. 20, 1857.
17097	Vaults, ventilating, method of	George R. Jackson	Rye, N. Y	April 21, 1857.
16827	Walls of buildings, mode of veneering the	George B. and Benjamin F. Field	St. Louis, Mo	Mar. 17, 1857.
16548	Walls, pisé-work, boxes for	Otis and Wales Needham	New Haven, Conn	Feb. 3, 1857.
17937	Window-blind slat-holder	William S. Mayo	New York, N. Y	Aug. 4, 1857.
18569	Window-blind slats, round tenons on, device for forming.	Thomas C. Ball	Keene, N. H	Nov. 10, 1857.
16527	Window-blinds	Alexander M. Cochran	New York, N. Y	Feb. 3, 1857.
16632	Window-blinds	Daniel Kelly and William Livingston	Grand Rapids, Mich	Feb. 10, 1857.
17938	Window-blinds, device for operating	James McMackin	New York, N. Y	Aug. 4, 1857.
16966	Window-blinds, folding	Sylvanus S. Clark	Manchester, N. H	April 7, 1857.
17922	Window-blinds, mode of opening and closing	Lucius N. Fay and William Mason	Warren, Mass	Aug. 4, 1857.

IX.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
17923	Window-blinds, slats of, device for operating	Lucius N. Fay and William Mason	Warren, Mass	Aug. 4, 1857.
17731	Window-frame box	Joseph B. Dodge	St. Louis, Mo	July 7, 1857.
18611	Window-sash	Francis Thrasher and Henry B. Horton	Akron, Ohio	Nov. 10, 1857.
18200	Window-sash, mode of operating	John C. Grant	Salem, Mass	Sept. 15, 1857.
18182	Window-sash, mode of sustaining	Edward T. Briggs	Salem, Mass	Sept. 15, 1857.
16559	Window-sashes, hanging	William Webster	Morrisania, N. Y	Feb. 3, 1857.
16998	Window-shutters, mode of arranging and operating.	D. Rohan	Cincinnati, Ohio	April 7, 1857.

CLASS X.—LAND CONVEYANCE, *comprising carriages, cars, and other vehicles used on roads, and parts thereof.*

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
16499	Axle-boxes	Alfred E. Smith	Bronxville, N. Y	Jan. 27, 1857.
16661	Axles, hubs on, mode of securing	Alfred E. Smith	Bronxville, N. Y	Feb. 17, 1857.
16891	Axles, hubs to, mode of attaching	James M. White	Xenia, Ohio	Mar. 24, 1857.
17063	Axles, hubs to, mode of attaching	Lorenzo Winslow	Rochester, N. Y	April 14, 1857.
17247	Axles, hubs to, mode of securing	Leonard J. Worden	Utica, N. Y	May 5, 1857.
16404	Axles, mail, and hubs, mode of constructing	Alfred E. Smith	Bronxville, N. Y	Jan. 13, 1857.
17410	Axles, nuts on, securing	Thomas S. Williams, assignor to himself and Henry T. Hoyt.	Philadelphia, Pa	May 26, 1857.
18248	Axles with friction-rollers, journals of	George A Prentiss	Cambridge, Mass	Sept. 22, 1857.
17899	Boxes, receiving, for passengers' fares	John B. Slawson	New Orleans, La	July 28, 1857.
18715	Brake, railroad, automatic	Alfred F. Toulmin	Ellicott's Mills, Md	Nov. 24, 1857.
18516	Brake, railroad, operating	Philander Perry	Troy, N. Y.	Oct. 27, 1857.
17058	Car-brake, railroad	Richard L. Smith	Philadelphia, Pa	April 14, 1857.
18018	Car-brake, railroad	James Mitchell	Osceola, Iowa	Aug. 18, 1857.
18150	Car-brake, railroad, automatic	W. B. Jackson	Baltimore, Md	Sept. 8, 1857.
17004	Car-brakes, railroad	R. M Wade	Wadesville, Va	April 7, 1857.
17257	Car-brakes, railroad, bumper	Louis Brauer	Sommerville, Tenn.	May 12, 1857.
17983	Car-brakes, railroad, mechanism for operating	E. R. Roe	Bloomington, Ill	Aug. 11, 1857.
17763	Car-brakes, railroad, method of applying	Ira J. Webber	Salem, Mass	July 7, 1857.
18435	Car-brakes, railroad, rubbers of	Henry M. Collier	Binghamton, N. Y	Oct. 20, 1857.
18990	Car-coupling, railroad	John F. Rague	Dubuque, Iowa	Dec. 29, 1857.
18132	Car-coupling, railroad, reversible	Joseph Boothroyd	Michigan City, Ind	Sept. 8, 1557.
16654	Car-coupling, railroad, self-disengaging	Joshua C. Price	New Philadelphia, Ohio	Feb. 17, 1857.
17845	Car-couplings, railroad	Wellington Prosser	Kendall, N. Y	July 21, 1857.
17796	Car-doors, &c., seal for	D. W. Long	Baltimore, Md	July 14, 1857.
18743	Car, dumping	George W. Hart	Aurora, Ind.	Dec. 1, 1857.
18961	Car, railroad, or carriage springs	George Douglass	Scranton, Pa	Dec. 29, 1857.
17794	Car-seats, railroad	B. J. La Mothe	New York, N. Y.	July 14, 1857.
18252	Car-seats, railroad	J. H. Swan	New York, N. Y.	Sept. 22, 1857.
18375	Car-seats, railroad	Charles P. Bailey	Zanesville, Ohio	Oct 13, 1857.
18122	Car-seats, railroad, head-rests for	William M. McCauley, assignor to J. N. McIntire.	Washington, D C	Sept. 1, 1857.
16916	Car-springs from mandrel, railway, machine for disengaging.	Perry G. Gardiner	New York, N. Y	Mar. 31, 1857.
18515	Car-springs, railroad	Henry M. Paine	Worcester, Mass	Oct. 27, 1857.
16915	Car-springs, railway, machine for creasing plates for.	Perry G. Gardiner	New York, N. Y	Mar. 31, 1857.
17442	Car-wheels, cast-iron	A. L. Mowry	Cincinnati, Ohio	June 2, 1857.
	Car-wheels, casting. (See Class II, letter C.)			
16851	Car-wheels for railroads, cast-iron	James M. Ross	Springfield, Mass	Mar. 17, 1857.
18752	Car-wheels, railroad	A. B. Latta	Cincinnati, Ohio	Dec. 1, 1857.
18767	Car-wheels, railroad	Michael Phelan	Bridgewater, Pa	Dec. 1, 1857.
17250	Car-wheels, railroad, wrought-iron plate	G. W. Allen	New York, N. Y	May 12, 1857.
	Car-wheels, railway, casting. (See Class II, letter C.)			
16724	Car-wheels, railway, making tire for	James Evans	Portsmouth, Ohio	Mar. 3, 1857.
	Carriage-axles, lubricating. (See Class XII, letter L.)			
17506	Carriage-brakes	George Hanck	Mechanicsburg, Pa	June 9, 1857.
17376	Carriage, horse and shafts from a, apparatus for discharging a.	Gilbert Hubbard	Sanderstield, Mass	May 26, 1857.
18421	Carriage, hose	J. W. Wiler, S. B. Sturges, and G. McFall	Mansfield, Ohio	Oct. 13, 1857.
17360	Carriage-hubs	Sylvester W. Beach	Chicago, Ill	May 26, 1857.

X.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
18893	Carriage-hubs, band portions of, machine for turning the.	Zina Doolittle	Perry, Ga	Dec. 22, 1857.
17846	Carriage-hubs, method of turning	Alexander Rickart	Schoharie, N. Y	July 21, 1857.
18254	Carriage-prop	Chauncey Thomas	West Newbury, Mass	Sept. 22, 1857.
	Carriage-shaft coupling. (See Shaft-coupling.)			
18451	Carriage-springs	Bold R. Hood	Clinton, N. C	Oct. 20, 1857.
16802	Carriage-springs, arrangement of	Charles A. McElroy	Delaware, Ohio	Mar. 10, 1857.
16986	Carriage-springs, arrangement of	Rinehart P. March	Jeffersonville, Pa	April 7, 1857.
16919	Carriage, steam	John S. Hall	Pittsburg, Pa	Mar. 31, 1857.
17680	Carriage-top	R. S. Jennings	Waterbury, Conn.	June 30, 1857.
16925	Carriage-tops	R. S. Jennings	Waterbury, Conn.	Mar 31, 1857.
16467	Carriage-tops, calash	G. & D. Cook	New Haven, Conn	Jan. 27, 1857.
18992	Carriage-tops, joints for	A. C. Shelton and Byron Tuttle	Plymouth, Conn	Dec. 29, 1857.
18558	Carriage-tops, joints of	Reuben W. Stone	Solsville, N. Y	Nov. 3, 1857.
18106	Carriage-tops, mode of adjusting	C. W. Saladee	Columbus, Ohio	Sept. 1, 1857.
17520	Carriage-wheel	James D. Sarven	Columbia, Tenn	June 9, 1857.
18097	Carriage-wheels, hub for	James W. Jackson and L. W. Burchinal	Smithfield, Pa	Sept. 1, 1857.
18855	Carriage-wheels, hubs of	Cornelius Merry	New York, N. Y	Dec. 15, 1857.
18556	Carriage-wheels, tires on, mode of tightening	N. J. Skaggs	Talladega, Ala	Nov. 3, 1857.
16353	Carriages	John W. Crannell	Olivet, Mich	Jan. 6, 1857.
17191	Carriages, adjustable pole for	Sherlock H. Bishop	Orange, Conn	May 5, 1857.
16528	Carriages, adjustable seats for	George & David Cook	New Haven, Conn	Feb. 3, 1857.
17638	Carriages, central draught-joint of	Luther O. Rice	Castorville, Canada West	June 23, 1857.
17805	Carriages, mode of constructing	Rufus Nutting	Randolph, Vt	July 14, 1857.
17337	Carriages, running-gear of	Richard Murdoch	Baltimore, Md	May 19, 1857.
18403	Carriages, shafts and poles to, mode of fastening.	Thomas Miller	Worcester Township, Penn	Oct. 13, 1857.
17970	Carriages, steam, steering-apparatus of	Edward C. Jones	Pittsburg, Penn	Aug. 11, 1857.
18153	Carriages, wear-iron for	J. George Lefler	Philadelphia, Penn	Sept. 8, 1857.
18781	Cars and carriages by horse-power, propelling	Henry G. Vanderwerken	Greenbush, N. Y	Dec. 1, 1857.
17793	Cars, hand, applying fly-wheels to	Charles T. Kipp and John Lawrenson	New York, N. Y	July 14, 1857.
16762	Cars, railroad, guide-wheels for	John B. Wickersham	New York, N. Y	Mar. 3, 1857.
18884	Cars, railroad, journal-boxes for	Robert McWilliams, assignor to himself and Adam J. Frederick.	Philadelphia, Penn	Dec. 15, 1857.
16806	Cars, railroad, method of preventing dust, &c., from entering the windows of.	Philip M. Pyfer	Baltimore, Md	Mar. 10, 1857.
17114	Cars, railroad. mode of dumping	William Pearce and John Lowrie	Piedmont, Va	April 21, 1857.
17953	Cars, railroad, pedestal for	D. H. Feger, assignor to himself and Daniel Shepherd.	New York, N. Y	Aug. 4, 1857.
16520	Cars, railroad, safety-coupling for	Edward H. Anderson	Milford, Del	Feb. 3, 1857.
18950	Cars, railroad, springs for	John C. Blair	Pittsburg, Penn	Dec. 29, 1857.
16884	Cars, railroad, steam-brakes for	Theophilus E. Sickels	Kennett Square, Penn	Mar. 24, 1857.
17982	Cars, railway, safety-tops for	Albert Potts	Philadelphia, Penn	Aug. 11, 1857.
17801	Cars, &c., railroad freight, seal for	Henry D. Mears and William Houlton, jr	Baltimore, Md	July 14, 1857.
17802	Cars, &c., railroad freight, seal for	Henry D. Mears and William Houlton, jr	Baltimore, Md	July 14, 1857.
18400	Cars, &c., railroad, implement for sealing	F. W. A. Kráuse	Baltimore, Md	Oct. 13, 1857.
18984	Cars, &c., railroad, journal-boxes for	James A. Norris	Philadelphia, Penn	Dec. 29, 1857.
17486	Cart, self-loading	J. S. Brown	Washington, D. C	June 9, 1857.
18519	Chair, railroad	John S. Robinson, Levi Herendeen, and George Sheldon.	Canandaigua, N. Y	Oct. 27, 1857.
17773	Chairs, railroad, machine for making	Robert Archer	Richmond, Va	July 14, 1857.
16813	Coaches, tongues of, mode of supporting the	Zalmon B. Wakeman	Beloit, Wis	Mar. 10, 1857.
16408	Felloes in wheels, mode of tightening	Augustus Stoner	Mount Joy, Penn	Jan. 13, 1857.
18998	Head-rests	Elisha Waters	Troy, N. Y	Dec. 29, 1857.
17206	Omnibus-coffer	Joseph T. Curtis	New York, N. Y	May 5, 1857.
18615	Railroads, revolving snow-excavators for	Jesse Urmy	Wilmington, Del	Nov. 10, 1857.
17751	Shaft-coupling	Edwin F. Shoenberger	Germantown, Penn	July 7, 1857.
16577	Sleighs, attaching thills to, mode of	J. M. Batchelor	Foxcroft, Me	Feb. 10, 1857.
17232	Sleighs and cutters	Levi B. Randall	Penn Yan, N. Y	May 5, 1857.
18882	Snow-plough	Newcomb Demary, jr., assignor to James Yates.	Attica, N. Y	Dec. 15, 1857.
18903	Snow-plough, railroad	Andrew Hotchkiss	Sharon Valley, Conn	Dec. 22, 1857.
17314	Truck, hand	Z. Butt	Lincolnton, N. C	May 19, 1857.
18865	Vehicles, bracing-springs of	C. W. Saladee	Columbus, Ohio	Dec. 15, 1857.
17358	Vehicles, construction of	Charles Atkinson and G. S. Manning	Danville, Ill Springfield, Ill	May 26, 1857.
17918	Vehicles, coupling of thills to	S. T. J. Coleman and J. W. Sibbet	Cincinnati, Ohio	Aug. 4, 1857.
18426	Vehicles, detaching horses from, mode of	W. D. Mayfield, assignor to himself and S. D. Porter.	Bloomington, Ill	Oct. 13, 1857.
16625	Vehicles, springs for, arrangement of	Darius Babcock, assignor to himself and Thomas Harrop.	Horner, N. Y	Feb. 10, 1857.

X.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
18077	Vehicles, two-wheeled, thills for	Philipe Baillau	New York, N. Y	Sept. 1, 1857.
18386	Wagon-brake	M. C. Chamberlin	Johnsonburg, N. Y	Oct. 13, 1857.
17493	Wagon-brake, self-acting	M. C. Chamberlin	Johnsonburg, N. Y	June 9, 1857.
17369	Wagon-couplings	W. D. Guseman	Morgantown, Va	May 26, 1857.
18438	Wagon, dumping	M. Y. and T. J. Cope	Centrebridge, Penn	Oct. 20, 1857.
18431	Wagon-wheels, mode of constructing the tires of.	John S. Blinn	Austin, Texas	Oct. 20, 1857.
17700	Wagons, brake for	Hugh Slater	Auburn, N. Y	June 30, 1857.
16523	Wagons, couplings for	Jacob Boyers	Grandville, Va	Feb. 3, 1857.
16648	Wagons, gearing for	Edgar Huson	Ithaca, N. Y	Feb. 17, 1857.
18242	Wagons, loading logs on, apparatus for	Philander Gilbert	Alexandria, Ohio	Sept. 22, 1857.
18448	Wheelwright-machine	Chauncey H. Guard	Brownsville, N. Y	Oct. 20, 1857.
17509	Wheelwright's-machine	E. N. Kilpatrick	Byhalia, Miss	June 9, 1857.
18138	Wheels, carriage, tires of, mode of tightening	James M. Dick	Buffalo, N. Y	Sept. 8, 1857.
17532	Wheels, setting tires on, machine for	John H. Williams	Pleasant Hill, Ohio	June 9, 1857.
17668	Whiffle-tree hook	Anthony Cooley	Paw Paw, Mich	June 30, 1857.
17752	Whiffle-trees	David A. Smith	Washington, D. C	July 7, 1857.

CLASS XI.—HYDRAULICS AND PNEUMATICS, *including water-wheels, wind-mills, and other implements operated on by air or water, or employed in the raising and delivery of fluids.*

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
16645	Air-blast, generating, method of	Isaiah J. Hendrix	Troy, N. Y	Feb. 17, 1857.
17664	Blast-blower	Joseph Braugh	Aurora, Ill	June 30, 1857.
16736	Cock, basin	Robert Leitch	Baltimore, Md	Mar. 3, 1857.
17539	Cocks, basin, &c., valvular arrangement for	E. G. Burnham, assignor to himself and Henry A. Chapin.	Springfield, Mass	June 9, 1857.
17433	Faucet	L. J. Knowles	Warren, Mass	June 2, 1857.
17604	Faucet	D. N. B. Coffin, jr., assignor to Boston Faucet Company.	Boston, Mass	June 16, 1857.
17342	Faucet, basin	Erastus Stebbins	Chicopee, Mass	May 19, 1857.
17511	Faucet, basin	William C. Marshall and Horace W. Smith	Hartford, Conn	June 9, 1857.
18091	Faucets, device for locking	Henry Getty	Brooklyn, N. Y	Sept. 1, 1857.
17074	Faucets, waste way in	James E. Boyle	Richmond, Va	April 21, 1857.
17973	Faucets, &c., valvular arrangement in	John C. Macdonald	Cincinnati, Ohio	Aug. 11, 1857.
17987	Filter	John A. Thompson	Cayuga, N. Y	Aug. 11, 1857.
18031	Filter	William W. Ayres	Worcester, Mass	Aug. 25, 1857.
17028	Filtering liquids, apparatus for	Benjamin N. DeBuffon	Paris, France	April 14, 1857; England, May 3, 1856.
16330	Filters, method of attaching, to supply-pipes	James Fernald	Boston, Mass	Jan. 6, 1857.
18595	Fire-plugs	Lucien Moss	Philadelphia, Pa	Nov. 10, 1857.
16810	Fluid gates or faucets	Jared W. Smith	Hartford, Conn	Mar. 10, 1857.
16945	Fluid-meter	James Cochrane	New York, N. Y	Mar. 31, 1857; England, Nov. 19, 1855.
17127	Fluid-meter	Samuel J. Burr, assignor to himself and Henry F. Read.	Brooklyn, N. Y	April 21, 1857.
17443	Fluid-meter	James R. Maxwell	Cincinnati, Ohio	June 2, 1857.
17394	Gaseous bodies, machinery for compressing	William A. Royce	Newburgh, N. Y	May 26, 1857.
16450	Hose-coupling	L. D. Phillips	Chicago, Ill	Jan. 20, 1857.
	Hose-pipe, coating. (See Class IV, letter C.)			
16448	Hydrant	James G. Morgan	Brooklyn, N. Y	Jan. 20, 1857.
16536	Hydrant	W. Fields and S. Gerhard	Wilmington, Del	Feb. 3, 1857.
17093	Hydrant	A. Hoagland	Jersey City, N. J	April 21, 1857.
17415	Hydrant	William W. Binny	Seneca Falls, N. Y	June 2, 1857.
17552	Hydrant	Joel Bryant	Brooklyn, N. Y	June 16, 1857.
17632	Hydrant	George P. Perrine and James E. Boyle	Richmond, Va	June 23, 1857.
17538	Hydrants, incasing, method of	William Bramwell, assignor to Samuel P. Ayres.	New York, N. Y	June 9, 1857.
17447	Hydraulic blast-generator	August F. W. Partz	New York, N. Y	June 2, 1857.
18280	Hydraulic engine	John D. Heaton	Dixon, Ill	Sept. 29, 1857.
16756	Hydraulic engines, supply and discharge valves of, method of operating the.	Homer H. Stuart	New York, N. Y	Mar. 3, 1857.
16801	Hydraulic jack	George Lindsay	New York, N. Y	Mar. 10, 1857.
18912	Hydraulic valve	A. R. Ketcham	Buffalo, N. Y	Dec. 22, 1857.
17383	Hydro-dynamic machine for testing strength of materials.	Francis C. Lowthorp	Trenton, N. J	May 26, 1857.

XI.—*List of patents for inventions*, 1857.

No	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
16983	Liquid-meter	Otto G. Leopold	Cincinnati, Ohio	April 7, 1857.
17073	Liquors on tap, method of excluding air from	A. F. Boyd	Zanesville, Ohio	April 21, 1857.
16558	Pump	Ambrose Tower	New York, N. Y	Feb. 3, 1857; England, July 23, 1856.
16785	Pump, lifting, converting a, into a section or forcing pump, or *vice versa*.	John F. Brickley	Winchester, Ind	Mar. 10, 1857.
18705	Pump-packings	Washburn Race	Seneca Falls, N. Y	Nov. 24, 1857.
17516	Pump, rotary	Robert Ramsden	South Easton, Pa	June 9, 1857.
17423	Pumping apparatus, steam	George H. Corliss	Providence, R. I	June 2, 1857.
18718	Pumping engines, steam	John S. Borden, assignor to himself and Aaron W. Rockwood.	New Haven, Conn	Nov. 24, 1857.
16366	Pumps	G. W. B. Gedney	New York, N. Y	Jan. 6, 1857.
16373	Pumps	James S. Burnham	Yorkville, N. Y	Jan. 13, 1857.
17327	Pumps	Silas Hewit	Seneca Falls, N. Y	May 19, 1857.
17625	Pumps	William H. Harrison	Philadelphia, Pa	June 23, 1857.
17768	Pumps	Henry Pease, assignor to himself, Eckler, Buswell, & Co.	Brockport, N. Y	July 7, 1857.
17820	Pumps	Birdsill Holly, assignor to Silsby, Mynderse, & Shoemaker.	Seneca Falls, N. Y	July 14, 1857.
18309	Pumps	J. D West	New York, N. Y	Sept. 29, 1857.
18559	Pumps	Noah Sutton	New York, N. Y	Nov. 3, 1857.
18870	Pumps	Harmon A. Sheldon	Middlebury, Vt	Dec. 15, 1857.
18916	Pumps	Hosea Lindsey	Ashville, N. C	Dec. 22, 1857.
19003	Pumps	Francis G. Wynkoop	Corning, N Y	Dec. 29, 1857.
17653	Pumps, air, chambers to, method of attaching	Charles N. Lewis, assignor to George C. King.	Seneca Falls, N. Y	June 23, 1857.
17154	Pumps, atmospheric	Levi Keiler	Cattawissapa, Pa	April 28, 1857.
16603	Pumps, chain	Edmund Morris	Trenton, N. J	Feb. 10, 1857.
17217	Pumps, chain	James Harrison, jr	New York, N. Y	May 5, 1857.
16875	Pumps, rotary	George W. Griswold	Carbondale, Pa	Mar. 24, 1857.
16869	Pumps, rotary	Abel Barker	Honesdale, Pa	Mar. 24, 1857.
16974	Pumps, rotary	Richard Gilbert	Rochester, N. Y	April 7, 1857.
18488	Pumps, rotary	Henry Pease, assignor to Eckler, Buswell, & Co.	Brockport, N. Y	Oct. 20, 1857.
18986	Pumps, rotary	Oliver Palmer	Buffalo, N. Y	Dec. 29, 1857.
19004	Pumps, rotary	William A. Young	Charlotte, N. C	Dec. 29, 1857.
	Pumps, ships'. (See Class VII, letter S.)			
18660	Pumps, ventilating attachment to be applied to	Charles N. Lewis, assignor to himself and G. C. King.	Seneca Falls, N. Y	Nov. 17, 1857.
17009	Pumps, working, method of	William Wright	Hartford, Conn	April 7, 1857.
17188	Stuffing-boxes	N. R. Bates	New York, N. Y	May 5, 1857.
17503	Valves, puppet, method of guiding and cushioning	Joseph Hyde and William Stearns	Wilmington, Del	June 9, 1857.
17401	Valves, safety, thermo-pneumatic	S. H. Whitaker and Ezra Cope	Cincinnati, Ohio	May 26, 1857.
17624	Valvular arrangement for faucets, &c.	Edward Hamilton	Chicago, Ill	June 23, 1857.
18842	Water, lifting, machinery for	Isaac C. Foster	Union city, Tenn	Dec. 15, 1857.
17654	Water-meter	Peter H. Niles, assignor to himself and Alfred Douglas, jr.	Boston, Mass	June 23, 1857.
17593	Water, method of elevating, by compressed air	Archibald Thomson	Detroit, Mich	June 16, 1857.
18293	Water, oily matter from, apparatus for separating.	James Naughten	Cincinnati, Ohio	Sept. 29, 1857.
17338	Water, raising, apparatus for, valvular arrangement in.	Andrew Nicol	Carbondale, Pa	May 19, 1857.
16669	Water, raising, method of	Daniel K. Winder	Cincinnati, Ohio	Feb. 17, 1857.
16686	Water, supplying the upper stories of houses with, apparatus for.	James Hanson	New York, N. Y	Feb. 24, 1857.
16881	Water-wheel	Samuel Reynolds	Oswego, N. Y	Mar. 24, 1857.
17426	Water-wheel	Reuben Daniels	Woodstock, Vt	June 2, 1857.
18507	Water-wheel	William Henley	New Salem, N. C	Oct. 27, 1857.
16432	Water-wheel, centre-vent	E. G. Cushing	Dryden, N. Y	Jan. 20, 1857.
17119	Water-wheel, current	T. Stamp	Wetumpka, Ala	April 21, 1857.
17041	Water-wheels, adjustable buckets to the shafts of, method of attaching.	J. R. Howell	Alexandria, Va	April 14, 1857.
16465	Water-wheels, direct horizontal, method of inserting the buckets in the shafts of.	Tenison Chesher	Middleburg, Ohio	Jan. 27, 1857.
17726	Water, &c, flow of, through pipes, chamber to effect uniformity of.	Thomas Clark	Philadelphia, Pa	July, 7, 1857.
16535	Wells, raising water from, self-operating device for tilting buckets in.	D. P. Farnham	Milton, Wis	Feb. 3, 1857.
16975	Wheel, current and paddle	James H. Hanchett	Beloit, Wis	April 7, 1857.
17246	Wheels, turbine, method of operating the gate of	L. M. Wright	Niagara Falls, N. Y	May 5, 1857.

XI.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
17168	Wind-mill	Rufus Nutting	Randolph, Vt	April 28, 1857.
18368	Wind-mill	William Zimmerman	Quincy, Ill	Oct. 6, 1857.
16492	Wind-mill, self-regulating	John M. May	Janesville, Wis	Jan. 27, 1857.
16943	Wind-mills, sails or vanes of, method of feathering the.	J. C. & T. G. Wilson	Cedar Hill, Texas	Mar. 31, 1857.
16346	Wind-mills, self-regulating wind indicator for	Henry S. Wentworth	Napoleon, Mich	Jan. 6, 1857.
17862	Wind-mills, &c., governor for regulating the work of.	Ethan Allen	Worcester, Mass	July 28, 1857.
17384	Wind-wheel	James Mitchell	Woodsfield, Ohio	May 26, 1857.
16616	Wind-wheel, self-adjusting	Edward A. Tuttle	Brooklyn, N. Y	Feb. 10, 1857.
16818	Wind-wheel, self-regulating	Abner P. Wilson	Solon, Ill	Mar. 10, 1857.
16378	Wind-wheels, automatic regulator for	Joseph Dunkley	Carrolton, Mo	Jan. 13, 1857; reissued Aug. 25, 1857.
16723	Wind-wheels, method of suspending, in self-revolving adjusting frames.	Joseph De Sendzinvir	South Oyster Bay, N. Y	Mar. 3, 1857.
16893	Wind-wheels, sails of, mode of regulating velocity and furling the.	F. W. Witting	Twelve Mile Colett's Gin, Texas.	Mar. 24, 1857.
18440	Wind-wheels, vane for	Jesse M. Clock	Atlanticville, N. Y	Oct. 20, 1857.
16895	Wind-wheels, velocity of, method of regulating	A. W. Wood	Milwaukie, Wis	Mar. 24, 1857.
18210	Wind-wheels, velocity of, method of regulating the.	Francis Peabody	Salem, Mass	Sept. 15, 1857.

CLASS XII.—LEVER, SCREW, AND OTHER MECHANICAL POWER, *as applied to pressing, weighing, raising, and moving weights.*

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
16390	Balance for detecting counterfeit coin	H. Maranville	Clinton, Ohio	Jan. 13, 1857.
17252	Balance, self-indicating	Otis and Z. W. Avery	Bethany, Pa	May [illegible], 1857.
18973	Balances for detecting counterfeit money	Ferdinand J. Herpers	Newark, N. J	Dec. 29, 1857.
17485	Band-fastening, metallic, for bales, &c	Asa O. Broad	Louisville, Ky	June 9, 1857.
18514	Bands for cotton-bales, &c., metallic fastening for.	William Minor	Hounia, La	Oct. 27, 1857.
18299	Bands of cotton-bales, &c., metallic fastening for.	Charles J. Provost	Sardis, Ala	Sept. 29, 1857.
17034	Bucket, hoisting, for coal, &c	George Focht	Reading, Pa	April 14, 1857.
16501	Cans, oil	Isaac Van Hagen	New York, N. Y	Jan. 27, 1857.
17124	Cans, oil	Hiram Wells	Florence, Mass	April 21, 1857.
17810	Cans, oil	George W. and George H. Simmons	Bennington, Vt	July 14, 1857.
18949	Cans, oil	Joseph F. Berendorf	Paris, France	Dec. 29, 1857; France, May 21, 1856.
18353	Elevators, extension	Pierce Porter	Hooksett, N. H	Oct. 6, 1857.
17289	Elevators, grain, clearing-guard of	George Mann, jr	Ottawa, Ill	May 12, 1857.
18575	Hoisting-apparatus for bricks, &c	John Crawshaw	Rochester, N. Y	Nov. 10, 1857.
18540	Hoisting-buckets	George Focht	Reading, Pa	Nov. 3, 1857.
17536	Hoops, cheese	C. P. S. Wardwell	Lake Village, N. H	June 9, 1857.
18779	Hoops, metallic, clasps for	James R. Speer	Pittsburg, Pa	Dec. 1, 1857.
17024	Jack, lifting	John S. Chesnut	Philadelphia, Pa	April 14, 1857.
17027	Jack, lifting	Robert W. and Daniel Davis	Yellow Springs, Ohio	April 14, 1857.
17344	Jack, lifting	William Thomas	Hingham, Mass	May 19, 1857.
17757	Jack, lifting	Heber G. Seekins and Charles H. Goss	Elyria, Ohio	July 7, 1857.
18592	Jack, lifting	Lucius J. Knowles	Warren, Mass	Nov. 10, 1857.
18955	Jack, lifting	John Callagan	Stroud Glades, Va	Dec. 29, 1857.
18760	Jacks, lifting	David L. Miller	Madison, N. J	Dec. 1, 1857.
18364	Lubricating carriage-axles	Albert A. Vedder	Lysander, N. Y	Oct. 6, 1857.
	Lubricating fire-arms, mode of. (See Class XIX, letter F.)			
18863	Lubricating oil-cups	Enoch N. Roland	Baltimore, Md	Dec. 15, 1857.
16871	Lubricating under pressure, method of	J. D. Custer	Norristown, Pa	Mar. 24, 1857.

XII.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
16553	Lubricator	Norman W. Pomeroy	Meriden, Conn	Feb. 3, 1857.
17118	Lubricator	Hiram Strait	Covington, Ky	April 21, 1857.
17822	Lubricator	Henry J. Hawkins	Mobile, Ala	July 14, 1857.
17957	Lubricator, automatic, for railroad car-axles	William Baker	Utica, N. Y	Aug. 11, 1857.
17972	Lubricator, automatic, for railroad car-axles	A. B. Latta	Cincinnati, Ohio	Aug. 11, 1857.
16796	Lubricators for steam-engine cylinders	John Henwood	New York, N. Y	Mar. 10, 1857.
18322	Packing wool, machine for	Charles Carlisle	Woodstock, Vt	Oct. 6, 1857.
18328	Packing wool, machine for	Albert Dorr	Orleans, Mich	Oct. 6, 1857.
18004	Press, drop	William Wilson, jr., assignor to Wilson, Green, & Wilson, jr.	Brandywine, Del	Aug. 11, 1857.
17978	Press, filtration, for expressing liquids from substances.	William Needham and James Kite	Vauxhall, England	Aug. 11, 1857.
16391	Press, oil	William W. Marsh	Jacksonville, Ill	Jan. 13, 1857.
18502	Press, steam cotton	T. J. De Yampert	Mobile, Ala	Oct. 27, 1857.
18864	Press, steam cotton	John Roy	New Orleans, La	Dec. 22, 1857.
18895	Press, wine and cider	John Eiberweiser	Cincinnati, Ohio	Dec. 22, 1857.
16389	Presses	Rodolphus Kinsley	Springfield, Mass	Jan. 13, 1857.
18862	Presses, cheese	C. H. Robertson	Middleport, N. Y	Dec. 15, 1857.
16494	Presses, cotton	M. L. Parry	Galveston, Tex	Jan. 27, 1857.
18995	Presses, cotton	Riley Smith	Towanda, Pa	Dec. 29, 1857.
18766	Presses, cotton and hay	G. W. Penniston	North Vernon, Ind	Dec. 1, 1857.
18854	Presses, cotton and hay	James Massey	Thomasville, Ga	Dec. 15, 1857.
17053	Presses, cotton, self-releasing doors of	George W. Penniston	North Vernon, Ind	April 14, 1857.
17411	Presses, drop	Milo Peck	New Haven, Conn	May 26, 1857.
17278	Presses for cotton, &c	Henry Hughes	Port Gibson, Miss	May 12, 1857.
17161	Presses, oil, securing and guiding the boxes of.	William W. Marsh	Jacksonville, Ill	April 28, 1857.
17108	Presses, &c., hay, method of securing the doors of.	Cornelius Martratt	New Baltimore, N. Y	April 21, 1857.
16422	Pressing, oil, machinery	William Wilber	New Orleans, La	Jan. 13, 1857; England, June 12, 1856.
18367	Pressing, oil, machinery	William Wilber	New York, N. Y	Oct. 6, 1857.
16381	Scales, platform	Thaddeus Fairbanks	St. Johnsbury, Vt	Jan 13, 1857; reissued Mar. 31, 1857.
17230	Weighing-machines, automatic grain, buckets of.	Rufus Porter	Washington, D. C	May 5, 1857; reissued Dec. 22, 1857.

CLASS XIII.—GRINDING-MILLS AND MILL-GEARING, *including grain-mills, mechanical movements, horse-power, &c.*

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
18753	Banding, machine	Charles Lensmann	Brooklyn, N. Y	Dec. 1, 1857.
17743	Belt-shifter for machinery	Lucius J. Knowles	Warren, Mass	July 7, 1857.
17216	Belting, india-rubber, machine for making	Robert Hale	Roxbury, Mass	May 5, 1857.
18650	Belting, machine, fastening for	Lewis Smith	Buffalo, N. Y	Nov. 17, 1857.
18941	Belting, mode of	Benjamin Chester, assignor to W. H. Burnap.	New York, N. Y	Dec. 22, 1857.
18179	Bolt, flour	N. Baumann	Elmore, Ill	Sept. 15, 1857.
17126	Bolting-cloths to reels, mode of attaching	John Woodville	Chillicothe, Ohio	April 21, 1857.
16748	Clutch, centrifugal friction	Rensselaer Reynolds	Stockport, N. Y	Mar. 3, 1857.
	Governor for water, steam, and other power. (See Class VI, letter G.)			
18926	Governors for machinery	George M. Phelps	Troy, N. Y	Dec. 22, 1857.
17325	Grain-cleaning, machines for	J. R. Gates	Eckmansville, Ohio	May 19, 1857.
17363	Grain-scourers and separators	Samuel Canby	Ellicott's Mills, Md	May 26, 1857.
16439	Grain-separators	George Heberling	Quincy, Ill	Jan. 20, 1857.
16471	Grain-separators	Michael Decamp	South Bend, Ind	Jan. 27, 1857.
17498	Grain-separators	Elihu Doud	Oshkosh, Wis	June 9, 1857.
17728	Grain-separators	Amaza Curtis	Lena, Ill	July 7, 1857.
17853	Grain-separators	William Zimmermann	Quincy, Ill	July 21, 1857.
18761	Grain-separators	John R. Moffitt	St. Louis, Mo	Dec. 1, 1857.
18444	Grain-separators, screens for	Abram Gaar	Richmond, Ind	Oct. 20, 1857.
18137	Grain, &c, drying machine for	Christian Custer	Philadelphia, Pa	Sept. 8, 1857.
	Hominy-machines. (See Class XXII)			
17966	Hominy-mills	J B Gowdy and J. A. Welsh	Xenia, Ohio	Aug. 11, 1857.
18232	Horse-powers	George E. Burt and Abram & George F. Wright.	Harvard, Mass	Sept. 22, 1857.

XIII.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
16612	Horse-powers, attaching the arms of	Cyrus Roberts	Belleville, Ill	Feb. 10, 1857.
18028	Horse-powers, portable	Daniel Woodbury	Rochester, N. Y	Aug. 18, 1857.
17706	Journal-boxes for shafting, &c., manufacture of.	Daniel Taylor, assignor to himself and H. A. Chambers.	Carbondale, Pa	June 30, 1857.
17333	Journals of shafts, axles, &c., friction-rollers for.	William H. Main	Litchfield, Ohio	May 19, 1857.
18734	Mechanical movements for regulating the action of a fly-wheel on the working parts of machinery connected with it.	Abram C. Frederick	Clarendon, N. Y	Dec. 1, 1857.
16847	Mill, cider, convertible	Samuel Males	Cincinnati, Ohio	Mar. 17, 1857.
16988	Mill, corn and cob	Richard F. Maynard	Baltimore, Md	April 7, 1857.
18844	Mill, corn and cob	Harvey Hall	Mansfield, Ohio	Dec. 15, 1857.
18574	Mill, flouring, distributing apparatus in	James M. Clark	Lancaster, Pa	Nov. 10, 1857.
16325	Mill, grinding	James Culbertson	Covington, Ky	Jan. 6, 1857.
17619	Mill, grinding	Ezra Coleman	Philadelphia, Pa	June 23, 1857.
18178	Mill, grinding	Aaron Arnold	Troy, N. Y	Sept. 15, 1857.
18610	Mill, grinding	Charles Tripp	Ann Arbor, Mich	Nov. 10, 1857.
18923	Mill, grinding	J. R. Morrison	East Springfield, Ohio	Dec. 22, 1857.
16383	Mill, grinding, flour-bolt as applied to	Sanford E. Fitch and Theodore Sharp	Greenbush, N. Y	Jan. 13, 1857.
18637	Mill, grinding, flour-distributing bolt for	W. W. Hamer	Cincinnati, Ohio	Nov. 17, 1857.
18412	Mill-shafting, &c., elastic coupling for	William S Reeder	St. Louis, Mo	Oct. 13, 1857.
18234	Mill-stone drivers, bearings for	Edwin Clark	Lancaster, Pa	Sept. 22, 1857.
18741	Mill-stones, balance-iron for	Joseph H. Glover	Skeggs's Creek, Ky	Dec. 1, 1857.
18848	Mill-stones, dress of	Nelson Hayward	Cleveland, Ohio	Dec. 15, 1857.
16615	Mill-stones, facing of, instruments for facilitating the.	B. D. Sanders	Holliday's Cove, Va	Feb. 10, 1857.
17446	Mill-stones, feeding grain to	M. & C. Painter	Owing's Mills, Md	June 2, 1857.
18191	Mill-stones, hanging	Edwin Clark	Lancaster, Pa	Sept. 15, 1857.
17421	Mill-stones, method of hanging	W. A. Clark, S. D. Porter, and W. D. Simpson.	St. Louis, Mo	June 2, 1857.
17326	Mill-stones, redressing, machines for	W. Y. Gill	Henderson, Ky	May 19, 1857.
18993	Mills, cider	H. O. Sheidley	Republic, Ohio	Dec. 29, 1857.
17667	Mills, flouring, distributing apparatus for	A. T. Clark	Lancaster, Pa	June 30, 1857; reissued Aug. 4, 1857.
16508	Mills for tempering oleaginous seeds	William Wilber	New Orleans, La	Jan. 27, 1857; England, June 12, 1856.
17985	Mills, grain, dress of, grinding-surfaces for	Otis W. Stanford	Cincinnati, Ohio	Aug. 11, 1857.
17116	Mills, grinding	E. Ripley	Troy, N. Y	April 21, 1857.
18163	Mills, grinding	William Stauffer	Middlebury, Ind	Sept. 8, 1857.
18985	Mills, grinding	Franklin Olds	Providence, R I	Dec. 29, 1857.
16987	Mills, sectional, corn and cob, securing the legs of.	Richard F. Maynard	Baltimore, Md	April 7, 1857.
17995	Mills, winnowing	Manasseh Grouer, assignor to himself and H. H Seely.	Clyde, Ohio	Aug. 11, 1857.
18006	Mills, &c., tubular shafting for	Z. Allen	Providence, R. I	Aug. 18, 1857.
17555	Motion for preserving rolling contact, &c	George P. Gordon and Frederick O. Degener.	New York, N. Y	June 16, 1857.
17222	Motion, transmitting	Matthaus Kaefer	Alexandria, Pa	May 5, 1857.
18496	Rice, crushing, machine for	O. I. Butts	Georgetown, S. C	Oct. 27, 1857.
18374	Rice, cleaning, machine for	Wilson Ager	Rohrsburg, Pa	Oct. 13, 1857.
17646	Rice, cleaning, machines for	John F. Taylor	Charleston, S. C	June 23, 1857.
17882	Rice, cleaning, machines for	P. R. Lachicotte and T. B. Bowman	Charleston, S. C	July 28, 1857.
18177	Rice, cleaning, machines for	Wilson Ager	Rohrsburg, Pa	Sept. 15, 1857.
18176	Rice, hulling, machines for	Wilson Ager	Rohrsburg, Pa	Sept. 15, 1857.
18099	Sack-fastener	William P. and J. E. B. Maxson	Albion, Wis	Sept. 1, 1857.
18419	Sacks, &c., string-fastening for	James A. Watrous	Green Spring, Ohio	Oct. 13, 1857.
17236	Shafting, coupling for	William and Coleman Sellers	Philadelphia, Pa	May 5, 1857.
17716	Shafting, &c., strap pillow-block for	George H. Reynolds, assignor to himself and D. B. Hinckley.	Medford, Mass	June 30, 1857.
17596	Smut-machine	James Tompkins	Liberty, Pa	June 16, 1857.
16897	Smut-machines	William Zimmerman	Quincy, Ill	Mar. 24, 1857.
16980	Smut-machines	Israel Kepler	Milton, Pa	April 7, 1857.
17869	Smut-machines	Everard M. Clark	Lancaster, Pa	July 28, 1857.
18484	Smut-machines	John A. Woodward	Burlington, Iowa	Oct. 20, 1857.
18727	Speed-indicator	James M. Benckert	Philadelphia, Pa	Dec. 1, 1857.

CLASS XIV.—LUMBER, *including machines and tools for preparing and manufacturing, such as sawing, planing, mortising, shingle and stave, carpenters' and coopers' implements.*

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
18003	Auger-bit, expanding	Asa Weeks, assignor to himself and Orin W. Fiske.	South Boston, Mass	Aug. 11, 1857.
17868	Auger-handle, fastening	William N. Clark	Chester, Conn	July 28, 1857.
16399	Auger, tubular	J. A. Reynolds	Elmira, N. Y	Jan. 13 1857.
18549	Barrels, chamfering and crozing, method of	James H. Mattison	Scriba, N. Y	Nov. 3, 1857.
16642	Bench-clamp, carpenter's	James E. A. Gibbs	Mill Point, Va	Feb. 17, 1857.
18345	Bench, joiner's	J. W. Mahan	Lexington, Ill	Oct. 6, 1857.
17292	Bench-strip, joiner's	Charles F. Pearson	Chelsea, Mass	May 12, 1857.
17769	Bit, brace	Henry W. Porter, assignor to Samuel G. Porter.	West Earl, Pa	July 7, 1857.
17891	Bit, brace, for boring obliquely to the axis of the stock.	Charles C. Plaisted	Chicopee, Mass	July 28, 1857.
17038	Bit, expansion	Alexander Hall	New York, N. Y	April 14, 1857.
17395	Bit for cutting out cylindrical plugs of wood	C. W. Saladee	Columbus, Ohio	May 26, 1857.
18282	Bit-holder	Benjamin B. Hill	Chicopee, Mass	Sept. 29, 1857.
17479	Bit in the brace, holding, devices for	George Benjamin	Avoca, N Y	June 9, 1857.
17770	Bit or drill holder	Amos J. Smith, assignor to himself and George W. Otis.	Lynn, Mass	July 7, 1857.
16938	Bit-stocks, method of constructing	Abel W. Streeter	Shelburne Falls, Mass	Mar. 31, 1857.
16931	Bits in their stocks, mode of securing	A. C. Moore	Wilmington, Vt	Mar. 31, 1857.
17341	Blind-slats, compressing the ends of, machine for.	Luther T. Smart	Manchester, N. H	May 19, 1857.
16777	Boards to uniform thicknesses, machine for reducing and smoothing.	Tristram D. Knight	Charleston, Tenn	Mar. 3, 1857.
17017	Boring-machine	Jonas Bosenbury	Cherryville, N. J	April 14, 1857.
18057	Boring-machine	Emmett Quinn	Trenton, N. J	Aug. 25, 1857.
18872	Boring-machine	Lafayette Stevens, assignor to William L. Gibson.	Elmira, N. Y	Dec. 15, 1857.
17630	Boring-machines, device for feeding and limiting the depth of hole in.	Levi B. Lloyd	Warwick Township, Pa	June 23, 1857.
17799	Boring-machines, mortise, device for feeding the cutter intermittently in.	Hiram E. Payne	Troy, N. Y	July 14, 1857.
18370	Boring-machines, wood	Lafayette Stevens, assignor to William L. Gibson.	Elmira, N. Y	Oct. 6, 1857.
	Boring-mills. (See Class II, letter B)			
17001	Boxes, cylindrical, machine for manufacturing	Horace S. Smith, Elijah Hanson, and M. S. Richardson.	Rutland, Vt	April 7, 1857.
18287	Bungs, machine for cutting	Josiah Kirby	Cincinnati, Ohio	Sept. 29, 1857.
16800	Chair-seats, solid wooden, machine for forming the curved surface of.	E and A. and C. Kilburn	Burlington, Vt	Mar. 10, 1857.
18161	Chisel, mortising	John A. Scroggs	Burlington, Vt	Sept. 8, 1857.
18838	Dove-tails, adjustable gauge for	Juan S. L Babbs and Amos H. Ray	Boston, Mass	Dec. 15, 1857.
16627	Dove-tails and their grooves, machine for cutting.	Elbridge G. Mathews, assignor to Harvey Church	Clear Water, Minn Troy, N. Y	Feb. 10, 1857.
18877	Drawing-knife	Richard N. Watrous	Charlestown, Ohio	Dec. 15, 1857.
18305	Drilling and milling machine	William D. Sloan	New York, N. Y	Sept. 29, 1857.
16936	Forms, irregular, lathe for turning automatic	William D. Sloan	New York, N. Y	Mar. 31, 1857.
17403	Gauge, compound	Albert Williams	Philadelphia, Pa	May 26, 1857.
16816	Hoop-pole machines, method of operating the splitting knife in.	Carver Washburn	Bridgewater, Mass	Mar. 10, 1857.
17014	Hoop-poles, splitting, machine for	Joseph and Sylvester Sawyer, assignors to the American Hoop Machine Company.	Fitchburg, Mass	April 7, 1857.
	Hoops, cheese. (See Class XII, letter H.)			
17500	Hub-blocks for the lathe, machine for preparing	Lovitt Eames	Kalamazoo, Mich	June 9, 1857.
16402	Hub-borer	John Shaerer	Reading, Pa	Jan. 13, 1857; add'l improvement July 13, 1857.
18808	Hubs, boring, machine for	Zina Doolittle	Perry, Ga	Dec. 8, 1857.
18612	Hubs for boring, clamp for centering	John Thrasher	Avon, N. Y	Nov. 10, 1857.
16932	Hubs while being bored, centering and holding, method of.	Albert Moore	Honeoye, N. Y	Mar. 31, 1857.
17735	Joiners' ploughs, device for securing the stocks to the guide rods of.	Stephen Going	New York, N. Y	July 7, 1857.
16557	Joining boxes, &c., method of	James Stimpson	Baldwinsville, Mass	Feb. 3, 1857.
16493	Lathe-machine	Joseph B. Okey	Indianapolis, Ind	Jan. 27, 1857.
17782	Lathe, automatic	Alexander Edmonds	Mount Pulaski, Ill	July 14, 1857.
17866	Lathe, automatic, for turning irregular forms	Samuel N. Baker	New Haven, Conn	July 28, 1857.
	Lathe, watch-maker's, chuck for. (See Class XVIII, letter L.)			

XIV.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees	Residence.	Date of patent.
17762	Lathes for beaded work, mode of operating radical cutters in.	George W. Walton and Henry Edgarton	Wilmington, Del.	July 7, 1857.
18268	Lathes for manufacture of clothes pins, &c	John Humphrey, assignor to himself and Amos E. Berry.	Keene, N. H	Sept. 22, 1857.
18120	Lathes, sliding-rest for	Eleazor S. Gardner, assignor to Smith, Gould, & Co.	Philadelphia, Pa	Sept. 1, 1857.
18112	Lathes, socket, coupling for	George N. Trowbridge	Lowell, Mass	Sept. 1, 1857.
17313	Lumber, pieces of, arrangement of devices for dressing.	Harvey Brown	New York, N. Y	May 19, 1857.
17494	Mitre-box	George L. Chapin	Perrysburgh, N Y	June 9, 1857.
17880	Mortising and boring machine	J. M. Joy	Canton, Ohio	July 28, 1857.
17285	Mortising-chisel	George P. Ketcham	Bedford, Ind	May 12, 1857.
17878	Mortising-chisel	C. J. Heistand	Rapho, Pa	July 28, 1857.
16332	Mortising-machine	Charles Green	Bethel, Ohio	Jan. 6, 1857.
17701	Mortising-machine	H. B. Smith	Lowell, Mass	June 30, 1857.
18521	Mortising-machines, chisel in, device for reversing the.	Caleb B. Rogers	Norwich, Conn	Oct. 27, 1857.
18535	Mortising-machines, chisel in, method for reversing the.	D. M. Cummings and P. C. Cambridge, jr.	North Enfield, N. H	Nov. 3, 1857.
18977	Mortising-machines, device for throwing into and out of gear the tool of.	Levi Kittinger	East Greenville, Ohio	Dec. 29, 1857.
17183	Mortising-machines, method of reversing the chisels of.	Moses Marshall, assignor to Richard Ball and Charles H. Ballard.	Lowell, Mass	April 28, 1857.
17141	Mortising the stiles for blind-slats, machine for.	D. T. Drake	Leominster, Mass	April 28, 1857.
17657	Plane, bench	Thomas D. Worrall, assignor to himself and Thomas F. Caldicott, assignors to Thomas F. Caldicott.	Lowell, Mass	June 23, 1857.
17553	Plane, bench, stock for	Joel Bryant	Brooklyn, N. Y	June 16, 1857.
17965	Plane-bits, machine for whetting	Jesse M. Gilstrap	Fayetteville, Ark	Aug. 11, 1857.
16805	Plane, carpenter's	Oldin Nichols	Lowell, Mass	Mar. 10, 1857.
16889	Plane, carpenter's	M. B. Tidey	Ithaca, N. Y	Mar. 24, 1857.
17541	Plane, hand, tonguing and grooving	Porter A. Gladwin, assignor to himself and Thomas F. Caldicott.	Boston, Mass	June 9, 1857.
17618	Plane-irons in their stocks, method of holding and adjusting.	Willard W. Chipman	Lowell, Mass	June 23, 1857.
17645	Plane-irons in their stocks, mode of securing and adjusting.	William Stoddard	Lowell, Mass	June 23, 1857.
16569	Plane, joiner's	J. F. Palmer, assignor to S. W. Palmer	Auburn, N. Y	Feb. 3, 1857.
17286	Plane, joiner's	Benjamin J. Lane	Newburyport, Mass	May 12, 1857.
17332	Plane, joiner's	James Lashbrooks	Owensburg, Ky	May 19, 1857.
17951	Plane, joiner's	Thomas D. Worrall	Lowell, Mass	Aug. 4, 1857.
16954	Plane-stocks, carpenters', machine for cutting the throats of.	Henry S. Dewey, assignor to H. S. Dewey and L. W. Newton.	Bethel, Vt	Mar. 31, 1857.
18312	Planes, joiners', method of attaching adjustable handles to.	Thomas D. Worrall	Lowell, Mass	Sept. 29, 1857.
16412	Planes, size of the mouth in, method of adjusting the.	Thomas J. Tolman	South Scituate, Mass	Jan. 13, 1857.
17921	Planes, smothing-stock for	John F. W. Erdmann	Philadelphia, Pa	Aug. 4, 1857.
17300	Planing chair-seats, machine for	Edward Q. Smith	Cincinnati, Ohio	May 12, 1857.
17343	Planing-cutters, rotary	Henry D. Stover	Boston, Mass	May 19, 1857.
18007	Planing-cutters, rotary	H. H. Baker	New Market, N. J	Aug. 18, 1857.
16513	Planing hoops, machine for	Sylvester Sawyer, assignor to American Hoop Machine Company.	Fitchburg, Mass	Jan. 27, 1857.
17171	Planing hoops, machines for	Thaddeus S. Scoville	Elmira, N. Y	April 28, 1857.
18806	Planing-machine	John D. Dale	Philadelphia, Pa	Dec. 8, 1857.
17963	Planing-machines, arrangement of feed-rollers for.	Benaiah Fitts	Worcester, Mass	Aug. 11, 1857.
17315	Planing-machines, dogging lumber in, devices for.	David N. B. Coffin, jr., and Henry D Stover.	Boston, Mass	May 19, 1857.
17873	Planing-machines, shell-roller bed for	George Darby and James E. Young	Augusta, Me	July 28, 1857.
17833	Planing-machines, &c., feed rollers of	Jonathan Hall	Worcester, Mass	July 21, 1857.
16403	Planing shingles or tapering pieces, machine for.	Reuben W. Sharp	Montgomery, Ala	Jan. 13, 1857.
16427	Sashes, &c., making, method of	Daniel Berlew	Delaware, Ohio	Jan. 13, 1857.
18089	Saw-clamp	Leonard O. Fairbanks	Bridgeton, Me	Sept. 1, 1857.
	Saw-filer. (See Class II.)			
18378	Saw-filer	A. M. Beardsley	White Pigeon, Mich	Oct. 13, 1857.
18415	Saw-filer	Jonathan Smith	Agawam, Mass	Oct. 13, 1857.
18324	Saw-filing machine	Jeremiah S. Cole and Harley Stone	Blackstone, Mass	Oct. 6, 1857.
17153	Saw-gummer	Oliver B. Judd	Little Falls, N. Y	April 28, 1857.

XIV.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
18394	Saw-mill	Wooster A. Flanders James B. Drake, and A. M. Fox	Troy, N. Y Williamsport, Pa Elmira, N. Y	Oct. 13, 1857.
17537	Saw-mill blocks, automatic	Hiram Wells	Florence, Mass	June 9, 1857.
16795	Saw-mill clogs, method of operating	George W. Hearn	Princess Ann, Md	Mar. 10, 1857.
16888	Saw-mill dogs	John A. Taplin	Fishkill, N. Y	Mar. 24, 1857.
18860	Saw-mill, portable	T. T. Prosser	Oconomowock, Wis	Dec. 15, 1857.
18474	Saw-mill, reciprocating	Samuel Tarver	Augusta, Ark	Oct. 20, 1857.
17677	Saw-mills, adjustable fender posts for	Henry Harpold	Racine, Ohio	June 30, 1857.
16876	Saw-mills, double carriages in, method of operating.	Franklin B. Kendall	Bath, Me	Mar. 24, 1857.
17170	Saw-mills, head-blocks of, method of setting	Ira Robbins	Unityville, Pa	April 28, 1857.
16697	Saw-set	Joseph D. Spiller	Concord, N. H	Feb. 24, 1857.
17099	Saw-set	Oliver B. Judd	Little Falls, N. Y	April 21, 1857.
17620	Saw-set	Jacob Erdle	West Bloomfield, N. Y	June 23, 1857.
18921	Saw-set	Edward Marshall	Brooklyn, N. Y	Dec. 22, 1857.
18114	Saw-teeth, planing-machine for	John N. Wilkins	Waukegan, Ill	Sept. 1, 1857.
18039	Saw-teeth, setting-swage for	Pearson Crosby	Fredonia, N. Y	Aug. 25, 1857.
17719	Sawing-apparatus, cross-cut	H. F. Willson, assignor to himself and Henry B. West.	Elyria, Ohio	June 30, 1857.
18745	Sawing beaded curves, machine for	John C. Hintz	Cincinnati, Ohio	Dec. 1, 1857.
16814	Sawing, circular, machine	C. P. S. Wardwell	Lake Village, N. H	Mar. 10, 1857.
18402	Sawing given curvatures, device for guiding the logs in.	Thomas Miles	Greenbush, N. Y	Oct. 13, 1857.
18960	Sawing hand-rails or stair-wreaths, machine for.	John Davis	Cincinnati, Ohio	Dec. 29, 1857.
16407	Sawing hoops, machine for	Emerson C. Strange	Taunton, Mass	Jan 13, 1857.
16435	Sawing-machine	George Gregg	Lowe's Mills, Va	Jan. 20, 1857.
17112	Sawing-machine	H. F. Purmost	Saginaw City, Mich	April 21, 1857.
18443	Sawing-machine	J. T. Foster	Jersey City, N. J	Oct. 20, 1857.
18570	Sawing-machine	Harvey Brown	New York, N. Y	Nov. 10, 1857.
16894	Sawing-machine, circular	George F. Woolston	Washington, D. C	Mar. 24, 1857.
19005	Sawing-machine, circular	E. H. De Witt, assignor to himself and Butler N. Strong.	Xenia, Ohio	Dec. 29, 1857.
16326	Sawing-machine, cross-cut	William Cady.	Eaton, Ohio	Jan. 6, 1857.
18943	Sawing-machine, cross-cut	George R. Moore, assignor to himself and Charles G. Sargent.	Westford, Mass	Dec. 22, 1857.
16883	Sawing-machine, cross-cut, portable	Stephen Scotton	Richmond, Ind	Mar. 24, 1857.
17686	Sawing-machine for felling trees	Matthew Ludwig	Boston, Mass	June 30, 1857.
17454	Sawing-machine, portable cross-cut	Stephen Scotton	Richmond, Ind	June 2, 1857.
17601	Sawing-machine, portable steam	Samuel R. Wilmot and R. G. Fairbanks	Watertown, Conn Brooklyn, N. Y	June 16, 1857.
17425	Sawing-machine, scroll	John J. Curtis	East Boston, Mass	June 2, 1857.
18942	Sawing-machinery, circular, method of governing the cut of.	A. C. Martin and M. M Wombaugh, assignors to A. C Martin and R. Ashcroft.	Cincinnati, Ohio	Dec. 22, 1857.
16606	Sawing-machines, arrangement of devices for suspending and adjusting sticks in.	Ezekiel Page	Platea, Pa	Feb. 10, 1857.
18269	Sawing-machines, circular, method of holding and setting the log in.	James H. Bachelder	Rome, Mich	Sept. 29, 1857.
16854	Sawing-machines, circular, portable reciprocating.	Osborn E. Stevens	McCall's Ferry, Pa	Mar. 17, 1857.
16812	Sawing-machines, circular, table-gauge for	M. B. Tidey	Ithaca, N. Y	Mar. 10, 1857.
18066	Sawing-machines, cross cut, method of clamping logs in	Stephen Woodard	New London, N. H	Aug. 25, 1857.
17860	Sawing-machines, feeding arrangement for	Thomas J. Alexander	Westerville, Ohio	July 28, 1857.
16454	Sawing-machines, feeding lumber laterally in, method of	Samuel R. Smith	Florence, Mass	Jan. 20, 1857.
18948	Sawing-machines, gearing for feed-rollers in re-	D. B. Bartholomew	Lancaster, Pa	Dec. 29, 1857.
17626	Sawing-machines, picker	John Haw	Old Church, Va	June 23, 1857.
17629	Sawing-mill	James G Kennedy	Cincinnati, Ohio	June 23, 1857.
17840	Sawing-mill	Franklin B. Kendall	Bath, Me	July 21, 1857.
17829	Sawing-mill	William F. Ferry, jr	Ferrysburg, Mich	July 21, 1857.
16725	Sawing-mill, circular	Philander Eggleston	Mobile, Ala	Mar. 3, 1857.
18098	Sawing-mills, feed and gigging movement for	George D. Lund	Yonkers, N. Y	Sept. 1, 1857.
17226	Sawing-mills, self-reversing feed motion for	Daniel & Angus A. Methven	Wooster, Ohio	May 5, 1857.
16624	Sawing, re-, lumber, machine for	Simon P. Winne	Albany, N. Y	Feb. 10, 1857.
17026	Sawing shingles, machine for	Jonathan Creager	Cincinnati, Ohio	April 14, 1857.
18354	Sawing shingles, machine for	Jesse Gilman	Nashua, N. H	Oct. 6, 1857.
18967	Sawing shingles, machine for	George Hall	Morgantown, Va	Dec. 29, 1857.
17346	Saws, circular, device for allowing play to the arbors of.	H. R. Wolfe	Louisville, Ky	May 19, 1857.

XIV.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
16643	Saws, circular, device for allowing, to play laterally independent of their shafts.	A. P. Gross	St. Louis, Mo	Feb. 17, 1857.
16655	Saws, circular, device to allow, end play independent of the driving-shaft.	William S. Reeder	St. Louis, Mo	Feb. 17, 1857.
17521	Saws, circular, method of adjusting, obliquely to their shafts.	G. R. Scriven	Philadelphia, Pa	June 9, 1857; antedated May 18, 1857.
16339	Saws, circular, method of adjusting to any required dish.	Josiah B. Pomroy	Chicago, Ill	Jan. 6, 1857.
17861	Saws, circular, method of driving	Thomas J. Alexander	Waterville, Ohio	July 28, 1857.
16424	Saws, circular, method of mounting and grinding.	G. F. S. Wright	Black Oak, S. C	Jan. 13, 1857.
17518	Saws, circular, shield and guide for	George W. Rodeboy	Milwaukie, Wis	June 9, 1857.
18957	Saws, clamp for setting	Cyrus E Cook	Cambridge, Ohio	Dec 29, 1857.
18017	Saws, dressing, machine for	Philo Maltby	Dayton, Ohio	Aug. 18, 1857.
	Saws, filing (See Class II.)			
18250	Saws, filing and setting, machine for	A. C. Smith and Joseph K. Creighton	East Birmingham, Pa	Sept. 22, 1857.
17774	Saws, gauging and filing, machine for	Emanuel Andrews	Elmira, N. Y.	July 14, 1857.
17110	Saws, grinding	Albert S. Nippes	Lower Marion, Pa	April 21, 1857.
17432	Saws, hand-gauge, attachment for	Michael Kennedy	Troy, N. Y	June 2, 1857
18651	Saws, hand, method of adjusting, to circular stocks.	Jacob Vaughan	Exchangeville, Pa	Nov. 17, 1857.
16782	Saws, machine for grinding	Emanuel Andrews	Elmira, N. Y	Mar. 10, 1857.
16421	Saws, "muley," method of hanging, guiding, and adjusting.	A. Winter	Pickens C. H, S. C	Jan. 13, 1857.
16416	Saws, reciprocating, method of hanging and operating.	Carlyle Whipple	Lew ston, Mo	Jan. 13, 1857.
18547	Saws, scroll, method of operating	John L. Lawton	Baltimore, Md	Nov. 3, 1857.
17823	Saws, two circular, mode of cutting tenons by, oblique to shaft.	William H. Harrison	Philadelphia, Pa	July 14, 1857.
18828	Shingle	S. R. Tenney and Asa Bennett	Hubbardston, Mass	Dec. 8, 1857
17254	Shingle-cutter, rotary	William Bevard	St. Louis, Mo	May 12, 1857.
16546	Shingle-machine	William Huey	Columbia, Pa	Feb. 3, 1857.
16562	Shingle-machine	William A. Whiting	St. Louis, Mo	Feb. 3, 1857.
16742	Shingle-machine	H. D. McGeorge	Morgantown, Va	Mar. 3, 1857.
16964	Shingle-machine	John L. Brown	Indianapolis, Ind	April 7, 1857.
17104	Shingle-machine	G H. Mallary	New York, N. Y	April 21, 1857.
17347	Shingle-machine	C. M. Young	Sinclearville, N. Y	May 19, 1857.
17378	Shingle-machine	W. A Jarratt	Peytonsville, Tenn	May 26, 1857.
17906	Shingle-machine	Elbridge Webber	Gardiner, Me	July 28, 1857.
18512	Shingle-machine	Simeon Marshall	Philadelphia, Pa	Oct. 27, 1857.
18681	Shingle-machine	James Crary	Kittaning, Pa	Nov. 24, 1857.
16911	Shingle-machine, rotary	Edwin Edwards	Oneida Lake, N. Y	Mar. 31, 1857.
17907	Shingle-machines, method of feeding the bolt in.	William Wood	Westport, Conn	July 28, 1857.
18679	Shingles from the bolt, machine for cutting	E. K. Collins	Cambridge, Mass	Nov. 24, 1857.
18222	Shingles, method of manufacturing	James E. Young	Augusta, Me	Sept. 15, 1857.
18207	Spoke-machine	Samuel Lord	Perry, Ga	Sept. 15, 1857.
18680	Spoke-machine	George W. Cook	Springfield, N. J	Nov. 24, 1857.
17111	Spoke-shaves, knives of, method of adjusting and holding the.	Manley Packard	North Bridgewater, Mass	April 21, 1857.
16532	Spokes, tool for tenoning	John J. Croy	Caledonia, Mo	Feb. 3, 1857.
17106	Square, mitre-square, and bevel, combined	A. McKenzie	Boston, Mass	April 21, 1857.
16857	Squares, carpenters', machines for graduating	Heman Whipple	Shaftsbury, Vt	Mar. 17, 1857.
16817	Squares, carpenters', machines for stamping figures on.	Heman Whipple	Shaftsbury, Vt	Mar. 10, 1857.
17139	Stave-machine	Henry L. McNish, assignor to H. L. McNish and D. C. Butler.	Lowell, Mass	April 21, 1857.
16746	Staves, bevelling and jointing, machine for	Erasmus M. Pitman	Warren county, Va	Mar. 3, 1857.
18123	Staves, crozing and chamfering, machine for	H. L. McNish, assignor to himself and David C. Butler.	Lowell, Mass	Sept. 1, 1857.
17871	Staves, method of sawing, from the bolt and dressing their edges simultaneously.	E. K. Collins	Cambridge, Mass	July 28, 1857.
18088	Staves, sawing, machine for	Peter Deal James Greenman	Amsterdam, N. Y Northampton, N. Y	Sept. 1, 1857.
16849	Staves, tapering, machine for planing	Valentine Munck	Carrollton, La	Mar. 17, 1857.
17946	Staves, &c., machine for bevelling	J. Trahin and C. Voebel	New Orleans, La	Aug. 4, 1857.
17816	Tenon-cutters, round, method of adjusting to certain fixed sizes.	Melyn Weatherington	Springfield, Ohio	July 14, 1857.
17219	Tenoning, adjustable bed and gauge to regulate	David Hodges	Suffolk, Va	May 5, 1857.
17175	Tenoning blind-slats, machine for	Lafayette Stevens	Elmira, N. Y	April 28, 1857.
18212	Tenoning-machine	Perry Putnam and John E. Crane	Lowell, Mass	Sept. 15, 1857.

XIV.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
16534	Tenons or blind slats, machine for cutting	Seth C. Ellis	Albany, N. Y	Feb. 3, 1857.
16453	Timber, bending, machine for	James D. Sarven	Columbia, Tenn	Jan. 20, 1857.
18974	Timber, hewing, guide-gauge for	Jacob Hoke	Grand Detour, Ill	Dec. 29, 1857.
18588	Turning spiral forms, machine for	John C. Hintz	Cincinnati, Ohio	Nov. 10, 1857.
18001	Turning spools, machines for	A. D. Waymoth, assignor to himself and H. W. Page.	Fitchburg, Mass	Aug. 11, 1857.
16705	Turning tapering sticks, device to operate the mandrel-cutters in.	Peter H. Niles, assignor to himself, N. Hunt, R. C. Webster, and A. Douglas, jr.	Boston, Mass	Feb. 24, 1857.
17958	Veneer-machine, rotary	Gilbert Bishop	New York, N. Y	Aug. 11, 1857.
17072	Veneers, cutting, knife for	Gilbert Bishop	New York, N. Y	April 21, 1857.
16529	Veneers, machine for cutting	Peter Cook	Tonawanda, N. Y	Feb. 3, 1857.
17190	Veneers, machine for cutting	Gilbert Bishop	New York, N. Y	May 5, 1857.
17736	Veneers, machine for straightening	Joseph H. Goodell	Bridgeport, Conn	July 7, 1857.
17329	Wash-boards, machine for making	Edward and Britain Holmes	Buffalo, N. Y	May 19, 1857.
18944	Wash-boards, stiles of, machine for cutting the zigzag grooves in the.	O. S. Reynolds, assignor to H. F. Snow	Dover, N. H	Dec. 22, 1857.
18171	Wash-boards, wooden, method of manufacturing.	L. B. Batcheller, assignor to West, Canfield, & Co.	Arlington, Vt	Sept. 8, 1857.
18379	Wood, bending, machine for	Charles F. Beverly	Lancaster, Ohio	Oct. 13, 1857.
18917	Wood, carving, machine for	Isaac Lindsley	Providence, R. I	Dec. 22, 1857.
17169	Wood, splitting, machine for	Waterman L. Ormsby	Jersey City, N. J	April 28, 1857.
17061	Wood, splitting, machines for	W. L. Williams	New York, N. Y	April 14, 1857.
17249	Wooden boxes, cylindrical, cutters for turning.	Henry Mellish, assignor to Charles Pope	Walpole, N. H Brooklyn, Mass	May 5, 1857.
18646	Wooden boxes, turning, machine for	Alexander S. Newton	Brandon, Vt	Nov. 17, 1857.
16953	Wooden slats, &c., form or mould on which, are made into baskets.	Joel A. H. Ellis, assignor to Joel Woodbury, as trustee.	Springfield, Vt	Mar. 31, 1857.
17992	Wooden surfaces, planed, machines for smoothing.	Baxter D. Whitney	Winchendon, Mass	Aug. 11, 1857.

CLASS XV.—STONE AND CLAY MANUFACTURES, *including machines for pottery, glass-making, brick-making, dressing and preparing stone, cements, and other building materials.*

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
18629	Brick-machine	John B. Collen	Philadelphia, Pa	Nov. 17, 1857.
16385	Brick-machines	J. Hockman	Mexico, Ind	Jan. 13, 1857.
16449	Brick-machines	B. F. Nave	Roanoke, Ind	Jan. 20, 1857.
16561	Brick-machines	William Wood	Hartford, Conn	Feb. 3, 1857.
16839	Brick-machines	Almon V. Hough and Richard W. Jones	Green Castle, Ind	Mar. 17, 1857.
16907	Brick-machines	James A. Dorr, Ira Hersey, and Edward G. Oldfield.	New York, N. Y	Mar. 31, 1857.
17131	Brick-machines	G. I. Washburn and E. H. Bellows, assignors to themselves and C. Washburn.	Worcester, Mass	April 21, 1857.
17220	Brick-machines	Joseph W. Jayne	Sandusky, Ohio	May 5, 1857.
17248	Brick-machines	James Hotchkiss and William H. Schofield, assignors to themselves and William R. King.	Yellow Springs, Ohio	May 5, 1857.
17390	Brick-machines	Stephen Parks	San Francisco, Cal	May 26, 1857.
17759	Brick-machines	Stephen Ustick	Philadelphia, Pa	July 7, 1857.
18040	Brick-machines	P. S. Devlan	Reading, Pa	Aug. 25, 1857.
18166	Brick-machines	Stephen Ustick	Philadelphia, Pa	Sept. 8, 1857.
18226	Brick-machines	George I. Washburn, assignor to himself and Anson L. Hobart.	Worcester, Mass	Sept. 15, 1857.
16468	Brick-machines, rotary	George Crangle	Philadelphia, Pa	Jan. 27, 1857.
16649	Brick-press	Samuel Lille, jr	Fort Wayne, Ind	Feb. 17, 1857.
18318	Brick-press	E. H. Bellows	Worcester, Mass	Oct. 6, 1857.
17546	Brick-presses	R. H. Harbour	Oskaloosa, Iowa	June 9, 1857.
17203	Brick, rotary, machines	George Crangle	Philadelphia, Pa	May 5, 1857.
17999	Bricks, moulding, machines for	I. Z. A. Wagner, assignor to P. H. Watson, assignor to E. S. Renwick.	Philadelphia, Pa	Aug. 11, 1857.
16457	Cement, roofing	R. H. Smith	Cincinnati, Ohio	Jan. 20, 1857.
17505	Clay-pulverizers	Ira Hersey and James H. Van Riper	New York, N. Y	June 9, 1857.
18059	Glass-furnaces	Samuel Richards	Philadelphia, Pa	Aug. 25, 1857.
17960	Glass-ware holder	Hiram Dillaway	Sandwich, Mass	Aug. 11, 1857.
18392	Hones, artificial	Timothy Deming	East Hartford, Conn	Oct. 13, 1857.

XV.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
17098	Kiln, lime	Aaron Jeffries	Wilkins, Pa	April 21, 1857.
17056	Kilns, lime	William Robinson	Baltimore, Md	April 14, 1857.
17807	Kilns, lime	Leonard Phleger	Philadelphia, Pa	July 14, 1857.
17885	Kilns, lime	John McGregor	Selma, Ala	July 28, 1857.
17889	Kilns, lime	C. D. Page	Rochester, N. Y	July 28, 1857.
17986	Kilns, lime	Daniel Stephens	Elmira, N. Y	Aug. 11, 1857.
18531	Kilns, lime	A. G. Anderson	Quincy, Ill	Nov. 3, 1857.
18635	Kilns, lime	Powell Griscom and Charles S. Denn	Baltimore, Md	Nov. 17, 1857.
18764	Kilns, lime	Jacob Newkirk	Factoryville, N. Y	Dec. 1, 1857.
17125	Pipes, &c., clay, machines for forming	Charles P. S. Wardwell	Lake Village, N. H	April 21, 1857.
18298	Pottery-ware, machines for manufacturing	Philip Pointon	Baraboo, Wis	Sept. 29, 1857.
	Rock-cutting and drilling machine. (See Class IX, letter D.)			
16687	Slates, marking	John W. Hoard	Providence, R. I	Feb. 24, 1857.
	Slates, school. (See Class XXII.)			
17993	Stone and glass, polishing, machines for	George H. Wood	Green Bay, Wis	Aug. 11, 1857.
16545	Stone, dressing and polishing, machines for	David Hinman	Berea, Ohio	Feb. 3, 1857.
16799	Stone, fire-proof	Thomas Hodgson	Brooklyn, N. Y	Mar. 10, 1857.
16460	Stone-grooving machines	George W. Bishup	Brooklyn, N. Y	Jan. 27, 1857.
16878	Stone into regular forms, machines for breaking slabs or blocks of.	Ira Merrill	Shelburne Falls, Mass	Mar. 24, 1857.
16672	Tile-machine	Junius Foster, assignor to J. Herbold, George Kuhn, and Junius Foster.	Brooklyn, N. Y	Feb. 17, 1857.

Class XVI.—Leather, *including tanning and dressing, manufacture of boots, shoes, saddlery, harness, &c.*

No.	Inventions or discoveries.	Patentees.	Residence.	Date of Patent.
17051	Boot and shoe heels	Stephen Oliver, jr.	Lynn, Mass	April 14, 1857.
18227	Boot and shoe sole-cutter	Parker Wells, assignor to Samuel Mower	Middleton, Mass	Sept. 15, 1857.
18237	Boot and shoe soles, edge-planes for trimming	Isrec A. Dunham	North Bridgewater, Mass	Sept. 22, 1857.
17408	Boot and shoe soles, India rubber, gutta-percha, and other machines for cutting.	Stephen Thurston, assignor to himself, Marcus L. Ward, and Huntington & Co.	Newark, N. J	May 26, 1857.
17905	Boot and shoe soles, trimming the edges of, edge-plane for.	Charles Warren	Putnam, Conn	July 28, 1857.
17603	Boot-counters, skiving, machine for	William Butterfield and Bradford Stetson, assignors to themselves and E Townsend.	Boston, Mass	June 16, 1857.
16670	Boot-crimping machines	J. G. Baker, jr., assignor to J. G. Baker, jr., and Charles Bradfield.	Philadelphia, Pa	Feb. 17, 1857.
18074	Boot-crimps	William W. Willmott, assignor to himself and Amos H. and Charles H. Brainard	Boston, Mass	Aug. 25, 1857.
17067	Boot-trees	William W. Willmott, assignor to himself and Henry F. Gardner	Boston, Mass	April 14, 1857.
17947	Boot-trees	William Upfield	Lancaster, Ohio	Aug. 4, 1857.
17455	Boots and shoes, heels of, heel-cutter for cutting out.	John Shaw	Natick, Mass	June 2, 1857.
18152	Boots and shoes, lasting, machines for	John Kimball	Boston, Mass	Sept. 8, 1857.
17998	Boots and shoes, machines for pegging	Benjamin F. Sturtevant, assignor to himself and Elmer Townsend.	Boston, Mass	Aug. 11, 1857.
18594	Boots and shoes, patterns for cutting out the uppers of.	W. W. Merriam	Oswego, N. Y	Nov. 10, 1857.
17514	Boots and shoes, pegging, machines for	B. F. Sturtevant, assignor to himself and Elmer Townsend.	Boston, Mass	June 9, 1857.
18170	Boots and shoes, pegging, machines for	Seth D. Tripp, assignor to himself and Luther Hill	Winchester, Mass	Sept. 8, 1857.
18879	Boots and shoes, pegging, machines for	Wm. Wells, assignor to Edgar M. Stevens	Boston, Mass	Dec. 15, 1857.
18583	Boots and shoes, water-proof, soles and heels for	B. D. Godfrey	Milford, Mass	Nov. 10, 1857.
18291	Boots and shoes without seams, manufacture of the "uppers" of.	Samuel Middleton	England	Sept. 29, 1857; England, Nov. 3, 1856.

XVI.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
17524	Boots, manufacture of	James Scrimgeour	Brooklyn, N. Y	June 9, 1857.
17268	Bridle-bits, connecting the cheek-piece to the mouth-piece of, method of.	Kasson Fraser	Syracuse, N. Y	May 12, 1857.
16347	Buckles	George P. Woodruff	Watertown, Conn	Jan. 6, 1857.
17545	Carpet-bags	Joseph Zepfel, assignor to Joseph Zepfel and John B. Radley.	New York, N. Y	June 9, 1857.
16834	Collars, horse, machines for stuffing	Wade H. Haworth	Philadelphia, Pa	Mar. 17, 1857.
17902	Collars, horse, machines for stuffing	J. C. Tobias	Lincoln, Ill	July 28, 1857.
18290	Hame-tug fastening	W. J. Lockwood	Sturgis, Mich	Sept. 29, 1857.
16475	Hames, fastenings for	Henry A. Fowler	East Guilford, N. Y	Jan 27, 1857.
18601	Harness-buckles	John Prendergast	Boston, Mass	Nov. 10, 1857.
16660	Harness for horses	Joseph Smith	Delaware, Ohio	Feb. 17, 1857.
16530	Harness-hames, fastenings for	Homer Compton	Wells' Corner, Pa	Feb. 3, 1857.
17117	Harness-saddles	Palmer Shaw	Syracuse, N. Y	April 21, 1857.
18996	Harness-saddles	Richard Swift	New Haven, Conn	Dec. 29, 1857.
18790	Harness-traces, device for fastening	Joseph W. Briggs, assignor to Judson A. Lazell.	Cleveland, Ohio	Dec. 1, 1857.
18300	Harness, awning-frames for horses attachable to.	N. Pullman	New Oregon, Iowa	Sept. 29, 1857.
18614	Last-holders	A. J. Tewksbury	Haverhill, Mass	Nov. 10, 1857.
17160	Last-holders, revolving	Benjamin Marshall	Philadelphia, Pa	April 28, 1857.
18427	Lasting-pincers	B. F. Sturtevant, assignor to Elmer Townsend.	Skowhegan, Maine	Oct. 13, 1857.
18310	Lasts, hollow metallic	Sylvanus H. Whorf	Malden, Mass	Sept. 29, 1857.
17471	Leather and hides, process of splitting	Isaie Lippmann, assignor to M. J. A. Guiet.	Paris, France	June 2, 1857.
17576	Leather, scouring and setting, machines for	Peter E. Hummel	Pulaski. N. Y	June 16, 1857.
17445	Leather shoe-binding, manufacturing	E L. Norton	Charlestown, Mass	June 2, 1857.
16573	Leather, stuffing	Joseph Armstrong	Woburn Centre, Mass	Feb. 10, 1857.
17554	Leather, &c., splitting, rigid hoop-knife for	D. H. Chamberlain	West Roxbury, Mass	June 16, 1857.
18441	Leather, &c., stripping, machine for	A. R. E. Falck and Paul Stoerger	Newark, N. J	Oct. 20, 1857.
16345	Saddles, riding	Seth Ward	Princeton, Ind	Jan. 6, 1857.
18771	Saddles, riding	Joseph Rudisill	Natches, Miss	Dec. 1, 1857.
16566	Saddles, riding, ladies'	Robert Spencer	New York, N. Y	Feb. 3, 1857.
18246	Saddles, riding, stirrups for	James Neil	Yorkville, N. Y	Sept. 22, 1857.
16917	Shoe-lasts, machine for manufacturing	Alanson and William P. Haskell	North Brookfield, Mass	Mar. 31, 1857.
16559	Shoe-pegs, splitting, machine for	Nathaniel H Shaw	Tamworth, N. H	Feb. 17, 1857.
17399	Tanning-apparatus	Otis B. Wattles	Waddington, N. Y	May 26, 1857.
	Tanning-composition. (See Class IV, letter C.)			
16355	Tanning hides	E Daniels	Lafayette, Wis	Jan. 6, 1857.
17043	Tanning hides, composition for	David H. Kennedy	New Alexandria, Pa	April 14, 1857.
	Tanning-liquids. (See Class IV, letter T.)			
18599	Tanning-mills, lateral feed-motion for	Kingsley R. Olmstead	Chicago, Ill	Nov. 10, 1857.
18046	Trunks, mail-bags, &c., method of rendering the mouths of, water-tight.	Charles H. Hinckley	Stonington, Conn	Aug. 25, 1857.
16336	Trunks, travelling	Henry Loemenberg	New York, N. Y	Jan. 6, 1857.
17617	Whips, raw-hide, machines for polishing	Eugene Blattner	Philadelphia, Pa	June 23, 1857.
17133	Whips, raw-hide, method of manufacturing	Charles Baeder	Brooklyn, N. Y	April 28, 1857.

CLASS XVII.—HOUSEHOLD FURNITURE, *machines and implements for domestic purposes, including washing-machines, bread and cracker machines, feather-dressing, &c.*

No.	Inventions or discoveries	Patentees.	Residence.	Date of patent.
18476	Apple-slicer	Nathaniel Thomas	East Dixfield, Me	Oct. 20, 1857.
17484	Apples, paring and quartering, machines for	Charles F. Bosworth	Petersham, Mass	June 9, 1857.
16417	Apples, paring and slicing, machines for	D H. Whittemore	Chicopee, Mass	Jan. 13, 1857.
16517	Apples, paring and slicing, machines for	Clarissa A. Hubbard, administratrix of Guy H Hubbard, deceased.	Shelburne Falls, Mass	Jan 27, 1857.
17901	Apples, paring and slicing, machines for	R. W. Thickins	Brasher Iron Works, N. Y	July 28, 1857.
16443	Apples, paring, machines for	J. O. M. Ingersoll	Ithaca, N. Y	Jan. 20, 1857.
16666	Apples, paring, machines for	David H. Whittemore	Worcester, Mass	Feb. 17, 1857.
16843	Apples, paring, machines for	B F Joslyn	Worcester, Mass	Mar. 17, 1857.
16993	Apples, paring, machines for	J. J. Parker	Marietta, Ohio	April 7, 1857.
	Bath, shower, apparatus. (See Class XX)			
	Bathing apparatus. (See Class XX.)			
17282	Bed-bottoms	J. F. Keeler	Cleveland, Ohio	May 12, 1857.

XVII.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
17605	Bed-bottoms, spring	George W. Dow, assignor to himself and Walter F. French.	Lynn, Mass	June 10, 1857.
18357	Bed-bottoms, spring	Henry T. Smith	Washington, D. C	Oct. 6, 1857.
17558	Bed, invalid, elevators	D. S. Dunning	New York, N. Y	June 16, 1857.
18189	Beds, invalid	George H. Clark	Pontiac, Mich	Sept. 15, 1857.
18902	Bedstead-slats	Samuel Hickok	Buffalo, N. Y	Dec. 22, 1857.
17695	Bedstead-slats, suspending elastic loop for	Charles Robinson	Cambridgeport, Mass	June 30, 1857.
19008	Bedstead, steam-spring	Charles T. Young, assignor to himself and Henry Crowther.	North Chelmsford, Mass	Dec. 29, 1857.
17569	Bedsteads	Peter Hinds	Kendall Mills, Me	June 16, 1857.
16946	Bedsteads and sofas, life-preserving	John T. Garlick	New York, N. Y	Mar. 31, 1857.
17818	Bedsteads, bureau	Ethan Whitney	Boston, Mass	July 14, 1857.
16647	Bedsteads, folding	Benjamin Hinkley	Troy, N. Y	Feb. 17, 1857.
17281	Bedsteads, folding	James A. Johnston	Antrim, Ohio	May 12, 1857.
17460	Bedsteads, folding	John B. Wickersham	New York, N. Y	June 2, 1857.
18565	Bedsteads, folding, iron	Henry F. Vanderhove	New York, N. Y	Nov. 3, 1857.
18968	Bedsteads, spring-bottoms for	Royal Hatch	Strafford, Vt	Dec. 29, 1857.
17047	Bedsteads, wardrobe or bureau	James S. McCurdy	New York, N. Y	April 14, 1857.
	Bell-telegraphs, attaching wires to. (See Class VIII, letter T.)			
18597	Bread, machine for cutting	James Naughten	Cincinnati, Ohio	Nov. 10. 1857.
16877	Brooms, clamps for	Samuel Mason	Indian Springs, Md	Mar. 24, 1857.
18770	Brooms, machines for making	Spencer Rome	Baltimore, Md	Dec. 1, 1857.
17631	Brush-handles, machine for finishing	Thomas Mitchell	Lansingburg, N. Y	June 23, 1857.
18528	Brushes, machine for making	Leemon A. Tripp, assignor to Lewis C. Platt.	New York, N. Y	Oct. 27, 1857.
16950	Brushes, paint, manufacture of	James T. Steer	New York, N. Y	Mar. 31, 1857.
18647	Cake-cutter	George R. Peckham	Worcester, Mass	Nov. 17, 1857.
16684	Cans and bottles, sealing, elastic cap for	Rhoda Davis	Brookhaven, N. Y	Feb. 24, 1857.
18035	Cans, method of hermetically sealing	William Borrmann	Cincinnati, Ohio	Aug. 25, 1857.
18078	Cans, sealing	William Bennett	Baltimore, Md	Sept. 1, 1857.
17783	Cans, &c., bottles, device for sealing	Mills B. Espy	Philadelphia, Penn	July 14, 1857.
18631	Carpet-fastener	Stephen Culver	Newark, N. J	Nov. 17, 1857.
17488	Carpet-fastenings	David N. B. Coffin, jr	Newton, Mass	June 9, 1857.
17890	Carpets, fastenings for	Washington H. Penrose	Philadelphia, Penn	July 28, 1857.
17897	Carpets, fastenings for	R. E. Schroeder	Rochester, N. Y	July 28, 1857.
18466	Caster and fan, automatic	E. & A. H. Nordyke	Richmond, Ind	Oct. 20, 1857.
18740	Casters, bottle, revolving	Edward Gleason	Dorchester, Mass	Dec. 1, 1857.
18839	Casters for furniture	Timothy P. Burger	Oyster Bay, N. Y	Dec. 15, 1857.
18377	Chair for pews, folding	M. S. Beach	Brooklyn, N. Y	Oct. 13, 1857.
18873	Chair, infantine exercising	John Sawin, D. J. Goodspeed, and John H. Minott.	Gardner, Mass	Dec. 15, 1857.
17008	Chair, invalid	Ransom Witherell	Huntington, Mass	April 7, 1857.
18696	Chair, rocking, ventilating	David Kahnweiler	Wilmington, N. C	Nov. 24, 1857.
16635	Chairs, extension	S. J. Anderson and N. Richardson	Erieville, N. Y	Feb. 17, 1857.
17567	Chairs for invalids	James G. Holmes	Charleston, S. C	June 16, 1857.
18722	Chairs, rotary	Jordan L. Mott and William Tabele Assignors to "The J. L Mott Iron Works."	Mott Haven, N. Y New York, N. Y	Nov. 24, 1857.
16972	Chairs, sofas, and other articles, forming spiral springs for.	J. T. Foster, J. J. Banta, and J. H. Banta	Jersey City, N. J	April 7, 1857.
18632	Clothes-clamp	Lewis H. Cushman	Monmouth, Me	Nov. 17, 1857.
16923	Clothes-pins, slots in, machine for cutting	John Humphrey	Keene, N. H	Mar. 31, 1857.
17240	Clothes-pounder	Sardis Thompson	West Otis, Mass	May 5, 1857.
18930	Clothes-racks	S. I. Russell	Chicago, Ill	Dec. 22, 1857.
18777	Clothes-wringer	Riley Smith	Towanda, Penn	Dec. 1, 1857.
18710	Coffee-roasters	Elias Schneider and A. Kolman	New Tripoli, Penn	Nov. 24, 1857.
18263	Cooler	W. F. Messenger and Henry Rehahn	New York, N. Y	Sept. 22, 1857.
17697	Corn, green, modes of preserving	David Rome	Baltimore County, Md	June 30, 1857.
17048	Cups, molasses	Daniel W. Messer	Boston, Mass	April 14, 1857.
16673	Curtain fixtures	Lewis B Guzman, assignor to L B. Guzman, and H. W. and H. Safford.	Philadelphia, Pa	Feb. 17, 1857.
17059	Curtain-fixtures	C. H. Wheeler	Boston, Mass	April 14, 1857.
17967	Curtain-fixtures	Nathaniel S. Graves	Boston, Mass	Aug. 11, 1857.
18536	Curtain-fixtures	John W. Currier and James M. Thompson	Holyoke, Mass	Nov. 3, 1857.
18878	Curtain-fixtures	Lewis Whitehead	Buffalo, N. Y	Dec. 15, 1857.
16960	Curtain-fixtures, window	Ranson Ballou, jr., and B. F. Hooper	Albany, N. Y	April 7, 1857.
16989	Curtain-fixtures, window	Purches Miles	Hartford, Conn	April 7, 1857.
16741	Curtain-rollers	Purches Miles	Hartford, Conn	Mar. 3, 1857.
17368	Curtain-rollers	Chandler Fisher	Milton, Mass	May 26, 1857.
18323	Curtain-rollers	David N. B. Coffin, jr	Newton Centre, Mass	Oct. 6, 1857.

XVII.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
17006	Curtain-rollers, fixtures for	C. H. Wheeler	Boston, Mass	April 7, 1857.
17911	Curtain-rollers, fixtures for	Lewis White, assignor to himself and Elihu P. White.	Hartford, Conn	July 28, 1857.
18180	Dough, kneading	Hiram Berdan	New York, N. Y	Sept. 15, 1857.
18723	Dough, kneading, machine for feeding the flour, mixing the materials, and.	John Hecker and William Hotine, assignors to John Hecker.	New York, N. Y	Nov. 24, 1857.
18758	Dough, machines for rolling	John McCollom	New York, N. Y	Dec. 1, 1857.
18759	Egg-beaters	Harvey Miller	Cincinnati, Ohio	Dec. 1, 1857.
18849	Egg-beaters	John B. Heich	Cincinnati, Ohio	Dec. 15, 1857.
17517	Fans, automatic	L. Rebstock and N. Reimel	Philadelphia, Pa	June 9, 1857.
18493	Feather-dressing machine	Amon Bailey	East Poultney, Vt	Oct. 27, 1857.
18422	Graters	Nathan Ames, assignor to himself and Edmund Brown.	Saugus, Mass	Oct. 13, 1857.
17361	Griddles	William Bennett	New York, N. Y	May 26, 1857.
17461	Hat-stands	John B. Wickersham	New York, N. Y	June 2, 1857.
18543	Iron, smoothing	James Goodin, jr	Cincinnati, Ohio	Nov. 3, 1857.
17470	Irons, sad, holders for	Leon Londinsky, assignor to L. Londinsky and A. E. Becker.	New York, N. Y	June 2, 1857.
17105	Irons, smoothing	Galen B. McClain	Bath, Me	April 21, 1857.
18108	Irons, smoothing	William F. Shaw	Boston, Mass	Sept. 1, 1857.
18498	Jars, &c , metallic screw-cap for	John K. Chase	New York, N. Y	Oct. 27, 1857.
	Kettle, tea. (See Class V.)			
16887	Mangles	Richard A. Stratton	Philadelphia, Pa	Mar. 24, 1857.
17785	Mattresses	William P. Ford	Cheneyville, La	July 14, 1857.
18585	Mattresses, chairs, &c., springs for	William Hersee	Buffalo, N. Y	Nov. 10, 1857.
18886	Mattresses, ventilating	Thomas Tolman, assignor to John P. Saben.	West Townsend, Mass	Dec. 15, 1857.
17527	Mop-head	Edward P. Thompson	Worcester, Mass	June 9, 1857.
17877	Mop heads	James S. Harris	Poultney, Vt	July 28, 1857.
18645	Pitchers for molasses, &c	Edward Mingay	Boston, Mass	Nov. 17, 1857.
18526	Pitchers, water-cooling	Alonzo Hebbard	New York, N. Y	Nov. 3, 1857.
	Portfolio or music stands. (See Class XVIII, letter P.)			
18621	Quilting-frames	H. N. Dewey, assignor to B. S. Hill & Co.	Berlin Heights, Ohio	Nov. 10, 1857.
17588	Refrigerators	John C. Schooley	Cincinnati, Ohio	June 16, 1857.
17980	Sausage-cutters	Jacob Peters	Hummelstown, Pa	Aug. 11, 1857.
18778	Sausage-machines	W Sniff	Fultonham, Ohio	Dec. 1, 1857.
18748	Seats, standard for	John Irwin	Philadelphia, Pa	Dec. 1, 1857.
18713	Snuffers, candle	O. M. Stow and Augustus Barnes	Southington, Conn	Nov. 24, 1857.
18513	Spoons, iron, making	G. J Mix	Wallingford, Conn	Oct. 27, 1857.
18517	Spoons, iron, making	Russell B. Perkins	Meriden, Conn	Oct. 27, 1857.
16350	Tables, extension	Benjamin Clark, assignor to E. L. Ferguson and C. B. Clark.	Oriskany Falls, N. Y	Jan. 6, 1857.
18636	Tables, extension	Henry Gross	Tiffin, Ohio	Nov. 17, 1757.
18733	Tables, extension	Charles B. Clark	Mount Pleasant, Iowa	Dec. 1, 1857.
18891	Tables, extension	Edwin A. Curley	Westport, Conn	Dec. 22, 1857.
18042	Tables, self-waiting	William B. Farrar and Jonathan H. Farrar.	Evans' Mills, N. C	Aug. 25, 1857.
17087	Tea-kettles. &c	James Greenhalgh, sen	Waterford, Mass	April 21, 1857.
16752	Tin pans, manufacture of	E F. Parker and J. Smead	Proctorsville, Vt	Mar. 3, 1857.
18653	Tooth-brushes	H. N. Wadsworth	Washington, D. C	Nov. 17, 1857.
18630	Upholstery purposes, India-rubber springs for	Francis Colton	New York, N. Y	Nov. 17, 1857.
18929	Vegetable-cutter	William Robinson	Highgate, Vt	Dec. 22, 1857.
16667	Vegetables, cutting, machine for	H. A. Willard	Westminster, Vt	Feb. 17, 1857.
18965	Wash-board	W. M. Galusha and B. W. Safford	Arlington, Vt	Dec. 29, 1857.
18483	Washing-machine	Joel Wisner	Aurora, N. Y	Oct. 20, 1857.
18489	Washing-machine	Smith Skinner, assignor to William H. Skinner and Jacob Nichols, jr.	Lowell, Mass	Oct. 20, 1857.
18518	Washing-machine	Thomas J. Price	Industry, Ill	Oct. 27, 1857.
18642	Washing-machine	Abraham Huffer	Hagerstown, Md	Nov. 17, 1857.
18633	Washing-machine	Alexander Dickson	Hillsboro', N. H	Nov. 17, 1857.
18695	Washing-machine	John D. Jenkins	Jacksonville, Ill	Nov. 24, 1857.
18720	Washing-machine	Thomas A. Dugdale, assignor to himself and George Taylor.	Richmond, Ind	Nov. 24, 1857.
18721	Washing-machine	David Elliot, assignor to himself and Isaac White.	Pembroke, N. H	Nov. 24, 1857.
18889	Washing-machine	H. S. Bridwell	New Albany, Ind	Dec. 22, 1857.
18898	Washing-machine	George Hall and John Fordyce	Morgantown, Va	Dec. 22, 1857.
18956	Washing-machine	Thomas C Churchman	Sacramento, Cal	Dec. 29, 1857.
16567	Washing-machines	Amos Jacobs, deceased, Lydia Jacobs, administratrix of.	Ithaca, N. Y	Feb. 3, 1857.
16715	Washing-machines	Richard Collins	Chicopee, Mass	Mar. 3, 1857.
16751	Washing-machines	Louis C. Rodier	Detroit, Mich	Mar. 3, 1857.

XVII.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
17030	Washing-machines	Thomas A. Dugdale	Richmond, Ind	April 14, 1857.
17113	Washing-machines	Joseph F. Pond and Charles L. Pond	Cleveland, Ohio Buffalo, N. Y	April 21, 1857.
17166	Washing-machines	Josiah Mayes	Cohoes, N. Y	April 28, 1857.
17180	Washing-machines	H. D. Young	Junius, N. Y	April 28, 1857.
17377	Washing-machines	Abraham Huffer	Hagerstown, Md	May 26, 1857.
17784	Washing-machines	Adam Fisher	Leavenworth city, Kan	July 14, 1857.
18041	Washing-machines	Hiram F. Everitt	Benton, Pa	Aug. 25, 1857.
18045	Washing-machines	William M. Hammond	Jonesville, Mich	Aug. 25, 1857.
18050	Washing-machines	Justin Loomis	De Ruyter, N. Y	Aug 25, 1857.
18062	Washing-machines	Isaac A. Sergeant	Springfield, Ohio	Aug. 25, 1857.
18067	Washing-machines	Abram Wood	Camden, N. Y	Aug. 25, 1857.
18168	Washing-machines	Philip N. Woliston	Springfield, Ohio	Sept. 8, 1857.
18407	Washing-machines	Benjamin H. Pearson and Daniel B. Neal	Mount Gilead, Ohio	Oct. 13, 1857.
	Water-closets (See Class IX.)			
18773	Work-boxes	Charles C. Schmitt	New York, N Y	Dec. 1, 1857.

CLASS XVIII.—ARTS POLITE, FINE, AND ORNAMENTAL, *including music, painting, sculpture, engraving, books, paper, printing, binding, jewelry, &c.*

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
17473	Bank notes, &c., to prevent counterfeiting of	Christopher D. Seropyan, assignor to Wm. Cousland and J. D. Bald.	New York, N. Y	June 2, 1857.
16829	Bill-holder	E. F. French	Franklin, Vt	Mar. 17, 1857.
17477	Blotter	R. G. Allerton	New York, N Y	June 9, 1857.
17299	Books, binding	A. H. Rowand	Allegheny city, Pa	May 12, 1857.
17149	Books, blank, machine for cutting indexes to	Geo. Hodgkinson and T. F. Randolph	Cincinnati, Ohio	April 28, 1857
18935	Books, machine for turning the leaves of	Frederick Suter	Brooklyn, N. Y	Dec. 22, 1857.
17480	Books, rounding and backing, machine for	Theodore Bergner	Philadelphia, Pa	June 9, 1857.
18245	Bracelets, &c, safety-clasp for	Isaac Hermann	New York, N. Y	Sept. 22, 1857.
16808	Breast-pins, guard for	James M. Ross	Springfield, Mass	Mar. 10, 1857.
17881	Breast-pins, mode of fastening	Charles F. Kolb	Philadelphia, Pa	July 28, 1857.
17800	Breast pins, spiral catch for	John F. Mascher	Philadelphia, Pa	July 14, 1857.
17647	Caligraphs	Charles Thurber	Worcester, Mass	June 23, 1857.
16700	Camera, solar	David A. Woodward	Baltimore, Md	Feb. 24, 1857.
16600	Daguerreotype cases, &c., process for ornamenting	John F. Mascher	Philadelphia, Pa	Feb. 10, 1857.
18288	Diamonds, &c., setting	Isaac Lindsley	Providence, R. I	Sept. 29, 1857.
18198	Easels, painters'	George Gillett	Little York, N Y	Sept. 15, 1857.
17741	Electrotype plates, method of backing	Albert H. Jocelyn	New York, N. Y	July 7, 1857.
17290	Engraving cylinders, machines for	Robert Muckelt and William Rigby	Salford, England	May 12, 1857.
17146	Engraving designs on watch and locket cases, &c., machine for.	Charles H. Field	Providence, R. I	April 28, 1857.
16576	Envelopes, making, machine for	Theodore Bergner	Philadelphia, Pa	Feb. 10, 1857.
18857	Flexomanus	Horace A. Nathans	Philadelphia, Pa	Dec. 15, 1857.
17054	Flutes	John Pfaff	Philadelphia, Pa	April 14, 1857.
16489	Harps, keyed	Anthony Kuhn	Baltimore, Md	Jan. 27, 1857.
18060	Inkstand	Thomas Robjohn	New York, N. Y	Aug. 25, 1857.
17147	Inkstands	Kingston Goddard	Philadelphia, Pa	April 28, 1857; add'l imp't Nov. 3, 1857.
17373	Inkstands	Bennett Johns Heywood	London, England	May 26, 1857; England, Jan. 16, 1856.
18277	Jewelry, fastenings for	John T. Folwell	Philadelphia, Pa	Sept. 29, 1857.
17167	Letters for signs, &c., mode of constructing	Thomas Motley	Brooklyn, N. Y	April 28, 1857.
17137	Lockets, &c., mode of constructing	Charles G. Bloomer	Wickford, R. I	April 28, 1857.
17755	Melodeon-attachment	D. L. Sprague and Riley Burditt	Townshend, Vt Brattleboro', Vt	July 7, 1857.
16574	Melodeons	J. C. Briggs	Woodbury, Conn	Feb. 10, 1857.
16760	Melodeons	Thomas F Thornton	Buffalo, N Y	Mar. 3, 1857.
16786	Melodeons	Riley Burditt and Hatsel P Green	Brattleboro', Vt	Mar. 10, 1857.
17501	Melodeons	William Evans	Lockport, Ill	June 9, 1857.
18399	Melodeons	Stanley A. Jewett	Cleveland, Ohio	Oct. 13, 1857.
18676	Melodeons, &c., couplings for	E. B Carpenter and E. N. Merriam	Brattleboro', Vt East Poultney, Vt	Nov. 24, 1857.
18751	Melodeons, &c., pedal base for	George W. Lane and William N. Manning	Rockport, Mass	Dec. 1, 1857.
17196	Melodeons, &c., swells for	Jeremiah Carhart	New York, N Y	May 5, 1857.

XVIII.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
18581	Music, &c., apparatus for holding	A. A. Gaget	Paris, France	Nov. 10, 1857.
18284	Musical instruments, reed, stops for	Amos P. Hughes	Philadelphia, Pa	Sept 29, 1857.
16995	Musical instruments, strings for	William Randle	Florida, N. Y	April 7, 1857.
18699	Painters' striping instrument	J. J. McCormick and George Crossingham	New York, N. Y Croton Falls, N. Y	Nov. 24, 1857.
17184	Paper bags, &c., machines for making	Benjamin F. Rice, assignor to B. R. Smith and C. H. Morgan.	Clinton, Mass	April 28, 1857.
17526	Paper-file	D. A. Stiles	West Meriden, Conn	June 9, 1857.
18075	Paper, folding, machine for	C. Pyle Wiggins, A. H. Nordyke, and B. Strawbridge.	Richmond, Ind	Aug. 25, 1857.
	Paper, folding, machines for. (See Class III, letter P.)			
17535	Paper, folding, machines for	James F. Weeks	Columbus, Ohio	June 9, 1857.
18533	Paper, folding, machines for	Cyrus Chambers, jr	Philadelphia, Pa	Nov. 3, 1857.
17776	Pen and pencil case	Edward Baptis	Hudson, N. J	July 14, 1857.
16711	Pen and pencil holder	George Hunt Byron	Governor's Island, N. Y	Mar. 3, 1857.
18365	Pen, fountain	A. F. Warren	Brooklyn, N. Y	Oct. 6, 1857.
16496	Pen, writing	John F. Reeve	Richmond, Va	Jan. 27, 1857.
18265	Pencil-sharpener	William Strange and Samuel Darling	Bangor, Me	Sept. 22, 1857.
16514	Pens, fountain	Joseph C. Silvy, assignor to T. J. Dobyns	Parish of Orleans, La	Jan. 27, 1857.
17298	Pens, fountain	Charles Adolphus Rosefield	Columbus, Ga	May 12, 1857.
17761	Pens, metallic	F. A. Wait	Philadelphia, Pa	July 7, 1857.
17162	Photographic baths and pans, mode of constructing.	George Mathiot	Washington, D. C	April 21, 1857.
16637	Photographic camera-box	L. M. Bolles and W. G. Smith	Cooperstown, N. Y	Feb. 17, 1857.
18218	Photographic cameras, diaphragms for	J. Robert Werner	New York, N. Y	Sept. 15, 1857.
16689	Photographic glass-holder	Joseph Longking	Newburg, N. Y	Feb. 24, 1857.
17231	Photographic grounds for wood engravers, varnish to prepare.	Robert Price	Worcester, Mass	May 5, 1857.
17152	Photographic pictures, engravings, &c., preparation of.	S. Dwight Humphrey	New York, N. Y	April 28, 1857.
16438	Photographic pictures, treating	John B. Hall	New York, N. Y	July 20, 1857.
17738	Photographic plate-holder	William and William H. Lewis	New York, N. Y	Mar. 3, 1857.
18780	Photographic plate-holder	John Stock	New York, N. Y	Dec. 1, 1857.
16841	Photographic plate-vise	J. W. Jarboe	New York, N. Y	Mar. 17, 1857.
17066	Photographic purposes, baths for	John H. Morrow, assignor to himself and Edwin Bennett.	Baltimore, Md	April 14, 1857.
16979	Photographic trays	Daniel J. Kellogg	Rochester, N. Y	April 7, 1857.
18901	Photographs and other pictures, mode of treating.	Ezekiel C. Hawkins	Cincinnati, Ohio	Dec. 22, 1857.
17330	Photographs from glass to paper, process for removing.	Edward Howell	Ashtabula, Ohio	May 19, 1857; reissued Sept. 22, 1857.
17651	Photographs on glass, back ground for	J. W. Wykes	Wheeling, Va	June 23, 1857.
17858	Photography	Henry A. Marchant, assignor to Edward D. Marchant.	Philadelphia, Pa	July 21, 1857.
16832	Piano-forte action	James A. Gray	Albany, N Y	Mar. 17, 1857.
17238	Piano-forte action	Henry Steinway, jr	New York, N. Y	May 5, 1857.
18453	Piano-forte action	George Howe	Roxbury, Mass	Oct. 20, 1857.
17320	Piano forte actions	Spencer B. Driggs	New York, N. Y	May 19, 1857.
17296	Piano-forte bridge	Thomas E. Power	Columbia, Mo	May 12, 1857.
17789	Piano-fortes	G. Henry Hulskamp	Troy, N. Y	July 14, 1857.
18673	Piano-fortes	S. P. Brooks	Boston, Mass	Nov. 24, 1857.
18810	Piano-fortes	H. Goldsmith	Philadelphia, Pa	Dec. 8, 1857.
17838	Piano-fortes, metallic bridge for	G. Henry Hulskamp	Troy, N. Y	July 21, 1857.
16990	Piano-fortes, sound-boards of	Joseph Newman	Baltimore, Md	April 7, 1857.
17148	Pianos, grand, action for	Daniel F. Haasz	Philadelphia, Pa	April 28, 1857.
17812	Pianos, wrest-pins for	Gustav Schilling	Hoboken, N. J	July 14, 1857.
18239	Portfolio or music stands	Augustus Eliaers	Boston, Mass.	Sept. 22, 1857.
17311	Portfolios	Robert Arthur	Philadelphia, Pa	May 19, 1857.
18994	Portfolios	Henry T. Sisson	Providence R. I	Dec. 29, 1857.
17057	Portmonnaies, lock and clasp for	Daniel C. Smith	Tecumseh, Mich	April 14, 1857.
17753	Press, embossing and printing	Samuel J. Smith and Charles Locklo	New York, N. Y	July 7, 1857.
16718	Press, hand printing	Nathaniel L. Chamberlin	West Roxbury, Mass	Mar. 3, 1857.
17307	Presses, copying	William M. Smith, assignor to himself and Peter Hanny.	Washington, D. C	May 12, 1857.
16500	Printers, composing-stick for	William T. Tillinghast	Dayton, Ohio	Jan. 27, 1857.
17007	Printers' composing-sticks	Daniel Winder	Cincinnati, Ohio	April 7, 1857.
17457	Printers' composing-sticks	James and William Tidgewell	Middletown, Conn	June 2, 1857.
18668	Printing, engraved metal plates for, preparation of.	John M. Batchelder and Luther L. Smith	Cambridge, Mass New York, N. Y	Nov. 24, 1857.

XVIII.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of Patent.
17239	Printing fabrics, rollers or cylinders for, method of constructing.	Richard Ford Sturges	Birmingham, England	May 5, 1857; England Oct. 16, 1856.
16952	Printing from engraved plates, machine for	Linus Stewart and John McClelland, assignors to McClelland & McClelland.	Washington, D. C	Mar. 31, 1857.
17319	Printing in colors, method of	William Croome	Brooklyn, N. Y	May 19, 1857.
17688	Printing ink	George Matthews	Montreal, Canada East	June 30, 1857.
18504	Printing-machine	Samuel W. Francis	New York, N. Y	Oct. 27, 1857; England July 15, 1857.
18795	Printing-machine, card	James S. Moody, assignor to T. F. & J. F. Randolph.	Cincinnati, Ohio	Dec. 1, 1857.
17322	Printing-machines, calico, blanket for	John Fallon	Lawrence, Mass	May 19, 1857.
17308	Printing, painting, &c., canvas for, method of preparing.	Elisha Lee	Baltimore, Md	May 12, 1857.
18056	Printing, photo-galvano-graphic process for	Paul Pretsch	Austria	Aug. 25, 1857.
18477	Printing-press	John H. Utter	New York, N. Y	Oct. 20, 1857.
18744	Printing-press	John Henry	Vevay, Ind	Dec. 1, 1857.
18812	Printing-press	Charles W. Hawkes	Boston, Mass	Dec. 8, 1857.
17499	Printing-press, card	Charles E. Emery	Canandaigua, N. Y	June 9, 1857.
17036	Printing-press, engraved plate	M. C. Gritzner, assignor to M. J. Gritzner	Washington, D. C	April 14, 1857,
16861	Printing-press, hand	Francis S. Coburn, assignor to W. W. Messer and George F. Gray.	Ipswich, Mass	Mar. 17, 1857.
18557	Printing-press, hand	Samuel J. Smith	New York, N. Y	Nov. 3, 1857.
18907	Printing-press, hand	J. M. Jones	Palmyra, N. Y	Dec. 22, 1857.
16826	Printing-press, rotary	John C. Davis and William Miller	Elizabethtown, N. J	Mar. 17, 1857.
16837	Printing-presses	Horace Holt	Winchester, Mass	Mar. 17, 1857.
17405	Printing-presses	S. D Learned, assignor to A. C. Learned	Boston, Mass	May 26, 1857.
17418	Printing-presses	Jason L. Burdick	New York, N. Y	June 2, 1857.
17463	Printing-presses	Daniel K. Winder	Cincinnati, Ohio	June 2, 1857.
17615	Printing-presses	Franklin L. Bailey	Boston, Mass	June 23, 1857.
18567	Printing-presses	Merwin Davis, assignor to Peter G. Bergen	New York, N. Y	Nov. 3, 1857.
18545	Printing-presses	George P. Gordon	New York, N. Y	Nov. 3, 1857.
18618	Printing-presses	Stephen Wilcox, jr	Westerly, R. I	Nov. 10, 1857.
17549	Printing-presses, card	Franklin L. Bailey	Boston, Mass	June 16, 1857.
18589	Printing-presses, feeding paper to	Richard M. Hoe	New York, N. Y	Nov. 10, 1857.
18640	Printing-presses, fly-frames, mode of operating.	Richard M. Hoe	New York, N. Y	Nov. 17, 1857.
18527	Printing-presses, hand	Jedediah Morse, assignor to the S. P. Ruggles Power Press Manufacturing Company.	Canton, Mass	Oct. 27, 1857.
17824	Printing presses, inking-rollers for	E. E. Barrett	Milwaukie, Wis	July 21, 1857.
17449	Printing-presses, oscillating	Charles Putter, jr	Westerly, R. I	June 2, 1857.
17543	Printing-presses, power	Jedediah Morse, assignor to S. P. Ruggles Power Press Manufacturing Co.	Canton, Mass	June 9, 1857.
17388	Printing-presses, registering apparatus for	Gordon McKay	Boston, Mass	May 26, 1857.
18032	Printing-presses, wetting and cutting paper for, machine for	M. S. Beach	Brooklyn, N. Y	Aug. 25, 1857.
16581	Printing-stamp	William H. Elliot	Plattsburg, N. Y	Feb. 10, 1857.
16641	Printing-stamp	William H. Elliot	Plattsburg, N. Y	Feb. 17, 1857.
17340	Printing, stencil-plate	Samuel T. Sanford	Fall River, Mass	May 19, 1857.
17194	Printing subscribers' names on newspapers, machines for.	Stephen D. Carpenter	Madison, Wis	May 5, 1857.
	Seal for car-doors, &c. (See Class X, letter C)			
	Seal for railroad freight-cars, &c. (See Class X, letter C.)			
16856	Seals, metallic	J. Wappenstein	Philadelphia, Pa	Mar. 17, 1857.
18065	Shears, vibrating	John Toulmin	Worcester, Mass	Aug. 25, 1857.
16608	Stamp, hand	P. A. Ramsay	Boston, Mass	Feb. 10, 1857.
16731	Stamp, hand	Horace Holt	Winchester, Mass	Mar. 3, 1857.
16712	Stamp, hand	Leonard Bailey	Winchester, Mass	Mar. 3, 1857,
18249	Stamp, hand	T. J. W. Robertson	New York, N. Y	Sept. 22, 1857.
17587	Stamp, postage, and label-sticker	Colemon Sellers	Philadelphia, Pa	June 16, 1857.
18947	Stamps, hand	E. E. Barrett	Salem, Mass	Dec. 29, 1857.
16962	Stereoscopic views, apparatus for exhibiting	Alexander Beckers	New York, N. Y	April 7, 1857.
18209	Tracing-muslin, composition for preparing	Jesse K. Park	Marlborough, N. Y	Sept. 15, 1857.
16947	Type, composing and distributing, machine for.	William H. Houston	Belfast, Me	Mar. 31, 1857.
16743	Type, composing, machines for	William H. Mitchell	Brooklyn, N. Y	Mar. 3, 1857.
18264	Type, distributing, machine for	William H. Mitchell	Brooklyn, N. Y	Sept. 22, 1857.
18175	Type setting and distributing machine	Timothy Alden	New York, N. Y	Sept. 15, 1857.
17218	Violin-attachment	Andrew Hett	Augusta, Ga	May 5, 1857.
18544	Violin-attachment	Jackson Gorham	Bairdstown, Ga	Nov. 3, 1857.
17324	Violins	Bradley Fitts	Charlton, Mass	May 19, 1857.
17515	Watch and locket rims, constructing	Henry A. Phillips	Providence, R. I	June 9, 1857.
18033	Watch-keys, combination of, with finger-rings.	Elihu Bliss	Newark, N. J	Aug. 25, 1857.
18213	Watch-maker's lathe	Roswell H. St. John	Bellefontaine, Ohio	Sept. 15, 1857.
16811	Watch-maker's lathe, chuck for	William Stephens	Richmond, Ind	Mar. 10 1857.

CLASS XIX.—FIRE-ARMS AND IMPLEMENTS OF WAR, *and parts thereof, including the manufacture of shot and gunpowder.*

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
17339	Battery, centrifugal	Albert Potts	Philadelphia, Pa	May 19, 1857.
18876	Bayonet fastening	James N. Ward, (U. S. A.)	New York, N. Y	Dec. 15, 1857.
16819	Bomb for killing whales	N. Scholfield, and J. W. Wight, assignors to Nathan Scholfield.	Norwich, Conn	Mar 10, 1857, reissued July 7, 1857.
17370	Bomb-lance	Julius Grudchos and Selmar Eggers	New Bedford, Mass	May 26, 1857.
18824	Bomb-lance, cushion for wings of	Nathan Scholfield	Norwich, Conn	Dec. 8, 1857.
17173	Bomb-lances	Rufus Sibley	Greenville, Conn	April 28, 1857.
18424	Bomb-shell	Samuel Driver, assignor to himself, Isaac V. Culin, and Joel B. Sutherland.	Philadelphia, Pa	Oct. 13, 1857.
18616	Bullet-machine	William H Ward	Auburn, N. Y	Nov. 10, 1857.
16910	Bullet-mould	Henry L. De Zeng	Geneva, N. Y	Mar. 31, 1857.
16327	Bullet-moulds	Tristram Campbell and Henry B. Poorman	St. Louis, Mo	Jan. 6, 1857.
16629	Bullets, patching, mode of	Frederick D. Newbury, assignor to Richard Varick De Witt, jr.	Albany, N. Y	Feb. 10, 1857.
17920	Cannon, mode of discharging	Josiah Dodge	Dummerston, Vt	Aug. 4, 1857.
18117	Cap-carriers, percussion	George W. Baker, assignor to himself and Abijah French.	Burlington, Vt	Sept. 1, 1857.
16587	Caps, percussion, machine for ramming	Charles Hicks	Haverstraw, N. Y	Feb. 10, 1857.
16646	Caps, percussion, machine for varnishing.	Charles Hicks	Haverstraw, N. Y	Feb. 17, 1857.
17792	Cartridge, shot	William B. Johns	United States army	July 14, 1857.
17287	Cartridges	Edward Lindner	New York, N. Y	May 12, 1857.
17702	Cartridges	Gilbert Smith	Buttermilk Falls, N. Y	June 30, 1857.
18217	Cartridges, ball	Samuel Wells	Astoria, N. Y	Sept. 15, 1857.
18143	Cartridges for breech-loading fire-arms	J. Durell Greene	Cambridge, Mass	Sept 8, 1857.
16367	Fire-arm	Ethan Allen	Worcester, Mass	Jan. 13, 1857.
17644	Fire-arm, breech-loading	Gilbert Smith	Buttermilk Falls, N Y	June 23, 1857.
17642	Fire-arm, breech-loading	John P. Schenkl	Boston, Mass	June 23, 1857.
17386	Fire-arm, repeating	W. W. Marston	New York, N. Y	May 26, 1857.
18836	Fire-arm, revolving	Ethan Allen	Worcester, Mass	Dec. 15, 1857.
16575	Fire-arms	Francis S. Brettell and Joseph B. Frisbie	Allegheny City, Pa	Feb. 10, 1857.
16846	Fire-arms	Sewell K. Lovewell	Gardner, Mass	Mar. 17, 1857.
17136	Fire-arms	G. A Blittkowski	New York, N. Y	April 28, 1857.
17143	Fire-arms	Josiah Ells	Pittsburg, Pa	April 28, 1857.
17233	Fire-arms	John B. Read	Tuscaloosa, Ala	May 5, 1857.
17382	Fire-arms	Edward Lindner	New York, N. Y	May 26, 1857.
17698	Fire-arms	Jacob Shaw, jr	Hinckley, Ohio	June 30, 1857.
17904	Fire-arms	James Warner	Springfield, Mass	July 28, 1857.
16568	Fire-arms, accelerating	Azel Lyman to Accelerating Fire-arms Company.	New York, N. Y	Feb. 3, 1857.
18472	Fire-arms, breech-loading	Chauncey D. Skinner and Dennis Tryon	Haddam, Conn	Oct 20, 1857.
18634	Fire-arms, breech-loading	J. Durell Greene	Cambridge, Mass.	Nov. 17, 1857.
16797	Fire arms, breech-loading, nipples for discharging or withdrawing cartridges from.	William Cleveland Hicks	New Haven, Conn	Mar. 10, 1857.
16503	Fire-arms, flint-lock, mode of altering, to percussion.	James N. Ward	U. S. Army	Jan. 27, 1857.
18387	Fire-arms, hair triggers for	P. F. Charpie	Mount Vernon, Ill	Oct. 13, 1857.
18418	Fire-arms, lock for	Michael Tromley	Mount Vernon, Ill	Oct 13, 1857.
16411	Fire-arms, locks for	Alfred Tonks	Boston, Mass	Jan. 13, 1857.
16716	Fire-arms, lubricating, mode of	Samuel Colt	Hartford, Conn	Mar. 3, 1857.
17044	Fire-arms, many-chambered breech, rammer for.	James Kerr	London, England	April 14, 1857; England, Sept. 25, 1855
16683	Fire-arms, many-chambered rotating breech	Samuel Colt	Hartford, Conn	Feb. 24, 1857; England, Mar. 3, 1853.
18678	Fire-arms, many-chambered rotating breech	Samuel Colt	Hartford, Conn	Nov. 24, 1857; England, April 23, 1853.
16761	Fire-arms, portable	John Tilton and William Floyd	Rock House, Ohio	Mar. 3, 1857.
16477	Fire-arms, repeating	Heinrich Genhart	Liege, Belgium	Jan 27, 1857; Belgium, Aug 31, 1853.
18486	Fire-arms, repeating, mode of priming	George R. Crooker, assignor to George G. Martin.	New York, N. Y	Oct. 20, 1857.
17032	Fire-arms, revolving	Josiah Ells	Pittsburg, Pa	April 14, 1857.
17359	Fire-arms, revolving	Fordyce Beals	New Haven, Conn	May 26, 1857.
17261	Fire-arms, windage in, mode of overcoming the.	Ambrose E. Burnside	Bristol, R. I	May 12, 1857.
17863	Fuse-making machine	A. F. Andrews	Avon, Conn	July 28, 1857.
16634	Gun-lock, hair-triggered, self-acting	Jonathan Altman	Armstrong county, Pa	Feb. 17, 1857.
17733	Gun-locks, self-priming	Mahlon J. Gallager	Savannah, Geo	July 7, 1857.
16860	Gun-muzzle, loading, piston for	John T. Foster and Jacob J. Banta, assignors to themselves and James H Banta.	Jersey City, N. J	Mar. 17, 1857.
17321	Gunpowder	Lammot, Dupont	Wilmington, Del	May 19, 1857.
	Gunpowder. (See Class IV, letter P.)			

XIX.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
16944	Gunpowder-keg	James Wilson, Charles Green, and William Wilson, jr.	Brandywine, Del.	Mar. 31, 1857.
17915	Gun, walking-stick	Ira Buckman, jr	New York, N. Y	Aug. 4, 1857.
16377	Ordnance, rifling, mode of	Horace E. Dimick	St. Louis, Mo	Jan. 13, 1857.
16571	Pistols	William S. Butler, assignor to Butler, Sugden, & Co.	Rocky Hill, Conn	Feb. 3, 1857.
18016	Powder, percussion	Magnus Kling	Reading, Pa	Aug. 18, 1857.
18707	Projectile for fire-arms	John B. Read	Tuscaloosa, Ala	Nov. 24, 1857.
17407	Projectile for killing whales	Rufus Sibley, assignor to Christopher C. Brand.	Norwich, Conn	May 26, 1857.
18049	Projectile for rifled cannon	T. T. S. Laidley, (U. S. A)	Fayetteville, N. C	Aug. 25. 1857.
16753	Projectiles	Malcom Shaw	Sandwich, Mass	Mar. 3, 1857.
17312	Projectiles	Christopher C. Brand	Norwich, Conn	May 19, 1857.
18568	Projectiles	Henry Bates	New London, Conn	Nov. 10, 1857.
16755	Projectiles for rifled cannon	John M. Sigourney	Watertown, N. Y	Mar. 3, 1857.
17935	Projectiles for rifled cannon	Theodore T. S. Laidley, (U. S. A.)	Fayetteville, N. C	Aug. 4, 1857.
18401	Projectiles for rifled ordnance	James H. Merrill	Baltimore, Md	Oct 13, 1857.
17886	Projectiles for smooth-bored guns	John L. McConnel	Jacksonville, Ill	July 28, 1857.
18866	Projectiles, shells and other, fuses of	Nathan Scholfield	Norwich, Conn	Dec. 15, 1857.

CLASS XX.—SURGICAL AND MEDICAL INSTRUMENTS, *including trusses, dental instruments, bathing-apparatus, &c.*

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
16602	Abdominal supporter	Julia M. Milligan	New Albany, Ind	Feb. 10, 1857; reissued Sept. 15, 1857.
16485	Auricle, acoustic	Edward G. Hyde	Irvington, N. J	Jan. 27, 1857.
17948	Bath, shower, apparatus	Noah Warlick	Lafayette, Ala	Aug. 4, 1857.
18101	Bath, shower, apparatus	William Meyer	Progress, N J	Sept. 1, 1857.
17102	Bathing-apparatus	L. H. Lefebvre	New Orleans, La	April 21, 1857.
17979	Bathing-apparatus	John K O'Neil	Kingston, N. Y	Aug. 11, 1857.
18349	Baths, shower, appendages to	William Miller	Waltham, Mass	Oct. 6, 1857.
17356	Corsets, spinal	Alanson Abbé	Boston, Mass	May 26, 1857.
16822	Enema-giving apparatus	B. T. Babbitt	New York, N. Y	Mar. 17. 1857.
18015	Eye-shading apparatus	Francis H Jones	Federalsburg, Md	Aug. 18, 1857.
17101	Forceps, dental	J. A. McClelland	Louisville, Ky	April 21, 1857.
18021	Hands, artificial, construction of	William Selpho	New York, N. Y	Aug. 18, 1857.
18020	Inhaling-apparatus	John C. Schooley	Cincinnati, Ohio	Aug. 18, 1857.
16479	Lancet, spring	James W. W. Gordon	Catonsville, Md	Jan. 27, 1857.
17994	Lancets, spring	Jefferson T. Martin, administrator of William Parkinson, deceased.	Moundsville, Va	Aug. 11, 1857.
16360	Legs, artificial	Benjamin W. Jewett	Gilford, N. H	Jan. 6, 1857.
16420	Legs, artificial	O. D. Wilcox	Easton, Pa	Jan. 13, 1857.
17888	Legs, artificial	R. H. Nicholas and Douglass Bly	Rochester, N. Y	July 28, 1857.
17262	Lozenges, machines for making	O. R. and S. E. Chase	Boston, Mass	May 12, 1857.
17095	Medicinal agents, means for inhaling	Alonzo G. Hull	New York, N. Y	April 21, 1857.
16361	Milking-shields	O. H. Needham	New York, N. Y	Jan. 6, 1857.
16396	Nipple-shields	James Parker	Boston, Mass	Jan. 13, 1857.
17195	Splint-apparatus, surgical	J. H. H. and William J. Burge	Brooklyn. N. Y	May 5, 1857.
16680	Syringe, cauterizing	Erastus T. Bussell	Shelbyville, Ind	Feb. 24, 1857.
16956	Syringe, enema	Charles H. Davidson and Harman E. Davidson, assignors to Charles H. Davidson.	Charlestown, Mass	Mar. 31, 1857.
17000	Syringer, veterinary	William Somerville	Buffalo, N. Y	April 7, 1857.
16433	Teeth, artificial	Alfred A. Blandy	Baltimore, Md	Jan. 20, 1857.
16482	Teeth, artificial	George E. Hayes	Buffalo, N. Y	Jan. 27, 1857.
16708	Teeth, artificial, casting plates for	Alfred A. Blandy	Baltimore, Md	Mar. 3, 1857.

XX.—*List of patents for inventions*, 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
17775	Teeth, artificial, fastening, to the metallic plate.	Theodore H and James P. Bradish	Utica, N. Y	July 14, 1857.
16784	Teeth, artificial, of alloys, casting plates for	Alfred A. Blandy	Baltimore, Md	Mar. 10, 1857; antedated Mar. 3, 1857.
18005	Teeth, porcelain, setting	Martin Luther Wright	Cleveland, Ohio	Aug. 11, 1857.
18708	Trusses	J. W. Riggs	Plainfield, N. J	Nov. 24, 1857.
16497	Trusses, hernial	Samuel S Ritter	Philadelphia, Pa	Jan. 27, 1857.
16835	Trusses, hernial	Ancel I. Hardin	Shelby, N. C	Mar. 17, 1857.
17670	Uterine supporters	W. E. Cooke	Philadelphia, Pa	June 30, 1857.
16478	Vaccinating-instrument	James W. W. Gordon	Catonsville, Md	Jan 27, 1857.

CLASS XXI.—WEARING APPAREL, ARTICLES FOR THE TOILET, &C., *including instruments for manufacturing.*

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
17725	Button-holes, instruments for cutting	William Chicken	Boston, Mass	July 7, 1857.
18014	Buttons, metal, manufacturing	Jared O. M. Ingersoll	Ithaca, N. Y	Aug. 18, 1857.
16909	Buttons, sleeve	John P. Derby	Boston, Mass	Mar. 31, 1857.
17082	Bustles	Alexander Douglas	New York, N. Y	April 21, 1857; antedated Jan. 6, 1857.
18958	Coats, instruments for drafting	Simeon Corley	Lexington, S. C	Dec. 29, 1857.
16859	Combs	Thomas L. Calkins, assignor to Thomas L. Calkins and J. W. Bliss.	Hartford, Conn	Mar. 17, 1857.
17416	Garments, fastenings for	Jeremy W. Bliss	Hartford, Conn	June 2, 1857.
17103	Hair, curling, instruments for	Mark M. Lewis	Albany, N. Y	April 21, 1857.
16640	Pins, bosom	John P. Derby	South Reading, Mass	Feb. 17, 1857.
17857	Pins, diaper	J. Heilmann, assignor to Ignatius Sturn	New York, N. Y	July 21, 1857; reissued N v. 10, 1857.
17225	Pocket safes or fastenings	George R. McIlroy	Covington, Ky	May 5, 1857.
17553	Pockets, safety	Horace Harris	Newark, N. J	June 16, 1857.
16583	Razor-strops	E. K. Godfrey	New York, N. Y	Feb. 10, 1857.
16533	Shirt-bosom studs	John C. Derby	Cavendish, Vt	Feb. 3, 1857.
17241	Skirts, ladies'	Helen C. Traphagen	New York, N. Y	May 5, 1857.
17602	Skirts, ladies'	Edward F. Woodward	Brooklyn, N. Y	June 16, 1857; reissued Sept. 29, 1857.
18013	Skirts, ladies', hoops for	Charles S. Goodman	Washington, D. C	Aug. 18, 1857.
18247	Sleeve-fastener	David C. Peacock	Brooklyn, N. Y	Sept. 22, 1857.
17413	Sleeve-fasteners	William A. Bates	Boston, Mass	June 2, 1857.
17345	Stud or button, shirt	Willian Vogt and John J. Klink	Louisville, Ky	May 19, 1857.
16328	Studs, bosom	J. Perley Derby	Boston, Mass	Jan. 6, 1857.
16872	Studs, shirt	John P. Derby	Cavendish, Vt	Mar. 24, 1857.
17060	Studs, shirt	Dutee Wilcox	Povidence, R. I	April 14, 1857.
16472	Tailors' measures	Lyman Derby	New York, N. Y	Jan. 27, 1857.
17600	Umbrellas and parasols	James Willis	London, England	June 16, 1857; England, Mar 24, 1855.
18036	Umbrellas and parasols	Sheldon Canfield	Derby, Conn	Aug. 25, 1857.
18500	Umbrellas, cane	Heman Crosby, jr	Waterbury, Conn	Oct. 27, 1857.
16340	Umbrellas, folding	L. K. Selden	Haddam, Conn	Jan. 6, 1857.
18445	Wristband-fastener	Benjamin F. Grinnell	New York, N. Y	Oct. 20, 1857.

CLASS XXII.—MISCELLANEOUS.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.
18826	Alarm, pocket-book	William Stoddard	Lowell, Mass	Dec. 8, 1857.
16942	Baby-jumpers	Marion J. Wellmann	New York, N. Y	Mar. 31, 1857.
16862	Baby-walkers	Joseph Thomas, assignor to Joseph Thomas and Charles A. Durgin.	Brooklyn, N. Y	Mar. 17, 1857.
16970	Baskets, construction of	Joel A. H. Ellis, assignor to Joel Woodbury, as trustee.	Springfield, Vt	April 7, 1857.
17621	Baskets, fastening handles to	Anthony Faas	Philadelphia, Pa	June 23, 1857.
1862	Bells, apparatus for ringing	James R. Baird	Vincennes, Ind	Nov. 17, 1857.
17836	Bells, signal or alarm	George H. Hoagland	Port Jervis, N. Y	July 21, 1857.
18799	Billiard-table cushions	John M. Brunswick	Cincinnati, Ohio	Dec. 8, 1857.

XXII.—*List of patents for inventions,* 1857.

No.	Inventions or discoveries	Patentees.	Residence.	Date of patent.
18805	Billiard-table cushions	H. W. Collender	New York, N. Y	Dec. 8, 1857.
18841	Billiard-table cushions	Levi Decker	Bergen, N. J	Dec 15, 1857.
16374	Blacking-boxes, implement for holding	W. & J. Cairns	Jersey City, N. J	Jan. 13, 1857.
17431	Block for blacking boots and shoes	F. G. Harding	Boston, Mass	June 2, 1857.
16719	Boxes, pasteboard for, machine for cutting	E. E. Clarke	New Haven, Conn	Mar. 3, 1857.
	Boxes, receiving, for passengers' fares. (See Class X, letter B.)			
18086	Bottles, washing, machine for	Henry N. Degraw	Watervliet, N. Y	Sept. 1, 1857.
17406	Burglars' alarms	David Coon, assignor to himself and B. F. Chesbrough.	Ithaca, N. Y	May 26, 1857.
18236	Burglars' alarms	Simeon Coon	Ithaca, N. Y	Sept. 22, 1857.
18292	Burglars' alarms	E. M. & J. E. Mix	Ithaca, N. Y	Sept 29, 1857.
17504	Camp-tents, frame for	Benjamin Hinkley	Troy, N. Y	June 9, 1857.
16674	Can, varnish	Alonzo Marshall, assignor to Benjamin Marsh.	Newark, N. J	Feb. 17, 1857.
18541	Candy-twisting machine	John Gardner	Philadelphia, Pa	Nov 3, 1857.
17163	Canisters, metallic, for putting up paints, &c.	John W. Masury	Brooklyn, N. Y	April 28, 1857.
18706	Cigar-lighters, machine for making	H. Reimann	Hartford, Conn	Nov. 24, 1857.
18552	Coffee, cleaning and polishing, method of	William Newell	Philadelphia, Pa	Nov. 3, 1857.
17557	Cork-machine	Edward Conroy	South Boston, Mass	June 16, 1857.
16466	Corpse-preservers	Samuel Cobb	Cincinnati, Ohio	Jan. 27, 1857.
18295	Fire, buildings from, apparatus to protect	Thomas Odlon	Portsmouth, N. H	Sept. 29, 1857.
18262	Fire-escape ladder	Henry Loewenberg	New York, N. Y	Sept. 22, 1857.
16863	Fireman's mask and respirator	Israel P. Nelson, assignor to Israel P. Nelson and George N. Davis.	Cambridge, Mass	Mar. 17, 1857.
16626	Fishing-rod reels	Edward Deacon, assignor to John Warrin.	Brooklyn, N. Y	Feb. 10, 1857.
17469	Hominy-machines	Oscar F. Mayhew, assignor to W. H. Weeks and O. F. Mayhew.	Indianapolis, Ind	June 2, 1857.
18413	Hominy-machines	Peter Siemers	St. Louis, Mo	Oct. 13, 1857.
17264	Honey, artificial	Z. Corbin and G. Marlett	Syracuse, N. Y	May 12, 1857.
17934	Horses, device for protecting the necks of, from flies.	Ernst L. Kurtz	New York, N. Y	Aug. 4, 1857.
18691	Horses, &c., across rivers, method of floating	Samuel P. Heintzelman	Newport Barracks, Ky	Nov. 24, 1857.
17263	Match-splints, cutting, machines for	Thomas Cook	New York, N. Y	May 12, 1857.
17316	Matches, dipped, machine for gathering and depositing.	Thomas Cook	New York, N. Y	May 19, 1857.
18273	Oysters, opening, apparatus for	Waldren Beach	Baltimore, Md	Sept. 29, 1857.
17176	Sack-holder, self-adjusting	Augustus Stoner	Mount Joy, Penn	April 28, 1857; additional improvement Dec. 29, 1857.
18709	Scissors-sharpener	William E. Roberts	Orange, Conn	Nov. 24, 1857.
17147	Skates	John A. Winslow	Roxbury, Mass	April 28, 1857.
17414	Skates	R. W. Belson	Philadelphia, Penn	June 2, 1857.
18685	Skates	Stockton H. Evans and L. Gentsch	Philadelphia, Penn	Nov. 24, 1857.
16653	Skates, fastening, mode of	Henry Pickford	Boston, Mass	Feb. 17, 1857.
17019	Slates, school	Samuel H. Burrell	New York, N. Y	April 14, 1857.
16549	Soda-fountains, apparatus for containing and dispensing sirups for.	James R. Nichols	Haverhill, Mass	Feb. 3, 1857.
17158	Street-sprinkler	C. O. Luce	Brandon, Vt	April 28, 1857.
18416	Street-sweepers	W. W. St. John and Isaac Brown	Leonardsville, N. Y	Oct. 13, 1857.
18195	Street-sweeping machines	John Critcherson	Boston, Mass	Sept. 15, 1857.
18664	Street-sweeping machines	David Shattuck, assignor to himself, John S. Shattuck, Jacob Morrill, and William P. Marshall.	Boston, Mass	Nov. 17, 1857.
17811	Trap, fly	William T. Shannon	Greensboro', Ga	July 14, 1857.
18261	Trap, fly	S. R. Wilmot	Watertown, Conn	Sept. 22, 1857.
17803	Trap-hook, self-setting	Donald McLean	Boston, Mass	July 14, 1857.
17570	Traps, animal	Henry Hackman, jr	Pequea, Penn	June 16, 1857.
18092	Traps, animal	George Hart	Granger, Ohio	Sept. 1, 1857.
16335	Traps, animal, manufacture of	C. Jillson	Worcester, Mass	Jan. 6, 1857.
17297	Traps for animals	Frederick Reuthe	Hartford, Conn	May 12, 1857.
16516	Vermin-destroyer	Welcome Whitaker, assignor to Henry L. Palmer and Julius A. Skilton.	Troy, N. Y	Jan. 27, 1857.

LIST OF REISSUES GRANTED DURING THE YEAR 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.	Date of reissue.
493	Abdominal supporter	Julia M Milligan	New Albany, Ind	Feb. 10, 1857	Sept. 15, 1857.
502	Acid, sulphuric, manufacture of	Alfred Monnier	Camden, N. J	Aug. 11, 1857	Oct. 6, 1857.
420	Axle-box rollers	G. W. Geisendorff and J. C. Geisendorff	Indianapolis, Ind Cincinnati, Ohio	Feb. 6, 1855	Jan. 13, 1857.
478	Bomb for killing whales	Nathan Scholfield and William W. Wight, assignors to Nathan Scholfield.	Norwich, Conn	March 10, 1857	July 7, 1857.
421	Bonnet-fronts, moulds for pressing	Whitten E. Kidd	New York, N. Y	Nov. 28, 1854	Jan. 13, 1857.
427	Bonnets and bonnet-frames, machines for pressing.	William Osborn	Louisville, Ky	Aug. 19, 1856	Feb. 17, 1857.
483	Boot-crimps	Josiah Copeland, assignor to Abraham Thayer, assignor to Josiah M. Read, assignor to Josiah Copeland.	Weymouth, Mass	Jan. 20, 1844	Aug. 11, 1857.
477	Boots and shoes, cutting out the "uppers" of, method of.	John Chilcott and Robert Snell	Brooklyn, N. Y	Sept 13, 1853; Belgium, Sept. 16, '52; England, Sept. 30, 1852; France, Sept. 17. 1852.	July 7, 1857.
431	Caldron and furnace combined, mode of constructing a, for the use of agriculturists and others.	Jordan L. Mott	Mott Haven, N. Y	Dec. 1, 1840; extended Dec. 1, 1854; reissued Feb. 6, 1855.	Feb. 24, 1857.
468	Car-wheels, cast-iron	Anson Atwood	Troy, N. Y	May 15, 1847	June 9, 1857.
497	Car-wheels, cast-iron, (B)	Anson Atwood	Troy, N. Y	May 15, 1857	Sept 22, 1857.
498	Car-wheels, cast-iron, (C)	Anson Atwood	Troy, N. Y	May 15, 1847	Sept. 22, 1857.
434	Carding-engines	A. D. Shattuck	Grafton, Mass	Sept. 23, 1856	Mar 10, 1857.
490	Carding-engines	William H. Walton	New York, N. Y	Dec. 9, 1856; reissued Jan. 13, 1857.	Sept. 1, 1857.
422	Carding-engines, cleaning the top-flats of.	William H. Walton	New York, N. Y	Dec. 9, 1856; reissued Jan. 13, 1857.	Sept. 1, 1857.
509	Carding-machines	H. N. Gambrill and S. F. Burgee	Woodbury Mills, Md	Feb. 27, 1855; antedated Aug 12, 1854	Nov. 17, 1857.
514	Carding-machines, cleaning top cards of.	Horace Woodman	Biddeford, Me	Aug. 1, 1854	Dec. 8, 1857.
437	Carriages, running-gear of	Gustavus L Haussknecht	New Haven, Conn	Jan. 13, 1852	Mar. 17, 1857.
515	Carriages, wheels for	Thomas Brownfield	George's Township, Penn.	Aug. 19, 1856	Dec. 15, 1857.
479	Chairs, railway, bending the lips of wrought-iron, machine for.	Samuel A Cox, deceased, assignor to Sawyer & Hall, assignors to the New York Wrought-iron Railroad-chair Co.	New York, N. Y	Aug. 28, 1849	July 14, 1857.
492	Cloth, elastic gore	Charles Winslow	Lynn, Mass.	Aug. 4, 1857	Sept. 15, 1857.
440	Cloth, web for, machine for forming the, of wool, hair, or other suitable substance, without spinning or weaving.	Charlotte Arnold, administratrix, and Peter U. Morgan, administrator, of John Arnold, deceased, and George G. Bishop, assignors to the Union Manufacturing Company.	Norwalk, Conn	Oct. 20, 1836; extended Oct. 17, 1850; extended by act of Congress, Mar. 28, 1854.	Mar. 17, 1857.
429	Clothes-pins, machine for making	George W. Parker	Fitzwilliam, N. H.	Mar. 18, 1856	Feb. 17, 1857.
423	Cord, making, machinery for	William E. Nichols	East Haddam, Conn	Dec. 11, 1849	Jan. 20, 1857.
504	Cordage-machinery	Henry Pearce	Cincinnati, Ohio	May 22, 1855	Nov. 3, 1857.
465	Cowl or draught-accelerator for steamers.	Peter C. Guion	Cincinnati, Ohio	Nov. 4, 1856	May 26, 1857.
507	Diaper-pins	J. Heilmann, assignor to Ignatius Sturn.	New York, N. Y	July 21, 1857	Nov. 10, 1857.
457	Drills, seed	James Selby	Lancaster, Ohio	June 19, 1855	April 21, 1857.
474	Fence, portable field	James G. Hunt	Cincinnati, Ohio	Dec. 16, 1856	June 30, 1857.
472	Ferry-boats, line, or flying bridges, means for guiding	William A. Jordan	Thibodeaux, La.	Aug. 5, 1856	June 16, 1857.
433	Fire-arms, breech-loading	B. F. Joslyn	Worcester, Mass	Aug. 28, 1855	Mar. 3, 1857.
446	Furnaces for burning wet fuel	Moses Thompson	New York, N. Y.	April 10, 1855; reissued Oct. 7, 1856.	Mar. 31, 1857.
467	Gas-burners	Charles H. Johnson	Boston, Mass	June 26, 1855; additional improvem't Mar. 18, 1856.	June 2, 1857.
448	Gauges, carpenters'	Joel Bryant	Brooklyn, N. Y	Aug. 19, 1856	April 14, 1857.
511	Harvesters, grain and grass, (A)	William H. Seymour, assignor to himself and Dayton S. Morgan.	Brockport, N. Y.	Dec. 14, 1852; antedated Oct 28, 1852.	Dec. 1, 1857.
512	Harvesters, grain and grass, (Division B)	William H Seymour, assignor to himself and Dayton S. Morgan.	Brockport, N. Y.	Dec 14, 1852; antedated Oct. 28, 1852.	Dec. 1, 1857.
513	Harvesters, grain and grass, (Division C)	William H. Seymour, assignor to himself and Dayton S. Morgan.	Brockport, N. Y.	Dec. 14, 1852; antedated Oct. 28, 1852.	Dec. 1, 1857.
466	Harvesters, grass	William F. Ketchum	Buffalo, N. Y.	Feb. 10, 1852; reissued Feb. 28, 1854.	June 2, 1857.
476	Hat-bodies, machines for manufacturing.	Lansing E. Hopkins	New York, N. Y	Dec. 7, 1852	June 30, 1857.
428	Hosiery, manufacture of	William H McNary	Brooklyn, N. Y	Dec. [illegible]3, 1856	Feb. 17, 1857.
482	Hullers, rice	Peter McKinlay	Charleston, S. C.	April 1, 1851	Aug. 11, 1857.

List of reissues for 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.	Date of reissue.
505	Iron, manufacture of	William Kelly	Eddyville, Ky.	June 23, 1857	Nov. 3, 1857.
485	Journal-box, glass	Edward Campbell	Columbus, Ohio	Aug. 21, 1855	Aug. 25, 1857.
503	Lamp, locomotive	Irvin A. Williams	Utica, N. Y.	Oct. 10, 1854	Oct. 27, 1857.
470	Locomotive fire-box	Ross Winans and Thomas Winans	Baltimore, Md.	May 9, 1854	June 16, 1857.
471	Locomotive-tenders	Ross Winans and Thomas Winans	Baltimore, Md	May 23, 1854; antedated May 9, 1854.	June 16, 1857.
454	Looms	Warren W. Dutcher	Milford, Mass	June 27, 1846	April 21, 1857.
489	Looms	Daniel W. Snell and Stephen S. Bartlett.	Woonsocket, R. I.	Jan. 13, 1857	Sept. 1, 1857.
494	Looms	William V. Gee, assignor to the Atwater and Bristol Manufacturing Company, assignors to the Nashawannuck Manufacturing Company.	New Haven, Conn.	Feb. 27, 1855	Sept. 15, 1857.
461	Looms for weaving Brussels carpets, &c.	E B. Bigelow	Boston, Mass.	Mar. 10, 184 ; reissued Oct. 9, 1849	May 5, 1857.
432	Looms for weaving pile-fabrics	E. B. Bigelow	Boston, Mass	Nov. 15, 1853	Feb. 24, 1857.
436	Looms for weaving pile-fabrics	Erastus B. Bigelow	Boston, Mass.	Dec. 18, 1855	Mar. 17, 1857.
475	Looms for weaving piled fabrics	Mertoun C. Bryant	Lowell, Mass.	Mar. 19, 1850	June 30, 1857.
462	Metallic surfaces, particularly saw-plates, machinery for grinding and polishing	Richard M. Hoe	New York, N. Y.	May 30, 1842; extended May 26, 1856	May 5, 1857.
473	Mills, flouring	Joseph Weis	Bordentown, N. J.	Jan. 29, 1856	June 16, 1857,
481	Mills, flouring, distributing apparatus of	Alfred T. Clark	Lancaster, Pa.	June 30, 1857	Aug 4, 1857.
463	Mills, hanging shafts in	Joseph Bancroft, executor of Edward Bancroft, deceased.	Wilmington, Del.	Oct. 9, 1849	May 12, 1857.
484	Musical instruments, reed	Jeremiah Carhart	New York, N. Y.	Dec. 28, 1846; reissued June 24, 1856.	Aug. 18, 1857.
487	Ovens	William E. Treadwell and William Hustace, executors of Ephraim Treadwell, deceased.	New York, N. Y.	July 19, 1853	Aug. 25, 1857.
464	Paper drying and pressing, machine for	John North	Middletown, Conn	April 14, 1857	May 19, 1857.
430	Photographic pictures, bituminous ground for.	V. M. Griswold	Lancaster, Ohio	Oct. 21, 1856	Feb. 24, 1857.
500	Photographs from glass to paper, process for removing.	Edward Howell	Ashtabula, Ohio	May 19, 1857	Sept. 22, 1857.
456	Picture-cases, hinge for	Alfred P. Critchlow, assignor to Alfred P. Critchlow & Co.	Florence, Mass	Oct. 14, 1856	April 21, 1857.
444	Planing-machines	James A. Woodbury	Winchester, Mass	Feb. 7, 1854	Mar. 31, 1857.
499	Planters, seed	Solomon T. Holly	Rockford, Ill	June 16, 1857	Sept. 22, 1857.
508	Planters, seed	George W. Brown	Galesburg, Ill	May 8, 1855	Nov. 10, 1857.
506	Ploughs	George Watt	Richmond, Va	Dec. 9, 1856	Nov. 10, 1857.
455	Refrigerators	D. W. C. Sanford	St. Louis, Mo.	Nov. 13, 1855	April 21, 1857.
426	Reapers, raking-attachment for	M. G. Hubbard	Penn Yan, N Y.	Sept. 2, 1856	Feb. 3, 1857.
449	Reaping-machines (A)	Obed Hussey	Baltimore, Md	Aug. 7, 1847	April 14, 1857.
450	Reaping-machines (Division B)	Obed Hussey	Baltimore, Md	Aug. 7, 1847	April 14, 1857.
451	Reaping-machines (Division C)	Obed Hussey	Baltimore, Md	Aug. 7, 1847	April 14, 1857.
491	Roofing-composition	James West	Syracuse, N. Y	Oct. 30, 1855	Sept. 8, 1857.
458	Saw-mill for resawing boards and other lumber.	Pearson Crosby	Fredonia, N. Y	November 3, 1841; reissued March 10, 1849; extended October 30, 1855.	April 28, 1857.
435	Saw-mills	Lemuel Hedge, assignor to George W. Hedge, assignor to William P. Wood and Samuel De Vaughan.	Washington, D. C	May 8, 1849	Mar. 10, 1857.
424	Sawing-machine, portable steam	Samuel R. Wilmot	New York, N. Y	Aug. 14, 1855	Jan. 27, 1857.
447	Sawing machine, cross-cut, portable steam, (Division of No. 424.)	Samuel R Wilmot	New York, N. Y	Aug. 14, 1855	April 7, 1857.
438	Sawing off logs, machine for	Cornelia Waterman, administratrix of the late Stephen Waterman, assignee of Isaac D. Russell, joint inventor and patentee.	Brooklyn, N. Y	May 19, 1843	Mar. 17, 1857.
425	Saws, reciprocating, mode of driving	Isaac Brown	Baltimore, Md	July 19, 1853	Feb. 3, 1857.
445	Scales, platform	Thaddeus Fairbanks	St. Johnsbury, Vt	Jan. 13, 1857	Mar. 31, 1857.
452	Sewing-machines, (Division A.)	John A. Bradshaw, assignor to Joseph P. Martin.	Philadelphia, Pa	Nov. 28, 1848	April 14, 1857.
453	Sewing-machines, (Division B.)	John A. Bradshaw, assignor to Joseph P. Martin.	Philadelphia, Pa	Nov. 28, 1848	April 14, 1857.
469	Ships' blocks	Cornelia Waterman, administratrix of the late Stephen Waterman, and Isaac D. Russell.	Brooklyn, N. Y	Jan. 31, 1844	June 9, 1857.
501	Skirts, ladies'	Edward F. Woodward	New York, N. Y	June 16, 1857	Sept. 29, 1857.

List of reissues for 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.	Date of reissue.
480	Spoons, wire-strengthened, method of making.	William Mix, assignor to Charles Parker.	Meriden, Conn	May 1, 1849	Aug. 4, 1857.
488	Steamboats, capstans for	John Schaffer	Manchester, Pa	Oct. 21, 1856	Aug. 25, 1857.
439	Sugar-works	Norbert Rillieux	New York, N. Y	Aug. 26, 1843; extended Aug 19, '57.	Mar. 17, 1857.
442	Teeth, mineral, setting	John Allen	New York, N. Y	Dec. 23, 1851	Mar. 24, 1857.
460	Turn-tables	Jacob C. Robie	Binghampton, N Y	Aug. 15, 1854	May 5, 1857.
441	Vault-covers	John B. Cornell	New York, N. Y	Feb. 19, 1856	Mar. 24, 1857.
510	Watches	George P. Reed	Waltham, Mass	April 14, 1857	Nov. 24, 1857.
496	Water-pipes, coating	Jonathan Ball	Elmira, N. Y	Dec. 15, 1843; extended Nov. 30, '57	Sept. 15, 1857.
516	Weighing-machine, grain, automatic	Rufus Porter	Washington, D C	May 5, 1857	Dec. 22, 1857.
486	Wind-wheels, automatic regulator for	Joseph Dunkley	Carrollton, Mo	Jan. 13, 1857	Aug. 25, 1857.
443	Window-curtain fixtures	Silas S. Putnam	Boston, Mass	April 15, 1851	Mar. 31, 1857.
495	Window-shades, apparatus for stencilling	Daniel Lloyd, assignor to Gibbons L. Kelty and Dudley M. Ferguson.	New York, N. Y	Jan. 29, 1856	Sept. 15, 1857.

LIST OF ADDITIONAL IMPROVEMENTS GRANTED DURING THE YEAR 1857.

No.	Inventions or discoveries.	Patentees.	Residence.	Date of patent.	Improvements added.
160	Bed-bottoms, spring	Hiram Tucker	Cambridgep't, Mass.	July 3, 1855	Mar. 31, 1857.
177	Boilers, locomotive	J. Edward McConnell	Wolverton, Eng	June 2, 1857; England, Dec. 2, 1856.	Oct. 3, 1857.
180	Chairs, portable	Zebulon Lyford	Lowell, Mass	May 13, 1856	Dec. 8, 1857.
172	Dough, kneading, machines for	Jean Louis Rolland	Paris, France	Jan. 9, 1855	July 21, 1857.
173	Engines, steam, packing pistons and stuffing boxes of.	Patrick Clark	Rahway, N. J	June 2, 1857	July 28, 1857.
162	Filters	David N. B Coffin, jr	Newton, Mass	Sept. 2, 1856	April 14. 1857.
161	Fire-arms	F. D Newbury, assignor to R. V. De Witt, jr.	Albany, N. Y	Aug. 12, 1856	Mar. 31, 1857.
171	Fire-arms	Frederick D. Newbury	Albany, N Y	Aug 12, 1856	July 13, 1857.
164	Gate, farm	Charles N. Cole	Pleasant val'y, N.Y	May 13, 1856	June 9, 1857.
158	Harvesting-machines	Robert J. Morrison	Richmond, Va	Dec. 16, 1856	Jan. 20, 1857.
163	Hatches for warehouses, safety	William H. Thompson and Eustis P. Morgan.	Biddeford, Me	June 24, 1856	April 14, 1857.
170	Hub-borer	John Shaerer	Reading, Pa	Jan. 13, 1857	July 13, 1857.
166	Hubs, wheel, cutter for boring	Leonard S. Maring	Fall river, Mass	Oct. 4, 1853	June 16, 1857.
179	Ink-stands	Kingston Goddard	Philadelphia, Pa	April 28, 1857	Nov. 3, 1857.
159	Looms	James O. Leach	Ballston, N. Y	Oct. 30, 1855; additional improv't July 8, 1856.	Mar. 3, 1857.
176	Looms	Daniel W. Snell and Stephen S. Bartlett.	Woonsocket, R. I	Jan. 13, 1857; reiss'd Sept. 1, 1857	Oct. 6, 1857.
183	Sack-holder, self-adjusting	Augustus Stoner	Mount Joy, Pa	April 28, 1857	Dec. 29, 1857.
168	Sawing-machine	William P. Wood	Washington, D. C.	Feb. 26, 1856 reissued Mar. 25, 1856	June 23, 1857.
182	Skates	Ferdinand Klein	Newark, N. J	April 1, 1856	Dec. 22, 1857.
167	Spoke and axe-helve machine	Owen Redmond	Rochester, N. Y	Oct. 30, 1855	June 23, 1857.
174	Stereotype compositions, gutta-percha	Leonardo Westbrook	New York, N. Y	July 19, 1853	July 28, 1857.
178	Straw-cutters	Loren J. Wicks	Boston, Mass	Nov. 13, 1855	Oct 13. 1857.
175	Winches, hoisting, for ship board	Joel Bryant	Brooklyn, N. Y	April 7, 1857	Aug. 11, 1857.
181	Winnowers	Thomas J Doyle	Staunton, Va	April 20, 1852	Dec. 15, 1857.
169	Winnowing-machines	J. Keech and S. Stillwell	Waterloo, N. Y	June 13, 1854	July 7, 1857.

LIST OF DISCLAIMERS ENTERED DURING THE YEAR 1857.

Inventions or discoveries.	Patentees.	Residence.	Date of disclaimer.	Date of patent.
Looms, figure or fancy power	William Crompton, assignor to M. A. Forbush and George Crompton	Hartford, Conn. Worcester, Mass.	Aug. 27, 1857	Nov. 25, 1837; extended April 9, 1851; reissued Sept. 13, 1853.
Reaping-machines	Cyrus H. McCormick	Chicago, Ill.	Nov. 18, 1857	January 31, 1845.
Vault-covers	George R. Jackson	Rye, N. Y	April 22, 1857	April 21, 1857.

LIST OF EXTENSIONS GRANTED DURING THE YEAR 1857.

Inventions or discoveries.	Patentees.	Residence.	Date of extension.	Date of patent.
Bricks, burning	Joel W. Andrews	Bridgeport, Pa	Mar. 9, 1857	Mar 21, 1843.
Chests and safes, fire-proof	Daniel Fitzgerald, assignee of Benjamin G. Wilder.	New York, N. Y	May 30, 1857	June 1, 1843.
Coal, breaking, machine for	Joseph Battin	Philadelphia, Pa	Sept. 23, 1857	Oct. 6, 1843.
Corn-shellers	Francis N. Smith	Kinderhook, N. Y	May 23, 1857	June 1, 1843.
Hay-presses	Samuel Hewitt	Rochester, Wis	Dec. 14, 1857	Dec. 30, 1843.
Knitting-machines	Henry Burt	Newark, N. J	Sept. 14, 1857	Sept 23, 1843.
Pavement, cast iron	Harriet V. Terry, administratrix of William D. Terry, deceased.	Boston, Mass	July 7, 1857	July 12, 1843.
Pipes, water, coating	Jonathan Ball	Elmira, N. Y	Nov. 30, 1857	Dec. 15, 1843; reissued Sept. 15, 1857.
Spoons, polishing	Luther Boardman	East Haddam, Conn	Dec. 10, 1857	Dec. 15, 1843.
Sugar-works	Norbert Rillieux	New York, N. Y	Aug. 19, 1857	Aug. 26, 1843; reissued Mar 17, 1857.
Washing-machines for cleaning rags	James Phelps	Sutton, Mass	Nov. 9, 1857	Nov 24, 1843; reissued Mar. 25, 1851.

LIST OF PATENTS FOR DESIGNS GRANTED DURING THE YEAR 1857.

No.	Designs.	Patentees.	Residence.	Date of patent.
964	Barometer-cases	Theodore R Timby	Medina, N. Y	Nov. 10, 1857.
879	Bedsteads, legs and posts of	William Maurer, assignor to K. Krenkle	New York, N. Y	Mar. 31, 1857.
957	Borders, grave	Irah Chase, jr	Boston, Mass	Oct. 20, 1857.
947	Brackets, shelf, (1)	Irah Chase, jr	Boston, Mass	Oct. 13, 1857.
948	Brackets, shelf, (2)	Irah Chase, jr	Boston, Mass	Oct. 13, 1857.
958	Brackets, shelf, (3)	Irah Chase, jr	Boston, Mass	Oct 20, 1857.
936	Brick, ornamental design for	G. W. Sholl and Charles Stewart	Cincinnati, Ohio	Aug. 25, 1857.
894	Busts of Napoleon Bonaparte	Thomas Ball	Boston, Mass	June 9, 1857.
888	Churns, egg-beaters, &c	John S. Gallaher, jr	Washington, D. C	May 19, 1857.
935	Clock-case front	Pietro Cinquini	West Meriden, Conn	Aug 25, 1857.
862	Clock-case fronts	Charles Chinnock	New York, N. Y	Jan. 6, 1857.
883	Clock-case fronts	Chauncey Jerome	New Haven, Conn	April 14, 1857.
882	Clock-cases	Elias Ingraham	Bristol, Conn	April 14, 1857.
916	Clock-cases	Pietro Cinquini	West Meriden, Conn	July 14, 1857.
946	Clock-cases	Pietro Cinquini, assignor to W. L. Bradley, W. Hubbard, and N. L. Bradley.	West Meriden, Conn	Oct. 6, 1857.
959	Clock cases	Samuel B Jerome	Waterbury, Conn	Oct. 20, 1857.
950	Clock-fronts, (A)	Nicholas Muller	New York, N. Y	Oct. 13, 1857.
951	Clock-fronts, (B)	Nicholas Muller	New York, N. Y	Oct 13, 1857.
970	Clock-fronts	Elias Ingraham	Bristol, Conn	Dec. 22, 1857.
947	Coal-scuttles	Gottfried Thulemeyer	New York, N. Y	Oct. 6, 1857.
890	Furnaces	Willis S. Bronson	Hartford, Conn	May 26, 1857.
943	Gas-burners, shade for	George B. Foster	Boston, Mass	Sept. 22, 1857.
952	Kegs, metal	C. L. Rehn and H. Everett	Philadelphia, Pa	Oct. 13, 1857.
965	Match-boxes	Elisha Waters	Troy, N. Y	Nov. 17, 1857.
918	Medallions of Franklin, to mark pens and penholders.	William Ball	New York, N. Y	July 21, 1857.
875	Oil-cloths, floor	James Hutchinson, assignor to J. E Whipple and Stephen E. Haskell.	Lansingburg, N. Y	Mar. 10, 1857.
861	Pencil-cases, ever-pointed	John H. Knapp	New York, N. Y	Jan. 6, 1857.
889	Picture-frames	A. P. C. Bonte	Cincinnati, Ohio	May 26, 1857.
971	Plough-springs, &c., trade marks on	James D. Willoughby	Pleasant Hall, Pa	Dec. 22, 1857.

List of patents for designs, 1857.

No.	Designs.	Patentees.	Residence.	Date of patent.
863	Printing-types	George Bruce	New York, N. Y	Jan. 6, 1857.
880	Railings, iron	Robert Wood	Philadelphia, Pa	April 7, 1857.
917	Railings, iron	Henry Jenkins, assignor to the New York Wire Railing Company.	Brooklyn, N. Y	July 21, 1857.
869	Ranges, cooking	Charles J. Shepard	Brooklyn, N. Y	Feb. 10, 1857.
945	Shovels and tongs, stands to hold, (A)	Julius Meyer, assignor to M. Greenwood & Co.	Cincinnati, Ohio	Sept. 29, 1857.
944	Shovels and tongs, stands to hold, (B)	Julius Meyer, assignor to M. Greenwood & Co.	Cincinnati, Ohio	Sept. 29, 1857.
876	Soda-water apparatus	Joseph Bernhard, assignor to J. Bernhard, J. Hindermeyer, and L. Ganss.	Philadelphia, Pa	Mar. 24, 1857.
919	Statues of General Warren	Henry Dexter, assignor to William Carleton	Cambridge, Mass	Aug. 4, 1857.
865	Stove, cooking	N. S. Vedder, assignor to Newberry, Filley, & Co.	Troy, N. Y	Jan. 13, 1857.
956	Stove, cooking	G. Smith, H. Brown, and J. A. Read, assignors to Leibrant, McDowell, & Co.	Philadelphia, Pa	Oct. 13, 1857.
972	Stove, cooking	Jacob Steffe, James Horton, and John Currie, assignors to M. W. Jackson and W. H. Woodin.	Philadelphia, Pa	Dec. 22, 1857.
884	Stove, cooking, plates of a	N. S. Vedder, assignor to Smith & Sheldon.	Troy, N. Y	April 14, 1857.
874	Stove-doors	M. C. Burleigh	Great Falls, N. H	Mar. 10, 1857.
909	Stove-fronts, grate or	John E. Bendix, assignor to S. B. Sexton & Co.	New York, N. Y	July 7, 1857.
902	Stove-ornaments	Samuel D. Vose	Albany, N. Y	July 7, 1857.
903	Stove-ornaments	Samuel D. Vose	Albany, N. Y	July 7, 1857.
904	Stove-ornaments	Samuel D. Vose	Albany, N. Y	July 7, 1857.
864	Stove, parlor	Samuel F. Pratt, assignor to Treadwell, Perry, & Norton	Boston, Mass Albany, N. Y	Jan. 13, 1857.
941	Stove, sad-iron	S. W. Gibbs, assignor to Winne & Abeel	Albany, N. Y	Sept. 8, 1857.
885	Stoves	Jacob Steffe, James Horton, and John Currie, assignors to F. H. Church.	Philadelphia, Pa	May 5, 1857.
887	Stoves	Russel Wheeler and Stephen A. Bailey	Utica, N. Y	May 19, 1857.
891	Stoves	G. Smith, H. Brown, and S. H Sailor, assignors to J. G. Abbott and A. Lawrence.	Philadelphia, Pa	May 26, 1857.
895	Stoves	S W. Gibbs	Albany, N. Y	June 16, 1857.
901	Stoves	Jacob Beesley and E J. Delany, assignors to Cresson, Stuart, & Peterson.	Philadelphia, Pa	June 23, 1857.
900	Stoves	N. S. Vedder, assignor to North, Chase, & North.	Troy, N Y	June 23, 1857.
905	Stoves	John C. Smith, assignor to W Resor & Co	Troy, N. Y	July 7, 1857.
908	Stoves, (A)	S. W. Gibbs, assignor to Rathbone & Co	Albany, N. Y	July 7, 1857.
906	Stoves, (B)	S. W. Gibbs, assignor to Rathbone & Co	Albany, N. Y	July 7, 1857.
907	Stoves, (D)	S. W. Gibbs, assignor to Rathbone & Co	Albany, N. Y	July 7, 1857.
912	Stoves, (C)	S. W. Gibbs, assignor to Rathbone & Co	Albany, N. Y	July 14, 1857.
913	Stoves, (E)	S. W. Gibbs, assignor to Rathbone & Co	Albany, N. Y	July 14, 1857.
911	Stoves	N. S. Vedder, assignor to North, Chase, & North.	Troy, N. Y	July 14, 1857.
921	Stoves	S. W. Gibbs, assignor to Young & Brother	Albany, N. Y	Aug. 4, 1857.
920	Stoves	J. J. Dulley and Russell Mann, assignors to George W. Eddy.	Troy, N. Y	Aug. 4, 1857.
928	Stoves, (Centurion)	Thomas Barry	New York, N. Y	Aug. 25, 1857.
926	Stoves, (Farm)	Thomas Barry	New York, N. Y	Aug. 25, 1857.
927	Stoves, (Home)	Thomas Barry	New York, N. Y	Aug. 25, 1857.
925	Stoves, (Polar)	Thomas Barry	New York, N. Y	Aug. 25, 1857.
924	Stoves, (Superior)	Thomas Barry	New York, N Y	Aug. 25, 1857.
923	Stoves, (Vesuvian)	Thomas Barry	New York, N. Y	Aug. 25, 1857.
930	Stoves, (Crescent)	S. H. Ransom	Albany, N. Y	Aug. 25, 1857.
933	Stoves, (Evening Star)	S. H. Ransom	Albany, N. Y	Aug. 25, 1857.
929	Stoves, (Northern Light)	S. H. Ransom	Albany, N. Y	Aug. 25, 1857.
932	Stoves, (Ocean)	S. H. Ransom	Albany, N. Y	Aug. 25, 1857.
931	Stoves, (Peruvian)	S. H. Ransom	Albany, N. Y	Aug. 25, 1857.
934	Stoves, (Snow Bird)	S. H. Ransom	Albany, N. Y	Aug. 25, 1857.
937	Stoves	Thomas D. Worrall	Lowell, Mass	Aug. 25, 1857.
939	Stoves, (column)	Thomas Barry	New York, N. Y	Sept. 1, 1857.
938	Stoves	N. S. Vedder, assignor to North, Chase, & North.	Troy, N. Y	Sept. 1, 1857.
942	Stoves	Garrettson Smith, Henry Brown, and Samuel H. Sailor, assignors to J. G. Abbott and A. Lawrence.	Philadelphia, Pa	Sept. 8, 1857.

List of patents for designs, 1857.

No.	Designs.	Patentees.	Residence.	Date of patent.
954	Stoves	N. P. Richardson and William W. Stevens	Portland, Me	Oct. 13, 1857.
955	Stoves	G. Smith, H. Brown, and J. A. Read, assignors to Leibrant, McDowell, & Co.	Philadelphia, Pa	Oct. 13, 1857.
962	Stoves	Garrettson Smith and Henry Brown, assignors to Leibrant, McDowell, & Co.	Philadelphia, Pa	Oct. 20, 1857.
963	Stoves	William T. Coggeshall	Fall River, Mass	Nov. 3, 1857.
969	Stoves	B. W. Dunklee	Boston Mass	Dec. 15, 1857.
896	Stoves, coal cooking, (No. 1)	Conrad Harris and Paul W. Zoiner	Cincinnati, Ohio	June 23, 1857.
866	Stoves, cook	N. S. Vedder, assignor to Wolfe & Warren	Troy, N. Y	Jan. 27, 1857.
870	Stoves, cooking	J. E. Stevenson	Albany, N. Y	Feb. 10, 1857.
873	Stoves, cooking	Allen Comstock	Quincy, Ill	Mar. 10, 1857.
878	Stoves, cooking	N. S. Vedder, assignor to John S. & Merritt Peckham.	Troy, N. Y	Mar. 24, 1857.
886	Stoves, cooking	Jacob Beesley and E. J. Delany, assignors to Cresson, Stuart, & Peterson.	Philadelphia, Pa	May 19, 1857.
892	Stoves, cooking	Thomas H. Wood, Henry S. Hubbell, and John E. Roberts.	Utica, N. Y	June 2, 1857.
899	Stoves, cooking	S. W. Gibbs, assignor to North, Chase, & North.	Philadelphia, Pa	June 23, 1857.
915	Stoves, cooking	James R. Hyde	Troy, N. Y	July 14, 1857.
910	Stoves, cooking	J. Maguire, Joseph A. Read, and Duncan Wright, assignors to Charles Gilbert.	Philadelphia, Pa	July 14, 1857.
922	Stoves, cooking	Elias Young	Cincinnati, Ohio	Aug. 4, 1857.
960	Stoves, cooking	Garrettson Smith and Henry Brown, assignors to Leibrant, McDowell, & Co.	Philadelphia, Pa	Oct. 20, 1857.
893	Stoves, cooks'	John D. Marshbank	Lancaster, N. Y	June 2, 1857.
966	Stoves, cooks'	Elias Young, assignor to Chamberlain & Co.	Cincinnati, Ohio	Dec. 1, 1857.
967	Stoves, cooks'	G. Smith and H. Brown, assignors to Wolfe, Moore, & Co.	Philadelphia, Pa	Dec. 8, 1857.
898	Stoves, dining-room, (No. 3.)	Conrad Harris and Paul W. Zoiner	Cincinnati, Ohio	June 23, 1857.
881	Stoves, for the plates of	A. C. Barstow	Providence, R. I	April 14, 1857.
968	Stoves, laundry	A. C. Barstow	Providence, R. I	Dec. 15, 1857.
914	Stoves, parlor	E. J. Cridge	Troy, N. Y	July 14, 1857.
961	Stoves, parlor	Garrettson Smith and Henry Brown, assignors to Leibrant, McDowell, & Co.	Philadelphia, Pa	Oct. 20, 1857.
867	Stoves, parlor cook	N. S. Vedder, assignor to Wolfe & Warren.	Troy, N. Y	Jan. 27, 1857.
871	Stoves, parlor cooking	Daniel Wilson, assignor to Union Stove Co.	Nashua, N. H	Feb. 10, 1857.
877	Stoves, radiator	N. S. Vedder, assignor to Galbraith & Cassell	Troy, N. Y Jacksonville, Ill	Mar. 24, 1857.
868	Stoves, railroad car	James L. Howard	Hartford, Conn	Jan. 27, 1857.
953	Stoves, six-plates	N. P Richardson and William W. Stevens	Portland, Me	Oct. 13, 1857.
860	Stoves, upright	Abner J. Blanchard	South Reading, Mass	Jan. 6, 1857.
872	Stoves, wood	A. C. Barstow	Providence, R. I	Feb. 17, 1857.
897	Stoves, wood parlor, (No. 2.)	Conrad Harris and Paul W. Zoiner	Cincinnati, Ohio	June 23, 1857.
940	Type	George Bruce	New York, N. Y	Sept. 8, 1857.

DESCRIPTION AND CLAIMS FOR PATENTS,

ISSUED IN THE YEAR 1857.

ILLUSTRATED WITH ENGRAVINGS.

[To find the Plates, see Index at the end of this Report.]

I.—AGRICULTURE.

No. 18,576.—JUSTUS DAY, of Murray, N. Y.—*Improvement in Machines for Pulling Beans.*—Patent dated November 10, 1857.—When the handle K is down to its lowest point on the stole A, the teeth in each section of the head are exactly over each other. In this position the rake is thrown into the beans or whatever is to be pulled; then the operator pulls upon the handle K, which causes the movable portion of the rake-head to slide, and whatever is between the teeth is bound fast.

Claim.—The movable head, arranged and operated as described, for the purposes set forth.

No. 16,926.—ALBERT KELSEY, of Westport, Mo.—*Improvement in Bee-Hives.*—Patent dated March 31, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I am aware that sash-frames have been used in the working chambers of bee-hives; these I do not claim. But I *claim*, in combination with the double chambers of sash-frames K, the two walls J, with communicating passages *a* through them, when said walls or partitions are so arranged that a slide or cut-off *c* can be introduced between them for the purpose of an entire separation.

No. 18,523.—B. D. SANDERS, of Holliday's Cove, Va.—*Improvement in Bee-Hives.*—Patent dated October 27, 1857.—The nature of this invention consists in an arrangement embracing the outer casing with extended sides and vertical bottomless honey-boxes, in combination with the grooved perforated moth traps; whereby the area of the hive, by reason of the extended sides, can be increased without the necessity of piling one box on top of another at pleasure, by the simple addition of one or more transverse partitions; and whereby, also, the filth and dirt of all the boxes can, owing to their being bottomless and on the same plane, be readily removed, and also the moth which infests the inside of the hive can be entrapped and destroyed.

Claim, 1st. The combination and arrangement of the outer casing A with the extended sides *a a*, and vertical bottomless honey boxes

E E with the grooved and peculiarly perforated internal moth traps F F, substantially as and for the purposes set forth.

2d. The combination and arrangement of two honey boxes, so as to produce a double chambered swarm hive, when constructed and arranged in relation to each other, and to the outer casing A, substantially as shown in figures 1, 5, and 6, and for the purposes set forth.

No. 18,757.—Henry M. McClellan, of York, Pa.—*Improvement in Bee-Hives.*—Patent dated December 1, 1857.—This improved hive is constructed in sections, hooked together in front and rear, the hook on the door of each hive entering a staple in the hive adjoining it, by means of which the hook is made to perform two functions, viz: fastening the hive door and holding the two sections together, as shown in the engravings A, B, C, fig. 2.

Claim.—The combination of the sections A, B, C, connected as shown with the rotating doors *d*, agitating and regulating wires *e*, ventilating tubes *f*, and tolling and feeding cups *g*; the said parts being constructed and arranged in relation to each other in the manner and for the purposes described.

No. 18,815.—Samuel Kelly, of Washington, D. C.—*Improvement in Bee-Hives.*—Patent dated December, 8, 1857.—A A represents the inner box or hive enclosed in outer box B B, both of which are open at the bottom, and rest on platform C, with the space E between the tops, so that jars, or vessels of any kind, may be placed upon box A, to receive the surplus virgin honey. The bars or frames F are always kept a certain distance apart; yet it may sometimes occur that the bees may allow the comb to project out further than usual. Then, in order to insert the zinc plates B between the frames, without injury to the combs or bees at work, the pins I are removed and the frames gently slided over, thus widening the space between the frame or frames desired to be removed, which will allow the plates B^1 to be inserted without injuring the comb or bees. When, all the bees have passed out, the valve O being placed over the passage-way opposite the frames selected, they can pass out, lifting the valve up in doing so, but they cannot return.

Claim.—The sliding frames F, removable pins I, and dividing zinc plates B^1, in combination with the movable passage-ways and the sliding valve O, arranged in the manner and for the purposes set forth.

No. 16,474.—Jeremiah D. Egleston, of Canaan, Connecticut.—*Improvement in Feed-boxes of Bee-Hives.*—Patent dated January 27, 1857.—The feed in the feed-box *j* is kept on a level with the bottom of said feed-box by means of a platta *l*, which is pressed against said feed-box by means of spiral springs *m*.

Claim.—The platta *l*, and wire springs *m*, in combination with the feed-box *j*, as described.

No. 18,649.—Isaac L. Smith, of Burlington, Vermont, and Charles C. Colburn, of Massena, New York.—*Improved Butter Worker.*—Patent dated November 17, 1857.—In the engravings *a* represents the posts of the frame, and *b* the top rails thereof; *c* is the pressing roller, which is mounted on a shaft *k*, which turns in bearings located in the rails *b*. The outer end of this shaft is provided with a cog pinion *l*; *m* is the box which receives the butter to be worked. This box is hinged at one end, by means of hinges *g*, to a sliding frame m^1, and at opposite ends there are thumb screws *h*, which pass upward through the frame m^1 against the bottom of the box *m*. By turning the said screws the end of the box is raised or lowered to accommodate the amount of butter required to be worked at one time. The lower edges of the frame m^1 form tongues, and fit into the grooved rails *f*. The latter are attached, in an angular position, to the posts *a*.

Claim.—The box *m*, hinged to a sliding frame m^1, and made capable of adjustment to any desired extent without being thrown out of gear, substantially as and for the purpose set forth.

No. 17,564.—Charles W. Gage, of Homer, N. Y.—*Improvement in Butter Workers.*—Patent dated June 16, 1857.—The butter is placed in the machine in front of the rollers C; the scrapers E^1, at the back of the rollers, are then lowered, and the rollers C and C^1 are made to pass over the butter by operating handle H. As said rollers pass over the butter, cutting and pressing, it, it is scraped up by scrapers E^1 and carried to the back end of the machine; scrapers E are then lowered, elevating scrapers E^1, and the motion of the rollers is reversed and the butter is worked back to the front end of the machine. This operation is repeated as often as the condition of the butter may require it.

Claim —The combination of rollers C C and C^1 within scrapers E and E^1, connected and operating in the manner and for the purpose set forth and described.

No. 18,479.—William E. Ward, of Portchester, N. Y.—*Improvement in Machines for Spading Land.*—Patent dated October 20, 1857.—In this invention the entire machine is propelled in the field in any direction required, and turned at the will of the attendant; and the same power which does this operates a series of spades which enter the land, each in succession, cut into it in the arc of a circle, and, after cutting down to the required depth, suddenly throw up the cut slice against a shield plate so as to reverse it and at the same time break it up, so that when it falls down it will be thoroughly disentegrated; the forward movement of the machine determining the thickness of the slices to be cut by the spades.

The inventor says: Having described the mode of construction which I have planned for the application of my invention, I do not wish to be understood as limiting my claim of invention to such mode of application, as other and equivalent modes of construction may be substituted.

Nor do I wish to be understood as limiting myself to the use of the several parts of my invention, as some of these may be used in connexion with substitutes for the others.

I *claim* the mode of operation of the mechanism substantially as described, for imparting the cutting action to the spades as set forth.

I also claim the mechanism for tilting the spades substantially as described, in combination with the mechanism for giving the cutting action to the said spades, substantially as described.

I also claim, in combination with the spades operated substantially as described, the shield plate, substantially as described, for aiding in disintegrating and reversing the slices as they are thrown up by the spades as set forth.

I also claim, in combination with the spades operated substantially as described, the yielding or springing part of the levers for imparting the digging or cutting action to the spades, and the yielding or springing part of the tilting levers as set forth, and for the purpose of preventing the mechanism from being broken when the spades meet with any obstruction, such as stones.

No. 18,666.—JOHN ALLISON, of Parish St. Martin, La.—*Improvement in Machines for Covering Sugar Cane.*—Patent dated November 24, 1857.—The operation of this machine is as follows: One or more horses being hitched to it, it is brought in such a position to a row of cane or seed to be covered that the row is in the centre under the machine in its longitudinal position. By drawing the machine forward the dirt will be taken and scraped up by the blades B B, accumulated and raised by lateral boards A A, and forced to the opening E, where it escapes, filling completely the furrow opened previously by a plough to receive the cane or seed. Then comes the roller D, and presses the dirt escaping through the opening E down to a convex ridge over the cane or seed. Should any dirt clog the roller, the knife or scraper H will scrape it off, and keep the roller free and clean. If the ground is rough and cloddy, the revolving harrows F F will break the lumps and prepare the ground properly to cover cane or seed.

Claim.—The inventor says: I do not claim the lateral boards A A nor the blades B B, nor do I claim the revolving harrows F F nor the roller D.

But I claim the boards A A, provided with the blades B B, and revolving harrows F F, in combination with the roller D, arranged and operating in the manner and for the purposes as set forth.

No 18,702.—JEREMIAH H. PHILLIPS, of Colebrook, Ohio.—*Improvement in Shelving for Curing and Storing Cheese.*—Patent dated November 24, 1857.—The claim and engravings show the nature of this invention.

Claim.—The inventor says: I do not claim the construction of cheese shelves in double or single tiers.

But I claim the short moveable shelves, with the rabbeted or bevelled ends thereof combined and operating with the fixed cheese shelves, in the manner and for the purposes set forth.

No. 18,671.—LEWIS W. BEECHER, of Avon, N. Y.—*Improved Churn.*—Patent dated November 24, 1857.—Letter A is a vertical pendulum motion frame hung at the top of the churn-box; upon pivots in the centre of the box B B B are three bars that hold the frame together; C, a flat lifting beater at the bottom of the dash frame; D, a dividing rod between the valves or swing beaters; E E, swing beaters, hung in the frame, and allowed to turn each way to an eighth of a circle—the lower one to be 3¼ inches wide, tho upper one 7 inches wide, with attenuated edges; F F, two pieces united, forming the lever, the perpendicular part being attached to the frame; G, hand-staff attached to the extreme end of the horizontal part of the lever, and by which motion is given to the frame; H, lid in two pieces; J J, buttons to hold the lids down, and keep the frame in its place when in motion; K, a loop handle at the bottom of the churn-box.

Claim.—The swing valves or beaters, operating and producing the effects substantially as set forth.

No. 18,936.—WILLIAM F. TRUESDELL, of Elgin, Ill.—*Improved Churn.*—Patent dated December 22, 1857.—This invention is designed to collect the small particles of butter, which usually escape when a horizontal dasher is used. This dasher is caused to slide upon its axle, and by a gentle rotation collect the butter.

The inventor says: I do not claim the introduction of atmospheric air into the body or mass of cream while being agitated or churned, in order to expedite the formation of butter; for this has been previously done, and in various ways.

Nor do I claim, broadly, the idea of adjusting the dashers in churns.

But I *claim* the employment of the peculiarly formed dashers D, having air-tubes *j* attached, said dashers being so made as to churn and introduce the air when turned in one direction, and presenting chambers for the collection of the butter, when the direction is reversed.

No. 18,937.—JAMES VANDOLAH and ELIAS CURRY, of Dillsborough, Indiana.—*Improved Churn.*—Patent dated December 22, 1857.—In this invention a cylindrical vessel or tub A is provided, on the removable cover of which are mounted a winch B, and bevel wheel C, gearing into a bevel pinion D, whereby motion is communicated to a short vertical shaft E. The lower end of said shaft is suitably coupled to the upper end of the dasher shaft G. There is employed for the dasher shaft a tube, through which hot or cold water may be poured into the hollow dasher. In the upper end of this shaft opens a mouth A to receive the water to be conveyed to the dasher H. Said dasher is secured to the bottom of the tubular shaft G, and from the centre of its under shaft projects a small pivot or journal to turn in a step in the bottom of the churn.

The inventors say: We *claim* the construction of the dasher, with the rim *c*, wings *d d*, peripheral strips *f f*, and horizontal plates *g g*, arranged and operating substantially in the manner and for the purposes specified.

We also claim the arrangement of the ribs I I, with retaining hoops *k k*, or their equivalents, so as to render them adjustable and removable, substantially as and for the purposes specified.

No. 18,382.—Isaac N. Buck, of Elgin, Illinois.—*Improvement in Churn-Dashers.*—Patent dated October 13, 1857.—In the drawing C is the wheel, or sectional scroll, made of wood. E are the diamond-shaped breakers fastened on the upper side of wheel C. At the commencement of each section of the wheel A are the arms. B is the place for the shaft which puts the dasher in motion.

Claim.—The inventor says: I claim the diamond-shaped breakers E, in combination with the wheel C, when formed and arranged in the manner and for the purpose as substantially set forth.

No. 16,717.—E. P. Cowles and J. A. Cowles, of Oakfield, New York.—*Improvement in Churns.*—Patent dated March 3, 1857.—The inventors say: We distinctly disclaim the invention of two dashers, moving in contrary directions and operated by geared wheels and an intermediate pinion. Examples of such an arrangement are seen in Brown and Bigelow's patent, 1852, and in Mansfield and Moore's rejected application, 1853; but in neither of these examples, nor in any other churn with which we are acquainted, is our feature seen of having the arms of the dashers so curved as to draw the cream from the centre of the churn and force it against the sides of the machine for the purposes set forth.

We disclaim the use of curved arms, except when thus employed and operating.

Having the connecting pinion F adjustable, in the manner and for the purposes described, is also a new and highly valuable feature in this description of churn. Without this adjustability, it would be almost impossible to collect the butter.

The employment of springs *g* and *i* saves the necessity of stuffing boxes to prevent leakage. These features are also new in churns, to the best of our knowledge and belief.

We disclaim every part and feature of our device which is seen in any other churn or analogous machine; but we *claim* and desire to secure by letters patent the shafts B, C, with collars *f h*, and wheels D and H, thereon, in combination with springs *i* and *g*, arranged and operating in the manner and for the purposes set forth.

No. 17,159.—H. N. Mackey, of Morgantown, Virginia.—*Improvement in Churns.*—Patent dated April 28, 1857.—The inclined shafts c and c^1 run across the body B of the churn, each shaft being provided with wings W W^1. These shafts rotate in opposite directions by the gearing connexion $g\ g^1$. The wings are perforated, and through said perforations pass a system of double headed pistons *a*, fitting loosely and having a reciprocating movement by the action of gravity as the shafts rotate.

Claim.—The combination of the oblique wings with the double-headed self-acting pistons passing through them, operating as and for the purposes set forth.

No. 17,444.—Henry C. Nicholson, of Mount Washington, Ohio.—*Improvement in Churns.*—Patent dated June 2, 1857.—The nature of this

invention will be understood by reference to the claim and engravings.

The inventor says: I am aware flutter wheels have been used in churns, but in such manner as to prevent the free agitation of the cream, viz: by causing them to rotate against a division board, or by passing a hoop around their peripheries, either of which does not effect the object I have in view. I do not claim either of these plans.

But I *claim* the so arranging of the flutter wheels W upon bent arms A as that the cream agitated by them shall not react against any dividing surface, or be impeded by any surrounding piece, and thus I allow the agitation to be more direct in a vertical line, and not follow the rotation of the shaft S on which they are placed, as set forth and represented.

No. 17,781.—Charles H. Dana, of West Lebanon, New Hampshire.—*Improvement in Churns.*—Patent dated July 14, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim as new an oscillating churn; neither do I claim the causing of the dasher to make more than one up and down stroke at each oscillation of the cream vessel, independent of the specific means employed.

But I *claim* the irregular curved pieces C, forming the undulating slot D in combination with the slotted oscillating frame E, and cross-bar K, with friction rollers J, for giving three up and down strokes to the dasher at each oscillation of the cream vessel, as set forth.

No. 17,790.—Silas Hewit, of Seneca Falls, New York.—*Improvement in Churns.*—Patent dated July 14, 1857.—As the shaft C is rotated the flanges B force the cream continually upwards, and it is then allowed to fall around the shaft downward to the bottom of the tub, where it is again operated upon by floats A and flanges B.

Claim.—The floats A, in combination with the flanges B, constructed and arranged in the manner and for the purposes set forth.

No. 18,165.—Daniel E. True, of Lake Village, New Hampshire.—*Improvement in Churns.*—Patent dated September 8, 1857.—The cream being put into the receptacle A, a rocking motion is given to said receptacle, which causes the cream to flow rapidly in two separate currents around the separator E, said currents coming in contact at their terminus alternately, whereby the cream receives a violent and peculiar action which causes a speedy union of the particles of butter into one mass.

The inventor says: I am well aware that dashers made in the form of grates, or perforated with holes, are not new, and may be found in the specification of Enoch Thomas's and John McLaughlin's patents; therefore I do not claim their application or use.

I *claim* the employment (in the rocking and other churns of similar operation) of a separator, when the same is constructed, arranged and applied, substantially in the manner and for the purpose herein described and set forth.

No. 18,384.—**Moses Byard**, of Milan, Illinois.—*Improvement in Churns.*—Patent dated October 13, 1857.—Upon the driving shaft A, in this improved machine, is a hollow cylindrical vessel or "gatherer" B, secured in any convenient manner concentrically around said shaft, with which it revolves. At one side of the gatherer there is a spiral opening or mouth *a*, formed substantially as represented in the drawing, by which means a passage is left to the interior of said vessel. At suitable distances apart, in the surface of the gatherer, are long narrow openings *b b*, arranged in the direction of its periphery, as shown in the drawings. This peculiar shape in the openings is necessary in order to keep them from being filled or clogged with butter as the gatherer is revolved. In one end of the gatherer may be a removable head *f*, which slides over the shaft A, and fits closely in the open end of said gatherer. Its use is to give support to the end of the cylindrical vessel.

The inventor *claims* the cylindrical vessel B, or its equivalent, with a special opening or mouth in one side, and small oblong openings in its periphery, arranged and operating substantially in the manner and for the purpose specified.

No. 17,797.—**Howard Mann**, of San Francisco, California.—*Improvement in Cultivators.*—Patent dated July 14, 1857.—By turning the crank C, the operator can contract or expand the cultivator plough B, to suit the width of the rows, without stopping the movement of the implement.

Claim.—The arrangement of shanks *g g* with rack bars *f f* and segmental plates *h h*, in the manner and for the purpose set forth.

No. 17,439.—**Robert McCutchen**, of Towanda, Pa.—*Improvement in Atmospheric Churns.*—Patent dated June 2, 1857.—The body A being filled with milk or cream, the reservoir D is filled with water of the proper temperature at which milk or cream is easiest and best converted into butter. By working lever A the bellows F and F^1 are operated, forcing the current of air through the reservoir C to assume the temperature of the water in the reservoir D, and thence through air pipe M, which distributes it through the milk or cream, and produces the butter by separating the oily from the serous part of the milk.

The inventor says: I do not claim using atmospheric air in a churn to produce butter, by the mechanical disturbance of the cohesion of the oily and serous part of milk or cream by agitation, as that is known and used.

But I claim the bellows F F^1, the chambers C and D, and the air pipe M, when arranged in relation to each other and to the body of the churn in the manner and for the purposes set forth.

No. 18,505.—**A. J. French** and **J. A. French**, of Franklin, Vermont.—*Improvement in Machines for Severing Ears of Corn from the Stalks.*—Patent dated October 27, 1857.—In operating this machine power is applied to the cylinder D, and motion is communicated to the endless apron B and roller C by means of the belts *e* and *i*. The apron, rollers, and cylinders rotate in the direction indicated by the arrows. The stalks, with the ears of corn attached, are placed on the apron butts foremost, and pass underneath the roller C. This roller has a tendency to turn the ears of corn downwards as the ears pass underneath it, and the stalks pass between the cylinders D E, and are cut by the knives *d* into small pieces for fodder; but the ears cannot pass through or between the rollers, and are cut from the stalks by the knives *d*, the knives severing the butts or nubbins at the bases of the ears, which fall down, as shown in the engraving.

The inventors say: We are aware that endless aprons are commonly used as feeding devices, and also that two cylinders D E (one being provided with knives) are in common use for cutting stalks, &c.; but we are not aware that the apron and cylinders have been combined so as to operate conjointly, as shown, for the purpose specified.

We *claim* the endless apron B, and pressure roller C, in combination with the cylinders D E, the cylinder D being provided with knives *d*, and the cylinder E having a smooth periphery, the parts being arranged as described, for the purposes set forth.

No. 17,466.—**Isaac N. Whitaker**, of Pecatonica, Ill.—*Improved Hand Implement for Severing the Butts and Separating Husks from ears of Corn.*—Patent dated June 2, 1857.—In using this implement the plate *b* is secured to the waist of the operator by means of a strap. The operator grasps the tip of the ear of corn with one hand, and opens the levers A A by grasping the handle *c*, and the two cutters C are placed at opposite sides of the butt of the ear. The operator then closes the levers, and the cutters C pierce the butt and detach the ear from it, the husks being also detached from the stem; and as the levers close, the concave and oblique sides of the lips *e* press up the ear of corn, and present it to the hand of the operator free from husks.

Claim.—The cutters C C and flanches or lips *e e* attached to the levers A A, and constructed and arranged substantially as shown and described, for the purpose set forth.

No. 18,326.—**William T. Clement**, of Shelburne Falls, Mass.—*Improvement in mode of attaching Scythes to Snaths.*—Patent dated October 6, 1857.—This invention consists in securing the "tong" or "shank" of the scythe to an adjustable plate by means of a loop and screw, the plate being pivoted to the butt of the snath, and the several parts so arranged that the scythe may be not only firmly secured to the snath, but also adjusted or set at varying angles with it, as circumstances may require. In this improvement no nuts are required to be removed or unscrewed in order to adjust the scythes. The slot K, in the plate D, allows of the ready insertion of the tong E through the loop C, the claw *l* passing into said slot as the tong is passed within the loop.

The inventor, in stating his claim, says: I *claim* the combination of the adjustable plate D, loop C, and screw C, when arranged substantially as described for the purpose specified.

No. 18,361.—**Ancil Stickney**, of Concord, N. H.—*Improved Corn-Sheller.*—Patent dated October 6, 1857.—In operating this improved machine an ear of corn, tip first, is inserted in the mouth of the machine; as the wheel is turned the ear is carried down, with a rolling motion, by the side of flanch *b*, until the head of the ear gets below the centre of the wheel, when it rolls across the flanch, the tip in the meantime projecting from the bottom of the machine, and then is carried up by the side of flanches *b b*, and escapes from the machine at the top. This improvement is applicable only to the particular kind of corn-sheller patented by J. D. Briggs, in 1845.

The inventor *claims* the combination of the rocking piece C with the flanged piece B and wheel A, the whole being arranged substantially as described, and for the purpose specified.

No. 18,139.—**Andrew Dillman**, of Plainfield, Illinois.—*Improvement in Corn-Shellers.*—Patent dated September 8, 1857.—The corn cobs pass down through hopper H, and against the shelling desk H, the empty cobs and corn dropping down on apron M, where they are carried upwards by means of lags *f g*, while the corn drops down through the machine, as represented in the engraving.

Claim.—In combination with an inclined trunk, such as described, the inclined carrying apron or belt M, with its lags *f g*, arranged in the manner and for the purpose set forth.

No. 18,296.—**J. J. Parker**, of Marietta, Ohio.—*Improvement in Corn-Shellers.*—Patent dated September 29, 1857.—This improvement is described in the drawings and claim of the inventor. The inventor says: I am aware that a sheller consisting of a face wheel working against a vertical burr wheel, patented to Peck, has been suggested as a corn-sheller; but its efficiency for shelling corn is questionable, neither is there any provision for clearing the corn by fan or otherwise.

Neither do I claim the mere combination of a sheller and fan irrespective of the arrangement I have discovered.

But I *claim* the necked shelling wheel D, when arranged and operating in connexion with the shelling wheel F and elastic side C of spout H and spring *d* in the manner and for the purposes set forth.

No. 18,700.—**John W. Morton**, of Brunswick, Ohio.—*Improvement in Corn-Shellers.*—Patent dated November 24, 1857.—In operating this machine the ears of corn are passed into the opening R, between the jaws; these jaws being adjustable, any sized ear of corn will be shelled in passing through. The inner edge S of these jaws are spreading so as to form the section of a screw; by these the cob is drawn into the spur rollers *o o*, which discharge the cob from the machine, while the corn passes down through the spout T as it is separated from the cob by the teeth U on the jaws. By the action of the springs G, the jaws are always in place for shelling the various sized ears.

Claim.—The driving of both the exit rollers *o* o^1 in opposite directions by means of the endless screw L, or its equivalent, operating upon the gear M, the opposite end of one roller shaft N being made adjustable by the step P and spring *a* for the purpose of seizing the cob, whether large or small, and delivering it from the machine as specified.

No. 18,342.—**Sanford Kingsbery**, of Carrolton, Georgia.—*Improved Machine for Shucking and Shelling Corn.*—Patent dated October 6, 1857.—Upon a suitable driving shaft D, which must be placed in a horizontal position, or nearly so, a strong wheel A is secured. The wheel should be forty-two inches in diameter, or thereabouts. One or both sides of said wheel is armed with peculiarly arranged lateral teeth, viz: At the distance of some eight or ten inches from the centre of the face of said wheel commences the innermost of the two, three, or four annular rows *g g* of teeth, which gradually increase in length from the innermost to the outermost of said rows; and outside of said annular rows of teeth the face of the wheel is armed with alternating fan-shaped series of teeth *f f*, which gradually increase in length as they pass outwards to the periphery of the wheel.

At the side of the face of the wheel A, and as near to its shaft as practicable, is secured to the frame of the machine the vertical tapering concave B, whose shape is represented by fig. 3 in the drawings; the inner surface of said concave being of such a shape that all parts thereof will be equidistant from the extremities of the respective series of teeth which project from the face of wheel A.

Claim.—The inventor says: I *claim* the combination of the toothed face or faces of the wheel A with the tapering concave or concaves B, when the respective series of actuating teeth on the face or faces of the wheel A are proportioned and distributed substantially as set forth, and for the purposes specified.

No. 18,905.—**William G. Huyett**, of Williamsburg, Pa.—*Improvement in Machine for Cutting and Grinding Cornstalks.*—Patent dated December 22, 1857.—This invention consists in combining a conical grinding shell F with a vertical grinding disk G and vertical cutting-knives E, in such a manner that the bottom part of the shell shall form an inclined plane, down which the cut stalks shall roll, and prevent the grinding disk from being choked up, and also prevent the cutting-knives from being choked; the stalks which roll down the shell being also ground during their downward passage.

Claim.—Combining an inclined grinding concave G with a cutting wheel D and disk *e* in the manner and for the purposes as described.

No. 18,076.—**John Augspurger**, of Trenton, O.—*Improvement in Machines for Cutting Corn Stubble, &c., on ground preparatory to ploughing.*—Patent dated September 1, 1857.—As the machine is drawn over the field, the corn stalks lying on the same are gathered by the teeth *a*, while the shears *g* cut them shearwise with the teeth of the rake, the sweeps *h* removing any cornstalk which might otherwise clog the teeth.

Claim.—The described (or substantially equivalent) combination with the teeth of a rake of rotating knives, for the purpose set forth.

No. 16,401.—Joseph Shaw, of Richland, Ga.—*Improvement in Cotton-Cultivators.*—Patented January 13, 1857.—The vertical adjustment of the hoes E is effected by operating the set-screws *a* and *b*, the lateral adjustment by turning the heads *c*, and the position of the shoes H can be adjusted by means of set-screw *f*, which can be inserted into any one of the holes *g*, arranged in a circle around the centre of shafts D.

Claim.—In combination with the hoes E E, having both a vertical and lateral adjustment, the shoes H H above them, and so adjustable on or with said hoes as to serve to throw the earth towards or from the plants, as may be required, the whole being for the purposes set forth.

No. 17,091.—John M. Hall, of Warrenton, Ga.—*Improved Cotton-Cultivator.*—Patent dated April 21, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The combination with the wheel P of the adjustable hoes *i*, constructed, arranged, and operating in the manner and for the purposes set forth.

No. 16,364.—James P. Cramer, assignor to Hiram Cramer, of Schuylerville, N. Y.—*Improvement in Cultivator Teeth.*—Patented January 6, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—As a new manufacture my improved cultivator teeth, composed of a properly shaped sheet-metal blade and shank B, with an iron head A cast upon the shank, and embracing its outer and inner surfaces in such manner that the said blade, shank, and head of the tooth will form but a single piece, substantially as set forth.

No. 17,925.—F. R. Forsythe, of Cape Vincent, N. Y.—*Improvement in Cultivator Teeth.*—Patent dated August 4, 1857 —The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The new manufacture of cultivator teeth, consisting of a sheet steel blade, bent to the required form, with a cast iron boss *b* cast thereon, substantially as specified.

No. 18,471.—Charles H. Sayre, of Utica, New York.—*Improvement in Cultivator Teeth.*—Patent dated October 20, 1857.—This improvement relates more particularly to that class of cultivator teeth made of sheet metal. To provide a tooth that will not be subject to the objections heretofore made to sheet metal teeth is the object of this improvement, which consists in a peculiar mode of constructing and securing the block head A to the shank B of the tooth, by which superior strength and durability are attained.

A tooth constructed on this plan is made in two principal parts, the first of which consists of the head piece A, and the second of the body of the tooth B; the latter of which is cut out of sheet metal of the proper size and thickness and then swaged into a tooth, as represented in the engravings, the tooth being provided with a couple of ears *a*.

The inventor says: I *claim* the method described of securing cultivator teeth formed of sheet metal to the frame, by means of a head or cap piece, constructed in the manner substantially as described.

No. 17,821.—Henry Schreiner, Jr., of Berrysburg, Pennsylvania, asignor to himself and George Lark, of Berrysburg, aforesaid, and by them reassigned to said Scrheiner.—*Improvement in Cultivators.*—Patent dated July 14, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I am aware that ploughs similar to mine have been patented and also harrows; I therefore disclaim the plough separately, and the harrows separately.

But *claim* in connexion with the cultivator E E, F F, the arrangement of the cross beams A A^1 C, and the transverse beam D, in the manner and for the purpose set forth.

No. 17,797.—Howard Mann, of San Francisco, California.—*Improvement in Cultivators.*—Patent dated July 14, 1857.—By turning the crank C, the operator can contract or expand the cultivator plough B to situ the width of the rows without stopping the movement of the implement.

Claim.—The arrangement of shanks *g g* with rack bars *f f* and segmental plates *h h* in the manner and for the purposes set forth.

No. 17,909.—Harrison Ogborn, of Greensfork, Indiana, and George Taylor, of Richmond, Indiana, assignors to Harrison Ogborn, aforesaid.—*Improvement in Cultivators.*—Patent dated July 28, 1857.—By operating treadle I, the plough beams *g* are raised for the purpose of turning the cultivator or passing over obstructions.

The inventors say: We do not claim the combination of a crank axle-tree extending across the centre of the frame, on the ends or cranks whereof are mounted the sustaining wheels, the same being for the purpose of raising and lowering the frame of the cultivator as shown and described in D. B. Rogers's patent of January, 1849.

But we *claim* the combination of the plough beams *g g g g* with the eccentric axles F, in the manner and for the purposes set forth.

No. 18,073.—Charles H. Sayre, of Utica, New York, assignor to himself and Samuel Remington, of Ilion, New York.—*Improvement in Cultivators.*—Patent dated August 25, 1857.—The positions of the plows can be adjusted by loosening the nuts $e\ e^1\ e^2\ e^3$, and sliding the shanks of the plough shares within the grooves $c\ c^1\ c^2\ c^3$; and by then securing them to the desired places, the pitch of the mould-boards C^1 to suit the width of the rows being given by adjusting the slotted arms *f*.

Claim.—A combined horse hoe and double mould-board plough, constructed, arranged, and operated substantially as set forth.

No. 18,330.—William J. Forshee, of Indianapolis, Indiana.—*Improvement in Cultivators.*—Patent dated October 6, 1857.—In the drawings A is the beam which is attached to the bar B, to which is firmly attached the wheel C. D and E are clamps designed to hold the wheel C in any required position. The teeth F are attached to shanks, to which are attached the levers G. The levers G are attached to the bar H at an equal distance from the centre with the attachments of the shanks (upon which are the teeth) to the bar B from its centre, the levers being of equal length.

The inventor *claims* the combination and arrangement of the bar B, the wheel C, the bar H, and levers G G G and G, when constructed and operated substantially as set forth.

No. 18,520.—Thomas A. Robertson, of Friendship, Maryland.—*Improvement in Cultivators.*—Patent dated October 27, 1857.—The wing B of this implement is of the peculiar form shown in the engravings, viz: having a straight edge C, to which a cutter may be attached if necessary. The side D extends upwards and gradually curves to the rear portion E. The box side portion F is straight, and on a level with the cutter A. The edge C is inclined upwards from the straight side F, so that while the cutting edge enters the ground, the point H just skims below the surface without disturbing the roots of the plants, while the weeds are carried back over the wing and deposited in the rear of the cutter, in the middle of the row and clear of the plants.

The inventor says: I am aware that a weeding implement was patented November 18, 1851, to Henry Goldson, in which a scraper or mould-board was attached to the standard of a plough in such a way as to turn the weeds over the land side of the plough; and, therefore, I lay no claim to such an invention.

But I *claim* the curve scraper in combination with the plough point and standard, in such manner that the weeds and sods shall be delivered in the rear of the standard, as set forth.

No. 18,530.—Nicholas Whitehall, of Rob Roy, Indiana, assignor to Himself and A. L. Whitehall, of Rob Roy, Indiana.—*Improvement in Cultivators.*—Patent dated October 27, 1857.—The object desired to be accomplished in the construction of this improved cultivator is to fit it for ploughing both sides of a row of corn or other vegetable at the same time, even after having grown to considerable height, using two horses to do the work; the frame work, evener, &c., being arched from side to side to pass over the corn.

The inventor says: I *claim* providing a double cultivator, the middle of which is elevated to pass over the corn, with a compound evener suspended upon three points, and arranged as described for the purpose set forth.

No. 18,587.—David E. Hall, of Abingdon, Illinois.—*Improvement in Cultivators.*—Patent dated November 10, 1857.—This invention, by giving a lateral and vertical motion to the shares under the control of the person guiding the cultivator, enables the operator to follow the sinuosities of the furrows; it also has cutters attached for cutting up stalks or weeds that may be in the way.

Claim.—The inventor says: I am aware that cultivators have been previously devised, in which shares have been so arranged as to allow a certain degree of lateral movement; but I am not aware that shares

have been arranged and applied, as shown, to admit of the two movements described, and rendered capable of being adjusted with such facility.

I therefore do not claim, broadly and separately, the adjustable shares, irrespective of the arrangement shown and described.

But I *claim* the attachment of the shares P P to the bars I I, which have their back ends pivoted in the pendants H H and their front ends fitted in the pendant slotted bars J J, which are attached to the sliding bar K, the bar K being operated by the treadles M to give the lateral movement to the shares, and the bars I used vertically by the treadles N to give them their vertical movement, as described.

I further claim the cutters Q pivoted to the bars o^1 and over the plates R, and connected to the rods *l*, the whole being arranged as shown for the purposes specified.

No. 18,714.—Joseph Summers, of Raleigh, Virginia.—*Improvement in Cultivators.*—Patent dated November 24, 1857.—The engravings and claim explain the nature of this invention.

Claim.—The use of the hinged wings D D, which are adjusted by rack and pinion, when arranged to move in and out over a stationary curved supporting and guide rod E, which has two springs F F coiled round it, in combination with a stationary circular notched plate J, pivoted tilting lever K, and spring L, which are arranged, as shown, as and for the purposes set forth.

No. 18,785.—A. Quarles Withers, of Red Banks, Miss.—*Improvement in Cultivators.*—Patent dated December 1, 1857.—The scrapers H H, whereby the surface of the earth is cultivated, are respectively secured to the front edges of the stock bars G G, one of which is situated at each side of and near the central longitudinal line of the implement. The said stock bars are hinged at *d d* to the under side of the forward frame B, so that they may have a vibrating play sidewise, and thereby allow the scrapers to yield transversely and adapt themselves to the surface of the ground, each independent of the other.

Claim.—Hanging the stock bars G G to the frame by hinge joints, so as to give them a vibratory play sidewise, substantially in the manner and for the purpose specified.

No. 18,739.—Joshua Gibbs, of Newark, Ohio.—*Improvement in Cultivators.*—Patent dated December 1, 1857.—The claim and engravings show the nature of this invention.

Claim.—The inventor says: I am aware that adjustable and reversible shares have been heretofore used. I do not claim, broadly, to be the inventor of them.

I respectfully disclaim whatever may be in my device which resembles any portion of J. L. Eastman's patent, June 30, 1836, R. H. Springstead's patent, February 12, 1845, and A. Leland's patent, January 2, 1849.

But I *claim* a cultivator constructed as described, viz: having its frame A made of wrought iron in the form shown, with metallic plates J, made to slide longitudinally on the frame, the share

C of the form shown attached to the plates *j* by bolts *m*, and capable of being adjusted and reversed, all as specified.

No. 18,840.—David P. Daggett, of Palmyra, N. Y.—*Improvement in Cultivators.*—Patent dated December 15, 1857.—The claim and engravings explain the nature of this invention.

Claim.—The peculiar construction and arrangement of parts whereby the frame of the cultivator may be elevated or depressed in relation to the surface of the soil, either parallel to the plane of the surface or inclined thereto forward or backward at any desired angle by means of the lever beam D, swivel wheel I, swivel clevis H, and adjustable wheels C, combined, arranged, and operating in the manner and for the purposes specified.

No. 18,900.—A. W. Hawley, of Milan, Ohio.—*Improvement in Cultivators.*—Patent dated December 22, 1857.—A is the body of the frame; B is the brace attached to side of frame; to the brace is framed the arm D, to which arm is secured the peculiarly formed share E. In the centre of the rear end of the frame is the arm F. The shovel plough H is secured to the lower end of the arm F. To the side of the arm or brace is connected the adjustable arm J, to which is attached the fender K, by a pin joint at L. The arm J moves and may be set at any proper position by the screw M, by which it is connected to the brace.

Claim.—The movable fender K, adjustable arm J, and movable brace B, with the peculiar shaped share E, when arranged as set forth, and for the purpose of protecting the plants from injury, as specified, and for changing the share and fender to the right or left of the frame, in the manner and for the purpose substantially as specified.

No. 18,928.—John Righter, of Clarksburgh, Va.—*Improvement in Cultivators.*—Patent dated December 22, 1857.—The frame A is provided with teeth and shares so arranged and supported by draught rods F as to make them strong. The teeth A admit of lateral adjustment in suitable slots D, and, by a device of cog wheels and screws working in unison with each other, further admit of the change of position requisite in giving the teeth point or inclination to properly enter the soil. The device further serves the purpose of clamping and retaining the teeth in the slots of the frame.

Claim.—The employment of the pinions *e* and *f*, when in combination with the screw shaft *h* and teeth or ploughs *a a*, substantially in the manner and for the purposes set forth.

No. 18,939.—Lorin Wetherell, of Worcester, Mass.—*Improvement in Cultivators.*—Patent dated December 22, 1857.—The object of this invention is to make the same machine susceptible of the cultivation of young and tender plants that require but little soil to be at first thrown up against them, and to increase its capacity as the plants continue to grow by increasing the width of its wings, hoes, or scrapers *f n*, and bring them into such position vertically as will cause them to dip into or penetrate the soil to the proper depth.

Claim.—In combination with a plough, H, the pair of revolving hoes or scrapers, having a vertical adjustment in addition to the adjustment of the edges thereof, so that the capacity of the machine may be increased with the increasing height of the plants to be cultivated by it, substantially as set forth.

No. 16,906.—John B. Baker, of Onondaga, N. Y.—*Improvement in Corn Cultivators.*—Patent dated March 31, 1857.—The beams B can be adjusted upon the bars E and G, and secured in their positions by bolts *a* and *b*. The bar E is provided with an arc E, which serves the double purpose of brace to said bar, and of fender to push the stalks aside without breaking them.

Claim.—I am aware that cultivators have been made with adjusting bars before and behind, whereby the teeth may be adjusted in a manner similar to mine; and I do not, therefore, wish to be understood as making any claim to the adjustment.

But I claim the arc or fender E^1, in combination with the adjusting bar E, whereby the stalks are laid aside, and the said bar rendered much more durable—the whole constructed as set forth.

No. 17,391.—Alexander A. Roberts and Baldwin Davis, of La Grange, Ga.—*Improvements in Cotton-Cultivators.*—Patent dated May 26, 1857.—The frame A, to which the front hoes *a* are attached, can be operated by brake *e*; while the frame B, to which the rear hoes and the harrow *c* are attached, swings on shaft *z*, and can be raised or lowered by means of handles *d*.

Claim.—In combination with the frame A A A A and brake *e*, as described, the movable frame B B B B, armed with hoes *a* and a harrow *c c*, the teeth of said harrow being so arranged as to cultivate between the bunches of cotton, and at the same time clear the standing cotton-plants from clods, &c., in the manner set forth.

No. 18,442.—Daniel P. Forney, of Jacksonville, Ala.—*Improvement in Cotton Cultivators.*—Patent dated October 20, 1857.—To each of the cranks E and F is attached a hoe G. The first crank E, on shaft of the pinion D, is sixteen inches from the pinion, or any distance so as merely to strike clear of the wheel A. The second crank, F, is twenty-one inches from the first crank, that is, from centre to centre of the cranks.

To give an up and down stroke to the hoe, the lower of the two rollers, I, is placed in a line with the crank shaft and the point on the ground where the hoes strike. Thus, as the cranks ascend the hoe descends, and as the hoe ascends the cranks descend, giving an up and down motion to the hoe. As the cranks begin to descend below the line, the hoe will ascend, clear itself of earth, and be raised above the row of cotton, ready to make another lick, and so on to the end of the row.

The inventor says: I *claim* the application of the rollers I and brake K, in combination with the hoes G and cranks E and F, substantially in the manner and for the purpose described.

No. 18,478.—Ransom A. Vick, of Byhalia, Miss.—*Improvement in Cotton Cultivators.*—Patent dated October 20, 1857.—This improvement can be understood by referring to the engraving and claim.

The inventor says: I *claim* the construction and arrangement of the body E, top-piece D, and front bar G, so as to be firmly and conveniently combined, and so that three bolts will unite them together, and at the same time secure the handles, beam, and blade thereto, substantially in the manner specified.

No. 17,849.—Thomas E. Shannon, of Woodville, Mississippi.—*Improvement in Cotton and Cane Cultivators.*—Patent dated July 21, 1857.—This invention consists in combining a series of revolving cutters a^2 with an adjustable framework, and in combination therewith an elevated central revolving cutter a^3, to pass over the drill and to thin out the plants.

Claim.—The combination with a wheel carriage of a series or gang of revolving cultivators, arranged and operated in the manner and for the purpose set forth.

No. 18,317.—Henry Beitzell, of Centreville, Indiana.—*Improvement in Grain Drills.*—Patent dated October 6, 1857.—A (fig. 1) is a hollow cast iron tooth, of the shape and dimensions usual in grain drills, with the addition of two shoulders, or jaws, of the form and structure represented by letter C in the drawing, which said jaws project in front of the tooth, and contain holes to receive the bolts *r r* and W W, and which said jaws are cast to and along with the tooth A. D is a wrought iron drag bar, which is secured between the jaws of the tooth by the iron bolt *r*, and also by a wooden pin at W, both of which pass through the jaws and the bar. B, in fig. 2, is an adjustable cutter, which is attached to and between the jaws of the tooth A C by means of an iron bolt in fig. 1.

The inventor says: I *claim* the combination of the adjustable cutter B with the drill tooth A C and the draft bar D, in the manner and form as described and represented.

No. 18,590.—Joseph Ingels, of Fayette county, Indiana.—*Improvement in Grain Drills.*—Patent dated November 10, 1857.—On the axle B of the machine which turns with the wheels is placed a cam or zig-zag wheel L, which, as it revolves, vibrates a lever *g*, which is pivoted at its centre *i* to the frame of the machine, there being a friction roller *n* on lever *g*, against which the wings or cams *o*, on wheel L strike, to cause the vibratory motion of said lever. Both ends of lever *g*, where they extend beyond the sides of the hopper, are provided with a series of holes, 1, 2, 3, 4, into one of which the hook, or one end of a connecting rod *m*, is placed, the other end of said rod being connected to a bar M, which gives to it a reciprocating motion, longitudinally of the hopper. To the bar M are connected the ends of crank rods *r r r*, which have their other ends attached to the other blocks P P P, which are pivoted one in each of the seed cells G. The motion communicated to the bar M is thus transmitted to the blocks or feeders P. These feeders have cups or recesses S formed in their under sides.

The inventor says: I am aware that a seed slide has been operated from a zig-zag wheel, and caused to draw or force the grain to the exit; this I do not claim.

But I *claim*, in combination with the cells G, the feeding blocks P, vibrating in said cells, and provided with recesses S for catching and forcing the grain to the exit openings, as described.

No. 16,540.—Oliver C. Green, of Worcester, Illinois.—*Improvement in Seed Drills.*—Patent dated February 3, 1857.—As the disk F vibrates, its arm *f* vibrates; and as the arm is in close proximity to the hole *g*, which communicates with the hopper E, it will constantly keep the hole clear and carry the seed over the ends of the concave *h* into the tube G.

Claim.—The arrangement of the oscillating armed disks F, concave *h*, and guide ways *i*, in combination with the aperture *g* of the hopper, in the manner substantially as set forth.

No. 17,144.—Ezra Emmert, of Franklin Grove, Illinois.—*Improvement in Seed Drills.*—Patent dated April 28, 1857.—As the machine moves forward, the axle B and circular cutters E revolve, and the soil is drilled for the reception of seed by the cutters, which are caused to enter the soil by the weight of the frame, cutting and demolishing all grass and stubble which may come before the drill teeth *d*, and thus preventing said teeth from being thrown above the surface of the soil, out of operative condition.

The inventor says: I do not claim broadly the use of edge wheels in seeding machines; neither do I claim broadly the use of extension tubes; but I *claim* the arrangement and combination of the wheels E with the extension pieces *d*, in the manner and for the purposes substantially as described.

No. 18,690.—Philip M. Gundlach, of Belleville, Ill.—*Improvement in Seed Drills.*—Patent dated November 24, 1857.—D is the hopper, with perforations *a a* in its bottom. E the vibrating seed slide arranged on the bottom of the hopper, and furnished with a series of oblong slots *b b*. F is the vertical gauge and guard plate arranged against the front side of the hopper, and in a manner to be adjusted up and down by means of set screws *c c* and slots *d d*; said plate having a series of narrow, overhanging guards *e e* and downward-projecting spurs *f f*, *e e*. G G the drill tubes arranged in front of the axle C of the truck. H H are the radial clearing rods placed in the spiral lines round the axle and made of sufficient length to just clear the ground and to extend and pass up between the lower extremities of the tubes, in a manner to remove the weeds or grass or other impediments which may collect on their points and interfere with their entrance into the soil.

The inventor says: I am aware that clearers have been used to work between cultivator teeth for the purpose of clearing said teeth or tubes from stubble, &c., and I do not, therefore, claim such feature broadly, but only with reference to my particular arrangement therefor.

I *claim*, 1st, the arrangement consisting of a variable, vibrating, slotted slide E *b*, vertical adjustable plate F, with a series of overhanging guards *e e*, and downward projecting gage spurs *d d*, and perforated hopper D *a*, for united operation, as and for the purposes set forth.

2d. The arrangement of a series of radial arms H H in spiral lines directly upon the propelling axle C, and of said axle and arms behind the seed tubes, and in such relation to the same that the arms pass successively between the lower extremities of the tubes, as and for the purposes set forth.

No. 18,688.—Oliver C. Green, of Dublin, Ind.—*Improvement in the Measuring Apparatus of Seed Drills.*—Patent dated November 24, 1857.—This improvement relates to the construction of a reciprocating slide and its accessories adapted to measure out seed in a regular and continuous stream, and with the avoidance of any cutting, bruising, or crowding of the grains.

Claim.—As new and of my invention the construction and arrangement, as set forth, of the sheath C and the slide D 1 2, provided with the described passages *d d* 3 3′, operating, as explained, in combination with the seed box A of a grain drill.

No. 18,652.—William Wakeley, of Homer, New York.—*Improvement in Self-Feeding Drills.*—Patent dated November 17, 1857.—This invention consists in connecting the feed movement with the driving movement of the drill in such a way that both may be operated simultaneously, when desired, by turning a single crank, and the feed also operates singly or alone when necessary; so that the drill or arbor may be moved forward or backward with increased speed to any desired point or position.

Claim.—The inventor says: I claim the arrangement of the gearing, J K F E¹, as shown, whereby both pinions E¹ F may be operated at the same time, so that the drill E may be rotated and fed to its work by the rotation of a single shaft or crank.

I also claim the arrangement of the lever M with the shaft *g* and catch *k*, as shown, in connexion with the rod L and cross head *c*, with the pins *b b* attached, for the purpose of connecting the wheel K with the wheel J, and disconnecting it therefrom, as described.

No. 16,476.—Richard J. Gatling, of Indianapolis, Ind.—*Improvement in Machines for Fallowing Land.*—Patent dated January 27, 1857. The steam power rotates the cam shaft D as the machine is drawn forward by animal power. This rotation forces the alternate spades H into the soil, by reason of the lifting of the levers by the cams. The flanges *m*, on the cams, produce a twist of the spade as it penetrates and leaves the earth, whereby the loosening thereof is effected. As the spade rises from the earth the spring I, connecting it with the lever F, draws it forward into a vertical position ready for the next descent.

Claim.—A series of spades having a combined vertical reciprocation and spiral twist, through the agency of a system of cams and levers, arranged and operated substantially as specified.

No. 16,547.—Chester P. Marshal, of Worcester county, Mass.—*Improved Fan Blower.*—Patent dated February 3, 1857.—The fixed partitions *g* in the air tube *c*, next to the fan *d*, are intended to prevent a rotation of the current of air and thereby to increase the strength of the blast.

Claim.—The application of fixed partitions in conducting air tubes of fan blowers in the manner and for the purpose described, or in any other way which shall be substantially the same.

No. 18,804.—Charles Clow, Abram Clow, and Charles N. Clow, of Port Byron, New York.—*Improvement in Agricultural Forks.*—Patent dated December 8, 1857.—E is a wire bow at the back end of the fork to prevent the straw from sliding off when the fork is elevated; and the peculiar manner in which it is attached to the head is a part of this improvement. The manner in which it is attached is thus: at each extremity of the head is a small cylindrical projection F F, and these have grooves around them; the ends of the wire bow E are bent around in these grooves, thus forming a hinge joint, which permits the bow to be turned down on the tines by disengaging the brace G from the handle, said brace being jointed on the bow so that it will also lie down on the tines. When the bow is thus turned down, one fork or handle of the forks can be laid on another without trouble, and the inconvenience usually experienced in packing is thereby avoided.

The inventor says: We are aware that manure forks have been constructed with cast malleable iron heads, with sockets for the tines; but in all such forks the sockets have been parallel with the socket in which the handle was inserted, which cannot be done with barley forks, for reasons heretofore given.

We therefore wish it expressly understood that we do not claim a fork constructed with a cast malleable iron head of itself considered, nor any such head in which the sockets for the tines are parallel to the socket in which the handle is inserted.

But we *claim* jointing the bow E on to the head, for the purpose and in the manner substantially as described.

No. 16,388.—William Jones, of Speedsville, New York.—*Improvement in Hay Forks.*—Patent dated January 13, 1857.—By operating set screw D, the conical point thereof forces apart the wedges E, pressing the tines *c* against the ferrule F, that confines them to socket B.

Claim.—The slotted socket B, for the reception of the tangs of the tines, when used in connexion with the wedges E, screw D, and ferrule F, or their equivalents, in the manner substantially as and for the purposes described.

No. 18,047.—William Jones, of Speedsville, New York.—*Improvement in Hay and Manure Forks.*—Patent dated August 25, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Casting the ferrule B upon, or otherwise securing it firmly to the outer end of a socket, in which are slots for the reception of the tangs of the tines of a fork, to prevent lateral working when in connection with a wedge F, cast or otherwise formed between the recesses made for the tangs, to prevent end play, and screws *a*, for the securing of the tines, socket, and handle to each other, substantially as set forth.

No. 18,670.—G. L. Barton and A. E. Roberts, of Albany, New York.—*Improvement in Hay and Manure Forks.*—Patent dated November 24, 1857.—The claim and engraving explain the nature of this invention.

Claim.—A hay fork provided with an upright bow C, said bow being firmly held in its position by means of the rod D, which rod extends from the centre of the tines to the centre of the bow, and thence to the handle of the fork, the tines B provided with double crossbars $b\ b^1$—all as set forth.

No. 18,503.—William Doty, of South Hartford, Conn.—*Improvement in Fruit Gatherers.*—Patent dated October 27, 1857.—This invention is more especially intended for harvesting and assorting apples. It consists in having an inclined apron placed on a suitable frame, and using in connexion therewith screens and conveying spouts, so arranged that the apples may, without injury, be shaken from the tree and assorted.

The inventor says: I am aware that screens and troughs have been used in various ways for screening articles and conveying them to the proper receptacles, and I therefore do not claim, broadly, inclined screens and troughs separately and irrespective of the arrangement shown.

But I *claim* the combination of the apron B, stretched or placed over the frame A, the screen D formed of the adjustable and stationary wires *e d*, and the inclined troughs $F\ G^1$—the whole being arranged as shown for the purpose specified.

No. 18,582.—Firman Goodwin, of Astoria, N. Y.—*Improvement in Fruit Gatherers.*—Patent dated November 10, 1857.—This invention consists in providing a metallic frame so formed as to serve the purpose of a rim for a bag which receives the fruit, and also to serve as the means to detach the fruit from the limb.

Claim.—The frame A formed of the elliptical and annular rims *a b* and socket B, the socket having an oblique position relatively to the frame, the outer *a* having the bag D attached, and the rim *b* provided with the projections *c c* and openings *d d*, as and for the purposes set forth.

No. 17,467.—Jesse Whitehead, of Manchester, Va.—*Improved Machine for Dressing Water Furrows in Land.*—Patent dated June 2, 1857.—As the machine is drawn forward, rotary motion is communicated to the distributors A from the driving wheels B by means of pulleys, cords, and gearings; and the earth which the plough E lifts up from the furrow is scraped up on the table F, when it is scattered over the adjoining land by the distributors H.

Claim.—In combination with the coulter E and mould-boards G, which scrape off and smooth the sides of the furrow, and serve to guide and direct the machine along said furrow, the horizontal plate F, which shaves off the top of the furrow and receives all the excess of earth, and the distributors H, for scattering the earth therefrom, so as not to leave it in ridges—the whole being combined and operating together substantially in the manner and for the purpose set forth.

No. 17,135.—J. F. Barrett, of North Granville, N. Y.—*Improved Apparatus for Binding Grain.*—Patent dated April 28, 1857.—The stock A holding the binding mechanism is secured to any convenient portion of the harvester by a bolt passing through slot *a*, and a cord from the driving apparatus which passes round pulley *d* causes said pulley to revolve. When the apparatus is in position as represented in the engraving, the lower face of pulley *e* rests upon the body *g*, and the pulley is stationary. In operation, the attendant holds the straw for the band in both hands, and receives the cut grain upon it as it falls. When sufficient for a sheaf has been received, he crosses the band, places it between the jaws *m*, then with his foot depressing lever *l*, pawl *h* turns on shaft C, pressing upwards spring B which encircles pulley *d*; the jaws *m* are closed and made to revolve, and by twisting the band, tighten it upon the sheaf.

Claim.—In devices for facilitating the binding of the grain, twisting or tightening the band after it has been crossed upon the sheaf by the operator, by means of jaws *m m*, working in balanced shaft *c*, in combination with the devices described for simultaneously closing and rotating said jaws substantially in the manner set forth.

No. 18,231.—Joseph F. Black, of Lancaster, Ill.—*Improved Machine for Binding Grain.*—Patent dated September 22, 1857.—The novelty of this device consists in a peculiar arrangement of the different parts whereby a requisite amount of grain presented to it will be bound into a sheaf in an expeditious manner, requiring but one attendant.

In the drawings H is a shaft placed on the lower end of the frame A; this shaft has four semi-circular arms I I and J J, placed loosely upon it, said arms when raised so that their outer ends will be in contact forming two eccentric circles as shown in the drawings. The arms I I are somewhat longer than the arms J J. The outer ends of the arms I have springs *n* attached. These springs are merely flat plates of steel attached to the arms. Each arm has a projection O, at its lower end.

Claim.—The inventor says: I claim the combination of the arms I I and J J, and hooks or clamps *u v*, constructed and arranged to operate conjointly as and for the purpose set forth.

No. 18,988.—Lodner D. Phillips, of Chicago, Ill.—*Improvements in Machines for Binding Grain.*—Patent dated December 29, 1857.—The nature of this invention is described by the claim and engraving.

The inventor says: I *claim* the circular revolving platform *n*, in combination with the rake d^1 d^1 d^1 and apron c^1, for the purpose of gathering the grain and conveying it to the binding receiver i' i' i'.

I also claim the construction and combination of the grooved arms S^1 S^1, with the slotted lever k^1, for the purpose of carrying and crimping the band and compressing the stalks in proper shape for binding.

I also claim the construction and arrangement of the apron with straps and pins v^1 in combination with the box *d e f g*, for the purpose of feeding the binding clamps with bands taken from the mass of straw placed in said box, one at a time.

No. 16,815.—Samuel D. Warren, of Lebanon, Ala.—*Improvement in Grain Cradles.*—Patent dated March 10, 1857.—The inventor says: I am aware that the fingers of cradles have been "gathered." I do not, therefore, claim the principle of so doing; but I claim the combination of the standards C D F, fingers H, and speed A, when so made and united, so that by the bar G said fingers may be gathered or adjusted as set forth, and for the purposes explained.

No. 18,464.—Daniel Miffleton, of King George C. H., Va.—*Improvement in Grain Cradles.*—Patent dated October 20, 1857.—In the engraving, A represents the snath; B, the scythe, which is attached to the snath by means of ring C and wedge *a*, which latter can be operated so as to secure or release the scythe by turning set-screw *b*; the fingers D are secured to the arm E by means of hook-bolts *d* and clamp-screws *h*, as shown in engraving; thus the length of the fingers can be adjusted to scythes of different lengths by sliding the rear ends within the hooks *d*, and when adjusted to the proper position they can be secured by means of screw-nuts *h*. The fingers D are secured and braced to each other by means of the screw-bolts *i*, passing through tubes *k*, the latter serving to keep the fingers distended in their true positions. The lowest finger D is secured to the scythe by means of the brace F, as shown in the engraving. *M* represents a square rod, which has a screw-thread *n*, cut at its upper end, working in the screw-nut *o* of the staple *p r* represents a square tube, which encloses the rod *m*.

Claim.—The inventor says: I claim the adjustable fingers D, in combination with the brace F, arranged and operating in the manner and for the purpose set forth.

No. 17,223.—Hiram Kellogg, of McHenry, Ill.—*Improvement in Machines for Cutting and Binding Grain.*—Patent dated May 5, 1857.—The grain being cut by the rotating cutters of this harvester, the stalks are drawn in between the fingers *b* of the sheaf-boards *a*, and the standing grain leans against the grip-rod g^2, the rods *g* and g^2 being then distended, as the machine moves on, arm P, coming in contact with arm *r*, closes rod *g* upon rod g^2, thus compressing the standing bundle of grain, when the operator, standing on platform *e*, binds the grain. The arm P now releases rod *g*, and spring J causes to fly back rod *g* for the reception of a new bundle of grain.

Claim.—The compresser device formed of the grip-rods *g* g^2, *h*, *r*, standard *i*, and spring J J^2, in combination with the striker P, when the same are constructed and operated substantially as described.

No. 16,498.—Daniel W. Shares, of Hamden, Conn.—*Improvement in Harrows.*—Patent dated January 27, 1857.—G represents the front tooth, having two divergent wings to throw the soil to each side of the track. The divergent wing, or covering portion of each tooth H, is formed with such curve towards the centre of the track as will best serve the purpose of loosening and mollifying the soil and cover it into the track of the preceding tooth without overturning or laying it over. The line of the front part of the teeth is continued a short distance below the line of the bottom edge of the covering portion of them to form the point I, which will elevate the teeth when cutting into stumps or roots. The teeth are secured to the bars B B by bolts inserted through the flanges J.

The inventor says: I do not claim the particular construction of the frame or the shape given to it as described, nor do I claim making the frame adjustable to different widths. I *claim* the construction and arrangement of the series of teeth H on the side bars B B^1, in relation to the said bars and to each other, in the manner and for the purpose specified.

No. 16,866.—Sidney S. Hoogle, of York, Ohio.—*Improvement in Harrows.*—Patent dated March 17, 1857.—The claim and engraving show the nature of this invention.

Claim.—The inventor says: I am aware that horizontal harrows have been so constructed that they could be rotated upon their axes.

I *claim* causing the forward movement of a pivoted horizontal harrow to impart a rotary motion thereto by means of the auxiliary action of a weighted roller, or its equivalent, upon one side or the other of said harrow, substantially as set forth.

No. 16,933.—John E. Morgan, of Deerfield, N. Y.—*Improvement in Harrows.*—Patent dated March 31, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I do not claim the connexion of the two parts of the harrow by means of the rod F.

Nor do I claim the sliding or horizontal movement allowed upon this rod, as described, without the use of the vertical movement.

But I *claim* the providing for the vertical action between the two parts of the harrow by means of the coupling formed by the use of the vertical elongated links E, operating on the rod F, or its equivalent, as described.

No. 17,121.—George W. Tolhurst, of Cleveland, Ohio.—*Improvement in Harrows.*—Patent dated April 21, 1857.—If this harrow be drawn forward by applying the draft to the tongue D, the teeth on the opposite side from the shield G will hold in the ground, and the whole frame A will turn horizontally on its centre support B. By raising shield piece G and lowering B, the harrow will turn in the opposite direction.

The inventor says: I am aware that harrows have been made to rotate by dragging them across the field, but they always rotate in one direction. This I do not claim, my object being to cause the harrow to rotate to the right or left, as circumstances may require. I effect my rotation by the harrow teeth themselves, whilst in the other plans one or more auxiliary wheels are used for the rotation, which is then only in one continuous direction.

I claim the adjustable shield pieces G G, in combination with the rotary harrow, substantially in the manner and for the purpose described.

No. 17,831.—James B. Glascock, of Fancy Creek, Illinois.—*Improvement in Rotating Harrows.*—Patent dated July 21, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—I am aware that a patent has been granted for combining a weighted lateral arm with the draft bar of a rotating harrow, for the purpose of causing the harrow to have a positive rotary movement when it is drawn forwards.

I claim causing the after end of the pivoted draft bar B to bear upon the upper surface of the rotating tooth frame A in such a manner as to properly distribute the propelling power exerted upon said draft bar, by which I relieve the fulcrum journal from injurious warping strains, and at the same time impart a steady and uniform movement to said tooth frame as it is drawn forwards, substantially as set forth.

No. 17,151.—M. G. Hubbard, of Penn Yan, New York.—*Improvement in Harvester Frames.*—Patent dated April 28, 1857.—This invention consists in uniting the corners of the wrought iron bars which constitute a harvester frame, by means of a cast iron block provided with flanges *a t*, fig. 2, for the reception of the ends of the bars, and securing bars and block together by means of a bolt *b*.

Claim.—Joining the parts of the frame, substantially as described, by means of the lock plates or irons and bolts, so as to make a firm and rigid union between the parts at a small cost, as set forth.

No. 18,686.—Elias T. Ford, of Batavia, N. Y.—*Improvement in Harvester Rakes.*—Patent dated November 24, 1857.—In figure 1 the gathering arms G G are opened and in the act of closing, and the ends of the spring platform L L are elevated by the wire bail N N to the circle described by the movement of the gathering arms, which are made to close, gathering the cut and falling grain upon the platform L L, retaining the same and removing the gavel W thus gathered to the rear; the arms then open and deposit the same upon the stationary platform W W; the arms continue to move forward until they reach nearly the front end of the spring platform, and then close and gather the second gavel; at this moment the combined levers H H and folding canvas Y Y drop, and effect a sudden division of that portion of the grain gathered from that being brought in by the reel, at the same time preventing all drivelling of the grain.

Claim.—The gathering arms G G, in combination with the spring platform L L, grain driver H H Y, and gavel remover V; the whole being arranged in relation to and operated by the rock shaft I, and cam F, for the purpose set forth.

No. 16,441.—M. G. Hubbard, of Penn Yan, N. Y.—*Improvement in Harvesters.*—Patent dated January 20, 1857.—The nature of this invention consists in forming the cutting standard *m* and track-clearer *n* in one piece, the cutter *m* being hinged at S to the shoe and resting against the fulcrum post *b* by which it is supported; this arrangement serving the purpose of separating the cut grass from the standing grass where it is heavy and tangled together.

Claim.—The combined cutting standard and inclined track-clearer, when constructed and operating substantially in the manner and for the purpose set forth.

I also claim hinging the cutting standard and track-clearer forward of the finger bar, and near the front end of the shoe, and supporting the same against lateral pressure by means of the fulcrum post *b*, as above specified.

No. 16,445.—Pells Manny, of Waddam's Grove, Ill.—*Improvement in Harvesters.*—Patent dated January 20, 1857.—The nature of this invention will be understood by reference to the claims and engravings.

Claim.—Connecting the leading board D to the main frame A, by means of the curved elastic shoe C, rigidly attached at its front to the leading board, and at its back to the under side of the main frame by joint C, in rear of the finger bar and in front of the driving wheel, when said leading board serves to carry the fulcrum of the seat lever F, by which the front of the main frame is raised and lowered, substantially in the manner specified.

And I further claim the combination and arrangement for operation together of the seat lever F and foot lever or treadle E, essentially as set forth, for the purposes described.

No. 16,484.—Moses G. Hubbard, of Penn Yan, N. Y.—*Improvement in Harvesters.*—Patent dated January 27, 1857.—The finger-bar F is affixed to the frame A by two flat elastic braces E E, rigidly attached to the frame and finger-bar, so that the finger-bar can have a vertical motion independent of the frame, its motion being governed by the surface of the ground when in action, or raised above it when not cutting by the operator.

Claim.—The mode of attaching the finger-bar F to the frame A, by means of two flat springs *e e*, when the same are so constructed and arranged as to operate in relation to each other substantially as and for the purposes set forth.

No. 16,763.—DAVID WATSON, of Newark, N. J.—*Improvement in Harvesters.*—Patent dated March 3, 1857.—The gate J, when closed to the platform H, as represented in figure 3 by full lines, prevents the cut grain from passing off the platform; but when the operator throws the gate open (see position of the gate represented in fig 3, by dotted lines) the cut grain is carried off by the endless apron I, said apron acting upon the outer parts of the stalks, and causing the grain to pass obliquely off the inner corner of the back end of the platform.

The inventor says: I do not claim separately an endless apron for discharging the cut grain from the platform; for endless aprons, and in some cases gates, have been previously used for the same purpose.

But I *claim* the gate J, in combination with the inclined endless aprons I and platform H, when arranged and operated in the manner and for the purpose specified.

No. 16,721.—STILLMAN A. CLEMENS, of Rockford, Ill.—*Improvement in Harvesters.*—Patent dated March 30, 1857.—The revolution of the driving wheel D causes the catch teeth on the edge of its rim to lift the end of finger R, which, moving the rock shaft Q, causes arm P to vibrate inwards and press against the end of sickle rod N, carrying the nut T against the spring S. As soon as the tooth leaves the finger R, the force of the spring S causes the sickle bar to slide back, when the finger will be ready for the next tooth. U is an elastic cushion upon the sickle bar, which cushion, when striking the plate O, serves to arrest the force of the spring S.

Claim.—The method of operating the sickles of harvesters by means of a catch wheel and a recoil cushion connected, combined, and attached, substantially as described.

No. 16,730.—LEWIS W. HARRIS, of Waterville, N. Y.—*Improvement in Harvesters.*—Patent dated March 3, 1857.—The inventor says: I am aware two rock shafts, with segmental wheels and pallets, have been worked from a crown wheel, and to one of which shafts the pitman was connected to vibrate the cutters; this I do not claim. But what I do *claim* is, first, in combination with the alternately projecting lugs *a b*, the rocking shafts L L, with their toe-pieces, cranks, and connecting rod N, for the purpose of operating the cutters as set forth.

I also claim hanging the shafts L L in the hinge pieces K K, when said hinge pieces are put within the control of the conductor by means of the rods *h h* and treadle, or their equivalents, so that he may from his seat throw the cutters into and out of gear, as herein set forth and explained.

No. 16,788.—HIRAM CLARK, of Rochester, N. Y.—*Improvement in Harvesters.*—Patent dated March 10, 1857.—The cutter bar J is attached to levers m m^1, and the cutter bar F to levers w w^1; arms C connect the upper ends of the levers to cranks on shaft M. The revolution of the shaft and cranks will impart to the cutter bars the motions described in the claim.

The inventor says: I do not claim double cutter bars, nor an advancing and withdrawing stroke.

But I *claim* giving to each of the cutting bars, alternately, an advancing upward stroke against the grain, as specified.

No. 16,840.—M. G. HUBBARD, of Penn Yan, N. Y.—*Improvement in Harvesters.*—Patent dated March 17, 1857 —This improvement relates to a shifting seat which may be used in combination with a mower and reaper, or harvester. The seat is of ordinary and convenient form, as seen at *w*; it has four legs *u*, permanently affixed to it, and simply resting upon the frame, without being affixed to it. On each side there is a straight or other conveniently formed rod *m*, pivoted at S to the frame at one end and to the centre or other convenient point on the seat underneath. This attachment holds the seat securely in its place, and allows it to be at any moment thrown forward of the axle or back of it, as seen in the engravings.

The inventor says: I *claim* a shifting seat, when constructed, arranged, and combined with a harvester, substantially in the manner and for the purposes set forth.

No. 16,836.—CORNELIUS HOLLOWAY, of Petersburg, Va., assignor to JAMES D. MANNY.—*Improvement in Harvesters.*—Patent dated March 17, 1857.—A cam or eccentric P is connected to the finger bar H by a link Q, and the tongue K to this cam by a strap T passing around it, which strap is fastened to the tongue A; crank R is connected to the cam, so that, by turning said crank the front of the machine may be raised or lowered at pleasure on the tongue. The slot O in the tongue admits of the moving of the machine to and fro; and the rear of the tongue being connected to a pivoted lever, the swinging of said lever compensates for the horizontal backward and forward motion of the machine.

The inventor says: I am aware many devices have been arranged for raising and lowering the cutters from the tongue of the machine. This I do not claim, independent of my special manner of accomplishing this end.

But I *claim*, in combination with the cam P connected to the frame by a link Q and to the tongue by a strap or yoke, the slot O at front, and the lever connexions L M at the rear, so that the machine may swing forward and back as it is lowered or raised, but be rigid when the draught is on, as set forth.

No. 16,957.—SAMUEL S. ALLEN, of Bristol, Pa.—*Improvement in Harvesters.*—Patent dated April 7, 1857.—By the arrangement of the sliding pole V, in connexion with the draught rod *m*, the point of traction, instead of being on one side of the machine, as usual, is removed so near to the centre that the side draught is avoided; at the same time that ample room is afforded to the horses without interfering with the standing grain.

Claim.—The combination of the upper platform Q and sliding pole V with the main frame C and inclined draft-rod or chain, when the same are constructed and arranged for joint operation substantially in the manner and for the purpose set forth.

No. 16,985.—Pells Manny, of Waddam's Grove, Ill.—*Improvement in Harvesters.*—Patent dated April 7, 1857.—By operating the rod *l*, the driver, from his seat C, is enabled to raise or lower the finger-bar *c*, the lower pivoted end of which leans against the elastic shoe *b*. The movement of the rod *l* is effected in the direction of its length.

Claim.—Raising and lowering the finger-bar of harvesters by means of the adjusting stanchion *k*, when used in combination with the elastic shoe *b*, rigidly attached to the draft-bar or pole, and jointed to the main frame in front of the driving wheel and back of the finger-bar; the whole being constructed for joint operation, substantially in the manner and for the purposes set forth.

No. 16,984.—Pells Manny, of Waddam's Grove, Ill.—*Improvement in Harvesters.*—Patent dated April 7, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The combination of the smooth elastic cap or sheath *c*, connecting the divider *b* with the main wing C, with the reversed hook or bent projecting end *d* of an automatic rake; when said parts are constructed and arranged for joint operation, essentially in the manner and for the purposes set forth.

No. 17,123.—J. C. Wilson and T. G. Wilson, of Cedar Hill, Texas.—*Improvement in Harvesters.*—Patent dated April 21, 1857.—The grain, being received upon the endless apron A, is conveyed to the inclined grating *g*. The reel *e* is kept stationary by spring *i* coming in contact with one of the teeth of ratchet *h*. The arm *m*, on wheel *l*, raises spring *i*, thus releasing ratchet-wheel *h*; and arm *n*, on wheel *l*, turns the arms *o* of the reel-shaft, the reel *e* discharging the gavel from the grating *g*. The reel is then arrested by spring *i* coming in contact with the next tooth on ratchet-wheel *h*, and the operation is repeated.

Claim.—Operating the reel by means of the rigid pin *m*, and spring-arm *n*, attached to pulley *l*, in combination with ratchet *h*, arms *o*, and holding spring *i*, when said parts are arranged to operate in relation to each other, as and for the purpose set forth.

No. 17,157.—Isaiah Knauer, of Valley Forge, Pa.—*Improvement in Harvesters.*—Patent dated April 28, 1857.—The rotation of shaft S causes the crank *k* to move within the box B, while the pressure of the pin *p* against the sides of the slot *n* produces the reciprocation of the box and cutter-bar attached thereto.

The inventor says: I make no claim to the manner of producing the reciprocation, as that is not new.

But I *claim* the peculiarly constructed close box B, in combination with guides G G and cover C, when arranged to operate in the manner and for the purposes set forth.

No. 17,280.—Moses G. Hubbard, of Penn Yan, N. Y.—*Improvement in Harvesters.*—Patent dated May 12, 1857.—By taking hold of handle *h* and turning crank *d* half of one revolution, the gear *k* will be moved twice the length of the crank from its pinion, and the machine is thus thrown out of gear.

Claim.—The combination of the shifting fork *f*, short crank *d*, and handle *h*, or their equivalents, for throwing the machine out of or into gear, when constructed and arranged substantially as and for the purposes set forth.

No. 17,277.—Moses G. Hubbard, of Penn Yan, N. Y.—*Improvement in Harvesters.*—Patent dated May 12, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The employment of the cogged segment C attached to the pole rocker in combination with the worm P, for the purpose of elevating and depressing the frame as set forth.

No. 17,451.—W. T. B. Read, of Alton, Ill.—*Improvement in Harvesters.*—Patent dated June 2, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Making the shoe E in one piece, as described, so that, by its peculiar formation, it shall serve not only as a support for the finger bar A, and as a support and guide for the inner end both of the sickle bar C and connecting rod D, but also as a means of preserving the connexion between the connecting rod and sickle bar, as set forth.

No. 17,555.—Nicholas Clute, of Dunnsville, N. Y.—*Improvement in Harvesters.*—Patent dated June 16, 1857.—The endless apron L is caused to revolve on its rollers L^1 and L^2, at a greater speed than the rake-head K travels with the chains I^3, and carries forward any loose straw that lies across the rake-heads, so as to clear the heads and let the grain fall clear into the gavel box K^2.

Claim.—The raking apparatus described, consisting of the endless belt I^3, carrying arms or rakes K K, when used in combination with the endless clearing apron L and curved and elevated platform K, all arranged to operate in the manner and for the purposes set forth.

No. 17,676.—Henry D. Hammond, of Batavia, N. Y.—*Improvement in Harvesters.*—Patent dated June 30, 1857.—For the passage of an obstacle, the turning of the shaft *p*, by power applied to arm *g*, effects the simultaneous elevation of the frame *x* and of the points of the cutters *a h*.

Claim.—The shaft *p*, with arms *o*, *s*, and *q*, relatively attached thereto, as described, in combination with the swinging flanged supporting bar B and the journaled cutter and finger bar I, connected with arm *o*, when said parts are arranged for joint operation in the manner and for the purposes described.

No. 17,691.—Daniel S. McNamara, of North Hoosick, N. Y.—*Improvement in Harvesters.*—Patent dated June 30, 1857.—The yoke ring in which the end of the tongue is placed fits in a recess *o* on the rod F; and when the team is backed, the shaft *i* will be actuated through the medium of the lever *k*, and the latter will come in contact with lever E, and raise the same together with the cutter bar D.

The inventor says: I do not claim the lever E, for that has been previously used, and is quite a common device for raising and lowering the sickles of harvesters.

But I *claim* connecting the shaft *i*, by means of the arm K and link *i*, with the rod F, placed at the underside of the draught pole C, and connected with the yoke ring, substantially as described for the purposes set forth.

No. 17,705.—Charles T. Stetson, of Amherst, Mass.—*Improvement in Harvesters.*—Patent dated June 30, 1857.—By having the finger bar G arranged as represented in the engraving, it is allowed to yield at either end, and to conform perfectly to the irregularities of the ground.

The inventor says: I am aware that the finger and cutter bars of reaping and mowing machines have been variously attached, so as to conform to the irregularities of the ground; and I therefore do not claim attaining this end irrespective of the peculiar means employed for that purpose.

But I *claim* attaching the finger bar C to the frame A, by means of the guides *i i* and the grooved segment guides *e*, the inner end of the bar being provided with friction rollers *d*, which are fitted and work in said segment guides *e*, the parts being arranged substantially as described for the purpose set forth.

No. 17,779.—John P. Manny, of Rockford, Ill.—*Improvement in Harvesters.*—Patent dated July 14, 1857.—By raising the lever J, by means of cord *g*, on pulley J, bolt *a* is raised, and also the system of levers L and M, throwing the whole into the position represented in figure 3; and the effect of these combined levers is to retain the platform P of the harvester in a horizontal position when raised or lowered.

Claim.—The combination of two frames, one of which is adjustable, and can be raised or lowered at pleasure with the lifting piece L and platform P, hinged to said adjustable frame, when said parts are constructed and arranged to operate in relation to each other, in the manner and for the purpose set forth.

No. 17,942.—N. C. Sherman and S. Lightcap, of Hazle Green, Wis.—*Improvement in Harvesters.*—Patent dated August 4, 1857.—By throwing back collar H, the wheel G is left loose and turns upon its axis in the usual manner; and by throwing forward collar H, the pin *j* passes into the recess of the collar, and the wheel is prevented from turning on its vertical axis at *g*.

Claim.—The combination of the peculiarly formed adjustable collar H with the caster frame *f*, in the manner described, whereby the caster wheel may be, at the pleasure of the driver, held rigid in line parallel with the driving wheels, or released so as to turn in the ordinary manner.

No. 17,945.—Charles Tinker and J. A. Sprague, of Mantua, O.—*Improvement in Harvesters.*—Patent dated August 4, 1857.—By operating one of the levers Z or Z^1, one end of the cutter bar V can be raised to avoid any obstacle that may occur; and by raising both levers simultaneously the cutter bar is raised horizontally, as it is required when the machine is to be moved from one locality to another,—in that case the machine will run upon the four wheels, B, O, Y.

Claim.—The vibrating arm K, parallel rod I, and connecting rod T, in combination with the bent levers X X, fulcrum wheels Y Y, levers Z Z^1, and stops U U, when the same are arranged to operate in relation to each other, (and used in connexion with a self-adjusting cutter and finger bar,) substantially in the manner and for the purpose set forth.

No. 17,927.—Samuel Gumaer, of Chicago, Illinois.—*Improvement in Harvesters.*—Patent dated August 4, 1857.—As the machine is drawn along, a vibrating motion is given to the cutters *m* and m^1 by means of the crank pins *r*, pitmen R, and levers *p* turning on the fulcra g^1, and the grain is cut by the action of said cutters and falls on to platform A.

Claim.—The combination of the blades *m* m^1 with the peculiarly constructed platform A and the center swell reel C, when said parts are arranged to operate in relation to each other as and for the purpose set forth.

No. 18,173.—C. M. Lufkin, of Acworth, N. H., assignor to Norris Lufkin, of Unity, N. H.—*Improvement in Harvesters.*—Patent dated September 8, 1857.—The cutters *o n* are pivoted to the finger-bar D, and work on said pivots 1 2, they being operated upon by pitmen *r s* and bars *p g*. The inner semi-circular ends of the cutters *n* are sunk into plate J, so that the plate J is flush with cutters *n;* by this arrangement the cut grain or grass cannot choke or clog the cutting device.

The inventor says: I am aware that two series or sets of cutters, working one set over the other, like shears, have been previously used, and I therefore do not claim cutters thus arranged.

But I *claim* the combination of the cutters *n* and *o*, with the peculiarly constructed plate J, arranged and operating in the manner and for the purpose above set forth.

No. 18,267.—Samuel Pennock, of Kenneth's Square, Pa., assignor to himself and Morton Pennock, of the same place.—*Improvement in Harvesters.*—Patent dated September 22, 1857.—This invention consists in placing the crank shaft E within a frame which is pivoted to the main frame A, and operated by an eccentric, so that the shaft guiding the frame may be easily thrown out of gear.

The inventor says: I *claim* adjusting and regulating the position of the crank shaft E by means of mechanicism constructed, arranged, and operating in the manner set forth.

No. 18,240.—Andrew B. I. Flowers, of Greenfield, Ind.—*Improvement in Harvesters.*—Patent dated September 22, 1857.—This invention relates to guiding the machine. The plates L L^2 of the caster wheels K K have gear teeth cast upon their peripheries, and also on their flat surfaces. The edges of there plates serve, to a certain extent, as guides for themselves and for the caster wheels. It will be seen that the two pinions *n n* gear respectively with the teeth upon the upper and lower surfaces of the plates L L^1, so that by turning the hand wheel N both caster wheels are simultaneously turned in the same direction.

The inventor *claims* guiding the machine by means of the caster wheels K K, upright shaft *i*, and the horizontal shaft M, in combination with the peculiarly constructed caster plates L L^1, said parts being arranged to operate in relation to each other in the manner set forth.

No. 18,390.—Reuben Daniels, of Woodstock, Vt.—*Improvement in Harvesters.*—Patent dated October 13, 1857.—The object of this improvement is to divide the delivered grain on the discharging platform from that which is being delivered by the carrying bands, to prevent collision between the rake and the mechanism which supports it as it descends, in order to divide the grain and discharge it from the machine, and also to support the rake in the arms that communicate to it reciprocating motion for the purpose of discharging the gavels, so that it may turn on its axis, and also rise and fall vertically on these arms.

The inventor says: I *claim*, 1st. The combination of the carrying bands and the pressure feed-rollers with the rake, when arranged and operated substantially as described.

2d. The combination of the spring comb with the rake, carrying bands and pressure rollers, when arranged in the manner and for the purpose described.

3d. The rake when arranged in the arms that support and give to it its reciprocating movement, as described, in combination with the mechanism for raising, lowering, and turning it in these arms for the purpose set forth.

No. 18,405.—N. A. Patterson, of Kingston, Tenn.—*Improvement in Harvesters.*—Patent dated October 13, 1857.—In this improved machine, by turning the shaft G, the axle B will not only be turned, but the double tree L will also be moved or shifted; for instance, if the shaft be turned from left to right, the axle B will be moved or turned, and the double tree L will be moved to the left, and if the shaft be turned in a reversed direction, the axle and double axle-tree will be moved in reversed directions. Consequently, whenever the machine is to be turned, the team is moved towards the wheels having the greatest circuit to pass over, and the power or draught is, therefore, applied where it is most needed, viz: near said wheels, so as to act in the most direct manner in turning the machines.

The inventor *claims* connecting the axle B with the double tree L, substantially as and for the purpose set forth.

No. 18,562.—Hosea Willard and Robert Ross, of Vergennes, Vt.—*Improvement in Harvesters.*—Patent dated November 3, 1857.—This invention consists in forming cutters so that they can be raised to suit any inequality of ground, or elevated bodily when moved from place to place.

The inventors say: We do not claim broadly attaching the finger bar to the machine by a joint, for this has been previously done.

But we *claim* the combination of the hinged finger bar L with the adjustable bar I, lever P, regulating set screw *f*, and wheel *o*; the whole being constructed and arranged in relation to the main frame for joint operation, in the manner and for the purpose set forth.

We also *claim* lever P and regulating set screws *f*, in combination with bar I, chain or cord J^1, pulley *i*, and clutch Q, for the purpose of raising the hinged finger bar L, as described.

No. 18,813.—Seymour Johnson and Leicester Johnson, Aurora, New York.—*Improvement in Harvesters.*—Patent dated December 8, 1857.—To a rectangular frame, of any suitable form, having the finger-bar attached to the back end, the third wheel C is attached on the side of the frame opposite the platform, with its centre nearly over the end of the finger-bar, and back of the drive wheel, so that lines connecting the three wheels A B and C will form a triangle, A being in front, so that the line connecting its centre with the centre of C shall form an angle of nearly forty-five degrees with the frame. By placing the gearing on the outer side of the drive wheel its weight is brought to bear on the wheel C, thereby counteracting the side draught occasioned by the platform. To the front part of the frame is attached a draught pole R, and at the side or sides of the pole, at the place of its attachment to the frame, is placed a movable block or blocks *v v*, by moving which the position of the pole is moved, and the line of draught varied at pleasure.

Claim.—The arrangement of the outer wheel C, drive wheel A, and inner wheel B, in combination with the adjustable draught pole R and movable blocks *v v*, the whole being arranged for joint operation substantially in the manner and for the purpose set forth.

No. 18,938.—William Webber and John Webber, of Rockton, Illinois.—*Improvement in Harvesters.*—Patent dated December 22, 1857.—The claim and engravings explain the nature of this invention.

Claim.—Communicating motion from the main shaft *a* of the driving wheel to the cutter blade by means of the intermediate shafts *c d*, arranged parallel with each other on opposite sides of the bearing wheel A in such a manner that pulleys on the after ends of said shafts may be banded to each other, and a regulating fly-wheel be combined with the shaft *d*; the whole being constructed and arranged for joint operation substantially in the manner and for the purpose set forth.

No. 19,001.—Walter A. Wood, of Hoosick Falls, New York.—*Improvement in Harvesters.*—Patent dated December 29, 1857.—The claim and engravings explain the nature of this invention.

Claim.—So filling up the space between the forks or hounds of the

No. 18,240.—**Andrew B. I. Flowers**, of Greenfield, Ind.—*Improvement in Harvesters.*—Patent dated September 22, 1857.—This invention relates to guiding the machine. The plates L L^2 of the caster wheels K K have gear teeth cast upon their peripheries, and also on their flat surfaces. The edges of these plates serve, to a certain extent, as guides for themselves and for the caster wheels. It will be seen that the two pinions *n n* gear respectively with the teeth upon the upper and lower surfaces of the plates L L^1, so that by turning the hand wheel N both caster wheels are simultaneously turned in the same direction.

The inventor *claims* guiding the machine by means of the caster wheels K K, upright shaft *i*, and the horizontal shaft M, in combination with the peculiarly constructed caster plates L L^1, said parts being arranged to operate in relation to each other in the manner set forth.

No. 18,390.—**Reuben Daniels**, of Woodstock, Vt.—*Improvement in Harvesters.*—Patent dated October 13, 1857.—The object of this improvement is to divide the delivered grain on the discharging platform from that which is being delivered by the carrying bands, to prevent collision between the rake and the mechanism which supports it as it descends, in order to divide the grain and discharge it from the machine, and also to support the rake in the arms that communicate to it reciprocating motion for the purpose of discharging the gavels, so that it may turn on its axis, and also rise and fall vertically on these arms.

The inventor says: I *claim*, 1st. The combination of the carrying bands and the pressure feed-rollers with the rake, when arranged and operated substantially as described.

2d. The combination of the spring comb with the rake, carrying bands and pressure rollers, when arranged in the manner and for the purpose described.

3d. The rake when arranged in the arms that support and give to it its reciprocating movement, as described, in combination with the mechanism for raising, lowering, and turning it in these arms for the purpose set forth.

No. 18,405.—**N. A. Patterson**, of Kingston, Tenn.—*Improvement in Harvesters.*—Patent dated October 13, 1857.—In this improved machine, by turning the shaft G; the axle B will not only be turned, but the double tree L will also be moved or shifted; for instance, if the shaft be turned from left to right, the axle B will be moved or turned, and the double tree L will be moved to the left, and if the shaft be turned in a reversed direction, the axle and double axle-tree will be moved in reversed directions. Consequently, whenever the machine is to be turned, the team is moved towards the wheels having the greatest circuit to pass over, and the power or draught is, therefore, applied where it is most needed, viz: near said wheels, so as to act in the most direct manner in turning the machines.

The inventor *claims* connecting the axle B with the double tree L, substantially as and for the purpose set forth.

No. 18,562.—**Hosea Willard** and **Robert Ross**, of Vergennes, Vt.—*Improvement in Harvesters.*—Patent dated November 3, 1857.—This invention consists in forming cutters so that they can be raised to suit any inequality of ground, or elevated bodily when moved from place to place.

The inventors say: We do not claim broadly attaching the finger bar to the machine by a joint, for this has been previously done.

But we *claim* the combination of the hinged finger bar L with the adjustable bar I, lever P, regulating set screw *f*, and wheel *o;* the whole being constructed and arranged in relation to the main frame for joint operation, in the manner and for the purpose set forth.

We also *claim* lever P and regulating set screws *f*, in combination with bar I, chain or cord J^1, pulley *i*, and clutch Q, for the purpose of raising the hinged finger bar L, as described.

No. 18,813.—**Seymour Johnson** and **Leicester Johnson**, Aurora, New York.—*Improvement in Harvesters.*—Patent dated December 8, 1857.—To a rectangular frame, of any suitable form, having the finger-bar attached to the back end, the third wheel C is attached on the side of the frame opposite the platform, with its centre nearly over the end of the finger-bar, and back of the drive wheel, so that lines connecting the three wheels A B and C will form a triangle, A being in front, so that the line connecting its centre with the centre of C shall form an angle of nearly forty-five degrees with the frame. By placing the gearing on the outer side of the drive wheel its weight is brought to bear on the wheel C, thereby counteracting the side draught occasioned by the platform. To the front part of the frame is attached a draught pole R, and at the side or sides of the pole, at the place of its attachment to the frame, is placed a movable block or blocks *v v*, by moving which the position of the pole is moved, and the line of draught varied at pleasure.

Claim.—The arrangement of the outer wheel C, drive wheel A, and inner wheel B, in combination with the adjustable draught pole R and movable blocks *v v*, the whole being arranged for joint operation substantially in the manner and for the purpose set forth.

No. 18,938.—**William Webber** and **John Webber**, of Rockton, Illinois.—*Improvement in Harvesters.*—Patent dated December 22, 1857.—The claim and engravings explain the nature of this invention.

Claim.—Communicating motion from the main shaft *a* of the driving wheel to the cutter blade by means of the intermediate shafts *c d*, arranged parallel with each other on opposite sides of the bearing wheel A in such a manner that pulleys on the after ends of said shafts may be banded to each other, and a regulating fly-wheel be combined with the shaft *d;* the whole being constructed and arranged for joint operation substantially in the manner and for the purpose set forth.

No. 19,001.—**Walter A. Wood**, of Hoosick Falls, New York.—*Improvement in Harvesters.*—Patent dated December 29, 1857.—The claim and engravings explain the nature of this invention.

Claim.—So filling up the space between the forks or hounds of the tongue with the caster block, to which the caster wheel R and lever S are attached, as that, by the introduction of a rod that passes through them, as at *g*, they may be made rigid and serve to support each other in turning the machine, in the manner and for the purpose set forth.

No. 19,002.—Walter A. Wood, of Hoosick Falls, New York.—*Improvement in Harvesters.*—Patent dated December 29, 1857.—The claim and engravings explain the nature of this invention.

Claim.—So constructing the frame of a combined reaping and mowing machine, and combining it with a spring track-clearer, as all that part of the frame in rear of the cutter-bar may be disjointed and removed by simply taking out the bolts *m n t*, said track-clearer remaining attached for the purpose of adapting the machine to the cutting of tangled or lodged grass, without obstruction, whilst the machine, with the driver upon it, remains perfectly balanced, as set forth.

No. 18,981.—John Long, of Masillon, Ohio.—*Improvement in Harvesters.*—Patent dated December 29, 1857.—In describing the operation of this invention, the inventor says: Suppose the machine to be moving forward, and the shaft 2 to be in the position to the complex spur wheels L^1 L^2, spur wheel L^1 meshing with vibratory shaft 2, moves the shaft in the direction it revolves, exactly half the distance its sectional teeth N are apart, where spur wheel L^2 meshes with the shaft 2, and moves the shaft the same distance back again to the point where the spur wheel L^1 meshes with the shaft, and so on; the complex spur wheels thus mesh alternately with the vibratory shaft, and impart to the knife bar a quick, regular, vibratory motion.

The inventor says: I am aware that cranks and cam wheels have been used in mowers and reapers for driving the vibratory knife bar, and being old devices do therefore not claim them; but I *claim* giving the cutter bar *g* the vibratory motion by two complex spur wheels L^1 L^2, in combination with the reciprocating shaft 2, the whole being constructed and arranged in the manner and for the purposes set forth.

No. 17,687.—Joseph S. Manning, of Philadelphia, Pa.—*Improved Automatic Rake for Harvesters.*—Patent dated June 30, 1857.—As the machine is moved along, the driving wheel gives motion to the endless belts *o*, and to the rakes; and as the rake teeth 2 3 pass above the slats R P, they gather the cut grain and deposit it from the ends of the platform; when the rollers, on levers 4, drop through the openings *a*, the teeth fold by the turning of the bar 1, so as to admit of the rake passing below the platform R P, and having reached the right side of the same the end of the centre tooth 3 projects through opening *b*; the belts in the meanwhile passing on cause the teeth 2 and 3 to be set up for another clearing of the cut grain from the platform.

Claim.—The described raking device, consisting of cross bar 1, teeth 2 2 and 3, swinging bars 4 4, and supporting roller 5, when the same is used in combination with the peculiarly constructed platform P P R R, in the manner and for the purpose set forth.

No. 18,070.—John W. Brokaw, of Springfield, Ohio, assignor to Warder, Brokaw, and Child, of the same place.—*Improvement in Automatic Rakes for Harvesters.*—Patent dated August 25, 1857.—Motion being given the crank G, the rake-head I is moved over the platform by means of pitman H, and the teeth rake off the grain from the platform, the guide roller *i* passing under the spring guide P; the roller, when arrived at the end of the platform, passes down to the lower edge of the guide rail R, the rake being thrown by that movement to the position represented in dotted lines, when it is ready to rake off the grain which has accumulated on the platform.

Claim.—the arrangement of the spring guide P and double guide bar R, in combination with the rake-head I, carrying friction rolls *h* and h^1, constructed, arranged, and operated in the manner substantially as set forth. Also, the friction rolls *g*, in combination with the sleeve *f*, rake-head I, and guide rod *o*, as arranged and operated for the purposes set forth.

No. 18,697.—Joshua Ketcham and John Waterman, of Orangeport, New York.—*Improvement in Bean-Harvesters.*—Patent dated November 24, 1857.—In fig. 1, A A^1 A^2 are the frame work of the machine, E is the head gatherer; this head is provided, as seen, with teeth, or cutters, marked O; these teeth are pivoted to the head, and are ground in a working machine to a wedge on top, in order to more easily disengage the beans and vine. F is a slide, for the purpose of assisting in pulling off the beans and vine and of removing them from the head; this slide is connected with roller D by means of levers *a* and *b*. D is a revolving backward and forward by means of lever G and rod B, which connect with the handle C. This roller serves to operate slide F, giving it motion, whereby it assists and relieves the head E.

Claim.—The slide F, for the purpose of pulling and dislocating the beans and carrying them away over the head, and this slide F, in combination with roller D and levers *a* and *b*, operated by means of lever G, rod B, and handle C, for the purpose of forming a bean harvester, as set forth and described.

No. 16,921.—Abram Heulings, of Philadelphia, Pennsylvania.—*Improvement in Corn Harvesters.*—Patent dated March 31, 1857.—The corn stalks are seized as soon as cut by person standing on the fixed platform P^1, and are placed upon end against the securing gates *b c*. When the tilting platform P^2 is filled with the cut product, the driver moves lever *l* into the position of figure 2, causing the shaft *a* to turn and tilt the platform P^2. The turning of this platform causes the curved arms *d* of the posts *b* to press against the links *e* and produce a partial rotation of said gate-posts simultaneously with the tilting of the platform P^2. This turning of the posts *b* effects the separation of the bars *c* and the load glides from off the machine. The driver then draws the long arm of the lever *l* towards him, and the platform P^2 and gates are ready for the reception of another load.

Claim.—The combination of the tilting platform P, the gates *b c*, curved arms *d*, and swinging links *e*, with the rock shaft and its operating lever and rod, when said parts are arranged for joint operation substantially as described.

No. 17,729.—Israel Dodenhoff, of Bloomington, Illinois.—*Improvement in Corn Harvesters.*—Patent dated July 7, 1857.—As the machine is drawn along, the knife F¹ is vibrated between its ways *b*; and as it works against the stationary knife F, the corn is cut by the action of said knives. The stalks are fed towards the cutters by means of the teeth *i* of endless belt K and guide-bars L. When cut, they are deposited in the revolving collector N.

Claim.—First. The arrangement of the knives, in relation to each other, when combined with the peculiar shape of the teeth for the purposes substantially as set forth.

Second. The armed belt K and spring guide-bars L, for holding, guiding, and carrying the corn, so as to deposit it in the arms of the collector N, in the rear of the machine, in combination with the cutting apparatus, the whole being arranged in relation to each other in the manner substantially as set forth.

No. 17,832.—G. D. Haworth, of Mechanicsburg, Ill.—*Improvement in Corn Harvesters.*—Patent dated July 21, 1857.—As the machine is drawn along, a reciprocating motion is given to the cutters I, in consequence of cam H working between the two rollers *l*; the cutters work in an arc of a circle, and the cut stalks fall upon the arms *i* of the shaft X; and when sufficient stalks are cut to form a gavel, the shafts X are turned by the driver by operating lever *z*, when the stalks will fall to the ground.

Claim.—The cutters I I, attached to suspended rods J, the cutters being curved, and working underneath stationary teeth or fingers, substantially as described for the purpose specified.

No. 18,747.—Adam Humberger, of Somerset, Ohio.—*Improvement in Corn Harvesters.*—Patent dated December 1, 1857.—By this invention two rows of corn may be cut, bound, and shocked with ease and rapidity, the cutter being drawn by a horse and attended by a boy.

The inventor says: I am aware that shafts with revolving arms and knives have been used in connexion with guards for conducting cut stalks upon a platform or table. Therefore, I do not claim these devices as heretofore employed, neither do I claim the carrying table, P, when moved with its supporting frame.

But I *claim*, 1st. The large shafts, or rollers, E E, turning upon the fixed axle D D, and having radial arms L L and H H, with knives I I, in combination with the guards M M, G G, and F F, and knives K K, for the purpose of cutting the stalks, and securely conducting them across the table B, to the binding table P, as set forth.

2d. I claim the table P, when movable upon its supporting frame, in combination with lever U and clamps R R, for binding and shocking the corn, as set forth.

No. 18,769.—John H. Rible, of Somerset, Ohio.—*Improvement in Corn Harvesters.*—Patent dated December 1, 1857.—This invention has reference to the cut product and depositing it in shocks. It consists of a re-entrant angled reel R, to carry the stalks to the middle of the machine, and a receiving apparatus, consisting of a bed *f* and arms *k l*, operating to hold the stalks until sufficient have accumulated to constitute a shock, and deposit the same butt downward upon the ground.

The inventor says: I *claim* the combination of the bed *f* and arms *k l* with the movable carriage C, or its equivalent, so as to receive the cut product and deposit the same as described.

I also claim the re-entrant reel, in combination with the receiving apparatus, as described.

No. 16,442.—M. G. Hubbard, of Penn Yan, N. Y.—*Improvement in Cutters for Harvesters.*—Patent dated January 20, 1857.—This cutter is formed with a thick steel cutting edge, *b*, towards the fingers having a thin web or centre *a*, which fills up the triangle, by which means the friction between fingers and cutters is reduced.

The inventor says: I do not claim forming the edges of cutters by bending a plate of steel at its edge, and thus making an offset for the cutting edge; for this has before been done by Hazzard Knowles, many years since.

I *claim* the cutter, when formed in one piece, as seen in figure 2, constructed substantially as and for the purposes set forth.

No. 16,968.—Samuel Comfort, jr., of Morrisville, Pa.—*Improved Cutting Apparatus for Harvesters.*—Patent dated April 7, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I am aware that springs have been used for the purpose of pressing the knives of harvesters together, and thereby increasing their cutting effect, so arranged, however, as to have an extensive frictional surface. I therefore do not claim exclusively the employment of such springs.

But I *claim* as an improvement on the cutting apparatus of harvesters, for which a patent was granted to me on the 18th of March, 1856, the springs B, with their twisted or bent projections *h*, in combination with the endless chain of cutters D and E, and stationary knives F, when the said parts are constructed and arranged for operation in the manner and for the purpose set forth.

No. 17,745.—John P. Manny, of Rockford, Ill.—*Improved Cutting Apparatus for Harvesters.*—Patent dated July 7, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Causing a series of cutters D to cut from right to left and from left to right, between each pair or set of fingers B at every single revolution of said series of cutters upon their shaft C, or journals, substantially as described.

Also in combination with such series of cutters the recess *g* in the sides of the fingers into which they may enter, to enable them to clear themselves from the clogging matter that gathers and accumulates, unless somehow prevented, in all harvesting machines, as set forth.

No. 17,739.—**Joseph Irwin**, of Frankfort, Ohio.—*Improved Cutting Apparatus for Harvesters.*—Patent dated July 7, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I am aware that spiral cutters have been used before; I am also aware that a continuous spiral bar has been used in combination with stationary cutters, as in the patent of A. Armsden, and I do not claim such devices.

But I *claim* the spiral cutters *e f*, when the same is arranged below, and used in combination with the curved cutting fingers *h h*, in the manner and for the purpose set forth.

No. 18,659.—**James L. Fountain**, of Rockford, Ill., assignor to Himself, **L. J. Clark**, **Bradford McKinney** and **C. M. Fountain**, of Rockford, Ill.—*Improved Apparatus for Harvesters.*—Patent dated November 17, 1857.—E E in fig. 1 are holding plates, keeping the cutters down upon the upper surfaces of the lower limbs of the guard fingers C, and their horns G. By sectional figure 2, the relative position of the finger bar A, the finger C with its horn G, the cutter bar B, cutter D, and upward projection a^1 is plainly shown.

Claim.—The inventor says: I do not wish to be understood as claiming broadly either the combination of an inclined cutting edge with a straight edge on the finger, the cavities *c c*, or the clearing pins a^1 a^1.

But I *claim* the fingers C, when constructed in the peculiar manner above described, in combination with the horns or projections G, reciprocating sectional cutters D, and clearing rivets, a^1 a^1, the whole constructed and arranged for joint operation in the manner and for the purpose set forth.

No. 17,575.—**M. G. Hubbard**, of Penn Yan, N. Y.—*Improvement in the Cutting Apparatus of Harvesters.*—Patent dated June 16, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I am aware that the cutters of reaping and mowing machines have been attached to the cutter bar by means of a single bolt or screw to each cutter, and consequently I do not claim such mode of fastening.

Neither do I claim the device patented to William Hovey, April 29, 1856, and from which my invention radically differs.

But I claim the mode of attaching the cutters *c* to the cutter bar *v*, substantially in the manner, by the devices, and for the purposes set forth.

No. 18,052.—**Pells Manny**, of Waddam's Grove, Ill.—*Improvement in the Cutting Apparatus of Harvesters.*—Patent dated August 25, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The method of constructing the fingers of the cutting apparatus of harvesting machines of two members, B and E, and securing them upon the finger bar in the manner as set forth.

Also the recesses *r* and *z* in the inner faces of the fingers, in combination with the supplementary inclined cutters *u* and *v*, projecting above and below the sickle, substantially as set forth.

No. 18,754.—**J. M. Long**, **Peter Black**, and **Robert Allstatter**, of Hamilton, Ohio.—*Improvement in Finger Bars for Harvesters.*—Patent dated December 1, 1857.—The nature of this invention consists in constructing the finger bar of two metallic plates, one above and the other below the fingers, to which they are riveted, the upper sheet being set back upon the fingers, and the under notched and bent upward between them, until its edge is flush with their upper surface; so that besides the easy passage of the bar over the stubble, due to the turned up edge and lower plate, the front edge of the upper plate will constitute a rear guide for the cutter bar, which, by this construction, is thrown well back.

The inventors say: We expressly disclaim the formation of finger bars of a single sheet of metal, rounded in front, and with the fingers passing through holes in the said rounded portion, as patented by Moore & Patch, November 25, 1856.

But we *claim* the combination of the wrought metallic plates P P^1 with the reciprocating cutter bar A, cutters C, and square-shanked fingers B, said parts being constructed and arranged in relation to each other for joint operation in the manner shown and described for the purposes set forth.

No. 17,328.—**John H. Heyser** and **Edward M. Mobley**, of Hagerstown, Md.—*Improvement in Grain and Grass Harvesters.*—Patent dated May 19, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventors say: We do not claim operating the fork B by means of cams on the driving wheel.

But we *claim* operating the cutter bar O, from the driving wheel A, by means of fork B and arm E, in combination with rocker G and slotted arm H, when said parts are constructed and arranged to operate in relation to each other, as described.

No. 18,229.—**John W. Baltzly** and **William Hobson**, of Pana, Ill.—*Improved Cutting Apparatus for Grain and Grass Harvesters.*—Patent dated September 22, 1857.—By this invention the grass or grain, as the sickle vibrates, is prevented from being thrown outward from the fingers by the action of the cutters, and the cutting device is thereby rendered more efficacious.

In the drawings A represents the cutter bar, which is fitted and works in the fingers B. The cutter bar has a reciprocating movement. C represents the cutters, the back ends of which are attached to the cutter bar. The cutters work underneath the caps *a*, which are attached to the screw bolts *b*, to the upper surfaces of the fingers, one to each finger, as seen in the drawings. The upper surfaces of the fingers are recessed, and a steel plate *c* is inserted in each one, the sides of said plates projecting a little beyond the fingers, and having a bend or "basil" on the under surface at each side, so as to form a cutting edge, as shown at *d d*. The plates *c* may be secured to the fingers by screws.

Claim.—The inventors say: We *claim* the reciprocating teeth C, constructed as shown at figure 3, in combination with the stationary cutting plates *c* in the fingers B, for the purpose set forth.

No. 17,894.—Adam R. Reese, of Phillipsburg, N. J.—*Improvement in Guard Fingers for Harvesters.*—Patent dated July 28, 1857.—The engraving represents a vertical cross section through the guard finger. The body C D of the guard finger is cast around the steel blades M, by inserting said blades within the mould. By having the blades M secured in an oblique position within the cutter, they can be sharpened with great facility.

The inventor says: I do not wish to be understood as claiming broadly the use of steel plates or cutting edges, as applied to cast or malleable iron guard fingers, for I am aware that such use is old.

But I *claim* the combination with a cast or malleable iron guard finger of the steel plates or cutting edges M M, when the same are united to the finger in the peculiar manner above described, and arranged to operate in relation to each other and to the cutters, as fully shown in figure 5, for the purpose set forth.

No. 18,871.—Thomas J. Stealy, of Middlebourne, Va.—*Improved mode of supporting Reels for Harvesters.*—Patent dated December 15, 1857.—The engravings and claim will give the reader an idea of the nature of this invention.

Claim.—The reel W, supported by hinged arms X X, in combination with the notched and adjustable braces *w w*, bar X^1, and rake frame N, as and for the purposes set forth.

No. 18,736.—C. P. Gronberg, of Geneva, Ill.—*Improved Rake for Harvesters.*—Patent dated December 1, 1857.—In the engravings A represents the platform for the reception of the falling grain as it is cut; at one end of which is erected a standard B, on the upper end of which is mounted the pulley C, there being a similar pulley C^1 mounted on the upper end of the driving shaft *a*, which has its bearing in the standard D, erected on the other end of the platform; both pulleys C and C^1 are encompassed by an endless chain E. Between and to the standards B D, is secured a guiding rod *b*, there being another C arranged above the other, and secured to standards Y and Y^1, attached to the standards B D, the one *b* below, and the other *c* above the two pulleys C C^1.

To one end of the swinging frame *d* is attached a stationary arm F, carrying prongs on its lower end; another arm G, to which is secured the movable fork H, being provided at one end with a sliding collar *e*, which is mounted on the guide rod *b*, and at the other end with a hook or collar *f*, for the purpose of attaching it loosely to the swinging frame *d*.

Claim.—The guide rods *b* and *c*, and swinging frame *d*, carrying the stationary fork F, in combination with the levers *l* and *n* and travelling fork H, the whole being constructed, operated, and arranged in relation to each other in the manner substantially as set forth.

No. 18,256.—Isaac Van Doren, of Somerville, N. J.—*Improvement in Rakes for Harvesters.*—Patent dated September 22, 1857.—The nature of this improvement consists in a peculiar mode of operating the rakes of harvesters.

The relative radii of the sector G will vary somewhat according to circumstances, as the sweep of the rake, the motion of the rod D, or the rock shaft E, but the principle of action will be the same. When worked as shown by the engraving, the wheel H becomes an additional driving or bearing wheel, and connects the shaft of the actual driving wheel by clutch K, by which it is disconnected when the machine is to be turned.

The inventor says: I *claim* operating the rake A, when arranged in relation to the platform as described, by means of the double-geared sector G, in combination with the rod D and rock shaft E, or their equivalent, the whole arranged and operating substantially in the manner set forth.

No. 18,437.—Samuel Comfort, jr., of Morrisville, Pa.—*Improvement in Rakes for Harvesters.*—Patent dated October 20, 1857.—By this improvement, a revolving motion is given to the rake G, in such a manner that the grain is effectually cleared from the platform A, and deposited on the ground during a portion of its revolution; and during the remainder of its revolution, the rake is in such an elevated position as to allow the grain, as it is severed from the cutters, to fall on the platform.

The inventor says: I do not confine myself to any precise mode of imparting a vibrating movement to the lever E. But I *claim* operating the rake by means of the vibrating lever E, ratchet wheel N, spindle F, arm K, spring pawl P, and rods L Q and M, in combination with the segment *q* and plate *i*, when the whole are arranged and combined for joint operation substantially in the manner set forth and for the purposes specified.

No. 16,941.—Jesse Urmy, of Wilmington, Del.—*Improved Raking Apparatus for Harvesters.*—Patent dated March 31, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I am aware that rakes have been constructed and operated with a rake bar similar to mine driven by a crank, and having its rear end working around a stationary stud, and I do not lay any claim to such an arrangement.

I am also aware that the upper end of the rake bar has been governed by a connecting rod attached to a stationary point or fulcrum, and do not, therefore, wish to be understood as laying claim to any such arrangement.

But I *claim* operating the rear end of the rake A by means of a crank D, when said crank moves with the pin that operates the rake bar C, in combination with the connecting rod *b* and adjusting holes *v v* and *y y*, the whole being constructed and arranged in the manner and for the purpose set forth.

No. 17,703.—DANIEL C. SMITH, of Tecumseh, Mich.—*Improved Raking Apparatus for Harvesters.*—Patent dated June 30, 1857.—As the machine is drawn along, the rollers D on the driving shaft B strike alternately against the levers E, moving them on their fulcrum *a*, and the rods F cause the shaft J to oscillate by means of arm G, and this oscillating motion is transmitted to the rake Q, which is pivoted at N to shaft I; the rake is thus vibrated over the platform S, and is raised and lowered alternately by friction roller I coming in contact with rod K, depressing said rod and the short end of rake O; and at the next motion the rake drops down on the platform by its own weight. Thus the rake is raised when the grain accumulates on the platform, and, at the end of one motion, drops down and rakes off the grain from said platform.

Claim.—The mode of operating the rake of a grain harvester, by means of the mechanism described.

No. 17,798.—JOHN P. MANNY, of Rockford, Ill.—*Improved Raking Apparatus for Harvesters.*—Patent dated July 14, 1857.—The manner of raising and lowering the platform J of this harvester is described in No. 17,779. The rake Q can be operated either by the attendant on seat I, by means of lever K and rod I, or by power applied to handle O; in both cases the shank N and bar P are moved on the same plane M, turning on the hinged point *e*, and when the shank N comes in contact with the incline *m*, the roller *n* rises on the cam ledge K, and causes the rake to rise during its forward motion over the platform. The teeth *h* are pivoted to the rake head Q; and when the rake rakes off the grain, the teeth *h* are forced into the position represented in full lines by the peculiar shape of the platform. On the rake being elevated, it assumes the position represented in dotted lines.

Claim.—In combination with a contracting trough-shaped platform, a self-contracting and elongating rake, substantially in the manner and for the purpose described.

Also, raising and lowering a rake operated as set forth, to cause it to preserve its relative working position with regard to the platform, as said platform is raised or lowered, by means substantially such as described.

No. 18,009.—ISRAEL DODENHOFF, of Bloomington, Illinois.—*Improved Raking Apparatus for Harvesters.*—Patent dated August 18, 1857.—When the machine is put in operation, the rake H, while passing on the front part of the platform, is kept in proper position by the curved rails *e* to rake off the grain; but on its arrival between the standards J K, it forces back the gate I to the discharging place, as represented in dotted lines, and discharges the grain in a compact bundle on the ground.

Claim.—The rake H, in combination with the platform A and stationary and elastic guides, the whole being constructed and operated substantially as described.

Also gate I, in combination with a rake H, travelling in a horizontal endless track, the whole being constructed and operated in the manner substantially as and for the purposes set forth.

No. 17,025.—ISAAC H. CONKLIN, of Rockford, Illinois.—*Improvements for Raking Attachments for Harvesters.*—Patent dated April 14, 1857.—As the machine is drawn along, rotary motion is given to the rod J in consequence of the wheel F gearing with pinion F on shaft G, and the pinion H on said shaft gearing into wheel I. As the rake teeth *g* sweep over the platform A, the cut grain is raked into the hopper *j*, and at this point the pin *n* passes over and turns the outer pinion *h* on shaft K, and the hopper *j* is tilted as shown in dotted lines, the grain that was in it falling in a gavel upon the ground. As the rod J rotates, the pin *n* strikes the pinion *h*, and throws up hopper *j* to its original position.

Claim.—Operating the hopper *j*, attached to the shaft K, by means of the pin *n* on the plate *m*, in combination with the pinions *h h* on the shaft K, when the said parts are constructed and arranged in relation to the platform A in the manner and for the purpose set forth.

No. 17,045.—DANIEL W. LAFETRA AND HENRY A. LAFETRA, of Eatontown, New Jersey.—*Improved Raking Attachment for Harvesters.*—Patent dated April 14, 1857.—As the machine is drawn along, the two pinions k^1 and *l* will be kept in gear in consequence of roller E bearing upon the ground, and the cylinder C will be rotated by the cranks *p q* and connecting rods *r*, and the rake B will have a reciprocating motion given it by the spiral grooves *i j j*, the teeth a^1 of the rake being elevated as they reach the outer end of the platform by the spring catch *s*, which acts upon the head *b* at that point and turns it, so that the cut grain will be raked off the platform *a*, the rake teeth being turned down in a horizontal position and below the upper surface of the platform as it moves back to the outer end of the platform. When the machine is backed the rake B is not actuated, as the pinion *k* will be thrown out of gear with the pinion *l*.

The inventors say: We are aware that reciprocating rakes, provided with teeth, fitted in a slotted platform, have been previously used, and various devices have been employed for operating them. We therefore do not claim a reciprocating rake, irrespective of the means employed for operating it.

But we *claim* operating or giving a reciprocating motion to the rake B by means of the spirally grooved cylinder C, in combination with the spirally grooved collar K, constructed and arranged substantially as shown and described.

Also, rotating the cylinder *c*, by means of the self-adjusting wheel or roller E and vibrating shaft F, when the same are constructed and arranged in the manner and for the purpose substantially as described.

No. 17,690.—JOHN McINTOSH, of Geneva, Illinois.—*Improved Raking Attachment for Harvesters.*—Patent dated June 30, 1857.—As the machine is drawn along, the grain is deposited on the travelling apron B, and the plate C is drawn in and out in consequence of the cord *j* being wound around the hub *n*, and said cord is cast off from the hub at every revolution of the hub by means of the inclined side *o* on the projection *m*. When the cord *j* is cast off from the hub *n*, the plate C is forced back underneath the apron B by spring F, and the grain on said plate is deposited on the ground.

The inventor says: I am aware that endless aprons and sliding plates have been frequently employed on harvesters for the purpose of discharging the cut grain from the machine, and I therefore do not claim the employment or use of such separately or in themselves considered.

But I *claim* the peculiar method described for withdrawing and releasing the sliding plate C, when the same is used in combination with the endless belt B, in the manner and for the purpose set forth.

No. 18,096.—Stephen R. Hunter, of Cortlandt, New York.—*Improved Raking Device for Harvesters.*—Patent dated September 1, 1857.—When the gate J is in a horizontal position, as represented in dotted lines, the cut grain will pass over the plate F behind the gate J; and when a sufficient quantity has passed behind the gate J, said gate will assume a vertical position and cut off the passage of the cut grain, the gate N rising simultaneously, and allowing the cut grain to remain in a gavel on the ground.

Claim.—The rod K, or its equivalent, and two gates J N, applied to the machine as shown, the gates being operated from the wheel E, by means of the cam D^1, crank shaft H, rod L, and arm M, arranged substantially as shown, for the purpose set forth.

No. 17,749.—Charles D. Rogers, of Utica, New York.—*Improved Scroll Wheel for Harvesters.*—Patent dated July 7, 1857.—By constructing the scroll wheel as illustrated by the claim and engravings, the use of cores becomes unnecessary, lessening the expense of casting, while the chilling process may be readily applied.

The inventor says: I do not claim broadly the construction of scroll wheels in two separate parts.

But I *claim* constructing scroll wheels of harvesters in two separate parts, when both the adjustable portions D and main rim A are constructed and arranged in the peculiar manner set forth.

No. 17,685.—Salem T. Lamb, of New Washington, Indiana.—*Improvement in Self-acting Rakes for Harvesters.*—Patent dated June 30, 1857.—In the engraving G represents the driving shaft of the harvester; as said shaft is rotated, the crank I is also rotated, causing the end of the beam M, which is pivoted to said crank, to rotate with it; and as the beam M is pivoted at *k* to shaft L, and shaft L can turn freely in its bearings, it follows that the slotted end *g* of the beam describes also a circle. By this movement, and the combination of spring *k*, the rake N of the harvester is operated in such a manner that it will be raised, as represented in fig. 2, when it is moving towards the front of the platform, and will be depressed to said platform when moving to the rear, and raking off the grain, as represented in fig. 1.

Claims.—In combination with a rake having the motions described, the gyratory beam M, and the rock shaft L, when the rake is attached to said rock shaft as shown, and the whole operates in the manner set forth.

Also, in combination with a rake operating as above described, the slotted guide *g*, for regulating or governing its motions, when combined with the beam M and shaft L, as set forth.

Also, in connexion with a rake having the motions described, the combined use of the spring K for holding it to its work, and the set screw *m* for regulating the extent of descent of said rake, substantially as set forth.

No. 18,462.—Samuel C. Longshore, of Lahaska, Pa.—*Improved Swathing Apparatus for Harvesters.*—Patent dated October 20, 1857.—By this invention as the grain or grass is severed by the cutters of the harvester it falls into the endless apron D, which conveys it toward the raker E. The ends of the teeth *e* e^1 e^2 catch the grain or grass just as it is about being carried over the roller by the endless apron, the teeth of the raker conveying it in a radiating direction along the surface of the plate I, and allowing it to fall to the ground down the abrupt inclination of the latter, the guard M preventing the tendency to carry up the stalks of grain any higher than necessary. As the stalks of grain or grass are carried over the plate I, they are confined to their proper position by means of the curved projection *k*.

Claim.—The inventor says: I do not desire to claim exclusively the depositing of the severed grain or grass on the ground in a line with the cutters, or the employment of a cone-shaped rake for effecting that purpose.

But I *claim* the angular rotating rake in combination with the endless apron, and the plate I with its recesses *i* and projection *k*, when the whole is arranged and constructed substantially in the manner and for the purpose set forth.

No. 16,789.—George R. Crane, of Caldwell, N. J.—*Improvement in Machines for Harvesting Grain.*—Patent dated March 10, 1857.

Claim.—Operating the bars M N, to which the rake teeth *a* are attached, from left to right by means of the straps O O, roller P, cord *f*, and spring Q, when the same are constructed and arranged in relation to each other, within the divider or shield X, in the manner and for the purpose set forth.

No. 16,658.—William Schnebly and Thomas Schnebly, of Hackensack, N. J.—*Improvement in Machinery for Harvesting Grain and Grass.*—Patent dated February 17, 1857.

Claim.—The thin trapezoidal-shaped finger or guard R, in combination with the cutters E S, when said finger is constructed with an open area or space *m m*, conforming to the same finger, and with recesses *m m* in front and rear to support and guide the cutters near the centre of the finger or guide substantially in the manner described.

No. 17,438.—John B. McCormick, of Versailles, Ky.—*Improvement in Machines for Harvesting Hemp.*—Patent dated June 2, 1857.—The driver is seated upon seat B, and an attendant is seated upon seat J; as the machine is drawn along the hemp is cut by sickle B, the reel F striking the upper part of the hemp and throwing it over upon rods L and platform C, the butts resting on the platform C and the upper ends on rods L. When a requisite quantity of hemp has fallen upon the platform and rods, the attendant withdraws the rods L, and the hemp falls to the ground; the rods L are then replaced upon bars K, ready to receive a new supply of hemp.

Claim.—The combination of the adjustable bar I and seat J with the bars K K, rods Q Q, moveable bar L, and narrow platform G, when said parts are arranged in relation to each other, to facilitate the harvesting of hemp, as described.

No. 18,628.—John C. Cox and Reuben Newton, of Greenville, N. C.—*Improved Harvesting Machine.*—Patent dated November 17, 1857.—The object of this invention is to gather grain from the heads of standing straw in the field, the straw being left in an uncut state. The invention consists of a comb G, formed of concave teeth *e*, attached to the front end of a mounted seed box A, and used in connexion with revolving teeth I.

The inventors say: We do not claim separately either of the parts described.

But we *claim* the comb G, in combination with the rotating teeth *i* and roller *f*, constructed and arranged substantially as and for the purpose set forth.

No. 16,618.—Walter A. Wood, of Hoosick Falls, N. Y.—*Improvement in Harvesting Machines.*—The raker's seat H can be swung around point *c*, so as to adapt the machine to the quality of the grain or to the ease of the raker.

Claim.—Making the raker's seat or stand adjustable in the arc of a circle on the rear part of the frame, substantially in the manner and for the purpose set forth.

No. 16,619.—Walter A. Wood, of Hoosick Falls, N. Y.—*Improvement in Harvesting Machines.*—Patent dated February 10, 1857.—The track clearer E may have through its spring F a vertical motion to pass over obstructions, and at the same time possesses the necessary rigidity horizontally to resist the pressure of the grass against it to move it out of the track of the machine on its return swath. (See engraving 16,619, and also engraving 16,618.)

Claim.—In combination wth the finger bar A and shoe C, a track clearer E, hung to said bar by a spring F, and playing vertically between, but resisted laterally by the lugs *a a* on said shoe, when said parts are constructed and arranged in relation to each other substantially as set forth.

No. 16,620.—Walter A. Wood, of Hoosick Falls, N. Y.—*Improvement in Harvesting Machines.*—Patent dated February 10, 1857.—By drawing up the clutch lever U, the cam planes b^1 move the shaft E to the right, thus throwing wheel P out of gear with pinion Q; a contrary or downward motion brings them into gear again through the other cam planes *b*.

Claim.—Connecting and disconnecting the gears P Q by a clutch lever U, with its cam planes and handle extending up through the support to a convenient position for the operator, and when made and operated in the manner and for the purpose set forth.

No. 16,873.—George Esterly, of Heart Prairie, Wis.—*Improvement in Harvesting-Machines.*—Patent dated March 24, 1857.—This invention relates to the construction of the frame of a harvesting-machine, with a view of its being better balanced and adjusted on its supports, and for preventing side draught. The claim and engravings further explain the nature of this invention.

The inventor says: I *claim*, 1st. Connecting the leading truck to the main frame by means of a rigid reach or secondary frame H I K, when said reach or frame is pivoted to the rear end of the main frame, and united to the truck by a king bolt, and arranged in relation to the driving-wheel, main frame, and platform, substantially as set forth.

I also *claim* the forked lever P, lifting piece N, and spring dogs *g*, combined and operating together for lowering the sickle beam, as set forth.

No. 17,134.—J. F. Barret, of North Granville, N. Y.—*Improvement in Harvesting-Machines.*—Patent dated April 28, 1857.—As the machine is drawn along, main wheel B drives shaft E, the cam wheel G of which operates bar H, by striking against the projection *k*, and a reciprocating motion is thus imparted to the knife N. The slides Q, which are attached to the knife N, move in the fingers P, and carry the knife N; and the pivots *s* of knives R R^1, by reason of the sudden reversals of the direction of their motions, and by the projections *n v w* operating against the stops *z*, and the knives R and R^1 are thus caused to vibrate in arcs of circles toward and from the knife N, while their pivots *s* move with said knife.

Claim.—Constructing the combination of the straight forward and back moving knife N, or its equivalent, with the oscillating or swivelling knives R R^1, when constructed and operating substantially as described.

No. 17,678.—John K. Harris, of Allensville, Ind.—*Improvement in Harvesting-Machines.*—Patent dated June 30, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Imparting to the cutter-bar of harvesting-machines a uniform reciprocating motion, by means of the duplex drive-wheel K K^1, when used in combination with the rocking pinion L; said wheel and pinion being geared by means of alternate and oblique sets of cogs k k^1 l l^1, in the manner set forth.

No. 17,088.—Jonathan P. Green and Israel Dodenhoff, of Bloomington, Ill.—*Improvement in Automatic Rakes for Harvesting-Machines.*—Patent dated April 21, 1857.—Rotary motion being imparted to pulleys *b* and b^1, the belt C, to which the rakes D are attached, moves over said pulleys; the rakes, when over the platform A, are pressed down on said platform by means of guide *h*, while they are raised to a vertical position by guide *k*, when they pass to the rear of the platform.

Claim.—The mode described of attaching rakes to endless belts or chains, and of properly guiding the same, whereby lateral and vertical deflection of the band is prevented in operating the rakes; that is to say, hinging the rakes to the belt C, by means of jaws *c* and projecting lips *d*, when combined with guide-pins *f*, working in grooves to prevent lateral deflection, while a guide-bar *h* keeps the rake down to the platform in raking off the grain, all as set forth.

No. 16,393.—Robert J. Morrison, of Richmond, Va.—*Improvement in the Cutting Apparatus of Harvesting-Machines.*—Patent dated January 13, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—As an improvement on my patent of August 14, 1855, the peculiar form of the lid which overlies the cutters, namely, a lozenge or spear-shaped point and rhomboidal base, for the purpose of giving an oblique direction to the joints between said lids, to prevent the grass, gum, or other material from clogging said joint and checking the efficiency of the lids, substantially as described.

No. 18,093.—James Haviland, of Milton, N. Y.—*Improved method of operating the Cutters of Harvesting-Machines.*—Patent dated September 1, 1857.—As the wheel A revolves, the teeth *e* cause shaft B to turn by acting upon its spiral grooves, and the cutter-bar is vibrated by the intermediate eccentric D and pitman *f*.

Claim.—Imparting the requisite movements to the cutter-blade of a harvesting-machine by means of the spirally grooved intermediate shaft B, and the series of hemispherical or oval-headed teeth *e e*, projecting from the face of the main bearing wheel A, and operating upon the said intermediate shaft, substantially as set forth.

No. 17,367.—Ralph Emerson, Jr., of Rockford, Ill.—*Improved Tongue and Caster Plate for Harvesting-Machines.*—Patent dated May 26, 1857.—The tongue E can be attached to either side of the plate A, being held between the flanges *b*, and secured to the plate by screw bolts. This arrangement affords the means of bringing the tongue nearer or carrying it further from the standing grain.

The inventor says: I do not claim merely giving a lateral adjustment to the tongue of harvesting-machines, as this has been done in various ways. But I *claim* the tongue and caster plate, constructed in the manner and for the purpose described.

No. 16,726.—James H. Frampton, of Hopewell, O.—*Improvement in Machines for Harvesting Standing Corn.*—Patent dated March 3, 1857.—The arms *c* serve to throw the cut stalks into the body H. The driver walks behind the bars *m m*, and when the body is filled with stalks, he draws back the body by grasping the cross-piece *z*; the pin *k*, which is fitted in the slot *l* in the plate *i*, serving as a guide to the body. When the body is drawn fully back (see broken lines in figure 1), the driver turns the body at right angles to its former position (see broken lines in figure 3), the wheels *n n* of course turning with the body. The body is then shoved towards one side of the machine and is then tilted (see broken lines in figure 2), when the stalks will fall from the body, and the chains *s s* will actuate the rods *o o*, causing the arms *p p* to approach each other, and gripe and depress the upper ends of the stalks, thereby causing the lower ends to spread out so as to form a proper base to keep them in a vertical position. The driver then replaces the body in its original position.

Claim.—The body H, so arranged that it may be operated to discharge the stalks, as described, in combination with the rods O O, placed in said body and provided with curved ends or griping arms *p p*, as shown, for the purpose specified.

No. 16,462.—Samuel Bradbury, of Griggsville, Ill.—*Improvement in Machines for Trimming Hedges.*—Patent dated January 27, 1857.—This machine is drawn along the side of the hedge, and the vertical cutters B, constructed similarly to the cutting apparatus of harvesting machines, are operated by means of gearing H and Q, shaft R, crank T, and rod V, trimming the side of the hedge, while the cutters M on the elevated beam A, cut the top of the hedge.

Claim.—The arrangement of the adjustable cutters M and vertical cutters B B, operated in the manner and for the purposes set forth.

No. 17,764.—William Wimmer, of Billingsville, Ind.—*Improvement in Machines for Trimming Hedges.*—Patent dated July 7, 1857.—The position of the horizontal cutting apparatus for trimming the top of the hedge can be adjusted by turning the cranks *p* of the screw shafts, and the position of the vertical cutting apparatus can be adjusted by operating the nut on screw *i*.

Claim.—The duplex arrangement of shears *s g*, substantially as described, both sets being actuated from the same driving-wheel, and being adapted to trim simultaneously the top and one side of the hedge to any desired uniformity, height, and pitch.

No. 18,997.—H. N. Throop, of Pultneyville, N. Y.—*Improvement in Governor for Steam-Engines.*—Patent dated December 29, 1857.—This invention consists in a wheel with a series of connected segments D, so applied as to be capable of moving from and towards its centre, or to form an expanding and contracting rim, and combined with a spring K, or springs acting in opposition to the centrifugal force generated in said segments or expanding rim by the rotation of the wheel, so that the segments or rim will have a tendency to move from or towards the axis, as the velocity of the wheel increases or diminishes with the increasing or diminishing velocity of the motor, and thus will act upon the regulator to diminish or increase the supply of steam.

Claim.—The combination A, or their equivalents, the expanding segments and links constituting the expanding rim, and the springs to operate as described.

No. 17,848.—Solomon Shetter, of Allegheny, Pa.—*Improvement in Garden Hoes.*—Patent dated July 21, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim the mere form of the tines or prongs on the top of the hoe blade; that is to say, said tines being formed concave on the back, and convex on the face.

But I *claim* cutting and forming hoe blades out of sheet iron or steel, with side edges A and prongs C, as described, and for the purpose set forth.

No. 16,764.—Joseph Weber, of Braysville, Ind.—*Improvement in Machines for Hulling and Scouring Wheat, &c.*—Patent dated March 3, 1857.

The inventor says: I do not claim a polygonal surfaced drum or cleaning chamber having a roughened series of projections or a roughened surface, for I am aware such have been used for many purposes.

I *claim*, first, the polygonal chamber A, when made substantially in the manner described, so that the grain will be turned over and over during its descent through the chamber, and be rubbed without being broken.

Second. The curved and notched arms *a a*, in combination with the polygonal chamber A, when constructed and used for the purpose described.

Third. The combination and arrangement of the polygonal chamber A, curved and notched arms *a a*, and the smooth triangular arms *c c*, as and for the purposes described.

No. 16,509.—William Wilber, New York, N. Y.—*Improvement in Machines for Hulling and Separating Cotton Seeds.*—Patent dated January 27, 1857.—The lower end of the sieve box M rests upon the pins O O, arranged in a wheel N. A third pin P is embraced by two studs Q Q attached to the sieve box M, which arrangement, in combination with the eccentric L, causes the sieve box to vibrate vertically and longitudinally.

Claim.—First, in combination with the runner and concave, a blast across the top of said runner, to carry the material to the spout or trunk as soon as it rises to the top of the runner, as set forth.

I also claim, in combination with the runner and concave, the trunk W, with its teeth or grooves for facilitating the separation of the hulls and kernels, as set forth.

I also claim hanging the sieve box by an eccentric to the shaft of the runner and by the plate N and pins O O P to the frame, to give said sieve box its compound, vertical, horizontal, and end movement, as set forth.

I also claim the plates *e f*, with their dress arranged at the feeding-in point of the machine, and forming a portion of the breast of the machine, as set forth.

No. 17,961.—William R. Fee, of Cincinnati, Ohio.—*Improvement in Machines for Hulling Cotton Seed.*—Patent dated August 11, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim the device shown in the mill of Walker, patented in 1855, or any other form of mill dress heretofore known.

But I *claim* a series of cutting edges *e i*, with deep intervening furrows *b h*, for the purpose of hulling cotton-seed by a culling action, which renders both the screening process and the expression of the oil easy and complete, as set forth.

No. 16,469.—Lewis F. Currier, of Portland, Maine.—*Improvement in Machines for Hulling Rice.*—Patent dated January 27, 1857.—While rolling around in the mass of rice in the endless trough A, each wheel B forces the kernels downward, and causes them to pass upwards between the sides of the wheel and those of the trough; and as the wheel leaves them the peculiar shape of the sides causes them to fall back into the path of the wheel, so that it may act again upon them in a similar manner when it next comes around into that part of the trough where they may be situated.

The inventor says: I do not claim the use of a wheel and trough either for pressing or mixing substances, as this is a common application of such devices in the manufacture of powder and in crushing ores, as well as pulverizing or mixing various materials; and although I believe I am the first person who used wheels and a trough for the process of skinning and pearling rice, I presume I cannot claim the same, so far as a new use of them alone is concerned.

I *claim* the improvement in the construction and application of the wheel or wheels to the endless trough, made substantially as described, whereby advantages in skinning rice are gained as specified; such improvement consisting in the disked wheels, applied or arranged in such a trough, essentially as set forth.

No. 18,332.—Harlan P. Gerrish, of Sandoval, Illinois.—*Improved Corn-Husker.*—Patent dated October 6, 1857.—A in the drawings represents the frame of the machine; B the husking cylinder; C the clearing cylinder. At one end of the machine, and contiguous to the husking cylinder, is placed a feeding cylinder D, fixed upon a shaft *a*, and made to revolve in suitable bearings *b b*. Upon said cylinder, and at suitable distances apart, are arranged four or any other proper number of long troughs or boxes E E^1 E^2 E^3, said boxes being inserted into the sides of the cylinder, and bearing or resting upon springs *k* (extending from the shaft *a*, up to and against the bottoms of the troughs), as seen in the drawings. Stops *l l* prevent the trough from falling out of the cylinder.

The ears of corn to be husked are placed successively upon or into the husking troughs as the feeding cylinder rotates, and in the proper position for the knives to cut the stalk off just in rear of where the husks are attached to said stalk.

Claim.—The inventor says: I claim the feeding cylinder D, or its equivalent, made with a series of spring troughs $E\ E^1\ E^2\ E^3$, for holding the blades of corn successively to the action of the knife and husking cylinder, as set forth.

I also claim causing said cylinder to stop each time the ear is brought against or to the action of the husking cylinder, in manner and for the purpose as described.

No. 18,358.—WILLIAM H. SMITH, of Newport, R. I.—*Improved Corn-Husker.*—Patent dated October 6, 1857.—This improvement can be best described by showing how the machine operates. Motion is given to the driving-shaft L, in any proper manner, and the attendant takes the stalks and lays them transversely on the aprons D E in such a way that the ears will be upon the central apron D. These aprons move in the direction of the arrow 1, in figure 1; and as the ears pass underneath the apron H, they are held firmly down on the apron D, while the saws cut the ears from the stalks. The stalks, when cut from the ears, fall down at each side of the frame A; and the ears, as they pass off the inner end of the apron D, fall between the upper ends of the aprons M M. These aprons move in opposite directions, as indicated by the arrows, in figure 1; and the husks are stripped off from the ears as they pass down between the aprons by the teeth *d*, the requisite pressure of the teeth *d* against the ears being produced by the pressure-rollers P P. The ears, as they pass from between the aprons M, fall upon the apron Q, and are conveyed by it to one side of the frame B. The brush cylinders O O strip the husks from the aprons M, and keep their teeth *d* always clean and in perfect order.

Claim.—The inventor says: I am aware that machines have been devised in which one toothed endless apron and brush cylinder were used, and a patent was formerly granted to me for an arrangement of such devices in connexion with a toothed disk.

I am also aware that circular saws have been used for sawing off the butts from the ears; I do not claim, therefore, separately, the employment or use of saws.

Neither do I claim the employment or use of endless aprons, irrespective of the arrangement shown.

But I *claim* the combination of the two toothed aprons M M, provided with pressure P, with the brush cylinders $O\ O^1$, arranged and operating conjointly as shown, for the purpose specified.

No. 18,447.—ALDEN GRAHAM, of Roxbury, Mass.—*Improved Corn-Husker.*—Patent dated October 20, 1857.—In using this improved machine, the knife C, as it detaches the butt from the ear, also forces it upon the fork *l*; and as the knife descends, its edges *f f* force the two arms *i j* apart, the fork causing the butt with husk *c* attached outward to one side of the machine, and the ear being forced outward at the opposite side, the cutter K slitting the husks on the ear so that they may be readily drawn from it by the fork *l*. When the two arms are fully distended by the knife, the ear, stripped of its husk, will fall off the bed F.

The inventor says: I *claim* the vertical reciprocating knife C, in combination with the slitting cutter *k*, stripping fork *l*, and slotted bed F, arranged and operated substantially as and for the purpose set forth.

No. 18,571.—JOSEPH CAWTHRA, of Rochester, N. Y.—*Improved Corn-Husker.*—Patent dated November 10, 1857.—B is a driving-wheel, which, by cogs meshing into the cogs of *c*, propels a shaft *d* running at right angles with the driving-wheel; a belt from a pulley affixed to the inside part of the axle of the driving-wheel propels the wheel F; *h* is a wheel which drives the wheel I, into the extended cogs of which it meshes, and has a long axle, around which, as one centre, the belt P revolves. The wheel I also meshes into the wheel J, and wheels I and J are affixed to the axle of the rollers *l* and *k*; *m* and *n* are elastic or spiral spring dishes (the spring being behind the dish), by which the pressure is adjusted to the different dimensions of ears.

The fan consists of curved arms, with teeth upon cross plates at the perimeter, the curved arms giving the plates and teeth a curved form, and fitting them to take the husks and strip the husks lengthwise off the ear, and from the top to the butt.

Claim.—The grooved rollers *l k*, saw wheel 4, and endless apron *p*, in combination with the husker 2, grating 3, and curved tooth fan 1; the whole being constructed as set forth

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No. 18,584.—SAMUEL A. GOULD, of Seneca Falls, N. Y.—*Improved Corn-Husker.*—Patent dated November 10, 1857.—In operating this machine, an ear of unhusked corn, attached to the stalk or otherwise, is held against the guide C, and the butt brought on to the point of the knife D, while the ear toward the small end rests on the arm E of the trip-lever E; a stroke, lever B, performed by the hand or foot by means of a treadle, brings the slotted portion of the lever B down upon the butt, driving the knife through it, which partly separates the knife from the butt, while at the same time the lever B, striking the end of the arm K of the trip-lever E, elevates the other arm and breaks the ear loose from its husk, leaving the husk attached to the stalk.

Claim.—The trip-lever E, in combination with the lancet-shaped knife D, the guide C, and the slotted lever B; the whole being constructed and operating as described.

No. 18,658.—HERMAN A. DOSTER, of Bethlehem, Pa., assignor to Himself and SMITH A. SKINNER, of Lowell, Mass.—*Improved Corn-Husker.*—Patent dated November 17, 1857.—This invention consists in the employment or use of two rollers, placed one above the other in the same plane, the rollers B C being armed with teeth *e*, and grooved circumferentially, whereby the ears of corn, when placed in the angle or "bite" formed by the contact of the two rollers, will have their husks stripped from them in a rapid manner, the husk being drawn through or between the rollers; the ears, when fully stripped or denuded of their husks, falling directly down from the bite or angle of the rollers without passing between them.

Claim.—The inventor says: I do not claim the employment or use of rollers for husking corn, irrespective of the arrangement of the teeth and grooves, as shown, for rollers have been previously used for the same purpose.

But I *claim* the rollers B C, when provided with the grooves *d* and teeth *e*, arranged substantially as and for the purpose set forth.

No. 18,662.—SMITH A. SKINNER, of Lawrence, Mass., assignor to Himself and HERMAN A. DOSTER, of Bethlehem, Pa.—*Improved Corn-Husker.*—Patent dated November 17, 1857.—The nature of this invention consists in the arrangement of teeth and grooves of two rollers, whereby the husk will not only be stripped from the ear of corn, but the ear put in rotation so as to accomplish the stripping operation entirely around it.

The claim and engravings further show the nature of this invention. The inventor says: I am aware that my machine contains some mechanical devices incident to other machines for husking corn—that is, it contains a serrated cutter, and a means of stripping the husk from the ear; I therefore do not claim the employment of a saw or cutter in connexion with an endless carrier to hold the ear of corn, and so present it to the said saw as to enable the latter to separate the stalk and husks from the ear.

Nor do I claim the employment of an inclined grated spout or gird, and a toothed cylinder having its teeth operating through the spaces between the bars of the spout, and so as to seize the husks and separate them from the ear, while the latter, by the action of gravity, passes down the spout.

I am also aware that, for separating the husk from the ear of corn, two rollers have been employed, each of which has been constructed with teeth and grooves arranged circumferentially on it, and so that the teeth of one roller worked into the grooves of the other, while the teeth of the latter work into the grooves of the former. In this case, however, the ear of corn, being seized on opposite sides by the teeth of both rollers, could not easily revolve so as to be entirely stripped of its husk, the conjoint operation of the teeth of the two rollers operating also to cause the teeth to penetrate the husks, and tear the kernels of corn out of the ears.

I therefore do not claim fluted or corrugated rollers for husking corn, nor the employment and use of rollers, irrespective of my improved arrangement of teeth and grooves; nor do I claim making each roller with teeth and grooves.

But I *claim* the arrangement of the teeth in one roller, in combination with the arrangement of the grooves entirely in the other roller, the same serving to effect the rotation of the ear of corn, as well as the removal of the husk and its presentation to the bite of the rollers, as specified.

No. 18,644.—CHARLES N. LEWIS, of Seneca Falls, N. Y.—*Improved Corn-Husker.*—Patent dated November 17, 1857.—This invention consists of a bed-piece A, to which is hinged a cast iron lever B, to the head of which is attached a chisel-pointed steel blade C for severing the ear from the butt. To the side of the head is hinged a wedge-pointed dog D, with an elbow lever E. Directly underneath the blade is a concave bed G, for receiving the corn to be husked, by the side of which rises a tripping post H, having a bent head I for operating the dog D, by means of the elbow lever E. The concave and bed-piece are mortised through at J, to allow the blade to descend an inch or thereabouts below the surface of the bed, and a slot K extends from the mortise to the end of the concave.

Claim.—The combination of the operating lever B, with the wedge-pointed dog D, lever E, tripping post H, blade C, concave G, and slot K; the whole arranged and operating in the manner and for the purpose set forth.

No. 17,269.—E. F. FRENCH, of Franklin, Vt.—*Improvement in Corn-Huskers.*—Patent dated May 12, 1857.—The corn is placed between the two aprons D, which form a hopper, and, moving in the direction as indicated by the arrows, have a tendency to loosen the husks on the ears. The ears pass down upon the apron E, and are conveyed to rollers G, which grasp the husks and strip them from the ears, the husks passing between the rollers, and the corn passing over them.

Claim.—The combination of the endless aprons D D E, and rollers G G, two or more, covered with India rubber or other elastic material; the above parts being arranged and operating as shown and described for the purpose specified.

No. 18,331.—AMMI M. GEORGE, of Nashua, N. H.—*Improvement in Corn-Huskers.*—Patent dated October 6, 1857.—The operation of this machine is as follows: By turning crank M, a rotary motion is imparted to the shaft N, and roller S, and cogged wheel *u*; the motion of roller S is transmitted to roller *t* by means of a belt or rope and to shaft P, and a rotary motion is given thus to roller C, and a travelling motion to apron B. The attendant now places the ears of corn each between two slats *a*, and the ears are thus carried forward. The disk wheel E, has a rapid revolving motion imparted to it by means of the cog-wheel *u* and *v*; and when the ears arrive opposite the groove *d* in arm *g*, the butt end of each ear is cut off by the action of the knives *b*. During the process of cutting, the butt end rests on the arm, and the blade separates the stalk from the ear and passes through slot *d*, while the ear passes on with belt B, after which the husked ear is discharged at the rear of the machine.

The inventor says he *claims* the combination of the revolving cutter wheel E, with the travelling endless apron B, slotted arm *g*, and the vibrating husking board L, arranged and operating substantially in the manner and for the purpose described.

No. 18,396.—JOHN B. HEICH, of Cincinnati, Ohio.—*Corn-Husker.*—Patent dated October 13, 1857.—In working this machine, the operator stands in front of the driving-wheel Q, and, as he turns the crank R, gives motion to all parts of the machine. As the crank turns, motion is given to the roller E by means of the pinion O, and the corn, guided by the edge of the inclined feeder K, which is on line with the outer edge of roller E, rolls into the flutes of the roller and is held fast by roller F, which is rotated by the movement of the under roller, impelled forward by the ear, and the butt is gradually cut off, the knife G revolving quicker than the ear. The butt, in consequence of the angle at which the knife is placed, is thrown off in a tangent, and the ear falls down the inclined feeder K into the grating L, when the spikes, acting through the grating L, tear the husk off and pass it through the spikes on the under side of the convex frame S S^1, when, being separated from the spikes by means of the rake V, it drops to the floor, and the husk falls from the grating into a basket or other receptacle.

Claim.—The inventor claims: First. The feeding rollers E and F, in combination with the inclined feeder K and rotating knife G, when said parts are constructed and arranged in relation to each other, in the manner and for the purposes set forth.

Second. The convex frame S S^1 and grating L, in combination with the inclined tapering cylinders B B^1, provided with teeth as described, and rake V; the whole constructed and arranged for joint operation as and for the purposes specified.

No. 18,385.—ROBERT BRYSON, of Schenectady, New York.—*Improvement in Corn-Huskers.*—Patent dated October 13, 1857.—In this improvement, to the front sides of the heads *e* a bar G is attached. This bar has two openings *k k* made transversely through it. These openings are in conical form. In the back side of the bar G a steel plate *l* is fitted, and this plate has openings *m m* made through it, the edges of the openings at one or both sides being brought to a cutting edge. The outer end of the plate *l* is attached to one end of the lever H, which has its fulcrum at *n*. The opposite end of this lever is fitted into a cam *p*, which is placed on one end of the inner roller *a* of the apron B.

The inventor says: I do not claim the endless aprons B C and corrugated rollers D D^1 E E^1, for they, in connexion with a guard, have been previously used, and were formerly patented by me.

But I *claim* the reciprocating plate *l* placed in the bar G, and having apertures *m m* made through it, and provided with cutting edges, substantially as shown, for the purpose of cutting the butts from the ears; the bar G having apertures K made through it, and the bar *t* operated in any proper manner.

No. 18,433.—GEORGE K. BROWN, of Moultonborough, New Hampshire.—*Improvement in Corn-Huskers.*—Patent dated October 20, 1857.—The claim and engraving show the nature of this improvement.

Claim.—The inventor says: I *claim* the rotating drum D, provided with holding sockets L, gauge plates I, and clearing teeth *h*, and acting in combination with the stationary cutting knife H and elastic ribs E, provided with stripping teeth *m*, with or without brushes *n* on their under sides, in the manner and for the purpose specified.

No. 18,922.—DAVID M. MEFFORD, of Perrysburgh, Ohio.—*Improvement in Corn-Huskers.*—Patent dated December 22, 1857.—A is a large cylinder, or drum, journalized horizontally. Encircling this drum, and near its left end, is a groove N adapted to receive the "root husks" of the ear. The periphery of the drum, to the right of the groove N, is occupied by equidistant longitudinal troughs M adapted to receive the unhusked ears, bear them forward to the slicing knife D, and discharge them into the shute I, as the drum continues to rotate. *o* are notches on the periphery of the drum, to the left of the groove N, arranged in a line with the trough M, but sufficiently shallow to adapt them to receive the stalk.

The nature of this invention consists in preparing the ear for the action of the husking rollers, and in the combination of a hinged and roughened apron, with husking rollers of peculiar construction, adapted to completely strip the husks from the ear, whether their roots have been severed or not.

The inventor says: I *claim*, 1st. The feed drum A, provided with ear pockets M N O, when used in the described combination with the knife D and husking peg E, for the purposes set forth.

2d. The husking rollers F G, constructed as described, in combination with the hinged and roughened apron H, in the manner and for the purposes set forth.

No. 16,727.—JAMES FULTON, of Louisville, Ky.—*Improvement in Chronometer Escapements.*—Patent dated March 3, 1857.—M L R represents part of the escape wheel; A the roller (partially broken away to show the lifting pallet B below it); N the pivots of the staff; P E D a lever on pivots at E, with the detent pallet placed on its upper side at P; *c* is a banking attached to the plate for the lever to stop against, so as to limit the depth of the locking; F D G is a small lever or click, with its pivots playing in the lever at D, and is held against a banking attached to the lever at H, by the pressure of the spring K G against the part G of the click. It will be seen that the same pressure of the spring K G will hold the lever against the banking *c*.

Claim.—The combination of two levers in such a way that one spring may perform the offices above described by acting on both of them.

No. 18,625.—DAVID BEDELL, of Seneca Falls, N. Y.—*Improved Device for Husking Corn.*—Patent dated November 17, 1857.—In using this invention, the knife *c* is raised in consequence of the operator grasping the bar B; and when the knife is properly adjusted on the bar C, the operator forces down the knife upon the butt, and the bar will also be forced down, the spring D yielding and forcing up the rod E, in consequence of its connexion with the spring through the lever *f* and link *e*. By the time the knife has penetrated the husk as far as it is allowed, the cross-head *g* strikes the ear and detaches or throws it from the butt and husks.

The inventor says: I do not claim the knife C attached to the bar B, nor do I claim any of the parts, separately considered; but I *claim* the knife C attached to bar B, in combination with bar *c* attached to spring D, and rod E^1 attached to said spring by means of the lever *f* and link *e*; the whole being arranged to operate conjointly as and for the purpose set forth.

No. 16,633.—EZRA SPRAGUE HOLMES, of Lockport, N. Y.—*Improvement in Machines for Husking Corn.*—Patent dated February 10, 1857.—

The corn is fed in at E, with its front end in the circular blade of the shears at B; the plates C, with the hands thereon, receive a vibrating motion towards and from B; as the hands recede, the points *g g* being thrown out against the guides S^2 S^2 by the springs *e e*, pass back between the guides S^2 and *q*, by which the hands are kept closed until they reach the angle of guides S^2 S^2 at q^1, when the points *g g* are forced towards each other, which opens the opposite fingers. The spring guides S^1 S^1 permit said points *g g* to pass on to the outside of guides S S, thus keeping the hands opened till they meet again at B, when the points *g g* are made to drop off of the ends of guides S S by the springs at *e e*, which causes the hands to close again; the guides *q q* assist the springs *e e* to close the hands, and keep them closed till the points again reach the angle of *q* and S^2; before the hands meet, the pin *p* hits the stop X in the guide p^1, which stops the palm *a* and gives the fingers room to close; as the hands pass back, the spiral spring *y* presses the palm against the fingers, thus grasping the husks and tearing them from the corn; the fingers Z^1 Z^1 accommodate themselves to the shape of the corn by means of their spring shanks Z Z; the blade of shears K^1 is shut down upon the circular blade B by the cam *u*, just after the stem of the ear is thrown between them, by the hands pulling out upon the husks; the spring *t* opens the shears.

The inventor says: I do not claim the motive parts of this machine, nor the compound crank, nor the ways, slides, and arms, nor the shears; for they have been used before.

I *claim*, first, the huskers, consisting of the guides S^2, q^1; *q*, S S, p^1, shown in figure 3, and of the hands *a*, *f*, *g*, Z^2, Z, Z^1, C, shown in figure 2, or their equivalents, operating in the manner and for the purpose substantially as described.

I also *claim*, second, the combination of the huskers, figures 3 and 2, with the shears, figure 1; said combination acting in the manner and for the purpose substantially as described.

No. 16,758.—Hiram Strait, of Covington, Ky.—*Improvement in Machines for Husking Corn.*—Patent dated March 3, 1857.—The ears are all held against the toothed drum D in a vertical, horizontal, or inclined position by the ear-holders V, H, or I, respectively. O in each of the ear-holders is an edged hole, in which the ears rest and rotate as the drum revolves. The doors of the ear-holders are held down by springs S, and may be opened against said springs to let the husked ears pass out.

Claim.—The toothed drum D, with its projecting saw or knife K and cam X, in combination with one or more ear-holders V, I, H, arranged substantially as specified; also the ear-holders V, I, and H, when constructed and arranged substantially in the manner specified.

No. 16,740.—John Massey, of Buffalo, N. Y.—*Improvement in Machines for Husking Corn.*—Patent dated March 3, 1857.—After the husks and stalk of the corn have been severed by the cutter A, the tip of the ear of corn is thrust into the revolving tubular burr B, and the husks are thereby loosened and removed from the corn.

The inventor says: I do not limit myself to the particular proportions set forth, but desire to include only such forms and proportions as substantially embrace the principle of my invention. I *claim* the tapering tubular burr B, for the purpose of removing the husks from the corn, when arranged and operating substantially as set forth.

No. 16,924.—A. R. Hurst, of New Cumberland, Pa.—*Improvement in Machines for Husking Corn.*—Patent dated March 31, 1857.—The operation of this machine is as follows: The lever E, being depressed at a^x, the band D, attached to it, and passing over pulley J, compresses spiral spring *d*, and causes the jaws C to open. The ear is then inserted between the jaws C, lever a^x is released, and the handle H is turned on its fulcrum *o*, the knife *p* cutting off the butt from the ear, and thereby separating the husks. By again depressing lever E, the ear and husks will drop down, and another ear can be inserted.

Claim.—The employment or use of the sliding jaws or plates C, lever E, and plate or disk F, the jaws or plates C being connected to the lever E by straps D, and the jaws or plates C placed or fitted on the bed-piece or platform B; the above parts being arranged substantially as shown, and used in connexion with the knife or cutter *p*, for the purpose set forth.

No. 16,731.—Horace Holt, of Winchester, Mass.—*Hand Stamp.*—Patent dated March 3, 1857.—The toe G of the hand-lever F serves to depress the platen K. The toe *b* operates the lever N, to which the ink roller M is attached.

The inventor says: I do not claim operating the platen or stem and the inking roll by a simple operation of the hand; but I *claim* the combination of a detached lever, with its toe-pieces for inking and taking the impression, when said inking and impressing devices are returned to their places by springs L and *m*, as set forth.

No. 17,720.—George W. Bachman, of Clifton Springs, N. Y.—*Improvement in Machines for Husking Corn.*—Patent dated July 7, 1857.—The ears of corn are placed within the grooves *a* of the cylinder *c*; and as the cylinder is rotated, the butts are cut off by knives F, the ears being retained in the grooves by spring C. The ears, as the butts are cut off from them, fall into the spout H, which has a vibrating motion given it in consequence of its connexion with screen I; and the ears pass down into screen I, and have their husks stripped from them by the teeth *h* of the board J, the screen and board moving in opposite directions in consequence of their connexion with driving-shaft L; the wire J serving to strip the husks from the teeth *h*.

Claim.—The grooved cylinder C, wires *b*, and knife F, in combination with the reciprocating screen I, provided with clearing teeth *f*, and the reciprocating toothed board J; the whole being arranged to operate conjointly as shown for the purpose set forth.

No. 18,473.—MARTIN W. STEVENS and EDWARD G. KINSLEY, of Stoughton, Mass.—*Improvement in Corn-Husking Machines.*—Patent dated October 20, 1857.—In using this improved machine the ears of corn, with their stalks and husks, are placed in the depression before they reach the severing knife. When the ear is moving forward on the apron, the knife H is at rest; and when the apron stops, the knife begins to descend, and with it a series of wire springs *g*. The ear is placed so that the stalk projects beyond the knife bed I; and as the knife descends it severs the stalk and attached portions of husks, the springs *g* serving to press upon and keep down the ear while being so severed from the stalk. The knife is jointed to or turned upon a pin *h*, and is moved up and down at proper times by a pin projecting from one end of the knife-bar into a cam groove cut in the rear face of a cam wheel K.

Claim.—The inventors say: We are aware that an endless apron with troughs has been used in a husking-machine for feeding the ears of corn.

We are also aware that an intermittent motion has been applied to a feeding cylinder, so that it shall stop at each time an ear is presented to the action of a husking cylinder, or to that of a cutting-off knife. We, therefore, do not claim such as our invention.

But we *claim* the plates *d d* and *i i*, provided with teeth or points for holding the husks, in combination with the piston or bar L, knives *v* and H, spring *g g*, and stop-plate *u*; the whole being arranged for operation substantially in the manner and for the purposes set forth.

No. 18,656.—GEORGE YOUNG, jr., of Saratoga Springs, N. Y.—*Improved Machine for Facilitating the Husking of Corn.*—Patent dated November 17, 1857.—In using this invention the operator seats himself upon the projecting end of the base or bench A, immediately in the rear of arbor K; and placing one foot upon the arm at the lower extremity of the actuating lever *b*, he throws the knife *a* and hammer *g* into the position shown in the engravings; then taking an unhusked ear of corn in his hands, he inserts the stem of it, which projects beyond the husks, under the holding-pin *h*, and steadies the tip end of said ear with his left hand; then, by the operator's straightening his leg and throwing back the lever *b*, the knife *a* is suddenly thrown upwards and severs the husks from the root of the cob; and the instant that the said knife has performed its work, the hammer *g* descends with force and throws the ear of corn entirely free and clear from its severed husks; and thus the operation may be continued with great rapidity, requiring the exertion of but a small amount of force on the part of the operator.

The inventor says: I *claim* the combination of the respective actuating parts thereof as above described, whereby the latch *i*, the knife *a*, and the hammer *g*, will act in conjunction with each other, in the manner and for the purpose set forth.

No. 18,607.—DAVID E. SHAW, of Ross County, Ohio.—*Improved Husking Palm.*—Patent dated November 10, 1857.—This improved husking palm is composed of a leather strap A, some two and a half inches wide on the inside of the hand, and has a hole cut through it for the thumb in such a manner as to fit the hand; to one end of this strap there is attached a narrow strap having a buckle on it, which serves to fasten the palm to the hand. To the strap A there is riveted a thin iron plate B, which is made concave to fit the palm of the hand at and near the root of the thumb. Plate B serves as a stiffener to the palm to prevent soreness, and forms a support to steel tang C, which is riveted to the plate B; the tang is about two inches long, and is made a little crooked so as to stand out from the hollow of the hand, so that when the workman grasps an ear of corn it penetrates and splits the husks.

The inventor says: I do not claim a husking peg, to be worn across the inside of the fingers.

But I *claim* the husking palm, to be used on the palm of the hand for husking and breaking off the butts of corn, constructed and operating substantially as described.

No. 18,774.—PIERPONT SEYMUOR, of East Bloomfield, N. Y.—*Improvement in Machines for Spreading Lime and other Fertilizers.*—Patent dated December 1, 1857.—The claim and engravings explain the nature of this invention.

Claim.—The inventor says: I do not claim the use of the levers, rods, or eccentric or zig-zag wheels whereby I communicate motion from the carriage wheel to the distributing works, as such devices are well known and in use for various purposes.

But I *claim* the combination and arrangement of a series of vibratory plates or distributors *d*, attached to and working upon the face of an inclined plane or distributing surface C, by means of the rod F, or any equivalent connexion that will give the required motion to one end of said plates, while another portion is stationary upon the board or plane, in the manner and for the purposes described.

No. 17,693.—J. A. MOORE and A. H. PATCH, of Louisville, Kentucky.—*Improved Frame for Combined Mowers and Reapers.*—Patent dated June 30, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventors say: We do not claim making the rear and outer end of the frame in one piece, nor do we claim the indiscriminate use of "angle iron."

But we *claim* making the rear and outer end of the frame of a combined mower and reaper of a single bar E of angle iron, when said bar E is bent into the form and united to the frame bars A A¹ C, and to the finger bar D and shoe E¹, as described and shown in the drawings.

No. 17,357.—AMORY AMSDEN, of Rochester, N. Y.—*Improvement in Mowing and Reaping-Machines.*—Patent dated May 26, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I do not claim giving the bars of a reel, or of a cutting-wheel, an inclined or spiral direction, such being a well known device.

But I *claim* the combination of a continuous helix F with the cutters C C, when said helix forces the grass or grain against the cutters in a direction transverse to the direction in which the helix revolves, for the purpose set forth.

No. 16,855.—John Taggart, of Roxbury, Mass.—*Improvement in Mowing-Machines.*—Patent dated March 17, 1857.—In this invention the bearing surface S is arranged at a distance from the rear edge of the cutter frame equal, or about equal, to the greatest breadth of each of the knives, while the bearing surface S is disposed in the rear of the front edge of the cutter-head in such a manner as to keep the knives R in the proper position for cutting the grass, as shown in the engravings. Just in rear of the sprocket-wheel M is arranged a stationary knife-sharpener T, formed of two blades of steel *c d*, arranged together as seen in fig. 2. While the knives are passing along the front part or guide S^1, they will extend beyond the cutter-head so as to cut the standing blades of grass, and with "drawing strokes" the guide S^1 performing the office of maintaining the knives in proper positions for cutting the grass. When the machine is pushed forward against the grass, its endless chain of cutters R R will be put in rotation in such a manner as to cause them to mow the grass and keep themselves sharp.

The inventor says: I do not claim a series of cutters in their application to grain and grass harvesters; neither do I claim a knife-sharpener.

But I *claim* a series of rotary cutters, working in recesses or guides S S^1, in combination with a knife-sharpener T, when the said parts are constructed and arranged for operation in the manner and for the purpose as set forth.

No. 17,355.—William F. Channing, of Boston, Mass., and Moses G. Farmer, of Salem, Mass., assignors to William F. Channing aforesaid.—Patent dated May 19, 1857.—*Improvement in Fire-Alarm Telegraphs.*—If a fire is discovered in the vicinity of the signal station Z, an authorized person opens the signal box and turns crank *a* a number of times. The teeth b^1 b^2 on the circuit wheel depressing the key $c\ c^1$, and in this manner break and restore the circuit at definite intervals, the key returning by its own elasticity. This operation causes the electro-magnet and armature of the central station Y, by repeated strokes on bell *r*, to indicate the number of the district and station whence the alarm originates. The operator, at the central station Y, by turning crank A, operates the transmitting apparatus A^1 B, causing the bells at the alarm stations *v* to give the alarm; and, by tapping on key $m\ m^1$, the number of the signal station originating the alarm may be transmitted to any of the signal stations Z.

Claim.—First, the signal system described, consisting of a series of signal stations scattered at intervals through a whole city or town, or any part thereof, and telegraphically connected with a common centre or point, or with each other, by one or more signal circuits, by which means a constant communication may be established and maintained between all parts of a city or town, however extended, and with the centre or centres at which the signal circuit or circuits converge or meet; so that the moment a fire occurs its existence and locality may at once be known at the centre of the system, and efforts for subduing it properly directed.

Second, the alarm system described, consisting of a series of alarm stations suitably distributed throughout a whole city or town, or any part thereof, and telegraphically connected with a central station by one or more alarm circuits, by which means a public alarm of the existence and locality of a fire may be given at different points.

Third, in combination with the alarm system, for striking the number of the district upon the alarm bells, the signal system for communicating the number of the station at which the fire occurs to all the signal stations, as well as for communicating an alarm to the central station.

No. 17,417.—Silas P. Briggs, of Saratoga Springs, N. Y.—*Improvement in Mowing Machines.*—Patent dated June 2, 1857.—To raise up the finger bar and cutters of this mowing machine the driver, on seat U, places his foot against lever K, pressing it forward till arms P and Q come into the same straight line, when they will become set, and hold the finger bar or dragging parts elevated for transportation. To let down the finger bar the driver may pull back lever K, by means of loop V.

Claim.—The peculiarly constructed attachment described, when connected to and used in combination with the Ketchum mowing machine, in the manner and for the purpose set forth.

No. 17,597.—Jeremy B. Wardwell, of Methuen, Mass.—*Improvement in Mowing Machines.*—Patent dated June 16, 1857.—The beam C, which supports the knives *e*, by means of arm D, is applied to the wheel shaft B by means of a universal joint I; the sickle bar *d* is thus capable of adjusting itself to the contour of the ground over which the machine is passing.

Claim.—Supporting the finger bar and cutting apparatus from the main shaft, substantially as described.

No. 17,964.—Alanson Gale, of Poughkeepsie, N. Y.—*Improvement in Mowing Machines.*—Patent dated August 11, 1857.—As the machine is drawn along, driving wheel A^1 imparts rotary motion to pinion H, wheel J, pinion K, shaft L, and reciprocating motion to pitman N and arm O, while arm S drives the cutter bar *f*.

Claim.—Operating the cutter bar *f* from the master wheel A^1 by means of the mechanism constructed and arranged in relation to the main frame and master wheel of the machine, substantially in the manner described.

No. 17,956.—William Bacheller, of West Newbury, Mass.—*Improvement in Mowing Machines.*—Patent dated August 11, 1857.—

The thill frame I is hinged at a^2 to the cutter frame F, and can be raised or lowered for the purpose of harnessing the animals, while it also yields to slight obstructions on the ground.

The inventor says: I am aware that the thill frames and cutter frames have been variously connected, and in many instances by flexible joints, but not in the peculiar manner described.

I *claim* the combination of the thill frame I with the cutter frame F, when said frames are constructed and used in combination with the supporting wheels B B and operating wheels C C, in the manner and for the purposes set forth.

No. 18,141.—George C. Dolph, of West Andover, O.—*Improvement in Mowing Machines.*—Patent dated September 8, 1857.—By turning lever *a* on its pivoted point *b*, the sliding box *g* is raised between its guides *h*; and the brace bar I, which is hinged to the sliding box, is also raised, and with the same the cutter bar B of the harvester.

Claim.—The lever *a*, links *e*, sliding box *g*, and guides *h h*, with the adjusting wrist *j*, when arranged as set forth, and in relation to an adjustable cutter bar as described for the purpose specified.

No. 18,187.—A. H. Caryl, of Sandusky, O.—*Improvement in Mowing Machines.*—Patent dated September 15, 1857.—The force applied to tongue E to move forward the machine tends to elevate the cutter bar F; and the driver, on seat G, is enabled to raise it entirely from the ground by bringing part of its weight upon treadle O. The machine may be backed without forcing the cutter bar to the ground by the forked end *a* passing over pin *c*.

Claim.—The combination of the rear portion of the tongue or hounds E E with the main or wheel frame A and seat G, said parts being arranged for joint operation, in the manner and for the purposes set forth.

No. 18,510.—John P. Manny, of Rockford, Ill.—*Improvement in Mowing Machines.*—Patent dated October 27, 1857.—The nature of this invention relates to the hanging or suspending of the cutter bar F by flexible connexions, such as cords or chains, at both its ends, to rigid frames, so that it may be raised and lowered by both its ends at the same time by the driver in his seat, and without straining or twisting the cutter bar.

Claim.—Suspending, elevating, and lowering the cutter bar of mowing machines in a horizontal position by means of flexible connexions, such as cords or chains attached to each of its ends, when the same are arranged in relation to, and used in combination with, independent rigid frames, substantially in the manner and for the purposes described.

No. 18,788.—Ephraim Ball, of Canton, O., assignor to Himself and John Butter, of Buffalo, N. Y.—*Improvement in Mowing Machines.*—Patent dated December 1, 1857.—The cutter bar P is permitted to rise and fall bodily, or either end may rise or fall, according to the irregularities of the ground, in consequence of its connexion to the frame A, by the bar 2; for the upper end of said bar is connected to the frame by a universal joint, the pivot *g* allowing the finger bar and bar 2 to rise and fall bodily, and the ability of the rod *f* to turn in the socket *h* permitting either end to rise and fall; the base rod R serving to steady the finger bar while it is moved, and to prevent it from being wrenched out of place by the resistance of the grass or other obstacles; and thus the finger bar is, under all circumstances, at liberty to conform to the unevenness of the ground, and consequently the sickle will perform its work better and with greater uniformity than it otherwise could do.

Claim.—The combination of the short curved brace rod R with the rigid and broad angle attachment of the inclined bar 2 to the finger bar P, the whole arranged for joint operation, substantially as and for the purpose above set forth.

No. 18,975.—Silas E. Jackson and Morgan P. Jackson, of Booneville, N. Y.—*Improvement in Mowing Machines.*—Patent dated December 29, 1857.—The claim and engravings explain the nature of this invention.

Claim.—Counteracting the side draft of a harvesting machine, by attaching the power that draws it to the uncontrolled end of a chain; the other end of said chain being attached to the lower end of a stud, or bar, located and arranged with regard to the frame, as described.

No. 18,976.—Silas E. Jackson and Morgan P. Jackson, of Booneville, N. Y.—*Improvement in Mowing Machines.*—Patent dated December 29, 1857.—The claim and engravings explain the nature of this invention.

The inventors say: We do not claim a raising wheel and lever as generally applied to harvesting machines.

But we *claim* the combination, in harvesting machines having but one main supporting wheel, the finger bar resting on the ground, and supported by braces connected with it and the main frame of the machine, of the hinged lever E and hinged axle F with its wheel I, when arranged and located in relation to the rear cross-piece of the frame and the driver's seat substantially as described.

No. 18,800.—Chester Bullock, of Jamestown, N. Y.—*Improvement in the Cutting Apparatus of Mowing Machines.*—Patent dated December 8, 1857.—A is the finger bar; B is the guard fingers, or teeth, to which the cutters D are hung by pins *a*, which are fixed in the guards B. The back end of the cutters is hung to the under side of the cutter bar E, by a single pin *b* to each cutter, on which pins the cutters may vibrate freely, as the machinery is so operated as to cause them to do so. These pins *b* are fixed in the cutter bar.

The cutters are hollowed, or cut away, forward of the cutting portion. The grass is cut at each stroke fully up to the points of the teeth G, they having very little, if any, tendency to throw the grass down.

The inventor says: I *claim*, 1st. The mode described of attaching the cutters to guard teeth and to the cutter bar, in combination with the shortened lip *b*, by which I am enabled to readily detach said cutters for grinding or for other purposes, as set forth.

2d. A hollowed cutter, so arranged in connexion with other parts as to present the same, or nearly the same, cutting angle in every part of the stroke, when the teeth are hinged to their axes *a* forward of the cutting parts, as set forth.

No. 18,983.—Abraham Marcellus, of Amsterdam, N. Y.—*Improvement in Track Clearers for Mowing Machines.*—Patent dated December 29, 1857.—A is the outer portion of the framing of a mowing machine that supports the inclined wing B. C is a plate, or board, which forms the track clearer. The front end of this plate is pivoted at a^1 to the metal shoe, or divider, a^*, fastened to the front part of the framing, adjoining the finger bar D.

The plate or board C has a spring E fastened to its inner edge, and an arm *a* is attached to the outer side of C, said arm having a friction roller *b* in its outer end. F is the wheel which supports the outer end of the framing.

Claim.—The vibrating clearer C and adjusting spring E, in combination with the wing B, divider *a*, and operating wheel F, said parts being constructed and arranged in relation to each other as and for the purposes set forth.

No. 18,363.—Joseph W. Thorn, of Courtland, Me.—*Improvement in Machines for picking Cotton in the Field.*—Patent dated October 6, 1857.—This invention relates to that class of machines for picking cotton in the field which are driven by horse power, and in which the cotton is collected by a number of picking cylinders, and deposited by them on a receiver.

In the drawing, figure 1 represents a top view of this machine, figure 2 the cylinders, and figure 3 a perspective fraction of the cotton receptacle.

The inventor *claims* the method of delivering the cotton within the receptacle G, by means of the teeth *d* turning on shafts *b*, in combination with the cam rods K and toes *h*, for returning said teeth to the position for picking the cotton, substantially in the manner set forth.

No. 17,362.—Silas P. Briggs, of Saratoga Springs, N. Y.—*Improved Hand Seed Planter.*—Patent dated May 26, 1857.—As the plunger P descends, the wire D, being elastic, slips over a notch on the rim of the wheel C, said wheel being prevented from turning back by spring H; when the plunger P is raised, the wire D carries the wheel round the distance of one notch, which causes a chamber in said wheel to come over an opening below and to discharge its seed. By pressing the elastic rod I into notch K of the plunger said plunger is fastened, and the machine may be pressed into the earth with as much force as the operator pleases, and on releasing rod I the plunger is driven down.

Claim.—The set or fastener I, in combination with the plunger, arranged and operated substantially in the manner and for the purpose set forth.

No. 18,756.—Tobias Marcus, of New York, N. Y.—*Improvement in Cane Planters.*—Patent dated December 1, 1857.—The nature of this invention consists in attaching to the common plough used in furrowing this improvement, which is so constructed that, while the plough clears one furrow, the attached machine will cover the cane plants which have been placed in the adjoining furrow; the machine thus performing the labor that has heretofore been done by hand with the hoe.

Claim.—The adjustable mould-board F, arranged and operated by means of the circular slide M, in combination with the adjustable beam A and socket B, secured by braces C and N, in the manner and for the purpose as described and shown in the drawings and specifications.

No. 16,410.—John S. Toan, of Venice, N. Y.—*Improvement in Corn Planters.*—Patent dated January 13, 1857.—The cogged wheel G, on driving wheel B, meshes into bevel wheel E, the cells *c* of which become filled with corn as they pass under the hopper C; the contents of each cell passing down the tube F^1, where the grain drops on the sliding valve I, which is operated for the discharge of the seed by means of cam L, operating bent lever K of fulcrum d^1, which in its turn actuates lever J and slide valve I.

The inventor says: I do not claim the general construction and operation of the machine, and am aware that many of the devices employed have before been used, as specified.

I *claim* the combination and arrangement for operation together, substantially as shown and described, of the lower striking tube F, having a plough-bit in front and covering roller rigidly attached to it in the rear, with the secondary cross-sliding valve I and its operative lever J, arranged to form part of said sliding tube F^1, the whole being supported by the covering roller and plough-bit, for the more perfect and easy operation of the secondary valve and sliding tube, as specified.

No. 16,551.—Samuel M. Perkins, of Fort Hill, Ill.—*Improvement in Corn Planters.*—Patent dated February 3, 1857.—The draft pole P is secured to frame F, connected with shaft S by means of two straps *a*, leaving the shaft free to turn whenever ring *d* is withdrawn from pin *m* projecting from frame F. A is the driver's seat. By operating lever *c* the catches e e^1 may be caused to enter notches in the inner ends *n* of the wheel hubs, and thereby the wheels will be fixed to the shaft, at the same time that the ring *d* is withdrawn from the pin *m*, as above mentioned. Thus the shaft will be allowed to turn with the wheels.

Claim.—The seed chambers *e* upon the shaft S with radial depositing apparatus B, in combination with the wheels and the mechanism by which said wheels are adjusted relative to the shaft, arranged and operating as set forth.

No. 16,611.—Martin Robbins, of Cincinnati, O.—*Improvement in Corn Planters.*—Patent dated February 10, 1857.—One end of the chain *i* is made fast at one end of the field, and the other end of the chain at the other end of the field. The chain having been placed within the box at the end of the arm *f*, as the machine is drawn forward the buttons *k* and spring *w*, acting through the vibrating tappet *g* on the seeding mechanism, cause the depositing of the seed at regular intervals. When the machine has reached the termination of a row, the chain is removed from the arm, and the machine is brought on to the next row facing in the opposite direction. The arm and hopper are then swung around until the former projects from the opposite side of the beam, and the chain (having been shifted the proper distance) being again placed within the box, the work proceeds as before. By using the reversible hopper and arm, the chain may always be placed on the planted side of the field.

Claim.—The reversible hopper *b* and arm *f* with the vibrating claw or tappet *g*, connected as described with seeding mechanism, in combination with the jointed rod or chain *i*, provided with buttons *k* or similar devices, for the purposes explained.

No. 16,930.—JOHN MILLER, of Bucyrus, O.—*Improvement in Corn Planters.*—Patent dated March 31, 1857.—The two slides *f* and *f* ^{1} are operated simultaneously, and the seed is dropped from the compartment *c* into the furrow made by share H, and by the side of the furrow a quantity of gypsum or lime is dropped from the compartment *d*, indicating the precise spot where the seed is deposited.

The inventor says: I do not claim the perforated and reciprocating slides *f f*, for measuring and distributing the seed and gypsum or lime, for they are well known and commonly used. But I claim the auxiliary compartment *d*, having a slide *f* ^{1} acting simultaneously with the seed slide *f*, arranged and operating as described, for the purpose of designating the point of planting, as set forth.

No. 17,258.—JOHN BROUGHTON, of New York, N. Y.—*Improvement in Corn Planters.*—Patent dated May 12, 1857.—By pressing down handle I and plunger B, the seed in the recess H is carried from sack I to chamber P, the tube E resting on the surface of the ground. By further pressing downward plunger B it forces the seed from recess *a* into tube E, forcing at the same time tube E into the ground. By then raising the implement the seed drops from chamber P into recess *a* for the next operation.

Claim.—The distributing device formed of the block A, having the opening *a* made longitudinally through it to receive the plunger B, having the recess H made in it, the block being provided with the chamber P, slide D, and tube E, when said distributing device or its equivalent is used in combination with the flexible tube or sack J, and the whole arranged to operate as shown, for the purpose set forth.

No. 17,397.—F. J. SMITH, of Four Corners, Ohio.—*Improvement in Corn Planters.*—Patent dated May 26, 1857.—When this machine is in operation the plates *n*, attached to the rods *m*, are pressed towards the tongue P by springs *i*, so as to allow the seed from hoppers H to pass into the seed tubes *a*; by depressing the long arm of lever L, the front part of the machine is raised, and the bent ends of rods *m* are forced asunder by reason of the wedged-shaped form of the tongue P, as represented in figure 3, and the plates *n* close the passage from the hoppers to the seed tubes.

Claim.—The combination of the rods *m m*^{1} and cut-off plates *n* with the springs *i i* and the inclined recesses in the tongue, arranged and operating as described for the purposes specified.

No. 17,380.—ROBERT KUSCHKE and PETER MERKEL, of St. Louis, Mo.—*Improvement in Corn Planters.*—Patent dated May 26, 1857.—As the machine is drawn along, the driving wheels B rotate the crank shaft F, by means of gearings D E, and a reciprocating motion is imparted to the seed boxes L, which causes the seed to drop through the tubes P to the ground.

Claim.—The reciprocating seed boxes L, arranged and operated in the manner and for the purpose set forth.

No. 17,582.—WILLIAM T. PEPPER, of Rising Sun, Ind.—*Improvement in Corn Planters.*—Patent dated June 16, 1857.—As the machine is drawn along, the wheel *a* is rotated and carries up between the flanges B *b* a portion of earth, which being removed from the wheel by scrapers *d*, passes down through spout *e*, and is deposited on the upper floor *f f* of the seed box. When it is desired to plant a hill, the rear part of the machine is depressed to bring the seed box *l* in contact with the ground; while the machine continues to move forward, the lower end of the box remains stationary, bringing it into the position shown in dotted lines. At the same time the depression of the rack *j* closes the entrance to the upper chamber F of the seed box, causing the segments *r* and *r*^{1} to turn slightly and to open the bottoms of the two chambers in the seed box simultaneously, and to allow the seed contained in the lower one to fall on the ground, while the earth contained in the upper chamber falls and covers the seed. At the same time the upper teeth of rack *j* rotating the cog-wheel *m* bring the cup *o* in position to receive the seed for the next hill.

Claim.—1st. The arrangement of the flanges B *b*, on the periphery of the wheel *a*, when used in connexion with the plate *n*, scrapers *d*, and receiving or conducting spout *e*, or their equivalents, the whole being arranged and operating in the manner substantially as and for the purposes set forth.

2d. The rocking seed-box *l*, having its lower end held stationary during the act of planting by contact with the ground, and operated automatically by the power by which the machine is drawn forward; in the described combination with the falling floors *f f g g*, and seed measuring and delivering mechanism *n o p*, operated by means of racks *j*, by depressing the box against the ground, as set forth.

No. 17,584.—SYLVANUS RICHARDSON, of Jericho, Vt.—*Improvement in Corn Planters.*—Patent dated June 16, 1857.—When the planters are pressed to the ground, the slide 6 is raised, and spring 12 attached thereto turns the notch wheel 15 and seed cylinder 10 one notch and empties one notch of its corn; at the same time as the corn leaves the seed cylinder and lodges against the slide 8, the plunger 5 carries the preceding charge into the ground; and when the planters are raised, the slide drops of its own weight and the corn passes under the end of plunger 5, and is prevented from passing out by spring valve 7 having a cord 14 fastened to the planter at one end and the other end to the valve 7; and when the slide rises as the planters are pressed to the ground, the cord 14 slackens and the valve opens and the plunger presses the corn into the ground.

Claim.—The seed cylinder 10 operated by spring 12 in combination with slides 6 and spring valve 7, constructed in the manner and for the purposes set forth.

No. 17,566.—Ives W. McGaffey, of Buffalo, N. Y.—*Improvement in Corn Planters.*—Patent dated June 16, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: While not claiming a swinging frame carrying the seed boxes and ploughs and by which the ploughs are raised or lowered as described,

I *claim* hanging said swinging frame E by boxes F upon fixed sleeve boxes G, arranged around but distinct from the axle C to insure freedom of the axle against the resistance encountered by the ploughs, without in the swinging of the frame E varying the relative concentric position of the axle and seed distributing devices thereon to the seed boxes.

No. 17,786.—Alvin Franklin, of Genoa Cross Roads, Ohio.—*Improvement in Corn Planters.*—Patent dated July 14, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The combination of the plough box extension E and hoe F in the rear of the planting tube or passage for operation together, and with an intermittent corn discharge or seed depositing arrangement substantially as specified, for the purpose set forth.

Also providing the plough box extension E with a knife or scraper *n* arranged in relation to the hoe, for the purpose of clearing the latter in its back spring or stroke, as shown and described.

No. 17,841.—Norman A. Lewis, of Glen's Falls, N. Y.—*Improvement in Corn Planters.*—Patent dated July 21, 1857.—As the machine is drawn along, the axle *d*, by its rotation, conveys the corn which passes into the recesses *f* around into the band *l*; the corn passes into tubes *n*, and as the ends of these tubes enter the ground, their respective slides *i* will be raised by the curved incline *o*, over which the rollers *r* on the rod *j* alternately pass, and the corn will be deposited in the soil.

The inventor says: I do not claim distributing the corn or seed through hollow arms, or through spouts placed radially in the driving wheel, so that the corn or seed will be deposited in the soil from the periphery of the driving wheel, for this has been previously done.

I *claim* having the slides *i* placed over the ends or orifices of the conveying tubes H, the slides being attached to the ends of the same rod *j*, and operating said rod by means of the curved incline *o*, attached to the rod or bar D, and the pulley or roller attached to the rod *j*, the whole being arranged as shown, whereby the slides are actuated or opened and closed alternately for the purpose set forth.

I further claim the hoe H attached to the frame G, which is placed within the roller frame F, arranged as shown, and operated by the projections Q on the driving wheel B, for the purpose specified.

No. 17,898.—Charles Schnepf, of Lancaster, Pa —*Improvement in Corn Planters.*—Patent dated July 28, 1857.—As the machine is drawn along, a vibrating motion is imparted to the hoes F, which operate the slides K, and cause the seed to drop to the ground through passages J.

The inventor says: I am aware that shovels and teeth are attached to slides for planting corn, but these I do not claim.

I *claim* the semi-circular shaped scooping hoes F, with jointed ends E, in combination with the sliders K, and operated by the revolving levers C, as arranged and constructed substantially as described for the purposes set forth.

No. 18,140.—J. W. Ells and James Charlton, of Pittsburg, Pa.—*Improvement in Seed Planters*—Patent dated September 8, 1857.—As the machine is drawn over the field, the slide J has a reciprocating motion imparted to it by means of eccentric G, and causes the seed in hopper A to pass through the holes *x*, and into the seed tube, the slats *t* covering at each operation two of the holes *x*, permiting the seed to pass only through the other two. The object of these slats is to compensate for the inaction of the eccentric at its dead points, during which time the wheel C turns a certain portion before the slide J commences to move.

Claim.—The combination and arrangement of the reciprocating feed slide J with the cut-off slats *t t* and the brush L, in the manner and for the purpose set forth.

No. 18,127.—D. R. Alden, of Unionville, Ohio.—*Improvement in Corn Planters.*—Patent dated September 8, 1857.—As the machine is drawn along, the knobs *i* of the belt K catch against the ends of the arms of the wiper wheel *g*, and rotate the wheel F intermittently, and the seed passes at certain intervals down through passages $e\ f\ f^1$ into seed tube D, and into the furrow.

The inventor says: I do not claim the wheel F for distributing the seed or conveying it from the hopper into the spout, for that is well known and in quite common use.

But I *claim* operating or rotating the wheel F by means of the belt K, having knobs *i* attached, and the wiper wheel *g* attached to the shaft *b* of the wheel F, the above parts being arranged substantially as shown and described.

No. 18,128.—Horace R. Allen, of Athens, Ohio.—*Improvement in Corn Planters.*—Patent dated September 8, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The lever J, pins K, scraper H, spring I, and rake M, when arranged in the manner described, and in combination with the spout G and valve V, for the purpose set forth.

No. 18,508.—Hanford Ingraham, of Naples, N. Y.—*Improvement in Corn Planters.*—Patent dated October 27, 1857.—The sides and ends of the seed hoppers S S are of wood, the bottoms of zinc; the valves *n n* are of a circular form, with an aperture *z* in the side, to contain the seed sufficient for a hill, and are placed in a bed piece in which is an opening to receive the valve *n n*. At the other end a brush is attached, to regulate the distribution of the seed. The bed piece is secured to the under side of the bottom of the hopper, bringing the valves directly under the back ends of the hoppers, and bringing the apertures within the hoppers through an opening in their bottoms, through which the seed passes. To one corner of the hoppers is attached a vibrating spring *v v*, extending a little past the centre and elevated a little above the hoppers. To this spring is attached an agitating wire *w w*, extending down nearly to the aperture in the valve.

The inventor says: I do not claim any of the described parts separately or irrespective of their arrangement.

But I *claim* the arrangement of the seed hoppers S S, in connexion with the hollow teeth *f f*, the valves *n n*, agitating wires *w w*, the vibrating springs *v v*, for the purpose and in the manner substantially as set forth.

No. 18,768.—Bradley Lock Prime, of Hamilton, Ohio.—*Improvement in Corn Planters.*—Patent dated December 1, 1857.—The operation of this improvement is as follows: The projections $n\ n^1\ n^2$, by slightly moving the slide D beyond its cavity, are carried under partition *c*, serve to settle the grain in its cavity, and insure the more proper filling thereof. As the cavity passes under partition *c*, under the action of projection *m* upon lever *k*, it will carry its contents to discharge opening *d*; but in the event of packing of the grain in the cavity to such an extent that the motion of the slide would be stopped, or the grain cut, the partition *c* will be carried in the direction of the motion of the slide, and the contents of the cavity dropped through opening *d*, the partition resuming its place by the force of spring *g*. When the grain becomes jammed between the partition and the grain cavity, before the cavity reaches the partition, the partition yields, and the shake given by the projection on the cam wheel E settles the grain in the cavity, and the partition resumes its place.

Claim.—The yielding partitions *c* of the hopper, constructed, arranged, and operating as and for the purpose set forth, in combination with the secondary projections $n\ n^1\ n^2$ of the cam E, the whole operating as described.

No. 18,798.—J. H. Bonham, of Elizabethtown, Ohio.—*Improvement in Corn Planters.*—Patent dated December 8, 1857.—In the engravings B is the plough stock; C D the plough; H the covering flukes; G the conical reservoir; X the handle; J the tilting pins; F the conducting spout; E the block or bottom; K is the inner ring; *a a* oblong holes in the inner ring; *b* is its slot; L is the outer or thick ring; *c c* are oblong holes in the outer ring; *b* is the outer slot and screw of the inner ring; *a a* are holes to supply *c c* with corn; figure 4 is the cap to fit on

the conical reservoir; A is a disk having a flange M upon its periphery; *n* is a segmental flange placed from O^1 upwards a sufficient distance from M to receive figure 6; *q* is an opening in M for the exit of the corn; *t* is a slot in the segmental flange; O^1 *o* is a wire spring playing in the slot to force the corn out of the holes into the spout; S S is the height of corn in reservoir; S *v* is the segmental space.

The inventor says: I claim a conical seed reservoir G, in combination with the caps or disks A, figures 4 and 8, operated by the handle *x*, and constructed and arranged in the manner and for the purpose set forth.

I also claim the conducting spout F, in combination with tilting pins I and block or bottom E, constructed and arranged as set forth.

No. 18,846.—J. J. S. Hassler, of Ripley, Va.—*Improvement in Corn Planters.*—Patent dated December 15, 1857.—The inventor says: By having detachable sliding perforated gauge-valve blocks or seed-escapes *f f f*, of different thicknesses, with larger or smaller seed escapes, any size can be inserted between the alternately actuating and reacting pressure springs *i i i*, very readily lifting up the flap *b b b* of the hopper, and thus one size may be substituted for another.

The inventor says: I am well aware that various kinds of hand corn planters have been constructed with internally arranged springs and valves and seed escapes; consequently I disclaim such devices.

But I *claim* the detachable sliding, perforated gauge-valve blocks or seed-escapes *f f f*, with the alternately actuating and reacting pressure springs *i i i i*, the adjustable graduating tapering throat blocks C C C C, together and in combination with the hopper and striding equi-distant legs and spouts, arranged and operated as described and set forth.

No. 16,368.—William Badger, of Memphis, Tennessee.—*Improvement in Cotton Seed Planters.*—Patent dated January 13, 1857.—The driving wheel F imparts rotary motion to shafts H and L, and the arms *b* and *c* of said shafts work through the seed in the hopper G, and cause the same to drop to the ground. As the quantity of seed in the hopper diminishes, the operator, by pulling the cords *d*, brings the false sides N of the hopper towards the shafts, and thus the seed is constantly within reach of the arms *b c*.

Claim.—In combination with one or more sets of feeding arms, centrally located in the hopper, the false sides in the hopper, for drawing or forcing the cotton seeds up to said feeding arms, substantially as set forth.

No. 16,550.—James F. Orr, of Orrville, Alabama.—*Improved Cotton Seed Planters.*—Patent dated February 3, 1857.—The plate E may be adjusted by means of set screw F so as to regulate the discharge of seed.

Claim.—Combining an adjustable plate E with the seed cylinder D, in the manner and for the purposes set forth.

No. 17,221.—Henry L. Justice and John H. Galbreath, of Goodlettsville, Tennessee.—*Improvement in Cotton Seed Planters.*—Patent dated May 5, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The combination of rag wheel *d*, having adjustable arms Z, with the movable hopper *f* of a cotton seed planter, the whole being arranged and operated in the manner set forth.

No. 18,109.—Warren A. Simonds, of Boston, Massachusetts.—*Improvement in Portable Gas Generators.*—Patent dated September 1, 1857.—The pipes B and C having become sufficiently heated, a jet of oil is forced through pipe L into pipe B, where it comes in contact with the heated metal and is converted into an imperfectly formed gas or vapor; thence this vapor passes through half turn D into pipe C, where it is still further heated and converted into gas, which passes off through pipe F and cock G to the purifier.

Claim.—The tubular retorts B and C of the form described, operating in the manner substantially as set forth, for the manufacture of oil gas.

No. 18,482.—T. W. White, of Milledgeville, Georgia.—*Improvement in Cotton Seed Planters.*—Patent dated October 20, 1857.—In this invention a deep ring or flange E encircles one of the frusta at the point of its greatest diameter, and close to the edge of the discharge opening, in the same vertical plane as the plough C. This flange raises the hopper so high above the ground that the discharge opening does not come in contact with the earth, and it also protects the hopper from striking against rocks or other obstructions; it also greatly increases its stiffness and strength. The plough C, which is of the usual construction, is hinged to the forward end of the frame A by a bolt *h* passing through the sides of the frame and through the stock of the plough.

Claim.—The inventor says: I *claim* 1st. The arrangement of the flange in relation to the hopper and the plough, so that it will follow in the furrow made by the plough, and elevate the discharge opening for the seed above the ground for the purposes described.

2d. The combination of the plough, the seed coverer, and adjustable connecting rod *m*, when arranged in the manner and for the purpose set forth.

No. 18,913.—Lorenzo D. Law, of Henderson, Ga.—*Improvement in Cotton Seed Planters.*—Patent dated December 22, 1857.—Motion is communicated to the axles C C^1 C by means of a bevelled wheel *e*, placed under the hopper and immediately in front of the slot E, turning loosely in gearings *g g*, and carrying on one end of its axle a crank arm *h*, to which is attached a pitman rod h^1, which extends to the end of the centre arm h^2 of the axle C^1; the other two arms h^3 h^3 are connected to this arm by a rod *r*, so that the turning of the wheel will communicate motion to the set of axles and agitators.

Claim.—The employment of the vibrating agitators C C^1 C, each having their radiating arms arranged with respect to each other as set forth, in combination with the longitudinal slot E at right angles to the axis of the radiators, as set forth.

No. 16,677.—John H. Bruen, of Penn Yan, N. Y.—*Improvement in Hand Seed Planters.*—Patent dated February 24, 1857.

Claim.—The thin broad extremity F, or its equivalent, at the lower end of the rod B, acting as a cam to open the blades, by giving said rod a partial turn with the hand, substantially as specified.

Also, in combination with the above, the arrangement of the seed distributor G on the rod B, whereby the seed is made to drop simultaneously, and only with the opening of the blades, as described.

Also, the star or coral-shaped attachment I of the rod B, operating as described, so as to insure the regular action of the seed distributor.

No. 17,089.—Plymon B. Green, of Chicago, Ill.—*Improvement in Hand Seed Planters.*—Patent dated April 21, 1857.—On forcing the machine down, the point K enters the earth until foot A strikes the earth, when the machine slides down on slide B; slide B wedges out catch C from under the stop E, and the plunger O slides down and forces the seed into the earth; at the same time the seed in the cavity P is carried below the seed box D and deposited at S. On raising the planter from the earth, the plunger O slides up, and spring L forces catch C under stop E. Stop E and catch C prevent the plunger from forcing out the seed until the point K enters the earth to a certain depth.

Claim.—The combination of slide B, catch C, and stop E, constructed and arranged to hold the plunger stationary until the point K enters the earth to a certain depth, substantially as described.

No. 17,081.—John Decker, of Sparta, N. J.—*Improvement in Hand Seed Planters.*—Patent dated April 21, 1857.—The seed D is placed in hopper A, and the fertilizer in hopper A^1. When the slides *b* are forced down within the box B, the seed and fertilizing material will fall by their own gravity into the openings *h*. When the slides are drawn upward, so that the openings *h* will be above the upper ends of the partition plates *a*, the seed and fertilizing material will fall down to the lower end of spout *g;* and when the slides are again depressed, the longer slide B will force the plate C out from box B, pushing the seed and fertilizing material into the ground.

The inventor says: I am aware that reciprocating perforated slides for planting or distributing seed have been used, and I do not claim such separately or in themselves considered.

But I *claim* the slides *b b*, fitted in the box B, and placed relatively with the hoppers A A^1 as shown, and the plate or clearer *f*, attached to the block *d*, when the above parts are combined and arranged so as to operate conjointly, as shown, for the purpose specified.

No. 17,080.—Thomas Crane, of Fort Atkinson, Wis.—*Improvement in Hand Seed Planters.*—Patent dated April 21, 1857.—The apparatus being in position as represented in figure 2, the seed drops from the receptacle *g* through passage *m*, on to the upper bent end of spring D;

and by raising sliding rod *b* by means of handle A, the bent end of spring *d* falls into the recess *n*, the spring *d* expands and opens the passage *c*, and the seed drops down within the concavity *r*; on the next downward movement of sliding rod *b*, it forces spring *q* aside, turning block *a* on its fulcrum *x*, and the seed is forced into the ground.

Claim.—The combination of the pivoted and spring actuated block *a* with the grooved and perforated sliding slat *b*, substantially in the manner and for the purpose set forth.

Also the combination of spring *d* with the grooved and perforated sliding slat *b*, in such a manner that the inclined aperture *n* in the back of the planter will operate said spring, substantially in the manner and for the purpose set forth.

No. 18,145.—Joel Haines, of West Middlebury, Ohio.—*Improvement in Hand Seed Planters.*—Patent dated September 8, 1857.—When the plunger F is raised, the slide K is moved from the seed box B to the position represented in the engraving, and the seed in cell S drops down on plate P; and when the plunger is pushed down, the slide K and cell S move into the seed box, and the plunger forces the seed into the ground; as the plunger rises again, the moist earth adhering to the same is scraped off by scraper X, and passes off through opening W.

Claims.—The opening *w*, through the standard or its equivalent, so arranged as to form a bar or scraper, substantially as described, to clear the earth or wet earth from the plunger as it is pushed down, and deliver it out through the opening *w*, as described, whether the upper edge of the scraper is curved or otherwise.

No. 18,827.—Stephen H. Strong, of Brunswick, Ohio.—*Improvement in Potato Planters.*—Patent dated December 8, 1857.—By this invention, when the planter is moved forward, the bucket strikes against the head piece of slide R, and, forcing it back, passes through the seed box C¹, by which it is filled; and, as it rises, the slide R is forced back by the spring P, and the seed box is again filled from the hopper C and is ready for the next bucket, the seed, or potatoes, being carried over the wheel until it falls over the check E into the furrow, at equal distances apart, falling between the mould-boards of the plough, and is covered by the inverted mould-boards and the levelling scraper.

Claim.—Seeding wheel B, armed with adjusting buckets D and checks E, in combination with the hopper C and sliding bottom R, in the manner and for the purpose set forth.

No. 16,409.—Joseph Thompson, of Durhamville, New York.—*Improvement in Seed Planters.*—Patent dated January 13, 1857.—By pushing down the handle W, the roller H is caused to revolve and the seed cells *a* are turned upwards and are filled with seed from hopper O. By lifting the handle, the seed in the cells *a* passes around with roller H, drops into the tube S, on to spring T, so that when the handle is pushed down again the tube S is forced into the ground until plate Y is stopped by rod *f* striking stand *h*, when the punch V forces the seed, by the springs T, out of the tubes, so as to leave them in the ground.

Claim.—The spring-plate Y, or its equivalent, so constructed and arranged as to hold the earth down firmly while the punches V and the tubes S are drawn out of the earth, substantially as described.

No. 16,522.—Levi Beemer, of Libertyville, New Jersey.—*Improvement in Seed Planters.*—Patent dated February 3, 1857.—Figure 1 represents a side view of the seed planter, and figure 2 a similar side view with one thill C and a side plate B removed.

Claim.—A combination of triangular seed boxes located upon the sides of the drive wheel, as specified, with the measuring keys E E E, operated by the cams J^1 J^1, to admit the seed into the depositing cups G G G.

No. 16,590.—John Hildebrand, of East Berlin, Pennsylvania.—*Improvement in Seed Planters.*—Patent dated February 10, 1857.—The engraving represents a top view of the seed box. The slides L and M are operated by means of vibrating lever O. The slots S S in said slides are for the reception of the seeds. R R are cut-off plates placed over the discharge orifices in the bottom of the seed box, under which plates the slides pass. T and U are scrapers, which work in contrary directions to the slides, U being connected to the lever end P, and T to the lever end Q, by means of springs V and W.

Claim.—The combination of the above described spring connexion V and W, slides L and M, scraper T and U, and the vibrating head cam O, when arranged for the purpose set forth.

No. 16,617.—H. Thomason, of Lafayette, Ind.—*Improvement in Seed Planters.*—Patent dated February 10, 1857.—The operator, by turning the tube handle H, can operate the slide F.

The inventor says: I do not claim the slide F, nor the mode of operating the slide by the wheel I, with the pins a^1, attached, and the bent lever K, for these parts are well known.

Neither do I claim operating the slide F by hand, irrespective of the means shown and described for effecting the purpose.

But I *claim* operating the distributing device of slide F by means of the lever or rod G, having the arm e^1 attached to its fulcrum-bar *d*, which has a spring *e* connected with it, and the collar or tube H on the handle C¹ of the implement, the collar or tube H being provided with an arm *h* extending underneath the arm e^1 of the fulcrum-bar *d*, the whole being arranged substantially as shown and described for the purpose set forth.

No. 16,585.—Thomas B. Houghton, of Bloomington, Ill.—*Improvement in Seed Planters.*—Patent dated February 10, 1857.—The frame *x* is made to traverse in hangers Y Y, by means of crank T and connecting rod Z. Thus it guides the seed box W and planting slide V, and makes them deposit the seed at the proper point.

Claim.—Operating the planting slide and tube V W, by means of a crank T, receiving its motion from one or both of the carriage wheels A, substantially in the manner described.

Also, the reciprocating frame *x*, or its equivalent, so constructed and operated as to guide the planting tube, and make it deposit the seed in the ground at the desired point, substantially as described.

No. 16,610.—Silas T. Randall, of Rockford, Ill.—*Improvement in Seed Planters.*—Patent dated February 10, 1857.—S S are the handles for operating the machine.

Claim.—In combination with the shoe or spade, composed of the pieces E *f*, the spreading bars H, arranged and operating in the manner and for the purpose substantially as set forth.

No. 16,597.—Jacob Eandes, of Selma, Ohio.—*Improvement in Seed Planters.*—Patent dated February 10, 1857.—The seed falls from the hopper into the pocket *c*, and the slide E moves towards the concave front of cut off G in the direction of arrow 1. If any of the seeds in the pocket should project above the surface of slide E, they will come in contact with the bottom part of G and cause it to oscillate slightly about the point where it is pivoted to *d;* the upper part of G will be thrown forward (see arrow 2) and the lower part backward, (see arrow 3,) so as to present an inclined surface to the projecting seeds. This movement serves to stir the seeds, and at the same time the yielding of the bar *d* pivoted at d^1 allows the seeds to pass easily under the cut-off.

The inventor says: I disclaim the making of a seed cut-off with a concave face. I also disclaim the giving of a vertical movement to a cut-off; as both of these features are old.

I *claim* pivoting the cut-off G to the bar *d*, so that the cut-off shall have an oscillating movement, and thus stir the seed when it oscillates, in the manner and for the purposes set forth.

No. 16,592.—Reinhold Boeklen, of Jersey City, New Jersey.—*Improvement in Seed Planters.*—Patent dated February 10, 1857.—Compartment *b* contains the seed, compartment *c* the fertilizer. The implement being thrust into the ground (see fig. 2) and being withdrawn (see fig. 1), deposits the seed, as seen at a^*, and the manure, as seen at b^*, and covers the seed at one and the same operation.

Claim.—The distributor D, having chamber *l* and recesses *g*, and worked between the compartments *b* and *c* by means of the link E and slide C, in combination with the cut-off E^1 and plate F; the whole arranged and operating substantially in the manner and for the purpose set forth.

No. 16,636.—Leonard Arnold, of Janesville, Wisconsin.—*Improvement in Seed Planters.*—Patent dated February 17, 1857.—The rear frame is jointed to the front frame H Q by means of bars G.

Claim.—Employing two frames in constructing the machine, the forward frame resting on the axle of the principal or driving wheels, and the rear frame resting on the axle of the covering wheels, and extending forward and under the forward frame, to which it is jointed, and acting as a lever in elevating the forward frame, driving-wheels, and ploughs clear from the ground, in turning round and in passing from point to point, substantially as and for the purposes set forth.

No. 16,729.—Firman Goodwin, of Astoria, New York.—*Improvement in Seed-Planters.*—Patent dated March 3, 1857.—The bars D D, containing the seed apparatus, have at their front and rear ends tenons *c* which fit into grooves in the frame A. The bars D D may be moved laterally any desired distance from each other, and may be secured by pins *d*. As the machine is drawn along, the pin K raises shaft J, the cords *i* actuate the arms H upon the distributing wheels F, and throw the recesses *f* forward so as to allow the seed to drop. When the pin K passes the arms *m m*, the springs I, acting upon cords *i*, throw the shaft J down, and turn the wheels F back to their original position.

Claim.—Arranging the seed hoppers and seed cylinders, and the mechanism which operates the seed cylinders, upon movable bars D, in combination with the double crank J and frame A, in the manner and for the purpose set forth.

No. 16,929.—George A. Meacham, of New York, N. Y.—*Improvement in Seed-Planters.*—Patent dated March 31, 1857.—The planting device of this apparatus is secured to the foot, and the sack A is secured to the waist of the operator. By raising the handle P the operator will cause such an amount of seed to pass down the tube E as has filled the recess *d;* the seed drops into the box F, G G, and, by then pressing down the foot, the boards G G will be forced apart as the elastic straps *e* yield, and the plate I, passing down between the boards G, forces the seed into the ground.

Claim.—1st. The box B, provided with the elastic side *a* and the head C, or its equivalent, for the purpose of distributing or measuring the seed.

2d. The planter attached to the foot of the operator, and formed of the boards F, G G, connected by the elastic straps *e* e^1; the boards G G having the plates H H attached to them, and the under side of the board F the plate I attached; the whole being arranged substantially as described, for the purpose of planting and forcing the seed into the soil by the pressure of the foot.

No. 17,145.—George M. Evans, of Pittsburg, Pa.—*Improvement in Seed-Planters.*—Patent dated April 28, 1857.—By drawing back or pushing forward the bars K, which are attached to shaft *o* of the wheel H, the frame A of the machine may be raised or lowered, and the depth to which the shoe E shall penetrate the soil may be regulated.

Claim.—So uniting the wheel and guard frame to the beam, and to the rods or bars K, as that the operator may, from his position between the handles of the machine, adjust the depth at which the shoe shall open the furrow by moving said wheel and guard frame forward or back, substantially in the manner and for the purpose explained.

No. 17,305.—**Chas. Ketchum**, of Penn Yan, N Y., assignor to **Chas. G. Judd**, of same place.—*Improvement in Seed-Planters.*—Patent dated May 12, 1857.—By taking hold of the handle P and thrusting the blades B into the ground to the stop x on the blade, by then turning the handle P until the seed cups H come over the seed passages I, the blades B are opened by means of the flat end Q of the rod, and the seed can pass from sack O down between the blades into the ground; on raising the apparatus, the bolts K force the spring blades B together.

Claim.—Blades B, in combination with the bolts K, in the manner and for the purpose set forth.

Also, the adjustable cylinder G, in combination with the band R and sack O, in the manner and for the purpose specified.

No. 17,275.—**Jno. Haselton**, of Orford, N. H.—*Improvement in Seed-Planters.*—Patent dated May 12, 1857.—This invention consists in applying to the rear part of a seeding machine the frame F^1 and roller F, for the treble purpose of covering the seed, stopping the operation of seeding, and serving as a rear bearing wheel to transport the machine. The main wheels E, together with the gearing H and I^2 of the seeding apparatus, can be raised and their motion arrested by raising the handles V, and letting the cross-bar d rest on spring x, and the apparatus can be set in motion again by simply depressing spring x, when the wheels E will again come in contact with the ground.

The inventor says: I do not claim the attachment to seed-planters of a hind or finishing roller to press down the soil over the seed.

But I *claim* the arrangement of roller F and sliding frame F^1, substantially in the manner and for the purpose described.

No, 17,260 —**John H. Bruen**, of Penn Yan, N. Y.—*Improvement in Seed-Planters.*—Patent dated May 12, 1857.—The points of the blades C being thrust into the earth, the staff A receives a partial turn by the hand of the operator when the wedge-shaped point D throws open the blades C. Simultaneously with the opening of the blades the disk distributor E drops the seed, which descends through the passages F into the earth as penetrated by blades C. When it is desired to plant a pumpkin seed at intervals within the hill of corn, the operator can drop said pumpkin seed through the tube K, which is independent of the grain seed-planter.

Claim.—The tube K, in combination with the bar H and disk distributor E, arranged and operating in the manner and for the purpose set forth.

No. 17,402.—**Jesse Whitehead**, of Manchester, Va.—*Improvement in Seed-Planters.*—Patent dated May 26, 1857.—As the machine is drawn along, the distributing plate D is caused to revolve on shaft F, and the seed contained in the hopper passes into the cells of said plate, and passing through the spout H drops to the ground. The spout H is adjusted to such a position that the current of seed is divided, and that the excess will pass down spout G and into box J.

Claim.—The combination of the trough G with its spout H and receptacle J, when used in connexion with a seeding apparatus, for the purpose of dividing and retaining the excess of seed from that which is to be planted, substantially as set forth.

No. 17,450.—**Silas G. Randall**, of Dixon, Ill.—*Improvement in Seed-Planters.*—Patent dated June 2, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim —Hinging the seed hopper C with its drive-wheel G, and other appliances connected with it to the side pieces A of the harrow, by the pivoted arms D, so that when said hopper is thrown forward it shall rest on and be operated by said drive-wheel, which runs on the ground for that purpose, and when thrown back rest on said side pieces and be out of action, as herein set forth and explained.

No. 17,568.—**Solomon T. Holly**, of Rockford, Ill.—*Improvement in Seed-Planters.*—Patent dated June 16, 1857.—As the machine is drawn along, bevel-pinion E, on the driving shaft, imparts rotary motion to bevel-wheel G, which transmits it, by means of wheel M, to the revolving distributing disk R, which causes the seed in hopper b to pass through apertures g down into the seed tube T. The seed drops down on valve U, which is vibrated by pins r^1 of wheel M coming in contact with the arm S of valve U; and each time the valve is opened, the indicator b^1 is lowered. When the unevenness of the ground or other reasons should require the seed to be discharged at unequal distances, the attendant, by operating lever L and clutch I, releases spring a, and the connexion between the seeding apparatus and driving-wheel is interrupted, and the operator can thus adjust the discharge of the seed at pleasure.

Claim.—The employment or use of the indicator b^1, connected with the valve U, arranged and operated as shown for the purpose set forth.

No. 18,126.—**Cyrus C. Aldrich**, of Faribault, Minn. Terr.—*Improvement in Seed-Planters.*—Patent dated September 8, 1857.—As the machine is drawn over the field, the seed in box G constantly remains at the lower part of said box; and the seed cup i, passing through the seed, becomes filled, and the seed passes down spout H into box I; and as the wheels rotate, and the boards F come in contact with the ground, the plunger c will be forced down, forcing open the flaps b and causing the seed to pass into the furrow.

Claim.—The box I, provided with the plunger c, when said plunger is operated by the lever frame J, arranged as shown and described for the purpose set forth.

No. 18,140.—**J. W. Ells** and **James Charlton**, of Pittsburg, Pa.—*Improvement in Seed-Planters.* Patent dated September 8, 1857.—As the machine is drawn over the field, the slide J has a reciprocating motion imparted to it by means of eccentric G, and causes the seed in hopper A to pass through the holes x into the seed tube. The slats t covering, at each operation, two of the holes x, permitting the seed to pass only through the other two. The object of these slats is to compensate for the inaction of the eccentric at its dead points, during which time the wheel C turns a certain portion before the slide J commences to move.

Claim.—The combination and arrangement of the reciprocating feed slide J with the cut-off slats *t t* and the brush L, in the manner and for the purpose set forth.

No. 18,334.—Aaron M. Gould and Albert Flanders, of Cambria, New York.—*Improvement in Seed-Planters.*—Patent dated October 6, 1857.—In the drawings, fig. 1 is a side view of this improvement; fig. 2 is a plan or top view of the same. The back end of the frame of the machine is supported by two wheels or rollers, which are placed upon a square shaft or axle E, which extends the whole width of the machine, the shaft or axle having its journals fitted in the lower ends of the adjustable pendants F F attached to the back ends of the curved bar B. The wheels or rollers D D are fitted loosely on the shaft or axle E, and are secured at desired points by keys *b*, seen in fig. 2. H represents a square shaft, the journals of which are fitted in uprights *d*, at the ends of the bar B. The square shaft passes through hoppers J J, and on the shaft and within each hopper a distributing wheel K is placed. These wheels have holes made in their disks in the usual way; and brushes *u*, attached to spring plates *o*, bear against the periphery of the wheels, one on each side, as shown in fig. 3. L represents a hopper, which is secured to the bars A A in precisely the same way as hoppers J J. Two hoppers L are intended to be used, but only one is shown in the drawings.

Claim.—The inventors say: We do not claim adjustable hoppers, irrespective of the arrangement shown; for adjustable hoppers have been previously used.

But we *claim* the described arrangement of shaft H and hoppers, J J and L, with shaft E and rollers D D.

No. 18,344.—C. O. Luce, of Brandon, Vt.—*Improvement in Seed-Planters.*—Patent dated October 6, 1857.—A A in the drawings represent two conveying tubes, the upper ends of which communicate with the lower part of the hopper or seed box; the lower ends are placed directly over the wheels. Neither the hopper nor wheels are shown, as they do not form a part of the invention. The upper ends of tubes A A are attached as shown in fig. 1, and a shaft B passes laterally into each tube. Each shaft, that is the portion of them in the tubes, have four radial plates X attached to them at equal distances apart, as shown in fig. 1.

On the shafts B B cylinders *c c* are placed, one on each. The lower end of a spring plate *d* bears upon the periphery of each cylinder and the edges of their plates *a*, and serves as a cut-off, preventing the seed being crushed between the sides of the tubes and the edges of the plates as the shafts and cylinders rotate. The shafts may be rotated in any proper way from the driving-wheels of the machine.

The inventor says: I am aware that rotating cylinders provided with cells or chambers have been previously used, and form well known devices for distributing seed; but I am not aware that parts have been arranged as described, whereby the capacity of the seed cells or chambers can be varied with such facility. I therefore do not claim a rotating cylinder or shaft, provided with seed cells or chambers.

But I *claim* the rotating shafts B, provided with the radial plates *a*, and the adjustable or sliding cylinders C, in combination with the elastic or spring cut-offs *d;* the above parts being combined and arranged specifically as and for the purpose set forth.

No. 18,366.—Hosea Willard, of Vergennes, Vt.—*Improvement in Seed-Planters.*—Patent dated October 6, 1857.—The peculiar means employed for distributing seed, or conveying the seed from the hopper and measuring it in suitable quantities before it is dropped into the furrow, are those in which this invention consists.

In operating this improved machine, the seed to be sown is placed within the cylinder D, which, as the machine is drawn along, is rotated and the seed discharged by centrifugal force through the openings *f*, in greater or less quantities, according as the plates *g* are adjusted.

Claim.—The inventor says: I do not claim, separately, a perforated reciprocating slide *i* for distributing seed, for they are in common use.

Neither do I claim a rotating cylinder for distributing seed, when separately considered.

But I *claim* the rotating cylinder D, provided with the taper openings *f*, and the adjustable plates *g*, in combination with the inclined spout E, tube F, and perforated reciprocating slide *i*, when arranged as shown for the purpose specified.

No. 18,333.—W. Y. Gill, of Henderson, Ky.—*Improvement in Seed-Planters.*—Patent dated October 6, 1857.—In this invention, by means of a swinging frame and rollers, furrows can be made of any depth, and the seed delivered at any rate or distance, the whole being under the control of the operator.

The inventor, in stating what he claims, says: I *claim* the lever F attached to the bar D, and having the slides *e* connected to its end by means of the screws *f*, the lever being operated by means of the spring I, and the spring projection *p* on the wheel B^1; the parts being arranged substantially as described for the purpose of distributing or discharging the seed from the hoppers, and regulating or graduating the amount at each discharge as desired.

No. 18,393.—Joseph Hall, of Honeycut, Ala.—*Improvement in Seed-Planters.*—Patent dated October 13, 1857.—This invention operates as follows: When the plough is put in motion, the wheel W will, while revolving, give by means of connecting rod H an oscillating motion to the small wheel B; the cogs C D, pressing against the lower end of lever L, will cause the movable bottom M to slide past the lower part of the hopper O, and, when pushed to its extreme end, allow a few cotton or corn seeds to drop through its hollow ends, until the cogs, slipping past the ends of the lever, will cause the bottom of the hopper to close again by the action of the springs S S. The seed dropping in the lower hopper will be conducted by the tube and deposited in the furrow made by the ploughshare, while the heavy mouldboard attached to the stem levels the ridges of earth formed on each side of the furrow and covers up the seed. One revolution of the wheel W causes the movable bottom to open four times.

Claim.—The inventor says: I am aware that a great many seed planting ploughs have been brought into use, and I lay no claim to the originality of the principle of planting seed by a mechanical process.

But I *claim* the lever L, carrying a movable bottom M on its upper end, in combination with the springs S and wheel B; the whole arranged in the manner and for the purpose set forth.

No. 18,450.—P. Hinkley, of Charleston, Ill.—*Improvement in Seed-Planters.*—Patent dated October 20, 1857.—This invention consists in having the hubs of the distributing wheels connected by universal or compensating joints, and having the wheels placed in a frame, the several frames being pivoted at one end to arms connected to a rock-bar, and the opposite ends resting upon a rock-bar; said rock-bars being operated, an independent vertical movement is allowed each wheel, so that they may conform to the inequalities of the ground, and all the wheels raised simultaneously free from the surface of the ground, when necessary, so that the machine may be drawn from place to place without actuating the distributing devices.

Claim.—The inventor says: I am aware that distributing wheels provided with spouts, and having seed cells formed in their hubs for distributing the seed into the spouts attached to the wheels, have been previously used, the parts being arranged substantially as those shown. I therefore do not claim the distributing wheels, nor do I claim the universal compensating joints *b*.

But I *claim* placing the distributing wheels H in frames F, the front ends of which are pivoted to arms D, attached to the rock-shaft C, and having the back ends of the frames F rest or bear on the rock-shaft E, when the wheels thus arranged are connected by the universal compensating joints *b*, or their equivalents, substantially as and for the purpose set forth.

No. 18,525.—Jacob G. Winger, of Vicksburg, Miss.—*Improvement in Cotton-Scrapers.*—Patent dated October 27, 1857.—In using this implement, the ridge is scraped on both sides at one operation, and the top of the slope is left with the curved surface *m*. This leaves the top of the ridge in a better condition to sustain the plant than can be effected with a scraper of ordinary construction, either single or double. The inclined plates C rest upon the surface of the ridge, causing the weight of the implement to be effectual in pressing the earth.

The inventor says: I do not claim broadly the construction of cotton-scrapers for acting on both sides of the ridge at a single operation.

But I *claim* the longitudinally adjustable cutters C C, having each an inclined vertical and curved portion as described, in combination with mould-board, supports and frame, substantially as set forth.

No. 18,716.—L. F. Ward, of Marathon, N. Y.—*Improvement in Seed-Planters.*—Patent dated November 24, 1857.—The nature of this invention and improvements in seed-planters consists in the arrangement of scrapers to gather the earth and draw it over the deposits of seed, and then rise automatically, and leave the earth in a hill upon the seed; and after passing the hill over the deposit of seed, to descend again and gather the earth and draw it over the next deposit of seed, and leave it in the same manner; the devices for raising and lowering the scrapers being operated by the wheel on which the machine travels. Also in arranging two slides in the seed-boxes, one above the other, and operating them alternately, so as to hold and deliver the seed as required.

The inventor says: I *claim*, 1st. The covering scrapers *q q*, in combination with the pressing rollers *z z*, when constructed and operated as described.

2d. I claim in combination with the furrowing teeth *e e*, arranged to traverse perpendicularly the bar *g*, standard *h*, springs *m m*, and locking latch *k*, for raising, lowering, and holding the furrowing teeth in the required position, as described.

3d. I also claim the arrangement of the traverse rod N, links *o o*, and springs L L, for the purpose of operating the slides J J, as described.

No. 18,717.—Caleb B. Winder, of North Lewisburg, Ohio.—*Improvement in Seed-Planters.*—Patent dated November 24, 1857.—In this invention the seed-box is made in the form shown in the engraving, with an inclined front, so as to deliver the seed to the rollers or wheels, as long as a kernel remains. This box is provided with a partition U, so as to plant seed and deposit some kind of fertilizer with it, or plant two kinds of seed, either in the same or alternate hills, by changing the position of one of the rollers, so as to bring the scores in it opposite the space in the other. Pieces of leather V V are fastened to the rear corners of the pieces Q Q, to prevent the seed from being spilled over outside of the rollers. The pieces *a a* are fastened to the beam behind the rollers, and those upper surfaces *b b* incline diagonally, so as to catch any seed which is carried over by the roller, and deliver it to the roller again, so that it is carried around into the seed-box.

Claim.—The inventor says: 1st. I *claim* the inclined planes arranged to catch the seed carried or thrown over by the roller, and deliver it to the roller again, so that it will carry it back to the seed-box, as described.

2d. I claim connecting the draught-rod to the beam at the rear of or behind the wheel, in combination with the clevis yoke or staple, which allows it to vibrate, as described.

No. 18,772.—John Robinson, of Eli, Sharpstown, Md.—*Improvement in Seed-Planters.*—Patent dated December 1, 1857.—The claim and engravings explain the nature of this invention.

Claim.—The inventor says: I *claim*, 1st. Regulating the quantity of earth deposited over and adjacent to the seed, by means of adjustable stops *d*, when used in connexion with the curved arms G^1, lifting arms E, and adjustable strap K, in connexion with the adjustable coverer *k*; the whole constructed and operating as and for the purpose set forth.

2d. The combined arrangement of the vibrating box I, lifting arm F, adjustable strap *k*, and adjustable stop *d*; the whole operating as and for the purpose set forth.

No. 18,762.—Daniel B. Neal, of Mount Gilead, Ohio.—*Improvement in Seed-Planters.*—Patent dated December 1, 1857.—M is a cross-bar which is attached to the bar D; said bar running forward serves to carry motion from the driving-wheels to the slides *i*, and the seed distributing box *n* is a slot in a plate attached to bar D, into which the cam *h* on the driving-wheel enters; by throwing the bar in the position it now occupies, so that the cam will not act in the slot, the driving-wheel will not operate the slides *i i* and the distributing bar C, seen in figures 2 and 3; J is a rod having a handle H attached to it, said rod J, being attached to the bar D, serves to operate it when not operated by the cam on the driving-wheel; *p* is a roller in the forward end of bar D; said roller, resting on the frame of the machine, serves to prevent friction, and thus render the machine capable of hand operation.

The inventor says: I do not claim that any of the members of my machine are new; nor do I claim to have been the first who has dropped the grain at pleasure of the operator in a power planter. But I *claim* the peculiar arrangement of handle H, rod J, bars D M and C, slides *i i*, and lever *c*, when used in the manner and for the purpose described.

No. 18,821.—Joel Lee, of Galesburg, Ill.—*Improvement in Seed-Planters.*—Patent dated December 8, 1857.—C is the swivel spout, said spout being secured to the bottom of the seed distributor at one end in such a manner as to allow it to swivel around in any direction which may be desirable; D D^1 are two bevel wheels secured to the other end of the swivel spout, said wheels being bevelled on the inside and secured to the spout in such a manner that their edges will meet in front of the swivel spout at the point where it is desirable for them to cut and part the earth when the machine to which they are attached is in operation.

Claim.—The bevel wheels D D, constructed, arranged, and operated in the manner set forth, when combined with the swivel tube C, for the purpose described.

No. 18,802.—James Carroll, of Laporte, Ohio.—*Improvement in Seed-Planters.*—Patent dated December 8, 1857.—The nature of this invention consists in the employment of the handle B, furnished with a discharge passage, in combination with a slide *f*, which has a hand trigger *n*, and with the peculiar conducting tube A *c*, which is furnished with the shares *a a*. The whole has for its object the ready adjustment of the distributing device, whereby a greater or less quantity of seed, as desired, may be measured and dropped from the hopper into hills or drills.

Claim.—The employment of the handle B, furnished with a discharge passage, in combination with a slide *f*, which has a hand trigger *n*, and with the peculiar conducting tube A, which is furnished with shares *a a*, substantially as set forth.

No. 18,999.—L. F. Ward, of Marathon, N. Y.—*Improvement in Seed-Planters.*—Patent dated December 29, 1857.—The plunger G and lever H are drawn up by the spiral spring *k* fastened to the pin I and the top of the seed box F for that purpose; the fulcrum of the lever H is fastened in the standard L, and it vibrates in the bracket M, which extends up as high as the side of the seed-box, so as to allow the lever to be raised and let the marking cogs J pass in backing the machine; and as the lever H simply lies on the pin I, the plunger is not moved by the lever in backing the machine.

Claim.—The combination of devices for operating the plunger to deposit the seed automatically, consisting of the marking cogs J, the lever H, pins I, and spring *k*, constructed and arranged as described.

No. 18,843.—Joseph C. Haines, of Dublin, Ind.—*Improvement in Tubes for Seed-Planters.*—Patent dated December 15, 1857.—A is the chute that conducts from the seed-box, or hopper, through the frame F, to the tube I. H is the drill-tooth secured by the drag bar X and tackle K to the frame in the customary manner.

The tube I is constructed of a close and slightly tapering coil of wire, attached by its base to the frame, and depending thence in a slightly forward direction, so as to occupy the interior of the drill-tooth H in the usual way.

Claim.—As new, and of my invention, in the described combination with the tooth of a grain or seed drill, the tube or grain duct I, composed of a close coil of wire constructed and applied as set forth.

No. 17,462.—J. D. Willoughby, of Pleasant Hall, Pa.—*Improved Plough Clevis.*—Patent dated June 2, 1857.—This clevis or draught rod is attached to the under side of the front end of the plough beam. When forward motion is applied to the clevis, the button C, figure 1, presses against the rear end of the India rubber spring *a*, and forces the front end of said spring against the bolts *f*, figure 5; when the plough strikes a rock or any other obstruction, the India rubber spring will compensate the stroke, thus preventing injury to the plough or horses.

Claim.—The stem B and button C, with the grooves E, in combination with cylinder B and its elevation *i*, the whole being arranged and operated in the manner and for the purpose substantially as described.

No. 18,594.—W. W. Merriam, of Oswego, N. Y.—*Improvement in Patterns for Cutting out the Uppers of Boots and Shoes.*—Patent dated November 10, 1857.—The nature of this invention consists in making patterns adjustable independently in different directions, thus affording the means of adapting said patterns to the various sizes, as well as to various proportions of the same size of the thing or pattern to be cut.

In section II, figure 1 represents the pattern of a boot leg; figure 2 represents the same pattern, exposing the adjustable sliding plates in their most contracted positions; figure 3 represents the pattern, showing the sliding plates in their most expanded position.

The inventor says: I do not lay any claim to the extension pattern, which can be operated in such manner as to produce the various sizes of patterns.

But I *claim* the method described of operating the sliding parts of an extension pattern, so as not only to adjust the same to different sizes, but also to change the proportions of the several sizes at pleasure, without regard to the whole, as set forth.

No. 18,596.—Henry Moeser, of Pittsburg, Pennsylvania.—*Improvement in Ploughing-Machines.*—Patent dated November 10, 1857. —After a plough is set into the ground, (at the pulleys J J,) the plough carriage, as it moves along, gets under the guiding rail N, so that the forks *f f* branch up on both sides of the rail, whereby the carriage is guided as it continues its motion; near the pulleys J^1 J^1 the forks leave the guiding rail, and the carriage, after being lifted from the ground and returning back, passes above and clear of the guiding rail. The forks are cut out sufficiently to allow the plough carriage to rise or sink, according to any unevenness in the surface to be ploughed.

The engine, when set in motion, communicates, by the pinion *b*, wheel *m*, pinions *o o*, and wheels P P, and driving pulleys K K, a continuous circuitous motion to the endless chains H H, and thus to the ploughs attached thereto, in the direction of the arrows; the ploughs will set into the ground at the pulleys J J, and be lifted out of the ground at J^1 J^1, from where they return (above the ground) back to the pulleys J J again.

Claim.—The inventor says: I do not claim, broadly, the operating of a gang of ploughs on an endless chain, transversely or obliquely to the line of draught.

But I *claim*, first. The arrangement and combination of the transverse beam F, connecting links *a a*, chains H H, driving pulleys K K, pulleys J J^1, and wheels G G, or any other equivalent devices, when operating in relation to each other and to the steam carriage, as set forth and for the purpose described.

Second. The arrangement of the guiding-bar N, supported on the transverse beam F, and the forks *f f*, on the plough carriages, or any other arrangement substantially the same, for the purpose of guiding the plough carriages, as described.

No. 16,901.—Elliot Andrus, of Geneva, N. Y.—*Improvement in Ploughs.*—Patent dated March 31, 1857.—As the plough is drawn forward the cam wheel W will revolve, bringing the cams a, a^1, a^2, a^3, a^4, a^5, in contact with the friction roller *b*, in the mould-board B, giving it an oscillating motion, by which means the wedging of the mould-board under the furrow is relieved, lessening the draught and leaving the furrow in a porous condition.

The inventor says: I do not claim the invention of the plough, nor the iron beam, mould-board, or shear.

Neither do I claim the cam wheel.

But I *claim* the frame E E^1, for the purpose of holding the mould-board B, attaching the handle P', and supporting the end of the wheel-shaft *s*.

I also claim the manner of attaching the mould-board upon pivot points, in combination with the lock *d* d^1 and links L L^1.

I also claim the combination of the wheel W, cams a, a^1, a^2, a^3, a^4, a^5, and friction roller *b*, or their equivalents, to produce the oscillating motion of the mould-board, in the manner and for the purpose substantially as described.

No. 17,211.—Thomas C Garlington, of Lafayette, Ala.—*Improvement in Ploughs.*—Patent dated May 5, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The combination of headed slide *g*, strap *i*, brace D, and key *n*, constructed, arranged, and operated as described, for performing the double function of bracing the beam and stock, and securing the mould-board to the stock.

No. 17,476.—John Ormiston, of Center Township, O , assignor to D. N. Allard, of Rokeby, O.—*Improvement in Ploughs.*—Patent dated June 2, 1857.—When the point D has worn off its lower side, the screw bolt *g* is loosened, and the stirrup *d* can be removed; the point D can now be withdrawn to the rear, and turned so as to bring the worn off edge upward. Should the point D wear off in such a manner as to be shortened, it can easily be advanced the length of one or more teeth as desired.

Claim.—Uniting and adjusting the shank of the point D to and with the shank of the coulter E by means of the head on said piece D, the rack on the shank of said coulters, and the stirrup and set screw, substantially in the manner and for the purpose set forth.

No. 17,430.—John S. Hall, of West Manchester, Pa.—*Improvement in Ploughs.*—Patent dated June 2, 1857.—The slots *i* are so formed in the land side top that any draught exerted upon beam C in a horizontal line has little or no tendency to slip the bolts *a b* in their slots *i*, as all strain is brought indirectly upon the side of said slots *i*.

Claim—Vibrating the beam in a circular bearing in the land side, together with the oblique adjusting and securing slots *i i*, the whole combined and arranged substantially as described, whereby the draught end of the beam may be vertically adjusted, and the beam so secured to the land side as that it is impossible for the former to slip.

No. 17,577.—Charles B. Ingersoll, of Morris, Ill.—*Improvement in Ploughs.*—Patent dated June 16, 1857.—By forming a clear open space between the supports A^1 and A^2, and having only the land side to come in contact with the soil, the chocking and clogging while ploughing in loose wet lands are avoided.

Claim.—Standard A in combination with the standard arms A^1 A^2. and shear bar E, constructed and arranged in the manner and for the purpose set forth.

No. 17,579.—Erasmus D. Legg and Leander W. Legg, of Speedsville, N. Y.—*Improvement in Ploughs.*—Patent dated June 16, 1857.—In using this plough, the wing C is made to rest on the hinged mould-board F, and both are held stationary by hook *m*, passing through ring *n*; the other wing C remains in its rest *a* until it is to be used. When the mould-board F is turned to one or the other side of the plough on its bearings *x*, the cutter G must be moved correspondingly; which motion is effected by turning lever O on its fulcrum *y*, which will move the cutter G in its dovetailed plate *i*.

Claim.—The combination of the adjustable cutter and the reversible mould-board, when operated substantially in the manner and for the purpose fully set forth and described.

No 18,335.—Manassah Grover, of Clyde, Ohio.—*Improvement in Ploughs.*—Patent dated October 6, 1857.—The nature of this invention consists in constructing ploughs in such a manner as, when in the act of ploughing, to ascend and descend freely, corresponding with the surface of the earth, ploughing a uniform depth, however uneven it may be, without any exertion being made by the person using it to produce such an effect, while at the same time the beam keeps its same or relative position; the remainder of the plough being allowed to act or work up or down freely on a hinged joint, made for the purpose, nearly at the bottom and on the inside of the plough, by reason of a forked bar extending from the hinged joint up to the beam of the plough, and fastened firmly to it, and being so arranged and constructed as not to be allowed to move or sway in a lateral direction.

The inventor *claims* the combination of hinged forked bar B and beam A with the segmental bar D, and the adjustable lever E with its roller J; the whole arranged and operating substantially as and for the purpose set forth.

No. 18,355.—Thomas Sharp, of Nashville, Tenn.—*Improvement in Ploughs.*—Patent dated October 6, 1857.—This improvement consists in the peculiar means employed for regulating or adjusting the line of draught for a plough relatively to its share, whereby the depth of the furrow, as well as the width, may be regulated.

In the drawings, F is the beam, which is constructed of an iron tube, bent or curved, similar to the ordinary wooden beams, as shown in fig. 1. The beam has an eye *b*, secured in its outer end, to which the draught chain, whiffle-tree, or splinter bar is secured. The beam rests on a concave *c*, in the upper surface of a metal block *d*, on the inner surface of which a semi-sphere *e* is formed. The semi-sphere is fitted in a corresponding shaped recess made in the upper surface of the standard, as seen in figs. 1 and 3. Through the upper parts of standard E two bolts *g* and *n* pass, said bolts having eyes or rings *i* and *j* on their upper ends, through which the beam passes; and the beam is secured firmly upon the block, and the semi-spherical portion of said block is secured firmly in the recess by screwing the nuts *k* of the bolts in fig. 1.

Claim.—The inventor says: I do not claim a hollow or tubular iron beam, for they have been previously used, but, so far as I am aware, for lightness and strength only, without reference to any particular mode of attaching the beam to the plough with the view to the adjustment of the line of draught with the share.

I *claim* attaching the beam F to the plough, substantially as shown, or in any equivalent way which will admit of the turning of the beam for the purpose of adjusting the draught hook or eye *b*, both laterally and vertically, as set forth.

No. 18,463.—C. B. Magruder, of Thomasville, Ga.—*Improvement in Ploughs.*—Patent dated October 20, 1857.—In engraving, fig. 2, A is the beam; B the handles; C the side beams; C^1 the sliding arms passing through the beam A, and which are adjusted to the bolts *a*; D is the adjustable polygonal plates; E the foot with shoe on it; D^2 the foot for the first shovel; *b* the taps or nuts for tightening the screws. In the operation of this invention, the main beam A and centre foot attached is so constructed that it may be used as a single plough; then, by means of the polygonal plates and adjusting sliding arm, one, two, or more ploughs or shovels can be attached to the same stock.

The inventor says: I *claim* the polygonal plate D, in combination with the arm C and beam A, in the manner and for the purposes set forth.

No. 18,475.—David K. Thom, of Farmington, Tenn.—*Improvement in Ploughs.*—Patent dated October 20, 1857.—In the engraving, figure 1 presents a perspective view of the machine, and A the scraper, being a metal plate placed horizontally upon the mould-board, and from six to eight inches wide and from twelve to eighteen inches long, with its left and front end B turning forward from one to one and a half inches parallel with the beam of the plough, or the bar of the share, its lower front edge C being turned nearly horizontal. D and E are two parallel grooves running lengthwise on the scraper; said scraper is attached to the plough by means of the square stem and flat head screw K passing through the groove E, and the oblong hole F in the mould-board, fastened behind with a nut or screw G, and the loop H passing round the screw rod and through the groove D, and flattened on the outer end. The scraper is adjustable at pleasure, by slackening the screw attached at G behind the groove E.

Claim.—Combining with the ordinary turning plough an adjustable scraper A A, adjustable laterally and perpendicularly, as described.

No. 18,480.—Noah Warlick, of Lafayette, Ala.—*Improvement in Ploughs.*—Patent dated October 20, 1857.—In the engraving, F is the foot of the plough, and B B^1 the braces by which it is secured to the beam A. This attachment is effected by bolts *a* a^1 passing through braces and beam. The head of the rear brace B has a slot *b*, through which bolt *a* passes, as shown. This gives a lateral adjustment of the plough point, regulating the width of furrow slice.

The face of the plough foot is adapted to the reception of either the shovel or turn mould-board, in the following manner: The general surface of the face is inclined for the reception of the turn mould-board M, as indicated by lines o o^1 o^2 of detached views X Y Z; these views being sections on lines x y z. This surface is notched, as shown at f, and the triangular portion e d i cut away, so as to leave a flat bearing for the shovel s, which rests upon this surface and on the corner p, its head bearing against the notch f. By this construction the stock readily receives the shovel; and, when required for a turn mould-board, the inclined surface receives it, the notch f not interfering with the bearing.

The inventor says: I *claim* the double-faced plough stock, constructed, arranged, and operating substantially as and for the purpose set forth.

No. 18,459.—John S. Lash, of Carlisle, Pa.—*Improvement in Ploughs.*—Patent dated October 20, 1857.—The inventor, in describing his improved plough, says: A represents the plough beam, and B the clevis, both made in the usual form. C is the spring, made preferably flat and of wood, and arranged on the top of the beam on account of cheapness, and so that it can be easily replaced if broken. In this, in connexion with the increased and constant action of my spring, lies the utility and advantage of my invention. D is the elbow lever; it is arranged on a pivot a in slot b, cut vertically in the underside of the beam. This lever is connected by one of its arms to the loose end of the spring, which works up through the hole c in the beam by rod d, and by its other arm to the draught rod E.

The inventor says: I do not claim the attachment of the draught rod to a spring, irrespective of the arrangement and manner of applying the spring.

I *claim* the arrangement of the long, flat, and straight spring C on top of the beam, and the combination of the same, thus arranged with the draught rod E, by means of the elbow lever, substantially as and for the purposes described.

No. 18,609.—Horatio Stanley, of Erie county, Pa.—*Improvement in Ploughs.*—Patent dated November 10, 1857.—Between the frame piece H and E are hung four or more rollers L K I and J. These rollers diminish in length from I to L, and have concave surfaces, as shown in the engraving, and one so hung in the frame, by means of journals 1 2 3 4, that the concave surface of the rollers corresponds with the required curve of the mould-board, so as to turn over the sward in the same manner as it is now done by a common plough. Any number of ploughs can be conveniently suspended on the axletree B B, thus making a gang plough.

Claim.—The construction of the plough frame, with the rollers, as described, and so constructed that any number may be attached to the same axletree by means of the frame, fig. 2, constructed as described, or any other substantially the same.

No. 18,682.—James G. Cummings, of Columbus, Miss.—*Improvement in Ploughs.*—Patent dated November 24, 1857.—Letter A is a lateral expansion of the standard of the plough, provided with bolt holes B, and this expansion of the standard is made solid with the land side. The nose C of the plough is provided with a vertical groove D, and on each of the cutters and mould-boards to be attached there is a flange E, with bolts and holes to correspond with the bolt holes in the expansion A, and also a projection F, provided with a tongue H, which fits the groove D. By this arrangement one plough frame may be made to answer for a variety of operations.

The second part of this invention consists in a mode of adjusting the mould-board so as to vary its angle, as follows: The heel of the land side is provided with a screw-bolt K, which passes through the heel-post, and has a nut L on its projecting end M. Above and below the bolt are set screws K J S, which pass through the heel-post, and their ends abut against the land side, and by varying the set of these three screws, a variety of positions can be given to the land side, and thus the inclination of the mould-board altered to suit the various kinds of soil.

Claim.—The inventor says: I *claim* the mode of making the plough standard to carry the variety of cutters and mould-boards, the same consisting in the expansion of the standard at the point A, in combination with the groove in the nose of the plough, as set forth.

I also claim the compound adjustment of the mould-board by the three set screws K J S, operating upon the heel of the land side, as set forth.

No. 18,776.—William W. Skinner, of Davenport, Iowa.—*Improvement in Ploughs.*—Patent dated December 1, 1857.—At the back end of the land side there is a cast iron friction-wheel M, which is on a pivot in a crotch marked N, which is attached to the land side by screw bolts marked O. This friction-wheel is placed upon a bevel, depressed on the outer surface, and the plane of the wheel is parallel to the cut of the sod.

When the lever T is depressed, the front wheels can be at right angles under the beam G, and the plough turned within its own length.

The lift of the plough is regulated by the holes at the upper end of standard W. The lever is kept in position by the spring X and standard or radiating bar Y, which is secured to beam G by one screw bolt. The driver's seat Z is set upon iron standards, fixed at one end to the beam.

The inventor says: I do not claim the rolling cutter, the use of the front wheels, the lever, beam, and ploughshare, the rod mould-board, or any of the described parts, except as shown and set forth.

But I *claim* the mould-board B E, B E, B E, friction-roller M, rotary cutter a, wheels p, adjusting lever T, and seat Z, when combined and arranged and operated in the manner and for the purpose set forth.

No. 18,750.—John Lane, Jr. of Lockport, Ill.—*Improvement in Ploughs.*—Patent dated December 1, 1857.—Letter A represents the land side bar; E, the taper point; F, the inclined flanch projecting nearly at right angles from the upper edge of the land side bar, underneath the mould-board and lay; B, the mould-board; C, the lay; D, the long taper socket on the lay; G G^1, the brace and coupling iron made in one piece; H, the steel land side facing.

Claim.—The rigid foundation or frame, when constructed with a taper point and inclined flanch, which projects nearly at right angles from the land side of the plough, underneath the mould-board and lay for use, in combination with a yielding mould-board, a yielding steel lay which has a complete taper socket at its point, and with a steel land side facing, substantially as and for the purpose set forth.

No. 18,726.—Joseph Banks, of Dadeville, Ala.—*Improvement in Ploughs.*—Patent dated December 1, 1857.—The coulter I has two branches *f g* at the bottom. The rear branch *f* rests in a notch formed in the upper side of the point L, toward its upper end; while the fore branch *g* passes down in a notch in the edge of the point, and thence bends under and hooks into a depression in the bottom of the point, as represented in the engravings. The shank of the coulter extends up through a long mortise in the beam, and is held therein by wedges *m* and *n* driven into the mortises, respectively against both edges of the shank. Thus the coulter both bears upon the upper side and lifts against the under side of the point, thereby giving it firmness and steadiness, and holding its ring or opposite edge strongly to the strain to which it is subjected.

Claim.—The arrangement of the double branch coulter I, so that its rear branch rests on the point or share, and its forward branch supports the under side of said point, in combination with the vertical and forward and rear adjustments of the coulter in the beam, in the manner and for the purpose specified.

No. 18,783.—Robert B. Winston, of Richmond, Va.—*Improvement in Ploughs.*—Patent dated December 1, 1857.—The beam, it will be seen by referring to the engravings, to the land side of the plough, stands out from the plough abruptly, and then runs to its end in the direct line of draught; the end of the beam, however great the divergency at the point X, must be in a line with the point E. The beam and land side are made in one piece for the sake of strength as well as economy. The bolts *o o* pass through stay *i*, handles B, and into the metal of the land side, for the purpose of holding the handles in their places; *a* is a mortise projection, for the purpose of holding the ends of the handles.

Claim.—The construction of the beam, as described, in combination with the land side, when the said beam is cast in one piece with the land side, in the manner described and for the purpose set forth.

No. 18,820.—Joel Lee, of Galesburg, Ill.—*Improvement in Ploughs.*—Patent dated December 8, 1857.—When this improved plough is in motion, the wheels follow in line after or with the plough; but when the plough changes direction at the end of the row, and turns to the land side, the wheels E and E^1 swivel around and stand at right angles with the beam, thus allowing the plough to move freely around. Wheel E^1 acts, while revolving in the furrow, as a brace for the land side of the plough. The rear end of the mould-board, being along the ground when the plough is in motion, will have a tendency to crowd constantly toward the land side; hence the necessity of having the swivel wheel E^1 stationary, when the rear of the plough crowds to the left.

Claim.—The combination and arrangement of the two wheels E and E^1, attached to the different sections of the beam, swiveling quarter around in opposite directions, and bracing the plough as described, when used in the manner and for the purpose set forth.

No 18,803.—Jarvis Case, of /Springfield, Ill.—*Improvement in Ploughs.*—Patent dated December 8, 1857.—The engravings and claim explain the nature of this invention.

The inventor says: I *claim* hinging the tongue to the beam of a plough, and extending a lever or lever seat from one to the other, so that the driver mounted on the plough may, by said lever, throw the plough or ploughs out of the ground, as set forth.

I also claim supporting the front of the beam on the centre of an axle *c*, supported in wheels *c c*, so that said beam may be raised or lowered on said axle, but not affected by the passing of said wheels over the rough ground, as set forth and explained.

No. 18,825.—R. S. Stenton, of New York, N. Y.—*Improvement in Ploughs.*—Patent dated December 8, 1857.—The claim and engravings explain the nature of this invention.

Claim.—Uniting two or more ploughs by an intermediate share, in the manner and for the purposes set forth; said share commencing at or near the point of the plough A, and extending backwards in the direction of the sole of the land side of said plough, and receding obliquely at or about the angle of the share of said plough, until it meets the share of plough B, all substantially in the manner set forth.

No. 17,212.—Jaockson Grham, of Bairdstown, Ga.—*Improvement in the Construction of Ploughs.*—Patent dated May 5, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The foot-piece B having a box *a* at its upper end and the two flanches *b b* at its lower end, as shown, for the purpose of securing the foot-piece to the beam, and the lower end of the brace C to the foot-piece, as shown and described.

No. 17,777.—George G. Black, of Crossinville, O.—*Improvement in Cultivator Ploughs.*—Patent dated July 14, 1857.—By turning the link screw *h* and the bar *m* the scrapers *n* may be adjusted to throw the required quantity of earth about the growing crop being cultivated, the beams traversing on the rod *t*.

Claim.—In double ploughs, with two beams joined at the clevis and made to be adjusted to rows of crops of different widths, the rod *l* arranged between the beams and provided with a cross-bar *t*, upon which the beams can vibrate when the ploughs are adjusted, as described.

No. 18,600.—Ezra Peck, of Deer Park, N. Y.—*Improvement in Digging Ploughs.*—Patent dated November 10, 1857.—The nature of this invention consists of carved teeth attached to a rolling cylinder in combination with a horizontal share travelling beneath the surface set and acting both to loosen the under part of the soil, and also act as a resistance to insure the teeth of said cylinder passing into the earth. In the engravings, 7 is a horizontal share on the plough or coulter *g*, which coulter is attached by a bolt to the beam *h*, and extends upwards to the connecting rod *i*, which is provided with a latch taking an opening in the bar 11.

The inventor says: I wish it to be understood that I do not claim a rolling cylinder with either straight or curved teeth, as this has before been used; but I am not aware of any tooth having before been constructed and shaped in the manner shown, so as to enter the earth with only a very small expenditure of power as the cylinder progresses.

I *claim* the coulter *g* and its horizontal share 7, in combination with the cylinder *k* of teeth I, the whole constructed and acting substantially as specified.

No. 16,912.—Jesse Frye, of Springfield, Ill.—*Improvement in Gang Ploughs.*—Patent dated March 31, 1857.—The conductor on his seat Y, by turning hand-lever S, which is connected with lever R^*, fig. 2, can turn said lever R^* on its fulcrum *q;* which movement will cause the bar T to move in a parallel direction from or to the bar I, thereby altering the direction of the ploughs *y z*, thus altering the width of the furrow. By turning lever X the upright O hinged to frame K will be turned on its hinge, thereby altering the course of wheel N, and consequently the direction of the plough. By operating lever V the rear end of beam H, and consequently the rear end of the ploughs, can be raised. By operating the cranks *e*, the front part of the plough can be raised as illustrated in fig. 1.

Claim.—The so hanging of a gang or series of ploughs upon their stock and beam as that the conductor upon his seat, may, by a system of hand-levers and connecting rods substantially such as set forth, adjust said series of ploughs to any desired depth or width of furrow, as set forth.

No. 17,591.—Joseph Sutter, of St. Louis county, Mo.—*Improvement in Gang Ploughs.*—Patent dated June 16, 1857.—By turning pinion F so as to throw rack E forward, the points O of the ploughs D are made to dip and enter the ground; and by turning the pinion in an opposite direction, the points of the ploughs are elevated so as to emerge from the ground.

Claim.—The combination of the ploughs D with the frame B and pivot O, arranged and operated in the manner and for the purpose set forth.

No. 18,343.—Samuel L. Kingston and David Gore, of Plainview, Ill.—*Improvement in Gang Ploughs.*—Patent dated October 6, 1857.—This improvement is intended to surmount the difficulties that usually attend gang ploughs, by allowing them a vertical and lateral adjustment, and also to permit the shares, independently of the frame, to ride over obstructions. By this invention, the plough is also provided with rotating coulters and a swivel wheel by which it may be guided.

The inventors say: We are aware that series of shares have been arranged in gang ploughs so that they could be adjusted vertically or laterally, and we therefore do not claim a series of shares thus arranged, irrespective of the means employed for operating them. Neither do we claim a swivel wheel for guiding and turning the machine, irrespective of the manner in which it is arranged and applied to the machine. Nor do we claim a rotary coulter simply.

But we *claim*, 1st. Attaching the bar F to the bars A by means of the lever D and arm G, and having the ends of the bars K connected by chains *m* to arms *n*, connected to a bar L, to which a lever L^1 is attached; the lever O being attached to one end of the bar A and to the rod *q*, as shown, and the screw rod V attached to the bar B, and passing through the bar *g*, whereby the shares may be adjusted vertically and laterally, and also raised temporarily when necessary, as shown and described.

2d. We claim a mould-board, constructed of conical wire rollers X^1 X^1, arranged as shown, or in an equivalent way, for the purpose of raising and turning the sward, as set forth.

No. 18,397.—George W. Hildreth, of Lockport, N. Y.—*Improvement in Gang Ploughs.*—Patent dated October 13, 1857.—The nature of this invention consists in the construction of the forward axletree *h h*, bolster plates D, and centre bolt or pivot *i*, so as to allow a compound or triple motion of the axletree, by which the cranks and wheels are elevated or depressed at pleasure, the wheels set to run further to the right or left, and the axle to vibrate on the centre bolt *g*.

The inventor says: I do not claim the arranging of ploughs in a gang so as to turn several furrows at the same time, nor the carrying it on wheels changeable in height.

But I do *claim* the axletree having a triple motion, in combination with the centre bolt and bolster plate, constructed and arranged substantially in the manner and for the purposes set forth.

No. 18,698.—Joel Lee, of Galesburg, Ill.—*Improvement in Gang Ploughs.*—Patent dated November 24, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I *claim*, 1st. The peculiar arrangement consisting of the friction-wheels *d*, inclined planes *f g*, and lever K, for adjusting the plough frame to any required position, as set forth.

2d. The peculiar arrangement consisting of the flange or guard *e* and pivoted axle a a^1, for allowing the turning of the front truck to a position at right angles, or nearly so, to the hind truck, so that the machine may turn a square corner without liability of lifting the plough shares out of the ground, as set forth.

No. 18,749.—Edward C. Jones, of Pittsburg, Pa —*Improvement in Gang Ploughs.*—Patent dated December 1, 1857.—The nature of this invention consists in coupling the ploughs constituting a gang to a front and back bar hung to the back end of a steam carriage in such a manner that the said bars can be raised or lowered at their ends by means of rack rods, levers, and other equivalent means, for the purpose of adjusting the depth of the furrows cut by the ploughs; and in connecting further the whole gang of ploughs with the steam carriage, so that the position of the same adapts itself to the undulations in the surface of the ground to be ploughed.

Claim.—1st. The arrangement of the hinged beam C C and springs D D^1, or any equivalent device therefor, when constructed and operating substantially as described.

2d. The coupling of the ploughs to a front bar G and back bar H, as described, which bars can be raised or lowered by means of the rack rods E E^1 and segment levers F F, or any equivalent means in their place, substantially in the manner and for the purpose set forth.

No. 18,336.—Ancil J. Hardin, of Shelby, N. C.—*Improvement in Hill-side Ploughs*—Patent dated October 6, 1857.—In this improvement the handles are two bars of iron, one inch and a half thick and three feet long, marked H H, fastened by the bolt M through beam A, near the conjunction of C with A. The handles are held apart, at a proper distance, by two iron rods. The front rod, marked I, is set backward in the middle so as to form a shoulder on each side of spring G, and thus prevent the handles from passing to the right or left side. When the rod I is raised to the upper end of spring G, so as to catch the curve T, the plough is ready for use; and, by pressing the spring forward with the hand or foot, so as to allow the rod I to pass from curve T towards the other end of the spring, and at the same time turning over the whole plough and raising up the handles so as to let rod I catch in curve T of the upper end of the spring, the plough is again ready for use. Between the end of the handles and the rod I is another rod V, which serves to prevent the handles from being bent together. The back end of the handles is forked so as to form a set of handles to hold with, either side of the plough being up.

The inventor says: I *claim* the arrangement of spring G with relation to handle H and beam A, in the manner and for the purpose described.

No. 16,913.—Jesse Frye, of Springfield, Ill.—*Improvement in Prairie Ploughs*—Patent dated March 31, 1857.—The driver, on seat Z, can direct the course of this plough by operating the hand-lever E, which, by the connecting rod D, causes the standard M, which supports one end of the shaft T, to swing on its hinge *a*, thus to change the position of shaft T, and, consequently, the direction of the plough. By turning lever I of the sector G, the cam P is raised or lowered; and as the circular face of said cam supports the front end of beam A, the front part of plough K can consequently be raised or lowered by means of said lever. The rear end of the plough can be raised or lowered by means of lever J, the short end *m* of which moves on the incline U; and the beam B is consequently raised or lowered by operating lever J, and consequently the rear end of the plough K, which is attached to it. The bearings of the rollers *e*, F, *g*, may be adjusted by causing the movable shield P to turn on its pivoted point; and the end *k* of said shield, figure 1, can be caused to travel in a circular groove d^1, and can thus be adjusted to any desired point.

Claim.—1st. Supporting the after end of the plough beam A upon a vertical journal at the left hand end of the axle T, when the bearings at the opposite end of said axle are so arranged that the position thereof may be varied and adjusted, substantially in the manner and for the purpose set forth.

2d. Also arranging the bearings of the rollers *e e, e f* and *g g g*, in such a manner that their positions may be varied and adjusted, substantially in the manner and for the purpose set forth.

3d. In combination with the mould-board, composed principally of the series of adjustable rollers, as set forth, I also claim the adjustable triangular plate *w*, for the purpose of making the whole conform to the position in which the furrow slice is to be laid or turned, substantially as set forth.

No. 17,547.—Henry S. Akins, of Berkshire, N. Y.—*Improvement in Mould-boards for Reversible Ploughs.*—Patent dated June 16, 1857.—The position of the mould-board can be reversed for turning alternate right and left furrows, by unhooking hook J from brace E, and by then turning the brace E on its pivot F, the gudgeon G carrying with it the share and mould-board.

The inventor says: I do not make an unqualified claim to the mould-board composed of rods, for that has been known and used before in ploughs to turn furrows one way.

Neither do I claim turning the share and mould-board of a plough to both sides of the land side, as that is a well known operation.

I *claim* providing a reversible plough with a mould-board susceptible of torsion, or of being twisted to the right and left by means of being composed of a series of rods or bars of any desired number, so constructed and arranged with the other parts of the plough that they can be placed and held alternately in the different positions and directions required for turning alternate right and left furrows.

No. 18,894.—David Eberly, of Waynesville, O.—*Improvement in Shovel Ploughs.*—Patent dated December 22, 1857.—This invention consists in an arrangement of means for adjusting the shares E, whereby the same may be placed more or less angularly or obliquely with the ground, so that they may enter the same at a greater or less depth, as desired, and also placed so as to throw the soil either towards or from the rows, as the occasion may require.

Claim.—Securing the shares E E to the beam A, by having the upper ends of their bars D fitted in the bars C, the bars D also passing through the loops or eyes F of the bars G, and secured therein by keys i^2, the bars G being secured to the beam A, as shown, and the whole arranged as and for the purpose set forth.

No. 16,937.—David B. Spencer, of Parkersburg, Va.—*Improvement in Steam Ploughs.*—Patent dated March 31, 1857.—The nature of this invention will be understood by reference to the claim and engraving. The plough is driven by applying steam power to the crank pin *a*.

Claim.—1st. The use of the single wheel B at the rear of the carriage as the sole driving-wheel, and running in the bottom of the furrow turned by the plough C, substantially in the manner described.

2d. Also hanging the two supporting wheels D and E eccentrically on the same turning or rocking axle F, so that, whether the machine runs upon level ground, or with one wheel higher or lower than the other, the frame A and boiler J shall still preserve its horizontal position, as herein set forth.

No. 18,446.—John R. Gray, of Fair Play, Wis.—*Improvement in Steam Ploughs.*—Patent dated October 20, 1857.—This invention consists in driving or propelling the machine by means of two or more screw shafts, provided with right and left threads, and rotated in opposite directions, and using, in connexion with the screw shafts, adjustable wheels and gang ploughshares; the whole being so arranged that an efficient, simple, and durable implement is obtained, which may be managed by an attendant with great facility.

The inventor says: I *claim* the screw shafts E E^1, two or more, provided with right and left threads or flanches *a*, and arranged and operated substantially as shown, or in an equivalent way, for the purpose of propelling the machine both in a direct line and laterally, as described.

I further claim the adjustable wheels N N, when arranged and applied to the machine, as shown, for the purpose specified.

I also claim connecting the arms Z Z to the bars W, which are operated or actuated by the lever T, in combination with the shares A A^1, attached to the swinging arms Z Z, in the manner and for the purpose set forth.

No. 18,468.—E. Graves Otis, of Yonkers, N. Y.—*Improvement in Steam Ploughs.*—Patent dated October 20, 1857.—This invention consists in the employment of an endless chain of ploughs and harrows arranged and applied to a steam traction engine in a peculiar manner, whereby a simple and practical implement is obtained. The engravings and claim further explain the nature of this improvement.

Claim.—The inventor says: I am aware that ploughs have been previously attached to endless chains, and I therefore do not claim broadly such device, irrespective of the arrangement of the parts substantially as shown.

But I *claim* attaching the ploughs N to the chains K K, as herein shown and described, whereby they may be adjusted more or less obliquely to correspond with the oblique position of the furrows, and also to allow for the contraction of the chain in passing around the pulleys.

I further claim the teeth *s*, attached to the sleeves *v*, on the tie-rods *m*, and provided with the springs *u*, substantially as shown for the purpose specified.

No. 18,619.—John Wood and Reuben North, of Rochester, Wis.—*Improvement in Sub-soil Ploughs.*—Patent dated November 10, 1857.—By this invention two ploughs are combined in such a manner that, when it is desired to perform ordinary surface ploughing, it can be done without removing the auxiliary plough, or suffering any inconvenience from its remaining on the main plough. And, again, if it is desired to sub-soil, it can be done by simply depressing a lever; and if it becomes necessary to raise the sub-soil share out of operation, it can be done by raising the adjusting lever.

The inventors say: We are aware that a sub-soil attachment to ploughs is very common; also, that a thin, fixed blade has been arranged under the bottom of the surface plough. Therefore we do not claim such attachment as our invention.

But we *claim* the combination of the auxiliary or sub-soil share, and its adjustable standard, with the adjusting lever and its attachments, when the whole is constructed and arranged in the relation to the main share and beam as described and for the purpose set forth.

No. 16,722.—Paul Dennis, of Stillwater, N. Y.—*Improvement in Potato-Diggers.*—Patent dated March 3, 1857.—The stops or elevations *c* of the separator are arranged out of line with each other, so that the irregular undulating surface may effectually break up the dirt surrounding the potatoes, and prevent its passing off readily from the separator. The latter runs directly upon the ground behind the digger, and, by turning upon a shaft E at the forward end, adjusts itself to the soil. After the potatoes come upon the separator they roll some distance along a plane portion, where the dirt is stripped off and left adhering to the ground beneath; and by the time the potatoes are carried over the irregular stops *c* and a terminal plane portion F, they are pretty thoroughly cleaned.

Claim.—In combination with the digger A, in the manner described and shown, constructing the separator so as as to form an irregular undulating surface for the potatoes to fall upon, for the purpose set forth.

No. 17,129.—John Taggart, of Roxbury, Mass., assignor to Himself and William W. Messer, of Boston, Mass.—*Improvement in Potato-Diggers.*—Patent dated April 21, 1857.—As the machine is drawn along, the plough point *a* is made to run through a row of hills, and the arms I of the lifter wheels D will seize and raise the earth and potatoes below them, and force the earth through between the grate-bars C, while the potatoes will pass through the apertures K down upon the discharging spouts F, whence they are discharged and deposited in rows upon the ground.

Claim.—The combination and arrangement of the plough, the gird or grate, the revolving tooth-lifter wheel or wheels, and the means of discharging the potatoes from the same.

No. 17,428.—Isaac Griffen, of Quaker Springs, N. Y.—*Improvement in Potato-Diggers.*—Patent dated June 2, 1857.—As this machine is drawn over the ground, the teeth *a*, aided by the operations of the fork F, which is swayed back and forth by the driver, cut off and remove weeds near the surface of the ground, so that the drags T may, without material obstruction, bring the potatoes out of their hills.

Claim.—The arrangement of the drag G, axle A, and swinging fork F, substantially in the manner and for the purpose set forth.

No. 18,899.—Jacob E. Hardenburg, of Fultonville, N. Y.—*Improvement in Potato-Diggers.*—Patent dated December 22, 1857.—This invention consists in the combination of an adjustable share and grating Y, and horizontal revolving arms A^2 A^2, attached to a suitable framing A, mounted on wheels B B, and arranged relatively to each other, whereby the desired work may be accomplished quickly and well.

The inventor says: I am aware that shares and gratings or riddles have been employed for digging or ploughing up potatoes, and separating them from the earth; and I do not claim such parts, separately considered, and irrespective of the rotating arms.

But I *claim* the combination of the share P, grating Y, rotating arms A^1, arranged as shown, or in an equivalent way, to operate as and for the purpose set forth.

No. 18,954.—Isaac S. Bunnell, of Montrose, Pa.—*Improvement in Potato-Diggers.*—Patent dated December 29, 1857.—A represents the beam of an ordinary plough; B, a ploughshare with bevelled mouldboard *a a* on each side of the vertical axis of the standard; E is a transverse for connecting the rear ends of the wings; F F are two rakes; they are arranged diagonally across the wings on the under side of the same, being fastened by means of vertical pivots *d d;* G G are two connecting rods for adjusting and holding the rakes at any angle desired. These rods are pivoted to the outer ends of the rakes and to the front ends of the wings, as shown at *f f; g g g* are a series of adjusting holes in wings; they serve for receiving the pivots *f f* of the rods G G.

Claim.—The arrangement relatively to each other, and for united operation, of the oblique-hinged wings D D, diagonal pivoted adjustable rakes F F, pivoted adjustable rods G^1 G^1, and double mould-board ploughshare B *a a*, substantially as and for the purposes set forth.

No. 19,009.—A. Anderson, of Markham, Canada.—*Improvement in Potato-Diggers.*—Patent dated December 29, 1857.—The claim and engravings explain the nature of this invention.

Claim.—The opening shares 8 and 6, and the share or shovel 7, 9, and 3, in combination with figure 4 and revolving toothed cylinder 8 and 2, for the purpose of digging and separating potatoes from the soil; the whole being constructed and arranged as described.

No. 17,856.—Joseph Henlings, of Philadelphia, Pa., assignor to W. H. Lawson, B. M. Henlings, and Joseph Henlings, of the same place.—*Improvement in Machines for digging Potatoes.*—Patent dated July 21, 1857.—As the machine is drawn along, the knife *c* severs the stalks close to the upper portion of the ridge, and the revolution of shaft *b* causes the teeth *g* to break up the ridge, and carrying the potatoes upward drops them upon the ground in the rear of the machine. When an obstacle is to be passed, the operator lifts the rear portion of the frame, thereby raising the teeth *g;* this movement depresses the front portion of the frame, causing the cross-piece *g* to draw downward the arm of lever *n*, which is under it, and thereby causes the other arm of said lever to lift the stalk-cutter *c*, so that it will pass over the obstacle. When the rear of the frame is dropped, the stalk-cutter is free to fall to its operating position.

Claim.—The combination of the rotary digger, oscillating frame, and oblique stalk-cutter, connected and operating substantially as specified for the purpose set forth.

No. 17,827.—Galusha J. Bundy, of Lyndon, Vt.—*Improvement in Machines for Planting Potatoes.*—Patent dated July 21, 1857.—As the machine is drawn along, a reciprocating motion is given to the slide F, and the seed passes alternately through the passages *b* of the plate *a*, while the gate L distributes the manure in hoppers a a^1, to drop to the ground with the seed.

Claim.—The arrangement of the two movable gates *a* and L with the slider, the seed and fertilizer hoppers, and their discharging holes or chambers; the whole being substantially as set forth.

No. 18,079.—Andrew J. Blodgett, of Newport, New Hampshire.—*Improvement in Rakes.*—Patent dated September 1, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim spring teeth applied to a rake head.

But I *claim* making each arched brace rod and one or two teeth in one piece of wire, and extending the same through the rake head, and into or through the handle, substantially as specified.

No. 18,339.—A. A. Hotchkiss and Andrew Hotchkiss, of Sharon Valley, Connecticut.—*Improvement in Rakes.*—Patent dated October 6, 1857.—On the under side of the rake-head A is cast a ferrule C, into or through which the end of the rake-handle B passes and is made fast. The ferrule D and its braces *d d* and *e e* are cast in one piece, and the rake-head with its ferrule C, teeth *a*, and braces *b*, are cast in another piece, and the two riveted together at *f f*, which forms the rake.

Claim.—The inventors say: We are aware that cast-iron rakes have been made before, and that a ferrule has been braced from the rake-head by braces which were riveted to both the ferrule and rake-head; we therefore claim neither of these things.

But we *claim* the rake-head A, with its teeth *a*, ferrule C, and braces *b*, in one piece, and casting the ferrule D, with its braces, in another piece, and uniting the two pieces together, substantially in the manner set forth; by which means we produce a new, cheap, and serviceable article of manufacture not heretofore known in the trade.

No. 17,772.—S. W. Wood, of Washington, D. C., assignor to Lewis H. Parsons, of the State of New York.—*Improvement in Hay Rakes.*—Patent dated July 7, 1857.—The rake is retained in position by lever G until a sufficient quantity of hay is gathered; and when the tube C is released, the toothed-wheel F takes into the earth, revolves the rake, leaving the gathered hay in a row, and presents the rake in position for the next operation.

Claim.—A hay rake consisting of a loose revolving tube *c*, in combination with a segment wheel F placed upon an axle A, said tube being provided with the teeth D of any desired form or material; the whole being arranged and operating in the manner substantially as described.

No. 18,731.—L. A. C. Brown, of Sparta, Illinois.—*Improvement in Hay Rakes.*—Patent dated December 1, 1857.—A is an axle, and B B are wheels placed loosely on it, one at each end. C C^1 are thills, which are attached to the axle. D is a bar, which is provided with two hooks *a a*, said hooks fitting in eyes *b b*, which are attached to a cross-piece E of the thills. The hooks are allowed to turn freely in the eyes *b b* and the bar D; rake teeth *c* are attached. These teeth may be constructed of wire coiled at their ends, as usual, or other form of teeth may be used.

The inventor says: I do not claim, broadly, a rake so arranged as to swing and allow its teeth to be elevated that it may deliver its load; for rakes thus arranged have been previously used.

But I *claim* operating or raising the rake through the medium of the lever I provided with the pin *i*, the wheel B^1, and the curved bar *j*, arranged substantially as described.

No. 18,850.—Valentine Hyatt, of Westfield, Massachusetts.—*Improvement in Horse Rakes.*—Patent dated December 15, 1857.—This invention consists in the construction of a revolving rake, so arranged that it can be discharged of its burden at any moment by the hand of the driver; the rake performing half a revolution at each discharge. Also, in the means of elevating the rake so that it will pass clear of obstructions and of the ground when it is desired not to use it.

The inventor says: I *claim*, 1st. The combination of the lever L, cross-bar C^1, levers C C, and arms G G, for raising the rake from the ground when not in use, as described.

2d. I claim the combination of the lever N, connecting rods *n n*, levers M M, and arms G G, for holding the rake whilst it is filling with hay, and for discharging the load, as set forth.

No. 16,342.—James H. Thompson, Newark, New Jersey.—*Improved Raking Attachment for Reapers.*—Patent dated January 6, 1857.—As the machine is drawn along, a vibrating motion is given to the bar E by means of cranks F and G and connecting rod *d*, and a vibrating motion is also communicated to shaft F^1, the teeth *e* raking the cut grain off the platform A. As the shaft F^1 moves from the front towards the rear end of the platform, it is prevented from turning by pawl j^1 catching against one of the shoulders *g* on the hub *f*; but as soon as shaft F commences its forward movement, the wheel G^1 is connected with shaft F by pawl *h* catching against one of the shoulders on hub *f*, and shaft F^1 will be turned half a revolution, so that the teeth *e* clear the grain on platform A.

The inventor says: I am aware that vibrating rods have been used before. I do not claim such.

I *claim* the vibrating and intermittently rotating shaft F^1, when fitted or placed in the bar E, and provided with teeth *e*, and operated by the wheel G^1, hubs *f* f^1, pawls *h* j^1, cranks F G, and connecting rod *d*, arranged as described.

No. 16,582.—Peter Harnist, of Marinetown, Illinois.—*Improved Raking Attachment for Reapers.*—Patent dated February 10, 1857.—The broken lines represent one, and the dotted lines another, position of the raking apparatus.

Claim.—Operating the rod M to which the rake-head L is pivoted by means of rock-shaft N, arms *g f*, and connecting rods P O, in combination with spring Q, crank K, and bar S, when the same are constructed and arranged for joint operation, substantially in the manner and for the purpose set forth.

No. 16,413.—David Watson, of Newark, N. J.—*Improvement in Reaping and Mowing Machines.*—Patent dated January 13, 1857.—The finger-bar B, to which the rotating cutters E are attached, is bolted to the stirrup A by means of bolt *a*, and can swing on said bolt to adapt itself to the unevenness of the ground, and the spring tends to bring the bar B back to a horizontal position.

Claim.—The use and application of the adjustable curved flat spring *c* to the upper surface of the finger-bar B, when both are attached to the stirrup A for joint action, in the manner and for the purpose described.

No. 16,599.—Jeremiah W. Mulley, of Amsterdam, N. Y.—*Improvement in Reaping and Mowing Machines.*—Patent dated February 10, 1857.—Fig. 1 represents the machine ready for mowing, with the part A B of the platform open and secured to the guard-board M by means of hook R; fig. 2 represents the machine with the platform closed ready for reaping.

Claim.—Constructing and arranging the platform of combined reaping and mowing machines in parts, when one or more of said parts may occupy at pleasure such position in relation to the cutters as to form the track clearer for mowing, or the platform for reaping, in the manner substantially as set forth.

No. 17,205.—Charles Crook, of New Hope, Pa.—*Improvement in Reaping and Mowing Machines.*—Patent dated May 5, 1857.—When this machine is used for reaping, the driving-wheel D transmits motion to pinion J and bevel-wheels K *h*, which turn shaft H connected with the cutter-bar of the machine. For mowing, the platform of the machine is lowered and the pinion J is thrown in gear with wheel L^2, so as to slacken the speed suitably for mowing.

Claim.—Operating the cutters of combined reaping and mowing machines by means of the intermediate pinion J, in combination with the internally geared driving-wheel D and the spur wheel D^2, on the driving-wheel shaft, when the same are constructed and arranged in relation to each other substantially us and for the purpose set forth.

No. 18,238.—John G. Dunham, of Raritan, N. J.—*Improvement in Reaping and Mowing Machines.*—Patent dated September 2[illegible], 1857.—The nature of this invention consists in so constructing the outer end of the sickle beam that it can be sustained at different heights by the use of a single wheel, and thus both ends of the sickle beam be kept on a level with each other.

The drawings and claim fully describe the invention.

Claim.—In setting forth what he claims as new in this improved machine, the inventor says: I am aware that the use of a sliding arm or equivalent means has been employed for changing the elevation of the sickle, and therefore I do not claim generally the application of a slotted frame and sliding arm for such purpose.

But I claim, in combination with the rear part of the rectangular frame O, the supporting caster wheels K M, with the inclined sliding frame, and arms J and I, adjustable brace N, and inclined bar L, furnished with a series of sockets *l l l*; the whole arranged substantially as and for the purposes set forth.

No. 18,329.—Marcus E. Ellsworth, of Hudson, O.—*Improvement in Reaping and Mowing Machines.*—Patent dated October 6, 1857.—The nature of this invention relates to an improvement in Manny's combined mower and reaper, and consists in the peculiar manner of constructing the driver's seat and other parts connected therewith, and combining the same with said machine.

The inventor says: With my improvement there is no danger of the driver being thrown forward or being injured by the machine in passing over uneven ground. The seat is such that the driver can see in time everything which would be likely to obstruct the working of the machine; and its arrangement is such that the caster is dispensed with, and the machine balanced on the driving and truck wheels, thus rendering the machine much more light and easy of draught, so that it has been determined by practical test that a team of horses with this machine, is as effective as a team of three horses with the ordinary machine. The drawings and claim will give an idea of the improvement.

Claim.—I *claim*, says the inventor, the seat or stand B, consisting of the seat-board M, spring N, standard G, joint I I, foot-board and rests E F, when constructed and arranged in relation to and used in combination with Manny's combined reaper and mower, as set forth.

No. 18,829.—H. G. Vanderwerken, of Greenbush, N. Y.—*Improvement in Reaping and Mowing Machines.*—Patent dated December 8, 1857.—The nature of this invention consists in arranging the large internal spur gear fast in an auxiliary frame, and attaching said frame to the main or reaper frame, and using the same thus arranged in combination with a series of planetary wheels which have their axes on the inner face of the propelling wheel, and gear with a central transmitting pinion made loose on the shaft of the propelling wheel.

Claim.—The combination of the stationary and bracing gear F with the auxiliary frame A^1, main frame A, driving-wheel C, and pinion H G, arranged as and for the purposes set forth.

No. 18,833.—J. W. Brokaw and Thomas Harding, of Springfield, O., assignors to Benjamin H. Warder, John W. Brokaw, and Jonathan C. Child, of Springfield, O.—*Improvement in Reaping and Mowing Machines.*—Patent dated December 8, 1857.—This improvement relates to a new method of raising and lowering the finger-bar for the purpose of regulating the height at which the grain or grass is to be cut, and at the same time, and by the same means, to relieve the joints of the tongue from strain.

Claim.—The peculiar method of regulating the height of the cut, and relieving the draught on the joints of the tongue, by means of the bar K, in combination with a tongue I, hinged to the finger-bar C, or front of the main frame of the machine, both being constructed, operated, and arranged in relation to each other, in the manner as described.

No. 17,990.—John T. Whitaker and Calvin D. Read, of St. Charles, Illinois.—*Improved Finger-bar for Reaping and Mowing Machines.*—Patent dated August 11, 1857.—This invention consists in the use of a rolled tubular finger-bar E, of the form represented in the engraving, whereby the strength of the machine is increased and its weight lessened. The fingers *s* are inserted within suitable holes and secured to the bar by means of screw nuts s^1.

Claim.—A tubular finger-bar, when constructed in the peculiar manner and for the purposes substantially as set forth.

No. 18,340.—Charles Howell, of Cleveland, Ohio.—*Improved Guard-finger for Reaping and Mowing Machines.*—Patent dated October 6, 1857.—The object of this invention is to obviate the difficulties which arise from heavy or clumsy guards or fingers of reaping and mowing machines, which are liable to be clogged or gummed up, thereby preventing the free working of the knife. This invention consists in constructing the fingers in a peculiar manner of sheet metal, which is shown in the drawings.

The inventor *claims* constructing the guard-fingers of reaping and mowing machines of sheet metal, in the manner substantially as described and shown in figures 1, 2, 3, and 4.

No. 16,971.—George Esterly, of Heart Prairie, Wisconsin.—*Improvement in Reaping-Machines.*—Patent dated April 7, 1857.—The platform A is suspended to beam *c* by means of a hook a^2 on rod *b*, and the raker can raise or lower said platform by turning the lever nut a^1. The raker seat *e* can also be adjusted to any desired position on the beam *c*, as described in the claim.

The inventor says: I do not claim the use of an adjustable raker's seat or stand attached to a swinging platform.

Neither do I claim an adjustable raker's seat or platform.

But I *claim* the combination of the common supporting beam *c* with an adjustable raker's seat or stand *e* and platform A, when said parts are constructed and arranged in relation to each other so as to be easily adjusted to any desired position, there firmly held while the machine is in operation, and the raker on the platform, in the manner and for purpose set forth.

No. 16,735.—Caleb Lee, of Knox Township, Ohio.—*Improved Raker for Reaping-Machines.*—Patent dated March 3, 1857.—As the rake B, upon the end of shaft C, moves forward and backward along the guard E, the pins *p p* will alternately strike one of the latches *l l*, so as to lower one latch and disengage the lever *g* therefrom and force it into the notch of the other latch, and thus alternately raising or lowering the rake and holding it in its proper position, up or down, while it sweeps backward or forward.

Claim.—The two spring latches *l l*, working upon the arm *k*, in combination with the pointed lever *g*, the latches being notched to receive the same, and both the lever and latches being arranged so as to be acted upon alternately by pins *p p*, to raise or lower the rake and hold it in either position as required; all in the manner and for the purpose set forth.

No. 18,188.—A. H. Caryl, of Sandusky, O.—*Improved Raking Attachment for Reaping-Machines.*—Patent dated September 15, 1857.—As the wheel V is turned in the direction of its arrow, it revolves shaft H, which swings round shaft I, roller *l* running on way M, and rake Q sweeps the cut grain off the platform R. When the shaft I has swept over an arc of nearly 90°, the cogged wheel *n* is operated by rack *c*, on the way M, turning shaft O, and lifting rake Q, which is held in an elevated position by a ratchet and dog, while the shaft I is being swung towards the front end of the machine. When sufficient grain has fallen on the platform R to make another gavel, the driver presses with his foot on the end k^1 of lever h^1, and sets free the wheel V; when, by the uncoiling of the spring e^1, the wheel is turned in the direction opposite to that indicated by its arrow, and swings back shaft I towards block N. The instant this shaft strikes block N, the dog *t* is tripped, and the rake Q descends into the grain and rakes it off, as described.

Claim.—First. Raising the rake in the plane in which it is inclined by means of the devices described for the purposes specified.

Second. Operating the raking attachment back and forth over the platform by means of the mechanism, substantially as set forth.

Third. Inclining the rake from a vertical plane to correspond with the length of the grain being cut by means of the devices described.

No. 18,221.—Christian Yost, of Leacock township, Pa.—*Improved Raking Attachment for Reaping-Machines.*—Patent dated September 15, 1857.—As the machine is drawn along, the two rows of cogs N on wheel M operate alternately the cogged sectors K L, thereby oscillating shaft J, wheels I and G, and crank Z, which operates arm C, causing the rake A to descend and to pass over the platform B, the outer end of arm C bearing against roller H, while the rake-handle is supported by the hinged stirrup D.

Claim.—Operating the rake A by means of the device D, the regulator C, in combination with the semi-cog wheels K L and pins N N, arranged and connected substantially as set forth.

No. 18,525.—Jacob G. Winger, of Vicksburg, Miss.—*Improvement in Cotton-Scrapers.*—Patent dated October 27, 1857.—In using this implement, the ridge is scraped on both sides at one operation, and the top of the slope is left with the carved surface *m*; this leaves the top of the ridge in a better condition to sustain the plant than can be effected with a scraper of ordinary construction, either single or double. The inclined plates C rest upon the surface of the ridge, causing the weight of the implement to be effectual in pressing the earth.

The inventor says: I do not claim, broadly, the construction of cotton-scrapers for acting on both sides of the ridge at a single operation; but I *claim* the longitudinally adjustable cutters C C, having each an inclined vertical and curved portion, as described in combination with mould-boards, supports, and frame, substantially as set forth.

No. 18,158.—Abner H. Pinney, of Columbus, O.—*Improvement in Scythe Snaths.*—Patent dated September 8, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Uniting the two pieces C E by a branched ferrule A B, for the purpose of making a scythe snath that shall have the proper form without being bent into that shape, and the necessary strength and rigidity to make it an economical implement, as described and set forth.

No. 18,119.—Oliver Clark, of Henrietta, O., assignor to Aaron H. Pinney, of Columbus, O.—*Improvement in mode of Attaching Scythes to Snaths.*—Patent dated September 1, 1857.—The scythe shank *d* being placed in the recess of block A, and through the eye of stirrup *e*, it is tightened by the screw, and the angle of the blade to the snath is adjusted by passing the shank *d* a greater or less distance through the eye of the stirrup, and the edge is raised or depressed by moving the collar longitudinally upon its seat, thus correspondingly rolling the shank in the recess of block A.

The inventor says: I do not claim the making of a scythe with a curved heel, as I claimed that in my former patent; but I *claim* the metallic block A, in combination with stirrup bolt *e*, collar *f*, and scythe heel *d*, constructed and arranged in the manner and for the purpose set forth.

No. 18,326.—William T. Clement, of Shelburne Falls, Mass.—*Improvement in mode of Attaching Scythes to Snaths.*—Patent dated October 6, 1857.—This invention consists in securing the tang or shank of the scythe to an adjustable plate by means of a loop and screw, the plate being pivoted to the butt of the snath, and the several parts so arranged that the scythe may be not only firmly secured to the snath, but also adjusted or set at varying angles with it, as circumstances may require. In this improvement no nuts are required to be removed or unscrewed in order to adjust the scythe. The slot K in the plate D allows of the ready insertion of the tang E through the loop C, the claw *l* passing into said slot as the tang is passed within the loop.

The inventor, in stating his claim, says: I *claim* the combination of the adjustable plate D, loop C, and screw *c*, when arranged substantially as described for the purpose specified.

No. 18,982.—Jacob Mumma, of Harrisburgh, Pa.—*Improvement in Seed-Drills.*—Patent dated December 29, 1857.—The frame A is composed of two side pieces *a*, (which extend forward, forming the shafts of the carriage,) and two cross pieces *b*; it rests upon an axle B, with suitable wheels, and serves to support the various parts of which the machine is composed. Upon the forward part of the frame is placed the apparatus C for broadcasting lime, &c.

Claim.—The combination of the broadcasting apparatus for sowing pulverized manures with the seed-drills, when the former is placed in advance of the latter; the whole being arranged and operated in the manner and for the purposes specified.

No. 16,511.—Erastus D. Wooding, of Dixon, Ill.—*Improvement in Seeding-Machines.*—Patent dated January 27, 1857.—The nature of this invention consists in the construction of a double reciprocating seed-slide B D, with double the amount of holes in the under section that is made in the upper slide, and in the construction of a revolving spreading roller R supported by the braces S; T represents the band for driving the roller, said band passing around the hub H of the driving-wheel, which, by its revolving motion, causes a more regular distribution of the grain on the ground.

Claim.—The spreading roller H, when constructed to revolve, for the purposes substantially set forth.

No. 16,772.—Lewis B. Myers and Henry A. Myers, assignor to Themselves and Isaac Myers, of Massillon, Ohio.—*Improvement in Seeding-Machines.*—Patent dated March 3, 1857.—Figures 1, 2, 3, represent the successive positions of the pistons d^1 d^2; in figure 1, the tube *b* begins to fill from a hopper above with seed; in figure 2 it is filled with seed between the two pistons d^1 d^2, which quantity of seed will be discharged during the time the pistons come into position, figure 3.

The inventors say: We are aware that rollers, valves, and slides have been used in seed-drills for distributing the seed; therefore, being old devices, we do not claim them.

Neither do we claim an aperture, nor two piston heads on one rod separately.

We *claim* measuring and distributing grain seeds or fertilizers, by two or more piston heads d^1 d^2, and one rod *e*, or their equivalents, operating in and out of an aperature *b*, in the manner and for the purpose substantially as described.

No. 18,083.—Charles W. Cahoon, of Brooklyn, N. Y.—*Improvement in Seeding-Machines.*—Patent dated September 1, 1857.—As the machine is drawn along, the agitating teeth *d* cause the seed to pass from hopper C into discharger F, and rotary motion being given to said discharger, the seed is thrown broadcast from the outer edge of discharger F; the spiral flanches *p* create a current which gives an impetus to the seed, and the disk H prevents the air from rushing into the mouth of the discharger F.

The inventor says: I do not claim the slide *b*, nor the rock-shaft *c*, with the hopper. Neither do I claim distributing or sowing seed broadcast by means of centrifugal force effected by the rotation of wheels or cylinders, irrespective of the construction and arrangement shown.

But I *claim* the disk H, and rock-shaft *c*, with its teeth *d*, in combination with the funnel-shaped discharger F, having spiral flanches *p*, arranged substantially as and for the purposes set forth.

No. 18,346.—Daniel Markham and Austin S. Markham, of Monmouth, Ill.—*Improvement in Seeding Machines.*—Patent dated October 6, 1857.—In this improvement the seed falls from the seed box into the screen V, which is open at the top, and so made as to shelter the seed from the wind. The back part of it is an inclined plane, upon which the seed falls, and which tends to distribute the seed in its passage to the ground. The forward part of this screen is curved, and extends a little nearer to the ground, for the purpose of preventing the wind from affecting the grain from the direction opposite to that in which the machine is being drawn. In planting, the markers W serve to show the position of the seed. Should it be desirable to reduce the depths of the furrows to less than what the ploughs will naturally cut, it may be done by fastening the lever H in any required position. The shaft of the caster is supported in two pieces of timber Y and Z.

The inventors say they *claim* the inclined screen, with the overhanging lip upon the forward side, for protecting the grain from the wind, arranged as set forth.

No. 18,492.—Horace R. Allen, of Nelsonville, Ohio.—*Improvement in Seeding Machines.*—Patent dated October 27, 1857.—When it is desired to run the carriage without working the ground or sowing the seed, the levers *f f* are pressed back on their catches *g g*, whereby the slide H is held in such position that none of its caps *e e* come opposite to the spouts G G, the U axle of the hind wheels is then depressed and secured in position as seen in the engraving, and the steering wheel E thrown down by means of lever *a*, attached to its oscillating shaft D, when the carriage is so elevated that its teeth and seed spouts are placed out of reach of the ground. The sliding bar H is operated upon through the lever *h*, directly by the spokes of the wheels C C.

The inventor says: I *claim* the clearers *s* constructed as described, with the projection *v* working in the grove *w*, and operated by the motion of the slide H, as and for the purpose set forth.

No. 18,579.—ALBERT FRANKLIN, of Genoa Cross Roads, Ohio.—*Improvement in Seeding Machines.*—Patent dated November 10, 1857.—This improvement is intended to be used principally for sowing among standing corn such grain as wheat, barley, or rye. The claim and engravings show the nature of this invention.

Claim.—The combination of the wedge-shaped or triangularly-formed discharge openings *h i* of the hopper C, with the similar shaped cells *m n* in the feed cylinder B, arranged for operation in reverse directions to each other, and the several cells in each circular row of said cylinder forming though divided, a continuous opening, by means of channels Z connecting the apex of the one cell with the base of the other, for the purposes set forth.

No. 18,603.—EPHRAIM RUSSELL, of Coatesville, Pa.—*Improvement in Seeding Machines.*—Patent dated November 10, 1857.—One part of the axle *b* carries a cam wheel *c*, which revolves loosely between a shoulder *d* and the hub of a hand wheel *e*, which being screwed upon the axle operates as a friction clutch when turned in the proper direction to press the cam wheel against the shoulder, the end of one part of the axle being pivoted in the end of the other.

The conveyor spouts *r* consist of two parts hinged together, and are attached vertically to the frame and held in position by pins which are easily shifted to regulate the depth to which the shoe W enters the furrows.

Claim.—The inventor says: I *claim*, 1st, the combination of the screw friction clutch with the cam wheel, in the manner described.

2d. The adjustable jointed conveyor spouts, when constructed in the manner and for the purpose specified.

No. 18,730.—JARVIS CASE, of Springfield, Ill.—*Improvement in Seeding Machines.*—Patent dated December 1, 1857.—The engravings and claim describe the nature of this invention.

Claim.—So combining with the driver's seat H a marker, having in its arm a hinged brace, or its equivalent, as that said driver may, from his seat, turn over or reverse said marker, suspend it to the machine whilst turning around, and drop it into its working position without leaving his seat on the machine, as set forth for the purpose explained.

No. 18,735.—JACOB GEISS and JACOB BROSIUS, of Belleville, Ill.—*Improvement in Seeding Machines.*—Patent dated December 1, 1857.—The engravings and claim explain the nature of this invention.

Claim.—The inventor says: We are aware that perforated slides, moving rectilinearly in opposite directions, have been previously used for distributing seed; and we are also aware that slides to vary the orifices of seed receptacles or cells have been previously used.

We therefore do not claim broadly, and irrespective of construction and arrangement, such devices.

But we *claim* the employment or use of the two sector plates B C, constructed as shown, viz: one being provided with an opening *f*, and the other with a recess or seed receptable g^1 and ledge *i*, the plates being fitted on a common axis *b*, and operated through the medium of the eccentrics *d d*, and the connecting rods D D, attached to the arms *c c* at the desired points, and for the purpose set forth.

No. 18,765.—DAVID O. PAIGE and JOHN CLARY, of Dayton, Ohio.—*Improvement in Seeding Machines.*—Patent dated December 1, 1857.—The claim and engravings explain the nature of this invention.

Claim.—The inventors say: We are aware that pins and flanges have been attached to rotating drums or cylinders, for the purpose of agitating the seed in the seed boxes of seeding machines, and preventing the choking and clogging of the same.

But we are not aware that spiral flanges placed in reverse positions on drums or cylinders, so as to give a reciprocating or vibratory movement to the seed, and thereby effecting a greater agitation than usual, have been used.

We do not claim, therefore, broadly and irrespective of the arrangement shown, the employment or use of spiral flanges or pins placed in spiral rows on drums or cylinders; for they have been previously used.

But we *claim* the spiral flanges *c d*, placed in reverse positions on the rotating cylinders D D, within the hopper A, substantially as and for the purpose set forth.

No. 18,853.—HIRAM KELLOGG, of McHenry, Illinois.—*Improvement in Seeding Machines.*—Patent dated December 15, 1857.—The engravings and claim explain the nature of this invention.

The inventor says: Being fully aware that revolving harrows, pulverizing cylinders, and shafts with spikes and slicing blades have been used, I therefore do not claim such devices singly or in combination.

But I *claim* the construction of the double pointed mattock-like revolving digging shovels, arranged together in pairs at right angles to each other, and having passing through their centres a shaft or axle, and in arrangement and operation with a revolving scatterer C C C, *d d d*, attached to an adjustable graduating framing *e e e e*, *f f*, and in combination with an adjustable sliding hopper, or seed fountains J J, as described; and through all of which devices, forming an individual or unity of machine, the soil is dug up, pulverized, and scattered, and the seed or grain is deposited and covered up to a greater or less depth in one operation of the machine, as set forth.

No. 18,856.—SAMUEL MILLS, of New Castle, Ohio.—*Improvement in Seeding Machines.*—Patent dated December 15, 1857.—This invention consists in the employment or use of two distributing devices, peculiarly arranged and combined, so as to operate simultaneously, and plant seed in hills or drills, and also sow grain broadcast at the same time.

The seed to be planted in hills or drills is placed in boxes D D, and the grain to be sowed broadcast is placed in the box K. As the machine is drawn along, the seed is discharged from the boxes D D by the projections *i* on the shaft E, the tubes C conveying the seed into the furrows, a tube being in communication or line with each discharging orifice. The cam F and lever I give a vibrating movement to the cord J, and this cord, by its movement, serves to discharge the grain broadcast through the perforated bottoms of the box.

The inventor says: I do not claim, broadly, the sowing of two different kinds of seed at the same time in different ways; that is, in drills or hills and broadcast, for this has been previously done.

But I *claim* the rotating shaft E, provided with projections *i*, and placed within the seed boxes D D, which are provided with slides G H, in combination with the box K, having a perforated bottom, and provided with the endless cord J, operated by the cam F and lever I, as and for the purpose set forth.

No. 18,852.—CHARLES COX JAMES, of Dayton, Ohio.—*Improvement in Seeding Machines.*—Patent dated December 15, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I do not claim, broadly, the employment of reciprocating perforated slides in seed planters.

Nor do I claim adjustable slides and indexes for regulating the quantity of grain sown.

But I *claim* the employment of a stepped slide E and a slide H, having conveyors I attached, the parts being arranged and operating substantially as shown, so as first to thoroughly agitate the seed while in the hopper, and then to deliver it with a shaking hopper-like motion to the furrow tubes, thus preventing all liability in the grain to clog or bunch, and rendering the machine capable of sowing various kinds of seeds without change or alteration of said slides.

No. 18,881.—JOHN CRITCHERSON, of Boston, Massachusetts, assignor to JOHN WARREN, of Boston, Massachusetts.—*Improvement in Seeding Machines.*—Patent dated December 15, 1857.—The nature of this invention consists in the use of fluted conical valves, in giving said valves a vibratory motion to agitate the seed, in the method of simultaneously raising or depressing said valves in order to regulate the amount of seed discharged, and in making the pin J, which imparts the vibratory motion to the valve, adjustable by means of the collar *j* and set screw K, so that more or less of the valve may be made to operate; and any one of them may be readily adjusted independently of the others, if desired.

The inventor says: I *claim*, first. the use of fluted conical valves, constructed substantially as set forth, and vibrating as described, for the purpose of agitating the seed.

Second, the devices for simultaneously raising or depressing said valves in order to regulate the amount of seed discharged, as also for stopping the flow of seed; said devices consisting substantially of the slat P P, the lower sides of whose extremities are wedge-shaped at 22 and 23, said slat being moved by the lever Q, and held in place; the set screw Z, and the reciprocating slat N N resting on P P, and furnished with holes 7 for receiving and vibrating the adjustable pins J, which support the valve.

No. 18,959.—WILLIAM COGGESHALL, of Masillon, Ohio, and B. B. WARNER, of Wadsworth, Ohio.—*Improvement in Seeding Machines.*—Patent dated December 29, 1857.—This invention is distinguished from others by the peculiar arrangement of the levers U V, the lever U acting upon the lever V by means of the coupling seen at *x*, so that both seed-rollers can be thrown out of gear by the action of the lever W and the connecting rod Y; at the same time the seed-tubes H are raised from the ground. Also in the arrangement of the levers U and V, whereby the intermediate wheels can be removed so that either seed-roller can be used separately.

The inventors say: We do not claim the alternate arrangement of seed cavities in the seed-roller, so as to produce a corresponding deposite of seed in separate adjacent rows or drills, being aware that such is not new.

We *claim* the levers U V, respectively, bearing the removable and replaceable gear wheels S T, when arranged, operated, and combined together, and in combination with the gear-wheels of the seed rollers and the driving-wheel, substantially in the manner and for the purposes specified, disclaiming all other combinations of levers and gearing not essentially the same as set forth.

No. 18,978.—JAMES LAWSON, of Lawrence Mass.—*Improvement in Seeding Machines.*—Patent dated December 29, 1857.—This invention consists in a marking device, arranged and operated conjointly with the seed distributing device in a peculiar manner, whereby the marking of hills and dropping the seed may be regulated as desired.

The inventor says: I do not claim the wheels M for forming the furrows; for they have been previously used.

Nor do I claim the two frames A F, arranged as shown; for they have also been previously used.

But I *claim* operating the marking device formed of the bars S S and the slides I, by means of the cams P, with pins *r* attached, when said cams are placed on the hollow shaft E, which encompasses the axle D, and is connected therewith by means of the nuts *a* fitted on the slotted ends of shaft E, whereby the dropping and marking devices may be regulated as described.

No. 18,360.—WILLIAM C. SQUIER, of Rockford, Ill.—*Improvement in Seed Sowing Machines.*—Patent dated October 6, 1857.—The inventor, in showing the nature and advantages of his improvement, says: "The nature of my invention consists in the peculiar manner in which the seeding machine is constructed—so as to be capable of being expanded when required for use, and folded and contracted when not in use, or while being transported from the field to the house, or from the house to the field—this arrangement avoiding all inconvenience in passing through narrow gates or passages, and economizing room in the farm yard or implement house, after the season has expired.

"In folding the machine, first withdraw the stop pieces *d d* of the braces from the holes in the tongue, and then withdraw the stop pins *e e* of the circle plates; all being now ready for folding, move the bed pieces on their pivots *a a*, then turn the wheels and circle plates on their pivots *b b*. The machine being folded and adjusted, insert the pin *f* in the coupling *l*, in the hole of the bed piece *e*, and the stop pins in the holes of the circle plates. In unfolding, withdraw the pin of the coupling link, shift the wheels by turning the circle plates G G round to the ends of the hoppers, insert the stop pins of the circle plates, move the hoppers and bed pieces on their pivots round till they are at right angles with the tongue, and then adjust the braces J J, and couple the hoppers and bed pieces to the tongue by inserting the stop pins."

Claim.—The inventor says: I *claim* having the bed pieces E E^1, which carry the hopper F F, capable of turning on pivots *a a* of the circular bed plate C, and the short axles H H on pivots *b b* of said bed pieces E E^1, and the whole retained in proper condition, when expanded, by means of braces J J, stop pins *d d* and *e e*, and coupling *g g* on end of axles, substantially as and for the purposes set forth.

No. 16,698.—CORNELIUS VAN DERZEE, of Albany, N. Y.—*Improvement in Grain Separators and Straw Carriers.*—Patent dated February 24, 1857.—Each of the spokes *a b* revolves in circles, in consequence of the spoke supporters D E D being connected to the cranks K F G F. The straw is, at each successive half revolution of the cranks, carried the height of the crank and moved along twice that distance.

Claim.—The method of agitating and moving the straw, for the purpose of separating the grain from it, by rungs or spokes *a b* rotating in connexion with each other, or in reference to each other's movements, substantially as set forth and described.

No. 16,701.—BENJAMIN WRIGHT, of Hudson, Mich.—*Improved Method of Hanging the Sieves of Grain Separators.*—Patent dated February 24, 1857.—A hanging pin is inserted in an open slot in the shoe; therefore, as the shoe is shaken, it receives a quick, peculiar jerking motion, that prevents the screens from clogging.

The inventor says: I do not claim, broadly, the jarring of the shoe in grain separators, in order to keep the grain sieves clear, as that is seen in many separators.

Neither do I claim supporting the ends of the shoe upon elastic bars, for this is seen in J. Behel's patent, August 21, 1847.

Neither do I claim hanging the shoe in adjustable hanging bars; an example is seen in John Bambrough's patent, March 20, 1847, of such bars.

Neither do I claim supporting the inner end of the shoe, as in S. Canby's patent, December 28, 1852. The screw rod or pin F, in my device, does not support the shoe.

Neither do I claim any part or feature of the described machine which is seen in any other grain separator. But, to the best of my knowledge and belief, no grain separator has ever been made in which an adjustable rod or pin F, and hooked stop plate G, were used, in the manner and for the purposes I have described.

Therefore, I *claim*, as new in grain separators, the use of an adjustable pin F and hooked stop plate G, when the said parts are applied and operated in the manner and for the purpose described.

No. 16,578.—JOHN BEAN, of Hudson, Mich.—*Improvement in Extension Hoppers for Separators, Grain Mills, &c.*—Patented February 10, 1857.—The piece *a* may be moved in or out so as to enlarge or contract the opening at the bottom of the hopper B, whereby the feed of the grain to the screens I, J, &c., will be regulated.

Claim.—The combination of an adjustable extension piece *a* with the hopper B, in the manner and for the purposes substantially as set forth.

No. 18,151.—J. V. JENKINS, of Jackson, Mich.—*Improvement in Sheep Shearing Machines.*—Patent dated September 8, 1857.—The rotary motion of shaft *a* is transmitted by means of pulleys *e*, k^1, *l*, and by universal joints to shaft H, which operates the shears a^* *z*. The cutting device may be moved in either direction, and the bar D may be swung around on shaft *a*, and secured at any desired point.

The inventor says: I do not claim the cutting device formed of the vibrating cutters *z* working over the stationary fingers *a*, for this has been previously used.

But I *claim* connecting together the two shafts F G, and also the shaft G to the cam shaft H, by universal joints, the connecting joint of the shaft F G being provided with guards *p v*, and connecting the upper end of the shaft F by a joint *h* to the slide E, on the swinging bar D, substantially as shown and described, for the purpose set forth.

No. 16,461.—R. P. BRADLEY, of Cuyahoga Falls, O.—*Improvement in Machines for Shearing Sheep.*—Patent dated July 27, 1857.—By operating handle H, the pin *g* is moved back and forth in slot *e*, communicating a vibrating motion to lever E, and the teeth *d* are vibrated over fingers *a*, the wool being cut between the teeth which operate similar to shears. The lever E has an equal movement, or its length of vibration is always the same, in consequence of the varying angles and length of the zigzags of slot *e*.

Claim.—Increasing the length of the zigzags of the slot *e*, in the lever E, as they recede from its fulcrum, so as to give the opposite end of the lever which carries the teeth or blade *d* a uniform and equal motion, as the pin is traversed in the slot, substantially as described.

No. 16,720.—EDWARD G. CHAMBERS, Bucyrus, Ohio.—*Improvement in Sheep-Shears.*—Patent dated March 3, 1857.—The operator grasps the stock *c* in the palm of his hand with three fingers, and effects the vibration of the cutter *d e*, by the thumb and forefinger of the same hand acting upon the branches *h g* of handle H.

Claim.—The fixed plate stock C as described, combined with the bifurcated handle of the vibrating cutters, substantially as and for the purposes specified.

No. 17,837.—GEORGE C. HOWARD, of Hardwick, Mass.—*Improvement in Shovel, Spade, or Dung-fork Handles.*—Patent dated July 21, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—My improved manufacture of shovel handles, as made with a split and bent stock, and a round holder B applied and fixed together by concavities in the ends of the holder, convexities on the arm of the eye, and a rod E and metallic caps D, arranged and fixed together as specified.

No. 18,351.—Nelson Newman, of Springfield, Ill.—*Improvement in Sod-Cutters.*—Patent dated October 6, 1857.—By this improvement the sod is first cut and then detached from the sub-soil and then recut into narrow strips and turned over, so that the bottoms of the sods present the soil to receive the seed, the implement thereby serving as a plough as well as a sod-cutter.

The invention consists in the use of vertical and horizontal cutters and a cutter-wheel or cylinder provided with knives, the parts being arranged to operate conjointly. The drawings, showing a side and top view of the machine, will give an idea of its operations.

The inventor *claims* the vertical cutters *d d* and the horizontal cutters *i i*, in combination with the rotating cutters D, attached to the wheels B B^1, the whole being arranged to operate conjointly as shown for the purpose set forth.

No. 16,539.—J. C. Gaston, of Reading, Ohio.—*Improvement in Machines for Sowing Grain and Fertilizers.*—Patent dated February 3, 1857.

Claim.—The arrangement in machines for sowing grain and fertilizing materials of a reciprocating feed bar D at the required distance from the bottom of the hopper, for equalizing the supply of grain or fertilizing substance to the escape valves *c*, and securing to said bar hooks or slide F or I, by which the grain or compost is agitated and caused to escape, either in a continuous supply or at intervals, substantially as described.

No. 17,581.—Frederick Moehlmann, of Belleville, Ill.—*Improvement in Machines for Sowing Grain in Drills.*—Patent dated June 16, 1857.—The nature of the invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim a double chambered hopper, nor a turning reversible partition for separating the chambers of the same.

Neither do I claim broadly the use of a distributor composed of two circular slotted plates, one placed above the other and one stationary, and the other capable of turning irrespective of the position of the slots in said plates relatively to one another, and the form of the slot in the upper plate.

I *claim* having the curved slot F of the upper stationary plate H in the form of a scroll or letter "C," and the slot E of the lower plate I arranged in such relation to the same that, as the lower plate turns, the seeds, in order to escape as they are forced along on a curve by spurs G of the turning plate, shall be compelled to take a direction towards the axis of the plate, and thus be saved from being cracked or broken by being compressed between the terminations of the upper and lower slots, substantially as set forth.

No. 16,542.—George Hall, of Morgantown, Va.—*Improvement in Machines for Sowing Seed Broadcast.*—Patent dated February 3, 1857.

Claim.—The combination of the hinged and adjustable dash-board F with the working fingers *n* and exit openings *c*, for the purpose of taking the grain from the hopper C and scattering it broadcast, substantially as herein set forth.

No. 17,429.—D. Haldeman, of Morgantown, Va.—*Improvement in Machines for Sowing Seed Broadcast.*—Patent dated June 2, 1857.—The position of the graduating piece G, which can be adjusted by means of slide *b*, will regulate the discharge of the seed. By operating hand lever L, the reciprocation of the scatterer S moves the pins *i* within the recesses *d*, and prevents the packing of the seed. The seed from the hopper H drops upon the inclined surfaces *n*, which serve to distribute the seed evenly over the ground

The inventor says: I am aware that vibrating scatterers with upward projecting pins have been used in connexion with the bottom of the hopper, but incapable of vertical movement.

I am also aware of the notched bars for graduating the seed discharge.

I do not claim these devices of themselves.

But I *claim* the vertically adjustable graduating bar G, with recesses, as described, in combination with the vibrating scatterer and agitator connected therewith, when said parts operate together as set forth.

No. 17,440.—A. C. Miller, of Morgantown, Va.—*Improvement in Machines for Sowing Seed Broadcast.*—Patent dated June 2, 1857.—The seed in hopper A rests on the two hinged pieces H, and as the bars B and C are vibrated, the fingers C and E cause the seed to pass out through the openings G; and as the seed rests upon the pieces H, the bars B and D are not encumbered by the weight of the seed, thereby ensuring a free action of said bars, and diminishing the friction caused by their movement.

Claim.—In combination with the adjustable bottom K, and its openings G, and the stirrers D B, the secondary hinged bottom composed of the two pieces H H, with their openings *m*, the whole being combined in manner and for the purpose set forth.

No. 18,439.—William A. Chapin, of St. Johnsburgh, Vt.—*Improvement in Machines for Sowing Seed Broadcast.*—Patent dated October 20, 1857.—This invention consists in making the dispensary tubes F F in two or more parts, so that they can be lengthened or shortened according as the specific gravities of the different kinds of seed to be sown at the same time may require, in order that they may be sown over all the ground, and leave no parts where one kind of seed shall not reach, by means of its less specific gravity, as far as another of greater specific gravity, the lighter being thrown with sufficiently greater force by passing through the lengthened tube which, from its end revolving in a larger circle in the same time as the end of the short tube, has consequently greater centrifugal force, which will be imparted to whatever passes through it. This invention further consists in introducing into the dispensary tubes a shaker agitator W, which, by suitable mechanism, is caused to vibrate, so as to prevent lime, ashes, &c., from clogging the arms or tubes when they are being sowed.

The inventor says: I disclaim the horizontal rotating arms or tubes, with their valves and adjustable cam.

But I *claim* the extension tube F and shaker W, when arranged substantially in the manner and for the purposes described.

No. 18,495.—Jacob Boyers and David S. Greer, of Granville, Va.—*Improvement in Machines for Sowing Seed Broadcast.*—Patent dated October 27, 1857.—In using this machine the seed from the hopper drops through at the point *i*, which is between the centre of the axle A and permanent board D. The axle has a spiral flange *n* arranged around its perimeter, and the grain falling upon this axle from the hopper is carried around between the axle and the board D, until it drops upon the receiving board E; and as the axle continues to turn, its worm or spiral flange is sweeping the grain off at the edge of the board E, whence it drops to the ground and may be harrowed in. Should the machine strike any obstruction, or be moving over rough ground, it would not, by the jar, spill or throw out any of the grain, as it must all pass forward of the axle and cannot pass out faster than the spiral on the axle moves and brings it to the edge of the board E, and as the spiral touches every portion of the edge of the board it delivers the seed in uniform quantities.

The inventors say: We are aware that spirally grooved or fluted cylinders have been placed under seed hoppers to act as distributors; this we do not claim, as they are inefficient, and the seed too readily flies off by any jar of the machine.

But we *claim*, in combination with a seed hopper, an encased, spirally flanged roller or axle, which receives, carries around, and delivers the grain in uniform quantities at the edge of the receiving board without being affected by the jar of the machine in passing over the ground, as set forth.

No. 16,807.—George Morton Ramsay, of New York, N. Y.—*Improvement in Steam Spades.*—Patent dated March 10, 1857.—The spades J^1 are hung to the crank pins I^1, and the spades J to the crank pins I. The cog wheel G imparts motion to the pinions H H. As these pinions are fast upon crank axle I I^1 the latter will be made to revolve, and the spades J J^1 will alternately be brought into action.

Claim.—The alternate spades J, in combination with the double crank shafts I, constructed, arranged, and operating substantially in the manner and for the purpose set forth.

No. 18,479.—William E. Ward, of Portchester, New York.—*Improvement in Machines for Spading Land.*—Patent dated October 20, 1857.—In this invention the entire machine is propelled in the field in any direction required, and turned at the will of the attendant; and the same power which does this operates a series of spades which enter the land each in succession, cut into it in the arc of a circle, and, after cutting down to the required depth, suddenly throw up the cut slice against a shield plate, so as to reverse it, and at the same time break it up, so that when it falls down it will be thoroughly disintegrated, the forward movement of the machine determining the thickness of the slices to be cut by the spades.

The inventor says: Having described the mode of construction which I have planned for the application of my invention, I do not wish to be understood as limiting my claim of invention to such mode of application, as other and equivalent modes of construction may be substituted. Nor do I wish to be understood as limiting myself to the use of the several parts of my invention, as some of these may be used in connexion with substitutes for the others.

I *claim* the mode of operation of the mechanism substantially as described, for imparting the cutting action to the spades, as set forth.

I also claim the mechanism for tilting the spades, substantially as described, in combination with the mechanism for giving the cutting action to the said spades, substantially as described.

I also claim, in combination with the spades operated substantially as described, the shield plate, substantially as described, for aiding in disintegrating and reversing the slices as they are thrown up by the spades, as set forth.

I also claim, in combination with the spades operated substantially as described, the yielding or springing part of the levers for imparting the digging or cutting action to the spades, and the yielding or springing part of the tilting levers, as set forth, and for the purpose of preventing the mechanism from being broken, when the spades meet with any obstruction, such as stones.

No. 18,302.—Samuel Shepherd, of Nashua, N. H.—*Improved Method of Stemming and Polishing Peanuts.*—Patent dated September 29, 1857.—In the drawings, A is the frame of the machine in suitable bearings at *a*, upon which is supported the shaft B. The shaft B is placed at a proper inclination, descending, from the front to the rear of the machine, for the purpose of feeding the nuts through. In operating, the nuts, as they are beaten from the vines, are run from the hopper M into the inside of the cylinder G, when the two cylinders being revolved in opposite directions, the nuts are rolled over between the cylinders, and their stems are torn off by the teeth upon the cylinders F and G (the teeth of the two cylinders travel at such a distance that they do not crush the nuts, but their rough, curved edges catch and tear off the stems); the clean nuts pass over a suitable apron out of the machine at N, falling over a current of air from a fan O, which is driven by a belt from the main shaft. P is a cylinder on shaft B, furnished with rows of teeth similar to those on the cylinder F; beneath is placed a semi-circular box or concave R, in which are cut slits *i*, through which pass or travel the teeth of the cylinder as it revolves. The teeth are cleaned by passing through a series of brushes S at one side, secured to a frame in the path of the teeth.

The inventor says: I lay no claim to any specific machine, except when used for the purpose herein described.

I *claim* stemming and polishing peanuts, in the manner set forth, by means of the machinery described, or the substantial equivalents thereof.

No. 17,207.—E. G. Cushing, of Dryden, N. Y.—*Improvement in Straw Cutters.*—Patent dated May 5, 1857.—The straw to be cut being placed in the feed-box A, motion is given to the wheel E, and as the cutter F passes over the edge of the cutter *d*, said cutter will be raised and gradually moved towards the cutter F, in consequence of the tappet *f* acting upon projection *c*. A vibratory motion is given to the head C, the tappet *f* raising the head C, which falls by its own gravity, aided by spring *h*, each time the tappet leaves the projecting bar *c*. As the box C descends, the pawl H, in consequence of catching into the ratchet G, causes the lower roller E to rotate a certain distance, by which the feed motion of the rollers E D is effected.

The inventor says: I do not claim a knife or cutter attached to a rotating disk or cutter-wheel, for they are old and well known.

Neither do I claim the feed-roller irrespective of the means by which they are operated.

But I *claim*, first, the disk wheel E[1], with cutter F one or more attached, in combination with the vibrating head or box C, in which the feed-rollers D E are placed, and the "ledger" cutter *d* attached, the above parts being arranged and operating conjointly, as shown and set forth.

Second, operating the feed-rollers by means of the ratchet-wheel G and pawl H, when used in connexion with the vibrating head or box C, and arranged substantially as shown and described.

No. 17,850.—Jonathan L. Sullivan, of Lexington, N. C.—*Improvement in Straw Cutters.*—Patent dated July 21, 1857.—The straw is placed within the feed-box B, and motion being given to the shaft E, the roller C feeds the straw to the knives, the knives *a* cutting the portion of the straw which passes underneath the cutting edges at right angles, and the cutters *b* cutting the portion that passes over the end of plate *a* at right angles with them.

Claim.—The two sets of knives G *b*, and slotted plate *a*, combined and arranged so as to operate conjointly, as shown for the purpose set forth.

No. 18,084.—Aury G. Cobb, of Worcester, Mass.—*Improvement in Straw Cutters.*—Patent dated September 1, 1857.—As the shaft c is rotated, a rotary as well as vibratory motion is given to shafts C and F, by means of the eccentrics *a b*, and the bed L and knife K will be operated in such a manner as will cause them to feed forward, and cut through any hay or straw which may be projected from trough B.

Claim.—The improved straw-cutting machine, constructed so that its bed and knife shall each operate with a compound motion, produced by a lever, crank, fulcrum rod, and guides, arranged so as to operate together, substantially as specified.

No. 18,146.—Porter Hill and Charles E. Jones, of Millport, N. Y.—*Improvement in Straw Cutters.*—Patent dated September 8, 1857.—The straw being placed in the compartments F, between the rims I and E, motion is given to shaft L, and the straw extending beyond the ends of the cylinders is cut by the disk knife H. The feeding of the straw is performed in the following manner: As the cylinder revolves, the movable rack bar *m* is reciprocated, it being operated upon by the oblique stationary ring J; as the movable bar *m* is thrown forward, the dog *o* holds the rack bar *m*, while the dog o^1 is drawn over bar *l*, but when the bar *m* returns, the dog o^1 is held on the stationary bar *l*; and prevents the follower G, against which the end of the straw rests, from being drawn back again; thus each revolution feeds the follower G a certain distance. The amount of feed can be regulated by setting the ring J more or less oblique, which can be done by means of set screw *r*.

Claim.—The combination of the rotating knife or cutting disk H with the series of revolving chambers F, arranged around a central shaft or axis, in such a manner that the revolutions of the same shall bring the straw in each successively between the edge of the knife and periphery of the chambers.

We further *claim* the manner of feeding the straw to the knife, by means of the eccentric *j*, the permanent and movable ratchet bars *l m*, and dogs *o* o^1, so arranged as to crowd the straw forward only when the chamber F by descending is clear of the action of the knife, and also be capable of adjustment to different degrees of feed, as set forth.

No. 18,624.—Jesse Ball, of Barnesville, Ohio.—*Improvement in Straw Cutters.*—Patent dated November 17, 1857.—This invention operates as follows: The lid K is raised by turning the button *t* free from the notches of the sides of the box, and the compress L is removed therefrom, and the box filled, or the necessary amount of the stuff or article M to be cut placed therein. The back end of the article M is then placed between the two jaws *u v* of the compress, the teeth of the upper jaw being forced into the stuff M, and the button turned round, and its ends fitted in the proper notches in the sides of the feed box, so as to bear with a proper degree of pressure on the compress L. The springs S press the front end of the lid K on the stuff M. The lever D is then worked up and down, and the projection F on the lever E actuates the lever G, which in turn operates the rack H, and this rack, by means of the pawl 1, shoves the compress, and consequently the stuff M, towards the knife at every upward stroke of the frame C, so that as the knife descends it will cut the straw into pieces of a length corresponding with the length of the stroke of rack H. The pawl 2 and rack J serve to retain the compress during the backward movement of the rack H. When the compress has reached the front end or mouth of the feed box, the lid K is raised, the box refilled with stuff, the compress replaced in the box, and attached to the stuff as before, and the operation repeated.

Claim.—The reciprocating rack H, operated from the knife frame C, through the medium of the lever E, projection F, and bent lever G, in combination with the compress L, adjustable and pressure lid K, and stationary rack J, the whole being arranged to operate conjointly as shown, for the purpose set forth.

No. 18,887.—MOSES CLEMENTS, (deceased,) late of Worcester, Mass.—*Improvement in Straw Cutters.*—Patent issued to WILLIAM T. CLEMENTS, of Buckland, Mass., administrator of the estate of said MOSES CLEMENTS, (deceased.)—Patent dated December 15, 1857.—A A are the side pieces of the frame; B, a cross girt; C, the crowning bed piece, to which is attached the stationary knife D, adjusted by means of the screws *a a*, having a space between the crowning bed piece and stationary knife, for the gravel and dirt to fall through; also having a lip on the upper edge of the knife; E is a revolving knife holder, adjustable by means of the screws *b b* bearing against the boxes of the same, having two spiralling knives F F attached to the holder, and G a pulley attached to the same. H is the lower feed roll, on the end of which is pulley J, the upper feed roll K, with springs L to press it down. M is a cord on pulleys G and J to connect the revolving knife holder with the feed rolls; N is a crank by which the whole is operated.

Claim.—The combination of the revolving knife or knives, and the stationary adjustable knife and crowning bed piece, with feed rolls, all substantially as shown and described for the purposes set forth.

No. 18,946.—WILLIAM BARRET, of Stephenstown, N. Y.—*Improvement in Straw Cutters.*—Patent dated December 29, 1857.—This improvement consists of a box A to hold the straw, mounted upon legs in the usual way, with two uprights B B at the front end of the box. Against each of these uprights is placed a bar of iron C D, kept off from the surface of B, so as to allow the cutter or knife E to pass behind the bars, acting as guides to direct the knife in its movements.

The upper edge of the knife, with its brace *g*, passes between a horizontal bar *h*, lying opposite the end of the bottom of the box, and connecting the bars C and D, the straw being clipped off between the box and the bar. The knife is operated by a handle H attached to a broad or flat piece of wood or metal K; the further end of K is pivoted to a link L at *n*, which drops down a short distance, and is also pivoted to the front of upright B at *f*; the end of K, next to the handle is pivoted to rod G at *m*.

On the foot board is placed a spring S, arranged to be under the end of the bar G; its object is to catch the downward stroke, and assist in its upward movement, relieving the operator during that movement.

Claim.—The combination of guage K, and its handle H, with the bar G, and the link L, and spring S, by means of which an oblique drawing as well as downward movement is given to the knife, substantially as set forth.

No. 18,369.—DAMON R. AVERILL, of Pulaski, N. Y.—Assignor to Himself, JAMES F. DAVIS, and HENRY TWITCHELL, of same place.—*Improved method of balancing Threshing Cylinders.*—Patent dated October 6, 1857.—This invention consists in hanging weights in threshing cylinders, in circular slots in the cylinder ends, in such a manner that their position may be changed, so as to balance the cylinder, while at the same time their centrifugal force caused by the revolution of the cylinder cannot throw them out of place.

In the drawings A and B are the slots; C C are the weights or sliders, having an inner part D, which moves around upon and projects from the inner surface of the end of the cylinder.

Claim.—The inventor says: The particular improvement which constitutes my said invention, and which I claim, is, hanging the movable weights or sliders in circular slots, concentric with the axis of the cylinder, by which means the centrifugal force of the cylinder is prevented from throwing them out of position, as set forth.

No. 17,062.—J. C. WILSON and T. G. WILSON, of Cedar Hill, Texas.—*Improvement in Machines for Threshing Grain in the Field.*—Patent dated April 14, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventors say: "We make no claim to the threshing and cleaning mechanism, nor do we claim endless conveyors, as such; we further disclaim the employment of endless conveyors for receiving cut grain as it falls, such as are shown in certain combined reapers and threshers.

But we *claim* the arrangement with a travelling thresher, as described, of an endless gatherer and conveyor armed with hooked teeth *e* in rows conforming to the surface passed over, and operated as specified, to lift cut grain from the swath, and deliver it to the threshing mechanism, the relative position of the several parts being as set forth.

No. 18,436.—THOMAS L. COLVILLE, of Wilmington, N. C., and SAMUEL SHEPHERD, of Nashua, N. H.—*Improved Threshing Machine for Beating of Peanuts from their Vines.*—Patent dated October 20, 1857.—In operating this machine the nuts, with the vines to which they are attached, are drawn in by the feed rolls G, and are operated upon in succession by the toothed cylinders B C D and E, by which the nuts are separated from the vines, the nuts falling through the screen I on the inclined aprons K, and thence passing out of the machine at *f*, while the vines pass out of the machine at M.

The inventors say: We do not claim the described machine, or any portion thereof, when used for other purposes than those designated.

But we *claim*, first, the machine for beating peanuts from their vines, consisting essentially of the elastic feed rolls G, the screen I, and the beating cylinders B C D and E, operating in the manner substantially as set forth.

2d. We *claim* the elastic feed rolls G, operating in the manner substantially as described.

No. 18,455.—ADOLPH JUNGE, of Belleville, Ill.—*Improvement in Endless Aprons of Threshing Machines.*—Patent dated October 20, 1857.—The engravings and claim show the nature of this improvement.

Claim.—The inventor says: I *claim* making the slats of the carrier *o o* substantially in the form shown and described, and connecting them by means of a flat band inserted in their ends, so that they will retain and carry the threshed grain, and protect the bands that connect them from being worn by the pulleys that operate the carrier.

No. 18,598.—Andrew T. Nute, of Roxbury, Mass.—*Improvement in Mode of Protecting Trees from Canker Worms, &c*—Patent dated November 10, 1857.—The claim and engravings explain the nature of this invention.

Claim.—The improved method of protecting a tree from the ascent of canker worms, the same consisting in applying finely pointed metallic wires, or one or more strips of card teeth to the same, substantially as described.

No. 17,839.—Elmore Johnson, of Winchester, Mass.—*Improvement in Hog Troughs.*—Patent dated July 21, 1857.—When the cover D is in the position represented in figure 1, the animal has free access to the trough A; but when the cover is turned to the position represented in figure 2, the animal is shut out from the trough, and in this position the feed can be introduced from outside.

Claim.—An elongated trough or board and a quadrantal cover arranged or applied together, and in an opening in a frame, wall, or the side of a pen or stye, and made to operate substantially as specified.

No. 16,447.—Joseph Montgomery and James Montgomery, of Baltimore, Maryland.—*Improvement in Winnowing Machines.*—Patent dated January 20, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The application of an adjustable sieve M above the auxiliary screen box D, when arranged in combination therewith, in such a manner as to separate the large impurities before the grain is subjected to the action of the blast, in order to render said auxiliary screen-box more efficient in its action, and thereby allow it to be made as limited in extent as desirable, substantially as set forth.

No. 18,867.—John Shipley, of Princeton, Wisconsin.—*Improvement in Winnowing Machines.*—Patent dated December 15, 1857.—This invention consists in combining with the shoe B a number of bent pivoted levers E, in such a manner that, as the shoe vibrates or reciprocates from side to side, the outer ends of the levers will be brought into contact with the sides or fixed portions of the machine, which action will cause the inner ends of the levers to be thrown violently upward against the bottoms of the screens C D, thus producing a sudden jarring of the screens in an upward direction.

Claim.—The combination of the levers E with the shoe, when the said levers are arranged and operate in the manner as described.

No. 17,071.—Isaac K. Bennett, of Narrows, Pennsylvania.—*Improvement in Ox Yokes.*—Patent dated April 21, 1857.—This ox yoke serves to regulate the draught of the animals in the following manner: when one ox crowds against his mate he will turn his bow block L in such a manner as to cause the pinion *a* on its pivot to travel on the rack geared thereon towards the centre of the yoke, thereby diminishing the distance from the centre, and giving his mate an advantage in the leverage proportional to the extent to which he turns.

Claim.—The pinions *a a* on the pivots of the low blocks in combination with the racks into which they gear, operating substantially in the manner and for the purpose specified.

II.—METALLURGY.

No. 18,485.—Joseph A. Bertola, of New York, N. Y., assignor to Himself and John Stagg, of the same place.—*Improved Amalgamator.*—Patent dated October 20, 1857.—This machine, for amalgamating gold and silver ore with mercury, consists of a tub secured upon a strong frame, in such a manner as to be capable of being tilted over, or rock on an axis. The sides of this tub are made of wood or metal, but the bottom always of metal. In this tub there is a muller, which is driven round by a shaft, but so as to allow its weight to rest upon the bottom, and in such manner also as will permit it to be readily disengaged at the times when the tube is to be tilted to empty its contents. Two openings for emptying are employed: the first is to be used to draw off the water and refuse, and the other to empty the amalgamated mercury.

The inventor says: I *claim* the machine described for effecting the complete amalgamation of precious metals from ores containing such metals, consisting of a double concave muller, with grooved bottom, extending diametrically from side to side of the tub A, leaving spaces or chambers on each side of it, and revolving in said tub upon a central and vertical axis, substantially as set forth.

No. 16,525.—Otis Brigham and Seth E. Brigham, of Fitchburg, Mass.—*Improvement in Anvils.*—Patent dated February 3, 1857.—In using the secondary horn C, the smith lays that part of the shoe which he desires to have bevelled in the proper groove of it, and he strikes on the shoe with the hammer until he has caused it to be driven down into the groove, and to take the form thereof. The object of bevelling the inner edge and the corks of a horse-shoe is, that the snow, which becomes packed in it, may easily be thrown out from the shoe by the movements of the feet of the animal

The horn can be removed, and the anvil be used for any other purpose.

Claim.—Combining with the anvil the secondary movable grooved horn, and mechanism for confining the latter to the former, the grooved horn being for purposes as specified.

No. 17,078.—**Nathan S. Clement**, of Worcester, N. Y.—*Improved Awl-Haft.*—Patent dated April 21, 1857.—The square end of the awl D is inserted within a suitable recess of the slotted screw C, and secured to it by screwing the nut B on to it. The recess E in handle A serves for the reception of spare awls.

Claim.—An awl-haft constructed as set forth, having the chamber for spare awls on the same end with the griping jaws, and when closed in the manner specified.

No. 17,556.—**Richard H. Cole**, of St. Louis, Mo.—*Improved Machine for making Axe-Poles.*—Patent dated June 16, 1857.—The end of a heated metallic bar is inserted into the machine when the parts are in the position represented in fig. 2, and the blank is cut from said bar by the vertically acting cutter e^1, the bar resting on the projection p of the die-box. As the dies and punches are moved towards each other, the edge p^1 presses the blank against the side v, holding it tightly; and the punches b e, moving towards each other, punch the metal, which is held and compressed by the movable sections c d of the die-box. The die-boxes and cutters are moved and operated by levers and cams, which need no further description.

Claim.—1st. Constructing a die-box of three permanent and three movable sides, arranged and operating substantially as set forth.

2d. Arranging the vertically acting cutter e^1, and the projecting portions of the sections p t of the die-box, or their equivalents, in such a manner in relation to the other parts of the machine, that the said enumerated parts will operate substantially in the manner set forth.

3d. Combining the oval punches b e with the opposite movable sections c d of the die-box, when the said die-box is furnished with a sharp-edged side p, which acts in conjunction with the said oval punches, in converting a rectangular shaped blank into a properly shaped axe pole, substantially as set forth.

4th. Cutting a rectangular shaped solid blank from the end of a bar, and then driving said blank into a die-box, and converting it into a properly shaped axe-pole, substantially in the manner set forth.

N o17,639.—**James N. Rockwell**, of Napanock, N. Y.—*Improvement in Hardening Axes, &c.*—Patent dated June 23, 1857.—The apparatus being in the position represented in fig. 1, the door E is opened and the heated axe G is hung on the peg e; by turning pinion d, the box B is lowered into the water in box A, and the valves b, coming in contact with the bottom of box A, are moved in the position represented in fig. 2, and the water passes through passages a into box B and cools the axe. On raising the box B from the water, the tops of valves b come in contact with the stops F, and the passages a are closed.

The inventor says: I do not claim broadly the hardening of axes or other tools by admitting a stream of water upon their surfaces, as such methods have been long known.

I *claim*, in axe-tempering devices, providing the box or holder B, in which the axe is placed, with one or more valves b b, arranged and operating substantially as described.

No. 18,206.—**David A. J. Lamson**, of Cherry Valley, Mass.—*Improved Belt Tool.*—Patent dated September 15, 1857.—The implements of which this tool is composed are: the punch E; the square four-sided wrenches, which are formed of the notches D and L, when the jaws C are closed; the screwdriver G; and the awl H.

The inventor says: I do not claim broadly the combination of a number of implements together, so as to form a complex or universal tool, irrespective of the construction and arrangement of the parts forming such a tool.

But I *claim* the combination of the several tools specified in one instrument, when constructed and operating substantially as described.

No. 18,452.—**David Howell**, of Louisville, Ky.—*Improved Machine for bending Flanges on Boiler-Heads.*—Patent dated October 20, 1857.—This invention consists in the use of an annular bed or anvil C, in connexion with rollers E E attached to traversing levers G and H, whereby flanges may be turned or bent down both on the outer and inner edges of an annular metal plate F, for the formation of boiler-heads, flue-rings, and the like.

The inventor *claims* the employment or use of an annular bed or anvil in connexion with a roller or rollers attached to a traversing lever in any proper way for the purpose of bending down the inner and outer edges of annular plates, and thereby forming the flanges of boiler-heads, flue-rings, and the like, as set forth.

No. 18,058.—**Lewis Raymond**, of New York, N. Y.—*Improved Bending-Machine.*—Patent dated August 25, 1857.—The nature of this invention will be understood by reference to the claims and engravings.

Claim.—The combination of three rollers A B C, convex and concave, substantially as set forth, so as to bend sheet metal transversely and longitudinally at one operation.

In combination with the above, also a supporting roll D, located, arranged, and driven, substantially as set forth.

No. 17,128.—**Robert Killmer** and **Joshua W. Williams**, of Newtown, Pa., assignors to **Robert Killmer**, of the same place.—*Improvement in Blacksmiths' Butterises.*—Patent dated April 21, 1857.—The two-edged bits C can be secured within the flanges B of the plate A, and thus, when the edge of a blade becomes dull by striking against a nail in the hoof of the animal, the operator can readily insert a new blade without delaying the work by sharpening its tool.

Claim.—The construction of butterises with removable two-edged bits or blades secured to a plate A having rectangular sides by half flanges B B and a thumb-screw D, or when said sides are tapering by double flanges only; the whole being arranged and operating as set forth

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No. 17,284.—Hartwell Kendall, of East Dorset, Vt.—*Improvement in Blacksmiths' Strikers.*—Patent dated May 12, 1857.—By turning crank K, shaft E is turned, and cord 7 winding up on said shaft raises lever K, which is turned on its fulcrum *x*, the pin *y* of which depresses the springs *s p;* the movement of these springs raises hammer H. The hammer H may now be readily operated by pressing on treadle *b*, which, by the connexion of rod 1 2 brings down the hammer each time the treadle is depressed.

Claim.—The use of the springs $s\ p\ s^1\ p^1$, when constructed, arranged, and operating, in the manner and for the purpose specified.

No. 17,243.—Horace Vansands, of Middletown, Conn.—*Improvement in Blind-Fastenings.*—Patent dated May 5, 1857.—This fastening is inserted in a horizontal position in the shutter or blind, and fastened therein by means of the screw on shell E. When the shutter is shut, it is kept in place by hook *g* passing round a staple in the sill of the window; and when open, it is kept in place by part of the hook *h* passing round and holding to a suitable catch inserted in the building, the spiral spring on rivet B forcing the hooks against their respective catches.

Claim.—The attaching of the blind-hook by means of a screw or rivet between and in the recess of the two shells or case, as set forth.

No. 18,157.—Stuart Perry, of Newport, N. Y.—*Improved Bolt for Safes.*—Patent dated September 8, 1857.—A represents the door of a vault or safe; B the door frame; and C a lock of any description. If the lock C should be forced off the door either by means of powder or by a punch, it comes in contact with bar K, which is bolted to the door at *b*, causing the free end *c* of said bar to move; the bolt F is then in position represented in fig. 2; as soon as bar K is moved, it comes into position represented in fig. 3, withdrawing pin *d* from hole *f*, when the spiral spring G shoots the bolt out from its casing, and spring *a* causes bolt H to shoot into recess *i*, thus securing bolt F in the position shown in fig. 3, which then bolts door A.

Claim.—So combining a safety bolt with the lock of a bank, vault, store, or other door through the means of a bar or trigger, as that the forcing of the lock by any means from the door shall trip or release the safety bolt, and allow it to securely fasten or lock said door, substantially as set forth.

No. 17,660.—Joel R. Bassett, of Cincinnati, O.—*Improved Machine for Making Bolts and Rivets.*—Patent dated June 30, 1857.—The stock *b c* being made to rotate in the direction of the arrow, a rod is placed in the cavity *u* of the rest, and, being held with its end in contact with the face of the clamp stock *b*, enters readily the first aperture *f* which is presented. The stock *b c* continuing to rotate the clamp *e*, by means of the friction roller *p*, is made to press on the portion of the rod within its grasp, while the downward pressure of that within the rest *j* depresses the latter, causing the jaws *k l* to contract tightly on the end of the rod, thus effectually preventing its expansion, while the clamp is severed therefrom by the rotation of the clamp stock. The roller *p* continuing to hold the clamp *e* tightly compressed, the vertical face of the plate *l* now forms a support to the point of the blank, while the header *s*, being pressed against the inclined face *o* of the cam, is thereby impelled forward in such a manner as to form the head of the rivet; after which the formed rivet is liberated by projection *r* impinging against the roller *p* and retracting clamp *e*.

Claim.—First. The clamps *e f d r t*, constructed substantially as described, and arranged on the periphery of a rotating stock in such manner as to be readily accessible for inspection and replacement, in combination with the friction roller *p*, for the clamping and releasing of the bolt or rivet.

Second. In combination with the above, the yielding rest *i j*, and divided cutter *k l*, by means of which the rotation of the clamp stock severs the blank, the end of the rod being contracted during the act of separation, and afterwards released by the retraction of the rest and cutter *i j k*.

Third. The arrangement of heading dies *s*, and adjustable stationary cam *n o*, in combination with the clamps and the perpendicular face of the plate I, substantially as and for the purposes set forth.

No. 18,534.—Richard H. Cole, of St. Louis, Mo.—*Improved Machine for Making Bolts.*—Patent dated November 3, 1857.—The engraving and claim show what the nature of this invention is.

Claim.—The inventor says: I *claim* pressing the head on the bolt in a moving die-box or die, and against a yielding tool or support, as set forth, by the motion of the bolt instead of the tool, as described.

I also claim the combination of the spring X, the crotch *a*, and the jaws *s*, so that the crotch *a*, or its substitute, in pressing the jaw *s* forward, shall act against a yielding medium for the purpose specified.

I also claim the internal construction of the gripping tools *x*, as shown at Z, whereby each of the said tools in closing shall form one fourth of the point on the bolt, thus making half of the point when closed.

I also claim finishing the point on the bolt, that is, completing it by an off-set made on the side of the knife N, having a form in it to correspond with the form in the end of the tools *x;* the said off-set to be below the cutting edge of the knife a distance equal to the diameter of the point of the bolt when finished, so as to make the point of the bolt like the frustum of a cone.

No. 18,193.—H. W. Collender, of New York, N. Y.—*Improved Socket for Bolts.*—Patent dated September 15, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Having a disk or follower *d* placed within the socket, and connected with a spring E, arranged in any proper way so that, as the bolt A is withdrawn from the socket, the spring will press the disk or follower against the upper or outer end of the socket, and close the orifice thereof, for the purpose specified.

No. 18,775.—William Sellers, of Philadelphia, Pa.—*Improved Machine for Threading Bolts.*—Patent dated December 1, 1857.—The object of this invention is to avoid the necessity of reversing the motion of cutting dies, or of stopping the machine to change the bolts, and to so arrange the die and tap-holder as to admit of greater facility in changing from one sized thread to another, or to tapping nuts.

The inventor says: I *claim* the use of a die-box and cams, substantially as described, when these are so arranged as to be capable of revolving about a common centre at different velocities, for the purpose of opening or closing the dies.

I *claim* arranging the cams so as to leave open spaces between them, substantially as described, in combination with the die-box and dies, as described, to facilitate the changing of the dies.

I also *claim* the mode of attaching the tap-holder to the revolving die-box, substantially as described.

No. 17,641.—William Sellers, of Philadelphia, Pa.—*Improvement in Boring-Mills.*—Patent dated June 23, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Revolving the face plate M of boring or turning mills in a support R as near as convenient to the periphery thereof, substantially as described.

Also, the adjustable step or centre bearing *k*, when it is combined with an outer support, substantially as described.

No. 16,564.—Mary A Cannon, of Warren, R. I., (administratrix on the estate of John Cannon, deceased,) assignor to The New York and Brooklyn Brass Company, of New York, N. Y.—*Improvement in Brass Kettle Machine.*—Patent dated February 3, 1857.

The inventor says: I do not claim the spinning of vessels by hand pressure, when the spinning tool is both carried and pressed up against the metal by the workman, as this is the old plan, long known before any mechanism for carrying the tool was invented.

I distinctly disclaim those parts in my machine which are found in Hayden's patent, or in Miller and Whitehead's patent, or in any other machine for making brass kettles.

But the combination of a hand-lever for effecting the spinning by hand pressure, with a slide rest which is moved by mechanism, is, to the best of my knowledge and belief, a new combination, possessing great and important advantages: Therefore—

Disclaiming movable slide rests in machines for spinning brass kettles, and also disclaiming hand pressure in itself considered for such purposes,

I *claim*, 1st. Elongating the handle of the tool *q*, in the lever P, to be operated by hand, when the said tool is moved up to the work by mechanism, in the manner and for the purposes substantially as set forth.

2d. The arrangement of the shaft *e*, substantially as described, whereby it is made to serve for the driving of the sliding bed I, and also as a pivot upon which the slide H, which carries the said bed, is adjusted, thereby enabling the adjustment of the bed to be effected without affecting the driving gear.

No. 18,111.—Charles Taylor, of Little Falls, N. Y.—*Improvement in Casting Bearings in Iron Wheels.*—Patent dated September 1, 1857.—The movable cap-piece A, being placed upon pin B, and secured to it temporarily, the pin is placed within the core print of the newel D; the rope F is then placed upon the newel, and the cap A permits the pin B to enter the core print of the cope F, without injuring said core print.

Claim.—The employment of the bevel or oval cap-piece A, or its equivalent, when it is used in connexion with the pins B B, or their equivalent, and made to operate in the manner and for the purposes described.

No. 18,481.—Daniel A. Webster, of New York, New York, and George F. Burroughs, of Lumberton, New Jersey.—*Improved Core Spindle for Casting.*—Patent dated October 20, 1857.—The nature of this invention consists of an approved collapsing core or spindle, (for casting hollow tubes, either cylindrical or polygonal, with either one end closed or both open,) formed of segmental staves, adjusted by followers which operate against inclined planes upon internal surfaces of said staves, and which are governed by a transverse shaft running through the centre of the core spindle and passing through two heads.

Claim.—The inventors say: We are aware that core spindles have been made with a wedge stave secured at either end, but do not consider such a mechanism at all practicable in casting heavy work.

We do not claim, broadly, a collapsing core spindle, as we know their use is common; nor do we claim a hollow cylinder composed of staves, or their equivalent.

But we *claim*, first, the combination of a transverse centre shaft with the disk followers B B, and inclined projections D D, substantially as and for the purpose set forth.

Second. The bottom head E^1, constructed as described, in combination with the shaft A and followers B B, substantially as described, whereby I am enabled to cast one end of the tube closed; the whole arranged as set forth.

No. 18,924.—A. A. Needham, of Rockford, Illinois.—*Improvement in Casting Car-Wheels.*—Patent dated December 22, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I do not claim, broadly, a rotating mould for casting, for this has been previously used for casting pipes.

But I *claim* casting the wheel from two different kinds of iron—hard and soft—the hard iron to form the tread, and the soft to form the hub and centre of the wheel; and properly disposing the two kinds of iron within the mould, as desired, by giving the same a rotating motion, as shown and described.

No. 17,109.—Mortimer Nelson, of New York, New York.—*Improvement in Moulds for Casting.*—Patent dated April 21, 1857.—These moulds are made by making electrotype casts B of each half of the article to be moulded; the casts B are then backed up with plaster of Paris C to the requisite thickness; the backing C is then coated with black lead and placed in a copper bath, and a sheet of copper D is deposited on the rear and ends of the backing, thus uniting the mould in a substantial manner.

Claim.—The described method of forming moulds for casting britannia and other metals, by backing up a thin metallic face with plaster, in the manner substantially as set forth.

No. 16,864.—Michael H. Simpson, of Boston, Mass.—*Improvement in Machinery for Combing Wool.*—Patent dated March 17, 1857, antedated September 17, 1856.—In operating with this machine, the wool or fibrous material, as in the original machine of Couillard, is spread upon an endless apron B; and by means of the feed-rollers and a "licker in," it is taken from said apron and transferred to the main cylinder A; and during the revolutions of the same the fibrous material is subjected to the action of the workers and strippers situated above said card cylinder. Next, by means of the extra doffer L and stripper M, it is removed from the main card cylinder and laid upon the combing doffer I, by which it is thrown upon and amongst the teeth of the revolving comb N. From the latter, the longer fibres are drawn by the rollers U V, and from thence in the form of a sliver they pass through the condensing belt *f*, thence between the rollers *h i* and into the neck of the flyer, and are finally wound upon the bobbin.

The inventor says: I *claim* the combination and arrangement of an extra doffer L and stripper M, or equivalents therefor, with the main card cylinder, the combing doffer I, and the combing belt N; the whole being substantially in the manner and for the purpose as specified.

I also claim the described improved arrangement and construction of the draught rollers U V, with respect to each other and the combing belt N.

I also claim making the wires of the fringe belt W to extend below the table Z, and to run through a passage *c* formed between the part Z and the combing belt, or in the table, as specified.

I also claim combining with the curved plate R, when such is employed in connexion with the doffer I and the combing belt N, a steam-heating chamber S, or other suitable means of heating such plate, as set forth.

No. 16,688.—Andrew Leonard, of Kenosha, Wis.—*Improvement in Casting Skeins for Wagons.*—Patent dated February 24, 1857.—*c* represents the core and *a* the core-bar, which can either be adjusted by hand, as represented in figure 1, or its lower end can be imbedded into the pattern sand, so as to firmly support the upper portion of the core-bar and the core itself.—(See figure 2.)

Claim.—The method, substantially as set forth, of moulding and casting thimble skeins and other hollow conical castings in a vertical position from whole patterns, leaving their own cores of green sand, which were moulded in the hollow of the patterns around one end of long core-bars, so arranged and combined with the cores and with the solid sand in the flask, as to have the other end of the same bars sustain the core, or to render them adjustable by hand after the patterns are withdrawn and the mould completed, as specified; and of thus insuring the true position of the cores in the centre of their moulds, and making the casting perfectly true and seamless direct from the sand, substantially as described and shown.

No. 17,012.—Henry R. Remsen, of Albany, New York, assignor to William J. Noyes and Henry R. Remsen, aforesaid.—*Improved Mill for Cleaning Castings.*—Patent dated April 7, 1857.—The hollow ware to be cleaned is placed in the grated partitions *m*, so that each piece shall be separated from the other, and, as the mill revolves, the shot, iron, or scouring material, will act effectually on the castings.

The inventor says: I do not claim making a revolving mill for cleaning hollow ware or other castings.

Nor do I claim any particular external form, or any mode of opening or fastening the doors.

I *claim* the use, in a horizontal revolving mill for cleaning castings or hollow ware, of open work, lattice, or grated partitions, parallel to, or in a line with, the axle, for the purpose of such compartments as I have described, substantially as set forth.

No. 17,814.—Edward F. Whiton, of Stafford, Connecticut.—*Improved Centering-Machine.*—Patent dated July 14, 1857.—The shaft *e* to be centered is inserted within two opposite notches of the holders *d*, and is secured within said holders by forcing them together by means of screw J. The pulley D being then rotated, the marker *p* is forced towards the end of shaft *e* by operating screw *n*.

Claim.—Arranging the laterally adjustable notched holders *d d* in such a manner in relation to the longitudinally adjustable spindle C and its pointed marker *p* as to enable the ends of shafts of various sizes to be centrally marked, substantially as set forth.

No. 18,490.—Lauriston Towne, of Providence, Rhode Island.—*Improved Chain-Machine.*—Patent dated October 20, 1857.—The functions performed by this machine include the whole process of cutting the links from the strips of metal, and their subsequent bending and uniting, till the complete chain is formed. The engravings and claims set forth by the inventor will give an idea of the minutiæ of this invention.

The inventor says: I *claim* the forming-guide for holding and transmitting the chain during the formation thereof, constructed and arranged as described, or in any other manner which will enable it to perform substantially the same functions.

I also claim giving to the forming-guide an angular movement upon its axis, so as to present the chain to the successive links in such positions that the arms thereof will alternately interlock.

I also claim the double movement of the punch *m*—first, to give the outer bends to the links while depositing them upon the forming-guide; and second, to finally clinch them and force the chain downward to make room for the succeeding links, substantially as specified.

I also claim the arrangement and combination of the carrier E, die *m*, and the forming-guide, or their equivalents, so as to first bend the links inward near the extremities of the arms, and afterward to make the bends nearer the centre of the links, for the purpose specified.

I also claim the slender converging rods or holders *r r*, for holding down the top link while bending the first pair of arms of the link below up over it.

I also claim the arrangement and operation of the slides *a a*, or their equivalents, substantially as described, so as to bend and clinch the arms of each link successively by pairs, and cause the succeeding pair or pairs to overlap the preceding ones, or, in case the links have an odd number of arms, to cause the succeeding arms of each link to overlap the preceding ones singly in succession.

I also claim the fingers *p p*, operating as described, for the purpose of forcing and holding down the first pair of arms, so as to enable the succeeding pair to be lapped over them, substantially as specified.

No. 18,027.—Lauriston Towne, of Providence, R. I.—*Improved Machine for Twisting Curb Chains.*—Patent dated August 18, 1857.—The chain is inserted between the stationary dies *m* and the vibrating die N; and motion being given the driving-shaft, the die N is caused to vibrate by means of pitman I, each vibration of the die twisting one link of the chain. The unfinished portion *a* of the chain is prevented from winding, by giving a counter motion to reel G, upon its shaft E.

Claim.—The combination of the vibrating spiral die N and stationary holding die plates *m m*, or their equivalents, arranged and operating substantially in the manner and for the purpose specified.

No. 17,694.—James Oliver and Harvey Little, of South Bend, Ind.—*Improvement in Chilling Plough Shares.*—Patent dated June 30, 1857.—The iron that first enters the mould runs directly to the edge, and under the chill; these portions are thus filled at the start of the operation, and the vapors created by the damp mould, the air, and other gases, are expelled gradually through the spout.

Claim.—The process described, consisting in placing the surface of the chill in such a position in relation to the other parts of the mould that the melted metal shall first come in contact with the chill at the edge of the share, in the manner and for the purpose specified.

No. 16,470.—George N. Cummings, of Hartford, Conn.—*Improved Clamp for Soldering Spectacles.*—Patent dated January 27, 1857.—In using this instrument the eye-pieces *g* are placed upon the strips *b* and underneath the springs *d*, when they are pushed back against the strips *c*; the nose-pieces *h* are then adjusted to the eye-pieces *g* so as to give them the proper shape, and are soldered to said eye-pieces.

Claim.—The use of the supporting strips *b c*, springs *d*, and brick *e*, arranged and operating in the manner and for the purpose set forth.

No. 16,506.—Elbridge Wheeler, of Marlboro', Mass.—*Improved Clamping-Machine.*—Patent dated January 27, 1857.—A represents the bed of the machine upon which the article to be punched rests. B the stationary jaw. The movable jaw D is brought up against the article to be punched by the screws E, and is composed of two portions, 1 and 2, which are hinged together in the middle at E, the outer ends of these pieces sliding beneath the clamps *a*; the jaw A is thus enabled to conform itself to articles of irregular width.

Claim.—Constructing the movable jaw in two pieces and hinging them in the centre in the manner and for the purpose substantially as set forth.

No. 16,502.—Abner Van Horn, of New York, N. Y.—*Improvement in Core-Boxes.*—Patent dated January 27, 1857.—Figure 1 represents the core-box A, which is made in two parts, with the zigzag projections B B inserted, but not shown in this figure, which are attached to the lifts C C.

Figure 2 represents the interior and shape of the core-box, and also the projection B.

Figure 3 represents the projection B withdrawn.

Claim.—The use of the compartments B B, constructed and operating as described, when arranged in connexion with the lifts C C and flask A, as set forth.

No. 17,732.—William Gage & Richard B. Felthousen, of Buffalo, N. Y.—*Improvement in Dry Sand Cores.*—Patent dated July 7, 1857.—The nature of this invention will be understood by reference to the claim.

Claim.—The application and use of glue or blood (either separately or in combination) mixed with sand, for the purpose of making dry sand cores for founding purposes, substantially as described.

No. 18,964.—William Gage & Richard B. Felthousen, of Buffalo, N. Y.—*Improvement in Dry Sand Cores.*—Patent dated December 29, 1857.—In describing their improvement the inventors say: We take any convenient quantity of flour and put it into a vessel, and mix therewith a sufficient quantity of water to make it flow freely as a liquid, taking care that the flour and water shall be so well mixed, that there shall be no lumps or dry flour remaining there. We then place the vessel containing the mixture over a fire, and boil the same until it is converted into a starchy, glutinous, or viscous substance, and sufficiently dense and strong to bear up an egg.

The inventors say: We are aware that flour in a dry or unprepared state has long been used in the composition of dry sand cores; we therefore disclaim its application or use in this well known way.

We *claim* the application and use of the viscous substance, or paste which we obtain from flour, in the manner described, in admixture with sand, for the purpose of forming dry sand cores, in the manner set forth.

No. 18,337.—Norman C. Harris and Alonzo Butler, of Poultney, Vermont.—*Improvement in Curry Combs.*—Patent dated October 6, 1857.—The inventors, in describing their improvement, say: We cut out a piece of sheet metal A (fig. 1) of the proper size, and stamp it so as to form a hollow *a* for the reception of a handle to be applied to the card. Corrugations *b b*, of any design, may also be formed for adding firmness to and ornamenting the metal. The edges *c c* are likewise bent over in the manner shown.

When thus prepared, it is placed on the back of the sheet, or plate B, in which the teeth are inserted. Its edges *c c* are then turned closely over the edges of the face, as shown in the drawings. The handle C is then inserted in the socket formed by the union of the hollow *a* and the face B of the card, and is secured therein by the nails or tacks *d d*, and the card becomes complete.

The inventors *claim* the employment of a metallic plate A, to embrace the sheet or plate in which the teeth of the card are inserted in the manner described, for the purpose of adding strength and finish, and for securing the handle thereto.

No. 16,440.—E. T. Henry, of Scranton, Pennsylvania.—*Improved Die for Making Spikes.*—Patent dated January 20, 1857.—The bar *d*, from which the blanks are cut, is properly heated and placed in the groove *a* of the die A; a knife *e*, which is attached to arm *f*, cuts off the part of the bar which is within the groove *a* of the die, and the head is then formed by a heading device.

Claim.—The lip C, formed at the point end of the groove *a*, in the die A, substantially as shown for the purpose specified.

No. 17,453.—John F. Scharer, of New York, N. Y.—*Improvement in Die-Stock.*—Patent dated June 2, 1857.—The die-plate B can be kept stationary by the point of screw E entering one of the recesses *n*; but the die-plate D, being pressed against the screw blank by screw I acting against the sliding-piece C, can turn within said sliding-piece, and can thus adjust itself to its proper position.

The inventor says: I am aware that circular plates, having dies or recesses of graduated different sizes cut on the peripheries, have been used before, and I do not claim the same.

But I *claim* the arrangement of the die-plate B, when held steadfast in connexion with the die-plate D, having a slight adjusting motion, constructed and operated as specified.

No. 17,707.—James Teachout, of Waterford, New York.—*Improved Die-Stock.*—Patent dated June 30, 1857.—The dies C are inserted within the recesses Z of the die-holder B, and said die-holder, together with the dies, is inserted within the chub of the stock A, as represented in fig. 1; the top plate E and scroll plate D are then secured on the stock A by means of screws *a*, and the implement is ready for use.

Claim.—Constructing the die-holder B of the screw-cutting die-stock in the particular manner described, so as to give firm support to the inner portion of the top of the dies as well as to their bottoms and sides, and thereby relieve the scroll and guard-plates from all the upward strain or pressure otherwise exerted upon these plates by the inner portion of the dies in cutting screws.

No. 16,372.—Robert Brayton, of Buffalo, New York.—*Improvement in Dies.*—Patent dated January 13, 1857.—In making hot-pressed nuts and washers by means of these dies, the heated bar is placed upon the die C, and the blank is cut off from the bar by the die B, and compressed into shape in the chamber B^1, at the same time the blank is punched by the punch E, the burr from the nut passing off through hole C^1.

Claim.—The use of chilled cast-iron die or dies, constructed and operating substantially as set forth, for the purposes specified.

No. 17,475.—Leroy S. White, of Hartford, Connecticut, assignor to S. S. Rogers, E. W. Sperry, James H. Ashmead, and Edmund Hurlbut, of the same place.—*Improvement in Dies for Punching Fork Tines.*—Patent dated June 2, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Supporting the small bars or slender part of the tempered die *b* by suitable supports or dies of metal *a*, constructed and used substantially in the manner described.

No. 17,204.—Jeremiah M. Crosby, of Norwalk, Ohio.—*Improved Door-Bolt.*—Patent dated May 5, 1857.—When the bolt B is thrown outward into the jamb of the casing by the action of the shaft and eccentric C, the end of rod R, where it is connected with the cam, falls below the centre of the spindle, and its further motion in that direction is arrested by the case L, and thus the bolt is locked.

Claim.—The arrangement of the belt B, rod R, and the cam or eccentric C, combined substantially as described, for the purpose specified.

No. 17,464.—Amos Westcott, of Syracuse, N. Y.—*Improvement in Door-Bolt.*—Patent dated June 2, 1857.—The knob-shaft C is provided with a wrist-pin F, which passes through slot G of the bolt H, thereby supporting the rear end of the bolt; and the teeth of the pinion E on shaft C act on the pins I of the bolt, thereby operating said bolt when the knob is turned.

The inventor says: I do not claim any particular method of moving door-bolts. But I *claim* the supporting and guiding of the rear or inner end of the bolt H, by connecting it with the knob-shaft C, substantially in the manner and for the purpose set forth.

No. 17,474.—Samuel R. Wilmot, of Watertown, Conn., assignor to Samuel B. Guernsey, of same place.—*Improvement in Door-Bolts.*—Patent dated June 2, 1857.—The sides of the bars C, which are intended to hold the bolt O down to its bed plate, are first separated from the plate A, and by producing the corrugations *d*, said corrugations will serve as guide-bars for the bolt O, while the bars B are raised and hold the bolt to the plate A.

Claim.—The method described of forming a raised bar from a flat plate, without straining the material injuriously, by corrugating the plate at the ends of the bar, and slitting the sides of the bar from the plates, substantially as set forth.

No. 17,843.—Charles G. Page, of Washington, D. C.—*Improvement in Cylindrical Door-Bolts.*—Patent dated July 21, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—I *claim* the oblique slot in the guard, in combination with the lever or handle of the bolt working in said slot, as set forth.

The zigzag return slots S in the guard, as shown in fig. 2, by which the bolt is carried through its range by the two movements of raising and depressing the handle, as set forth.

No. 17,808.—Charles G. Page, of Washington, D. C.—*Improvement in Locking Cylindrical Door-Bolts.*—Patent dated July 14, 1857.—By having the stem of the handle *b* sliding in the oblique slots *m*, the bolt is convertible into a right and left handed bolt, and is secured against being revolved by jarring, and also against being slipped endwise by accident, while the bolt can be locked or unlocked by simply turning the handle *b*.

Claim.—Locking the bolt by means of the loose handles, substantially as set forth.

No. 18,537.—Samuel S. Day, of New York, N. Y.—*Improved Rose for Door-Knobs.*—Patent dated November 3, 1857.—In the engravings, A is the stile of the door; B are the knobs; C are the roses; *d* is the disk flange which fits against the door; *e* is a flange which projects into the door, having a screw-thread cut on the outside, by which it is firmly held in the wood, the inner surface forming a bearing for the shank of the knob, as seen in the engravings, by which arrangement this flange is made to serve two purposes, viz: securing the rose to the wood, and supporting the shank of the knob. This flange has within it, and forming a part of it, a slotted flange *f*, which answers the two-fold purpose of an end-bearing for the shank of the knob and a convenient and indispensable seat or hold for the screwdriver to act upon in driving the rose into the hole previously bored for its reception.

The inventor says: I make no claim to securing the shank of the rose in the door by means of a screw made upon the outside of it, as this has already been done.

I *claim* combining the slotted flange *f*, the screw-threaded flange *e*, and the disk flange *d*, in the construction of a rose for door knobs, as and for the purpose set forth.

No. 17,887.—Orrin Newton, of Pittsburg, Pa.—*Improved Spindle for Door-Knobs.*—Patent dated July 28, 1857.—The spindle B being passed through the door with the notches *i* projecting on the opposite side of the door, the shank C is placed upon the spindle, and the key D, fig. 5, is inserted in two of the notches *i* and the notches *d e* of the shank C, thereby securing the spindle to the shank, the plate E preventing the key from slipping out.

The inventor says: I do not claim as new the use of notches in the spindle, nor the use of a key to connect the spindle and shank.

But I *claim* the arrangement of the notches on the spindle of the door-knob in alternate positions on opposite corners or angles of the squared spindle, in combination with the key, constructed as described, and the deep and shallow groove in the shank, together with the depression in the circle plate to keep the key in place, for the purpose of adjusting the length of the spindle of door-knobs to different thickness of doors, by gradations sufficiently minute to answer all practical purposes, and for other purposes set forth, substantially as described.

No. 16.512.—A. F. Chatman, assignor to himself and Jacob Pecare, of New York, N. Y.—*Improved Door-Spring.*—Patent dated January 27, 1857.—The wire B B is passed through the hinges of the door, and forms the hinge of a pair of hinges; and the bent ends of the wire O O O O are fastened to the door by staples or otherwise.

The inventor says: I do not claim helical springs; nor a helix wound around a wire; nor a helix alone.

But I *claim* a wire B B^1 doubled lengthwise on itself two or more times in the manner described, so that it will form a spring, by opposite forces, when enclosed in a cylinder or tube, and not otherwise, to be used as a hinge, in combination with the spring, or without the hinge.

No. 17,070.—Gilbert L. Bailey, of Portland, Me.—*Improved Door-Spring.*—Patent dated April 21, 1857.—When the door T is opened, the roller H follows guide X and passes in towards the hinge of the door, thereby compressing the volute spring D; and the tendency of said spring to resume its conical form causes it to press against lever L, forcing roller H back to its original position at the outer end of guide X, thereby closing door T.

The inventor says: I do not claim any of the described parts separately.

Neither do I claim in a door-spring making the pressure greatest when the door is closed.

But I *claim* the use of the volute, coniform spring D, in connexion with post A, lever L, and guide X; the whole arranged and operating substantially in the manner and for the purpose set forth.

No. 18,164.—Edward P. Torrey and William B. Tilton, of New York, N. Y.—*Improved Door-Spring.*—Patent dated September 8, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventors say: We do not claim any of the parts, separately considered.

Neither do we claim the combination of a stop-pin and adjusting device applied for regulating the upright torsional rod spring, irrespective of the arrangements of said parts.

But we *claim* as our invention, and as a necessary auxiliary to render such adjusting device practicable and useful, the arrangement of the adjusting cog-wheel D between the two notched ears C of the bracket A and the pivoted stop plate on the face of the bracket, and in such relation to said cog-wheel and the notches *a* in the ears, that the whole, operating together as specified, will form a firm and substantial adjusting device for the upright torsional rod spring F, as set forth.

No. 18,987.—Charles A. Peck, of New York, N. Y.—*Improved Door-Spring.*—Patent dated December 29, 1857.—This invention relates to a door-spring in which an arm or lever operated by a box spring is made to act upon the door, and consists in the employment of a variable bearing roller *j*, which may be adjusted nearer to or further from the spring A. The plates *f f* are so attached to the door B as to be directly below the rod *e*, which rod bears against the roller.

Claim.—The employment of a variable roller *j*, as described.

No. 16,324.—John Broughton, Chicago, Ill.—*Improvement in Door-Springs.*—Patent dated January 6, 1857.—In the engravings, figures 1 and 2 represent this device as applied to a door when the latter is open, A representing the door frame, and B the door; figure 2 represents the device when the door is shut. The invention will be understood by reference to these figures and the claim.

Claim.—Combining a flat or other suitable spring H with the leaves D D of the auxiliary hinge or other actuating devices, by means of a compound or double action toggle I J, applied and operating substantially as described and for the purposes set forth.

No. 16,759.—Leopold Thomas, of Alleghany City, Pa.—*Improvement in Door-Springs.*—Patent dated March 3, 1857.—The nature of this improvement will be understood from the claim and engravings.

The inventor says: I do not claim the use of the spiral spring *c*, nor the roller *b*.

But I *claim* the use of compound lever *g h*, in combination with the connecting arms K K and spiral springs *c*, or their equivalent, in the manner and for the purposes set forth.

No. 17,490.—Jeremiah M. Crosby, of Norwalk, O.—*Improved Catch for Doors.*—Patent dated June 9, 1857.—In shutting a door to which this catch is applied, the bolt B is pressed back and operates only upon the soft spring F, without acting on cam A, spring E, or any other part of the lock, whereby no part of the lock is strained, and the shutting of the door can be performed easily and without noise.

Claim.—The employment of the additional soft spring F, and connecting slide S, or its equivalent, between and in combination with the bolt B and main spring E, arranged and operated substantially in the manner and for the purpose specified.

No. 18,911.—Charles D. Kellogg and William L. Coan, of Boston, Mass.—*Improvement in Glass Knobs for Doors.*—Patent dated December 22, 1857.—This improved knob is made of transparent glass, and with a cavity or recess *e* for the reception of the shank E, the same being made to extend axially into the knob. In and against, and so far as to cover the bottom of said cavity, a disk or plate *f* of silver foil is placed, so that the planished surface of the same may be in direct contact with the bottom.

Claim.—Arranging on the bottom of the cavity *e* a plate or disk of foil, in combination with arranging an annulus of foil around the mouth of the cavity and against the glass knob, as specified.

No. 17,944.—George C. Taft, of Worcester, Mass.—*Improved Self-Feeding Drill.*—Patent dated August 4, 1857.—When the drill arbor D is turned, the screw C, in consequence of being connected by clamp H to crank G, will feed the drill E to its work just as fast as the drill cuts; for the instant the screw attempts to force the drill forward faster than it cuts, the resistance offered to the turning of the drill will cause the clamp H to slip around on the screw C. The pressure of the clamp H on the screw C may be regulated by adjusting screw *g*.

The inventor says: I do not claim placing the drill arbor within the hollow screw, for that arrangement is commonly used for feeding the drill to its work, the screw being turned by hand.

Neither do I claim the means employed for adjusting the head I.

But I *claim* connecting the screw C with the crank G, by means of the clamp H, substantially as and for the purpose set forth.

No. 16,900.—George C. Taft, assignor to Henry W. Mason, both of Worcester, Mass.—*Improvement in Feeding Drill-Shaft.*—Patent dated March 24, 1857.—The purpose of the secondary lever and spring is to keep the drill D close up to the work, and prevent over straining or breakage of the screw threads or the vibrator lever. While the vibrator K has a positive motion invariable in its extent, the secondary lever and its spring, during the movements of said vibrator lever, will cause the pawl to turn the rachet M far enough to advance the drill in proportion to its ability to bore the work, the spring permitting the vibrator to continue its advance or forward movement, without danger of being strained or broken by the pressure of the cam I.

Claim.—Combining the pawl with the vibrator lever by a secondary lever and spring applied to them, substantially in the manner and for the purpose as specified.

No. 16,552.—Robert G. Pine, of Newark, N. J.—*Improved Machine for Grinding File-Blanks.*—Patent dated February 3, 1857.

Claim.—1st. The reciprocating frame E attached to the frame A^1, as shown, and having springs *f* connected with it, when said frame is used in connexion with the grindstone F and patterns *j j*, for the purpose specified.

2d. I *claim* attaching the frame A^1 to the levers *m*, bars I, and shaft K, having roller L upon it, said parts being arranged as shown or in an equivalent way, for the purpose set forth.

No. 16,681.—ISAAC H. COLLER, of Poughkeepsie, New York.—*Improved File-cutting Machine.*—Patent dated February 24, 1857.—The first part of the improvement will be fully understood by reference to the patent of Conklin, &c., upon which this is an improvement. Y C^2 F^2 is the device for holding the file T^2. Y consists of a right and left screw, with two nuts, which nuts are pressed by the screw against the levers F^2 at one end, which closes the other ends against the file, thus preventing it slipping endwise; and the tang is held by C^2, a round piece grooved at top to receive the tang, and a spring at the bottom, which keeps the file up until the roller U^2 presses it down, and keeps it from shifting sidewise; s is the chisel.

The inventor says: I do not claim the manner of automatically graduating the blow by the action of the cams F and springs S; but I *claim*, as an improvement on the mode patented by Conklin, Sidman, and Whritner, the jointed frames P Q R D for transmitting the graduated effect of the springs S to the hammer A, so that the rods holding said springs will not vibrate from the movement of the hammer.

I also claim the combination of the lever jaws with the spring tang-holder, arranged and operating substantially as and for the purposes set forth.

No. 17,760.—WILLIAM VAN ANDEN, of Poughkeepsie, New York.—*Improved File-cutting Machine.*—Patent dated July 7, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The arrangement of a bed E, on which the file blank is cut, having a forward positive feed motion, and an independent forward motion against the edge of the chisel, in consequence of the percussion of the hammer, and the difference of the resistance of the metal at the back edge of the chisel x, wedging it forward at the time of cutting the teeth of the file, to cause their upsetting, substantially in principle of operation as described.

Also, the combination and arrangement of the bed on which the file-blank is cut, operating in the manner substantially as set forth, with the triangular feed-gate I and side rails of the machine frame, or substantially their equivalents, for the purposes set forth.

Also, the combination and arrangement of the ratchet-wheel Q, spring S, and detent pins S^2, or their equivalents, in combination with the pawls P for operating the same, for the purposes substantially as set forth.

Also, the use of the compound self-adjusting chisel-holder stock W, in combination with the chisel, whereby it is held rigidly in its place under the blow of the hammer, in manner and for the purposes substantially as set forth.

Also, the use of the triangular gate, as a feed motion to my compound bed, in combination with the apparatus for operating the same, substantially as set forth.

No. 17,928.—WILLIAM HALLIWELL and LEVI OSBORN, of Poughkeepsie, N. Y.—*Improved File-Cutting Machine.*—Patent dated August 4, 1857.—When the carriages B C advance, either wing of the switch $o\,o$ is acted upon by one of two pins, which are fixed in the carriage C, and project through a slide in B, and move the point of the switch to the opposite side. The switch $o\,o$, being placed on the surface of bed A, thus causes the carriage C to slide to either side of carriage B, and thus to bring a fresh file under the chisel.

We *claim* 1st. The combined action of the two carriages B and C, by which the machine is enabled to remove the file that has been cut from under the chisel, and automatically to replace it by one to be cut

2d. We *claim* the swivel-head x for holding the chisel, by which, in connexion with the springs $z\,z$, the chisel adjusts itself on the surface of the file.

3d. We *claim* the levers b^1, cams a^1, and ratchet bar h, as described, for holding the file in place.

No. 18,458.—JAMES Q. KELLY, of Sag Harbor, N. Y.—*Improvements in Harpoons.*—Patent dated October 20, 1857.—When the harpoon is ready for use, it is in the position represented in the engravings 1 and 2. When driven into the body of the whale, the flukes $c\,c$ prevent the instrument from being drawn back, and the motion of the whale in attempting to escape causes the line to be straightened, and the pin d to be broken, and then forces the point B forward into the flesh until the eye E reaches the slide G. The barbs $b\,b$, being thus gradually turned in the flesh, cannot return in the cut made by their insertion, and consequently take a strong hold in the flesh of the whale.

By using the connecting rod i, the sliding socket C and the slide G are enabled to slide over any bends in the rod a, which are frequently caused by the turning or other violent motions of the whale.

The inventor says: I *claim* the arrangement of the eye or point of attachment of the line D to the harpoon, and the eye in the slide G, through which the line passes at different angles on the harpoon when prepared for throwing, substantially as described, whereby a twisting movement is given to the point of the harpoon in the act of being thrust further into the whale, for the purpose set forth.

I also claim the connecting rod i and guide G, in connexion with the sliding socket C, whereby the advantages of a long socket or bearing are attained, without the disadvantage of a continuous tube, in case of bending the rod or shaft which slides therein, substantially as specified.

No. 18,643.—W. G. HYNDMAN, of Cincinnati, Ohio.—*Improvement in Portable Forge.*—Patent dated November 17, 1857.—$a\,a$ represents the body of the forge made in a cylindrical shape, and furnished with a cylindrical bellows B, as usual, which bellows are operated in the ordinary manner at the side of the forge, with a lever which takes hold of the rod c attached to the lever part of the bellows. J is the air pipe extending from the bellows to the tuyere iron h; $d\,d$ is the hearth of the forge; $g\,g$ is a plate of circular form with a rim projecting up around its edge, and furnished with lugs for attaching it to the bottom of the hearth-plate, by which plate *g g* are attached to the hearth-plate, the recess R R is formed, which recess is filled with any non-conducting substance, to serve as a hearth to prevent the bellows from being heated.

Claim.—The plate *g g* when arranged with the bottom of the hearth-plate *d d*, by which arrangement of plates the recess R R is formed, and to be filled with fire-brick or any other good non-conducting material, to serve as a hearth to the forge in place of laying the brick on the top of the hearth-plate *d d*, for reasons mentioned and purposes specified in the specification, and represented in the drawings.

No. 16,531.—John W. Crannel, of Olivet, Mich.—*Improvement in Smith's Forge.*—Patent dated February 3, 1857.

Claim.—The use of two hollow sectional nozzle-pieces H H, moving at right angles in a two-way groove formed by the chamfered ribs G G G G, in combination with the two-wayed slotted opening K in the hearth-plate, fig. 2, formed and bounded by the stationary rims J J, and the chamfered corner block L, whereby the moving nozzles can slide past each other and form a continuous joint in any position.

No. 16,537.—George P. Foster, of Bristol, R. I.—*Improvement in Forging Gun-lock Springs.*—Patent dated February 3, 1857.—The power is applied to the shaft of the upper roll, and, as it revolves, the teeth D engage with wheel C. A blank is now inserted between the rolls; and when rolled to its full length the teeth disengage, the lower roll is suddenly drawn back by its spring F, and the apparatus is ready to receive another blank.

Claim.—Operating the rolls by means of the cogged segment D, wheel C, and spring F, in the manner and for the purpose substantially as herein set forth.

No. 16,444.—William Kelly, of Eddyville, Ky.—*Improvement in Blast Furnace.*—Patent dated January 20, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I do not claim blowing blasts of air into a liquid mass of iron, so as to refine it, as that is a well known process. Nor do I now claim, in this process, to refine the iron separate and apart from fuel, as the iron, when being so worked, as above described, in a blast furnace, has a large body of fuel to cover it, in a manner substantially as in a finery fire.

I *claim* the combination of the hearth of a blast furnace with the auxiliary tuyeres B B and C, for delivering a blast of air into the fluid iron in said hearth; the whole constructed and operating in the manner and for the purpose specified.

No. 18,167.—Samuel Wilkes, of Hammondsville, O.—*Improvement in Blast Furnace.*—Patent dated September 8, 1857.—The steam is introduced into this furnace at different points *a*, within the limit of the boshes, for the purpose of securing a thorough oxydation of the ore, by bringing it in contact with the same at the point at which the chemical action of the furnace is in most active progress.

The inventor says: I do not claim the use of steam in the smelting and making of iron.

I *claim* the introduction and application of steam in blast furnaces at the boshes, whether at one or more points, substantially in the manner as described.

No. 17,659.—Charles C. Alger, of Newburg, N. Y.—*Improved Smelting Furnace.*—Patent dated June 30, 1857.—By this improvement the capacity of a furnace can be materially increased, and a good iron can be produced with a blast not exceeding the pressure usually employed.

Claim.—An improved furnace constructed substantially as described, that is, with its hearth A, or crucible and boshes D, of an elliptical or elongated form, substantially and for the purposes as specified, in combination with two mouths F—one at each end for working and tapping—and two or more tuyeres B B^1 at each side, so arranged as to introduce the blast in the direction of the breadth, and for the objects explained.

No. 16,560.—Henry Weissenborn, of New York, N. Y.—*Improvement in Blast Furnace.*—Patent dated February 3, 1857.

Claim.—The mechanical arrangement of feeder B, in combination with a surrounding gas chamber D, with an open bottom placed above the furnace throat; whereby the gas is prevented from escaping from the throat of the feeder B, without being covered, and then forced into the gas chamber by the dense body of coal and ore always contained in the feeder, and therefore delivers a regular supply of gas, which can be carried descending to any heating furnaces placed on the bottom ground of the blast furnace with the same advantages as if applied on the top of it, for the purpose and in the manner as specified.

No. 18,051.—Philip W. Mackenzie, of Jersey City, N. J.—*Improvement in Cupola Furnaces.*—Patent dated August 25, 1857.—The blast enters the chamber *f* and passes in the direction of the arrows into the furnace, entering the fuel at a^1 a^1 after passing between the columns *d*.

The inventor says: I do not claim the boshing or outside air chamber.

But I *claim* forming a continuous sheet of air as indicated at a^1 a^1, where it is brought in contact with the fuel, in combination with the elongated form and increased size below a^1 a^1, where the blast enters the fuel.

No. 16,541.—Jacob C. Green, of Philadelphia, Pa.—*Improvement* in *Puddling Furnaces.*—Patent dated February 3, 1857.—On this furnace as many men may be employed as there are openings *a* at each side of the furnace. The arrangement of two hearths G G—one at each end of the furnace—serves to economize fuel and to create a more uniform heat throughout the furnace.

The inventor says: I do not confine myself to any particular length of furnace, or to the number of openings *a a a*, as four or even five on each side might be employed.

But I *claim* the constructing of puddling furnaces with any convenient number of openings or working-holes on each side, and a fireplace at each end, the bed of the furnace being common to both fires, and the whole being arranged and constructed substantially in the manner set forth and for the purpose specified.

No. 16,999.—Edward L. Seymour, of New York, N. Y.—*Improved Gold Separator.*—Patent dated April 7, 1857.—The ore is put into the hopper $h\ h^1$, and by rapidly shifting the lever *l* of the feeding frame *a* from 3 to 4, all that ore which is contained within the compartments 1 3 and 5 of the feeding frame will be scraped down upon the sieves fitted into the openings or divisions 2 4 6 of the sieve-frame. By now operating the piston of the pump A, water or air is made vertically to project that ore which rests on the aforesaid sieves, and fills out the three corresponding compartments of both the metal frame *c* and scraping frame *d*, so that after a few strokes of the piston, the particles of that ore may arrange themselves according to their specific gravity; after which the lever *l l* of the scraping frame *d* has also to be shifted from 3 to 4 for the purpose of scraping the refuse matter contained within its partitions 2 4 and 6 into refuse passages 1 3 and 5.

Claim.—The use of the sections or frames, as described, when perforated or constructed so as to open or shut the communication between the upright tubes or compartments for the passage of materials containing gold or other substances, of air or of water, as may be required, the whole operating in connexion with the hopper as described.

No. 17,758.—T. V. Tavnay, of San Francisco, Cal.—*Improved Gold Washer and Amalgamator.*—Patent dated July 7, 1857.—This gold washer is intended to be attached to the lower end of a sluice in which the coarser particles of gold have been collected; it only receives the finest particles of gold and sand which pass over the amalgamated plates C 1 2 3 4 6, F 7 8, whereby the gold particles adhere to the mercury of said plates; and when a sufficient quantity of them has been amalgamated on these plates, they pass as a coarse piece of amalgam into one of the riffles X; the metal plates being supplied constantly with mercury by introducing the same through screen K.

Claim.—In gold washers and amalgamators, the metal plates coated with mercury, the riffles, vanes, and reacting surfaces, arranged and located substantially as described and for the purpose set forth.

No. 16,948.—Samuel S. Lewis, of San Juan, Cal.—*Improved Machine for Washing Gold.*—Patent dated March 31, 1857.—The water employed in the operation of this machine flows freely over the surface formed by the flanges *a* of the bars *b*, and carries with it the large boulders that fail to pass through the openings F; the subcurrent, being received under the floor formed by the flanges *a*, is first directed towards the side of the sluice F by the oblique bars D^1, then the current is taken by the next riffle with direct bars B^1, then carried by antagonistic bars C^1 towards the opposite side of the flume, and so on in succession. To collect the deposit, all the riffles must be removed from the sluice, and the amalgam may be swept into a suitable receptacle.

Claim.—The employment of riffles or bottoms, constructed in the manner substantially as described, so that an under current of water may be used between the ribs, in connexion with that flowing over the surface of the bars of the riffles, in the manner and for the purpose set forth.

No. 18,509.—Daniel Lovejoy and George F. Butterfield, of Lowell, Mass.—*Improved Grinding and Polishing Machine.*—Patent dated October 27, 1857.—The object of this invention is to expedite the process of grinding and polishing metal plates and articles having plane surfaces. The claim and engraving show the nature of the improvement.

Claim.—Giving the plate R, or other article to be ground, a vertical reciprocating motion tangentially with the plane of motion of the stone or wheel D, or parallel therewith, and also a vibrating lateral motion, for the purpose set forth.

No. 17,398.—Robert F. Underhill, of Indianapolis, Ind.—*Improved Machine for Cutting Grooves and Slots.*—Patent dated May 26, 1857.—In order to cut a groove on the inside of the hub of the wheel, the wheel is placed on the table E, which can be adjusted by means of set screws H J, and the arbor K is forced down within the hub of the wheel by means of hand wheel P and screw N. Rotary motion being imparted to pulley X, it is transmitted to the cutter wheel V by means of the gearings R S T U, and the edges of the teeth of the wheel V cut a groove on the inner periphery of the hub of the wheel, the cutter wheel being pressed against said hub by means of the adjustable wedge *g*.

The inventor says: I do not claim the tables A or E; neither do I claim the set screws H H, J J, nor the cylindrical ring G^1, nor the ball and socket joint on the top of the said cylindrical ring. Neither do I claim the curved "standard" B, nor the head I; neither do I claim the screw N, nor the hand-wheel P, taken separately; neither do I claim as new the using of revolving circular cutters, for such have long been used.

But I *claim*, 1st. Forming cutting edges on the outer ends of the cogs or cog-wheels, substantially as described for the purpose set forth.

2d. The combination of the cutter V, as constructed, the cogged wheels R S T U, the shaft W, and the slotted "arbor" K, with the adjustable wedge *g*, and table E, or any equivalent device, arranged substantially as described for the purpose set forth.

No. 16,638.—Henry Burt and James T. Hedden, of Newark City, N. J.—*Improved Machine for Making Hames.*—Patent dated February 17, 1857.—An iron bar of proper length is placed with one end in the angular groove at *a*, against the stop *b*, that delivers it into the forming dies 1 on rollers A A^1; the bar is conveyed by the rollers A A^1 into the next set of rollers by means of guide $d\ d^1$, and so on. The bar is then placed upon its edge in the feed rollers opposite the hame dies and passed through them. From the latter set of dies it will come out as a finished hame with the end loops complete, there being a D counter-sink or punch at the ends of each set of dies as seen at S. E are the draft eyes.

Claim.—The use of the consecutive ring dies 1, 1 1 1, 2, 2 2 2, in connexion with the angular grooves *a* and a^2, and stops *b* and b^2, on the feed rollers E and E^2, substantially as described, constructed and operating in the manner specified and shown.

No. 18,408.—Russell B. Perkins, of Meriden, Conn.—*Improved Machine for Making Hammers.*—Patent dated October 13, 1857.—The nature of this invention will be understood by a reference to the claim and drawings.

Claim.—The inventor says: I *claim* arranging, in the manner described, the principal parts of a machine for forging hammers, that is to say: placing the rock-shafts *a* and *b*, upon which formers or dies are disposed in lateral series, at one end of the frame A, and in the relative position specified to the rock-shaft S, which operates the shearing, cutting, and punching apparatus; in combination with the double cross-head B and n^1, placed at the reverse end of the frame A, and deriving its motion from the crank C.

I also claim the pin *u*, so constructed and arranged in relation to the sliding-plate t^2 and lever t^3, that it will lock or unlock the rock-shaft S, to or from the collar *t*, when required.

I also claim the combined cross-heads B and n^1, when so constructed and arranged that the cross-head n^1 may work in connexion with the cross-head B, or separately within said B, as set forth.

I also claim the described contrivance for coupling or uncoupling the two cross-heads B and n^1, without stopping the crank motion, viz: combining the shaft p^1, of the two engaging and disengaging hooks *o*, with the latch *p*, the catch *r*, and the lever *q*, the whole being constructed, arranged, and operated substantially in the manner set forth.

No. 16,714.—Henry Bushnell, of New Haven, Conn.—*Improvement in Trip-Hammers.*—Patent dated March 3, 1857.—The object of this arrangement is to lift and drop the hammer without jar, and by very simple means.

Claim.—The use of the male and female V wheels *b c*, having, as specified, a portion *e* of the surface of either one of them removed, so as to permit the hammer *h* to drop freely, when arranged substantially in the manner and for the purpose set forth.

No. 18,087.—Levi Dodge, of Cohoes, N. Y.—*Improved Machine for Swedging Hatchet Heads.*—Patent dated September 1, 1857.—The heated iron bar is placed within the cheeks B, which are opened to receive it. The former L is then placed over the cheeks and driven down by any mechanical devices. As it advances it not only drives the metal of the bar before it but closes the cheeks upon K, enabling it to complete the hatchet head.

Claim.—The apparatus described, viz: the block cheeks and former, to be constructed and operated substantially as and for the purposes set forth.

No. 16,831.—Kingston Goddard, of Philadelphia, Pa.—*Improved Hinge.*—Patent dated March 17, 1857.—In the engraving, *a* is the socket; *b*, the torsion bar; *c*, the door; *e e*, the jamb; *h*, the hollow hinge. In adjusting said hinge to any door it is only necessary to see that one hinge has the socket end stationary, whilst the other moves in a rotary manner upon its pivot upon the opening of the door.

The inventor says: I *claim*, first, the socket in the end (or adjusted to the end so as to form part thereof) of the hinge, to be acted upon directly by a torsion bar, as specified.

I am aware that torsion bars are used in various ways to close doors; I therefore do not claim the torsion bar, but only the hinges, as specified.

No. 16,920.—R. Hart, of Marietta, O.—*Improved Hinge.*—Patent dated March 31, 1857.—Power being applied to lever F, it is turned on its fulcrum *k*, as represented in dotted lines, figure 1. The pawl *p* bearing on the arm E, the friction roller of the arm E is made to bear against the flat surface between the inclined planes *a b* of the part A; and the part A and the gate to which it is attached are raised, and the arm E takes the position shown in figure 2, the friction roller being under the inclined plane *b*. In the meantime the arm D, being released from the weight upon it, falls to the position shown in figure 2. The weight of the gate now being upon the friction roller of the arm E, at a point in the inclined plane *b*, the reaction of the friction roller against the part A causes the gate to open, and the flat surface between the inclined planes *a b* is brought over the friction roller of the arm D. The power being removed from the lever F, the spring *n* causes the lever F to resume its former position, and in doing so cam *j* of the arm E, bearing upon one end of the pawl *p*, causes the other end to be thrown over the projection *t* of the arm D, when it is retained by spring *t*.

Claim.—The employment of the arms or levers D E, constructed, arranged, and operating substantially in the manner and for the purpose set forth.

Also, in combination with the movable arms or levers D E, the lever F, constructed and arranged with a shifting pawl, and operating substantially as shown.

No. 17,419.—S. M. Bullard, of Holliston, Mass.—*Improved Door Hinge.*—Patent dated June 2, 1857.—The upper cup, whose inclined plane is marked *m n l k*, is attached to the flange which is fastened to the door, and the lower cup is fastened to the flange attached to the door frame. As the door is opened, the roller D commences ascending the inclined plane *k l m*. When the roller D has arrived just beyond the point *j*, the door will remain open or stand at rest; but if left free to itself at any intermediate point, its own weight will immediately cause it to close.

The inventor says: I do not claim the inclined planes, for they have been long known and used; but I *claim* the detached anti-friction roller inserted between two inclined planes, in the manner and for the purpose described.

No. 17,354.—Dr. JOSEPH SHERBOURNE SMITH, of New York, N. Y.—*Improved Spring Hinge.*—Patent dated May 19, 1857.—When this hinge is to be used as a spring hinge, the pin X is depressed so as to enter the hole *a* in plate D, to which the spring G is attached. By withdrawing the pin X, the hinge will act like a common hinge. The power of the spring G may be adjusted by turning the head S on shaft A, the square part B of which then turns plate D and spring G.

Claim.—The use of the centre pin, screw pin, and capped springs, constructed, secured, and operated within the tubular knuckle, having a double lapped joint, in the manner and for the purpose specified.

No. 18,593.—JOHN MAXSON, of De Ruyter, N. Y.—*Improved Spring Hinge.*—Patent dated November 10, 1857.—The claim and engravings explain the nature of this invention.

Claim.—The inventor says: I *claim* one or more springs acting against an inclined plane, curved or otherwise, with a recess at the end so arranged as to close and hold a door, substantially as described.

I also claim, in combination with the above, a coiled spring, so arranged as to assist the feather spring or springs, substantially in the manner described.

No. 16,678.—JOHN DAVID BROWNE, of Cincinnati, O.—*Improvement in Hinges.*—Patent dated February 24, 1857.—By this construction of a hinge a large horizontal bearing is obtained.

The inventor says: I do not claim the inclined planes on the joints or bearings of a hinge, as they are well known. I *claim* making one part *b* of the bearings of a hinge concentric to the other part *a*, as described.

No. 18,896.—NICHOLAS A. FENNER, of Providence, R. I.—*Improvement in Casting Hinges.*—Patent dated December 22, 1857.—This invention relates to the manufacture of cast hinges, and consists in the employment of a separate pin *b* for each core *a*; the latter being moulded upon the pins, which are cast into or enclosed in one leaf A of the hinge; said pins forming the pivots or centres upon which the knuckles *d d* of the other leaf B turn.

The inventor says: I do not claim generally the casting of a wire into the centre of the joint of a hinge, as wires extending right through the joint have been inserted in the process of moulding and casting.

Neither do I claim the casting of pivots or teats on certain of the knuckle pieces, to be received into recesses in others of the said pieces.

But I *claim* the employment of a separate pin for each core, when the cores are moulded upon the pins, and the latter enclosed within the hinge of the casting, as described.

No. 16,371.—SAMUEL BOYD, of New York, N. Y.—*Improvement in the Manufacture of Hoes.*—Patent dated January 13, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I disclaim the making of hoes with sheet steel blades, as such articles have long been known.

I also disclaim the use of rolled steel for hoe blades, as the same has been before used.

I *claim* as a new article of manufacture a hoe having a steel blade A and a malleable cast iron eye B, welded together.

No. 16,584.—HENRY HAVELL, of Newark, New Jersey.—*Improvement in the Mode of Attaching the Eyes to the Blades of Hoes.*—Patent dated February 10, 1857.—The triangular projection C of the cast iron eye is inserted into the cap A on blade B, and then the whole is welded together.

The inventor says: I do not claim the individual parts of a hoe, neither do I claim welding the malleable iron eye to the blade.

But I *claim* the cap A, which forms a socket with the blade B to receive the malleable iron eye, and becomes a part of the same, in the manner and for the purpose substantially as described.

No. 17,642.—JOHN P. SCHENKL, of Boston, Massachusetts.—*Improved Breech-loading Fire-Arms.*—Patent dated June 23, 1857.—By turning lever I, pin *m* on disk *k* forces back bar B, the bent portion *g* of which presses back the tumbler E, turning it on its centre pin *d* and thus cocking the gun. As the movement of lever I is continued, the cam *l* strikes against the corner of notch *t* and forces the barrel A forward off from thimble C; and, as the forward weight of the muzzle overbalances that of the breech, the barrel is thrown into the position represented in dotted lines, ready for loading. By reversing the motion of lever I, the end *r* of bar K raises the barrel A to a horizontal position and brings it up close against the breech thimble C. By pulling trigger H, the needle *c* is thrown forward and the piece is fired. When the hammer D is thrown down, in the act of firing, the pin c^1, being in the position represented in figure 4, enters the long groove b^1; but, when the hammer is let down slowly, the restraint of the hand on the upper end of lever x at d^1 presses the lever against the resistance of its spring a^1 into the position shown at figure 5, and the pin c^1 enters groove e^1 and rests against the lower end of it, holding the lock securely in half cock position.

Claim.—First. The method described of stopping the hammer at half cock, by the pressure of the thumb, as set forth.

Second. The bar K, constructed as described, and operated by the pin *s* and lever I, for the purpose of cocking the gun and of returning the barrel into line with the thimble C and locking it therewith, substantially as set forth.

No. 17,542.—ROBERT COOK, of South Abington, Mass., assignor to Himself and SAMUEL NORTON, of the same place.—*Machine for Forging Horse-Shoe Nails.*—Patent dated June 9, 1857.—The nail rod, after being properly heated, is passed through the feeder K, so as to extend between the strikers A B C D, which, on being put in operation, reduce and taper it on four sides. After it has been sufficiently hammered, the attendant lays hold of the catch lever N and turns it on its fulcrum, so as to bring its shorter arm down upon pitman M, and in front of the shoulder *w* thereof, so that, while said pitman is being moved forward, the shoulder may be carried up to the lever N, and, by pressure against the same, cause it to be moved laterally on its fulcrum, so as to move the feeder and introduce the nail rod between the cutters *m n*, the spring catch O serving to hold the feeder in position while the hammered part of the rod is being severed from the rod. As soon as the nail has been cut off, the attendant raises spring catch O, and turns the catch N, so as to enable the counteracting spring R to draw the feeder back to its original position.

Claim.—Arranging each striker in a separate guide lever, and operating such striker by a spring and such guide lever, when the latter is actuated by means substantially as described.

Also, combining with the pitman M, and the lever L carrying the feeder, a catch lever N, shoulder *w*, and spring catch O, whereby the said feeder may be moved and held up to the cutters, or set free therefrom, as circumstances may require.

No. 17,491.—Calvin Carpenter, jr., of Providence, R. I.—*Improved Machine for Making Horse-Shoe Nails.*—Patent dated June 9, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—I do not claim the cutting of the nail plate in such a manner as to make the heads and points of the blanks from opposite edges of the plate alternately, by turning over the plate, as that is done in cutting brads and other cut nails, for which purposes straight cutters are used.

But I *claim*, 1st, The attachment of the lower die *b* to, or construction thereof as a part of a plate I, which has such a sliding movement, horizontally or otherwise, below the lower cutter *a*, at right angles to the movements of the cutters and closing movement of the dies, as described, that the die receives the blank from the cutters while it is in a stationary condition, and then conveys it under the top die, and, in returning, has the finished nail pushed off it by the lower cutter, substantially as specified.

2d. The guage K applied to the lever G, or its equivalent, which carries the upper die *b*, and operating as described, in combination with a stationary slotted standard T, by which it is moved out of the way as the dies close, and which also serves to adjust it to give a greater or less width to the nail blanks.

No. 17,265.—David Cummings, of Sorrel Horse, Pa.—*Improvement in Horse Shoes.*—Patent dated May 12, 1857.—The plate B is secured to the horse shoe A by means of the bolts *a*, and serves to hold the calks C D E in place, and to prevent them from turning or unscrewing.

The inventor says: I do not claim movable calks screwed into the bottom of a horse shoe.

But I *claim* the false bottom or holding plate B, constructed as described, when used in connexion with the movable calks C D E, as specified.

No. 18,306.—William Somerville, of Buffalo, N. Y.—*Mode of Attaching Elastic Soles to Horse Shoes.*—Patent dated September 29, 1857.—This invention consists in attaching an elastic sole to the shoe of a horse, by which the inner portion of the bottom of the foot is protected. A is the foot of the horse; B is the shoe placed upon it, made as other shoes are; C is a piece of India rubber which fills that space under the foot which is partially enclosed by the shoe. The object of this cushion or sole is to protect the frog, and other parts of the bottom of the foot which are not protected by the shoe. This sole may be removed for cleaning or other purposes by first prying up the heel of it in the middle, so as to displace the prongs D, which allows it to be removed with facility.

The inventor says: I *claim* the sole C, provided with prongs or metallic projections D and E, or their equivalents, in combination with recesses or rebates, or their equivalents, in or above the shoe, substantially as set forth.

No. 18,940.—Elbridge Wheeler, of Marlborough, Mass.—*Improved Machine for Bending Horse Shoes.*—Patent dated December 22, 1857.—A is the frame-work of this invention; B the bed or table; C is a carriage which slides upon the ways *a a*, in the bed of the machine. In this machine, which is represented as arranged for bending horse shoes D in the form around which the shoe is bent, which is temporarily secured to the carriage C by the lever E, which is pivoted at *b*, and is forced down upon the former by an eccentric *c* upon the end of the hand lever F, the piece of metal to be bent is also secured to the sliding carriage by a lever G, similarly held down by the hand lever H. The carriage is operated by the crank I upon the driving shaft K and the pitman L. M are the bending levers, which are pivoted to the bed at *d* and connected by the strap or bar N at their forward ends. These levers carry the rolls *f*, the peripheries of which are bevelled to correspond to the bevelled edge of the horse shoe. The cams *o* bear upon the rollers *g*, pivoted to the underside of the bending levers; and thus, as the bending proceeds, the operator is enabled to regulate the opening between the rolls *f* to correspond to the form and size of the article being bent.

Claim.—The described machine for bending horse shoes, consisting essentially of the following elements in combination, or their substantial equivalents: The travelling carriage C, the bending levers M, and the regulating cam *o*, operating in the manner substantially as set forth for the purpose specified.

No. 16,691.—Edward Maynard, of Williamsburgh, N. Y.—*Improved Calk for Horse Shoes.*—Patent dated February 24, 1857.—The screw 2 draws the conical body down into the conical hole, wedging the same perfectly tight, and the blow on the calk when in use tends to drive it more tightly into place.

The inventor says: I do not claim a movable screw calk for the shoes of animals.

But I *claim* the conical or tapering body 1 of the calk, fitting a corresponding shaped hole in the shoe, in which it is retained by the screw 2, or its equivalent, substantially as and for the purpose specified.

No. 17,665.—Henry Burden, of Troy, N. Y.—*Improved Machine for Making Horse Shoes.*—Patent dated June 30, 1857.—The rod *r* in trough A^2 is introduced between the feed-rollers D and D^1, and is cut to the proper length by means of the stationary cutter *g* and moveable cutter g^1, fig. 4. With this feeding apparatus is connected a self-acting device for stopping its action when a portion of the rod remains too short to form a perfect shoe, consisting of parts B^2, C^2, catch *u*, and moveable frame D^2, which holds the feeding rolls apart, fig. 2. The rod, when it is fed to the machine, passes between the moveable guides I^2, fig. 1, against the stop O^2, and is held in place by them, and is bent by means of the bending-tongue E. The iron is then subjected to the operation of the swaging dies J^2 and M^4, fig. 3, which, in conjunction with the dies B, press the iron to the required form, and the sides of the shoe are then compressed so that the toe may be wider than said sides by means of the holders I^2, which are actuated by suitable cams operating on guides I^1; the shoe is then creased by creasers *m*, fig. 5, and punched in a similar manner, and is then subjected to the action of a flattener *t*, pressing it against a plate t^4, fig. 3; and when this operation is performed, the pin *s* pushes the shoe off from the projection s^2 and drops it upon an endless chain, to be carried to the store house.

The inventor says: I do not claim the process of passing the shoe between the revolving dies generally, but limit myself to the particular devices by which I have rendered it practical.

First. I *claim* the described feeding apparatus, and in connexion therewith the mode set forth of cutting off the rod; also the self-acting device for stopping the feeders, and the mode of renewing their action at the proper time.

Second. The mode of bending the rod and placing it in its proper position between the swaging dies, as described.

Third. The flange on the upper swaging die, for the uses and purposes specified.

Fourth. The combination of the revolving, creasing, and punching die with the revolving swaging dies, by which both operations are successively and automatically performed.

Fifth. The devices set forth for taking the shoe from the upper and confining it to the lower dies, and finally taking it from the lower dies and conducting it to the flattener.

Sixth. Also the means described for flattening the shoes.

Seventh. The combination and arrangement of machinery by which the several processes described are performed successively by one machine, and without aid from attendants.

I do not mean to limit myself to the precise means for performing the operations set forth, as they evidently admit of several variations; but I claim those devices or their equivalents which shall substantially effect the same purpose.

No. 17,441.—V. N. Mitchell, of Concord, N. C.—*Implement for Paring Horses' Hoofs.*—Patent dated June 2, 1857.—The horse's foot is raised and placed in the recess *d*, so that the bottom of the hoof, represented in dotted lines, will bear against the plate E. The frame C is then depressed by forcing down the treadle G, and the knife D will cut a slice from the hoof, the thickness of the slice corresponding to the distance between the edge of the knife and the plate E, which can be adjusted by means of screws *b*.

The inventor says: I do not claim the machine described, nor any of the portions thereof, in themselves; nor do I limit myself to the use of the precise mechanism described, as other forms thereof may be more advantageous for the working of my improvement. I *claim* the reciprocating frame C, provided with the knife D and plate E, the frame being attached to the upright B, having a recess *d* in its upper end, the whole being arranged specifically as shown and described for the purpose set forth.

No. 16,690.—Joseph G. Martien, of Newark, N. J.—*Improvements in the Manufacture of Iron and Steel.*—Patent dated February 24, 1857.—As the metal comes from the furnace A and flows through one or both of the troughs B and D, the air, steam, or gas issues through the perforations *c* in the troughs. From the troughs the metal passes into crucibles C L.

The inventor says: I do not intend to claim, generally, either the purification of fluid or molten iron, by forcing through, among or in contact with it, air, steam, or other oxydizing or purifying gases, or the employment of any chemical agents for the same purpose.

Nor do I wish to limit myself to any particular construction or arrangement of apparatus for the purifying or converting process, or the use of such chemical agents as have been specified.

But I *claim*, in the purification or conversion of fluid or molten iron, subjecting the molten iron to the action of atmospheric air, steam, or other gaseous body or chemical agents, in any form capable of evolving oxygen or other purifying gas, in such manner as to cause the air, steam, or other solid, liquid, or gaseous body, to impinge upon, penetrate through, or search among the metal while it is flowing, or in a state of transit through a trough or conductor, or other place, substantially as and for the purpose specified.

No. 17,389.—Robert Mushet, of Coleford, England.—*Improvement in the Manufacture of Iron and Steel.*—Patent dated May 26, 1857; patented in England September 22, 1856.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The addition of a triple compound or material of, or containing, iron, carbon, and manganese, to cast iron which has been purified and decarbonized by the action of air whilst in a molten or fluid state, or in any convenient manner, so as to become mixed and combined in the process of manufacture, in order, by the union of these substances, to obtain malleable iron and steel.

No. 16,798.—George W. Holley, of Niagara, N. Y.—*Improvement in Enamelling Cast Iron.*—Patent dated March 10, 1857.—The nature of this improvement consists in providing a core plate, (or core rod for a tubular surface,) corresponding, as nearly as may be, to the surface of the pattern which is to be moulded; in which mould, when prepared, the iron to be coated with any given composition is to be cast. This core plate is to be covered with sand, properly prepared with sour flour or molasses, on the side on which it is to be coated.

Claim.—The process of covering the skeleton or core plate and core rod, in the manner described, with the compound or composition with which it is proposed to coat or cover the iron, and then pouring the melted iron on or around said compound or composition, and melting or softening the same so that it will adhere to the surface of the iron as it becomes cold.

The same process may be used for coating or covering copper, brass, and other metals.

No. 17,561.—A. K. Eaton, of New York, N. Y.—*Improvement in making Cast Iron Malleable.*—Patent dated June 16, 1857.—The castings of white cast iron are packed in iron boxes, as in the well known process for making malleable cast iron, except that oxyd of zinc, or a mixture of oxyd of zinc and oxyd of iron is used instead of the ordinary material. The whole being exposed to a bright red heat in any suitable furnace, the cast iron is rapidly decarbonized at the expense of the oxygen of the oxyd of zinc.

Claim.—The employment of oxyd of zinc in the production of malleable iron castings, in the manner specified, so that the articles, whilst under this treatment, will have continually presented to them a fresh supply of decarbonizing material.

No. 16,419.—John B. Wickersham, of New York, N. Y.—*Improved Method of Fastening the Rails of Iron Fences in the Posts.*—Patent dated January 13, 1857.—The rails which pass through mortises in the single or double corrugated posts *a* are fastened to said posts by means of a wedge *o*, or in the manner represented in the different cross sections in the engraving.

Claim.—As an improvement on letters patent granted to me September 16, 1856, connecting the bars, strips, or rails that pass through mortises in corrugated metallic posts or bars, by the means described, or by any other means substantially the same, to secure said parts at the points of intersection, substantially as specified.

No. 16,679.—Christopher C. Bradley, jr., of Syracuse, N. Y.—*Improvement in Grinding the Inner Surface of Cast Iron Kettles.*—Patent dated February 24, 1857.—Loose pieces of grindstone L are placed inside of the kettle D, and they are revolved in contact with the inside of the kettle by means of fans F, which are attached to the revolving shaft B. By increasing the speed of B, the grindstones will be caused by centrifugal force to rise higher, and thus the stones can be made to grind and polish the whole inside of the kettle from the bottom to the upper edge.

Claim.—The arrangement of the revolving shaft, vertical fans, and the grindstones with respect to the kettle, as described, when the grindstones operate upon successive portions of the kettle by a change of velocity in the shaft, as set forth.

No. 17,628.—William Kelly, of Lyon county, Ky.—*Improvement in the Manufacture of Iron.*—Patent dated June 23, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Blowing the blasts of air, either hot or cold, up and through a mass of liquid iron, the oxygen in the air combining with the carbon in the iron, causing a greatly increased heat and boiling commotion in the fluid mass, and decarbonizing and refining the iron.

No. 18,347.—George P. Miller and Hugh Dougherty, of Lancaster, Pa.—*Improvement in Melting and Refining Iron.*—Patent dated October 6, 1857.—The nature of this invention consists in the use and application of anthracite coke for the purpose of melting and refining and softening iron, and the combining therewith due proportions of anthracite coal in the charging of the cupola for hardening the iron, and thus regulating the temper of the castings by the use of more or less coal as the nature of the casting may require.

The inventors say: We do not claim having discovered the coking of anthracite coal, nor the admixture of such coke with other coals or coke.

But we *claim* adjusting the proper proportions of these fuels for use in melting and refining iron, substantially as set forth, by which we are enabled to use more scrap iron and inferior pig iron than is now known to be used, and to temper the metal in the manner described, with economy of fuels and of time.

No. 18,910.—William Kelly, of Lyon, Ky.—*Improvement in Refining Iron.*—Patent dated December 22, 1857.—The claim and engravings explain the nature of this invention.

Claim.—1st. Conducting the blast down through the liquid iron to near the bottom of the hearth by the tuyere pipe C, substantially as and for the purposes set forth.

2d. Refining and decarbonizing crude iron simultaneously in the hearth of a blast furnace, and in an adjoining chamber having communication therewith, when the blast enters directly into but one of either of the chambers, as and for the purposes set forth.

No. 16,775.—Junius Foster, assignor to John Herbold, George Kuhn, and Junius Foster, of Brooklyn, N. Y.—*Improved Machine for Swaging Iron.*—Patent dated March 3, 1857.—The object of this improvement is to produce perfectly flat and circular fifth wheels of vehicles. The turned-down end of the heated iron is inserted in the hole 4, and then the lever *d* is turned so as to cause the rollers *h i* to press the iron into the proper shape around the pattern *e j*.

Claim.—The adjustable block *f*, and rollers *h* and *i*, set on and moved by the lever *g*, when combined with the pattern *c* and flanch I; the whole constructed and operating substantially as specified.

No. 16,991.—Garret J. Olendorf and Edwin R. Tripp, of Middlefield, and Samuel Harper, of Cooperstown, N. Y.—*Improved Trimming Jack.*—Patent dated April 7, 1857.—By pushing lever C *f* away from lever A, cam *m* on shaft B will release the swinging die D^1, and spring F forces it into the position represented in dotted lines; the bolt or other article to be cut is now inserted, and by forcing together the levers C and A, cam *m* acts upon swinging die D^1, which latter cuts the bolt.

Claim.—The construction of shaft B, in connexion with frame G and lever C, operating the dies as described and set forth for the purposes specified.

No. 17,939.—Stuart Perry, of Newport, N. Y.—*Improved Key.*—Patent dated August 4, 1857.—The key-bits *h* can be made to slide within their respective grooves in the case A by turning the handle C; as the projections *m* and *f* of the cams F D operate within the recesses *g l* of said bits, and as said recesses are made of different lengths, the bits will be operated at different times. By changing the position of the bits, a number of permutations can be formed, each representing a different arrangement of the key-bits and lock-tumblers.

Claim.—A bank or store lock-key, in which the bits have a movement before, during, and after they have arranged the slides or tumblers of the lock which it is to operate upon; so that all trace of the exact point or part of the movement of said key-bits at which such arranging of the sides or tumblers takes place shall be destroyed, and thus prevent any one but the maker of the lock from making a duplicate, substantially as set forth.

No. 18,654.—Thomas K. Webster, of Lawrence, Mass.—*Improved Key for Door-Locks.*—Patent dated November 27, 1857.—The engravings and claim show the nature of this invention.

Claim.—The mode of making the key—that is, with its shank and bit in two parts, applied together, and combined with and containing lever bits *p p*, a cam *k*, slider *l*, and spring *m*, or the equivalents therefor; such lever bits, while the key is being turned back in the lock, being made to actuate or force outward the latch-levers D D applied to the bolt and its case, and combined and operating therewith as specified, the main bolt being constructed substantially as explained.

No. 17,792.—William B. Johns, U. S. A.—*Improved Shot-Cartridge.*—Patent dated July 14, 1857.—The flange A of the base B expands at the moment of discharge, and tightens the cartridge in the base of the piece. The copper disk D is designed to give stiffness to the seat of the shot, and the disk of felt F secures the mouth of the cartridge.

Claim.—The combination of the counter-sunk base-piece B, copper disk D, case C, and felt disk F, as set forth.

No. 17,634.—Hiram Pierce, of Claremont, N. H.—*Improved Machine for Straightening Knife-Blades.*—Patent dated June 23, 1857.—The blade R to be straightened is placed upon die Q, and the die P is forced down upon the blade by means of a drop weight; the die P can adjust itself to the tapering form of the blade by means of the ball and socket joint *g*, by which it is secured to shaft O.

The inventor says: I do not claim the device for raising and dropping the weight, and I do not wish to confine myself to the rendering of the upper die only adjustable, as that may be permanent, and the lower die self-accommodating to the tapering form of the blade, or both dies may be made adjustable.

But I *claim* the employment, in conjunction with a drop weight of self-adjusting dies, in the manner and for the purpose set forth.

No. 17,952.—Anthony Hankey and Francis Stiles, jr., of Leicester, Mass., assignors to Themselves and Frederick S. Taylor, of the same place.—*Improved Machine for Grinding Knives.*—Patent dated August 4, 1857.—The knife B being clamped to the plate C, the plate and the head block E are adjusted by means of screws *i* and *k* to bring the knife into the required position with respect to the grindstone L. The handle I is now worked up and down, while the carriage G is slid past the stone; thus every portion of the face of the cutter is brought in contact with the stone, and the cutter is reduced to a perfect plane by a single traverse of the carriage G on the ways H. When this is effected, the knife is tilted by tilting the head block on plate C, and the knife is again traversed in contact with the stone to form the bevel S.

Claim.—Giving to the knife or other article to be ground or polished a vibratory motion in a tangent to the plane of motion of the stone or wheel or parallel therewith.

No. 16,955.—Conrad Poppenhusen and C. F. E. Simon, of College Point, N. Y., assignors to Conrad Poppenhusen, of the same place.—*Improved Table Knives.*—Patent dated March 31, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventors say: We are aware that German silver knives have been made by fitting the rear end of the German silver blade to a V-shaped groove in the forward end of the German silver balance nut, and then uniting them by solder; and we do not wish to be understood as claiming broadly the union of the blade with the balance nut by either welding or soldering.

But we claim the mode of procedure described, by which we effect the union of the steel blade with the cast balance nut, whether of malleable or ordinary cast iron, by preparing the rear end of the steel blade with cleansed parallel sides, fitting a groove with parallel sides in the cast balance nut, preparing the surfaces with borax, or other equivalent flux, and then welding the same by heat and pressure, as described and for the purpose set forth.

No. 17,908.—ALFRED E. MORGAN, Poughkeepsie, N. Y., assignor to Himself, DAVID TODD, and B. WADDLE, of same place.—*Improved Gate-Latch.*—Patent dated July 28, 1857.—When the gate E is open, and swung towards its post D, the bar F on the gate will raise the nearest bolt B, and will strike against the other, the bolt which was raised by the bar F falling by its own gravity as soon as the bar F has passed it.

The inventor says: I am aware that in Loudon's Encyclopædia of Agriculture (page 502) there is described a gate-fastener, composed of two separate swinging bolts.

I do not claim broadly to be the first inventor of vertically moving bolts or latches. I particularly disclaim the latch now in use on the southwest gate of Lafayette square, Washington, D. C.

I *claim* the arrangement and combination together, within a suitable case A, of a pair of vertically moving locking bolts or bars *b b* with a horizontal thumb-bar C, as and for the purposes described.

No. 16,908.—V. R. DAVID, of Newark, Ill.—*Improved Lock.*—Patent dated March 31, 1857.—When this lock is in a locked state, or the bolt G thrown forward, the projection *e* on the bar E is behind the projection *g* on the bolt; in order to throw back the bolt G, the projection *e* on the bar E must be thrown up, free from the projection *g* on the bolt G. This is effected by placing the key H in the hole D, the bit a^1 of the key passing through the whole in the plate B, the bit fitting in the slots *e e* at either end of the chamber C. The key H is turned a certain distance till the projection *b* on the slide *a* reaches the centre of the prominence *j*, between the two recesses *i i* in the bar E; and the projection *e* on the bar will then be thrown above the projection *g* on the bolt. The bit of the key is then shoved out free from the slots *c c*, and the end of the bit then acts upon the bolt G in the usual manner, so as to throw it back or within the case.

Claim.—The bar E, with projection *e* attached, in combination with the slide *a* fitted within the slotted chamber C; the above parts being arranged and used in connexion with the bolt G, as described, for the purpose set forth.

No. 17,424.—JULIUS M. COOK, of Hinsdale, N. Y.—*Improved Lock.*—Patent dated June 2, 1857.—When the bolt is locked, as represented in fig. 1, the hook *n*, pivoted in the hollow part of said bolt *a*, is in the position represented in fig. 4, where the projection *m* leans against stud *j*, and the bolt cannot be operated when in that position. To unlock the bolt, the operator places the key upon shaft *b*, turning it to the left, stud *p* of wheel *c* turns fly *e* inward, and at the next revolution the wheel *c* is arrested by the stud *p* coming in contact with the end *g*; the wheel *b* is then turned until the notches in the wheels *b* and *c* are brought opposite each other; and by then placing the key on shaft *d*, the hook *n* is turned into the notches of the wheels *b c*, while the stud *j* is released, and the bolt can now be freely operated.

Claim.—The set arranged and operating in connexion with the wheels, fly, and shaft, as described.

No. 17,013.—HENRY RITCHIE, of Newark, N. J., assignor to Himself, SAMUEL C. THOMPSON, and GEORGE W. WESTERFIELD, of Newark, aforesaid.—*Improved Car-Lock.*—Patented April 7, 1857.—When the bolt B is shoved into the casing A, the plates *h* of the jaws D will pass into the notches *c c* of the bolt B, and retain it within the case. In order to release the bolt from the jaws, the key G is turned till its bits move the tumblers *n*, so that the slots *p* will be in line with each other; the lower bit then acts upon the plate F and depresses it, the ledge *m* acting against the projecting inclined plates *i* on the jaws D, and expanding or forcing said jaws outward from each other, the bolt B, when the plates *h* are thrown out from the notches *c*, falling from the case by its own gravity.

The inventor says: I do not claim, separately, the elastic or yielding jaws D D, for they have been previously used.

Neither do I claim, separately, the tumblers *n*, for they are well known.

But I *claim* the combination of the sliding plate F, tumblers *n*, and jaws D D, arranged and operating in connexion with the bolt B for releasing the hasp H, as specified.

No. 17,412.—THOMAS ATTERBURY, of Pittsburg, Pa.—*Improved Door-Lock.*—Patent dated June 2, 1857.—When the lock is unlocked, as represented in figure 2, the key, being inserted in the key-hole and turned in the direction of the arrow, raises the tumbler Q^1 and depresses arm Q, turning the same on pivot *b*; this movement disengages hook *m* from projection *t*, releasing projection *p* from d^1; and on further turning the key, the lock can be locked without further obstacle, and the bolt can be secured by setting the dead-latch F to the position represented in figure 1; the dead-latch F can be operated by means of thumb-piece *g*.

The inventor says: I *claim*, first, the use of the vibrating arm Q Q, arranged and constructed as described, which, whilst it acts as a tumbler to the bolt B, serves, in combination with the follower D, as a means of disconnecting the spindle from the bolt when the door is locked, and connecting them when unlocked, as specified.

Second. I do not claim the use of a dead-latch operating directly on the locking bolt, to prevent it being locked or unlocked by the key, as that device is well known.

But I claim the use of an arm or lever F, which, when pressing upon the tumbler of the lock, prevents its being raised, thus forming a guard which protects the locking bolt from any action of the key, and prevents the locking or unlocking of the bolt, in the manner substantially as explained.

No. 18,169.—LINUS YALE, of Newport, N. Y.—*Improved Padlock.*—Patent dated September 8, 1857.—When the key C is inserted into this lock, as represented in figure 2, it places the joints on the stops 1, 2, 3, 4, 5, on a line with the joint *a*, and allows the part B to be drawn out until stop 5^1 strikes the end of notch F; the staple can now be inserted, and the lock can be closed by pushing part B up against eye a^1.

Claim.—The use of the tongued and grooved sliding joint, operating in concert with the jointed stops, as described.

No. 17,681.—Frank G. Johnson, of Brooklyn, N. Y.—*Improved Permutation Lock.*—Patent dated June 30, 1857.—In the engraving the lock is represented in the locked position; the bolt E is suspended to pin R, and by its own gravity is forced to the locked position. To unlock the bolt the key is inserted, and the part *m* of said key is made to act upon the pins *n* of the tumblers *l*, and said tumblers are arranged in such a manner that the slots *a* are made to coincide; the bolt can now be raised, as latch G can enter the grooves *a*; upon the bolt falling to the locked position, the springs S, acting on pins n^1, disarrange the tumblers so that the bolt cannot be raised.

Claim.—The combination together of the tumblers *l l l l*—using two or more of said tumblers—with the exterior pins *n n n n*, and the pins n^1 n^1 n^1 n^1 with the springs *s s s s*, the bolt E, and locking latch G, substantially as set forth.

No. 17,747.—Marcus P. Norton, of Troy, N. Y.—*Improved Sash-Lock.*—Patent dated July 7, 1857.—This sash-fastener is inserted in the jamb casing in the position represented in the engraving. By pulling the knob rods B the levers O are operated, thereby moving back the sash bolts E; by pulling the upper knob the upper sash can be moved; by pulling the lower knob the lower sash is operated.

The inventor says: I do not claim the arrangement of the window sash lock and fastener at or near the middle of the window frame, and upon the jamb casing, or in any other part of said window frame, for the purpose of controlling the upper sash without interference from the lower sash, or for any other purpose.

Nor do I claim two fastenings upon one plate.

Neither do I claim economy of room, or a cheap action upon both sashes.

But I *claim* making a double window sash lock and fastener with an upper and lower branch A, which converge and unite into one at or near the knobs B B, or upper end.

No. 18,155.—William Patton, of Towanda, Pa.—*Improved Sash-Lock.*—Patent dated September 8, 1857.—The catch C may take into a notch behind a metallic plate or any other suitable fixture on the upper edge of the sash, to prevent it from being raised; and the catch E will swing on its axle as the sash is run up, and yields to the staples as they come in contact with it; but when the sash is let down, its hook will take into the first one of these staples and there hold the sash.

Claim.—In combination with the single axle *e*, the self-locking hook C, and self-acting double hook-fastener E, so arranged as to act independently of each other, and so that they may be shifted on said axle to form a right or left hand catch, as set forth.

No. 16,749.—J. Christian Riethmüller, of Pittsburg, Pa.—*Improvement in Locks.*—Patent dated March 3, 1857.—The nature of this improvement will be understood from the claims and engravings. D is the bolt.

The inventor says: I am aware that tumbler plates with notches similar to those described have been used before in locks, and I therefore disclaim distinctly the use of the same.

But I *claim* the peculiar arrangement of the tumbler plates $t\ t^1$ in the box F, viz: the tumbler plates projecting and receding alternately sidewise, their guiding groves $f\ f^1\ f\ f^1$ in the box F being made accordingly deeper and shallower alternately, and also separating the tumbler plates by a small space; this whole arrangement of the plates *t t* being for the purpose of allowing each spring *h h* to act on its respective tumbler plate freely, without interfering with or disturbing the free play and action of the plates or springs adjoining.

And I further claim the providing of one of the tumbler plates with the tongue *r*, and the recesses $s\ s^1$ in the bolt tumbler E, operating together as described, and for the purpose of securing the bolt tumbler E in its position when the lock is in its locked or unlocked state.

And I further claim the combination of the key and bit plate. I am perfectly aware that bit plates and keys of similar construction have been used before separately, and I therefore do not claim any of these parts when used separately.

But I claim the same, when combined in the manner substantially as described.

No. 16,892.—William Whiting, of Roxbury, Mass., and Henry Pickford, of Boston, Mass.—*Improvement in Locks.*—Patent dated March 24, 1857.—In lieu of the India rubber H, any other suitable elastic substance may be used to hold the slides B in place, or these slides may be held by pressure applied to the top one by spring L, which is secured to the inside of the top plate, or by a wedge or inclined surface, or by a cam; in place of the pins *e*, notches may be made in the end of each slide B.

Claim.—Holding the slides in the exact position to which they are raised by the tumblers, by the pressure of an elastic cushion, or its equivalent, in the manner substantially as set forth.

No. 17,139.—Leger Dies, of Ilion, N. Y.—*Improvement in Locks.*—Patent dated April 28, 1857.—The key can only be inserted and withdrawn while the bolt A is projected, as when locked. When the key is inserted, the part W enters part L of the slot in the key block F, the head 2 of the key acquires its stationary position, the needles *o* standing immediately under the ends of the needles M in the needle block H; so that when this block is let down, the needles *o* of the key will successively enter the needle holes of the block H, and sustaining the needles M at different heights, according to the different lengths of the pins *o* on the key head, will, by means of the variant position of the stops *e* with respect to the length of the body plates X, allow the stops *e* to settle to a level with each other and to a position opposite to the slot *f* in the bolt A; this last movement is made secure by the use of a plate spring N, one end of which presses on a small projection at the upper end of each stop.

Claim.—The combination of the stop-holder G, self-spreading stops *e*, and the spring N, with the tumbler moving the stop-holder and needle block; the arrangement and operation being as described.

Second. The needle block H, as attached to the stop-holder, with its series of needles or pins, operating on the stops as described.

Third. The key block F, constructed as described, and also the needle key, as shown in figures 3 and 4, fitted to its position, and operating as described.

No. 17,245.—Alfred Williams and Edward P. Cummings, of Philadelphia, Pa.—*Improvement in Locks.*—Patent dated May 5, 1857.—The clock enclosed in the compartment L, when wound up, causes disk N to revolve the pin X on rod E, moving in the groove O of the pulley N, the bolt being then locked, as represented in figure 1. When the pin X arrives opposite the outlet P, the springs D draw back the yokes C, which are attached to bolt B, and unlock the lock, as represented in figure 2, the levers E F and H falling into the positions as represented in the engraving.

Claim.—The use of the yoke *c c c*, the levers E F, and the stop-lever H, the whole constructed, arranged, and operated in connexion with the disk N, as set forth.

No. 17,293.—Stuart Perry, of Newport, N. Y.—*Improvement in Locks.*—Patent dated May 12, 1857.—The parts of this lock are represented in the engravings in detached views. Figure 2 represents the bolt of the lock, the projection P of which enters the slots *d* of the fence tumblers I, when said bolt is set in its proper place, and the lower face of the cam-plate R (figure 3) is placed on the top of cylinder *g*, which encloses the key tumblers Q and 4 (figure 1 and figure 8). The key represented in figures 9 and 10 is inserted in the hub K, the projection *t* passing through the groove *r*, and the key bits act upon the projections 5 of the key tumblers and the intermediate plates R. When the lock is unlocked, the several parts are in the positions as represented in figures 1 and 5, the projection P of the bolt being then within the slots *d* of the fence tumblers; to lock the lock, the key handle S, as represented in dotted lines in figure 5, is turned to the right so as to drive the bolt J outward; as soon as the projection P is clear of the notches *d*, the arm H of the slide G comes in contact with the projections *c* of the fence tumblers, they being then in the positions represented in figures 1, 5, and 6. Cam M, in its dotted position (fig. 5), now comes in contact with projection *e* of slide G, driving said slide to the position, figure 4, and arranging the fence tumblers as represented in figure 4, thereby excluding the bolt. To unlock the lock, the cam M, in the dotted position of figure 4, is brought against projection *e*, pushing out slide G, which then releases the fence tumblers I; and by then turning key S (figure 4) to the right, the key tumblers 4 will come to act against the fence tumblers I, so as to arrange them in the position as represented in figure 6, when, by the further motion of the key, the bolt is withdrawn; the operation of the key tumblers 4 upon the fence tumblers I is performed by means of the different positions of the key bits 6, which cause said key tumblers to operate each of the fence tumblers I at such a moment as to bring the slots *d* in line at a certain moment.

Claim.—Operating the key tumblers or slides of locks by such an arrangement of parts within the lock that every time it is worked said tumblers or slides must, in relation to their furrings or guides, be moved by the key stem, or its equivalents, beyond the limits to which the key bits move them, and sufficiently beyond, and with such differing distances among themselves beyond, that the limits of their full movement shall be entirely different from the limits of their partial movements in the same direction by the key bits, thus producing false clues, and effectually destroying all true clues for picking, in the ways described.

No. 17,714.—Ludwig Baier, of Pittsburg, Pa., assignor to Joseph Lippincott and William C. Barr, of the same place.—*Improvement in Locks.*—Patent dated June 30, 1857.—To unlock the bolt B, the follower C is turned by wrench D in the direction as indicated by the arrow in figure 1; the arm *r* will move the box E until it leaves the notch *s*. The arm *g* will not move the bolt until it strikes the side *u* of the opening *p*; by this time the hook *v* has arrived at the top of the tumbler plates *e*; and when their slots *n* are arranged so as to coincide with each other, the hook *v* can enter said slots, and the follower *c* can be moved further, and the bolt B is drawn back by being acted upon by arm *g*. In order to arrange the tumblers *e* so as to admit the hook *v*, the key H is inserted into the lock, and the tumbler box E, together with the tumblers *e*, being moved forward by turning follower C, each of the tumblers *e* will strikes its respective bit *i* of the key H, and cause each one of said tumblers to be arrested in such a manner that all the tumblers come precisely in one range opposite the hook *v*.

The inventors say: I *claim*, 1st. The sliding tumbler box E, carrying the tumblers *e e*, which, by the sliding motion of the box, are brought into contact with the bits of the key, when arranged and constructed substantially as and for the purpose described.

2d. The three-armed "follower" C, when arranged, constructed, and operating on, and in combination with, the tumbler box E, bolt B, and tumblers *e e*, with their slots *n n*, substantially as and for the purpose set forth.

I am aware that bit plates of various shapes are used, and a well known device; but the same have been in all cases simple. I do not claim these; but what I do *claim* is, the key H, when constructed so as to form a double bit plate, and operating on the tumblers in the manner substantially as described.

No. 17,740.—Henry Isham, of New Britain, Conn.—*Improvement in Locks.*—Patent dated July 7, 1857.—A detailed description of this invention would take up too much space to be given here. The principal features thereof will be understood by reference to the claimed engravings.

Claim.—Combining with the mechanism for throwing the bolt, or any equivalent therefor, a mechanism which rotates with the said bolt-throwing mechanism, and which, by such rotation, at the end of the throw of the bolt interposes its periphery to the line of travel of the bolt, or some part of it, and thereby prevents the bolt from being forced back until the bolt-throwing mechanism is brought to the required position for throwing back the bolt, substantially as described.

Also, the combination of the non-cogged sectors and the cogged sectors on the key-bit with the cogs and projections on the tumbler-slides, substantially as described, or any equivalent therefor, whereby the said slides are controlled by the key-bit, as set forth.

And, finally, the mode, substantially as described, of imparting an intermittent motion to the key-bit, and stopping the same while the mechanism which imparts such motion continues to move, by means of the wheel and pinion having their engaging peripheries constructed as described.

No. 17,815.—William Whiting, of Roxbury, Mass., and Henry Pickford, of Boston, Mass.—*Improvement in Locks.*—Patent dated July 14, 1857.—As the key E is entered in the lock, the bits *a* press on the pins *c*, and raise the tumblers A against the action of the springs H. By operating the wrench N, the roller *p* will act upon the slides I, pushing them outward, and withdrawing the hooks *d* from the recesses J; by which motion, also, the catch M, which is pivoted at *p*, is thrown forward in the act of locking the lock, and the end *t* enters the notch of the bolt L, and holds the bolt from being withdrawn.

Claim.—The combination of the slides I with the pawl O, so arranged that whenever the slides are allowed to touch the tumblers, the pawl shall engage the teeth of the tumblers, and hold them stationary.

2d. Operating the slides, the bolt, and the pawl O directly from the wrench shaft, in the manner substantially as set forth.

No. 17,804.—L. F. Munger, of Le Roy, N. Y.—*Improvement in Locks.*—Patent dated July 14, 1857.—When the slots *t* of the wheels V coincide with the line of the tongue *g*, the tumbler S can be raised by the action of key *k*, thus releasing the bolt B, which now can be acted upon by key K. The position of the wheels V is adjusted by turning wheels W, two of which are playing loosely on shaft K, and various combinations between these two sets of wheels can be produced by the action of the eccentric shaft *r*, and by adjusting the positions of pins *e*.

Claim.—The combination of the wheels V with the arbor K, in the manner substantially as described, said wheels being retained in position, and imparting motion to each other, in the manner substantially as set forth.

No. 18,162.—John P. Sherwood, of Fort Edward, N. Y.—*Improvement in Locks.*—Patent dated September 8, 1857.—When the key is

turned in key-hole *z*, it first strikes against one of the legs of the tumbler B, and vibrates the tumbler to such a degree as to throw its teeth *b* clear of the teeth *j* on the bolt; and the instant that this is accomplished, the key strikes against one of the projections *m*, from the inner edge of one of the legs *a* of the bolt, and throws back said bolt; at which moment the key ceases to act upon the tumbler, and allows it to spring back into the normal position, when it will keep the said bolt in its latching position, within reach of the legs *i i* in the knob shank follower *h*, until it is again vibrated by the key.

The inventor says: I *claim* the improvement in locks produced by so shaping and arranging the bolt A and the tumbler B of a lock, that the said tumbler is enabled to retain the bolt within reach of the arms *i i* on the knob shank follower, when it is used as a spring latch bolt, and also retain the said bolt in a position beyond the reach of said arms, when it is thrown outwards by the key into a position to serve as a lock bolt, substantially as set forth

I do not claim the use of a dead-latch operating directly on the locking bolt, to prevent it from being locked or unlocked by the key, as that device is well known.

But I *claim* the combination of the lever shank *n* with the tubular pivot *d* and the tumbler B, in such a manner that it may be made to firmly lock the tumbler in such a position as to protect the bolt from any action of the key, and thereby prevent the locking or unlocking of the bolt, in the manner substantially as set forth.

No. 18,228.—H. W. Covert, of Rochester, N. Y.—*Improvement in Locks.*—Patent dated September 15, 1857.—By operating thumb-screw Z, the cones V V^1 are pressed within the disks D and D^1, which can thus be secured in any desired position, thus affording the means of forming new combinations of the slots on the disks D and D^1.

Claim.—The combination of the disks D D, with the cones, cylinders, or disks V V, in the manner and for the purpose substantially as described.

No. 18,243.—Joseph L. Hall, of Cincinnati, O.—*Improvement in Locks.*—Patent dated September 22, 1857.—This invention relates to the construction and arrangement of the parts of a lock whereby the tumblers are made to serve collectively as a screen between the key-hole and the more interior parts of the lock; to prevent the accidental rebound of the bolt at the instant of locking; and to resist the stress upon the tumbler springs at the period of throwing the bolt.

The inventor says: I *claim*, first, the construction and arrangement of tumblers B B^1 B^2, &c., in the described connexion with the block L, back plate M, the whole serving as a screen or curtain between the hole and the more interior parts.

Second. The described construction and arrangement of bit C *c*, lever D, *d* d^1, and tumblers B B^1 B^2, &c., whereby the bolt is held securely to its locked position until the withdrawal of the key.

Third. The described arrangement and combination of the bit C *c*, dog I, and arm H *h*, for the purpose of tightening the springs in the manner set forth.

No. 17,611.—Andrew Patterson, of Birmingham, Pa., assignor to J. H. Jones, of Pittsburg, Pa.—*Improved Keeper for Locks and Latches.*—Patent dated June 16, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim—The employment, in combination with a blunt or round ended latch bolt in a double faced or reversible lock case, of a keeper, the face of which is curved or made concave, in the manner substantially as described and set forth.

No. 17,150.—Amos Holbrook, of Milford, Massachusetts, and Henry D. Fish, of Hardwick, Massachusetts.—*Improvement in Chronometric Locks.*—Patent dated April 28, 1857.—The operation of this lock is as follows: When the lock is unlocked, as represented in dotted lines, the frame bolt G is first drawn down so as to project the lock bolts to their utmost capacity beyond the edge of the lock plate, thus compressing the unlocking spring F; in this position the clasps H are closed over the end of the jointed bolt G, clasping the latter and bearing against the stud *m*; the release levers E are then pressed down against the ends of the clasps H, and the graduated disks B turned sufficiently round to carry the notches *d* past the bent end of the release levers, so that they shall rest upon the periphery of disk D, the locking of the lock then being completed. The clocks are then wound up and the proper numbers on their disks are set opposite the dials F¹ determining a time in hours when the release levers E shall release the clasps H, and the lock can be unlocked. The lock bolts I are now pressed back to such an extent that their bevelled edges *n* only project beyond the lock case, when the door can be closed, and the bolts I are pressed in the mortises formed in the jamb of the door, and the operation is completed.

The inventors say: We do not claim the employment of two or more clocks to operate chronometric locks.

But we *claim* the confining of the frame bolt G, and the releasing of the same, by means of the jointed portion G *i*, the embracing pawls H H, and release levers E E, operated by said clocks, as set forth.

We also claim the partial setting back of the independent locking spring bolts I I, by means of the spring catch Q, until the closing of the door, as set forth.

No. 16,676.—Calvin Adams, of Oak Hill, New York.—*Improved Keeper for Right and Left Hand Door-Locks.*—Patent dated February 24, 1857.—The keeper E has a bevelled face at F, and can be attached to either side of the door frame. The bolt is blunt at its front end D. Figure 3 represents the position of the parts when applied to a left-handed door.

Claim.—The use of a bevelled keeper, such as described, when employed in connexion with a double-faced lock having a blunt bolt, so that the lock may be used on a right or left hand door, without changing any of its parts, as set forth.

No. 18,372.—Zachariah Walsh, of Newark, New Jersey, assignor to Cornelius Walsh, of same place.—*Improved Machine for Cutting Metal Caps for Nail-heads.*—Patent dated October 6, 1857.—This invention consists in the peculiar means employed for feeding or presenting the metal plates from which the caps or covers are cut and formed to the dies. The object being to economize, in the greatest possible degree, in the amount of stock used for the purpose, and also to facilitate and expedite the operation of the machine, so that the work may be done very expeditiously.

The inventor says: I do not claim, separately, the dies for cutting and forming the covers or caps for the nail-heads, for there is nothing essentially new in their construction or in their mode of operation.

But I *claim*, first, feeding or presenting the plate N¹ to the dies, substantially as shown, or in any equivalent way, so that said plate will be moved vertically between its longitudinal or lateral movements towards the dies for the purpose specified; and this I claim, whether used with the dies, arranged as shown, or otherwise.

Second. The bed U, slide G¹, and griping levers J¹, operated as shown, and constituting the feeding device, in combination with the dies *b* P *c d*, arranged and operated substantially as described.

No. 17,813.—James Tetlow, of Salem, Massachusetts.—*Improved Machine for Cutting Metal.*—Patent dated July 14, 1857.—These cutting blades are intended for cutting bevel edges to metal plates.

The inventor says: I would remark that I do not claim the machine or combination of levers or joints and slides for operating the cutter.

But I *claim* forming the cutter C with an obtuse angle, in such a manner as to give to the surface of the plate, while being cut, a broad, flat bearing D to rest upon, while the other cutter F is cutting through the plate, the obtuse angle of the cutter C being the supplement of the acute angle of the plate when cut.

No. 17,364.—Elias F. Coates, of Mystic Bridge, Connecticut.—*Improved Machine for Cutting and Bending Sheet Metal.*—Patent dated May 26, 1857.—The operation of this machine is as follows: The carriage F, with all its attachments, being run back in the ways *c*, as represented in dotted lines in fig. 2, the sheet of tin is placed upon the bed D, being held thereto by studs *d*. The carriage F is now drawn forward over the bed D, until it comes up to the stops *j*; the sheet to be acted upon is then between the respective faces of the bed and the carriage. The lever P is now pressed down, which brings the platform K upwards, and the blades *s* coming against the corners of the sheet, and forming shears with the blades *k l* of the carriage F, these corners are clipped off, and the wings *b o*, now being struck respectively by their levers M N, are caused to turn over the flanges *a n*, and the sheet is bent up on its opposite edges, as represented in fig. 3.

Claim.—The cutting and bending of sheets of tin or other metal for roofs by one operation, and through a combination of devices, substantially such as described.

No. 16,505.—Elbridge Wheeler, of Feltonville Mass.—*Improvement in Machines for Forging Metal.*—Patent dated January 27, 1857.—The upper roll C runs in stationary boxes, and the lower one D in boxes that are permitted to slide freely up and down in the frame work; X are rollers upon the shaft at the lower roll, immediately beneath which are the eccentrics M, that are secured to the shaft N; this shaft may be turned by means of handle O, so as to force the lower roll up against the upper one.

The guard P is employed to roll a scollop or other peculiar form upon one edge of a piece of iron; it also serves the purpose of keeping the iron straight, and preventing it from bending round as one side is compressed more than the other.

The inventor says: I do not claim the use of rolls revolving in fixed bearings, and having dies therein, for the purpose of forging or forming specific articles.

I *claim* the described combination and arrangement of the rolls C and D, one of them being capable of motion to and from the other, and entirely within the control of the operator, as set forth.

2d. I do not claim an annular guard or ring secured to one roll, and playing in a groove in the other, as this has been used before.

I claim the stationary guard P adapted to grooves in both the upper and under rolls, and operating in the manner and for the purpose substantially as set forth.

3d. I claim prolonging the boxes in which the rolls run for the purpose of straightening the work, as described.

No. 17,589.—E. A. Snead, of Tioga, N. Y.—*Improvement in Bending Sheet Metal Pans.*—Patent dated June 16, 1857.—A metal plate of the required size being placed upon bed *d*, the lever *m* is forced down, causing cam D to press down die F, which, in moving downwards, pushes down bed *d*, and the side pieces *e*, coming in contact with guides *j*, are forced into the position represented in figure 3, striking up the pan, and the superfluous metal at the corners of plate *l* will be compressed and will project out from the body, as represented in figure 4. The ends of the pan are now placed over the blocks N, as represented in the dotted lines; and the treadle *k* being depressed, the levers L are turned on their bearings *s*, and the jaws *t* are forced over the blocks N, and press down snugly the projection *n*, (fig. 4,) against the sides or body of the pan.

Claim.—The two levers L L, operated through the medium of the arms *r r*, which are attached to the sliding-bar I, the lips or jaws *t* of the levers working over the blocks or beds N; the parts being arranged specifically as shown for the purpose set forth.

No. 18,019.—Julius Perry, of Plymouth Hollow, Connecticut.—*Improved Machine for Bending Metal Plates.*—Patent dated August 18, 1857.—The plate, which has been bent to an angular shape, is placed on bed B and drawn through slot *b* between the rollers I F and bed B; and, as the plate is drawn along, the two rollers, owing to their angular position, press the metal towards the angle of the bend, thus bringing the angle to a sharp edge.

Claim.—The two rollers I F and bed B, placed in positions relatively with each other as shown and described, for the purpose specified.

Further: the rollers I F and bed B, in combination with the die or draw plate *a*, arranged as and for the purpose set forth.

No. 18,011.—E. L. Gaylord, of Terrysville, Connecticut.—*Improved Machine for Bending Metal Plates.*—Patent dated August 18, 1857.—The strip of metal P to be bent is placed on bed B^1, and the plate, by turning shaft *c*, is forced underneath the bending die M, which bends the plate angularly. The plate thus bent is then passed under the roller J and by the side of roller N; and these two rollers upset the bent plate, forming the corner to a sharp angle.

The inventor says: I am aware that rollers have been arranged in various ways for rolling metals. I also am aware that dies of various kinds have been used for drawing and bending metal bars and plates.

I therefore do not claim, separately, any of the parts shown and described.

But I *claim* the combination of the reciprocating bed B, forming or bending die M, and rollers J N, arranged so as to operate conjointly, as shown, for the purpose set forth.

No. 18,582.—F. Goodwin, of Astoria, New York.—*Improvement in Fruit-Gatherers.*—Patent dated November 10, 1857.—This implement is used as follows: The operator grasps the pole or staff C and elevates it, placing the frame A underneath the part *g* to be picked. The point passing through the rim *b* and the frame A is so moved that the stem by which the fruit is attached to the limb will be within either of the openings *d*. The operator then suddenly jerks the pole either from or towards him, according to which opening the stem is in, and the fruit will be plucked from the limb and drop into the bag D.

Claim.—The frame A, formed of the elliptical and annular rims *a b* and socket B, the socket having an oblique position relatively with the frame, the outer *a* having the bag D attached, and the rim *b* provided with the projections *c c* and openings *d d*.

No. 17,721.—Edward Borlase, of Bristol, Connecticut.—*Improved Metal-Separator.*—Patent dated July 7, 1857.—The sieves D being supplied with the pulverized ore, a stream of water is forced into cone B through pipe F; and a reciprocating motion being given to the plunger H, said plunger forces the water up through the sieves D, agitating the mass of ore; the metal passing down into pipe G, while the waste water and material pass off through pipe F.

Claim.—The use of conical reservoirs A and B, constructed as described, when arranged in connexion with the sieves D, and the whole operated in the manner specified.

No. 16,481.—Samuel Hall, of New York, N. Y.—*Improvement in Cutting Sheet Metal.*—Patent dated January 27, 1857.—The nature of this improvement in shears consists in making the scores *b b* and *c c* in the stock A B, which the edges of the sheet metal cut, pass into, within, or below the line or plane of the face of each shear blade

P P^1; and increasing them in depth as they extend from the cutters, so as to afford room to vibrate the sheet of metal being cut edgewise when the shears are open or while they are cutting; and providing the stock B opposite the scores with ribs *d* and *e*, to give it strength, when the scores are increased in depth.

Claim.—Making the scores *c c* and *b b* in the stock of the shears for the edges of the sheet metal cut to pass into, within, or below the line or plane of the face of each shear blade or cutter; and increasing them (the scores) in depth as they extend from the cutters, substantially as described for the purposes set forth.

No. 16,337.—J. J. Laubach, Easton, Pa.—*Improvement in Forming Joints for Sheet Metal.*—Patent dated January 6, 1857.—The locked edges of two metal sheets being placed upon bar C, the roller F is moved forward, the edges of it bearing upon the sheets at each side of the lock, thus closing the same, the roller J not pressing upon the lock in consequence of the bar I being allowed to move inwards; when the lock is closed its whole length, the motion of the rack-bar E is reversed; and as the bar moves backward, the roller J bears upon the upper surface of the lock and compresses it.

Claim.—The roller J, attached to the pendent and swinging-bar J, which is connected or jointed to the arm H, substantially as described for the purpose set forth.

No. 16,456.—John Wright, assignor to the "S. Stow Manufacturing Company," of Plantsville, Conn.—*Improved Machine for Bending Sheet Metal.*—Patent dated January 20, 1857.—The sheet of metal *b* is placed in the machine, as represented in fig. 1; and by turning the handle C towards the sheet, the parts will assume positions as represented in fig. 2, plate D turning on its axis and bending the sheet over the edge of C^1.

The inventor says: I disclaim every part of the machine described which is seen in other analogous machines; but I *claim* the plate D, when arranged and employed in the manner and for the purposes substantially as set forth.

No. 16,853.—Elmot Savage, of East Berlin, Conn.—*Improved Machine for Cutting and Bending Sheet Metal.*—Patent dated March 17, 1857.—The nature of this invention is explained by the claim and illustrations.

The inventor says: I do not claim so applying the clamps and cutters to separate frames or a bow and half bow, that the cutters jointly be moved either towards or away from the clamps without any disturbance of the positions of the cutters relatively to one another; but what I do *claim* is, constructing and arranging the frame which carries the clamps with respect to that which carries the cutters, substantially as described—that is, so that while the clamps are being forced together or made to seize a plate of metal, they shall not spread the cutters apart.

I also claim the mode of constructing the compound lever of the bending rollers, and arranging the rollers thereon, the said compound lever being composed of a bent lever and arm, and the rollers being applied to them, respectively, in manner as above explained.

I also claim combining with the clamps their crank-shaft and the bending rollers, the auxiliary crank-shaft, or equivalent means, by which the bending roller M may be rotated, independently of force applied through the clamps, and so that the middle of the metallic plate shall not be subjected to injurious strains by the bending rollers.

No. 18,130.—Courtlandt P. S. Betts, of New York, N. Y.—*Improved Machine for Cutting Figures out of Sheet Metal.*—Patent dated September 8, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The combination of the blade or shear *d* with the stationary blade or bed-shear *b*, made and acting substantially as specified, whereby the said shear or blade *d*, acting against the shear or blade *b*, first perforates and then cuts the sheet of metal or other material; and this I claim, whether the shear or blade *b* be made stationary or adjustable for varying the cutting angle, as specified.

No. 16,804.—Daniel Newton, of Southington, Conn.—*Improved Roller for Bending Sheet Metal.*—Patent dated March 10, 1857.

Claim.—The application to double seaming machines of a roller containing an angular groove, in which the seam runs in the first revolution, substantially as described.

No. 18,918.—Thomas J. Lloyd, of Pottsville, Pa.—*Improved Implement for Cutting Metal Tubes.*—Patent dated December 22, 1857.—This invention consists in having a metal collar A, provided at one end with a flanch *a*, which fits in a recess in a circular stock B, which is fitted loosely on the collar. The opposite end of the collar has a ring C secured upon it by a screw *b*, which passes through the ring and also through the collar, and passes or bears against the tube to be cut, which is fitted within the collar. The stock B is fitted and works between the flanch and ring, and a cutting tool *d* is fitted in a socket *c* attached to the stock. The tube D is cut by rotating the stock on the collar, the cutter being fed to its work by a screw *e* operated by hand.

Claim.—The collar A having the stock B fitted loosely thereon, and secured in proper position by the flanch *a* and ring C, the stock B having a socket *c* attached, in which a cutter *d* and screw *e* are fitted, and the whole arranged as shown for the purpose specified.

No. 18,811.—Samuel Hall, of New York, N. Y.—*Improved Machine for Cutting Metallic Bars.*—Patent dated December 8, 1857.—The nature of this invention consists in affixing a shear blade or blades H to the end of a cylinder C, so as to operate the blades affixed to it to cut bars of iron and other metal, in connexion with stationary shear-blades J and K, arranged in combination with them.

Claim.—The employment of one or more revolving shear-blades, fastened to the end or face of a revolving hollow cylinder, as described, in combination with a stationary shear blade or blades, for the purpose described.

No. 16,631.—**John R. Wendt**, assignor to Himself and **Augustus Rogers**, of Boston, Mass.—*Improvement in Manufacturing Metallic Beads.*—Patent dated February 10, 1857.—A blank B^1 having been severed from a long hollow tube, by means of sawing or filing, it is vertically inserted between two spherical dies A B, as represented in fig. 4. By forcing the dies together, the blank will be compressed in the line of its axis, and each of its two ends swaged down into a spherical bead, in which there will be a hole *a* for the reception of a string.

The inventor says: I do not claim making a piece of metal into a tubular form, nor swaging a piece of metal by dies, when these processes are separately considered; but what I do *claim* is my improved manufacture of hollow beads of metal as made by the operations of reducing the metal to a tubular form, and that of compressing it axially in dies as specified.

No. 17,040.—**Levi L. Hill**, of Hudson, N. Y.—*Improvement in Coating Metals with Silver.*—Patent dated April 14, 1857.—A given quantity of nitrate of silver is dissolved in water, and mixed with a solution of chloride of sodium The resulting precipitate chloride of silver is washed with water until there is left no trace of salt or acid, and then a sufficiency of a strong solution of cyanide of potassium is added to exactly dissolve the chloride of silver. A certain quantity of grape sugar and essence of sassafras is then added, and the article is ready for use.

The inventor says: I do not claim the use of cyanide of silver, for this has been used in the electrotype art, nor the use of the grape sugar or Paris white separately considered.

But I *claim* the combination of cyanide of silver, grape sugar, essence of sassafras, clay, and Paris white, or any of their equivalents, respectively, substantially in the manner and for the purpose described.

No. 18,115.—**Elbridge Wheeler**, of Feltonville, Mass.—*Improved Machine for Forging Metals.*—Patent dated September 1, 1857.—In this machine the forging of the metal is accomplished by two rollers A B; and as the iron is passed between said revolving rollers, a cam U on shaft T operates lever X of the fulcrum W, pitman Z, crank A^1, shaft D, and eccentric C, which latter supports the roller B, and as it revolves permits the bearings of said roller to slide in corresponding grooves in the frame. Thus the iron can be forged into any desired shape by using a suitable pattern cam U.

Claim.—Operating the roll B at stated intervals, by means of the described arrangement of cams and levers, or their equivalents, whereby I am enabled to roll a piece or bar of metal to a given pattern, in the manner substantially as set forth.

No. 17,876.—**George Haseltine**, of Washington, D. C.—*Improved Machine for Punching and Scraping Metals.*—Patent dated July 28, 1857.—The heated metal rod having been inserted within the open die box O of the dies L, rotary motion is given to shaft H, and the dies L close upon the metal by sliding down within their inclined ways S, at the same time that the blade B severs the blank from the rod, and the metal is thus formed into the required shape by dies L; the punching is then performed by the punches *b f*, which are operated by suitable cams, in such a manner that one punch does its work and retires, while the other completes the perforation.

Claim.—The punch *b*, in connexion with the punch *u*, constructed and operated as described.

2d. The movable dies L L, when used in combination with two punches *b u*, for the purpose and in the manner substantially as set forth.

No. 18,782.—**William H. Ward**, of Auburn, N. Y.—*Improved Machine for Moulding Shells.*—Patent dated December 1, 1857.—The claim and engravings explain the nature of this invention.

Claim.—1st. Adjusting the semi-flasks to the pattern, to the moulding bed, and each other, by means of circular V-shaped guides, constructed and arranged as described.

2d. The combination of the V guides, with the ribs g g^1 and the recesses n o^1 in the base of the flask, for adjusting the pouring tube to the gate pattern.

3d. The combination of the adjusting screws *d*, in the base of the pattern, with the adjustable eccentric rod, arranged as described, for adjusting and raising the pattern, so that its centre will coincide with the plane of the moulding plate.

4th. The combination of the core pin and adjustable flange *c* with the core pin holder and adjusting recess, the whole arranged in the manner and for the purpose set forth.

No. 18,617.—**John Wootton**, of Boonton, N. J.—*Improved Horse-Shoe Nail Machine.*—Patent dated November 10, 1857.—The nature of this improvement is explained by the claim and engravings.

Claim.—1st. The employment of the nail-rod itself as a ratchet, constituting part of a ratchet motion by which it is fed longitudinally to the machine, substantially as described, thereby insuring infallibly a proper length of feed, and dispensing with the necessity of gauges to regulate the feed movement.

2d. Giving to the punching apparatus a motion laterally to the nail-rod, in addition to the longitudinal movement of the rod, substantially as described, so as to produce a combined longitudinal and lateral feed motion.

No. 17,523.—**Elhanan W. Scott**, of Lowell, Mass., and **Ammi M. George**, of Nashua, N. H.—*Improved Nail Machine.*—Patent dated June 9, 1857.—Motion being given the driving wheel D, the bevel wheel Y is rotated, imparting to rods G and plate H a reciprocating motion by means of crank-pin B^2; the feed rolls *g* carry the rod, by the intermittent turning motion given them, up to the gauge X, the griping jaws L then seize the rod, and the cutters N sever the nail blank by being moved together by connecting rods P, and the friction rolls i^2 press against the faces of the angular edge of plates T, which causes the pointing rolls R to converge gradually and to point the nail, while the heading tool I performs the operation of heading, and as the arms J are moved backward they are forced apart by spring e, and discharge the nail.

Claim.—Forcing the pointing rolls to revolve and advance at the same time to point the nails or spikes, substantially as specified.

No. 18,457.—Jahaziah S. King, of Raynham, Mass.—*Improved Nail Machine.*—Patent dated October 20, 1857.—This improvement in nail or spike making machinery consists in combining a properly shaped lip E with the after end of the bed-piece H in such a position, in relation to the bed-knife A and the moving knife B, that the point end of a nail will rest upon said lip immediately after it has been severed from the nail-plate, and will be so firmly compressed between said lip and the outer end of the moving knife as to bring it to as sharp a point as is ordinarily given to a wrought nail.

The inventor says: I *claim* pointing a cut nail or spike immediately after it has been severed from the nail plate, by compressing its point between the lip E and a portion of the outer end of the moving knife B, substantially as set forth.

No. 17,273.—John C. Gould, of Boonton, N. J.—*Improved Nail Plate Feeder.*—Patent dated May 12, 1857.—The nail plate is placed within the nose piece u; and rotary motion being given to shaft A, crank i and pitman E impart a reciprocating motion to rod G, which actuates toothed sector F^1, which, meshing in pinion d, gives the alternate turning motion essential to the feeding apparatus of these machines to nose u, at the same time that the toothed sector F^1 is turned on its bearings h, when the nose u is moved to or from the shears b which cut the blank from the nail plate. This reciprocating motion of the nose u is produced by eccentric f^1 and rod v^1, and the feeding of the nail plate itself is done by rod T, the end of which, at each rearward motion of the nose u, comes in contact with the machine, causing arm S to turn on its fulcrum and to push forward the nail plate V, when the shears are in the position for cutting off a new blank.

Claim.—1st. The feed rod V, the forked spring arm S, in combination with the feed rod T, operating as described and for the purpose set forth.

2d. Placing the ratchet cam F^1 on arm Y for allowing it to have a forward and backward motion, also a vibrating motion for the purpose of accommodating itself to the movement of the nose piece, and for revolving the same as described and set forth.

No. 17,778.—William H. Battelle, of New Castle, Pa.—*Improved Nail Plate Holder.*—Patent dated July 14, 1857.—In spreading the jaws of this nail plate holder the pry G is inserted between them, resting against the guide piece F.

Claim.—A nail plate holder, composed of the socket, socket head, and guide, and the jaws held thereto by a ring, substantially in the manner and for the purpose set forth.

No. 19,007.—William H. Van Giesen of Waterbury, Conn., assignor to Himself, S. M. Buckingham, and E. Brown, of Waterbury, Conn.—*Improvement in covering the Heads of Nails.*—Patent dated December 29, 1857.—The blanks, as shown in the engravings, figures 1 and 2, are cut from sheet metal by means of proper dies, and are then swaged in cup or dish form, the points a being bent down at right angles with the central portion of the blank. The blank thus swaged is applied to the head b of the nail B, and the points are swaged inwards, or towards the inner surface or side of the head b; and the points are then swaged and compressed firmly against the inner side of the head b, the points being closed snugly around the head. By this means the blank or plate A is fitted over the head b.

The inventor says: I do not claim the cutting out and bending from the centre outwards of disks of metal for the purpose of making grummets, as in the patent of John Alexander, June 20, 1854. A piece of metal cut in the form necessary for a grummet could by no possibility be made to cover a nail head.

But I *claim* a nail covered in the manner substantially as described.

No. 17,941.—Samuel J. Seely, of New York, N. Y., assignor to John M. Hood, of Brooklyn, N. Y.—*Improved Machine for forging Nails.*—Patent dated August 14, 1857.—The rod to be forged being placed upon the feeder k, the operator pushes the feeder towards the hammers to bring the end of the rod over the anvils. Thus held, the anvil face i, by its rocking motion, is brought against the under face of the rod as represented by full lines in figure 2, and then the other anvil face j is brought against the edge of the rod, as represented by dotted lines. In this way the two anvil faces are in succession brought against the rod to be forged, that it may be struck alternately by the two hammers p and q, at right angles.

The inventor says: I do not wish to be understood as limiting myself to the use of the kind of feeder and cutters above described, as equivalent devices and arrangements may be substituted.

Nor do I wish to be understood as limiting my claim of invention to the described special construction of the anvils and hammers, nor to the described arrangement of the mechanism for imparting the motions, as the same results may be obtained by my invention by the substitution of equivalents.

I *claim* the employment of two anvil faces placed at an angle with each other, and having a rocking motion to bring them alternately in contact with the article to be forged, substantially as described, in combination with the hammers, substantially as and for the purpose described.

No. 18,428.—Cornelius Walsh and Zachariah Walsh, of Newark, New Jersey, assignors to Cornelius Walsh, of same place.—*Improved Machine for Polishing the Heads of Trunk Nails.*—Patent dated October 13, 1857.—This invention consists in the peculiar means employed for feeding and presenting the heads of the nails to the polisher, and also in the peculiar arrangement of the polisher and its connexion with the feeding device, whereby the above parts are made to effect the desired purpose in an expeditious manner.

In operating this machine the tube S is filled with nails, the points being placed first in the tube, as shown in the drawing; motion is given to the shaft H, and a continuous rotary movement is given to the cylinder d by means of the belts b^1 and e^1, which pass around their respective pulleys. The cylinder N is rotated intermittently by means of the crank pulley R; rod G, arm or lever P, and pawl j, are arranged as shown in the drawing, the pawls m m^1 retaining or holding the rachet O during the upper movement of the pawl j, so as to prevent the casual movement of said ratchet.

The inventors say: We *claim* the rotating and vertically reciprocating cylinder d, provided with the polishing substance i, in combination with the intermittently rotating cylinder N, provided with radial tubes n to receive and hold the nails, the above parts being arranged to operate as shown, for the purpose set forth.

We also claim the arrangement of the stop T, relatively to the spout or tube S, cylinder N, and cams G V, so that it shall be caused to rise at proper intervals, and thus feed the nails regularly out of the tube to the cylinder N, substantially as described.

No. 17,502.—Smith Gardner, of New York, New York.—*Improved Machine for making Wrought Nails.*—Patent dated June 9, 1857.—The nail rod is placed and secured within the clamp e of the feeding apparatus, and motion being imparted to the driving shaft m, the hammers x are raised alternately by the cams A B, and fall down to the anvil on the nail rod to be pointed. During the hammering of the nail, the feeding tube and nail rod is turned at each blow, so that each of the hammers x may strike a new side of the nail rod, and thus point the nail to a square. This turning of the feed tube is effected by means of wheel p^3 acting upon a sliding rack p which is connected by means of braces C with the disk b of the feeding tube.

Claim.—1st. The feeding apparatus, constructed substantially in the manner and for the purpose specified.

2d. Projecting the finished nail to the rear of the anvil to be cut off as described.

3d. The eccentric y and spring to hold the nail rod when rapidly brought back to its place.

4th. Vibrating the rod under the two hammers, so as to alternately receive a blow on its different sides as set forth, and by means substantially as described.

5th. The general combination and arrangement of the several parts of the machine for feeding, presenting, swaging, and cutting off the finished nail, by which I make a wrought iron nail of any specified pattern.

No. 17,534.—Samuel H. Whitaker, of Cincinnati, Ohio.—*Improved Nut Machine.*—Patent dated June 9, 1857.—The bar of iron, being properly heated, is fed by hand into the machine; and as the

punch b is moved forward, it punches a hole into said bar without forcing out the core, the bar being forced by the punch against the solid metal of the housing a. On the next advance of the slide F, the plunger L cuts off a piece of the size of the nut, and forces said pieces upon the tapering punch J, which punches the hole from the reversed side of plunger b. The piece, by the further continued motion of the plunger, is now brought between the rolls C, and between the roller M and the inside of the housing a, by which the exterior, which has been swelled out by the punching operation, is reduced to the proper shape. The retreat of the plunger L is followed closely by the return of hollow sleeve K along the mandrel, and the latter forces the complete washer from the mandrel.

The inventor says: I do not claim the employment of two punches entering the nut or washer from opposite sides, as I am aware that such a contrivance is described in the patent of Richard Coles, such punches, however, being parallel sided and arranged in line and operating differently to my taper punch and mandrel.

But I *claim*, first, the employment of a taper punch p, a hollow plunger L, or its equivalent, and a taper pointed mandrel J, combined and arranged to operate substantially as set forth.

Second. The combination of the hollow sleeve K and the plunger and cutter L with the forming rollers C C M, substantially as described, for the purpose of carrying the nut or washer blanks to and from the said roller.

No. 18,259.—Samuel H. Whitaker, of Cincinnati, Ohio.—*Improved Nut Machine.*—Patent dated September 22, 1857.—The nature and object of this invention consists in a provision for making metallic nuts of definite thickness, not varying materially from that of the bar, and so as to save the scrap produced by punching.

The dies N and L are mounted on, and advance and recede together with stock F, which has a longitudinal sliding motion imparted to it by the cam D; the die N is provided with upper and lower flanges or lugs n n, distant from each other the length of the bar; the central aperture of the die N is occupied by a punch b, which has an independent sliding motion imparted to it by the cam P, which acts on the stock p of said punch; the die L is provided with a cutting edge l, which separates the partially formed nut; the counter die K is retracted by a brace of cams G G working in yokes H H, which proceed from the cross-head I, attached to the head of the stock of the counter die; a punch J, being firmly fixed in the frame, occupies the central aperture of the counter die K, the latter sliding to and fro upon the punch.

The inventor says: I *claim* the use of the preparatory punch b and die N, in the described combination with the shearing and finishing die L, punch or mandrel J, and counter die K, whereby a nut of definite thickness is formed by first partially punching the blank while joined to the bar, and confined on every other side, then separating the blank and completing the punching and shaping, the whole being constructed and operating substantially in the manner set forth.

No. 18,499.—Richard H. Cole, of St. Louis, Mo.—*Improved Nut Machines*—Patent dated October 27, 1857.—The nature of this invention will be understood by an examination of the claim and engravings.

Claim.—The inventor says: I *claim* the preliminary shaping of the end of a heated metallic bar, to make it correspond on all sides, save one, with the cross section of the finishing die box, by which the necessity of cutting off, by the punch, of more than one side of the nut to be formed, is prevented, and from which results a very great saving of metal in manufacturing many-sided nuts, at the same time that a considerable saving of power is produced in operating the machine; but this I only claim when the said preliminary shaping of the exterior portion of a nut is accomplished immediately in front of the mouth of a die box, substantially in the manner set forth.

No. 18,892.—J. C. Day, of Jersey City, N. J.—*Improved Nut Machine.*—Patent dated December 22, 1857.—The engravings and claims explain the nature of this invention.

The inventor says: I *claim* the arrangement and use of the cutting die *a*, the compressing dies *g h*, the punches *c d*, and the finishing and discharging die *b*, when constructed in the manner and operated in the order set forth.

I also claim the arrangement of the projecting under side or bottom *f* of the die box, in combination with the feeding standard C, shear-edged die top *e*, and dies *a b*, in such a manner that the nut bar is fed into the machine, the nuts cut therefrom, and finally discharged from the machine without the employment of any other means except the ordinary or otherwise necessary motions of the two dies *a b*, substantially as described.

I also claim the arrangement of the bearing *k k*, with sliding wedges *i i*, which are adjusted by screws *j j*, or their equivalents, for the purpose of accurately adjusting the movements of the toggle levers and links, as described.

I also claim the arrangement and combination of the sectors R S and cam L, in the manner and for the purpose specified.

No. 16,507.—S. H. Whitaker, of Cincinnati, Ohio.—*Improvement in Nut Machines.*—Patent dated January 27, 1857.—Motion being given the shaft J, the bar Q is first moved towards the end of the mandrel I by the cam L, and its end pressed firmly against the end of the bar S, which is consequently clamped and somewhat compressed between the ends of the bar Q and mandrel I. The frame C is then moved towards the driving shaft J by the rod N, and at the same time the shears E E and roller F are partially rotated by the eccentric K and rod M. The shears E E cut off the blank from the bar, and the inner sides of the shears smooth its sides, while the rollers F G smooth the upper and lower edges of the nut. The rod a^1 moves with the frame C and punches the hole through the centre of the nut, the punch forcing the scraps b^1 through the hollow d^1 in the bar Q.

Claim.—The circular shears E E and rollers or dies F G for cutting off the blanks and smoothing their edges, the bar S being grasped or held by the mandrel I and bar Q or any proper device.

I also claim the circular shears E E and rollers or dies F G in combination with the fixed mandrel I, punch or rod a^1, and reciprocating bar Q, the above parts being arranged and operating as shown, for the purpose set forth.

No. 17,197.—Richard H. Cole, of St. Louis, Mo.—*Improvement in Nut Machines.*—Patent dated May 5, 1857.—This is an improvement on a machine patented to the inventor on the 3d June, 1856. The present improvement relates to the employment of a spring M mounted on plate G, which carries the angular punch *d*, for the purpose of quickly bringing back the round punch, both when the cam O allows it to recede after its forward motion for discharging the wad from the angular punch, and also after it punches the hole in the nut in conjunction with the round punch, in order to allow the said round punch to advance and clear the wad from the nut.

Claim.—The application of the spring M to the sliding punch plates, substantially in the manner and for the purposes described.

No. 17,914.—Robert Brayton, of Buffalo, N. Y.—*Improvement in Nut Machines.*—Patent dated August 4, 1857.—By the action of spring P, in combination with the eccentric J, the arm L is moved from L^1 to L, and also reverses the valve in the steam chest as soon as it is released from the spring catch Q; thereby steam is admitted to the upper end of the cylinder, causing the head block B and the dies to descend from A^1 to A, and back to A^1, thereby making a double stroke; at the same time the wrist R, which is secured to the head block, as it descends, turns the arm L down to L^1, when it is caught by spring catch Q. Thus as soon as the arm L is released from the catch Q it turns from L^1 to L, which instantly causes the head block to descend, and the dies to punch and compress the nut into shape; the head block then returns to its former position, and the nut is discharged from the die box.

Claim.—The use of the trigger *s*, spring catch Q, arm L, pin *f*, slide rod V, provided with the spring *e*, notch *v*, protection *g*, and inclined plane *h*, substantially as described, and in relation to and being operated by the foot lever *a* and spring *c*, constructed and arranged in the manner and for the purposes specified.

No. 18,156.—Edward Page and Samuel Hall, of New York, N. Y.—*Improved Machine for Forging Nuts.*—Patent dated September 8, 1857.—The machine being set in motion by turning shaft D, the heated end of an iron bar of suitable size is placed between the guides *i*, when punch I, operated by cam O, comes forward and cuts off a piece to form a nut and forces it on to punch L^2, which perforates it; it is then compressed by punch I, which forces it against the end of hub *a*; the punch I is then withdrawn, and the nut on punch L^3 is alternately hammered by hammers *e*, the pins *d* of which extend into the cam grooves *b* and are compressed by punches L^2 and I. The punch L^2 is then withdrawn by cam K^1, and the nut drops through hole R, and falls out of the machine.

Claim.—The hammering apparatus, as described, in combination with the punch I and the punch L^2, arranged and operating in the manner set forth, for making nuts, substantially as described.

No 17,734.—Almon B. Glover, of Birmingham, Connecticut.—*Improved Machine for Tapping Nuts.*—Patent dated July 7, 1857.—A rotating reciprocating motion being given to the arbors B^1 and G, the tap C is forced against the blank in the tap box S^1 by means of collar r acting against the face t of bar H, and the thread is cut in the blank. The blanks are fed to the tap box by means of slide l^1, which is operated back and forth by means of tappet F^1 acting alternately against the arms g^1 g^1.

Claim.—First. Giving the arbor B^1, simultaneously with its reciprocating rotary motion, a longitudinal movement back and forth by means of the collar r placed on the shaft G, and provided with the spiral groove g, and inclined or oblique end S, and the bar H, which is placed loosely on the shaft G, and connected with said collar, as described.

Second. The employment or use of the spring e, placed within the sleeve d, and the spring h^1 placed on the shaft N, and connected with the arms $g\,{}^1g^1$, for the purpose of allowing the arbor B^1 and arms g g an independent movement, and thereby preventing any injury which might otherwise be produced by any irregularity in the feeding of the blanks within the tap box.

No. 16,495.—David Pollock, of Lancaster, Pa.—*Improved Ore Cleaner.*—Patent dated January 27, 1857.—The nature of this invention consists in the construction of an open cylinder, with adjustable bars A to regulate the spaces between; a perforated guard D to relieve the cylinder; a hollow perforated shaft G, for the purpose of supplying and distributing water to any or all parts of the cylinder; an adjustable travelling roller N; and lifters K for crushing and stirring up the ore.

The inventor says: I am aware that machines for washing, cleaning, or crushing ore or other material have been made with parallel hollow cylinders, either perforated or closed, provided with pins, projections, or close ledges.

I am also aware of conical hollow cylinders, close and perforated, provided with projections, pins, or shovels, on the inner side of cylinders.

I am also aware of cylinders, or rollers working single or double, one beside the other, provided with pins, projections, segments, or close ledges on the outer circumference.

I am also aware of two or more cylinders of wove wire or perforated, working one within the other, hung and revolved by the same shaft, for screening and cleaning ore and other material.

I am also aware of cylinders composed of parallel bars or rods made permanently fixed and stationary. These I do not claim.

This machine is a washer and screener, and has a double operation, that of washing and screening at the same time. The ore is thrown into the one end of the cylinder and passes out at the other in a clean state, notwithstanding the cylinder rests in a horizontal position, or any required inclination.

I *claim* the cylinder with adjustable bars A, the perforated guard D, the hollow perforated shaft G, the perforated ledges I, the arms J and lifters K, the adjustable travelling roller N, all constructed, arranged, and operated as described, for the purpose of crushing, washing, screening, and cleaning ores or other material, either wet or dry.

No. 17,374.—Samuel F. Hodge, of Detroit, Michigan.—*Improvement in Ore Crushing Machines.*—Patent dated May 26, 1857.—By turning crank d, the clamping rollers A B will take hold of rod C, raising said rod as the rollers are turned. As soon as the flat side of roller B comes opposite the rod C, said rod is released and descends with great power by reason of the weight attached to said rod.

Claim.—The alternate lifting and dropping of a stamper hammer, or any weight, by means of a combination of a vertical rod with two clamping rollers, the periphery of one of which is not a complete circle.

No. 18,038.—Thomas J. Chubb, of New York, N. Y.—*Improvement in Separating Ore.*—Patent dated August 25, 1857.—The material to be acted upon is fed into the machine by means of a hopper, and drops on to shelf m, whence it is swept off by means of the scrapers l G, and drops upon the screens S, upon which it is spread and agitated by a blast of air passing upwards through the trunk of the machine, and the particles are separated in layers according to their specific gravity; the heavier substances will be retained in the chambers a b, while the lighter particles are caused to float uppermost, and are acted upon by scrapers l G, and escape through spouts g.

The inventor says: I do not claim the broad process of agitating substances in a receptacle, for the purpose of causing the heaviest to settle to the bottom thereof, irrespective of the means specified and described.

Nor do I claim separating substances of different specific gravity by a current of air applied on the old and well known winnowing process.

Neither do I confine my improvement to any specific arrangement of mechanism.

But I *claim* effecting a separation of a thin layer of finely pulverized ore into layers or strata of different specific gravity upon a perforated bed, or its equivalent, by means of applying light minute puffs of air up through the interstices of the said bed, and through a thin layer of ore evenly spread, and resting thereon as described, for the purpose of gently agitating the said layer of ore, and floating the lightest substances therein to the top thereof, and allowing the heaviest substances therein to gravitate to the bottom of the said layer on the said bed.

No. 18,085.—Thomas J. Chubb, of New York, N. Y.—*Improved Ore Separator.*—Patent dated September 1, 1857.—The material, having been properly screened to the desired size, is fed into hopper Q, and received on the upper part of the inclined perforated table A. The action of the bellows L, whose top plate J rises and falls at a rapid speed, causes the material on screen A to rise and fall at the same rate, rising always in a line perpendicular to the face of plate A, but falling vertically under the influence of gravitation, and consequently passing from the higher to the lower end of the inclined bed A. By this operation the heavier particles find their way in the channels C towards the main channel D, while the lighter particles pass off through channels F into side channels *b*.

The inventor says: I do not claim the separation of substances of different specific gravities, by submitting them to the action of a blast of air through a screen.

But I *claim*, 1st. The employment, in combination with an inclined perforated table or bed, and a bellows operating as specified, of a number of channels, applied and arranged substantially as described, relatively to the bed and to each other, to convey away the separated substances in different directions, as set forth.

2d. The division of a bellows, applied and operating in connexion with a perforated bed, for the separation of articles of different specific gravity into numerous chambers or compartments, each having its separate valve or valves, and constituting in itself a complete bellows, for the purpose specified.

No. 18,388.—Thomas J. Chubb, of New York, N. Y.—*Improved Ore Separator*.—Patent dated October 13, 1857.—The nature of this improvement consists in the arrangement of thin flat strips of brass, or other material, so bent or curved edgewise that, when fastened a little distance from each other, they form an open net-work; the upper edges of the strips form a curved inclined table or bed longitudinally, and a flat or a straight horizontal line in the transverse section. Also, in the arrangement of the divided or sectional bellows below the perforated bed, and operated by a series of levers and cranks or arms on a rocking shaft made adjustable. Also, the arrangement of a chain made of cut or punched or punched and bent links, fastened to the scrapers in such a manner as to form an endless chain of scrapers, holding the edges of each scraper always in an upright position when separating or scraping.

The inventor says: I do not claim separating substances of different specific gravity by submitting them to the action of a blast of air through a screen.

But I *claim*, 1st. The arrangement of a series of strips of wood or metal, forming a convex surface on top longitudinally, and horizontal in a transverse direction, employed as a support for a perforated table or bed of wire cloth, or its equivalent.

2d. The arrangement of a sectional bellows and the mechanism for operating the same below the framing, and the perforated table or bed.

3d. The employment of a chain made of angular links riveted to strips, and connected together by pins, forming an endless chain of scrapers, in combination with a perforated table or bed, for the purpose set forth.

No. 18,672.—William Oland Browne, of New York, N. Y.—*Improved Ore Separator*.—Patent dated November 24, 1857.—The operation of this machine is, that the material is fed from the hopper O, through the centre apertures *n*, on to the sieve cloth *s*, where it is constantly irritated by the rake teeth, and the lighter parts forced to the surface by the action of the blast from the bellows through the sieve cloth, and then scraped by the scrapers over the periphery of the sieve frame into the discharge box, and, by the action of an arm attached to and revolving with the frame *m*, is carried round to the discharge outlet P, the scrapers being adjusted at such an angle as will create a proper centrifugal action in proportion to the feed and speed of the machine. The same effect is produced by feeding the material into a solid tub without a blast of air, instead of the sieve, but in less quantity

The inventor says: I do not claim the use of air for the purpose specified, either forced in continuously or in vibrating strokes, as I am aware that such methods have been used.

But I *claim*, 1st. The arrangement of a rake with scrapers alternating and revolving over a body of ore upon a sieve, as described.

2d. The arrangement of the tub B with the bellows below the sieve, in relation to each other, for the purposes as set forth.

No. 17,385.—Pierre Prosper Martin, of Paris, France.—*Improved Ore Washer*.—Patent dated May 26, 1857. Patented in France May 13, 1856.—The material to be operated upon passes from hopper K into the cylinder A; and rotary motion being imparted to agitator B, the water and solid bodies, to the exclusion of the auriferous particles, are caused to pass down from one compartment to the other, the water being discharged through orifice S, while the auriferous particles are collected in the boxes *d*.

The inventor says: I do not claim any one of the component parts taken separately.

I *claim* the general arrangement of the apparatus as described and represented.

No. 18,406.—Joseph Paull, of Clifton, Mich.—*Improved Ore Washer*.—Patent dated October 13, 1857.—This invention consists in a peculiar arrangement of, and manner of giving motion to, a suspended basin, to which the ore or mineral is supplied, and which is immersed in water, by which the ore or mineral is washed clean. The ore or mineral matter to be washed is fed continuously to the hopper, together with a stream of water by the spout K, and the tub B is kept filled with water to overflowing. The revolving movements of the basin in the water cause the ore or mineral matter to be violently agitated and undergo a constant transposition in the basin, so that the earthy matter is quickly separated from the ore, which, on account of its being far more weighty than the earthy matter, is retained in the basin C, while the dirt is washed out into the tub B.

The inventor *claims* the basin C, hopper E, the conducting tube F, and central shaft G, all combined as described, and hung on a universal joint, and operated by a crank, substantially as set forth.

No. 18,789.—Joseph A. Bertola, of New York, N. Y., assignor to Himself and John Stagg, of New York, N. Y.—*Treatment of Ores of Gold and Silver.*—Patent dated December 1, 1857.—This invention or discovery is for an improvement in treating ores of precious metals preparatory to amalgamation, its object being to economize the operation by preventing loss of quicksilver, as well as to secure a large product of gold and silver.

The principle of this invention lies chiefly in submitting such ores to a treatment of pyroligneous, acetic, or other similar vegetable acid, which treatment produces certain effects upon the sulphurets of gold, whereby the metallic gold, being liberated, may thus be easily amalgamated with quicksilver.

Claim.—The use of pyroligneous, or other vegetable acids having similar chemical action, in treating gold or silver ores or "tailings" preparatory to amalgamation, substantially as described.

No. 17,336.—Alfred Monnier, of Camden, N. J.—*Improved Apparatus for Reducing Zinc Ores.*—Patent dated May 19, 1857.—A sufficient charge of coal being entered through F into the furnace A, it is ignited, and by the action of a cold blast through tuyere E, a large amount of carbonic acid is generated. A mixture of zinc ore, coal, and flux is then introduced through L into furnace H, which is exposed to a hot blast through K. The carbonic acid, passing from furnace A through pipes G G^1 and G, burns with the hot air, and causes the flux to unite with the earthy matter of the ore; while the zinc is oxydized, and the oxyd of zinc is immediately afterward reduced, in consequence of the excess of carbon and carbonic acid present; and the metallic zinc vapors escape at M, and are condensed in the chamber N.

Claim.—The combination of the gas generator and the reducing furnace H, arranged and operating as described.

No. 18,043.—Thaddeus Fowler, of Waterbury, Connecticut.—*Improved Pin-sticking Machine.*—Patent dated August 25, 1857.—By revolving the hopper B in the direction of the arrow, the ledges *d* will carry up the pins and allow them to fall on to the inclined plane *c*, down which they will slide until their heads are caught by the flanges of the flanged cylinder *b*, which, by its revolution, will carry up the heads, as represented in fig. 2, until the points fall upon the inclined plane *c*, when the pins will drop into the rack *a* until the rack on that link is completely filled. By operating lever J each succeeding link is thus brought under the inclined plane; *c* is filled with pins, which afterwards, as they arrive below the crimped paper *l*, are forced through said paper in their order as they are held by the racks *a*.

Claim.—1st. The endless chain, with its racks, in combination with the flanged cylinder, (whether with or without the revolving hopper,) when constructed, arranged, and made to produce the result substantially as described.

2d. The combination of the endless chain with the revolving hopper, when the whole is constructed and combined substantially as described.

No. 18,831.—Thaddeus Fowler, of Waterbury, Connecticut, assignor to the American Pin Company, of Waterbury, Connecticut.—*Improved Machine for Sticking Pins on Paper.*—Patent dated December 8, 1857.—This improvement consists in the method of crimping and clamping the paper, (sufficient for a whole paper of pins,) the manner of passing the pins through a slotted form, and the mode of inserting them into crimped paper (while it is clamped in the crimper) by the sliding form, thus sticking a whole paper, fourteen rows, or any other number, at one operation of the machine. An examination of the engravings and claim will give a further idea of the nature of this invention.

The inventor says: I *claim* the combination of the plate or form A with the slotted form C, when constructed and made to deposit the pins substantially as described.

I also claim the combination of the sliding frame E with the slotted form C when constructed and used as described.

No. 18,116.—Elizur Wright, of Boston, Mass.—*Improvement in Pipe Coupling.*—Patent dated September 1, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The use of a compressible packing ring *e* inserted in a groove around the pipe on each side of the joint, in combination with screw-threaded or flanged and bolted couplings, and a thimble *f* for holding the packing ring in the grooves, so as to form a water-tight joint and resist separation, by the packing ring serving as a dowel.

No. 16,663.—Caleb C. Walworth, of Boston, Mass.—*Improve Machine for Fitting Gas Pipe.*—Patent dated February 17, 1857.—This coupling governs the extent of the advance of the cutting tool *b*, and reverses its direction of rotation; figure 1 represents the coupling fully locked, so as to give the cutting tool the greatest amount of traverse; figure 2, a less amount; figure 3 shows the coupling at the point of unlocking, and figure 4 in the position where the direction of rotation of the driving part *d* of the coupling is changed to that of arrow *b d*; figure 5 shows part *d* of the coupling rotating in the direction of arrow *b d*, with its long face in contact with the long face of the part *e*.

Claim.—The coupling constructed with long, short, and inclined faces, substantially as described, and operating for the purposes set forth.

No. 17,482.—Charles Bigelow, of Hastings, Minn.—*Improved Machine for Grooving Stove Pipe.*—Patent dated June 9, 1857.—The jointed pipe being placed upon bar B, the roller D is then passed over the seam of the pipe by operating rack bar C, the groove *r* of the roller D passing over the joint and closing said joint; and when the roller D has reached the extent of movement, the end of bar *k* strikes against ledge *u*, and lever F will be actuated, and the yoke E moved so as to shift the position of roller D, and the flat surface *s* of roller D will now come to bear on the seam of the pipe; and as the motion of rack bar C is reversed, the joint is closed effectually. When the roller D reaches the extent of its backward movement, projection S^* on bar C strikes lever F, and pin *d* will be depressed and withdrawn from bar B, said bar being thrown outward by spring t^*, so that the finished pipe can be removed therefrom.

Claim.—The roller D, having its periphery or face formed of a grooved or concave surface and a flat surface, the roller being placed within a reciprocating bar C, and within a yoke E, arranged and actuated by the lever F and ledges *u u*, as shown, whereby the roller is shifted or moved automatically at the ends of its strokes or movements, and made to groove and close the joints or seams of the pipes at one operation. Further, the bar B, when jointed to the upright A, and secured to the projection *c* by the pin *d*, as shown and used in connexion with the lever *f* and spring *t*, as described, so that said bar may be thrown out automatically from the projection *c*, for the purpose of allowing the finished pipe to be removed readily therefrom, and another placed thereon.

No. 17,393.—M. C. Root, of Toledo, O.—*Improvement in Machines for Making Stove Pipe.*—Patent dated May 26, 1857.—The metal plate O being grasped by the operator, and one edge thereof being inserted in the groove *l*, motion is given to the rollers C D, and the plate O is bent as shown in figure 3. The plate O is now placed between rollers D E, and roller E is brought in contact with the plate O, so that, as the rollers D E are turned, the plate O will be bent in a circular form, as represented in dotted lines. The bent edges are then locked together, the joint is placed in the groove *m*, and the seam is closed by the action of cylinders C D, the pressure upon the whole of the seam not being simultaneous, by reason of the slight spiral form of the groove *m*. When the seam is closed, the pipe is moved to the end of roller E, and is beaded by the action of bead a^*, concave b^*, the plates d^* and e^* serving to contract the end of the pipe, so that it can be inserted into the adjoining pipe.

Claim.—The arrangement and combination together of the edging, grooving, forming, swaging, expanding, and contracting rollers C D, E J, *a b*, *c d*, as described. Also, giving a spiral form to the groove *m* of roller D, as set forth.

No. 16,967.—Richard H. Cole, of St. Louis, Missouri.—*Improved Machine for Making Rivets.*—Patent dated April 7, 1857.—The heated end of a rod is laid into the recess in one of the die box sections d^2, fig. 1, on the wheels B and B^1, and is pressed forward until its end bears against the gauge plate *b*; and then the action of one of the cams *c* imparts such an amount of motion to the wheels B and B^1, as will carry down and match the said die box sections; and just before said sections come opposite each other, one of the cams on wheel A strikes against the journal box G, and thereby forces inwards the wheel B, and brings the inner die box section on this wheel in close contact with the corresponding section on the opposite wheel; and the next instant one of the cams *j* carries forward the carriage P, and, by so doing, simultaneously throws upward the curved gauge plate *b* and the cutting plate *e*; the elevation of the gauge plate *b* gives free play to the header *a*, and the elevation of the cutting plate *e* cuts off the portion of the heated rod embraced within the die-box; the long actuating surface of the said cam *j* holds the lower portion of the cutting plate over the mouth of the die-box, fig. 2, where it is supported by the block N; whilst the header *a* is driven forward, forms the head on the rivet, and recedes again; and then the retrograde movement of the carriage P throws downward the gauge plate *b* and cutting plate *e*; and simultaneously with said movement the wheels B B^1 are again moved forward to discharge the finished rivet, and to carry the end of another heated rod into the machine to be operated upon.

Claim.—First. Forming a successive series of die-boxes of a double series of sections *d d*, which are combined with the parallel peripheries of two equal-sized intermittingly rotating wheels B B^1, when the arrangement of the bearings of one or both of said wheels is such as to allow of a sufficient amount of lateral play thereof to enable a pair of said sections to be firmly pressed against each other at the termination of each intermittently rotary movement of said wheels, substantially as set forth.

Second. Combining the curved gauge plate *b* and the cutting plate *e* with each other, and also with the cam wheels B B^1, substantially in the manner and for the purpose set forth.

Also, the combination of the cam wheels B B^1 with the gauge plate *b*, the cutting plate *e*, and the header *a*, substantially in the manner and for the purpose set forth.

No. 18,738.—John Griffin, of Phœnixville, Pa.—*Improved Pile for Rolling Beams.*—Patent dated December 1, 1857.—The inventor, in describing his improvement, says: My improvement consists in forming the pile of two flat pieces or bars of double the alternate width of the upper and lower flange. These bars are first rolled out with a groove in them, as shown in the engravings, of about three-quarters of an inch deep and two a half inches wide, for a seven-inch girder, for example. I then place a series of two or more bars of iron one on top of each other, as shown at *c* in the engraving. I then place the series *c* in the lower grooves *e* e^1, to retain *c* in position; and then I place the groove *d* d^1 in the upper piece A on top of the pile *c*, and place a wedge in the groove *d* d^1, in like manner as before.

Claim.—The manufacture of wrought iron I or T girders and bars, by forming the pile of grooved pieces, in combination with the intermediate webbing, arranged and combined in the manner substantially as described.

No. 18,906.—Asa Johnson, of Cairo, N. Y.—*Improved Machine for Rolling Cornice.*—Patent dated December 22, 1857.—The claim and engravings explain the nature of this invention.

Claim.—The arrangement of the series of rollers I^a, J^a, and K^a, guide *n*, and rollers *h* and h^1, and die n^1, for the purpose of forming sheet metal into cornice and gutters for buildings, while hot, and passing it through the machine in boiling oil, as described and for the purposes set forth.

No. 18,674.—John Bryan, of Covington, Ky.—*Application of Hot Water to Journals of Rolling Mills.*—Patent dated November 24, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I would state that I am aware that cold water has been used as a lubricator for journals; and although I do not know that hot water has ever been used for this purpose, namely, lubricating, yet I make no claim to it as such in this application.

But I *claim* equalizing the temperature of rollers and their journals that are used in rolling hot iron or other heated work by means of hot water applied to said journals, for the purpose of making the fibre of the metal of which the rolls and journals are made more uniform at their point of junction, and thus lessening the liability of their breaking or separating at that point, as described.

No. 18,962.—Leopold Eidlitz, of New York, N. Y.—*Improvement in Burglar-Proof Safes.*—Patent dated December 29, 1857.—The inventor, in describing the mode of forming his invention, says: I first take a sheet *b* of boiler iron, and bend it into a series of parallel elevations and depressions of substantially the shape shown in the engravings. When thus shaped, I combine with one side of the said sheet of boiler iron a series of parallel wrought iron ribs *c c*, which pass transversely across the ridges of said sheet at short intervals, and which are combined with said ridges by means of rivets *d d*. The sheet *b*, when thus prepared, is placed in a mould in such a position that its ribbed surface will be opposite to, and at a proper distance from, the inner surface of a chill plate of suitable thickness, so that when the melted iron is poured into said mould, it will embrace the series of ribs *c c*, and solidly fill up the series of depressions between said ribs and the inner surface of the sheet *b*.

Claim.—Forming an improved burglar-proof plate (or its equivalent) by the union of an outwardly chilled hardened layer of molten iron with the ribbed surface of a zigzag sheet of iron, substantially as set forth.

No. 16,464.—John Broughton, of Chicago, Ill.—*Improved Sash-Fastener.*—Patent dated January 27, 1857.—On turning handle *c* from the position shown in dotted lines to the one shown in full lines, the circular rib *a* enters the socket D on the upper sash, bearing against spring E, which spring presses the sash B close up against sash B^1, so as to form a tight joint.

Claim.—The employment of a spring E on the inner surface of the curtain *h* of the socket D, in the manner and for the purpose set forth.

No. 16,595.—William W. Kellogg, of Lynn, Mass.—*Improved Sash-Fastener.*—Patent dated February 10, 1857.—The hasp G, in combination with the holes in cleat E and similar holes in sash C, serves to confine the sashes B and C at various heights, and at the same time.

Claim.—The use of the hasp G constructed as described, and operating in connexion with the perforated cleat E and upper sash C, in the manner and for the purpose set forth.

No. 16,671.—Thomas Floyd, assignor to Himself and G. H. Merklein, of Chambersburg, Pa.—*Improved Sash-Fastener.*—Patent dated February 17, 1857.—It will be seen that, in the position of catch D, represented in the engravings, the sash B will be prevented from coming down by the point *b* slightly catching into the sash. By depressing lever E, so as to clear the sash of the two catch-points *b* b^1, the sash will be free to be lifted or lowered; by still further depressing lever E, the point b^1 will catch into the sash, and the latter will be prevented from being raised.

The inventor says: I do not confine myself to the application of the sash-fastener, as shown, as I may find it convenient to let it into the frame, causing it to operate against the edge of the sash style; to do so it will only be necessary to make the handle E at right angles with catch D, in which position it will work equally well against the edge of the style, and be found as convenient as at present applied.

I claim the triangular or catch-lever D and thumb-lever E, in combination with the cylinder F, the follower H, with cross-piece I attached, and spring G, as described, and for the purposes set forth.

No. 17,910.—F. Tarbell, of Boston, Mass., assignor to Himself and D. C. Bicknell, of the same place.—*Improved Sash-Fastener.*—Patent dated July 28, 1857.—As the plate B is moved upwards by taking hold of the thumb-piece *d*, the bolt C is drawn inwards by pin *g* of the bolt moving in the oblique slot *f*, and the sash is released, while, by pressing down the thumb-piece *d*, the sash is fastened.

Claim.—A sash-fastener made as described.

No. 16,695.—Archibald Robbins, Alanson Sherman, and Lawson R. Bigelow, of Watkins, N. Y.—*Improved Saw-Filer.*—Patent dated February 24, 1857.—The arc J is movable upon thumb-screw K. The arc having been set so as to bring the direction of the file at the right angle across the saw D, the socket-screw *b* is then tightened, and the file *e* is then operated by means of handle R. Having filed the teeth upon one side, the standard M is placed in the opposite socket *b*, and turned to the same relative angle that it before had.

Claim.—The combination and arrangement of the sliding carriage F, the index-wheel H, arc adjuster J, and guide-frame M, operating in the manner and for the purpose set forth.

No. 18,224.—Jasper J. Near, of Oneida, New York, assignor to Eli Near and Levi Vandusen, of Madison county, New York.—*Improved Saw-Filer.*—Patent dated September 15, 1857.—By removing one of the pins M, and swinging the file L round on the other pin M, the saw *z* can be inserted between the jaws A, which are then drawn together by means of screw *c;* by then inserting again pin M, and by adjusting nuts P to make the springs N press file L against the saw *z*, the file may be traversed by vibrating levers E.

Claim.—A clamp to gripe the saw, substantially as described, and carrying hinged vibrating arms provided with springs for holding and operating the file, substantially in the manner described.

No. 16,521.—A. M. Beardsley, of Constantine, Michigan.—*Improvement in Filing Saws.*—Patent dated February 3, 1857.—The file H is placed in an inclined position corresponding to the inclination of the upper side of the saw teeth, and the other file I is placed horizontally so as to correspond to the under side of the saw teeth. By this means both edges of the teeth may be filed by merely operating the bed E to which the files are attached, and raising or lowering the guides so that each file may act upon its proper side of the teeth.

Claim.—The two files H I arranged as shown, and attached to the reciprocating bed plate E, which works between guides on a movable or adjustable plate B; the bed plate E being operated by the lever F, or its equivalent, and the plate B by the lever J, substantially as shown for the purpose specified.

No. 18,684.—Jacob Erdle, of West Bloomfield, New York.—*Improved Machine for Filing Saws.*—Patent dated November 24, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I *claim*, 1st. The two adjustable or elastic bars G *i* attached one to the permanent bar E and the other to the bar *f* of the clamp, and arranged as shown, whereby the movement of the saw may be fed to the file in a horizontal or curved direction, corresponding to the form of its cutting edge, or to the line of its teeth, as described.

2d. I claim placing the file-bar O within the frame N, pivoted or hung as described, so that the position of the file may be changed relatively with the saw, as described.

3d. I claim the arrangement of the lever *v*, shaft M, pawls K L, wheel J, provided with ratchet teeth *o p*, as shown, and the pinion *n* and rack *m*, whereby the saw is fed to the file in either direction, as described.

No. 17,522.—Gotlob C. Schneider, of Washington, D. C.—*Improved Hob for Cutting Screw-Chasers.*—Patent dated June 9, 1857.—This hob is formed on its circumference with a number of parallel cutting edges *a*, which are in planes at right angles to the axis of the cylinder, instead of having the cutting edges arranged helically around the cylinder. In cutting screw-chasers with this improved tool, it is secured in a lathe; and as it is caused to revolve, the chaser to be formed is held against the teeth *a* in an oblique position; and as this position can be changed in different chasers, it follows that screw-chasers having various inclinations can be cut with the same hob.

Claim.—The hob for cutting the threads of screw-chasers, constructed in the manner described.

No. 17,563.—James M. Evarts, of Westville, Connecticut.—*Improved Screw-Cutter.*—Patent dated June 16, 1857.—The chuck A is attached to a mandrel, and is made to rotate; the rod D, on which the screw is to be cut, being stationary. The wheels C are adjusted the required distance apart by turning the pinion *c*, by means of a wrench; and as the chuck A rotates, the rod D is passed between the cutter wheels C, which cut the thread on the rod; and as the rod is fed between the wheels, said wheels are caused to rotate slowly, so that fresh cutters are continually presented to the rod.

The inventor says: I do not claim the chuck for adjusting the dies nearer to or further from each other, for that is a well known device.

But I *claim* the rotary dies C, placed within sliding or adjustable plates or sockets B, attached to the chuck A, or an equivalent device, for the purpose set forth.

No. 18,909.—William Kenyon, of Steubenville, Ohio.—*Improved Screw-Cutting Machine.*—Patent dated December 22, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I *claim*, first, the combination of dies which have an angular cutting extension or shoulder *e* on their front face, with the eye screw bolts *f h*, and a chuck which has straight radial grooves in its face, as and for the purposes set forth.

Second. I claim providing the peculiar oil reservoirs in the front of the chuck, between the cutting dies, in the manner and for the purposes set forth.

Third. I claim the face plate, consisting of a short hollow cylinder, with openings in its periphery, as and for the purposes set forth.

No. 17,187.—William N. Adams, of Olmsted, Ohio.—*Improvement in Screw-Cutting Machines.*—Patent dated May 5, 1857.—The instrument is attached to the spindle of the lathe by means of shank A^1, and the ring R is moved forward to close the burrs B. A bolt is then placed in the clasp of the lathe, and the instrument is caused to rotate, and the bolt rod caused to enter between the burrs B, by which means the thread is cut upon the bolt. As the end of the bolt comes in contact with the screw I, the pressure upon said screw presses backward plate C, reversing the position of levers D, and opening the burrs B, thus releasing the newly cut screw bolt.

Claim.—The construction of the branched body A, the disk C, sliding fulcrums E E, levers D D, and adjustable releasing screw I, combined in such a manner as to gauge the size of the screw and depth of screw thread, and to release the screw as soon as cut to a determinate extent, substantially as described.

No. 16,414.—Caleb C. Walworth, of Boston, Mass.—*Improved Screw-Feeding Gear.*—Patent dated January 13, 1857.—Motion is imparted to shaft *c* by means of a pulley A, and the tool *b* on shaft *c* is turned to cut a screw thread into a pipe joint *p*. The cogged wheel *i* meshes into pinion *h* and rotates feed screw *z*. The nut *g* can be set in and out of gear with this feed screw by means of cam *n* on shaft *j;* and, when in gear with the same, the screw is moved to one or the other side, and imparts a lengthwise motion to shaft *c*. When the cam *n* is turned to such a position as that nut *g* will release the feed screw *z*, then the springs *x* cause the screw to return to its mean position between them.

Claim.—The combination of a feeding screw or nut, arranged so as have an endwise movement, with springs for the purpose of insuring the engagement of the screw and nut, and returning either of them to a mean position when released from strain.

No. 18,669.—Barnabas H. Bartol, of Philadelphia, Pa.—*Improvement in Screwing Tubes into Vacuum Pans.*—Patent dated November 24, 1857.—By referring to the engraving, A in figure 1 shows the tube, B B the conical ends, and C C the tube sheets.

Figures 2 and 3 show the holes in the conical ends, by means of which the tube is screwed in place.

The inventor says: I would state that I do not claim screwing tubes into the sheets, as this has been done.

But I *claim* making the tubes many-sided in their interior parts, so that by the use of a many-sided long mandrel, fitted into said interior, they may be placed, removed, or replaced, without the necessity of having the ends of said tubes project beyond the tube sheets, as set forth.

No. 17,932.—Peter Hoffner, of Rising Sun, Indiana.—*Improvement in Cutting Screws.*—Patent dated August 4, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—In combination with the die-stock *b*, the volute or spiral spring *d*, arranged and operating substantially as and for the purposes set forth.

No. 16,803.—Thompson Newbury, of Taunton, Mass.—*Improved Machine for Cutting Screws.*—Patent dated March 10, 1857.—When the elevator (which swings about pivot D) is down, its upper edge lies even with or just below the bottom of the pan C, and the blanks fall into trough K, and hang by their heads, the heads being wider than the trough. As the elevator is raised, it carries up a supply of blanks, and slides them between the fixed ways L, when they descend into the carrier *b*. This carrier conveys the blanks to nippers *m*, which take hold of each blank, as operated upon by the threading and pointing tool S.

Claim.—The jointed elevator passing through the bottom of the feed pan, substantially as set forth.

The vibrating slotted guide piece, fixed to the carrier shaft, operated by arm M and pin *n*, as set forth.

Giving the threading tool, for the purpose of pointing the blank, a motion independent of and slower than that required to effect the threading, substantially as set forth.

The catch wheel C^1, with its pawl and stop, in combination with the leader worm T, as set forth.

No. 17,655.—Ira A. Richards, of East Brookfield, Mass., assignor to Silas Stevens, of the same place.—*Improved Taps and Dies for Cutting Screws.*—Patent dated June 23, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—First. Cutting away the teeth of taps and eyes on one side, substantially as and for the purposes set forth.

Second. Making the opposite scores *d*, which are parallel with the slides in which the two parts of a die work, or at right angles to the partition of the die, both on the same side of the line drawn through the centre of the die, substantially as and for the purposes set forth.

No. 17,437.—John L. Mason, of New York, N. Y.—*Improvement in Manufacturing Screws of Thin Metal.*—Patent dated June 2, 1857.—The thin metal plate *c* C is placed between the chucks A and D of a lathe, and the metal is then compressed between said two chucks in the well known manner. The chuck A has a screw thread formed on its circumference. By now giving revolution to the chucks, and pressing a dull tool against that portion of the face of the piece C which extends outside the diameter of the chucks, the metal is formed in shape of a cup around chuck A. The point of a tool formed like the section of a screw is then applied to the metal, and the latter is pressed into the screw threads of chuck A, whereby the screw is formed on the metal cylinder.

Claim.—The mode described of forming screw threads on cups, hollow cylinders, or hollow cones, of thin soft metal, substantially as described.

No. 16,778.—Daniel M. Robertson, of Manchester, N. H.—*Improvement in Pointing and Threading Screws.*—Patent dated March 3, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—I *claim* a pointing tool, arranged in connexion with one or a series of threading tools, and traversed slower than the threading tools, and so far in advance of them as to form the point of the screw blank, and prepare it for the threading tools, substantially as described; and I make this claim whether the pointing tool is traversed by the devices described, or by such other devices as will answer the purpose.

I claim the plate or guide A^2, when made to traverse substantially as described, whether it is operated by the devices described or such others as will answer the purpose.

I claim the guide or rest W, when made to traverse substantially as described, whether it is operated by the devices described or such others as will answer the purpose.

No. 18,914.—John E. Layton, of Pittsburg, Pa.—*Improved Furnace for Tempering Scythes.*—Patent dated December 22, 1857.—The nature of this invention consists in constructing the top of a furnace in such a manner that the shape of said top, or a portion of the same, and of the openings provided therein for the escape of the flame or heat of the furnace, conforms with the edge of the article to be hardened or tempered, whereby the said edge, in being held into or over the said openings, will receive a uniform degree of heat throughout its whole length, suitable for the hardening or tempering process; and also in providing two blocks or projections *g g* on the top with openings in the sides facing each other, whereby any particular spots or portion of the article, when brought between the blocks, can be heated for the purpose of correcting any unevenly tempered spots in the article.

The inventor says: I do not claim the arrangement of the body of the furnace, nor the introducing of a current of air under the grate; as these are not novel, and have been used before.

But I *claim*, first, constructing the top of a furnace in such a manner that the same, or a portion *b b* of the same, is curved or shaped so as to conform to the curve or shape of the edge of the article to be hardened; and providing in the top (thus shaped) an opening C C, or a number of such openings, as and for the purpose set forth.

Second. I claim providing in the top of the said furnace an opening *f f*, or a number of such openings, of such a shape as to conform to the curve or shape of the article to be tempered, substantially as and for the purposes described.

Third. I claim providing on the top plate of the said furnace two blocks *g g*, with the openings *i i*, as and for the purpose set forth.

No. 17,872.—C. P. CROSSMAN, of Warren, Mass.—*Improved Machine for Tempering Scythes.*—Patent dated July 28, 1857.—The scythe E being properly heated, it is placed between the jaws D, the back of the scythe resting on the boxes *h*. The operator then depresses the treadle B; and as the plates *d* of the levers F pass between the vertical guides *a b*, the jaws D will be forced together, and will firmly grasp the scythe E, which, when the treadle is fully depressed, will be immersed in water of the tank A and tempered.

Claim.—The employment, within a suitable water-tank A, of a pair of movable jaws D and boxes *h*, for the purpose of seizing, holding, and conveying the scythe blade, all substantially as described.

No. 17,996.—BENJAMIN F. HOOPER, of Albany, N. Y., assignor to Himself and RANSOM BALLOU, jr., of the same place.—*Improved Press for Shearing and Punching.*—Patent dated August 11, 1857.—The revolution of the wheel W by its pin G, operating upon cross-pieces E, impels the beam D backward and forward; which motion, by the operation of slot *k* upon pin *r*, propels the punch and shears vertically with a power proportional to the difference between the circuit of wheel G and the distance *x z*.

Claim.—The employment of the beam D, having an inclined slot in its extremities carrying the pins on which the punch and shears are suspended, as described, and operated in the manner substantially as set forth in the specification.

No. 18,025.—TIMOTHY F. TAFT, of Worcester, Mass.—*Improved Shears for Cutting Metal.*—Patent dated August 18, 1857.—The cogged wheel G is cast in one piece with the lever G and the bearings P of said wheel turn, respectively, in the grooves N of the slide M, to which the blade F is secured, and in the grove O of the iron frame of the machine. By operating lever G, the part M is raised and lowered as the wheel H meshes into the teeth of the inclined rack D, and the guide roller I passes over the incline E.

Claim.—The rolling lever upon an inclined plane which is upon the side or blade holder, substantially as specified.

No. 16,334.—ANSON HARDY, Dorchester, Mass.—*Improved Rotary Shears.*—Patent dated January 6, 1857.—The nature of this invention will be understood by reference to the claims and engraving.

Claim.—Dispensing with the top beam or support, as commonly used, and supporting the carriage B on the lower beam C, to which the straight knife G is attached, by which means is avoided the expense of and objection to a top beam.

Also, the use of a revolving circular knife A, when operated by two or more gears that can be regulated so as to give any amount of drawing cut that may be required.

No. 18,506.—ANSON HARDY, of Boston, Mass., and GEORGE A. ROLLINS, of Nashua, N. H.—*Improvement in Rotary Shears.*—Patent dated October 27, 1857.—Two rails L M are secured to the base plate, bed, or frame A, parallel to each other, and furnished, one or both, with grooves, in which the flange *e* on the carriage N may take to hold it thereto as it traverses said rails. A hinged stop *f* is placed on the inner side of one of the rails against which the carriage will stop when the piece *f* is raised up, and rests against the stud *g*, but will pass over when the piece *f* is turned down, as shown in the engraving. This stop *f* must be so placed that when the carriage is held by it the vertical axis of the clamps *h i* shall be in line with a vertical plane drawn through the cutting point of the blades F G. The clamps *h i* are so arranged as that they may freely turn on their axis, whilst the upper one *h* may be run down close to the lower one *i* by means of the screw and hand lever O.

The inventors say: We are aware that the rotary shears have been used in connexion with rotating clamps for cutting sheets into disks; this we do not claim.

But we *claim* the particular arrangement of the shears, carriages, clamps, and stops for cutting metals, as set forth.

No. 17,452.—DAVID B. ROGERS, of Pittsburg, Pa.—*Improved Machine for Making Shovels.*—Patent dated June 2, 1857.—The heated metal plate being placed in the hollow die K, rotary motion is imparted to crank shaft S, and the bed plate L is drawn over roller Q by the action of crank *i* and pitman J, and the pressing rollers P and O press down the upper die R, which is pivoted to the plate L, thus pressing the plate into the required shape.

Claim.—The use of the rollers O P Q, in connexion with the dies K and R and the pitman J J, arranged and operating in the manner specified.

No. 18,294.—Orrin Newton, of Pittsburg, Pa.—*Improvement in Spikes.*—Patent dated September 29, 1857.—This invention consists in having the sides of the spike made in concave form; A represents the spike, each side of which is made of concave form, and is nearly a simi-circle when cut transversely, as shown in fig. 2. The edges *b*, formed by the junction of concave sides *a*, are brought to a sharp edge by basils at each side. The point at the head of the spike, and also at the end, are of the usual form.

Claim.—The inventor claims the construction of the spike with concave sides and edges.

No. 16,958.—Horatio Bates, of New York, N. Y.—*Improved Mode of Clinching Spikes.*—Patent dated April 7, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I am aware that a clinching piece, in the form of a small spike, has been driven by the side of a spike to lock the same by its action against a jog or off-set on the adjacent side thereof, as described in the patent of J. H. Wigant; but that mode of locking the spike requires the spike to be specially constructed for the purpose, and I consider it less secure, while it is a more expensive mode of confining the spike than my method, which is applicable to common spikes or wrought nails of any kind, and makes the clinch on the spike or nail itself. I disclaim any such method of locking the spike.

But I *claim* securing a spike or nail by boring a hole in the timber of less depth than the spike or nail itself to receive it, and inserting thereinto, before the spike or nail, a ball *a* or lump of metal of substantially similar character, to deflect the point thereof when it is driven, and thereby cause it to clinch itself, substantially as described.

No. 16,483.—James Harrison, jr., of New York, N. Y.—*Improved Machine for Making Coiled Springs.*—Patent dated January 27, 1857.—In this machine, rollers $g\,g^1\,g^2$ are operated, in connexion with a single cone mandrel D, to produce double conical coiled springs by a continuous operation. As many springs as can be manufactured from a piece of wire of a certain length are formed by and delivered from the machine without stopping it. By this improvement these springs are produced rapidly, cheap, and of a superior quality.

Claim.—First. The combination of a revolving mandrel D and two or more grooved rollers, arranged and operating together in any manner substantially as described for the purpose set forth.

Second. The employment of an adjustable springing bed E to support the roller carriage F, or otherwise, in an equivalent manner, applying springs under or at the back of the roller carriage, for the purpose of enabling the rollers to accommodate their movements exactly to the longitudinal profile and varying diameter of the mandrel, and thus insuring their proper operation.

No. 18,991.—Daniel G. Rollin, of New York, N. Y.—*Improved Machine for Making Volute Springs.*—Patent dated December 29, 1857.—In forming double volute springs, plates of sheet steel are employed. These are heated and are then introduced underwise, one at a time, beneath the mandrel B upon the support I, until the central part of the plate is beneath the mandrel. Before each plate is introduced, the conical rollers H are put in motion; and as they revolve, they bear against the exterior face of the plate and roll it down into spiral coils. In effecting this operation the edges of the volutes of the rollers bear against the edges of the spring plate, and thus direct it in coiling, so that it assumes the proper conical or volute form.

The inventor says: I *claim* the combination of a conical roller with a mandrel, so as to coil a volute spring, as set forth.

I also claim the combination of two conical rollers moving in opposite directions, with a double conical mandrel, so as to coil a double volute spring at one operation.

I also claim directing the coiling of the plate into a volute spring so as to cause it to assume the desired conical form by means of the volute upon the conical roller, which volute is turned in a direction the reverse of that in the spring to be formed.

No. 16,794.—Perry G. Gardiner, of New York, N. Y.—*Improved Machine for Shearing Steel Plates.*—Patent dated March 10, 1857.—The stop *m* is adjusted so as to bring the end of the steel plate, when placed in the shears (when open), at the right position for the length of the strip to be cut off; and the plate T is adjusted at such a distance from the cutting edges of the shears as will regulate the width of the strip to be cut off at the beginning of the cut; and the guide bar *r* is adjusted upon its table so that, upon the steel plate being pressed against it, it will, in connexion with m^1 and T, bring the plate between the shears so as to cut the strip off at the required width, length, and angle. The lever S is then brought quickly down upon the steel plate, and it is thus held firmly and accurately for the shears to operate upon it.

Claim.—The arrangement of the movable bracket-plate M so as to adjust the lower steel cutter *b* to the upper steel cutter *f* as required, the adjustable stop or guide-plate T m^1 and the guide-bars *q* and *r* upon the tables attached to M, and the eccentric lever S; the whole combined, arranged, and operating in connexion with the shears, in the manner and for the purposes above described.

No. 17,172.—Henry A. Seymour, of Burlington, Conn.—*Improvement in Tempering Steel Plates.*—Patent dated April 28, 1857.—The plates to be tempered are heated and placed between the two water-circulating boxes B, one of which can be moved close up to the other by means of lever H acting on shaft F, the box sliding on rails E, the perforations of the plates D being filled with preparations ordinarily used for hardening and tempering.

Claim.—The employment of the perforated plates D D and the water-cooling boxes B B, substantially in the manner and for the purpose as set forth.

No. 16,793.—Perry G. Gardiner, of New York, N. Y.—*Improved Machine for Coiling Steel Springs.*—Patent dated March 10, 1857.—The steel plate is placed in a heated state upon the table T, and between the ways 15, and is forced through between the rollers *n* and n^1

into slot 10 in the mandrel *d*. The mandrel is then turned, and the steel plate is wound upon the cone *d*.

Claim.—I *claim*, first, the cone mandrel *c d*, constructed in two pieces, so that the spiral cone will slide off and upon the straight part of the mandrel, the straight part having the slot or groove, and being an eccentric, so that one edge of the slot will be lower than the other, and gradually rising round to the other edge or side of the mandrel, as above described.

2d. The construction and arrangement of the sliding frame T, for carrying or feeding up the steel plate upon the cone mandrel, and having attached to it the table Q, self-adjustable to any required inclination, for supporting and holding the steel plate while being drawn in upon the mandrel, and sustaining the adjustable rollers n^1 *n*, with their adjustment, to suit any required thickness of the steel plate.

3d. The arrangement of the loose or sliding pressure roller U, so as to have the lateral motion upon the axle *b*, by means of the arms V V^1 attached to the sliding frame T, and the simultaneous graduated downward movement to press and guide the steel plate upon the spiral cone.

4th. The combination of the sliding frame T and the parts attached to it, and the pressure roller U, and the intermediate guide-plate 18, with the cone mandrel *c d*, arranged and operating in a direct motion, or reversed, as described.

5th. The arrangement by which the wheel G is thrown in and out of gear, so as to connect or disconnect the shaft L with the shaft S^1; by which connexion or disconnexion may be made by hand or by the operation of the machine itself, at the proper moment, in the manner and by the means above specified.

No. 17,140.—Alexander Henry Dufresne, of Paris, France.—*Improvement in Gilding and Ornamenting Steel and other Metals.*—Patent dated April 28, 1857.—This invention consists in coating metals incapable of direct amalgamation with copper, after which process they can be gilded or silvered in the usual manner. The articles can be ornamented by protecting the design with a coating of varnish or other protecting matter, when the metal is exposed to the action of acid, which produces the design.

The inventor says: I do not confine myself to the precise working details laid down, as the same may be modified according to the requirements of each operation, without departing from the principle of the invention.

But I *claim*, first, the application of gold and silver to metals incapable of direct amalgamation by means of the processes described.

2d. The employment of photographic, heliographic, and printing processes for the production of the reserves on the metallic surfaces, to be operated on by the means described.

3d. The use of chromic acid for the destruction of the nickel, copper, antimony, or other metal employed in these processes, as described.

No. 17,590.—E. A. Snead, of Tioga, New York.—*Improvement in Wiring Tin Pans.*—Patent dated June 16, 1857.—The tin pan being formed as described in No. 17,589, a suitable wire is placed underneath the upper bent edges of the sides of the pan, and these edges are placed, one at a time, upon the bed R, and below the bar P of the machine illustrated in No. 17,589. The treadle K is then depressed, and the bar I, as it descends, throws the segment bar P down by means of links a^*, and the bar P forces the bent edge and wire into the recess d^* of the bar Q; and when in this position, the bed R is moved outward by the action of link a^*; at the same time the oblique sides of the projections b^* will actuate bar Q, causing the upper edge of recess d^* to clue the edge of the pan over the wire as represented in fig. 2.

Claim.—The combination of the segment bar P, vibrating bar Q, and bed R, the bar P, being operated from the sliding bar I, through the medium of the link *a*, and the bar Q being actuated by the bevelled or inclined projections *b*, the whole being arranged as described for the purpose set forth.

No. 17,738.—Rockwell Hazen & Volney Gibbs, of Homer, Michigan.—*Improvement in Upsetting Tire.*—Patent dated July 7, 1857.—The heated tire is placed between the plates I and J, and the plate I is moved up the requisite distance against the tire by turning screw H, the wedges L are then driven downward, and the edges *p q* are forced into the tire and prevent it from slipping. By now raising the plate C, by means of screw D, the blocks B are forced together in consequence of the oblique projection *d* fitting in the oblique grooves of the plate G, and the tire is compressed or upset as it is firmly clamped between the knives *p q*.

Claim.—The sliding blocks B B, with knives *g g* attached, and the heads L L fitted in slots in the plates *n*, to which the blocks B are attached, the inner blocks *k* having knives *p* attached, which knives are actuated by the wedges L; the above parts being used in connexion with the plates I J, and the whole combined and arranged as described for the purpose set forth; it being understood that we do not claim separately either of the parts described, but the whole when arranged to operate conjointly as specified.

No. 16,331.—Russell W. Gates.—Homer, Michigan.—*Improved Machine for Upsetting Tire.*—Patent dated January 6, 1857.—The tire, having been heated, is placed between the jaws E and clamping blocks C, where it is securely dogged by means of screws F. The follower H having been adjusted, the screw shaft I is revolved by crank J, and causes the blocks C to approach each other simultaneously, thus shortening the space between the dogged portions of the tire.

The inventor says: I am well aware that various devices are employed in machines for upsetting iron, such as compound levers, cams, screws, &c., and therefore do not claim any of these things, either single or in combination.

I *claim* the use of the right and left threaded screw shaft I constructed and arranged as described, and operated in connexion with the blocks C C, for the purpose set forth.

No. 18,553.—Samuel Penberthy, of Chicago, Illinois.—*Improved Method of Expanding Tires.*—Patent dated November 3, 1857.—This invention consists in applying a portable furnace to the tire while on the wheel, and the wheel attached to its axle or shaft; the furnace being so constructed that it may be applied to the tire at any point, and by heating a section thereof cause the same to be sufficiently expanded that it may be removed from the wheel or adjusted upon it without detaching the wheel from the locomotive or vehicle, nor from its axle or shaft.

The inventor says: I do not confine myself to the precise construction of furnace as shown and described, for it is obvious that various modifications of the same may be successfully employed for the purpose, although the described apparatus or contrivance would probably be as convenient and as simple as any that could be devised for the purpose.

I *claim* expanding the tires of locomotive and other heavy wheels while on their axles or shafts, and connected with their vehicles or locomotives, by means of a portable furnace, arranged as shown, or in any proper way, so that the same may be attached to the tire at any desired point, as set forth.

No. 18,971.—William Hart, of Mayville, Wisconsin.—*Improvement in Blacksmiths' Tongs.*—Patent dated December 29, 1857.—A represents the handles of the tongs, which are curved across each other, and one connected by a pivot *a* in the usual manner. The ends of the shanks *b b* of the handles are forked, as shown in the engraving; and jaws B are fitted thereon, one jaw in each fork. These jaws may have straight and oblique sides and are fitted on axes *c*, which pass through or have their bearing in the sides of the forks, the jaws being allowed to turn freely on their axes.

Claim.—Constructing the tongs with revolving jaws B B, placed or fitted in the shanks *b*, substantially as described for the purpose set forth.

No. 18,970.—James Hall, of New Haven, Connecticut.—*Improved Tool for Turning Journals.*—Patent dated December 29, 1857.—A A is a hollow cylindrical cutter box of a length equal or nearly so to the journal to be turned, and of an internal diameter somewhat larger than the rough journal, divided longitudinally into two equal parts, each of which is provided with lugs *a a* at each side to receive screws *b b*, which attach them together. B B are the cutters. C C is a metal ring, divided diametrically into two different parts, and fitted to a groove turned round the interior of the cutter box A A, each of the said parts being hinged by a separate pin *d* to a handle D; and opposite to their hinges they are provided with lugs *e e* to receive a screw *f*, by which they are kept closed upon the cutter box. *g g* are two pawls pivoted upon the handle D.

The inventor says: I do not claim to be the first inventor of a revolving cutter stock for turning journals, as I am aware that such a contrivance has been used for turning a crank and other articles.

But I *claim* the combination, substantially as described, of the divided hollow cylindrical cutter box A A, furnished with ratchet teeth on its exterior, and tightening screws *b b*, and the divided ring *c c*, handle D, pawls *g g*, and fastening screw *f*; the whole operating as set forth.

No. 17,301.—J. Henry Stimpson, of Boston, Massachusetts.—*Improvement in Heating Soldering Tools by Gas.*—Patent dated May 12, 1857.—The gas enters through the flexible pipe G and passes into the metal pipe N, to which the handle H of the soldering tool is secured; the gas escapes through the openings of the perforated cylinder E, and when ignited encloses the coppers S in a sheet of flame. When a copper is sufficiently hot it is taken from the stand, and the bolt *n*, being thus released, shoots over the aperture of pipe G, thus preventing any escape of gas. Upon the copper being replaced, the pipe N pushes back the bolt *n*, and the gas, escaping through cylinder E, takes immediately fire from the flame of the next copper.

The inventor says: I do not claim using flexible tubes or a hollow handle for heating soldering tools by gas, as this has been done before.

But I *claim* the perforated cylinder E, enclosing the soldering copper, in combination with the cylinder or chamber C C, which concentrates the heat, as stated.

Second. Detaching the soldering tool, and regulating the supply of gas by compressing the pipe G, substantially as described.

No. 16,363.—Nathaniel Whitmore, assignor to G. W. Keene and N. Whitmore, of Somerville, Mass.—*Improvement in Making Cop Tubes.*—Patent dated January 6, 1857.—The blank represented in dotted lines, fig. 3, is placed in the conical tube H, against the hollow part *d* of the backing *b*; and as the rod I descends, the shoulder *i* bears against the upper edge of the blank, pressing it through the cone H, and thence between the rollers K, where the pipe is closed. As the pipe passes from the rollers, the spindle I carries it into the receiver N, in which it is flanged, as represented in fig. 2, the tube being supported by step O P.

Claim.—The tube H with its backing *b*, in combination with the spindle I, operating in the manner substantially as set forth for the purpose specified.

Second. The tubular step for the support of the tube while it is being flanged, in combination with the receiver N, operating in the manner substantially as set forth.

No. 16,630.—William S. Platt, assignor to Himself, Alfred, and Clark M. Platt, of Waterbury, Conn.—*Improvement in Making Seamless Tubes.*—Patent dated February 10, 1857.—A is the stationary frame; B B B B are vibratory cross-heads, one for each sector; *a a a a* are the sectors which are made to vibrate by means of cogs on their outer circles and racks *d* upon the crossheads B, the lower ends of the said sectors being hinged to the frame by means of rods *e e e e*; *b* is the ingot; *c* the mandrel. The grooves in the lower edges of the sectors are made tapering, as will be seen from fig. 4, for the purpose of gradually operating upon the metal.

Claim.—So forming the groove upon each sector that the breadth and depth thereof shall gradually diminish from one end to the other, whereby the size of the central hole, formed by a set of the said sectors when arranged for operating, shall increase or diminish as the sectors vibrate or rotate, in the manner and for the purpose set forth.

No. 16,395.—William Ostrander, of New York, N. Y.—*Improved Machine for Rolling Tapering Tubes.*—Patent dated January 13, 1857.—This machine consists substantially of the three rollers *b b e*, between which the sheet metal is introduced, as represented in figure 2; the upper roller *e* being of a taper form, the rollers *b* cylindrical, and composed of a number of disks, for the purpose of imparting to the different points of said rollers the varying velocity of the circumference of the conical roller *e*.

Claim.—The combination with a tapering mandrel of cylindrical rollers formed of disks or sections, as described, for the purpose of rolling a tapering tube, substantially as set forth.

No. 18.205.—C. Jillson, of Worcester, Mass.—*Improved Machine for Pointing Wire.*—Patent dated September 15, 1857.—The wire to be pointed is inserted through hole *v*, the end of the same pressing against the end *m* of lever E, while the cutter C commences to cut at the end of the wire. As the wire is turned and fed to the cutter, it presses against the lever E, turning it on pin *i*, whereby the pattern *o* presses against roller *c* of the knife-stock D, operating the shank B and tool C.

Claim.—Causing the wire that is being pointed to force the cutter away from the point that is being cut, but forcing it away controlled by a pattern which regulates the form and the taper given to the wire; the whole being accomplished by means substantially such as herein set forth.

No. 16,790.—Joseph Cushman, of Racine, Wis.—*Improvement in Machinery for Making Wire-Rope.*—Patent dated March 10, 1857.—The nature of this improvement will be understood from the claims and engravings.

Claim.—I *claim*, 1st. The arrangement of the two sets of reels *e* and *j*, in combination with the carriage E, whereby the strands may all be adjusted and drawn out to the proper length simultaneously, as set forth.

2d. I claim the swinging arms *m*, in combination with the travelling top H, when constructed, arranged, and operating in the manner substantially as and for the purposes set forth.

No 18,080.—Byron Boardman, of Norwich, Conn.—*Improved Machine for Wiring Blind Rods.*—Patent dated September 1, 1857.—The bar G is fitted in the groove *s* of the bed F, and the staples p^1 are placed on the plate l^1. By depressing lever B, the bar *f* descends, and the rod K is forced downward, and the two shoulders $n\ n^1$ are turned below the upper edge of plate l^1; as the arm *f* rises, the shoulders $n\ n^1$ rise, and the innermost staple will come to rest against shoulder n^1; at the next downward movement, the staple which was between the shoulders *n* and n^1 passes between the guides *d* and d^1; and when rod K ascends, said staple passes under its lower end, the die forcing the staple into the rod G as it descends. The lengthwise feeding of the bar G, as performed by spring A^1 actuating lever I and bar J, which move the bar G along a proper distance until the staple last driven in shall strike against the lower end of lever E.

Claim.—The means employed for feeding the staples p^1 between the guides $d^1\ d^1$, and underneath the die or rod K, that is to say, the plate M, pivoted to the plate l^1, on which the staples are placed, and provided with the shoulders $n\ n^1$, the plate being connected with the bar *f* by means of the rod o^1, substantially as shown and described.

Also, feeding the rod G underneath the guides $d^1\ d^1$, to receive the staples p^1, by means of the bar J attached to the bent lever I, in connexion with the lever E, said parts being operated by their respective springs $A^1\ u$, and also by the bar *f*, as described.

Further, the guides $d^1\ d^1$, arranged substantially as shown, to convey the staples to the rod, and at the same time also allowed to expand, so as to prevent the clogging of the same, in combination with the die or rod K, for driving the staples into the rod.

No. 16,997.—Ezra Ripley, of Troy, N. Y.—*Improved Wrench.*—Patent dated April 7, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—Making the levers A B, combined together as described, with wrench jaws *c d* so arranged that the levers do not tend to spread open when used as an adjustable wrench, as set forth.

No. 17,531.—Edward J. Worcester, of Worcester, Mass.—*Improved Wrench.*—Patent dated June 9, 1857.—The movable jaw B of this wrench can be operated by turning the screw E, the threads of which are in gear with rack D.

The inventor says: I do not claim the application of a screw and rack to the movable jaw and the stock of a wrench, in order to produce the required movements of the movable jaw with respect to the stationary jaw extended from the stock.

Nor do I claim a wrench having its movable jaw affixed to a tenon or slide made to work through a mortise in the other jaw, and to be clamped in position by the handle, as the same is set forth in the patent of Orin O. Witherell, dated December, 1856.

I *claim* my adjustable fork jaw wrench as made with its jaws arranged and applied to its handle as described, and with a rack and rotary screw arranged in the handle and applied to the slide of the movable jaw as specified.

No. 17,737.—John H. Hathaway, of Millbury, Mass.—*Improved Wrench.*—Patent dated July 7, 1857.—This wrench can be adjusted to the different sizes by withdrawing the catch F from the slips X, when the sliding jaw B is free to move either way with facility; and by pressing the catch F between two of the slips X, the jaw B is secured in its position.

The inventor says: I do not claim the particular forms or arrangements shown and described; neither do I claim a sliding jaw when held by a catch, as such principle of holding it is not new.

But I *claim* making the ratchet or part corresponding thereto of separate pieces, between which the catch enters, substantially as set forth.

I also claim the aforesaid ratchet or series of slips, in combination with the stationary and sliding jaws, or their equivalents, when constructed and operating substantially in the manner and for the purposes above set forth.

No. 18,135.—H. M. CLARK, of New Britain, Conn.—*Improved Wrench.*—Patent dated September 8, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—As my improvement on wrenches, the combination with a hook or claw griper *a*, hinged to the permanent stock, and acted on by spring, of a sliding rag jaw *e*, having a screw adjustment on or along the permanent stock for joint and independent action, in the manner set forth.

No. 18,266.—HENRY D. BLAKE, of New Hartford, Conn., assignor to WYLLYS H. WARNER, of New Britain, Conn.—*Improved Wrench.*—Patent dated September 22, 1857.—The handle A in the engraving is represented as fitted on or attached to a T piece or stock *a*, that thus forms part of the handle as it were, and to which are jointed on opposite sides of the T. by joint pins *b* b^1, the shanks or extremities *c* c^1 of the two jaws *d* d^1, the one jaw extension *c* passing loosely through a guiding recessed attachment *e* of the other jaw.

The inner jaw d^1, or shank c^1 thereof, is provided with a thumb-piece *f*, arranged to overlap on the handle side the joint pin b^1, which connects said jaw to the T piece of the handle, so that by pressing said thumb-piece, the two jaws are closed and brought together.

Claim.—The inventor says: I *claim* the combination with a vibrating stock or handle, arranged for action, substantially in the manner described, of the two or inner and outer sliding jaws of the wrench, jointed on opposite sides to said stock or handle, and both jaws operated or expanded and contracted in reverse directions, to effect and release gripe by the lateral throw or motion proper of said handle, in both directions of its swing, essentially as set forth.

Also, while not claiming a projecting thumb-piece to a single sliding jaw to lock or release the gripe of the same, by means of a cam or its equivalent connected therewith. I do claim providing the one with a projecting thumb-piece *f*, arranged to overlap the jointed attachment of said jaw to the stock, and forming a rigid extension as it were of said jaw to facilitate the action or movement of both jaws, substantially as shown.

No. 17,844.—GEORGE B. PHILLIPS, of Albany, N. Y.—*Improved Hand Wrench.*—Patent dated July 21, 1857.—By pressing down thumb-piece K, the saddle H will press down the pins *d* and toothed blocks D, and the distance of the jaws B C can be adjusted. On releasing the thumb-piece K, the springs A will press the teeth of the blocks D between the teeth of rack *a*, and the jaws B and C are secured in their positions.

Claim.—In combination with the jaws, the arrangement described for regulating the space between the jaws and securing them when so adjusted; that is to say, by the employment of the two head blocks operated alternately upon teeth in the upper jaw, by the spring and saddle, or their equivalents, so as to regulate the space to distances differing by half the spaces between the teeth, substantially as set forth in the specification.

No. 16,733.—B. F. JOSLYN, of Worcester, Mass.—*Improved Screw Wrench.*—Patent dated March 3, 1857.—The hammer shank A has a thread on both edges from 2 to 3; B the main part of the wrench having four sides, and enclosing perfectly the hammer shank from 1 to 2; and from 2 to 3 only two sides, and smaller, thereby allowing both edges of the hammer shank to project the depth of the thread, so as to fit into the thread in the nut C, which encloses both parts from 2 to 3. Ring D serves as a bearing for the nut C. By turning the nut C, the hammer with the shank will move out.

Claim.—A hammer shank A, with a thread on both edges, fitting into a nut, when combined with the other parts of the wrench, arranged as shown and described.

No. 16,844.—B. F. JOSLYN, of Worcester, Mass.—*Improved Screw-Wrench.*—Patent dated March 17, 1857.—This invention consists in having the shank of the lower and stationary jaw of the wrench made hollow so as to receive the bar of the sliding jaw, and also to receive the screw which is fitted within the hollow shank by the side of the bar of the sliding jaw, the screw passing through a projection on the lower end of the bar of the sliding jaw, the whole being so constructed as to make a strong and durable wrench.

The inventor says: I do not claim a hollow shank, neither do I claim a screw for operating the sliding jaw, irrespective of the arrangement shown; but I claim the hollow shank B, with the bar F of the sliding jaw E fitted therein as shown, when the parts are used in connexion with the screw G placed within the hollow shank, and by the side of the bar F, the screw passing through the projection *f* on the end of the bar F, substantially as described, for the purpose set forth.

No. 17,609.—GEORGE C. TAFT, of Worcester, Mass., assignor to HENRY W. MASON, of the same place.—*Improved Screw-Wrench.*—Patent dated June 16, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim the mere addition of auxiliary screws to the wrench of the said Coes, and made with threads reversed in pitch with respect to the pitch of those of the primary screws; but I claim arranging the nut G between the two male screws F and K, in connexion with applying the auxiliary female screw *b* and its support I, with reference to the handle and shank, substantially as specified.

No. 17,229 —Charles Pinder, of Lowell, Mass.—*Improvement in Wrenches.*—Patent dated May 5, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—Moving, holding, and releasing the movable jaws B by means of the double wedge or key, with its inclined planes *e* and *i*, operating against similar ones *j* and *k* formed in the movable jaw B, while the lower surface *n* of this wedge comes in contact with the inclined plane *a*, in the groove E formed in the wrench-bar A, essentially in the manner and for the purposes set forth.

III.—FIBROUS AND TEXTILE.

No 17,120.—Clark Tompkins, of Troy, N. Y., and John Johnson, of Roxbury, Connecticut.—*Improvement in Machinery for Winding Conical Bobbins.*—Patent dated April 21, 1857.—The feature of this invention referred to in the first claim relates to the method of regulating the speed of the winding bobbin H; this is accomplished by making the yarn carriers J shift the belt Y by means of the following arrangement of parts: The twin belt-shifters L L^1, hung to the frame work at *e* e^1, linked together at e^2, and operated by rod L^2, which is hung to the shifter L at e^3, is slowly reciprocating endwise by arm M, fast on shaft M^1, which is operated by connecting rod M^2, arm N, shaft N^1, toothed sector J^4, and arc N^2. The operation referred to in the second claim is performed by the following parts: The sliding rod O, connected with the revolving bobbin H, by means of arm O^1, screw *f*, finger *g*, sleeve *h*, pawl *i*, and ratchet-wheel *s*; pawl *i* is operated by lever P, rod P^1, rock-shaft Q, arm Q^1. The parts which embrace that feature of the invention referred to in the third claim consist of rod S and finger *m*, which serve to guide the thread, finger *m* being attached to lever *n*, which is connected with pawl *i* by rod *p* in such a manner that the tension of the yarn, in winding, shall counteract the weight of rod *p* and thereby allow the pawl *i* to engage with the ratchet wheel *j* in the same manner that it acts when no rod *p* is attached to it, so that when a thread breaks the weight of rod *p* shall lift the point of pawl *i* out of the ratchet teeth and thereby stop the endwise motion of bobbin H. When any bobbin H is full or reaches that place in respect to the yarn carrier J where the winding thereon should end, the handle T then pushes the catch *u* from the belt shipper U, thus allowing spring *s* to throw the card X from the driving pulley W to the loose pulley V, and thereby stop the rotary motion of bobbin.

Claim, 1st. The manner described, in which the speed of the winding bobbins is changed so as to constantly draw the yarn from the fixed bobbins with uniform or nearly uniform swiftness, and thus secure more even tension on the winding yarn, and thereby make the new bobbins of more uniform density than if they were revolved with uniform velocity.

Also in machines for simultaneously winding a series of such bobbins, giving each bobbin spindle of the series the proper independent retreating movement from the yarn carriers as the winding progresses, by means of the mechanism described, or its equivalent, for the purpose specified, in contradistinction from giving each bobbin the separate retreating movement by means of a fixed guide acting against the conical part of the wound yarn, and instead of making all the bobbins move endwise together as heretofore.

Also when the revolving bobbins in such machines are separately moved endwise by the mechanism shown, connecting each thread of yarn as it runs to a bobbin of the series with the parts which give that bobbin its retreating movement, by means of a device arranged and operated upon by the tension of the winding yarn substantially in the manner set forth, so that whenever a thread of yarn in such case breaks or runs out, the bobbin upon which it was winding at once stops moving endwise, and consequently so that when the yarn is mended, and the winding resumed, the yarn is then laid by the carriers in exactly the proper place on the bobbin without any re-adjustment of the bobbin by the operative.

Finally, the combination of parts described, whereby the rotary motion of each bobbin is stopped whenever it is slid by the mechanism described to that place in respect to the yarn carriers where the winding should end.

No. 17,929.—Isaac Hayden, of Lawrence, Mass.—*Improvement in Bobbins for Roving and Slubbing.*—Patent dated August 4, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Making that portion of the barrel of the bobbin which receives and takes up the second layer of roving larger than that part of the barrel which receives and takes up the first layer, substantially as described, to compensate for the thickness of the said first layer, and makes the draft on the roving or stubbing uniform.

No. 16,744. - Jonathan Parker, of Biddeford, Maine.—*Improvement in Machinery for Grinding Card Cylinders.*—Patent dated March 3, 1857.—The grinding cylinder D is made considerably shorter than the width of the card cylinder B and doffer C. The grinder D is arranged upon a combined shaft E F, in such manner that the grinder revolves with the shaft E, but at the same time traverses longitudinally. This traverse motion is produced by giving the pulley upon pivot d^1 a little less velocity than the pulley upon pivot *d*, so that the shaft F (provided with a helix groove *i*) slowly revolves within the hollow shaft E.

Claim.—The combination of the stop-motion or mechanism, or the feed mechanism, or that which produces the reciprocating traverse motion of the grinder, as specified.

No. 18,124.—Horatio N. Gambrill and Singleton F. Burgee, of Woodbury, Md.—*Improvement in Carding Engines.*—Patent dated September 1, 1857.—The cotton is fed into the machine by means of feed rollers *a*, and passes to the cylinders B and D, by which it is delivered to the main cylinder C; the cylinders turning in the direction of the arrows, the cotton being finally stripped by cylinder L from cylinder C, to be further operated upon.

Claim.—Delivering the cotton on to the main cylinder always at two, and sometimes at three different points or places, whilst using but one set of feeding rollers, substantially as described; also, the combination of the working cylinders B D and the working and stripping cylinder E, all running in the same direction, and working in connexion with each other and with the main cylinder, as set forth; the two first B D delivering the cotton to the main cylinder regularly, whilst the latter E is doing so at intervals, substantially as described; also, mixing the strippings taken from the main cylinder by the stripping cylinder E with the cotton on the cylinder D, carding it and returning it thus mixed and carded to the main cylinder, substantially as set forth; also, in combination with the cylinders, the stationary casing M and the concave N for separating the dirt from the cotton, whilst undergoing the carding process, as set forth; also, in contradistinction from giving the variable motion to the cylinder E by cone pulleys and a travelling belt attached to each carding engine, the giving of said motion to a shaft or line of shafting and imparting it from said shafting to the engine by simple belt and pulleys, by which means more certain action is had and at less expense, as set forth.

No. 18,257.—William H. Walton, of Brooklyn, N. Y., and George H. Phinney, of New York, N. Y.—*Improvement in Carding Engines.*—Patent dated September 22, 1857.—The nature of this invention consists in the use of a cylinder brush, arranged with a lever in such a manner as to oscillate to and from the main cylinder, for the purpose of cleaning the same.

In operating this improved machine, a rotary brush H, which is fixed on the lever K, the lever being fixed on the stud I, will oscillate when put in motion by the hand or foot, so that when the teeth of the main cylinder have to be stripped or cleaned, the driving belt that gives motion to the main cylinder, when in operation, is removed to the loose pulley; this being done, the main cylinder will gradually decrease in speed until it stops—but previously to its stopping, when at a low speed, the operator can apply his hand or foot on the lever K, which will raise the brush H against the main cylinder to the depth required in the teeth, and thus clean out the refuse and cotton collected in the teeth of the main cylinder.

The inventors say: We *claim* the application and use of a rotary brush for stripping the main cylinder, in combination with the lever K, or its equivalent, by which the main cylinder is stripped and cleaned when running at the speed given by shifting the driving belt from the driving pulley to the loose pulley, as fully described and shown in the specification, for the purposes set forth.

No. 16,504.—George Wellman, of Lowell, Mass.—*Improvement in Machinery for Stripping the Top Flats of Carding Engines.*—Patent dated January 27, 1857.—The rim of L contains upon one side a full gear, by which motion is communicated to L, whether it be a continuous rotary motion or an intermittent one. The segmental gear gives an intermittent motion to the pinion M, when it will then stop and be held stationary by its set plate P turning its concave rim upon the face of the set rim Q. The shaft of pinion M has a bearing in one of the stud plates J, the other end of which is supported on the same stud with double cam gear L.

Claim.—First. The arrangement of the segmental gear L with its set rim Q, and the pinion M with its notched plate P, upon the vibrating arm or rocker frame E, substantially as described.

Second. Constructing the segmental gear L with its set rim Q and the lifting and stripping cams in one piece or casting, for the purpose and substantially as described.

Third. The double mangle pin segment or rim, constructed and applied for the purpose and substantially as described.

Fourth. The combination of the pinion M and its notched plate P with the double mangle pin segment, substantially as described.

No. 17,094.—Hiram Houghton, of Somers, Conn.—*Improvement in Carding Machines.*—Patent dated April 21, 1857.—The card fillet, on the feed rolls B, is secured in such a manner that the teeth will more readily yield without injury to the fillet; and, as it passes on, it is taken and worked by the cylinder D and the roll C, which at the same time strips the feed rolls B, and is taken thence forward, in the usual manner, by the main cylinder A.

Claim.—The combination of the third roll C with the feed rolls and lickering, arranged substantially as described for the purpose specified.

No. 18,423.—Joseph Davis, of East Wilton, N. H., assignor to Himself and Royal Southwick, of Lowell, Mass.—*Improvement in Carding Machines.*—Patent dated October 13, 1857.—In describing the operation of this machine, the inventor says: The operation of the improvement, by adding the cylinders L, consists, first, in receiving all dirt and loose fibres upon their surfaces; and if the dirt is hard and smooth, it will immediately fall off from them, and pass down between them to the floor. If there are fibres or locks of wool which fall upon them, the revolving motion of the cylinders will bring them up to the teeth of the main cylinder A, which will catch them and carry them around to be reworked.

In the drawings, C shows the feed apron; DD the feeding rolls; E the burring cylinder; F the lickering; G the workers; H the strippers; and I the brush.

Claim.—The inventor says: In the wool picker, the waste wool, after being raised by the rollers, is immediately thrown out of the machine by the air blast of the picker cylinder; consequently, I do not claim the application of a grate or grid under the main card cylinder.

Nor do I claim applying a series of rollers underneath the main toothed wheel of a wool picker.

But I claim the described combination and arrangement of a series of smooth surface rollers with the main card cylinder and its workers, or its workers and strippers, so as to operate therewith substantially in manner and for the purpose described, my invention having special reference to a carding machine.

No. 18,787.—**Horace Woodman**, of Biddeford, Me.—*Improvement in Machinery for Cleaning the Top Cards of Carding Machines* —Patent dated December 1, 1857.—The nature of this invention consists in mechanism, by which the top cards of carding machines are in turn raised, cleaned, and restored to their seats, and the movements of the cleanser frame effected.

The claim and engravings describe the invention.

The inventor says: I do not claim the use of corrugated arches, affixed to the card frame, as a means of moving the cleanser frame, the same having been claimed by me in my former letters patent.

Nor do I claim as new any device or machinery which is substantially described in my former letters patent.

But I *claim*, first, the peculiar construction and arrangement of fixed corrugated arches R and R^1, and traversing corrugated arches G and G^1, with gears L and L^1, operating in the manner and for the purposes specified.

Second, I claim the peculiar construction and arrangement of tangent pinion J, with section of teeth *o o*, and cavities 9 and 10 at its ends, operating in combination with the plane face of gear Y, in the manner and for the purposes specified.

Third, I claim the said jointed lifters, constructed and operated as specified.

No. 16,437.—**John Goulding**, of Worcester, Mass.—*Improvement in the Manufacture of Double-pile Carpets and Rugs.*—Patent dated January 20, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The fabric made or woven in the manner described, that is to say: crossing the top ground-warp once only for two shoots of binding-filling, one of which passes through and binds the pile-warps; and crossing the ground-warp of the bottom fabric once only for four shoots of the binding-filling, three of which pass through and bind the pile-warps.

No. 17,954.—**Louis Boudreaux**, of Thibodeaux, La.—*Improvement in Cleaning and Carding Moss.*—Patent dated August 4, 1857.—The moss to be cleaned is placed upon the apron K, and is conveyed towards roller F, the teeth of which deliver the moss to cylinder E, which in its turn throws it against the teeth of the vibrating bed H, the teeth of which pass between the teeth of the stationary bed I, combing and cleaning the moss and delivering it at the end of the machine.

The inventor says: It is obvious that my machine may be used for other purposes, such as combing wool, carding cotton, and threshing or separating grain from its straw, &c.; but I do not claim it for any such purpose.

I *claim* the combination of the vibrating bed H with the bed I, and the teeth arranged as described with relation to the cylinder E and roller F, operating in the manner set forth.

No. 16,783.—**George G. Bishop**, of Norwalk, Conn.—*Improvement in the Manufacture of Felt Cloth.*—Patent dated March 10, 1857.

Claim.—In contradistinction from forming a bat for felt cloth, by carding from laps, a bat made from ropings or rovings, carded and formed substantially in the manner described.

No. 17,950.—**Charles Winslow**, of Lynn, Mass.—*Improved Elastic Gore Cloth.*—Patent dated August 4, 1857.—Two strips of cloth are cut out in such a manner that their edges will be parallel to the filling *b*, and they are cemented together by a suitable India rubber cement, and the edges *c* of the wider strips are then turned over and cemented down upon the narrower, as represented in figure 2.

The inventor says: I am aware that an elastic cloth has been made as a shirred fabric. This, however, differs essentially from the gore cloth made in accordance with my invention.

I do not claim the peculiar elastic cloth as made with its filling arranged at an acute angle with its warp; nor do I claim the elastic fabric, as made of two layers of such cloth combined.

But I *claim* an elastic band or gore cloth when made not only of a fabric composed of a cement of India rubber or gutta percha, and two pieces of cloth, in which the warp and weft of each piece are made to cross one another diagonally or at acute angles, but with the edges of the cloth cut and overlapped in lines parallel or approximately so to the weft, and at acute angles with the warp threads, and cemented down to the fabric as described.

No. 16,685.—**Ernest Gessner**, of Aue, Saxony.—*Improvement in Gig Mills for Napping Cloth.*—Patent dated February 24, 1857.—P P^1 are two stretching cylinders of the usual construction for stretching the cloth in the direction of its breadth. The cloth is represented by a broken line.

Claim, 1st. The arrangement of the parts of the machine substantially as described, whereby it combines the properties of napping the cloth while it is continually moving over the surface of the napping cylinder, of holding the cloth stretched in the direction of its breadth, of presenting the cloth to the napping cylinder in such manner that the face which receives the nap is exposed to view, and of operating on the cloth at several points of contact at the same time.

2d. The arrangement of the four guide rollers U U U U, so as to be simultaneously adjusted by screws V V^1, or their equivalents, applied to their bearings, substantially as described, to bring the cloth into more or less intimate contact or with a greater or less surface in contact with the napping cylinder.

No. 17,227.—**John C. Millar**, of Starrucca, Pa., and **Charles N. Tyler**, of Washington, D. C.—*Improvement in Machinery for Napping Cloth.*—Patent dated May 5, 1857.—The cloth to be napped passes over the napping cylinders B, and over the teazling disks E, the axes of the latter being set at right angles to the axes of the cylinders B, operating in a line with the weft of the cloth, the cylinders B and disks E raising the nap in two different directions.

Claim.—First, the combination and arrangement of two or more napping cylinders, in the manner substantially as and for the purposes described.

Second, the teazling disks E, or their equivalents, in combination with the cylinders B, when arranged in the manner and for the purposes substantially as set forth.

Third, the method described of securing the gig rods *a* to the cylinders for the purposes set forth.

No. 18,796.—Milton D. Whipple, of Charlestown, Mass., assignor to A B. Ely, of Boston, Mass.—*Improvement in Machine for Shearing Cloth.*—Patent dated December 1, 1857.—In using this invention the piece of goods *a*, figure 1, is run through the machine in the direction of the arrow, whence it is led up over a roll in the customary manner, sufficient tension being kept upon it to keep the surface which is being sheared in contact with the under side of the ledger blades D. As the brush cylinders are revolved in the direction of their arrows they raise the fibre, or nap, of the goods on the surface which is in contact with them, ready for it to be seized and cut off by the knives, which is done by the knife cylinders drawing the fibres between the edge of its knives and the edge of the stationary blade D. The thickness of these ledger blades will regulate the length of the nap, or the closeness to which the goods are to be sheared.

Claim.—Removing the rest E away from beneath the shearing knives, and holding the cloth against the ledger blade by tension, in the manner and for the purpose substantially as set forth.

No. 17,224.—John P. Marston, of Charlestown, Massachusetts.—*Improvement in Machines for Turning the Edges of Cloth.*—Patent dated May 5, 1857.—The cloth, as it enters the machine, passes between the roller C and the guide *a*, which turns the edge of the cloth at right angles, and which operation is more perfectly performed by means of guide E and roller I. The edge of the cloth is then bent down to a horizontal position by means of guide H, and pressed down completely by roller L, whence it is discharged from the machine.

Claim.—The combination of the guides *a* and B, roller C, guide E, roller I, guide H, and roller L, substantially in the manner and for the purpose specified.

No. 17,164.—John Marland and Earlsworth Crockett, of Lawrence, Mass.—*Improvement in Cop Tubes.*—Patent dated April 28, 1857.—The material of which these cops are made is a compound formed by incorporating with gutta percha a portion of powdered charcoal. The gutta percha thus prepared is cut into fragments of the requisite size, is softened by heat, and the tube is formed by placing one of the fragments in a mould *f*, and causing a plunger *g* to enter said mould.

The inventors say: We do not intend to limit ourselves to the precise method described of forming the tubes.

We lay no claim to the machine upon which the tubes are made, as that forms no part of our invention.

We *claim* a cop tube formed of gutta percha, prepared in the manner substantially as set forth for the purpose specified.

No. 16,694.—James Pine, of Hoosick Falls, N. Y.—*Improvement in Cordage Machines.*—Patent dated February 24, 1857.—The inventor says: I do not claim the use of stretching rollers I I, except when used in a flyer E, as described. Nor do I claim producing friction on the bobbins of the flyers by means of springs applied otherwise than as described.

But I *claim*, first, the additional flyers E, carrying the stretching rollers, arranged relatively to the main flyers S, substantially as described, and deriving motion in the same direction as the said flyers, but at a less velocity, and operating substantially as specified, to stretch the strands after they have received the usual twist, and to impart an additional twist to compensate for the reduction of twist by stretching.

Second. The device for producing a uniform tension on the strands by friction upon the strand bobbins, consisting of the elastic curved lever or combined lever and spring *h j*, attached by a fulcrum pin *i* to the flyer frame, and operating on one head of the bobbin and upon the surface of the outer coil of yarn or strand on the bobbin, substantially as set forth.

No. 16,867.—James P. Arnold, of Louisville, Ky.—*Improvement in Cordage Machines.*—Patent dated March 24, 1857.—This invention relates to that class of cordage machines in which two or more strands are twisted in the same machine independently of each other, and then combined by being twisted together to form a cord. The illustrations and claim show the nature of this invention.

The inventor says: I do not claim the nose tube with the conical opening, the outer end of which is circular.

Neither do I claim the movable jaw of the rotary nippers, arranged with lateral guides, on which it slides in a direct line only from and toward the fixed jaw, and is pressed against the fixed jaw by means of a spring; as I am aware that the nose tube and nippers constructed in this manner are found in the cordage machine of Slaughter & Perry, and also in other machines.

But I *claim*, 1st. Flattening the outer end of the nose tube, for the purpose described.

2d. The wedge-shaped opening between the faces of the upper portion of the jaws of the nippers, as described.

3d. Constructing the movable jaw of the rotary nippers so that it can yield in any direction, as described.

No. 17,310.—James P. Arnold, of Louisville, Ky.—*Improvement in Cordage Machines.*—Patent dated May 19, 1857.—Motion being imparted to shaft B, the plates C on said shaft are rotated, carrying with them the flyers E, giving to the latter a motion of revolution around shaft B; as the flyers revolve, they are caused to turn uniformly on their own axes by the friction between their bottoms D and the elastic cushion N.

The inventor says: I do not claim giving motion of rotation to the flyers on their own axes by means of a friction band, or by pulleys covered with leather in connexion with a circular track; these being old and well known devices, and referred to as such in this specification.

Neither do I claim the circle or ring composed of a series of segments described in the patent granted to Milton Wallwork, April 7, 1857.

But I *claim* the combination of a series of two or more pulleys, each pulley arranged to rotate on its own axis, and to revolve around a centre common to all, with a ring concentric to said circle of revolution, whose surface, adjacent to the pulleys, is elastic, and forms a track for the pulleys to roll on, substantially in the manner and for the purpose set forth.

No. 16,452.—William Robinson, assignor to Amenzo W. Beardsley and William Robinson, of Warren, N. Y.—*Improvement in Laying Tops for Cordage Machines.*—Patent dated January 20, 1857.—The strands are passed through the holes H and grooves N in the cone J; are twisted together at the apex of said cone and passed through tube D, which is screwed on to collar I, so as to produce the required pressure on the strands of the rope; and should the strands differ in size, the largest presses the cone over against the smaller, so as to equalize the pressure and prevent the smaller strands from winding around the larger ones.

Claim.—In laying tops, the use of a movable cone, or its equivalent, so constructed and arranged as to yield to the larger strand or strands, and be pressed by them against the smaller strand or strands, substantially as described for the purposes set forth, whether said movable cone is pressed against the strands by a spring screw or otherwise.

No. 18,454.—Jesse Johnson, of Hempstead county, Ark.—*Improvement in Cotton Cleaners.*—Patent dated October 20, 1857.—The nature of this improvement consists in combining the main cylinder or drum N, provided with radiating arms *o*, to a secondary cylinder T provided with spikes, or teeth similar to a threshing cylinder; the main cylinder working in casing L L, has a perforated bottom, the sides M being formed with radiating ridges, and having concave, sloping, and tapering surfaces I J K. The first or main cylinder is designated as the breaking or threshing cylinder. The secondary or spike cylinder is enclosed beneath a top or casing V, and works over a perforated concave and sloping apron devices S. This combination of cylinders, surfaces, and bottoms form a unity of machine, which performs the functions of threshing and cleaning cotton.

The inventor says: I *claim* the construction and arrangement of the main or beating cylinder N in such a manner as to have the end N^2 thereof to work in beds or recesses or depressions as at N^3 N^3, formed in the inner surfaces of the sides of the casing, substantially as set forth and for the purpose described.

No. 17,819.—Lewis S. Chichester, of New York, N. Y., assignor to Henry G. Evans, of the same place.—*Improvement in Machines for Cleaning Cotton.*—Patent dated July 14, 1857.—The cotton being placed in hopper B, rotary motion is given to shaft F; the arms *d* draw the cotton through between the rods *a*, and the cotton is thereby divided into small parcels, which pass down the screen D by the shake motion produced by the projections *g*. The parcels of cotton fall upon the rack I, and are subjected to blows by the spring bars *t*, the outer ends of which are depressed by rods J. The spring bars *t* throw the cotton upwards against the screen M, down upon screen H, from whence it falls upon rack J, to receive an additional blow from bars *n*, and is then thrown upwards and deflected down into box B by screen L.

Claim.—The combination of the spring bars *l n*, one or more series operated as shown, the hopper B, rotating picker or arms *d*, shake screens D H, and deflecting screens L M, arranged substantially as and for the purpose set forth.

No. 18,742.—Isaac Hayden, of Lawrence, Mass.—*Improvement in Long Trunks for Cleaning Cotton.*—Patent dated December 1, 1857.—The nature of this invention and improvement, in elongated trunks for cleaning cotton and other purposes, consists in covering the bottom, or partitions on the bottom, with a woven screen which has the scores formed by the warp crossing the weft, or at the junction of the warp and weft, filled with metal or some kind of cement, so as to prevent the fibres of cotton, or other materials being passed over the screen, from catching and hanging in said scores.

Claim.—Covering the partitions of an elongated trunk or box for cleaning cotton and other fibrous substances with woven wire, having the scores formed by the weft crossing the warp of said wire screen filled with metal or cement; the whole combined in the manner and for the purposes set forth.

No. 16,526.—F. A. Calvert, of Lowell, Mass., and Charles G. Sargent, of Westford, Mass.—*Improvement in Machines for Cleaning Cotton.*—Patent dated February 3, 1857.

Claim.—First. The described arrangement of the cylinders D E and F, the guard G, and the diaphragm L, whereby the motes and dirt removed by the guard G are thrown back upon the first cylinder, in the manner and for the purpose set forth.

Second. The grating P beneath the brush I, which takes the material from off the fine-tooth cylinder when the brush is placed over the cylinder E, whereby the fly is either again carded on to the cylinder F, or is recovered upon the surface of the perforated cylinder R, the dust all passing through this cylinder, in the manner substantially as set forth.

No. 16,870.—Albert S. Carlton, of Clinton, Mass.—*Improvement in Manufacturing Cotton Flannel.*—Patent dated March 24, 1857.—In the engravings, *a* are the warps, *b* the filling threads, which may be twisted or otherwise woven together. As the weaving proceeds, a heavy soft yarn filling *c* is thrown in upon the surface of the fabric, to which it is tied by passing the warp threads at suitable intervals over it in a manner well known to weavers. Upon the surface of the fabric thus produced a nap is raised in the customary manner by means of the teazles. According to the quality of the cloth required, a greater or less number of the soft yarns *c* may be used in proportion to the number of the foundation filling threads. If a fabric of extra thickness and warmth be required, a soft yarn may be laid upon both the upper and under surfaces of the foundation fabric, and a nap raised on both sides of the cloth.

The inventor says: I do not claim weaving a fabric with two species of fillings; but what I do *claim*, as a new article of manufacture, is the described fabric or cotton flannel having a foundation of hard thread and an extra filling of soft yarn upon one or both sides, from which a nap is raised.

No. 18,410.—Jedediah Prescott, of Rockford, Ill.—*Improvement in Cotton Gin Feeders.*—Patent dated October 13, 1857.—The object of this invention is to supersede the manual feeding of cotton gins, thereby dispensing with an attendant for that purpose, insuring a more regular feed than can be given to the cotton by hand, and also serving, during its operation, to deprive the cotton of dust and dirt before entering the gin-hopper. This invention consists in the employment of an endless toothed apron placed within a suitable box, and used in connexion with a rotary fan stripper and stationary teeth or comb.

In stating what he claims in this improvement, the inventor says: I *claim* the endless toothed apron B, placed in the hopper or box A, in combination with the stripper and fan D^1, and stationary teeth or comb E^1, arranged substantially as and for the purpose set forth.

No. 16,394.—James F. Orr, of Orrville, Ala.—*Improvement in Cotton Gins.*—Patent dated January 13, 1857.—As the saws S rotate, they draw the cotton through between the ribs R, whence it is operated upon by the brushes, whilst the seed drops out through the apertures P, between the upper and lower ribs R and R^1.

Claim.—The combination of the two short ribs R and R^1, the latter arranged in relation to the saw-cylinder substantially as and for the purposes described.

No. 16,488.—Edward Keith, of Bridgewater, Mass.—*Improvement in Cotton Gins.*—Patent dated January 27, 1857.—The nature of this invention will be understood from the claims and the engravings.

Claim.—First. Inclining the upper part of the grates C for the purpose of giving an endwise motion to the roll of unginned cotton in the hopper, substantially as described.

Second. I claim the construction of a brush cylinder, with a chamber or aperture, on the end or head of the same into which a current of air is drawn through an opening in the side of the gin, at a little distance from the axis, and being deflected by the form and direction of the aperture or chamber, as shown by the dotted arrows *e e*, is finally discharged at the periphery of the brush, near the sides of the gin; thereby preventing any accumulation of cotton at the ends of the brush.

I also claim the peculiar construction of the brush cylinder head, whereby two separate currents of external air are received at the end of the open brush, one of which currents *c c*, being received near the centre in a direction parallel with the axis, is allowed to diffuse itself throughout the interior of the brush, and thus augment its general centrifugal action, while the other current *e e*, being diverted, and finally discharged through openings, more or less contracted, near the ends of the brush, and at right angles with the axis, tends to prevent all accumulation of cotton at the ends of the brush. The entire brush cylinder head being constructed substantially as set forth and described.

Third. I claim setting the rows of bristles in the brush alternately at different angles with the radii of the brush, for the purpose and substantially in the manner described.

Fourth. I claim the improved method of confining the lags or wings in the heads of the cotton gin brush, by means of lips or flanges projecting from the brush head, substantially as described.

Fifth. I claim the introduction of a slight current of air into the flue of the gin, through one or more openings in the mote board or bottom of the flue, for the purpose of facilitating the dropping of the motes or dirt in front or through the mote board, substantially as described.

Sixth. I claim the adjustable screw rods *k k*, in combination with the sliding mote board D, and extending outward to the front of the gin near the ginner, substantially as set forth and described.

No. 16,565.—Lewis S. Chichester, assignor to Henry G. Evans, of New York, N. Y.—*Improvement in Cotton Gins.*—Patent dated February 3, 1857.—The feeder-plate C has a vibrating or swinging motion on centres *a*, for the purpose of detaching the seeds from the cotton, and also assisting or feeding the cotton to the bite of the rollers. The comb *c* has an endwise lateral motion, together with the swinging motion in common with the feeder-plate. By this means the seeds are rippled out and thrown off from the cotton as fast as the cotton is stripped from them by the action of the rollers and ledge on the feeder-plate.

Claim.—First. The employment or use of the vibrating feeder-plate C, having a movement towards and from the bite of the rollers, and provided with the curved ledge *b* at its upper end; the said ledge being serrated or provided with teeth, and placed at or near the bite of the rollers, substantially as described for the purpose set forth.

Second. The feeder-plate C, with ledge *b* attached, in combination with the plate or comb *c*; the above parts being arranged and operating conjointly as shown for the purpose described.

No. 17,806.—Daniel Pratt, of Prattville, Ala.—*Improvement in Cotton Gins.*—Patent dated July 14, 1857.—The cotton is fed into the hopper E at its centre, the bottom of the mass resting on strip *l*. As the saws C rotate, the cotton will be turned by their action, and the cotton in the lower part of the hopper will be moved laterally in both directions from the centre of the box towards its sides, the seeds passing through the passages J while the cotton is drawn between the ribs F.

The inventor says: I do not claim feeding the cotton spirally to the saws, irrespective of the means employed for effecting the purpose.

But I *claim* the ledge *e*, secured or placed within the hopper or box E, as shown, so as to close the central portion of the lower end of the hopper or box, and cause the cotton, when fed into the box as described, to be fed spirally to the saws from the centre of the box towards each end, for the purpose set forth.

No. 16,699.—John W. Webb, of Cotton Valley, Ala.—*Improvement in Manufacturing Ribs for Cotton Gins.*—Patent dated February 24, 1857.—The inventor says: I am aware that the whole surface of the rib, or the entire space between A and A, might be chilled; but, in my opinion, they would not be so good, as they would be more likely to break; besides, they would be far more difficult to cast, and it would be far more expensive to finish them than if they were chilled at A A only, as described.

I *claim* the new manufacturing of cotton gin ribs, as described—that is to say, ribs of cast iron, with two places chilled upon them in casting, while the rib is so formed that the ends may be reversed in the same breast of the gin, so that when one chilled part of the rib is worn out, the other may be brought to the working point of the gin saw, and thus effect an important economy in the construction of cotton gins.

No. 17,155.—Edwin Keith, of Bridgewater, Mass.—*Improvement in Brushes of Saw Cotton Gins.*—Patent dated April 28, 1857.—The object of this invention is to prevent the entrance of the cotton between the brush heads and the side ceilings B, by which friction is produced to an amount oftentimes sufficient to set fire to the parts.

Claim.—Inclining the heads of the brush cylinder from the periphery towards the centre, and opening the passages *a* through the heads, in the manner substantially as set forth.

No. 16,833.—Isaac Hayden, of Lawrence, Mass.—*Improvement in Machinery for Cleaning and Separating Cotton, Wool, Fur, and other Fibrous Materials.*—Patent dated March 17, 1857.—The claim and engravings describe the nature of this invention.

Claim.—Increasing the area of the trunk above the screen, or making it larger towards its rear end by increasing its height or width, or both, as may be desirable, so that the blast of air which conveys the materials into or through the trunk will move gradually slower, so as to allow the light and fine, or such portions as are intended to be separated, time to be precipitated and pass through the screen before the air which holds them in suspension escapes from or passes out of the trunk.

Second. And in combination with a trunk made gradually larger towards its rear end, as above claimed, I claim a screen of woven wire or twine arranged upon a series of partitions, as set forth.

No. 17,612.—Joseph Vickerstaff, of Philadelphia, Pa., assignor to Martin Landenberger, of the same place.—*Improvement in Knitted Fabrics.*—Patent dated June 16, 1857.—In operating the needles D and C, each needle produces a plain knitting; and should the needles continue to operate thus, without the position of the thread being altered, two separate and distinct fabrics would be produced; but by interlocking the thread on the needles D C, a fabric is produced as described in the claim.

The inventor says: I do not claim exclusively the production of a knitted fabric ornamented by the transposition of threads of different colors.

But I *claim*, as a new article of manufacture, a fabric knitted with threads of different colors, and composed of two separate thicknesses, interlocked during the process of knitting, at any required intervals, by transposing the threads in such a manner that a knitted fabric may be produced, both sides of which shall present a plain uninterrupted surface of loops, and free from the loose unknitted threads common to other ornamental knitted fabrics.

No. 17,020.—Thomas B. Butler, of Norwalk, Conn.—*Improvement in Machinery for Crossing the Fibres of Wool in Making Felt Cloth.*—Patent dated April 14, 1857.—The wool from the doffer M is seized by the rods G, and carried on to apron O; and as each of the rods M carries the weft to the apron, it is moved laterally by the inclination of cams C, and forward towards the next preceding rod by the inclination of the guide plates F, and becomes fixed by the position of the cam as it passes round in contact with the bat and the wool felts upon the bat, and adheres to it. The succeeding rod G, which comes in contact with the wool, commences an opposite lateral and forward throw, and the wool is thus laid on the bat crosswise.

Claim.—The arrangement and use of the regular polygon heads B B, cams C C, guide plates F, and traversing rods G, connected with and operated by the shaft A, substantially in the manner and for the purpose specified.

No. 17,828.—Thomas B. Butler, of Norwalk, Conn.—*Improvement in Machines for Manufacturing Felt Cloth.*—Patent dated July 21, 1857.—When the doffer cylinder A is put in motion, the sliver of fibres passes over the transfer roll B and on to the apron H, as the latter is revolved by drum D; the end of the lever is moved at the same time by cam J, and the rolls B and D are vibrated by it in opposite directions, which deposits the sliver diagonally upon the bat.

The inventor says: I do not claim the trailing of the fibres of wool upon the bat apron diagonally by means of a traversing roll, for that is covered by the patent issued to John H. Bloodgood.

But I *claim* the traversing of the bat apron H, by traversing the apron drum D independently, and in connexion with a traverse of the frame, substantially as described and for the purpose set forth.

I also claim the traverse of the apron H, as described, in combination with a simultaneous opposite traverse of the transfer roll B, as specified.

No. 17,487.—Thomas B. Butler, of Norwalk, Conn.—*Improvement in Machinery for Manufacturing Felt Cloth.*—Patent dated June 9, 1857.—The worm gear I and pins *b* being properly adjusted, when a set of carrier combs i^2, by the revolution of the chains R, has taken a sliver of the weft from the doffer cylinder A across the warp ready to be united with it, the upper projection of one of the pins *b* of the worm gear I arrives in position to move and moves the actuating lever *f*, and that, by its connexion *n*, throws the tripping plates *l* out, so that the tripping pins i^2 on the comb circles *j* come in contact with the cams *y*, and the combs are turned and disengaged from the sliver. When this is effected, the sliver is removed by the descent of the warp, the pin *b* passes by the lever *f*, and the spring *g* returns the lever and tripping plates to their former resting position. When the sliver of weft has arrived across the warp, and is in position to be united with it, the inferior projecting portion of the pin *b*, whose upper portion has arrived in contact with lever *f*, moves the upper end of the pressure rod *d* in beneath cam K; the pressure rod is then depressed by the cam and carries down the lever M, which lifts the shaft L and its cams Z, and thereby the rising frame S, and rolls *e*, and apron T, and elevates the warp of the bat into contact with the sliver of weft at the same instant, when the upper portion of the pin *b* has moved the lever *f* and throws the tripping plates *l* into position, tripped the carrier combs, and disengaged them from it. As soon as this is effected, the pin *b* passes the head of the pressure rod *d*, and is thrown out from beneath the revolving cam by its spring, and the rising frame S falls into its resting position, to be elevated again at the next operation.

The inventor says: I do not claim the frame driving gear B, gears C D E, shaft F, bevel gears G G, shaft H, pinion gears *a a*, chains R, the four carrier combs *i i i i*, comb circle and spring *j*, tripping pins i^2, or the bearings upon the chains for the comb gudgeons—all which are essential parts of the machine as originally invented and patented by John Arnold, on the 15th of July, 1829.

But I *claim*, 1st. The flanged track plates *o o*, arranged substantially as described and for the purposes set forth.

2d. The movable tripping plates *l l*, arranged and operated substantially as described and for the purposes set forth.

3d. The rising frame S and rolls *e e*, operated and graduated substantially as described and for the purposes set forth.

No. 18,487.—Delos W. Gitchell and Luther W. Badger, of Mattewan, N. Y., assignors to the Seamless Garment Manufacturing Company.—*Improvement in Manufacturing Seamless Felt Garments.*—Patent dated October 20, 1857.—In the engravings, figs. 1 2 and 3, represent the component parts of a coat in a proper state for being united to each other, and fig. 4 is a section in the line *x x* of fig. 3. Fig. 5 represents a garment in a proper state to be operated upon by the "jigger" or hardener. 6 shows the same garment after it has passed through the required hardening and fulling operations. The edges *a b*, in fig. 1, are scratched or bevelled off on the outer side, and the edges *c d e* are scratched or bevelled off on the inner side. The claim will complete the explanation of the nature of this invention.

The inventor says: I *claim*, first, cutting the original portion or portions of a seamless article of clothing from a hardened bat, and then so perfectly uniting the edges of the said portion or portions with each by felting, that the articles thus formed will be of uniform thickness in every part, and will be of so tenacious a texture that they will retain their original shape during the ultimate condensing operation of the fulling mill, all substantially as set forth.

No. 16,431.—John H. Bloodgood, of New York, N. Y.—*Improvement in Machines for Forming Bats for Felting.*—Patent dated January 20, 1857.—In this machine the web passes over cylinder B, under roller C, over roller A, and then between rollers A and T, and under the latter on to the endless apron M. As these rollers rotate, a lengthwise motion is imparted to roller A by means of levers S operated by a crank, and this lengthwise motion produces a crossing of the fibres on the bats.

Claim.—The combination of the rollers B and C with the vibrating drum A, in the manner and for the purpose described.

Also, the combination of the rollers B and C with the vibrating drum A and the roller T, substantially in the manner and for the purpose specified.

No. 17,420.—Francis Burke, of Woodlands, Montserrat, British West Indies.—*Improvement in Machinery for Preparing the Fibre of Banana, Plantain, Aloe, &c.*—Patent dated June 2, 1857; patented in England July 14, 1855.—The material to be operated upon is fed on to the apron *d* between the rollers *c* and c^1, and, passing under the beating cylinder A, it is acted upon by the teeth *b* of said cylinder, the apron *d* at that place being supported by a yielding table *f*, which, turning on fulcrum *k*, is pressed upwards by a weight *h*; the material, when acted upon by teeth *b*, passes out on apron *d*, and is discharged from the machine.

The inventor says: I do not claim any of the parts of the machine, separately.

But I *claim* the combination of the beating cylinder with the endless apron or yielding table, or surface under the apron, substantially as explained.

No. 18,204.—Julius A. Jillson, of Poughkeepsie, N. Y., and Henry Whinfield, of New York, N. Y.—*Improved Method of Treating Fibrous and Textile Substances in a Vacuum for Cleansing Purposes.*—Patent dated September 15, 1857.—The articles to be cleansed are placed in the receiver E, and the cleansing fluid being forced into the lower part of the receiver A, it is heated by furnace G. The air is then exhausted from receiver E, and the fluid is forced by pump I up through strainer D, and through the articles in receiver E, and repasses through pump I to the lower part of receiver A, to be forced up again through receiver E.

Claim—The process of treating fibrous and textile substances in a permanent vacuum for extracting coloring, grease, or other foreign matters, substantially as set forth.

No. 16,865.—Milton D. Whipple, of Charlestown, Mass., assignor to Alfred B. Ely, of Boston, Mass.—*Improvement in Machines for Combing Fibrous Materials.*—Patent dated March 17, 1857.—After the material is placed upon the combing cylinder E, by which the fibres are disentangled and straightened out, they are then drawn out from the comb teeth as follows: I I are rolls revolving in stationary bearings, and carrying the apron P; K is a weighted roll, which operates with the roll I to draw the fibres from the teeth *f* at the point where the rolls operate; the teeth pass beneath the guards *b b*, which prevent the noil, knobs, and uncombed cotton from being drawn off with the straightened fibres. The separate slivers are thus led off by the apron P, and are united into a sliver R by the funnel M, which delivers it to the calender rolls N.

Claim.—Inclining the comb teeth to the axis of the cylinder, and covering them with the guard at the point of draught, in the manner substantially as set forth for the purpose specified.

No. 16,838.—John Howarth, of Salem, Mass.—*Improved Method of Cleaning Fibrous Materials.*—Patent dated March 17, 1857.—The inventor, in describing his improvement, says: Sixty pounds of oil-soap and fifty pounds of crude soda ash, or thereabouts, are dissolved in two hundred gallons of water; the mixture is then warmed to about 180° Fahrenheit. These proportions may be varied according as the material is more or less dirty or saturated with oil. Suppose the material to be operated upon to be dirty, oily cotton waste; upon one hundred pounds of this material pour fourteen gallons of the above mixture, or a sufficient quantity to saturate the waste without excess, the strength of the solution being such that the soda which it contains shall be just sufficient to saponify the grease in the waste. After soaking about thirty minutes, the whole is removed to a fulling mill, which is allowed to act upon it as in the process of fulling woollen goods, the material being prepared in parcels just sufficient to charge the mill once. The whole is removed to a powerful press, and the liquid and soap, including that formed upon the soda employed, and the oil in the materials, are expressed. It is again submitted to the action of the fulling mill and cold water, after which it is pressed once more, when it is cleansed and ready for use.

Claim.—The described process of cleansing fibrous materials, as set forth.

No. 18,888.—James Aperly and William Clissold, of Dudbridge, England.—*Improvement in Machinery for Preparing Fibrous Substances for Spinning.*—Patent dated December 22, 1857.—The sliver or roping having been threaded through the eye of the travelling feeder, and passed into the bite of roller *g g*, and rotary motion having been imparted to the band *k* through the bevel gearing, the feeder *f* will be driven along the rod *e* by the stop-pin *i*, which plays up and down in the vertical slot of the feeder; and the rollers *g g*, running over the face of the frame *d*, will be caused to rotate and deliver the sliver in parallel lines over the feeding bands. As the feeder *f* arrives at the position indicated by the lines at f^1, it will raise the lever *m*, and disengage it from the sliver, and it will then strike against the stop *q*, and give the rod *e* an endway motion to the left hand. This movement will bring the finger *n* into the dotted position, where it will rest against the lever m^1. On the return movement of the feeder *f*, it will have a fresh lap of sliver on the end of the lever *m*, and, passing forward, will raise the lever m^1 clear of the sliver. The finger *n* will then turn in the end of the sliver, and at the next movement it will be moved back out of action by the feeder first lifting a hinged catch *t*, and then striking the stop *p*, and sliding the rod *e* in its bearings.

Claim.—The means described for conducting the roping or sliver from one preparing machine to the other, and laying the roping or sliver in parallel lines on the feed-bands, aprons, or tables of preparing machines.

No. 18,801.—John Watson Burton, of Eye, and George Pye, of Ipswich, England.—*Improvement in Mode of Treating Flax, Hemp, and other Fibrous Material.*—Patent dated December 8, 1857.—This invention consists of treating the fibrous parts of flax, hemp, or other fibrous matter requiring like treatment, after being separated from the boon or woody matter, or without having first separated the woody matter or boon, by subjecting the same to the action of water impregnated or combined with fullers' earth and with steam, and then boiling the fibrous matters. During the process of boiling the fibres, they are to be alternately closely pressed together, and allowed to expand, from time to time.

In the engravings representing the machinery used in this invention, *f f* are pressing rollers, between which the moist flax, hemp, or other similar fibres, are to be run after they have undergone the process above described; *g g* are three pairs of crimping rollers; *h h* are two or more pressing rollers, to take out the impressions of the crimping rollers. The fibres are laid on an endless belt *k*, and after being seized by the rollers *f f*, pass from thence to and between the other rollers, whereby, before they leave the machine, they will have been pressed, crimped, and again pressed.

The inventors say: We do not claim merely heating or boiling fibre in water.

But we *claim* the described mode of treating flax or fibrous matters requiring like treatment, the same consisting in subjecting such as described to the action of a press, and to water impregnated with fullers' earth, and heated or boiled.

No. 16,977.—William J. Horstman, of Philadelphia, Pa.—*Improvement in Machines for Cutting Fringes.*—Patent dated April 7, 1857.—The fringe is fed in at the point G, towards the circular shears E F, by means of the feed rollers H and I, which take hold of and expand the fringe by means of the pins on their circumferences and pass it between the shears E F, so as to slit down the middle thereof and to form two fringes.

Claim.—The combination of the circular cutters, and the feeding-rollers H and I, arranged and operating substantially as described.

No. 16,543.—Washington G. Hagaman, of Philadelphia, Pennsylvania.—*Improvement in Machines for Forming Felt Hat Bats.*—Patent dated February 3, 1857.—The picker W blows the material as it comes from the feed rollers Q through aperture A^1, and is attached to the surface of rotary sieve I in consequence of the partial vacuum formed underneath said sieve by means of a fan E. The deflector B is of a flexible material, and by expanding or contracting it, the resisting surface which it presents to the attraction of the material to the centre of the sieve may be increased or diminished, for the purpose of forming a flat circular bat of equal and uniform compactness at all distances from the centre.

The inventor says: I do not claim the removal of the bat from the surface on which it is formed before hardening, such having been done by A. Rankin, as shown in his patent of October 3, 1854.

Nor do I claim the mere employment of a flat surface on which to form the bat.

But I *claim* the combination of the flat rotary sieve I with the deflector B, arranged and operating substantially as and for the purposes set forth.

No. 17,083.—William A. Fenn, of New Milford, Connecticut.—*Improvement in Machines for Blocking Hat Bodies.*—Patent dated April 21, 1857.—The hat body N is taken as received from the felting machine, and its edge secured between the jaws *b d* of the bars D E^1, which jaws are kept together by pressing down the outer end of treadle O, the inner end of which passes underneath the spring J. The spindle H is then raised by depressing the outer end of treadle I, and the hat block M is forced up within the hat body N. The rods *k* are then turned on their joint *j* and brought over the hat block and body, and are passed down to a point below block M, and the rods are closed, the curved portions serving as jaws, and drawing the body snugly around the hat block, as represented in fig. 3.

Claim.—The cylinder *g*, placed loosely on the spindle or arbor H, and resting on the spring *h*, in combination with the rods or jaws K K; the above parts being arranged substantially as described, whereby the hat body may be stretched and adjusted snugly around the hat block.

No. 16,823.—James B. Blakslee, of Newtown, Connecticut, and E. R. Barnes, of Brookfield, Connecticut.—*Improvement in Machinery for Felting Hat Bodies.*—Patent dated March 17, 1857.—The forked lever is so arranged that at each revolution of the cam L the clutch G is thrown into gear twice, thus giving two intervals of motion and rest to the rotating bed.

Claim.—Giving to the endless rotating bed of felting machines periods of rest during the continuous motion of the upper deck, substantially as described.

No. 16,973.—William Fuzzard, of Cambridgeport, Massachusetts.—*Improvement in Machines for Felting Hat Bodies.*—Patent dated April 7, 1857.—A reciprocating rotating motion being imparted to drum B, said motion is transmitted to the article F to be felted, which lies within the endless cloth C; and the corrugated roller G, attached to the swinging frame D, exerts a pressure upon said felt similar to that produced by the hand when felted by manual labor.

Claim.—The employment or use of the roller G, one or more attached or applied to the machine, substantially as shown and described for the purposes specified.

No. 17,115.—Henry L. Randall, of Roxbury, Connecticut.—*Improvement in Machines for Felting Hat Bodies.*—Patent dated April 21, 1857.—Motion being imparted to the crank pulley *r*, a vibrating motion is given to the levers F E and P; and the felting board M, attached to lever P, is caused to work the material N, which revolves with the rollers R. The stock O, which supports the rollers R, can be adjusted to any desired height by a pinion acting on rack V, it being retained in its position by pawl and ratchet *c*.

Claim.—1st. The rising and falling and forward and back motions of the felting board by a system of levers, arranged as described, or their equivalent.

2d. Rotating the bat or roll of material being felted round its own axis, in the manner substantially as described.

3d. In combination with the felting board, when operated as described, the adjustable stationary stocks or carriages for holding the roll or bat, substantially as set forth.

No. 18,316.—Alonzo C. Arnold, of Norwalk, Conn.—*Improvement in Machines for Forming and Hardening Hat Bodies.*—Patent dated October 6, 1857.—This invention, says the inventor, has two distinguishing features; the first relates to the formation of the bat, or body of the hat, and the second to the method of hardening it. The first consists in the adaptation of different portions of a perforated cone, situated over an exhaust, successively to an ordinary but concentrated blast of air created by a picker, or cylinder, in which the fibres of fur are suspended, so that although the fur is blown against a portion of the cone only, still it is, by an adjustable, alternating, vertical and positive motion of the cone, deposited over the entire surface, and with precisely such variations as to quantity on given portions of the cone as may be required to make a perfect hat, or the manufacturer may desire. This is effected by adding to the picking machine and exhaust box in common use a revolving adjustable heart-shaped cam, and a lever, and sundry incidental and auxiliary parts, by means of which the cone receives a graduated, vertical, alternating motion during the formation of the bat for the hat, accelerated or retarded by the form of the cam, on the application of a hand lever, so as to increase or diminish the quantity of fur deposited upon particular portions of the surface of the cone, as desired.

The second feature consists in the arrangement of the several devices employed in the process of hardening a hat.

The above results are effected by applying the outer cone as soon as sufficient fur is deposited on the inner one, locking the two together, and placing them in an inverted, perforated cone or disk, and there subjecting them to a rapid revolving motion and jets of steam from a pipe, having numerous apertures, extending into the disk.

Claim.—The inventor says: I do not claim the picking machine and feeding appendages or chamber, nor the exhaust box, nor fan, nor any of the movements for driving either, or revolving the cone, nor the method of forming a hat by their use.

But I *claim* the cam shaft I, worm-wheel L, cam J, levers U U^1, step *e*, cylinders *b*, and collar *a*, or their mechanical equivalents, arranged and operated substantially as described, and for the purposes set forth.

I further claim the shaft R, lever V, pulleys S and T, the inverted cone or disk *m*, brackets *p p*, shaft *n*, pulley *o*, sleeve *r*, shaft *q*, lever *x*, lifting rod *y*, or their mechanical equivalents, arranged and operated substantially as described, and for the purposes specified.

No. 16,426.—Ira Gill, of Walpole, Mass., assignor to Himself and Ellbridge Brown, of Malden, Mass.,—*Improvement in Machines for Forming Hat Bodies.*—Patent dated January 13, 1857.—The fur is carried to the machine on the feeding apron B, and passes between rollers D and E, where, by the action of the toothed cylinders F and G, it is thrown up in the trunk H, whence it passes to the top of box I; the fans T create a blast in the direction of their respective arrows, drawing the air and fur in the box I downwards; and as this current of air passes through the apertures in cone N, the fur is deposited on said cone. The current of air can be regulated by means of the registers S, which revolve with cone N, the lower one of which can be turned on shaft R, and serves to open or close the apertures of the upper disk, so as to produce a current of air of the desired strength.

Claim.—I *claim* the forming of a hat body, within an enclosed chamber, in which a vortex is produced by means substantially such as described; said chamber diminishing in area from its open to its close end, to regulate the draft through it, and to avoid counter currents, eddies, or dead space, as set forth.

Also, in combination with the cone on which the hat body is formed, a register, or draft regulator within it, so as to regulate the quantity of fur, or other material, that is to be gathered upon its upper and lower portions, as set forth.

No. 18,181.—Joseph Booth, of Newark, N. J.—*Improvement in Machines for Hardening Hat Bodies.*—Patent dated September 15, 1857.—As the spindle F is revolved with great rapidity, and as the cradle A is held excentrically thereto by crank pin *b*, and is also prevented from turning on its axis, it receives a continuous rapid tremulous motion, which has the effect of causing the inner cone N to revolve in a direction opposite to that of the spindle F, while the outer cone *a* is prevented from turning by its friction against the cradle A, whereby the inner cone carries the hat round with it, causing the latter to move slightly and rub upon the exterior cone.

Claim.—A hardening machine, operating substantially as set forth, and consisting substantially of a cradle and of a rapidly revolving spindle, upon which the cradle is supported excentrically.

No. 18,034.—Joseph Booth, of Newark, N. J.—*Improvement in Machinery for Manufacturing Hat Bodies.*—Patent dated August 25, 1857.—A quantity of fur being placed upon apron D, it is carried towards the feeding rollers *e* e^1, which seize it and carry it towards the picker A, the teeth of which operate upon the fur, throw it up into box G, whence the fine particles fall upon apron F, and are carried between feed rollers *i* i^1 to the second picker B, whilst the coarser particles fall down into box I, through space *h*. The fur collects upon the hurdle K, by reason of the draught created from below by means of fan J, and the fur is formed to a bat on said hurdle; and when it has acquired a sufficient thickness, it is removed therefrom for further operations.

Claim.—The rotating flat hurdle, having its perforated surface divided substantially as set forth, in combination with a picking or bowing apparatus and air-exhausting apparatus; the whole constructed and operating substantially as set forth.

Also, the arrangement of the fan shaft upon the spindle of the revolving hurdle, substantially in the manner and for the purpose set forth.

No. 16,338.—Evan Morris, Philadelphia, Pa.—*Improvement in Hats.*—Patent dated January 6, 1857.—The cutting of the band, as described in the claim, is represented in the engraving by the lines 1, 2, 3, 4, 5.

Claim.—Cutting or slotting the band of a hat, as set forth, to make that part of it soft and yielding to the head, whilst, at the same time, it is made to retain the requisite stiffness and support to give it durability, as set forth.

No. 17,033.—William A. Fens, of New Milford, Conn.—*Improvement in Machines for Forming the Brims of Felt Hats.*—Patent dated April 14, 1857.—The hat body being stretched over block O, motion is given to the lower shaft b^1, and the rollers *d e* rotate the hat body P and block O. The lever E has a vibrating motion given it by the cam J, and the segment M as well as the rollers *d e* have a continuous rotary motion. Each time the end of lever E is depressed the brim of body P is clamped between the end of lever E and the bed *m*, and the movement of the brim is checked for an instant; and, as the rollers *d e* have a constant movement, it follows that the brim is not only rotated by the rollers, but also stretched circumferentially, the stretching operation being intermittent in its action. The serrated segment M, with the plate *s* attached, stretches the brim in a radial direction.

Claim.—The employment or use of the rollers *d e*, vibrating bar E, working over the bed *m*, and the serrated segment M, with plate *s* attached, arranged and operating conjointly as shown for the purpose set forth.

Further, in combination with the rollers *d e*, segment M, and clamp formed of the lever E and bed *m*, the adjustable frame C, which receives the block O, the frame C being fitted within the frame B, as shown and described.

No. 16,588.—Alvin Hurd, of Danbury, Conn.—*Improved Method of Surfacing Felt Hats.*—Patent dated February 10, 1857.—The inventor provides the hat block C with an elastic cover *h*, over which the hat F is worked. The elastic cover is to compensate for the uneven thickness of the felt, the thicker portions settling into the elastic cover, and thus presenting an even surface to the action of the stone.

Claim.—Surfacing the hat upon the elastic cover or bed for the purpose and in the manner substantially as described.

No. 17,318.—George Cromwell, 2d, of Milford, Conn.—*Improvement in the Method of Treating Straw Braid for Hats, &c.*—Patent dated May 19, 1857.—The braid is passed between the rollers C and D by turning crank G, and, as the rollers are of conical form, the edge of the braid nearest the larger ends of the rollers will be compressed more than the opposite edge, and thus bevelled, and the braid will consequently be curved in a circular form.

The inventor says: I am aware that it is common to smooth braid by passing it between plain rollers. I do not claim such rollers, nor do I claim broadly the employment of conical rollers for curving materials of all descriptions, since they have been heretofore used. An example is seen in E. Caiver's patent (1838) for making circular saws. But I *claim* the method of simultaneously bevelling, curving, stretching, and smoothing the braid, as described.

No. 16,365.—Samuel H. Little, of St. Louis, Mo.—*Improvement in Hemp-Brakes.*—Patent dated January 6, 1857.—The hemp stalks pass from the endless feeding apron A, between the feeding rollers C and C^1, where they are crushed, and pass thence between the throat bars D to the beaters *g*, on the reciprocating gate E, whence the broken and crushed material passes to shoe F, which shakes the wood from the crushed hemp, and allows it to drop through the slatted top and bottom, whilst the clean hemp is drawn out by rollers G and G^1, and deposited on apron H.

The inventor says: I am aware that the throat through which the hemp passes to be acted upon by the beaters has been so arranged that it could be placed at different distances from a throat formed of beating bars secured in an oscillating frame, and therefore I do not wish to be understood as claiming said arrangement.

I *claim* placing the feeding rollers C C^1 and the throat bars D D in one and the same movable frame, for the purpose of enabling said frame to be so adjusted as to give any desired space between said throat bars and the beating bars of the reciprocating gate, without varying the distance between said feeding rollers and the throat bars D D, substantially as set forth.

I also claim the securing of the throat bars D D within their supporting frame in such a manner that they can be so adjusted as to form a wider or a narrower opening between them, for the purpose of adapting the said throat opening to the reception of hemp stalks of different sizes; but this I only claim when the said throat bar supporting frame is so arranged in relation to the supporting frame of the reciprocating gate that their distance from each other can be so adjusted that the action of the beaters will be exactly adapted to the size, quantity, and condition of the hemp stalks fed through said throat, substantially as set forth.

I do not claim an oscillating grating, used as a whipper, in machines for breaking hemp; for such, I learn, is involved in an interference now pending between the applications of S. A. Clemens and C. Simon before the Patent Office. And I am also aware that it has been proposed to rigidly combine a shaking shoe with an oscillating throat bar frame, and therefore I do not claim said combination.

I claim the combination of the shaking shoe F with the reciprocating gate E, when they are arranged substantially as set forth.

No. 17,015.—James Barkley, of St. Louis, Mo.—*Improvement in Hemp-Brakes.*—Patent dated April 7, 1857.—The operation of this machine is as follows: Rotary motion is communicated to conical pulley B, which, by means of belt J, communicates rotary motion to pulley B^1, also to cam disk C and cam D; the latter, in revolving, comes in contact with the anti-friction roller *f* in the end of bar N, which, by its connexion with rock shaft K, in conjunction with coiled spring O, imparts vibratory motion to breakers M. When the operation is first commenced, the operator stands on platform F, near shaft G; on receding from shaft G, platform F is pressed down into the dotted position, turning crank *i*, and bringing pin *h* and swords M in the dotted positions where the stroke of the latter is shortened; at the same time lever I moves belt T into the dotted position, thereby increasing the speed of the swords M.

The inventor says: I do not claim any single member of my machine as such. Neither am I unaware that a mode of shifting the speed and stroke in similar machines by hand levers has been used, for such is seen in the patent of M. Thompson, of August 5, 1856. But I *claim* the hinged platform, arranged as described, in combination with the mechanism substantially as set forth, and so that the attendant upon the platform may change the speed and stroke by merely changing his position, and thus leave his hands at liberty to manage the hemp.

No. 17,092.—Wade W. Hampton, of Winchester, Va.—*Improvement in Hemp Brakes.*—Patent dated April 21, 1857.—The operation of this machine is as follows: The hanks of hemp are inserted between the distended jaws *b*, *c*, then, by turning pulleys H, the jaws *c* are turned on their pivots and closed upon jaws *b*. The operator then turns pulley V, which causes pulley F and roller B to turn; by which means the bar E, brackets G, and clamps *b* are gradually lowered. The hemp to be broken now enters the four openings *z*, and passes down within the bent irons *m*, which thus prevent the hemp from being scattered during the operation of breaking. Motion being imparted to crank pulley M, the beam L is oscillated on its pivot at a rapid speed, striking alternately against the sides of frame A, and the material is broken by the operation of bars *o* and *p*, which are brought alternately into such positions as represented in fig. 3. The bar E is lowered until the shanks *x* of the pawls *h* come in contact with the table K, which movement forces the jaws *c d* asunder, causing them to release the hemp. Just before the jaws are tripped the operator pulls lever Q, so as to bring rollers *s* against rollers *t*, which rollers now take hold of the material and thus prevent it from dropping. The end of the hemp is now passed around the circumference of the pulleys U, and fastened to them by means of the hinged clamps *u*; and as the shafts S are rotated, the pulleys and clamps take hold of the hemp, drawing it through the breakers and discharging it from the machine.

Claim.—Clamping and feeding the clamped material through between the breakers, when accomplished by an arrangement of parts substantially such as set forth.

No. 17,274.—J. Locke Hardeman, of Arrow Rock, Missouri.—*Improvement in Hemp Brakes.*—Patent dated May 12, 1857.—The hemp I is placed transversely on the front or wider end of the bars *g*, and motion being given to the driving wheel H, the cranks *a* impart a curvilinear movement to the bars *c e*, and the latter are brought simultaneously towards and from each other, and the hemp is broken between said bars.

The inventor says: I do not claim broadly the invention of reciprocating slatted platforms for breaking hemp, for I am aware that they are old; an example may be seen in Walker's patent, May 27, 1851.

Nor do I claim giving a curvilinear movement to the beds of printing presses, as seen in T. H. Dodge's patent, November 18, 1851. In this example the printing beds have a curvilinear movement imparted to them similar to that given to my platforms, and by analogous means.

I do not claim this mechanical movement; but to the best of my knowledge and belief the combination of a pair of slatted platforms *c e*, each of which has a curvilinear motion, with an intermediate stationary platform *g*, as set forth, is a new feature in hemp brakes, constitutes a new combination, and is productive of useful results.

I *claim* the employment, in combination with a stationary platform composed of bars *q*, of a pair of curvilinear moving platforms, composed of bars *c e*, as and for the purposes set forth.

No. 17,900.—Stephen Stafford, of Carroll county, Missouri.—*Improvement in Hemp Brakes.*—Patent dated July 28, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—I claim, first, arranging a series of swords in a sash at unequal distances apart and parallel to each other, the spaces between them decreasing from the upper to the lower sword of the series, for the purpose described.

Second, arranging a series of swords in a sash, so that the edges of the under sword will project beyond the edge of the sword next above it throughout the entire series, for the purpose described.

Third, the combination of the swords *a* in the stationary sash with those *b* in the movable sash, when arranged respectively in each sash, in the manner described.

No. 18,303.—Conrad Simon, of Louisville, Kentucky.—*Improvement in Hemp Brakes.*—Patent dated September 29, 1857.—In this improvement there is combined with a table and mouth-piece a pair of receiving, feeding, or breaking rollers, which is thus described by the inventor: The table or mouth-piece *a* is securely mounted on a frame B. This mouth-piece consists of two plates extending from side to side of the machine, nearly about the length of the rollers, and sufficiently far apart to admit the hemp or flax to pass between them to the receiving or breaking rollers, as is shown in figures 2 and 3, where it is shown in two positions, with the stalks passing through the mouth-piece and breaking rollers *c c*, which are mounted in a gate or frame D D, and pass up and down, or at right angles, to feed in front of said mouth-piece, and at such a distance off as will rub or break the stalks. The said rollers are geared together, and revolve in the direction of the arrows, and are moved, or made to revolve, by the ratchets *e e*. These rollers revolve while they are moving up or down. The function of the rollers will be readily understood by reference to figures 2 and 3.

Claim.—The inventor says: I claim the combination of the breaking rollers *c c* with the mouth-piece *a*, arranged and operating in the manner described, for the purpose specified.

I do not claim broadly the rollers or mouth-piece as such; for they have been in use, and are well known in other machines for other purposes.

No. 18,657.—George F. S. Zimmerman and Armstong Beattie, of St. Joseph, Missouri.—*Improvement in Hemp Brakes.*—Patent dated November 17, 1857.—The engravings and claim explain the nature of this invention.

Claim.—The inventors say: We do not claim, separately or in itself considered, either of the parts shown and described.

Nor do we claim the broad idea of operating upon both sides of the hemp simultaneously, for this is seen in the device of F. P. Holcomb, patented March 13, 1847, where the hemp is carried in between a pair of rollers, the teeth of which mesh together.

But we claim the arrangement and operation of the rollers C C, scutching rollers D D, and breaking cylinder B, as set forth, whereby the hemp is stretched between the feed rollers and breaking cylinder, and also between the latter and the scutching rollers, the material, while thus stretched, being acted upon by the breaking cylinder B and the scutching rollers D D, all as described.

No. 18,638.—John L. Hardeman, of Arrow Rock, Mo.—*Improved Hemp Cutter.*—Patent dated November 17, 1857.—The engravings and claim show the nature of this invention.

The inventor says: I *claim* first, the hinged trailing hemp platforms approximating in form to a right angle triangle, and made with an inclined elevation *c d* and guard *e*, and arranged in rear of the cutter-beam on both sides of the machine, in such a manner that a broad central space shall be left for the cut hemp to be laid in, out of the way of the team and the body of the machine, by said platforms, as and for the purposes set forth.

Second. The employment of the peculiarly constructed hemp trailing platform J, in combination with the inwardly inclined bevelled directing board H, arranged just above the trailing platform, for the purpose of directing the hemp angularly upon the platform, as described.

Third. The employment of a reel having its blades bent spirally at one end to the axle or shaft, in combination with the inwardly inclining direction board or boards and trailing platform or platforms, as and for the purposes set forth.

No. 17,795.—Samuel Lownds, of Brooklyn, N. Y.—*Improvement in Hemp Drawing Machines.*—Patent dated July 14, 1857.—The endless chain of combs *a* all travel on the top side towards the drawing rollers A B, which travel at a greater speed than the chain does; consequently the hemp is pulled through the teeth although those teeth are travelling in the same direction, and thus the sliver is formed.

Claim.—The arrangement of a hemp-drawing frame, having its gills operated by guide dogs upon both sides of the frame, and attached to each alternate row of gills, substantially as described.

No. 16,375.—Enoch Colvin, of Poultney, Vt.—*Improvement in Knitting Machines.*—Patent dated January 13, 1857.—The yarn is carried to the needles by means of guide *h*, which is pivoted to the arm *i*; the double circle *a* of needles is carried around by two feeders *e f*, the upper ends of which are operated by the grooved cams *g*. These cams are so constructed that the feeders approach one another or recede together; as soon as a stitch is made, they open, and a curve in the groove of the cam throws them to the left to the distance of one needle from another; they are then directly brought together again, and clasp the double circle of needles, when another curve in the groove moves them to the right, carrying the circle along with them and bringing forward another needle.

The inventor says: Machines are already in use in which a single circle of needles are employed for knitting plain work with machinery similar, in some respects, to that described; and I make no claim to any part of such machinery.

But I *claim*, first, the use of two circles of needles, as described, for knitting a ribbed fabric.

Second. The method of moving the feeders, as described, by means of grooved eccentrics, with curves in the grooves.

No. 18,725.—Walter Aiken, of Franklin, N. H.—*Improvement in Knitting Machines.*—Patent dated December 1, 1857.—A is the body or frame of the machine; B is the needle bar on which the needles move, and is fastened to frame A by screws P P; C is the cap which confines the needles in bar B, and is held down by the screws R R; D is the sliding bar which gives motion to the needles H H H. The bar D runs in the boxes E E. G is a bar, holding plates L between the needles, for the purpose of keeping back the knit fabric, and to assist in throwing off the old loops from the needles and in forming new ones, and is secured to the frame by means of screws S S; I is the yarn carrier, attached to the bar D by means of the pivot screw J; F is the rocker bar, attached to the frame by the pivot screws T T, on which it turns; N is a spring, catching into the pin M, for the purpose of holding up the bar F.

The inventor says: I do not claim the plates L between the needles, when fastened to a movable bar, as shown and described in John Nesmith's patent of July 29, 1856.

Neither do I claim a rocker bar, when made and arranged as described in the patent of Nesmith, but only when constructed and arranged as hereafter claimed.

I *claim* a set or series of traversing needles, arranged to slide independent of each other, in combination with the stationary plates K, between the needles, to hold the fabric knit when the stitches are formed, constructed, and operating as described.

I claim a vibrating traversing yarn carrier, operated so as to hold the yarn over or near the selvage while the carrier is vibrated so as to change the latch opener, as described.

I claim a double-edged latch opener, in combination with a vibrating yarn carrier, operated so as to change the latch opener, as described.

I claim the stationary rocker or supporting bar F, so constructed and arranged as to support the outer ends of the needles beyond the fabric and under the latch opener, as described.

No. 18,792.—Sherman D. Fairbanks, of Cohoes, N. Y., assignor to Himself and Charles H. Adams, of Cohoes, N. Y.—*Improvement in Knitting Machines.*—Patent dated December 1, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I do not claim a latch regulator, with a point to pass under the latches after they are closed, such as is described and represented in the patent granted to Jonas B. and Herrick Aiken, May 22, 1855; neither do I claim a yarn carrier, in combination with a latch regulator, as described in said patent. But what I do *claim* is a latch interceptor, consisting of a bar or arm, arranged in such a position over the needles as to intercept the latches after they are opened or thrown back by the stitches of the fabric knit, and hold them open until the yarn is supplied to form new stitches, and then allow them to be closed again, substantially as described.

I also *claim*, in combination with the above described interceptor, the yarn carrier *f*, for the purpose of delivering the yarn, substantially as set forth in the specification.

No. 18,121.—William Mattison, of Northbridge, Mass., assignor to John C. Whitin, of same place.—*Improvement in Condensers for List Speeders.*—Patent dated September 1, 1857.—The roving A passes through guide P, between the upper and lower part of the belt P^1, under the layer G, the bonnet G^1 keeping the self-adjusting condenser F^1 in place, by which the roving is uniformly condensed when the belts P^1 should wear off.

Claim.—The self-adjusting weight or condenser F^1, applied in the manner described, and retained in its position by the casing or bonnet

G, or its equivalent, substantially as described for the purpose specified.

No. 16,415.—**William Weild**, of Manchester, Great Britain.—*Improvement in Power Looms.*—Patent dated January 13, 1857; England, March 7, 1855.—This invention consists in the application of a cylinder *k*, which is placed at one side of the loom, with its axis opposite and in line with the fell of the fabric, and its end about nine inches from the edges of the fabric, which passes over a surface, in going to the taking up roller, corresponding to the upper surface of the aforesaid roller, which is fluted longitudinally to a pitch equal to the pile loop formed by the wires in the fabric, a wire F being placed in each groove. Each wire F carried by the grooved cylinder, as it comes opposite the fell of the fabric by the rotation of the roller, is pushed along its groove into and through the shed; when across the fabric the end of the wire still remains in its groove in the roller, and when woven in the fabric it is allowed to remain till a certain number of wires have been successively pushed into the shed and have been woven in the fabric in like manner, when each wire is successively withdrawn from the fabric, so that a certain number of wires always remain in the fabric, one wire being withdrawn from the fabric for each wire pushed into the shed, the revolving of the cylinder returning the wires for insertion. The shuttle boxes are detached from the slay on the motion side, and have a movement corresponding to that of the slay at the moment of picking the shuttle across the shed, but do not advance with the slay to the point of beat up, as the fluted cylinder would be in the way.

Claim.—When applied to looms, or machinery for weaving pile fabrics, &c., the arrangement of the wires in grooves or flutes, formed in a roller or cylinder, the wires on being pushed into the "shed" never wholly leaving the grooves in the roller or cylinder.

Also, as a peculiarity and novelty, the arrangement of the wires, so that the one to be inserted in the shed is opposite, or nearly opposite, and in a line with the fell of the fabric, or that point where the reed will leave the wire on beating up such wires when so arranged, having to be bent out of the straight line to present the points towards the widest part of the shed, the whole combined and arranged substantially as described.

No. 16,354.—**François Durand**, of Paris, France.—*Improvement in Looms.*—Patent dated January 6, 1857.—A detailed description of this machine would take up too much space to be given here; the arrangement of the bobbins d, d^1, d^2, d^3, thread carriers Y, and needles 9, 9^1, 9^2, 9^3, permits any number of colors to be employed in the weft, using one or more thread carriers. When only one color is required in the weft the thread carrier Y, arranged in the circular race way between plates V and W, may be furnished with a bobbin-like shuttle, and may have a reciprocating motion passing through the shed in opposite directions alternately.

Claim.—First, the combination with a stationary race way of a reed passing entirely through the same, substantially as specified.

Second. The weft thread needles *q*, controlled by a jacquard machine or other pattern mechanism, to operate as described upon the weft threads in combination with a thread carrier of the character specified.

Third. The unhooker *t* operating in combination with the thread carrier substantially as and for the purpose specified.

No. 16,405.—**Daniel W. Snell** and **Stephen S. Bartlett**, of Woonsocket, R. I.—*Improvement in Looms.*—Patent dated January 13, 1857.—The nature of this invention will be understood by reference to the claims and engraving.

The inventors say: We do not claim priority in using a "strain" as a means of regulation, for under various modifications it is found in use: for instance, Hendrick employs strain acting upon or with the moveable reed, as his regulating feature; also Stone, Potter, and others, their motions acting in combination with an intermittent take-up motion; Knowles, Boyd, Bigelow, Mason, and others, use one or more stationary or reacting vibratory whip rolls as their point of regulation; while Taylor and Wilcox, and others, employ the beam as a means of regulation.

We *claim*, first, employing the positive take-up mechanism W Y, or cloth roll Z, as the point through which the variable strain and wind of warps is made to act more sensitively than from or by the variable or vibratory reacting motion of the whip rolls, or sudden jerking of the beam or movable reeds.

Second. Effecting and producing a regular delivery, and uniform strain of the warps, by the equalizing strain lever P, said strain lever being acted upon by the variable strain of the warps through the positive take up mechanism or cloth roll as represented.

Third. The equalizing strain lever P acting in combination with the positive take-up mechanism and cloth roll as represented.

Fourth. The equalizing strain lever P, when operating in connexion with the positive take-up mechanism, in combination with any mechanism for producing rotary motion to the beam, and with any device or means for regulating the delivery and strain of the warps as the beam decreases in diameter, and as the desired strain requires.

Fifth. Employing the rod T with the pin X, or equivalent, to act upon the strain lever P as a means of moving the weight K when the balance spring S or equivalent device is not sufficient to move it.

Sixth. In combination with the pulley F and pinion C we claim the moveable weight K, the fixed or yielding sectional friction piece G, and friction lever J, as and for the purpose represented.

Seventh. In combination with the weight K and friction lever J we claim the rack N, or its equivalent, to so act upon weight K through catches L, or analogous devices, as to gradually move the weight K towards the fulcrums of lever J as the beam decreases in diameter, and as the desired strain of warp requires.

Eighth. In combination with the weight K and friction lever J we claim the jointed or stationary sectional friction piece G and set screw H as and for the purpose represented.

No. 17,353.—Nathaniel B. Carney, of New York, N. Y., assignor to John R. Livingston, Charles H. Haswell, and Russell C. Root, of the same place, trustees.—*Improvement in Looms.*—Patent dated May 19, 1857.—The general features of this invention will be understood from the claims and engravings.

Claim, 1st. The weaving of fabrics within and upon a circular frame or looms, arranged about a common centre, producing the fabric at the central part, the shuttle being carried in a circle round the frame or loom in a continuous movement, the warps, shuttles, and filling being placed at the top of the loom, and the machinery for operating acting underneath, the weaving being effected by machinery, as described.

2d. The combination and arrangement of the machinery described, acted upon and driven by the spur-wheel Q, and its eccentric grooves and their connexions by which the sliding frames holding the warp wires or heddles are caused to reciprocate in opposite directions in equal times and regular succession, and the shuttles are made to rotate about the circumference of the loom in a plane perpendicular to the planes of motion of the sliding frames, and in equal times so as to pass between the upper and lower sets of warp threads when apart, thus producing a fabric at the central point.

3d. The combination of the roller covers and barrels, operating together, as described.

4th. The combination and arrangement or mechanism of the flat wheels or disks with their grooves with eccentrics, cams, and connecting rods and slides; the rollers cover the levers, bolts and slides; the levers carrying a motion from the rollers and covers to the warp wires, so as to hold them fast or set them free to move with the frames, the whole operating in conformity with Q and its connexions, thereby regulating the pattern, shape, or figure of the fabric to be woven.

5th. The giving to the shuttle the same continuous line of motion, without any divergence, thus avoiding the danger of injuring the operator or the fabric from an accidental false direction of the shuttle.

6th. The form and construction of the shuttle Q^1 *r*, as described, having its teeth on the underside or outside of its arc, and also the shuttle Q *s*, constructed so as to adapt itself to the increasing growth of the fabric, and pressing up the filling as described.

No. 17,375.—William H. Howard, of Philadelphia, Pa.—*Improvement in Looms.*—Patent dated May 26, 1857 —When the lay recedes, the combs fall into the warp or web at the points where the shed open; when the lay F advances it, strikes the under side of the arms C that is hinged on rod D, and causes the comb to rise just in time to clear the reed as it advances to beat up the weft last thrown across; on the receding of the lay, the combs fall into the warp again, and thus prevent the contraction by holding the thread of the weft on the outside tooth of the comb.

Claim.—The holding of the threads of weft and warp in a web of cloth, extended by combs applied to the selvedges and warp threads thereof, as described, or by any other equivalent mechanism.

No. 17,404.—Franklin Painter, of East Hampton, Mass., assignor to the Nashuawannock Manufacturing Company, of the same place.—*Improvement in Looms.*—Patent dated May 26, 1857.—A detailed description of this invention would take up too much space to be given here; the principal features thereof will be understood by reference to the claims and engravings.

The inventor says: I do not claim a patent barrel in connexion with a loom, it is an old device.

I do not claim to have invented a take up motion or automatic mechanism for stopping its action, because it would be useless to me unless combined with a divided reed or some equivalent thereof for beating up properly when the take up is stopped.

I do not claim to have invented a loom which will at the proper time form a shed on one side only of a button hole, while the rest of the warp, whether filled or unfilled, lies out of the path of the shuttle, as a loom producing that effect has already been patented.

I *claim*, 1st. A divided or sectional reed ff^1, operating substantially in the manner and for the purposes set forth.

2d. I *claim*, in combination with such a divided or sectional reed a take up motion or apparatus, which is thrown out of action at certain periods, substantially as described.

3d. I *claim* a pattern barrel *l*, or its equivalent, in combination with vibrating levers, acting substantially in the manner and for the purposes specified.

4th. I *claim* an apparatus substantially such as is specified, viz: a pattern barrel l^4, or its equivalent, in combination with a primary pattern barrel, or its equivalent, arranged in such manner substantially as specified, that the former shall at proper times prevent the selection of heddles or leaves of heddles by the latter, substantially in the manner and for the purposes set forth.

5th. I *claim* a latch *k*, substantially such as is described, acting substantially in the manner and for the purposes set forth.

6th. I *claim* a divided reel, substantially as is described, in combination with proper mechanism for forming a shed on one side only of a slit or button hole at the same time.

And, lastly, I *claim* a primary barrel for selecting heddles or leaves thereof, in combination with a secondary pattern barrel l^4 for preventing their selection, and vibrating levers l^8 l^9 acted upon by both barrels, or their equivalents of these parts in combination, each acting in combination with the others, substantially in the manner and for the purposes described.

No. 18,061.—Edwin A. Scholfield, of Westerly, R. I.—*Improvement in Looms.*—Patent dated August 25, 1857.—This invention consists in driving the cam wheel A, which acts on the harness, not by a uniform motion, but by an intermittent and variable motion, produced by the action of studs *e*, of the disk F, upon the slotted disk B, its periods of intermission and change coinciding with those of the spring or changing of the harness.

The inventor says: I am aware that the star-gears, under a modified form, have been used for changing the position of the shuttle-box, and also the pattern-chain which governs the order of succession of the harness, as in the patents of Samuel Eccles, of March, 1850, and Samuel and James Eccles, of August, 1852; but these are for totally different objects from that contemplated in this.

I do not claim the construction or use of star-gears for any purpose except to drive a cam-wheel to spring the harness in weaving.

But I *claim* the driving or revolving cam or tappet-wheel, which acts to spring the harness or produce a shed in weaving by an intermittent or variable motion, by the use of star-gears, substantially as above described.

No. 17,189.—Erastus B. Bigelow, of Boston, Mass.—*Improvement in Looms for Weaving Pile Fabrics.*—Patent dated May 5, 1857.—The cam o^1, through the medium of cam roller p^1, lever q^1, and bar r^1, moves the vibrating staff i^1 from the cloth, the spring s^1 forcing roller p^1 constantly against cam o^1. Motion towards and from the lathe is given to the staff by rocking frame j, by means of cam u^1, roller v^1, and arm n^1. When the carrier B, on staff i^1, returns for a new wire, the staff i^1 strikes the adjusting pin e^2, and thus through the spring of said staff brings said carrier in a line with the wire.

Claim.—First, operating the pile wires by a vibrating staff controlled by a parallel motion, substantially as specified.

I also *claim* the method of constructing and organizing the hook t and carrier B, for operating the pile wires, substantially as specified.

And I finally claim, in combination with the aforesaid hook and carrier, a box or holder, A, for holding the pile wires in position, and suitably guiding said hook to act thereon, substantially as specified.

No. 16,370.—Erastus B. Bigelow, of Boston, Mass.—*Improvement in Looms for Weaving Pile Fabrics Double.*—Patent dated January 13, 1857.—A detailed description of this invention would take up too much space to be given here.

Claim.—First, the employment in power looms for weaving two fabrics at one operation, such as described, of transverse intersecting pile wires, when said transverse intersecting pile wires are woven in between the two fabrics, substantially in the manner and for the purpose specified.

Also the application or employment in power looms for weaving two fabrics at one operation, of a double positive shuttle motion, in combination with transverse intersecting pile wires, for keeping the two fabrics apart, substantially as described.

Also the mode of arranging the parts which connect the shuttle or shuttles with the loom shipper, whereby the loom is thrown out of gear when the filling fails in either shuttle, substantially as specified.

Also elevating and depressing the reed, substantially in the manner and for the purpose set forth.

Also the mode of arranging the cams, whereby the combined action of the lathe, shuttles, intersecting pile wires, and ground warps is effected, that is to say, placing the cams f^4 f^4 for operating the lathe on the shaft m, and the cams r r for operating the shuttles on their respective counter shafts u and s, all said cams moving at the same relative velocity, whilst the crank q^3 and cam v^3 for operating the pile wires, and the cams or tappets p^4 p^4 for operating the ground warps are placed on the said counter shaft u, but move at different relative velocities, the said crank q^3 and the said cam v^3 being affixed to the said counter shaft u, whilst the said shuttle cam r and the said ground warp cams or tappets p^4 p^4 turn loosely thereon, the whole being geared together, and operating substantially as described.

And finally, the mode of arranging the double let-off motion, in connexion with one positive take-up motion, whereby the delivery of the ground warp of each fabric is regulated by its respective tension, and held at the beat of the lathe substantially as specified.

No. 16,392.—Stephen C. Mendenhall, of Richmond, Ind.—*Improvement in Hand-Looms.*—Patent dated January 13, 1857.—A detailed description of this invention would take up too much space to be given here; the principal features thereof will be understood by reference to the claims and engravings.

The inventor says: I *claim* the universal treadle cam J, cam O, shaft h, spring S, and hinge u, in combination with the revolving cam-wheel S, connecting rod 2, brace r, hook k, pin i, and spring v, or their mechanical equivalents, substantially for the purpose set forth.

I do not claim the arms g g, or the triggers w w.

But I *claim* the cords x x and pulleys c c, in combination with the spring h, arms g^1 g^2, triggers w^1 w^2, and cords f f, for the purpose of throwing the shuttle back and forth through the loom, as described and set forth.

No. 18,208.—George Matoon, of Chicopee Falls, Mass.—*Improvement in Harness for Looms.*—Patent dated September 15, 1857.—Figure 1 represents a harness as constructed in the ordinary manner; figure 2 represents a harness made in an improved manner, which will be understood by reference to the claim and engravings.

The inventor says: I do not claim making a harness with a knot at the top as well as one at the bottom of each eye thereof, as this has been done before. When the eye is knotted at the top and bottom, there is double the friction and wear on the warps that takes place when the eye is knotted only either at top or bottom.

I *claim* the improved mode of making a harness so that its leash d and knot b shall be below its eye a, and the threads of each loop be caused to pass against one side of their shaft or bar A instead of being caused to embrace opposite sides of it, namely, first knitting the harness with a leash at top and one at bottom, or one above as well as one below each eye, and subsequently changing the upper shaft so as to pass it between the several loop threads of the upper side of the harness in such manner as to make both threads of each loop pass against one side of the shaft.

No. 17,267.—Warren W. Dutcher and George Draper, of Milford, Mass.—*Improvement in Hook-Temples for Looms.*—Patent dated May 12, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—So combining with the temple and its spring C a lever E, or its equivalent, that just before the lay beats up it shall, by its action on such lever, cause the temple to be advanced on the cloth, or towards the reed, in order that when the lay may move in the opposite direction the spring C of the temple shall draw back the selvage of the cloth so as to straighten the warp threads thereof, substantially as specified.

No. 17,193.—Samuel Boorn, of Lowell, Mass —*Improvement in the Picker motion for Looms.*—Patent dated May 5, 1857.—The picker staff A, when operated in the proper manner, vibrates on its rocker B, but at the same time is raised and lowered in order to cause its striking point to move in a straight line, and the centralizer H serves to maintain a uniform position of the lower part of the picker staff when in operation.

Claim.—Arranging the centralizer and its mortise with the picker staff and its rocker, so as to operate therewith as specified.

No. 17,468.—Thomas J. Mayall, of Roxbury, Mass., assignor to Himself and George N. Davis, of Boston, Mass.—*Improvement in Pickers for Looms.*—Patent dated June 2, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—A picker made of hard vulcanized rubber, without seams, in the manner set forth.

No. 16,824.—John L. Cheney, of Lowell, Mass —*Improvement in Power Looms.*—Patent dated March 17, 1857.

I do not claim supporting the picker staff by a rocker and horizontal rail or stand.

Nor do I claim applying to the picker staff and its supporting bracket, a curved slotted guide and a roller, as the same is shown in Albert C. Williams's application for a patent.

Nor do I claim applying to the picker staff a spring for the purpose of retracting such a staff.

Nor do I claim applying to the rocker and its stand a spring to bring the rocker back to its place after having picked, and also to secure it to the rail while in the act of picking.

Nor do I claim making the striking point of the picker staff to travel in a straight horizontal line.

I *claim* my improved picker motion or mechanism as made with a guard stand and rocker, a stationary guide Q, and a stud or roller P, and with reference to the picker staff I, substantially as described.

Also, so arranging the top bearing surface of the stand of the rocker that it may incline downward, as specified, and so as to obtain all the advantages of a spring without the actual application or use of the same, meaning to claim such an arrangement of the top surface with respect to the rocker and staff as an improvement equivalent to the spring.

No. 17,912.—Andrew Allen, of Wilmington, Del.—*Improvement in Power Looms.*—Patent dated August 4, 1857.—A detailed description of this invention would take up too much space to be given here; the principal features thereof will be understood by reference to the claims and engravings.

Claim.—The inventor says: I claim, first, the combination of the step-formed indicator L, attached to the lifting and dropping mechanism of the shuttle boxes, and the adjustable pins P^1, P^2, P^3, P^4, of the pattern chain, substantially in the manner described, for the purpose of controlling the pattern and affording a greater facility for varying the same than the means heretofore used.

I am aware of the means described in the patent of B. H. Jenks, dated October 24, 1854, for varying the movement of the shuttle boxes by an auxiliary wheel; and this, therefore, I do not claim.

But I claim, second, the retarding wheel C. with its pins *h h*, combined with the pattern chain wheel or cylinder, substantially as described, to arrest the pattern chain or cylinder, when several picks are required to be made by the same shuttle, or with the same filling thread.

3d. The combination of the pins *m m*, on the pattern chain or cylinder, and the lever N, with the pawl E, of the retarding wheel, for the purpose of causing the operation of the retarding wheel to be suspended under the control of the pattern chain when desired, substantially as described.

No. 18,320.—Erastus B. Bigelow, of Boston, Mass.—*Improvement in Power Looms, for weaving Wire Cloth.*—Patent dated October 6, 1857.—In describing his improvement the inventor says: Owing to the inflexibility of wire, the movements of the ordinary power loom are not suited to weaving wire fabrics, the fly shuttle being too uncertain in its action for perfect work, and not adapted to straighten the wire as it comes from the bobbin. To meet the exigencies of the case, therefore, I so organize my wire cloth power loom as to give the shuttle a positive mechanical motion as it is being passed through the end of the wire warps from side to side of the loom; and I also provide the shuttle with a wire straightener through which the filling wire passes, and is straightened as it is drawn from the shuttle bobbin by the aforesaid positive movement of the shuttle; and to prevent the drag, or pall required to straighten the filling wire, as aforesaid, from drawing in the selvage wires and contracting the cloth, I employ painted bars, one on each side of the loom, which have a vibrating motion towards and from the selvages of the cloth, also a vertical motion up and down, by which latter motion they are alternately thrust between the filling wire of the shuttle and selvages of the cloth, so that when the shuttle is passed through the wire warps the filling wire draws around said painted bars and pulls them respectively towards the selvages of the cloth, until they are arrested by a strap which prevents the pull or drag of the filling wire from drawing in the selvage wires; then just before the shuttle has reached its greatest extent of outward motion, the painted bars are withdrawn from between the filling wire and the selvage wires, to allow the final motion of the shuttle to draw the filling wire snug up to the selvage wires and produce a true and even selvage.

Claim.—The inventor says: I claim, first, the mode of constructing and operating the shuttle and combining it with the selvage-forming apparatus, whereby the filling wire is straightened, the certain action of the shuttle secured, and the width and selvages of the wire cloth preserved, substantially as specified.

I also claim the mode of arranging the parts which connect the selvage-forming apparatus with the loom shipper, whereby the loom is thrown out of gear when the filling wire fails, as set forth.

I also claim the mode of giving a double action to the lathe, substantially in the manner and for the purpose specified.

And I finally claim the mode of constructing and arranging the parts of the warp wire stop motion, and combining it with the loom shipper for stopping the loom when a warp wire breaks, substantially as specified.

No. 17,926.—W. H. Gray, of Dover, N. H.—*Improvement in the Let Off Motion of Power Looms.*—Patent dated August 4, 1857.—Every time the lay moves forward, the cam I on the treading shaft H acts upon the part E of the clutch, to turn it in the direction of the arrow shown in fig. 3, and at that time the part D of the clutch is held in contact with the part E by the action of a spring in the box *c*, which produces sufficient friction between D and E to cause the latter to turn the former, and with it the shaft P; thus causing the endless screen *a* to operate wheel C to turn the yarn beam to let off the warp yarn. By this movement of the part E of the clutch, the latch d^2 is caused to pass the lever J, and be retained by said lever after the offset of the cam I passes the arm *d*, thereby preventing the part E of the cam from returning before the clutch is uncoupled, and thereby drawing back the shaft and causing the yarn let off to be taken back again. Before the lay completes its forward movement, the cam G, by its action on the lever F, moves the said part D out of contact with the part E, and leaves the latter free to move back in the opposite direction to the arrow shown in fig. 3.

Claim.—First. The combination of the shaft P, the endless screw and worm wheel *a* and *c*, or their equivalents, the friction clutch D E, the arms *d e* attached to the friction clutch, the lever F, the cams G and I, and the lever K, the whole arranged, applied, and operating substantially as set forth for the purpose specified.

Second. The combination of the latch d^2 attached to the loose portion E of the friction clutch, the levers J and T operating as described, to detain and liberate the said portion of the clutch, substantially as and for the purpose set forth.

No. 17,559.—Warren W. Dutcher, of Milford, Mass.—*Improvement in the Roller Temple for Looms.*—Patent dated June 16, 1857.—The end of roller A revolves in a cylindrical recess of the part *a* which encloses said roller, and serves, during the process of weaving, as a guard to prevent the loose warp or filling threads from getting in between the end of roller A and the part *a* of the case.

Claim.—The described improved roller temple case, made with a cylindrical recess for the reception and protection of one head or end of the toothed roller in the manner as specified.

No. 17,323.—Levi Ferguson, of Lowell, Mass.—*Improvement in the Shuttle Motion for Looms.*—Patent dated May 19, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim generally the employment of curved guides near the bottom of the picker staves to direct the upper ends of the staves in straight lines parallel with the warps; as I am aware that plates with curved slots to receive and form guides to studs on the picker staves have been employed, which device is less simple and more expensive in its construction, and does not work with so little friction as mine.

Nor do I claim, of itself, enclosing the retracting spring in a box carried by the rocker shaft.

But I *claim* the combination, substantially as described, of the rest *e* carried by the rock shaft, the curved sliding guide rod *b* connected with the picker staff, and the box *g* attached to the rock shaft—the latter serving not only to guide the sliding guide rod, but to contain the spring by which the picker staff is thrown back after throwing the shuttle—the whole operating substantially as set forth.

No. 17,746.—Alexander McCausland, of Providence, R. I.—*Improvement in Paper Cop Tubes.*—Patent dated July 7, 1857.—The strip of paper, of the shape represented in the engraving, is moistened with paste at one of its sides, then the wide end of the strip is wound first, by hand, once around the spindle, and the spindle is then carefully turned until the whole is wound up. By this process, the tube is produced shaped in the form of a truncated cone, the bore of which remains of the same size throughout.

Claim.—The paper cop tube, made of a strip of paper of the form represented, in the manner described, whereby greater strength is given to the base of the tube while the desired conical form is at the same time attained.

No. 17,050.—John North, of Middletown, Conn.—*Machine for Drying and Pressing Paper.*—Patent dated April 14, 1857.—The paper to be dried is placed at 1 on the endless belt *g;* and as it passes between the heated plates *e*, it is dried and carried to the printing cylinders *b*. The cylinders *b* are enclosed within a casing *d*, so that the ends of the said cylinders will fit closely to the ends of the casing, but that a space is left between the surface of the cylinders and the inner circumference of the casing. The rollers *e* rotate in this space and the interstices between the rollers *c* are filled with sawdust, and as the rollers *c* rotate, they constantly keep clean the circumference of the cylinders *b*.

The inventor says: I do not claim passing sheets of paper between heated cylinders or over-heated plates to dry the same, as that has repeatedly been done in the manufacture of paper; but such apparatus as heretofore used would not answer for printed paper, the printed surface of which must not be touched during the process of drying.

But I *claim*, 1st, the apparatus for cleaning the pressing cylinders, substantially as set forth.

2d. In combination with the pressing cylinder as described, the drying apparatus, consisting of heated plates or chests, between which the sheets of printed paper are passed on tapes without touching or dragging thereon as specified.

No. 17,352.—**Edward N. Smith**, of Springfield, Mass., assignor to **Steuben S. Bacon**, of Boston, Mass.—*Improvement in Machines for Folding Paper.*—Patent dated May 19, 1857.—The sheet to be folded being placed upon table *a*, the adjustable pins a^2 enter the register holes of the sheet and adjust the paper to its proper position. The fingers e^1 of the sliding frame *c*, take hold of the front edge of the sheet, the register pins a^2 are withdrawn as levers *v* are operated upon, and the sheet is carried forward, resting upon frame *c*, under the straight edge *d*; as the frame *c* moves forward the straight edge *d* descends on the sheet and drives it down through slit c^2, thus effecting the first fold; the edge *d* being provided with points *i* which prevent any displacement of the sheet. When the sheet passes from the first fold it is necessary to arrest it at the exact point to accurately receive the second fold; this is accomplished by the adjustable stop F, which determines the position when the sheet is to receive the second fold, which latter is effected by knife *g*. In a similar manner the sheet receives its third and fourth fold; and at the last fold the rollers *m* deliver it to a fly *o*, which places it upon a paper board M.

Claim.—1st. The employment of points or register pins, or their equivalents, for the purpose of correctly presenting sheets of paper to a folding apparatus, substantially in the manner and for the purpose set forth.

2d. The manner of adjusting the register pins, and their peculiar movement, as described, for the purposes specified.

3d. Combining with the knives or straight edges, or their equivalents, the points projecting beyond the edge thereof, for steadying the sheet while being folded, as specified.

4th. Reducing the speed of the succeeding set of rollers, from first to last, so as to proportion the distance traversed by the sheet at each succeeding fold to the reduction of its size, so that the time the sheets are moving from point to point shall be equal, or nearly so.

5th. The adjustable stop for determining the proper position of the sheet to receive its second and succeeding folds, as specified.

6th. The combination of the fly with the folding apparatus, for laying off the folded sheets, as described.

No. 17,663.—**Edward B. Bingham**, of Brooklyn, New York. *Improvement in Machines for Making Paper.*—Patent dated June 30, 1857.—The pulp, being properly prepared, is placed within the vat A, and the water will pass through the wire cloth covering the cylinder A, the fibre of the pulp adhering to the wire cloth. Motion is given to the endless aprons *c* on their rollers *a*, and the aprons knit or weave the fibres of the pulp together on the cylinder, so that a very compact paper is made.

The inventor says: I do not claim to be the first inventor of agitators for moving the fibres of the pulp, and thus causing them to interweave.

I especially disclaim the employment of spiral agitators, as in Marland's patent.

I *claim* the employment or use of the endless aprons C, one or more placed within the pulp vat adjoining the cylinder B, for the purpose set forth.

No. 17,917.—**Patrick Clark**, of Rahway, New York.—*Improvement in Machines for Making Paper.*—Patent dated August 4, 1857.—The nature of this invention will be understood by reference to the claims and engravings.

The inventor says: I am aware that the pump B, or an equivalent device, together with the pipe C, entering the vat at Y, is old and well known in connexion with such machines as I have described; and the pipes F and K are also old and well known. Therefore, I do not claim those pipes separately and in themselves.

Neither do I claim to have invented the use of a cistern to collect the water which is separated from the pulp during the process of forming pulp into paper by means of a machine.

I *claim* the arrangement of the conducting pipes W, connecting the pump B with the jet pipes F and K, for the purpose of washing the felt X and cylinder A with the water which has been separated from the pulp, and thus avoid the necessity of introducing for that purpose water from any other source into the machine, all substantially as described and for the purpose specified.

No. 16,430.—**John S. Blake**, of Claremont, New Hampshire.—*Improvement in Machinery for Making Paper.*—Patent dated January 20, 1857.—The pulp passes on the wire cloth E in the usual manner; the pump I is put in operation, and a vacuum is produced in the chambers *a* and *b*; as the pulp passes over chest C, the pressure of the atmosphere caused by the vacuum produced within chest C expels the moisture from the pulp, the water and air are drawn down within pipe D, through pipe G, into pump I, and both are forced into trunk F^1, the water falling to the bottom of said trunk; as the operation continues, the water is forced upward within the pipe K by the pressure of the air in trunk F^1, and passes through one of the pipes a^1 into pipe I, and is conveyed by pipe M to any proper receptable. The air in the upper part of trunk F^1 passes through pipe O into the two pipes P and P^1, and is ejected through tubes *i* and *j*, cutting the edges of the pulp on wire cloth E, thus forming a clear edge at each side of the paper. The felt apron S receives the paper from the wire cloth apron E, and passes between the wet press rollers T, and also between the usual heated cylinders, the roller V compressing the paper, and expelling the moisture therefrom. The margins of pulp cut off from the paper by tubes *i* and *j* are discharged from the apron E by jets of water, which flow from the tubes *k* of the pipe Q.

The inventor says: I do not claim expelling or forcing the moisture from the pulp by means of atmospheric pressure, irrespective of the means employed for effecting that purpose, as herein described.

I *claim*, first, the employment or use of the pump I, vacuum chamber *f*, and vacuum chest C, provided with the two compartments *a b*, and communicating with the pipes D G by means of the cocks *e d*, the parts being arranged substantially as shown and described, for the purpose set forth.

2d. The air and water trunk or reservoir F, provided with the pipe K, and communicating with the external pipe L, as shown, the reservoir communicating by means of a pipe O with the pipes P P, having the tubes *i j* connected to them—the whole being arranged, substantially as described, for the purpose of trimming the edges of the paper or pulp; and I further claim trimming the edges of the pulp by means either of air or steam, when ejected through tubes *i j*, arranged as shown.

3d. The pipe Q, with the tubes K attached and arranged as shown, for the purpose of discharging the margin or strips of pulp from the wire cloth apron A.

4th. The curved rod W, with the rollers s s^1 placed on it, the roller s^1 being connected with the springs *t*, and arranged as shown and described; whereby the felt upon S is stretched or distended transversely, and also guided or properly retained in position as it operates.

5th. The cylinder U, in combination with the wet press cylinders T T, when the speed of the cylinder U and cylinders T T is made variable for the purpose of stretching or distending the apron S longitudinally, as herein described.

No. 18,389.—Robert H. Collyer, of Camden, N. J.—*Improvement in Preparing Paper Pulp from Beet and other Refuse.*—Patent dated October 13, 1857.—This invention consists in the preparation of residue of beet root, mangel-wurtzel, and other species of the genus, left in the process of sugar-making and distillation, to be used in the manufacture of paper. By this invention the said residue for paper-making material is prepared in such a manner that the glutinous, albuminous, gelatinous, and other protein qualities it contains, shall be developed, preserved, and brought into an active state and rendered useful in the application and use of said residue, when prepared, in combination with other materials, to form a pulp convertable by known modes into paper, papier-mache, millboard, and other paper manufactures.

The inventor says: I do not mean to confine myself to the combinations and proportions above stated.

But I *claim* the exclusive use and employment for making paper and paper manufactures, in any combination or proportion whatsoever of the residue prepared, so as to retain and preserve the albumeno-mucilaginous substance, as before described, or in any other manner substantially the same of beet root, mangel-wurtzel, and other species of the genus, beta, left after the sugar-making and distilling processes have extracted the saccharine matter.

No. 18,190.—William N. Clark, of Chester, Connecticut.—*Improvement in making Paper Pulp from Ivory.*—Patent dated September 15, 1857.—The nature of this invention will be understood by reference to the claim.

Claim.—The using of ivory as stock to make pulp for the manufacture of paper.

No. 17,387.—Marie Amédée Charles Mellier, of Paris, France.—*Improvement in making Paper Pulp.*—Patent dated May 26, 1857; Patented in France, August 7, 1854; Patented in England, October 26, 1855.—The straw or fibrous matters are cut in short lengths, are washed in warm water, and then placed within the rotary steam-boiler represented in the engraving, together with a solution of caustic alkali, and the material is boiled in this solution by the steam entering pipe H, passing out at the end of I, and then through pipes F, and finally escaping through pipe K; when the material has been treated in this manner it may be bleached, and is then ready for use.

The inventor says: I do not claim the general use of caustic alkaline solutions, nor the employment generally of a close boiler for boiling straw and other vegetable fibrous substances.

But I *claim* the use of a solution of caustic soda *n a o* in a compartment of a rotary vessel separate from that which contains the steam heat, substantially as described.

Also, the described process for bleaching straw, consisting in boiling it in a solution of pure caustic soda *n a o*, from 2 to 3 Beaumé, at a temperature not less than 310 Fahrenheit, after it has been soaked and cleaned, and before submitting it to the action of a solution of chloride of lime from 1 to 1½ degrees, substantially as described.

No. 16,949.—Columbus F. Sturgis, of Dallas county, Ala.—*Improvement in the Manufacture of Paper Pulp.*—Patent dated March 31, 1857.—The bark of the root and of the stalk of the cotton plant is gathered in its most perfect state and subjected to cold water washings to separate the coarser impurities from it. The material is then subjected to washings in hot water, which separate the skin which invests the roots and stalks, in which process is also dissolved the mucilaginous matter contained in the material which is to be preserved in the material as a sizing for the paper. The material is then ground to pulp, and manufactured into paper in the ordinary way.

Claim.—The described process of manufacturing paper pulp from the bark of the root and the bark of the stalk of the cotton plant.

No. 16,994.—Charles L. Pond, of Buffalo, N. Y.—*Improvement in Paper Ruling Machines.*—Patent dated April 7, 1857.—The screw S through the shaft arm D secures the attachment to the pen-holder; its situation is such that its edge shall rest upon the roller under the striking point when the pens touch the paper. The point *m* of the concentric edge being in contact when the pen points drop upon the head line, the box *c* and rim *h* will revolve in the direction of the arrow as the paper is carried forward, and the pens be permitted to mark during the time the concentric portion of the rim is in contact with the surface on which it rolls. When the point m^1 is reached, the eccentric will lift shaft *a* and with it the pen holder, causing a space to be left while the rim rolls from m^1 to *m*, when a new contact of the pens and paper ensues. The tongue *e* enters a new tooth of the stop wheel F at each revolution; and when the rim *h* flies back by the action of coiled spring *l* on the lifting of the pen-holder, the contact of the last notch and the said tongue will insure that the rim *h* assumes the position from which it had previously started.

Claim.—The spring connected box and shaft, combined with the stop-wheel and the detachable rim, as described, constructed, arranged, and operating substantially as and for the purposes specified.

No. 17,895.—Julius A. Roth, of Philadelphia, Pa.—*Improvement in Treating Paper Stuff.*—Patent dated July 28, 1857.—This invention consists in treating the fibres of wood with a sulphurous acid bath, either in liquid or gaseous form, preparatory to the application of the chlorine solution for bleaching the same for the purpose of destroying the injurious effects of the relation of the chlorine bleaching agents to the nitrogen contained in the wood, by which the fibres are prevented from bleaching pure white.

Claim.—The combined application of sulphuric acid upon woody fibres with that of the chlorine bleaching agents, substantially as described.

No. 16,927.—Louis Koch, of New York, N. Y.—*Improvement in Machines for Making Pasteboard.*—Patent dated March 31, 1857.—The operation of this machine is as follows: The paper web upon the felt F is wound around the forming roller A, and the roller E which is pressed against said forming roller by spring *a*, will gradually be forced away from said roller A as the board increases in thickness, taking with it the arm G and screw O. When the pasteboard has obtained the required thickness, which is regulated by the position of the screw O, said screw O acts upon lever R, so as to force the lever R away and clear of the nose *n* on the arm H; setting thereby the slide P at liberty, which will then be forced outward by the spring F, by which action the pasteboard which has been formed on roller A will be cut in two. When the slide P has cut the board and partly loosened the same from the forming roller A, the pins *r* on the ends of the roller A act upon the levers *m* and communicate thereby a downward motion to the frame S, by which motion the India rubber *x*. strips the board off from the end of slide P, when said board falls upon the roller *p* and felt T, by which it is carried away.

Claim.—The arrangement of the roller E in connexion with the arm G and projection or screw O, for the purpose of operating the lever R, by which the slide P is held fast or set at liberty when the board has obtained the required thickness, together with the arrangement of regulating, by means of said screw *o*, the required thickness of the pasteboard, in the manner specified.

Secondly, the moveable slide P or its equivalent, constructed and operated as described, and for the purpose of cutting or tearing and lifting the pasteboard which was formed on the roller A from said roller, after the same has obtained the required thickness.

Thirdly, the arrangement of the moveable frame S with leather, or its equivalent, attached, for the purpose of stripping off the cut pasteboard from the end of the slide P, the whole being operated in the manner as specified.

No. 17,489.—Patrick Clark, of Rahway, N. J.—*Improvement in Machines for Drying Pasteboard or Paper.*—Patent dated June 9, 1857.—Steam is admitted through pipe K, which, by means of main pipe B, fills the hollow leaves A. These leaves can be turned on their hollow trunnions, which admit the steam into the hollow space; and when the upper leaves are turned to the position represented in the engraving, the pulp can be spread on the horizontal leaves, where it is dried by the heat of the steam.

Claim.—The inventor says: I am aware that hollow tables have been used for drying purposes, the materials spread on the top of them to be dried; but I am not aware that one heated hollow table was ever placed above another for such or any other purpose, or arranged in the manner I have described. And I am also aware that heated hollow plates have been used for heating purposes; but I am not aware that they have been used in the manner described.

I claim the arrangement of the series of hollow heated plates for drying purposes, substantially as described and for the purpose set forth.

No. 16,928.—Louis Koch, of New York, N. Y.—*Improvement in Machinery for Pressing Water out of Pasteboard.*—Patent dated March 31, 1857.—The pasteboard passes from the forming roller A, between the rollers *m p*, upon the felt T, by which it is carried over and between the different pressing rollers R, R^1, R^2, R^3, R^4, R^5, and passing also between the felt cloths V and V^1 of the rollers M, N, B^1, and M^1, N^1, R^3.

Claim.—The combination of the pressing rollers, in connexion with the rollers N M and N^1 M^1 arranged with endless felts, in such a manner that the board shall be made to pass between the pressing rolls between two thicknesses of felting, to allow the water contained in the board to be pressed out of the same without injuring the board during the pressing process, the whole being arranged in the manner and for the purpose described.

No. 17,723.—Denzlow Burhaus, of Burlington, Iowa.—*Machine for Cutting Pasteboard, &c.*—Patent dated July 7, 1857.—By forcing the paper against the cutter I, both surfaces of the paper are cut inwardly, so that no burr is left on either edges of the paper.

Claim.—The employment, in connexion with the grooved feed rollers, E F of a double-edged or V-shape cutter I, substantially as set forth.

I also claim the combination of the steadying roller H, with the feed roller F as and for the purpose described.

No. 17,754.—Joseph M. Smith, of Manchester, N. H.—*Improvement in Covering for Drawing-Rolls.*—Patent dated July 7, 1857.—This composition for covering drawing-rollers consists of the following ingredients: 25 pounds of India rubber, 5 pounds of magnesia, 4 pounds of sulphur, 12 pounds of black lead.

Claim.—The use of black lead in combination with India rubber as a material for covering drawing or draft-rollers for the purpose of avoiding the effects of electricity and the adhesion of the cotton to the rollers, as set forth.

No. 17,496.—William R. Dutcher, of Lansingburgh, N. Y.—*Improvement in Rope Machines.*—Patent dated June 9, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim a friction applied between the motive power and the reel, and allow the latter to slip and only wind the rope as made. But I am not aware that an adjustable friction plate has ever before been applied in such a manner by the screw and spring 23 as to be adjusted and adapted to different characters of rope.

I *claim* the self-adjusting thimble, *m* or *o*, combined with the cone *l* or *n*, when kept towards the said cone by suitable yielding pressure, for the purpose of laying up either the strand or rope and adjusting itself to any inequalities without breaking either the yarns or strands, substantially as and for the purposes specified.

No. 17,787.—Ezekiel Guile, of St. Louis, Mo.—*Improvement in Rope Machines.*—Patent dated July 14, 1857.—By the use of the additional flyer F, the capacity of this machine can be considerably increased; for by placing the bobbin *a* and reciprocating traverse *d* in said flyer, the flyer *E* can be driven to double the velocity. The readies *r*, in passing from the twisting flyers *c* to the laying flyers E, will draw against the ends of rods *n*, so as to compress the springs *x*, and allow the catch bolt *u* to drop into the notch cut in bar *x;* but should one of them break, the spring *x* will distend and cause the pin in said guide rod to act on levers *x* and *v*, so as to detach bolt *u* from rod *x*, which, being acted upon by spring *s*, will be thrown back and the belt shifter will shift the belt to the loose pulleys, thus causing the machine to stop.

Claim.—The additional laying flyer F, when combined with the described machine, substantially as set forth and for the purpose specified; also, the automatic stopping apparatus, when combined substantially as described. Further, the curvilinear dies, as shown, for the purpose specified.

No. 17,005.—Milton Wallwork, of Hoosick Falls, N. Y.—*Improvement in Machinery for making Rope.*—Patent dated April 7, 1857. The nature of this invention will be understood by reference to the claim and engravings.

Claim.—I do not claim pressing the rollers outward into contact with the ring by means of springs, as in Harris's patent.

I do not claim the giving to the strand flyers a rotary motion on their own axes to produce a twist of the strands by means of rollers on the axes of the flyers running in contact, with the inner face of a stationary ring.

But I claim the construction of the stationary circle, or ring, with which the rollers *a* on the flyers D run in contact to produce the rotary motion that gives the twist of a series of segments K, one or more of which may be removed or withdrawn from the ring or circle, or replaced therein at pleasure, for the purpose of varying the twist substantially as herein set forth.

No. 17,084.—Harvey W. Fowler, of Hoosick Falls, N. Y.—*Improvement in Machines for making Rope.*—Patent dated April 21, 1857.—Motion being imparted to layer shaft C, the spider E revolves with said shaft, and the pressure of pulleys *f* against the face of the stationary disk F causes said pulleys and the flyer shaft *g* to rotate, and gives to the thread wound off from bobbin *i* the required degree of twist. The degree of twist can be regulated by moving the pulleys *f* up or down on their shafts *g*, causing them to traverse a larger or smaller circle on the face of the disks. The revolution of the layer shaft C gives to the combined strands their proper lay as they issue from the hollow end of shaft C.

Claim 1st.—The stationary disk F, arranged in relation to the layer shaft C and the spider E in the manner described, for the purpose of communicating motion to the flyers *h*, through the flyer pulleys *f*, as set forth.

2d. Arranging the series of flyer shafts *g* radially to the layer shaft C, and revolving them when the layer shaft is revolved, so as to give the proper degree of twist to the threads or strands as they leave the spools or bobbins in the flyers, by the peripheries of the flyer pulleys *f* being kept in contact with the face of the stationary disk F, the said pulleys being adjustable nearer to or further from the centre of the layer shaft, to decrease or increase the speed of the flyers, and through that to give a less or greater degree of twist to the thread or strand, as described and set forth.

No. 16,842.—Michael H. Johnson, of St. Louis, Mo.—*Improvement in Rope manufacture.*—Patent dated March 17, 1857.—In the engraving, A is the frame; N N are the two condensing rollers, having their axis at F G; B B is the reciprocating carriage upon which the calender roller M and the bobbin I are placed; C C are the guides upon which the carriage traverses, the hooks P P having the weights V V attached or suspended on the axis of the bobbin at H. The calender roller has its axis in the carriage at E. D is an endless screw, which communicates the reciprocating motion to the carriage through the medium of the "dog" U. The power is applied to the pulley J, which communicates motion to the pulleys K, Q, and R, and also to the drum L, the calender M, and the bobbin I, by means of belts, as shown in the illustrations.

The inventor says: I do not claim the condensing rollers; nor do I claim, of themselves, the bobbin and calender roller.

But I *claim* the combination of the condensing rollers with the calender roller and bobbin, as described, whereby the sliver may be condensed to a greater degree than is admitted under the ordinary circumstances governing the aforesaid manufacture, with advantages as set forth.

No. 16,858.—**Joseph Wood**, of Brooklyn, N. Y.—*Improvement in Machines for making Rope or Cordage.*—Patent dated March 17, 1857.—The object of this invention is to perform the first stage of the reduction of old rope to its original fibre, or, in other words, to effect a separation of the strands. It consists in a rotating roller head B, carrying two feed rollers E E, having their axes arranged perpendicularly to and on opposite sides of its own axis of rotation, confined with a pointed mandrel I, that is arranged in line with said axis of rotation. The rope being conducted between the rollers, the rotation of the rollers in the head drives the rope upon the point of the mandrel, while the rotation of the head upon its own axis gives the rope a rotary motion in contact with the mandrel in the opposite direction to the lay of the rope, by which combined operations the strands are parted.

The inventor says: I disclaim the invention of the revolving roller head itself, and its use for any other purpose than that of unmaking rope.

But I *claim* the combination of the rotating roller head and the pointed mandrel, to operate in the manner and for the purpose set forth.

No. 18,845.—**James Hanley**, of New York, N. Y.—*Improvement in mechanical movement for Sewing and other Machines.*—Patent dated December 15, 1857.—The claim and engraving explain the nature of this invention.

The inventor says: I do not claim the mere stopping of a machine by the intervention of a brake, as this is already done in several ways, by pawls, clutches, and tightening bands.

But I *claim* the roller *r*, moving in a conical recess, and brought into action both to hold and release automatically, by the friction of its surface contact with and by the motion of the machine, substantially in the manner and for the purpose set forth.

No. 16,745.—**Samuel F. Pratt**, of Roxbury, Mass.—*Improvements in Sewing Machines.*—Patent dated March 3, 1857.—F is the arm that operates the machine; F carries the feeding apparatus H, and is also rigidly connected with the needle carrier E. As F is raised, the needle is raised above the cloth and the bar H rises, the spring I presses the nipper K upwards, so as to clamp the cloth at O. The bar H rising still further presses the cloth up into the grooved projecting foot of D, thereby drawing or feeding the cloth for the next stitch. When the needle descends through the cloth, the spring P will come down upon the cloth so as to flatten it and prepare it for the next ascent of H.

Claim.—Producing successive corrugations or folds in the cloth, substantially in the manner described, for the purpose of feeding the cloth for the production of the stitches.

Also, the combination of the lifter spring I, the nipper spring K, the rod H, and the flattening spring P, they operating together and upon the cloth essentially as specified.

No. 17,186.—**Bryan Atwater**, of Berlin, Conn.—*Improvement in Sewing Machines.*—Patent dated May 5, 1857.—The downward movement of the needle through the cloth carries with it the thread, and as the needle rises, a portion of the thread slackens by the friction of the cloth, and the upper part of said slack is confined to the under side of plate *g*; as the needle rises further, the loop is gradually contracted by passing between the two pins *m*, (fig. 2.) At this moment the feed motion suddenly takes place, and brings the loop in the position represented in fig. 3, the eye of the loop being then nearly parallel to the cloth. At the next downward movement of the needle *a*, it passes through the loop, carrying through it the thread which is to form the next loop, and tightening the first loop.

The inventor says: I do not claim forming a loop for a chain-stitch, and holding it in position to receive the succeeding loop wherein a stationary shuttle is used, as in the patent of T. J. W. Robertson.

But I *claim* the arrangement described, by which I am enabled to keep the loop of the needle thread positively in position by guides alone, without the necessity of introducing a looper or any other device into the loop, or making the loop pass around a hook or fixed shuttle; that is to say:

First. The described arrangement of guides for forming the loop from the slack of the needle thread, and directing the same by an external operation to a position for the needle to pass through it, consisting of a stationary guide-piece J, a stationary notched plate or edge *g*, and two stationary guides *m m*, arranged as specified, in proper relation to each other and to the needle and the cloth, or other material to be sewed, and employed in connexion with a proper feeding movement of the cloth or material, to operate substantially as described; and in combination with the said contrivance, I claim the guide plate *j*, with its lip *l*, arranged and operating as set forth.

Second. Though I do not claim the dog L, operating as described in connexion with an elastic foot-piece K on the face of the cloth, as in the machine of T. J. W. Robertson, to produce the feeding movement of the cloth or other material to be sewed, I *claim* the attachment of the dog L to lever M, arranged and operated upon, by a wiper *q*, on the driving shaft E, as set forth, to produce a quick or sudden feeding movement of the cloth or other material, which shall, at the same time, aid in throwing the loop in the path of the needle, as and for the purpose specified.

No. 17,930.—**Abial C. Herron**, of Remsen, New York.—*Improvement in Sewing Machines.*—Patent dated August 4, 1857.—The engraving represents a bottom view of the mechanism for forming and taking up the loop. As the machine is operated, a reciprocating motion is given to the rod *m*, which, by means of its rack, imparts a reciprocating revolving motion to shaft *k*, by means of pinion *a*. The looping-hook *i* forms the loop on the thread carried through the cloth by the needle, said needle leaning during said operation against the circumference of the India rubber roller *t*, which is rotated by the motion of the needle. Thus the needle is held on one side by roller *t*, while the loop is taken up by hook *i*, thereby preventing any bending of the needle; and as the needle rises, the roller presses the thread through the eye of the needle, and aids in throwing it from the needle on the side opposite to the roller, to facilitate the hook in catching the thread.

The inventor says: I do not claim a rotating hook which has a longitudinal or transverse motion in the direction of its axis, in addition to its rotary motion.

But I *claim* the hook *h* and roll *t*, arranged and operating in combination with the needle, in the manner substantially as described, for the purpose specified.

No. 16,382.—Milton Finkle, of New York, N. Y.—*Improvement in Sewing Machines.*—Patent dated January 13, 1857.—The loop-former B is made to pass in the shuttle race C, just forward of the shuttle, and forms and enters the loop first. By this means the shuttle can enter and pass through the loop with ease. As soon as the shuttle gets nearly though, the loop-former B is withdrawn; then, when the needle is going down, the shuttle is separated from it, by the thickness of the loop former, and therefore the needle is in no danger of being broken.

Claim.—The construction and use of the loop-former for the purpose of parting the thread from the needle, so that the shuttle will be certain to enter in the manner described.

No. 16,387.—A. F. Johnson, of Boston, Mass.—*Improvement in Sewing Machines.*—Patent dated January 13, 1857.—The loop hook F is attached to the sliding bar *g*, actuated by stud *h*, which, travelling in the cam groove *d*, vibrates hook F.

The inventor says: I do not claim the peculiar construction and arrangement of the mechanism described for driving and operating the machine, as I intend to make it subject matter of another application for patent.

I claim neither the set screw, nor a circular plate or cylindrical body rotating upon eccentric pivots, as new means for adjustment.

But I *claim* combining the hook when furnished with a lever or arm as described with the eccentric-headed screw *q* and the adjustable projection or screw *r*, for the double purpose of taking, first, the loop properly from the needle, and secondly, for actuating the hook at the proper time for the needle to take the loop from the hook.

No. 16,434.—James E. A. Gibbs, of Mill Point, Virginia.—*Improvement in Sewing Machines.*—Patent dated July 20, 1857.—On turning crank handle E a vibrating motion is imparted to the rocking shaft C and needle head R, so that said needle head will ascend laterally when the handle is turned in an upward direction, and descend, in returning, the same path it followed up. The needle is guided, first, by cross bars I, and, after passing through the cloth on table *a*, it is guided upon the inclined plane of the stationary crochet hook M. The loop is formed by the needle passing the thread over the crochet point, where it remains until the needle, in its next downward motion, passes through the loop and draws it off hook M. The further motion of handle E will bring cam F in contact with roller G of the tail-piece of cloth clamp X, and cause its elevation in front, the rigid feeding hook Y propelling the cloth one step when said clamp is raised.

Claim.—Making the chain-stitch with a vibrating needle in combination with a stationary hook.

No. 16,436.—Elias Howe, jr., of Brooklyn, New York.—*Improvement in Sewing Machines.*—Patent dated January 20, 1857; England, July 26, 1848.—The needle employed in this machine is pointed at both ends, and has an eye at the centre of its length to receive the thread. This needle is seized alternately by two pairs of nippers D and D^1, which are situated at opposite sides of the cloth, and which alternately push the needle into the cloth and withdraw it therefrom. As the needle is forced through the cloth, and when arrived at its lowest point, it is withdrawn a slight distance, thus causing the thread to form a loop, which is seized by finger *a* of lever J, said lever turning on the fulcrum K and being operated by cam G and arms *l* and *h*. As the lever J and finger *a* move to the position represented in dotted lines, the latter draws the slack thread from the needle and tightens the stitch.

Claim.—Drawing the thread through the cloth by means of a finger, or its equivalent, acting in connexion with mechanism which passes the needle through the cloth, substantially as set forth.

No. 16,566.—Joshua Gray, assignor to Himself and John Gault, of Boston, Mass.—*Improvement in Sewing Machines.*—Patent dated February 3, 1857.—Attached to the under surface of the machine is a plate F, upon which slides a plate G; the bar H slides in a recess in plate G, and it carries a pin *g* that plays in the slot *h*, thus imparting the required motions to plate G and hook *c*, which latter is fastened to plate G. The hook *c* forms the loop, in combination with a vibrating needle. The bar H receives its vibrating motions from the eccentric that operates also this needle bar.

Claim.—The combination and arrangement of the plate G, and slide H, with their slots and pins, operating in the manner substantially as described, for the purpose of giving the required motions to the hook, as set forth.

No. 16,554.—Samuel F. Pratt, of Roxbury, Mass.—*Improvement in Sewing Machines.*—Patent dated February 3, 1857.—Arm o^1 of hook N turns on pin *s* screwed into a bevelled standard *t*, so as to allow the hook to move in a vertical plane up to and into the vertical plane of the needle B and seam, and back from said plane; said movements being diagonal to said plane, and being produced by the arm o^2 being acted upon by the curved plate *u*, extending from lower rocker arm I. When the needle is at its highest position, the thread will be cast in a loop over the hook N; when the needle descends, it passes into and carries the thread through the loop; the point *w* of plate *u* strikes now arm o^2 thereby withdrawing the hook. When the needle rises and the thread slackens, part a^2 of plate *u* pushes forward arm o^2

and the hook through the slack in the thread. As the needle has risen above the cloth the feed motion takes place, and during the same the plate a^2, in consequence of its peculiar shape, stops moving the hook until the point of the needle has again descended to the loop, when the operation will continue as above. The feed motion will be understood from the engravings.

The inventor says: I do not claim the particular motions of the feed bar K, in vertical and horizontal directions. But I *claim* the combination with the arm I of the spring *f*, the projections *i l*, the bent lever L, and its projection *h*, or their equivalents, the same being to produce the motion of the feed bar, in the manner as described.

I also claim moving the loop hook or looper N diagonally up to and away from the needle, substantially in the manner as specified.

And I also claim effecting the movements of the loop-hook N at the proper times, substantially in the manner as described, that is to say, by means of the plate *u* attached to the arm I, operating upon the arm o^2 of the looper.

No. 16,518.—Elisa Alexander, of New York, N. Y.—*Improved Attachment to Sewing Machines.*—Patent dated February 3, 1857.

Claim.—Combining the mechanism of the guiding and conveying rollers *a* and *c* with the mechanism operating a sewing machine having an independent feed, in such a manner that the said rollers shall guide automatically the finished work away from the machine in a straight line, by revolving in opposite directions with a speed regulated by that of the machine

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No. 16,609.—Thomas J. W. Robertson, of New York, N. Y.—*Improvement in Sewing Machines.*—Patent dated February 10, 1857.—The operation of this device will be understood from the engravings.

Claim.—The spiral groove in the needle leading upward from the eye on one side, in combination with the looper *b*, in the manner and for the purpose described.

I also claim the loop guide *c* in combination with the looper for laying the loop, as described.

I also claim the guard pin *e*, or its equivalent, for the purpose set forth.

No. 16,713.—Joseph W. Burnham, of Hartford, Conn.—*Improvement in Sewing Machines.*—Patent dated March 3, 1857.—The cutter *a* is attached to the under side of the machine in such a way that by a quick motion of the hand on the pad *o*, when the machine stops its operation, the cutter will cut the thread below the work, and leave the thread in readiness to commence sewing in another place.

Claim.—The employment on sewing machines of the mechanism hereinbefore described, so as to cut or clip the thread on the under side of the work.

No. 16,710.—Charles D. Belcher, of Charleston, S. C.—*Improvement in Sewing Machines.*—Patent dated March 3, 1857.—The brake piece *b* is firmly secured in its holder *a*, but may be adjusted by slot and screw *x*, so that it may be brought nearer to the hook as its edge wears away. The periphery of the hook is sufficiently pressed against the brake to prevent the threads from passing under it, by means of spring *m*; this spring is attached to the frame of the machine and presses against the vibratory arm D. The brake is attached to the end of this arm D. The brake is separated at the proper moment from the periphery of the hook by means of cam *d* pressing against stud *h* upon arm D. *l* is a small friction roller at the end of the stud.

Claim.—The improvement on the patents of A. B. Wilson described, consisting in the application of an unyielding brake *b*, to hold the loop upon the revolving hook B, and imparting a positive movement thereto, in such a manner as to separate it from and bring it to the periphery of the hook at the proper moment, substantially as specified.

No. 16,850.—T. J. W. Robertson, of New York, N. Y.—*Improvement in Sewing Machines.*—Patent dated March 17, 1857.—The engraving and claim show the nature of this invention.

Claim.—The inventor says: I do not claim the broad idea of pulling the cloth through a sewing machine, independent of any tool or contrivance for so doing.

Neither do I claim the broad idea of moving cloth by means of hooks in all kinds of machines; for an example of such a movement is seen in the weaving temple of J. C. Tilton, patented 1855.

But I *claim* feeding the cloth in sewing machines by means of a hook, having one or more points, constructed and operating substantially as described.

No. 16,914.—James E. A. Gibbs, of Mill Point, V[illegible]—*Improvement in Sewing Machines.*—Patent dated March 31, 1857.—The operation of this apparatus is as follows: Supposing the needle of a lock-stitch machine to have passed through the cloth, down between the hooks 1 and 2, and to be about to withdraw, leaving a loop under the cloth, the hook 1, which is now placed in readiness to enter the loop, is caused to revolve and twist the thread a turn so as to pass the loop of the needle thread around and over the thread case A, when the needle is again brought down; the other hook 2 then faces the next loop presented, and by the return revolution twists the thread a turn or part of a turn in the contrary direction.

Claim.—1st. Making a series of lock-stitches with a double hook, reciprocating its motion of a single revolution or part of such revolution, substantially as herein set forth.

2d. In combination with a sewing machine the challon thread case A, of a spherical, oval, or any similar form, for containing a ball of thread having no fixed axis of revolution.

3d. Also attaching to the globular thread case A a plate B, or its equivalent, furnished with two hooks 1 and 2, which are placed symmetrically in the manner specified, and combining the whole with any suitable mechanism that will impart thereto a reciprocating motion of a single revolution, or part of such revolution, when the axis of revolution is fixed, substantially as set forth.

No. 17,049.—Willford H. Nettleton and Charles Raymond, of Bristol, Conn.—*Improvement in Sewing Machines.*—Patent dated April 14, 1857.—The press bar *u*, swinging on fulcrum 19, is kept down on the cloth by spring 20, and can be raised for inserting the articles to be sewed; the under side of said press bar, on each side of the slot in which the needle and feeding points operate, is formed with grooves 21 diverging from each other as shown at fig. 1, so that, as the cloth is fed along, the divergence of the grooves stretches the seam widthwise, rendering the same flat, and preventing any puckering or wrinkling by the needle feed points. The looper *r* is used when the machine is worked with two threads, and the looper *v* when operated with one thread.

The inventors say: We do not claim a single or double loop stitch, as that is well known; neither do we claim a needle feed, as this has already been used; neither do we claim the slide cam *o* and slot 11 in themselves, as these have before been used; and we are well aware that diverging grooves have been used for stretching the cloth widthways in shearing and similar machinery; but we are not aware that the press bar has ever before been grooved in the manner shown, to prevent the needle puckering the cloth as it is fed along in the manner shown.

What we *claim* is forming the face of the press bar next the material to be sewed, with diverging grooves to keep the cloth stretched widthways and prevent puckering under the operation of the needle, substantially as and for the purposes specified.

Also the looper (*r* or *v*) formed with the notch 13, into which the needle enters to insure the taking of a loop, when the said looper is combined with the slide *o* and slot 11, or their equivalents, for giving the necessary sideways motion for the purposes and substantially as specified.

No. 17,366.—Solomon B. Ellithorp, of New York, N. Y.—*Improvement in Sewing Machines.*—Patent dated May 26, 1857.—By revolving cam-wheel B, the needle C and its thread are forced through the cloth on table L; and the point of the needle coming in contact with slide H, the latter actuates lever I and loop former J, which catches the thread carried through the cloth, and forms it into a loop over the point of the bobbin M, through the action of spring-catch N, the bobbin M being alternately retained and released by the two arms of the magnet K, as the thread is drawn between the bobbin and the magnet.

Claim.—The attachment of the primary moving power to give motion to the needle in direct communication with the needle stock, and in vertical line with the needle.

No. 17,400.—Thomas S. Wells, of Utica, N. Y.—*Improvement in Sewing Machines.*—Patent dated May 26, 1857.—This invention relates to that class of sewing machines in which the sewing is effected by a needle with a point at each end passing entirely through the cloth to be sewed, from opposite sides alternately. The protruding portion of the finger *l* is caused by the rotation of the wheel O with the shaft E to pass between the point of the needle and the table A, at the precise moment when the needle has been withdrawn to the greatest distance from the cloth on the under side, and catching hold of the thread forms a loop in it, and by its continued revolution draws it through the cloth, doubling it and winding it upon the periphery of the wheel O till the stitch is drawn tight, when the drag of the thread on the finger *l* overcomes the force of the spring *p*, and allows the finger to fall back far enough for it to slip off, as represented in dotted lines in fig. 2.

The inventor says: I do not claim the invention of a two-pointed needle with an eye in the centre, nor a two-pointed needle with a slit or fissure to receive and pinch the thread. Nor do I claim the employment of a revolving finger for the purpose of drawing the thread through the cloth, or any other device described in the specifications of Hezekiah B. Smith or J. J. Greenough. But I *claim*, first, the employment of a wheel *o*, to carry the finger L, and take up the slack of the thread on its periphery as it is drawn through the cloth in tightening a stitch, substantially as and for the purpose specified. Second, enclosing the wheel *o* within a case R, substantially in the manner described, to prevent the thread slipping off the wheel, and to guide the slack while it is being drawn through the cloth in the production of the successive stitches as set forth.

No. 17,427.—James E. A. Gibbs, of Mill Point, Va.—*Improvement in Sewing Machines.*—Patent dated June 2, 1857.—The needle arm N is pivoted at *p*, and receives a vibratory reciprocating up and downward motion by a guide wheel W, in the eccentric groove of which the tail of the needle arm plays. The shaft S, which is attached to the centre of the disk C, has a rotary motion imparted to it together with its hook H, which is attached to the front end thereof.

When the needle arm has reached its lowest point of stroke, the hook H is just facing the loop which the needle has brought through the cloth; and when the needle next rises, the loop is loosened and opens at the same moment that the hook advances and penetrates the loop as represented in figure 2; the loop now slips off the hook and is caused to lodge in the angular recess *r*; the loop is then twisted by the spur or cast off *x*, which is so arranged in relation to the hook and angular recess *r*, that the loop is spread for the hook nose to pass through on taking a fresh loop from the needle. At this moment the hook has two loops engaged; the fresh loop at the nose and the preceding loop which now bears against the convex part of the hook figure 2. The next motion of the hook will allow this latter loop to slip off entirely from the hook, as shown in figure 3, and is drawn tight by drawing open the new loop. This series of operations is repeated at every revolution of the hook.

Claim.—The revolving hook described, constructed and arranged in relation to and operating in connexion with the needle, as set forth.

Also, when sewing with a single thread, interlacing or twisting the threads of the loop after passing the cloth to be sewed, and before taking a fresh loop, substantially in the manner and for the purpose specified.

No. 17,508.—**Daniel Harris**, of Boston, Mass.—*Improvement in Sewing Machines.*—Patent dated June 9, 1857.—When the needle with its thread *o*, after having completed its downward motion, commences to rise, the beak point *a* is caused to enter between the thread and needle before the thread has any chance to twist. The thread, as the beak advances by the motion of arm C, is laid partially around the beak, and is drawn over thread catch *x*; and when the plate projection *p* is brought against the end of spring *h*, the beak spreads the opening between the two portions of thread, and the needle on its descent passes through the opening. When the needle in its next descent has penetrated the cloth and its point has just entered the loop, then the front of bar C begins to rock back, causing the spring *h* instantly to depress the plate *b*, so as to slacken the thread, which release allows the needle in its further descent to draw its thread in part from the slack of the preceding loop.

Claim.—The mechanism for forming and interlooping the stitches, consisting of the beak *a*, the catch *x*, the plate *b* and its projection *k*, the spring *h*, and the needle, when constructed, arranged, and operated together in the manner as set forth.

No. 17,571.—**Daniel Harris**, of Boston, Mass.—*Improvement in Sewing Machines.*—Patent dated June 16, 1857.—As the crank shaft G is rotated, a vibrating motion is imparted to lever E and connecting rod *o*, and the sliding plate *m* is vibrated in its ways *i k*, resting upon plate *p*. When the plate *m* begins to move forward, the pin *n* is in the front part of the oblique slot of the plate *m*; and as said plate moves forward, it causes the pin *n* and looper rod *c* to move forward until the point of the looper reaches its most outward position. The plate *m*, as it continues to move against pin *n*, causes the looper rod *c* to turn on its bearings until stud *q* strikes against bed *p*, and to stop the rotary motion. As the plate next moves back, projection *r* strikes against stud *q* and rotates the looper, so that the pin *n* shall again enter the rear part of the slot. The effect of these movements is, that when the needle B and its thread are upon their downward course and the point of the needle has just penetrated the cloth, the looper is at its most forward position, as seen in fig. 6, its nose *y* being advanced past the path of the needle, its loop spreader *t* holding the loop of thread open in said path, and the slot *s* also in said path. As soon as the needle has penetrated the cloth, it enters the loop spread out under it; and as it continues, the loop rod rotates until the spreader *t* is turned at right angles to the table, when it is drawn back horizontally through its bearings, the needle ascending until the loop is fully pushed back. When thus pushed back, the nose of the looper is just against the side of the needle and in rear of the thread on the back of the needle; and as the needle begins to rise, the thread slacks, and the nose moves forward between the thread and the needle; and as the point of the needle rises from under the table, the spreader, having the thread cast over it, rotates and spreads the thread ready for the next descent.

The inventor says: "I am aware that a looper or hook has been before made and used for effecting the same purpose as my looper, namely, to take the loop from the side of the needle and lay it open under the point thereof, by having reciprocating horizontal and rotary movements imparted to it. I therefore do not claim these peculiar movements of a looper.

Neither do I claim moving a hooked needle vertically through a fixed bearing up through a feed bar, to take the thread from the cloth, as my looping apparatus is not for such purpose.

I *claim* the arrangement of the mechanism described for operating the reciprocating looper, and giving its rotation or partial rotation, for the purposes set forth; that is to say—

I claim the combination of the inclined slot plate *m*, the pin *n*, and the stud *q*, or their equivalents, they operating as above described to produce the proper movements of the looper.

No. 17,717.—**William Sage**, of Durham Centre, Conn., assignor to **Henry Sage**, of Berlin, Conn.—*Improvement in Sewing Machines.*—Patent dated June 30, 1857.—The loop-former, consisting of the parts *a b*, is operated by a cam on the driving shaft acting on lever L and slide N; and said cam is so formed that when the needle J is in the highest position, the loop-former will be in the position represented in the engraving. This is attained by the incline on part *a*, figure 3, of the loop-former striking pin *g*, which, as the former advances and the needle rises, forces the point of the loop-former upward to relieve the loop as the needle approaches its highest position; at the same time the heel of the jaw strikes the pin *h*, which opens the point of the loop to allow the needle in its descent to enter the loop. As the needle completes its descent, the loop-former is drawn back and releases the loop. As the needle commences to rise, the position of plate *k* insures such a position of the loop that the loop-former will enter and secure it as it returns against the plate. As soon as the point of the needle J rises above the loop-former, the spring M is caused to press the loop-former up against plate *k*, and to push it away from the needle; and at the same time the points of the loop-former are raised and spread to open the loop by the pins *g* and *h*, the raising of the points of the loop-former allowing them to spread and open the loop without strain upon the thread. These parts remain in this position till the needle descends into the loop, when the points of the loop-former descend and retire, and the plate *k* returns to the needle, as before described.

Claim.—1st. Combining the spring top plate with the needle and loop-former, as described, for the purpose set forth.

2d. Giving the point of the loop-former an upward motion as the needle rises, and the point of the loop-former expands to form the loop, substantially as described and for the purpose stated.

3d. The construction of the loop-former and its arrangement in connexion with the trip *h* and slide N, by which it is made to open to spread the loop for the reception of the needle, and close to enter the next loop, as set forth.

No. 17,679.—Elias Howe, jr, of Cambridge, Mass., and William R. Bliss, of Boston, Mass.—*Improvement in Sewing Machines.*—Patent dated June 30, 1857.—The needle E is first inserted and retracted sufficiently to open the loop; the shuttle T is then advanced sufficiently to insert the point *c* thereof into the loop, and for the finger V to enter the groove *e* in the shuttle. The needle is then withdrawn to the surface, and the shuttle is thrust forward through the loop, enlarging it sufficiently to permit its passage by drawing through the needle thread; the shuttle thread is then held, and the stitch is drawn up by the retraction of the needle arm D^2 in the usual manner.

Claim.—1st. In connexion with the mode of forming a seam by means of two threads, as described, we *claim* the seizing and holding of the loop of the needle thread after it is inserted, by means of the point *c* of the shuttle and finger V, or their equivalent, and the withdrawing of the needle from the material to be sewed before the shuttle thread is passed through the loop, substantially in the manner and for the purpose described.

2d. We claim the combining and arranging of the mechanism which works the shuttle thread and the baster H, or its equivalent, with the standard C, and in connexion therewith so arranging the mechanism which works the needle thread as that they shall co-operate and form the seam when the standard is inserted in objects of a tubular form, as described.

No. 17,744.—E. T. Lathbury, of Buffalo, N. Y.—*Improvement in Sewing Machines.*—Patent dated July 7, 1857.—When the needle has been protruded through the cloth and retracted a little to slacken the thread on one side of the needle to commence the formation of the loop, the looper, by the movement of lever K, is caused to advance and pass between the needle and the slack thread with the shorter finger *i*, next the needle; and as the needle is withdrawn from the cloth, the loop is left extended on the outside of the looper, which moves onward so far, that when the needle is withdrawn upward from the side of it, a lateral movement of the looper will bring the open space between the two needle-pointed fingers *i* and *h* directly under the needle with the loop extended around them; so that the needle in its next passage through the cloth will pass between the two fingers of the looper, and the loop being extended in an open condition around them, the needle cannot fail to pass through it.

The inventor says: I do not claim the employment of a looper with two fingers, or a thumb and finger, as described in the patents of W. H. Johnson and L. Jennings, which fingers, or thumb and finger, operate differently to the fingers of my looper to produce a different stitch.

But I *claim* the looper composed of two elastic pointed fingers *h i*, and operating in combination with the needle, so that the needle passes through the looper while the loop is extended upon it, and then escapes from it by opening its point as the looper is withdrawn from the loop, substantially as and for the purpose specified.

No. 18,000.—William C. Watson, of New York, N. Y., assignor to Himself, George H. Wooster, and Ira W. Gregory, of the same place.—*Improvement in Sewing Machines.*—Patent dated August 11, 1857.—The engravings represent bottom views of the loop-forming apparatus. In figure 1, the needle *e* is in its downward stroke; and as the needle retreats the loop is formed, and cam *x*, at the same moment striking roller a^1, moves hook *b* forward, which takes the loop up, as seen in figure 2. The hook *b* and hold-fast *c* both retreat now; the loop is spread, so as to insure the passing through it of the needle *e*.

Claim.—The improved device for seizing the loop and holding and properly presenting it for the passage of the needle, consisting of a vibrating hook *b*, in combination with a gripper or hold-fast *c*, so arranged and operated as alternately to close upon the loop after being engaged by the hook to draw back the said loop, and to release the same after the passage of the needle through, in the manner described.

No. 18,071.—Henry Behn, of New York, N. Y., assignor to Himself and Thomas Sewell, of the same place.—*Improvement in Sewing Machines.*—Patent dated August 25, 1857.—By turning crank A the needle has a vertical vibrating motion imparted to it, and the cams *c* and c^1 are rotated, causing the loopers *a* and a^1 to move towards and from each other. When the needle is at the bottom of its stroke, the half looper *a* advances, so that its point passes between the thread and the needle. The other half looper a^1 now also approaches, and catches hold of the thread immediately over the first looper, in like manner, from the opposite side, and carries said thread also along with it. As the needle now rises, the feed of the cloth takes place in the direction of the arrow, (figure 3,) the loop is pulled along and spread for the needle to pass through; the needle then recedes, and another loop is caught and spread.

Claim.—The specific looping device herein set forth, consisting of two pointed bars—the one moving in a plane above the plane of motion of the other, and operating in combination with the needle in such manner that the loop is formed and held open by bending the thread out of a straight line in opposite directions, as described.

No. 18,068.—William Wickersham, of Boston, Mass.—*Improvement in Sewing Machines.*—Patent dated August 25, 1857.—The thread for the sewing operations of this machine is contained in the shuttle G, which is operated by lever F and cam J. The different stages of the needle in making the stitch are represented in the engravings. The needle passes through the cloth hooks into the stretched thread below the cloth, (fig. 2,) draws up the loop, (fig. 3,) and passes the loop through the cloth, (fig. 4,) while the shuttle passes into said loop, and through the same, as represented in fig. 5, where the needle becomes disengaged, and rises while the shuttle stretches the thread for the next operation, thereby producing a stitch, represented in figs. 6 and 7.

Claim.—A fast stitch made by one thread, which is formed by having the loop or double of the thread pass through from one side of the cloth to the other, and back again in another place to the first side of said cloth, and around the same thread of which the loop is formed by means of a shuttle, carrying said thread through said loop, substantially as specified.

Second. I claim a thread guide, with a notch or opening *e* in one side of it to receive the thread, and formed and arranged substantially as described, so that the thread may pass into it when said thread is to be guided into the eye or hook of the needle, and pass out of said notch in the thread guide at other times.

Third. I claim the use of a double-hooked needle, as described, in taking the thread both ways through the cloth—one way or up through the cloth by means of one hook, and the other way or down through the cloth by means of the other hook of the same needle, all substantially as above described.

No. 18,069.—William Wickersham, of Boston, Mass.—*Improvement in Sewing Machines.*—Patent dated August 25, 1857.—The nature of this invention will be understood by reference to the claim and engravings and the description No. 18,068.

Claim.—First. The method of taking up the slack thread above the cloth by means of the shuttle—that is, when the needle descends after having taken the thread up through the cloth, and to its greatest distance above said cloth, drawing down through the cloth the end of the thread connected with the shuttle by means of the shuttle receding from the needle as the needle descends, thereby preventing the liability of the thread's getting under the point of the needle, as said needle passes down into the cloth, by thus keeping said thread straight or nearly so, until said needle point is so near said cloth that there is no further liability of the thread's passing under it.

Second. I claim the formation of a seam of one thread which cannot be unravelled, of stitches, each of which is made by having the loop or double of the thread passed through from one side to the other of the cloth, and back again in another place to the first side of said cloth, and a loop formed by means of a hook needle, and then by having the same thread of which said loop is formed passed through said loop, and the loop drawn up to the cloth around the thread thus passed through it by means of the shuttle, as specified.

No. 18,072.—Samuel Larkin, of Bridgeport, Conn., assignor to The Wheeler & Wilson Manufacturing Company, of same place.—*Improvement in Sewing Machines.*—Patent dated August 25, 1857.—When a spool of thread is to be applied to this apparatus, the thimble S is withdrawn from the spool spindle *e*, the jaws *d f* are separated, the spool is inserted, and the thimble S is replaced. The tension of the thread is adjusted by operating nut P.

The inventor says: I am aware that springs or spring frictional brakes of various descriptions have been used to control the tension of the thread in sewing machines, and therefore I do not claim the employment of a spring for such a purpose.

Nor do I claim any arrangement or combination of a spring and other devices which operates upon a different principle from the combination devised by me.

But I *claim* a spring force as constructed, substantially as herein set forth, in combination with a spool spindle, or equivalent means of supporting the spool.

No. 18,102.—Orson C. Phelps, of Rochester, N. Y.—*Improvement in Sewing Machines.*—Patent dated September 1, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim the use of a spring immediately connected with the needle, or with the socket for holding the needle, or any spring attachment for a similar purpose not directly attached to the needle bar, as seen in the patent of I. M. Singer and others.

But I *claim* constructing the needle bar of sewing machines with a cap or helmet D on its top, and a spring *b*, or other elastic material which is equivalent in its effect, as India rubber, air, &c., interposed between the parts, for the purpose of giving a yielding bearing to the thread, both in drawing in the stitch, and when the shuttle passes the loop; whereby a very fine thread may be used without breaking, and a better seam produced, in consequence of the even tension of the thread and gradual drawing in of the stitch, as described.

No. 18,285.—Edward A. Jenks and John Underwood, of Lowell, Mass.—*Improvement in Sewing Machines.*—Patent dated September 29, 1857.—The frame and table, as well as the wheel A, and crooked lever B, by which motion is communicated to the needle, may be of any ordinary form. Upon the table C rests the foot of a curved sheath R, and within this sheath slides a feed strip S, the end of which also rests upon the table. The sheath has a fork shape at the end so as to bestride the needle N, whilst the feed strip S has a slight notch, which comes up to the needle when the strip moves forward, to push the cloth along. This sheath is supported by the arm M, and has two braces, T and U. As the lever B raises the needle, it also carries upward the pin O, until the latter strikes the screw P, which is firmly connected with the feed-piece. The plate Q is also attached to the feed-piece. The action of the pin O is to force the screw P upward, carrying the feed-piece S along the sheath, and thus give motion to the cloth upon the table; at the same time the action of the pin tends to raise the sheath, so that the foot of the sheath does not press upon the cloth. As the lever B carries the needle downwards, the pressure against screw P is relieved, and the pin C soon reaches the lower end of the slot in plate Q, and then pulls the feed-piece back in the sheath; at this moment, when the feed-piece is being drawn back, there is an increased pressure on the cloth, by the foot of the sheath, so as to hold the cloth more firmly. The foot of the sheath is smooth, and the lower end of the feed-piece is both smooth and blunt, so that no injury is done to the fabrics whilst being sewed. Below the table is a pair of rollers D D turning on pivots E E. The pivots E E are supported by adjustable slides. The looper H (fig. 3) is attached to the back part of one of the rollers so as to turn with the roller, which also carries in front a spring I. This spring presses the lower end of the looper against the inclined plane K.

The inventors say: We are aware that a looper has been moved by the action of the needle, but in a way entirely different from our invention.

We disclaim the rigid guide and feed-piece, as employed in the patent of J. B. Woodruff, dated December 23, 1856; also the use of a spring presser for holding the cloth, as this device has been long in use in sewing machines

We *claim* the arrangement of the spring feed-piece S, with its pressure guide or sheath R, substantially as described, for the purpose set forth.

2d. We also claim the rollers D D^1 and looper H, as arranged and operating in combination with the needle, for the purpose specified.

No. 18,371.—William C. Watson, of New York, N. Y., assignor to Himself, George H. Wooster and Ira W. Gregorry, of same place. *Improvement in Sewing Machines.*—Patent dated October 6, 1857.—The nature of this improvement consists in making a looper for single thread or chain-stitching sewing machines, the object aimed at being the obtaining of greater certainty of action with simplicity of parts. The principle of this looper lies in the peculiar combination of two hooks, one of which is stationary, the other movable, which latter is called by the inventor "the loop-carrying hook," and which is to catch and carry the loop to one side, where it is held open for the passage of the needle by the combined action of both hooks.

In the drawings fig. 1, is a plan view of the device as seen from beneath the bed, or table of the machine, and fig. 2 is the same, but showing the looper in a different position.

Claim.—The inventor says: I *claim* the specified device set forth, being the vibrating hook operating to catch, spread, and carry the loop upon the stationary hook, where, by the action of the bolts, the said loop will be held securely open in the path of the needle, when the feed is given so as to insure certainty of action without extending the loop more than is requisite for the passage of the needle through it.

No. 18,350.—Willford H. Nettleton and Charles Raymond, of Bristol, Conn.—*Improvement in Sewing Machines.*—Patent dated October 6, 1857.—The nature of this improvement consists in a peculiar construction of feed-motion to move the material that is being sewed.

In the drawings, *a* is the metallic bed; *b* the box containing the cam ***d***, which is set on the shaft 1 and revolved by means of a fly-wheel and handle; *e* is a bent lever set on the fulcrum *x*, and given a vibrating motion by means of the cam acting on a stud or the short end of said lever. In the operation of the machine, the clamp *o* is forced down, the bed *q* yields, and, as the cloth and bed descend, the serrated edges of the fingers *r* take the cloth, and, standing in an inclined position, give more or less feeding motion to the cloth, according to the amount which the spring-bed *q* and the clamp *o* are pressed down by the lever *f* and cam *n*.

The inventor claims the spring-bed plate *q*, in combination with the pressure clamp *o* and inclined spring *r*, to feed the cloth substantially as specified.

No. 18,359.—E. Harry Smith, of New York, N. Y.—*Improvement in Sewing Machines.*—Patent dated October 6, 1857.—The nature of this invention will be understood by an examination of the claim and drawings.

The inventor says: I *claim* a cylindrical annular shuttle constructed as described, in combination with the driver, for holding it in place and driving it around. And, in combination therewith, I claim imparting to the needle and its thread a constant upward movement while the shuttle passes through the loop, so as to lift the shuttle completely off its bearings, and thus avoid all friction of a sliding shuttle, and the use of oil thereon.

I also claim, in combination with the above continuous movement, the two thread guides, as arranged and made to operate together with respect to the endless movement and shot of the shuttle, essentially in the manner set forth and represented, for the purpose of causing a positive withdrawal of the loop from the shuttle at the moment the latter has passed through it.

I futher claim the employment of the smaller or auxiliary foot to hold the cloth to the feeding teeth in their forward movement, and to release the pressure therefrom when they return, substantially as set forth.

Finally, I claim the use of a series of laterally reciprocating teeth, to carry the cloth along in their forward movement, in combination with a series of vertically acting teeth, to assist in holding the cloth and counteract the retrograde tendency in the return of the feed, when such teeth act independently of the foot to which they are attached.

No. 18,470.—T. J. W. Robertson, of New York, N. Y.—*Improvement in Sewing Machines.*—Patent dated October 20, 1857.—This improvement consists, first, in a new stitch called the "double back-stitch," which is made as follows: Pass a loop of thread through the fabric to be sewed; then pass through the fabric and through the first loop (from the same side of the fabric as the first loop) another loop from another thread; when this is done, pass through the fabric another loop from the first thread through its own first loop and the loop of the second thread, and the stitch is made.

The second part of the invention consists in a machine for making the foregoing described stitch, by means of two needles working at such angles to each other that they cross beneath the table and work through each other's loops.

The inventor says: I do not claim broadly the employment of two needles for the purpose of sewing cloth; for they are seen in the patents of O. Avery, October 19, 1852, to May 9, 1854.

I *claim*, first, forming a seam by passing a loop of thread through the fabric to be sewed; then passing through the fabric and through the first loop a loop taken from another thread from the same side of the material as the previous loop; then passing through the fabric another loop from the first thread through its own first loop and the loop of the second thread, thus making a line of stitching which I call "double-back stitching."

Second. The arrangement and combination of the needles *i* and *j*, or their equivalents, substantially as described.

No. 18,511.—John W. Marsh, of Oxford, Mass.—*Improvement in Sewing Machines.*—Patent dated October 27, 1857.—The operation of this machine is for sewing a welt seam; the slide A is drawn back and the work placed thereon, the guard E being set, if used; the end of the work being held under the foot-piece M and the under pad H; the knife L being set the distance from the needle that it is wanted to trim the work; it works with the needle or awl, cutting or trimming the work as fast as the slide is fed along.

The inventor says: I do not claim the use of a slide for a feed motion, irrespective of its form and accompaniments. But I *claim* first, the combination of the slide A, provided with the slots C D, guard E, and pad H, with the foot-piece M, with its guide N and slots, arranged and operating substantially as described.

I also claim the combination of the slide A and foot-piece M with the knife and needle-holder, as constructed and arranged for securing and trimming the work while being sewed in its passage through the machine.

No. 18,522.—Sylvester H. Roper, of Roxbury, Mass.—*Improvement in Sewing Machines.*—Patent dated October 27, 1857.—The engravings and claim explain the nature of this invention.

The inventor says: I *claim*, first, the feeding of the cloth alternately in opposite directions, for the purposes specified, and in the way described, or in any equivalent manner.

Second. I claim the use of the two plates *e e*, for the purpose of giving uniformity to the length of the stitches by preventing the wearing of the lever *g*, as described.

Third. I do not claim the hook *r*, for the purpose of taking the thread through the cloth, as has before been used; but I claim the yielding force of the hook *r*, which will allow said hook to remain stationary if the thread does not readily pass through the cloth until the needle is withdrawn, as described.

Fourth. I do not claim the double-hooked needle, or the use of it, in taking the thread both ways through the cloth; but I claim the combination of the double-hooked needle and the hook *r* for the purpose specified, all substantially as described.

No. 18,566.—C. H. Andrus, of Goshen, N. Y., assignor to Squire Lee, of Goshen, N. Y.—*Improvement in Sewing Machines.*—Patent dated November 3, 1857.—A is the principal feeding plate, and C the lever to which it is attached, and through which it derives its reciprocating motion. *a* is a slot in the feeding plate A to receive the supplementary feeding plate. B is the supplementary feeding plate fitted to rise and fall easily within the slot *a*, and furnished with a projection *b* at each end to prevent its dropping entirely through the slot *a*; the said projections, however, allowing its serrated lower surface to drop some distance below the lower surface of A. This feeding plate B contains a slot *c*, extending in a direction parallel with the feed movement for the needle to work through. $d\ d^1$ are two springs attached to the feeding plate A and its leg C, and pressing downward upon the plate B. *e* is a guide from the spring *d*.

The inventor says: I am aware that in the sewing machine of A. B. Wilson, patented 1854, a tri-pronged spring pressure pad is employed. The central prong of this pad presses or holds the cloth against the periphery of the feed wheel. I disclaim the spring pressure pad, and also the holding of the cloth against the feed-wheel by a spring. In the device of said Wilson the pressure pad is stationary, the feeding of the cloth being accomplished by a serrated wheel.

I am also aware that in the device of E. H. Smith, 1857, the pressure pad is slotted, and has a separate spring within the slot which presses the cloth upon a horizontally moving dog. The cloth is fed by said dog, which is below the table.

I do not claim the employment of two foot-pieces or feeding plates in any other way than as described; but I *claim* the employment of a supplementary serrated feeding plate B, fitted within a slot in the principal feeding plate, and provided with shoulders *b b*, and being controlled entirely by springs $d\ d^1$, applied between it and the principal feeding plate, so as to operate as described.

No. 18,605.—E. Harry Smith, of New York, N. Y.—*Improvement in Sewing Machines.*—Patent dated November 10, 1857.—A small cavity 1 is formed on one side of the centre of the shuttle *a*; into this cavity a bobbin *b* is inserted, or a cap. On the same side of the shuttle, opposite the bobbin cavity, the shuttle is chamfered off, and a small nose or hook 2 formed in its edge to catch the loop from the needle. The centre of the shuttle is slightly raised so as to form a small disk or button 3, which receives the loop of thread from the body of the shuttle after the bobbin has passed through, and retains it until the rotation of the shuttle releases it at the proper time, which is done by having one side cut away, as shown in the engravings.

The inventor says: I do not claim a shuttle from which the loop of needle thread is drawn at every stitch, as shown in the patent of Joseph Bond, jr., of May, 1855.

But I *claim* the discoidal shuttle, constructed as set forth, and made to control the loop of needle thread, substantially in the manner described and represented.

No. 18,639.—N. W. Harrington, of Jamestown, N. Y.—*Improvement in Sewing Machines.*—Patent dated November 17, 1857.—This invention consists in a looper of novel construction, operating, in combination with an eye pointed needle, to sew what is known as the "chain stitch" with a single thread. The claim and engraving will further show the nature of the improvement.

Claim.—The looper, composed of three fingers *s t w*, arranged and operating together, in combination with the needle, as described.

No. 18,732.—Joel Chase, of New York, N. Y.—*Improvement in Sewing Machines.*—Patent dated December 1, 1857.—In this invention the cam wheel E is made with a waved or undulating rim to give motion to the needle arm G. The needle arm is hung in a socket in the rock shaft H, which is hung in bearings in the frame. This needle arm fits closely into the socket, and is kept from turning by friction any further than it is compelled to turn by the arm I, which is attached to the lower end of the part which fits into the socket This arm is restricted in its motion by the stop J, and may also be restricted in its opposite motion by the lever K. It is also kept from moving more than a proper distance by the stop L in the socket.

Claim.—The combination of the lever G, when hung on an axis in the rock shaft, with the lever I, when the motion thereof is limited by the stops in the manner set forth, for the purpose of imparting the feed motion to the needle.

No. 18,793.—George Fetter, of Philadelphia, Pa., assignor to Himself and Edward Jones, of Philadelphia, Pa.—*Improvement in Sewing Machines.*—Patent dated December 1, 1857.—This invention relates to that class of sewing machines which produces the double lock stitch, and consists in a peculiar and simple mode of imparting a feed movement to the pressure bar for the reciprocating movement of the needle bar.

The inventor says: I do not claim exclusively imparting to the pressure bar a lateral motion from the reciprocating motion of the needle bar.

But I *claim* the needle bar H, with its adjustable lever L, in combination with the slide I and its projections *n* and *j*; the whole being arranged for joint operation substantially in the manner and for the purpose set forth.

No. 18,817.—William H. Lazelle, of New York, N. Y.—*Improvement in Sewing Machines.*—Patent dated December 8, 1857.—Within the ring E (within which this apparatus is set) the plate B is hinged at right angles to the shaft. The hole in the plate is large, so that the plate can vibrate without touching the shaft. Upon the face of the plate are two knobs, or semi-cylindrical bosses G, which are made smooth and rest against the face of the disk A.

The inventor says: I am well aware of the common use of the cam movement for vibrating the needle arm of sewing machines; I therefore distinctly disclaim the use of a cam for operating the needle arm.

But I *claim* the disk B, to which the needle arm is rigidly attached, provided with its bosses or friction surfaces G G, in combination with a plane-faced disk cam A, arranged and operating in the manner and for the purpose specified.

No. 18,834.—W. C. Watson, of New York, N. Y., assignor to Himself and George H. Wooster, of New York, N. Y.—*Improvement in Sewing Machines.*—Patent dated December 8, 1857.—The claim and engravings explain the nature of this invention.

Claim.—First. The employment of a stationary needle combined in such manner with a reciprocating table or cloth-holder, that the protrusion of the needle through the cloth or material being sewed is caused by the movement of the said material, as and for the purpose set forth.

Second. Operating the looper by attaching it to a lever which is carried by the reciprocating table or cloth-holder, and which derives motion from the movement of the said table or cloth-holder through an offset on one of its edges, working in contact with the driving shaft, or its equivalent, as described.

Third. The combination of the reciprocating table or cloth-holder, the oscillating feed-plate M, the stationary bar N, and the spring *q*, the whole operating as described, to produce the movement of the cloth in the direction to produce the seam.

No. 18,823.—Charles Moore, of Buffalo, N Y.—*Improvement in Sewing Machines.*—Patent dated December 8, 1857.—In operating this invention, when the cam wheel A is made to revolve, the cam will press the roller B inwardly, thereby moving a series of levers N N M and L, in the direction to move the looper back from the needle, and also to expand the spiral spring T. As the looper is thus carried back from the needle, by the acting of the cam upon the series of levers, the lever I strikes the stop P^2 before the looper has passed its limit backward, whereby the looper is turned so as to bring the tines of the fork perpendicular to each other. At this point the cam moves off from the roller, and then the spiral spring moves the looper in the opposite direction, the tines of the fork in that position passing between the needle and thread. The lever I then strikes the stop P, and causes the fork to make a quarter turn, and thereby carries the thread for the loop; so that when the needle is driven down through the cloth, it passes behind the thread and between the tines of the fork, thereby forming the loop. As the looper recedes, the needle serves to slip the thread from the fork, and the stitch is perfected.

Claim.—The specific mechanism described for forming the loop, namely: the fork G, crotch J, lever I, and stops P and P^2, arranged and operating in combination in the manner and for the purpose specified.

No. 18,880.—Henry Behn, of New York, N. Y., assignor to Himself and Thomas Sewell, of New York, N. Y.—*Improvement in Sewing Machines.*—Patent dated December 15, 1857.—This improved machine consists of an apparatus for making a three-threaded stitch. In constructing it, on a proper platform or table of metal is affixed an upright standard with a horizontal arm extending out therefrom above, and parallel with the table. At the end of the horizontal arm there is a slide which works up and down in a vertical line, to the lower end of which the needle *a* is attached, the needle being of ordinary form, with the eye near the point; at the right angle of this needle is placed a thread-carrier *b*, having a broad, flat spear-shaped point, in which are two or more holes, into which a thread passes from the spool *c*; this thread-carrier slides in guides below the table; the spool is also below that point. Opposite the thread-carriers will be seen a shuttle *d*, which runs in a race back and forth, as in the ordinary shuttle.

The inventor says: I *claim*, first, the combination of the needle *a*, thread-carrier *b*, and shuttle *d*, constructed, arranged, and operating in the manner and for the purposes described.

I also claim the method of operating the needle by means of the bent arm *i*, on the vibrating shaft *h*, actuating the slide to which the needle *a* is affixed.

No. 18,915.—William H. Lazelle, of New York, N. Y.—*Improvement in Sewing Machines.*—Patent dated December 22, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I do not claim the use of the revolving hook to form the loop, that being found in the patent of James E. A. Gibbs, June 2, 1857, to which this is an addition and improvement.

But I *claim* the addition to, or conjunction with, the revolving hook of the point or piece A attached to the feeder, which meets the point of the hook after it has caught the loop, and prevents the loop which is formed from interfering with the next loop, or from being lost; the whole made and operated as described.

No. 18,904.—George W. Hubbard, of West Meriden, Connecticut.—*Improvement in Sewing Machines.*—Patent dated December 22, 1857.—This improvement consists in the use of a forked needle *c*, (which has one prong *d* longer than the other *e*,) which pushes the cotton through the cloth, instead of pulling it through, producing what is known as the chain-stitch seam. In this invention the feed takes place as the needle completes its ascent, though not until the latter has been withdrawn from the material *p*; and the loop, which up to that time has hung vertically below the material in the position in which the needle left it, is drawn by the feed movement over the edge of the opening *q*, and thus caused to be thrown up to a position nearly parallel with the face of the material, so that the needle in its next descent may pass through it, and carry through it the new loop.

Claim.—The forked needle, constructed and operating as described, to enchain the loops on the opposite side of the cloth or other material to that on which it enters.

No. 17,825.—Abm. Bartholf, of New York, N. Y.—*Improvement in Feed-Motion for Sewing Machines.*—Patent dated July 21, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—1st. Giving the necessary motion to the feeding wheel B, substantially as described, through the agency of a collar E, or its equivalent, which, by being turned in one direction around a central shaft B fitted loosely in said wheel, is caused to move longitudinally on the said shaft toward the wheel, and thus clamp the wheel in one direction parallel with the length of the shaft against the flanch *b*, or its equivalent, fast on the shaft, and thus to carry with it both the shaft and wheel in a circular direction, but which, on being turned in the reverse direction, is caused to move in the reverse direction parallel with the shaft, and thus to liberate the shaft from the feed wheel, and allow it to return without the said wheel.

2d. The attachment rigidly to the loose feed wheel shaft of a lever *b*, or its equivalent, so operated by a cam G, or its equivalent, that when the loose clamping collar E, or its equivalent, is allowed to return, after having given motion to the shaft and feed wheel together, the shaft is temporarily prevented from returning with the clamping collar, or equivalent; and thus the friction between the wheel and the fast flanch or projection against which the wheel has been clamped by

the clamping collar, is made to aid in preventing the return of the wheels with the loose clamping collar, or its equivalent, substantially as set forth.

No. 16,429.—William B. Bishop, of Brooklyn, New York.—*Improvement in Guides for Sewing Machines.*—Patent dated January 20, 1857.—The goods are placed with the double edge in the groove *i*; the needle then passes down through the small hole *h* in the shoe or pressure pad D, which is pressed down on the material by means of spiral spring *b* on shaft E; and as the cloth to be sewed will rest on the feed apparatus, the goods will regularly progress in a straight line with but little or no care from the operator.

The inventor says: I am aware of the patent of H. W. Dickinson, of May 15, 1855, wherein are used grooves in the under or bottom side of the pressure pad, for the purpose of stitching cords in work; and I therefore claim no part, device, or thing claimed by him.

I am also aware of the patent of John B. Nichols, January 30, 1835, for a binding attachment, which has a semi-elliptical groove, through which the binding passes, to double it around goods preparatory to sewing it thereon, and that said gauge is rendered adjustable; and I therefore claim nothing patented to him.

I *claim* an elongated pressure bar, or foot, having therein a flat groove to receive the edge of the centre or button-hole plait of shirt bosoms; and also a straight bearing surface, forming the under and guiding surface for the other seams or plaits of shirt bosoms, whereby I am enabled to stitch continuous straight seams in shirt bosoms at a rapid speed, and perfectly straight, without any care or help from the operator; the whole being constructed, arranged, and operating as set forth.

No. 16,586.—Addison Hull, of Brooklyn, New York.—*Improvement in Guides for Sewing Machines.*—Patent dated February 10, 1857.—The guide, in connexion with the foot-piece, which confines the cloth to the table, allows of its being easily adjusted at suitable distances from the needle, and makes it self-adjusting to various thicknesses of cloth while under operation.

The inventor says: I do not claim generally the attachment of the guide to the foot-piece, which presses on the cloth during the sewing operation.

I *claim* the attachment of the guide plate *c* to a spring bar E, or its equivalent, which operates independently of the foot-piece A, holding the cloth during the sewing operation, and is adjustable laterally to the same; and the connexion of the same by a vertically slotted connexion *d e*, with a slotted sliding plate C working through the foot-piece A, substantially as described, whereby the guide plate is made adjustable and changeable, as set forth.

No. 17,255.—Charles F. Bosworth, of Petersham, Mass.—*Improved Stitch for Sewing Machines.*—Patent dated May 12, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Forming a stitch by passing a loop of thread taken from the opposite side through it, through any material to be sewn, and passing a loop of thread and fastening the last formed loop by passing the body of the thread upon the same side entirely through the said loop.

No. 17,835.—Abraham Hoagland, of Jersey City, N. Y.—*Improvement in Tension Apparatus for Sewing Machines.*—Patent dated July 21, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The use of two elastic wheels or rollers E E, governed by the saddle and thumb-screw I, between and around which the thread is passed to give it any required tension in sewing with a machine constructed and operated substantially as described.

No. 17,272.—Benjamin Garvey, of New York, N. Y.—*Improvement in Needles for Sewing.*—Patent dated May 12, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I do not claim any peculiar process of making such needles.

Neither do I claim an open-eyed needle, nor a needle with a spring attached to any part of it.

But I *claim* a sewing needle having a self-closed eye, with a slit leading outwardly, and made to terminate at a point more or less remote from the eye, through which slit the thread may be forced into the eye, in the manner and for the purposes substantially as described.

No. 18,807.—John Devlin, of Philadelphia, Pa.—*Improvement in Sewing Thimble.*—Patent dated December 8, 1857.—A is a common sewing thimble. B the "guard," or "fender." The guard, or fender, consists of a piece of the same material of which the thimble is made, soldered fast, in a radial longitudinal position, on to the outer side of said thimble. It is made from about three-sixteenths to a quarter of an inch wide at the middle, and rounded smoothly off at each end, so as to prevent its catching against the thread or the material being sewed. It has also its outer edge turned upwardly, or so constructed as to form a boundary rim *c* around the upper side of the same, to catch the eye end of the needle, in case the latter should not be caught and held in the indentations *d* which are made in the upper side of the guard for the purpose, when the needle accidentally slips over the thimble proper.

Claim.—The application of a guard or fender to the outer side of a sewing thimble, substantially as and for the purpose set forth and described.

No. 17,334.—J. D. Minder, of Killingly, Conn.—*Improvement in Machinery for Dressing Sewing Thread, Warps, or Yarns.*—Patent dated May 19, 1857.—The threads of yarn *a* coming from the sizing box, pass between the two series of brushes H and H^1, and are held steady by passing over and under stationary rods *d*. The brushes, by the crank movement they receive from the wheels F and I, are made to approach and recede from each other, each pair meeting upon the threads which pass midway between them, brushing off the superfluous size, and laying the fibres even.

The inventor says: I do not claim the employment of revolving brushes for dressing sewing thread or yarn.

But I *claim* the employment for dressing sewing thread and yarns, of a series of straight brushes arranged in pairs, and having a crank motion towards and from each other, so that the several pairs engage and move together along the thread or yarn, substantially as described.

No. 16,734.—Lucius J. Knowles, of Warren, Mass.—*Improvements in Weavers' Shuttles.*—Patent dated March 3, 1857.—While the shuttle is in motion over the race beam and its thread is unbroken, the draught on such thread will maintain the tilting lever in a horizontal position, so as to keep the cam C forward, and cause it to operate the protector. But should the thread become broken, the lever will be relieved from the pressure of the thread, and will tilt so as to offer no obstacle to the movement of the cam C into the recess E, into which it will be pushed by the protector when driven against the same, and therefore the loom will stop.

The inventor says: I am aware that a stop-motion or mechanism has been applied to a shuttle and race beam of the lay of a loom, and so as to operate in such manner, in case of the breakage of the filling thread of the bobbin of the shuttle, as to stop the motion of the shuttle or arrest it in the race beam before it could enter the shuttle box next to that part of the said stop-motion which was affixed to the race beam. In this kind of stop-motion the shuttle, in being arrested in its motion across the race, is liable to be driven by the reed close into the crossing of the warps. In case such should take place, injury to the warps or loom may ensue. My stop-motion is of an entirely different kind, as it allows the shuttle to enter each shuttle box, and when once in either box the loom will be stopped in case the filling thread may have been broken during the passage of the shuttle across the race beam, and into such box.

I *claim* the combination of the tilting lever F, the inclined wires G G, or the equivalent of the latter, and a spring cam C, or means essentially the same as said spring cam, whereby, in case of breakage of the thread from the shuttle while the latter is in motion across the race beam of the lay, the cam or contrivance to operate the protector may be caused to so act with or against such protector, or its equivalent, that it shall be made to produce stoppage of loom, as stated.

No. 16,463.—James S. Brown, of Pawtucket, Mass.—*Improvement in Speeders.*—Patent dated January 27, 1857.—By loosening the set screws *m*, in disk D, the flanch J and cogged-wheel W are set free to turn on shaft S, and the step C and spindles T descend by their own weight, the racks *r* meshing in pinions P; the spindles T, in descending, leave their bobbins on the upper frame, for the purpose of taking off the rovings.

Claim.—The device for dropping the spindle, arranged and operated substantially as described, for the purpose of enabling the operator to remove the full bobbins and insert the empty ones in their place.

No. 18,529.—Milton D. Whipple, of Charlestown, Mass., assignor to Alfred B. Ely, of Newton, Mass.—*Improvement in Machinery for Spinning Flax and Hemp, &c.*—Patent dated October 27, 1857.—The object of this invention is to obtain a machine that can spin hemp, flax, and similar fibrous material, directly from the hank, without the necessity of first forming it into a sliver; thus doing away with the drawing rolls and much of the expensive part of the operation of spinning, and substituting therefor a drawing movement that more closely resembles that of hand spinning, and which allows the twist given by the spindle to follow up close to the hank from which the fibres are drawn.

The engravings and claim will further show the nature of this invention.

Claim.—First. The device employed for regulating the amount of fibre drawn from the hank by the size of the yarn, consisting essentially of the lever a^3 and screw or stop b^3, attached to the draw nipper 8, with its immediate connexions, and the hook disk z^1, operating in the manner substantially as set forth.

Second. The vibrating draught nippers, operating in the manner substantially as set forth, whereby the twist is allowed to run up.

Third. The vibrating hank-holder U, constructed and operating substantially as described.

Fourth. The inclined wires or teeth on the guide pulleys O^1 R^1, operating in the manner and for the purpose substantially as set forth.

No. 16,657.—John N. Sawtell, of Lowell, Mass.—*Improvement in Manufacturing Spinning Flyers.*—Patent dated February 17, 1857.—The inventor says: I do not claim the process of casting cast iron around wrought iron, whether the wrought iron be or be not heated when the molten cast iron is poured thereon, as such process is well known.

Neither do I claim the constructing of the flyer of two different metals, without regard to how these two metals are united to each other, as different metals are now used in the formation of many articles.

I *claim* the manufacture of flyers, substantially in the manner described—that is to say, casting on the polished arms E E, the neck or nozzle F of metal, when the former are prepared by the application of a proper composition, so as to render the adherence of the nozzle to the arms secure, as set forth.

No. 18,029.—George Wright, of Grafton, Mass.—*Improvement in Self-Acting Mules for Spinning.*—Patent dated August 18, 1857.—A detailed description of this invention would take up too much space to be given here.

Claim.—Giving a second draught to the yarn after the delivery of the ends has ceased, for the purpose and in the manner substantially as set forth.

Second. Operating certain motions upon the carriage, such as braking up the spindles, backing off the yarns, and operating the upper faller by the taking in scroll chain, as set forth.

Third. Running the drum band over a vibrating arm upon the carriage, and clamping it thereto at intervals for the purpose of backing off and winding up the yarn, as set forth.

Fourth. Hanging the stop which holds the carriage stationary while the second twist is put into a spring, so that it may yield in the manner described to prevent injury or breakage of the yarn, as set forth.

Fifth. Varying the obtuseness of the cone upon different portions of the cop by means of the block F, operating in the manner substantially as set forth.

No. 18,081.—Charles K. Bradford, of Lynn, Mass.—*Improved Machine for Spooling Thread.*—Patent dated September 1, 1857.—By revolving the bobbin A, the thread *x* is caused to wind on it, the thread-carrier *g* resting against the side of the helix coil of the thread; such helix coil, by its pressure against the carrier, will force or slide it along laterally, so as to cause the thread to be drawn through the carrier and be evenly laid over the bobbin.

The inventor says: I do not claim combining with mechanism for rotating a spool or bobbin a mechanism for regulating the winding or laying of the thread on such spool or bobbin.

But I *claim* the improved mode of regulating the winding of the thread—that is, by causing the thread-carrier to rest directly against, and be moved and guided in its movements by, the side of the helix coil on the bobbin, as stated.

No. 18,391.—S. E. Davis, of Waterbury, Conn.—*Improvement in Twine Reels.*—Patent dated October 13, 1857.—A represents a box, having three standards *a a b* at each side; B C are two reels or spools, the journals of which are fitted in the upper ends of standards *a a*; and the two spools are connected at one end by a belt or cord D, which passes around pulleys E E attached or formed on the ends of the spools. The spool B is shown filled with twine; but the spool C is empty, and has an end of a ball of twine F attached to it—said ball being within the box A, and the twine passing through guides a^*.

Claim.—The combination of the two spools B C, connected by the cord or belt D and the box or receptacle A, arranged substantially as and for the purposes set forth.

No. 17,177.—Thomas Thompson, of Niversville, N. Y.—*Improvement in Machinery for Winding Wadding.*—Patent dated April 28, 1857.—A detailed description of this invention would take up too much space to be given here. The engraving represents the general arrangement of the machine.

Claim.—The apparatus, substantially such as described, for removing the full roller and supplying or depositing the empty roller, or the equivalent thereof, for the purposes substantially set forth. Also, the devices covered by the first claim, or their equivalents, in combination with the rollers arranged to divide or break the wadding or other material wrought, substantially as described.

No. 18,620.—Samuel Campbell, of Whitestown, N. Y., assignor to John C. Whitin, of Northbridge, Mass.—*Improvement in Machinery for Dressing Warps.*—Patent dated November 10, 1857.—The claim and engravings show the nature of this invention.

Claim.—The method of dressing warps by means of brushes above and below each section of yarn, said brushes being alternate in their movement, and constructed to come in contact with and leave the yarn gradually by the mechanism described, or any other substantially the same.

No. 16,622.—William H. Watrous, of Brooklyn, N. Y.—*Improvement in Wool-cleaning Machines.*—Patent dated February 10, 1857.—D is a cam rim secured to one end of the picker cylinder, and serves to vibrate the wire-cloth apron E by means of gnide-pin F, for the purpose of working the dust therefrom. The object of the fan-blower M discharging its blast at right angles to the line of motion of the picker cylinder, is to blow off the dirt and motes from the wool. The motes will work through the meshes of E, and by the blast of air will be carried against the screen R, to be collected while the air and dust escape.

The inventor says: I do not claim the picker cylinder, the fan-blower, or the reciprocating screen, and the devices for operating the same individually, as these have all been applied for analogous purposes. But I *claim* the combination of the picker cylinder B, reciprocating screen E, exhaust screen R, and fan-blower M, arranged and operating in the manner and for the purposes specified.

No. 16,864.—Michael H. Simpson, of Boston, Mass.—*Improvement in Machinery for Combing Wool.*—Patent dated March 17, 1857; antedated September 17, 1856.—In operating with this machine, the wool or fibrous material, as in the original machine of Coucilland, is spread upon an endless apron B; and, by means of the feed rollers and a "licker in," it is taken from said apron and transferred to the main cylinder A; and, during the revolutions of the same, the fibrous material is subjected to the action of the workers and strippers, situated above said card cylinders. Next, by means of the extra doffer L and stripper M, it is removed from the main card cylinder and laid upon the combing doffer I, by which it is thrown upon and amongst the teeth of the revolving comb N; from the latter the longer fibres are drawn by the rollers U V, and from thence, in the form of a sliver, they pass through the condensing belt *f*, thence between the rollers *h i*, and into the neck of the flyer, and are finally wound upon the bobbin.

The inventor says: I *claim* the combination and arrangement of an extra doffer L and stripper M, or equivalents therefor, with the main card cylinder, the combing doffer I, and the combing belt N; the whole being substantially in the manner and for the purpose as specified. I also claim the described improved arrangement and construction of the draught rollers U V, with respect to each other and the combing belt N. I also claim making the wires of the fringe belt W to extend below the table Z, and to run through a passage C formed between the part Z and the combing belt, or in the table, as specified. I also claim combining with the curved plate R, when such is employed in connexion with the doffer I and the combing belt N, a steam-heating chamber S, or other suitable means of heating such plate, as set forth.

No. 17,244.—Cullen Whipple, of Providence, R. I.—*Improvement in Machines for Combing Wool.*—Patent dated May 5, 1857.—The fibres to be operated upon pass into the machine over an apron *x* to the teeth on cylinder *b*, and the fibres are pressed between the teeth of said cylinder by brush *y*, which revolves around shaft y^1. The forward ends of the fibres are then raised by brush *k*, and seized by nippers *u*, and carried forward after the first ends are cleaned by drawing them through the teeth of the cylinder *b*; and when combed, the nippers *u* open and leave the cleaned fibre to return for the next quantity. And by this operation repeated, the continuous sliver is made, each quantity taken being made to overlap the preceding; and the fibres themselves are not removed from between the teeth on the cylinder from the time they are fed in until they are perfectly combed.

The inventor says: I do not limit myself to the construction and special arrangement of the parts, so long as the peculiar mode of operation described is attained, and the fibres are retained between the teeth of the surface *b* while being combed.

Nor do I claim the mechanical parts separately, or confine myself to the details described.

I *claim* the combining machinery as described, whereby the fibres, after being fed into or received amongst teeth, (set in a suitable surface,) have their ends raised out from the teeth and held by nippers while the ends are cleaned, the cleaned ends of the fibres being then nipped and drawn among the teeth in order to clean the other ends, and also to separate this quantity of fibres from the other fibres amongst the teeth; the protruding ends are then deposited amidst the teeth in such manner that they overlap the ends of the quantity of fibres which have been just previously similarly treated, thus admiting of the prepared or combed fibres being doffed or drawn off from the teeth in a continuous sliver, as explained.

No. 18,564.—John Waterhouse, of Little Falls, N. Y.—*Improvement in Machines for Burring Wool on the Pelt.*—Patent dated November 3, 1857.—The nature of this invention relates to a machine for burring and cleaning wool on the pelts, by clamping said pelts between feeding rollers and presenting them, thus held by the feed rollers, to the action of a revolving cylinder, armed with teeth and beaters, so arranged as to comb or straighten out the fibre whilst the beaters knock off the burrs and other extraneous matter; the pelt being held so as to prevent all danger of being drawn into, torn, or injured by the cylinder.

The inventor says: I *claim*, first, the combination of the feeding apparatus, which holds and controls the pelt, with a cleaning cylinder arranged, constructed, and operating substantially as set forth.

Second. I claim the combination of the rollers D E, one being elastic and the other non-elastic, for holding and presenting the pelt in a curved or bent form to the action of the cleaning cylinder, as described.

Third. I claim, in combination with the holding and presenting rollers, the feeding rollers F F—one of said rollers F being elastic, and the other non-elastic—as described and for the purpose set forth.

Fourth. I claim mounting one of the feed rolls F and one of the holding and presenting rolls on the main frame, and their fellows upon a travelling carriage, for the purpose of facilitating the introduction, turning, and removal of the pelt, as set forth.

No. 16,934.—Lucien E. Pratt, of South Kingston, R. I.—*Improvement in Preparing Yarn for Dyeing and Scouring.*—Patent dated March 31, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I do not claim the use of this or any other particular machine, for the purpose of forming the described muff or body of the yarn, as the same might be done on a reel, by having a suitable guide so constructed and arranged as to move a suitable distance along the reel alternately, or other different devices might be used for producing the same effect.

I do not claim winding a single thread in helices crossing one another, as is done in the formation of cops or balls of sewing thread.

But I *claim*, in making muffs of thread or yarn to be dyed or otherwise treated as described, my improvement consisting in winding a series of threads, each separated from or at a distance from the other, in one helix band around a cylinder or drum, and so that the coils of each layer of such on the cylinder may cross those of the next layer, substantially as described.

No. 17,379.—Christian Knauer, of Pittsburg, Pa.—*Improvement in Reels for Yarn or Thread.*—Patent dated May 26, 1857.—The machine being secured to a table by means of clamps *o* and set screw *p*, the operator places the yarn over the wings *n* of the arms *c* in a loose condition; then, by holding the back plate B with his left hand and turning plate A with his right hand, causes the guides d^1 to turn the arms *c* on their pivots *m*, and thus to expand them so as to tighten the yarn, the arms *c* being held in position by pivot *b* acting on ratchet a^1.

Claim.—The combination of the plates A and B, provided with the ratchet a^1 and pawl *b*, the curved arms *c*, and swivel guides d^1, arranged and operating substantially as described, for the purpose specified.

No. 18,461.—Samuel Cunliffe Lister, of Bradford, and James Warburton, of Addingham, England.—*Improvement in the Manufacture of Cotton Yarns.*—Patent dated October 20, 1857.—The engraving and claim explain the nature of this invention.

The inventors say: We *claim* an improvement in the process of manufacturing cotton yarn, the same consisting in wetting the cotton roving previous to its being drawn, and in drawing and spinning it while it is in a wet state, such being productive of advantages as stated.

And we also claim, in the process of impregnating the roving with water or liquid, and drawing and spinning it while wet, the employment of heated water or heating the water as explained, whereby advantages are gained as set forth.

No. 16,903.—George S. Bradford, of Sandlake, N. Y.—*Improvement in Manufacturing Yarns from Mixed Cotton and Wool.*—Patent dated March 31, 1857.—The evenly prepared cotton drawing I is steadily drawn by rollers E F from a cam J through a guide K and a condenser C, so in front of the doffer A, that as the wool is combed from the doffer in the manner of making a side drawing, the cotton drawing I is evenly covered with successive layers of wool, the fibres of the cotton core remaining nearly or quite as straight as they were before being covered.

The inventor says: I do not claim the mechanism employed for covering a cotton drawing with wool.

But I *claim* carding, through the finisher as specified, the drawing made by covering an evenly prepared cotton drawing with wool, as described, thereby leaving most of the wool on the outside of the finished roving, without carding the cotton through any wool carding machine but the finisher, and hence leaving the staple of the cotton straight in the finished rovings, as set forth.

IV.—CHEMICAL PROCESSES.

No. 16,879.—Philip O'Reilly, of Providence, R. I.—*Improved Apparatus for Making Nitric Acid.*—Patent dated March 24, 1857.—B is the retort. D is a stopper, which is removed to change the retort. A is the agitator, having attached to it a series of radiating arms *a a*. C is a pipe which conveys the vapor from the first receiver T to the condenser F. O is a pipe which connects the two condensers. P R is the purifier, consisting of a granite block P, hollowed out and having a brick dome R erected upon it. H is a pipe leading from the condenser F to the purifier. M is a pipe to convey steam or hot air from a boiler or hot blast apparatus below the surface of the acid in the purifier to blow up through the acid, to expel the nitrous fumes and chlorine. W is a pipe to convey the nitrous fumes and chlorine to a receiver and condenser V.

The inventor says: I *claim* purifying nitric acid in the manufacture from chlorine and nitrous fumes, substantially in the manner set forth.

No. 17,830.—Lawrent Gamotis & Sabin Martin, of New Orleans, La.—*Improved Apparatus for Making Acid Sulphate of Lime.*—Patent dated July 21, 1857.—The cistern *h* being filled with water to such a height that the surface of the water reaches a few inches above the lower edge of partitions *i*, a certain quantity of milk of lime is poured through funnels *g*, and the retort, within the furnace J, is filled with sulphur; and as soon as said sulphur is ignited, the pump *m* is set in motion, causing the sulphurous acid to pass through the milk of lime, forming sulphite of lime.

Claim.—The process of making bi-sulphite of lime by means of furnace J and cisterns *h, h, h, k*, operated as set forth.

No. 17,976.—Alfred Monnier, of Camden, N. J.—*Improvement in the Manufacture of Sulphuric Acid.*—Patent dated August 11, 1857.—Sulphuret of iron is pulverized and mixed thoroughly with from 33 to 75 per cent. of its weight of caustic soda; to this mixture is added so much water as to make the mass coherent and to mould it into blocks. These blocks are burned in the same manner in which pure sulphur is ordinarily burned, the sulphur of the pyrites being converted into sulphurous acid, which, upon being combined with oxygen, is converted into sulphuric acid.

Claim.—The process of preparing native metallic sulphurets, by pulverizing them and mixing them with the substances as described, in order to extract all or nearly all the sulphur from them, for the purpose of making sulphuric acid.

No. 18,214.—George Thompson, of East Tarentum, Pa.—*Improvement in Boxes for Preserving Alkalies.*—Patent dated September 15, 1857.—The caustic alkalies are put in a red-hot state into small sheet iron cylindrical boxes, the bottoms and tops of which are secured to the body by means of lap joints, which are made tight by the application of an infusible cement, made by moistening fire clay with linseed oil.

Claim.—The use of metallic boxes, constructed as described, and united with infusible cement, for the purpose of putting up the caustic alkalies of soda and potassa in small quantities, as described.

No 16,771.—Elie Mourier and Jules Francois Edward Vallent, of Paris, France, assignors to Henry Migeon, of New York, N. Y.—*Improvement in Fluxes for Treating Alloys.*—Patent dated March 3, 1857.—The object of this improvement is to produce a dense, sonorous, homogeneous, and brilliantly-colored metal. The composition is as follows: 100 parts, by weight, of copper; 17 of zinc; 6 of magnesia; 3.60 of sal ammoniac; 1.80 of quicklime; 9 of unpurified tartar.

The inventors say: We do not claim making an alloy of copper and zinc or tin, as this is well known; and we do not limit ourselves to the precise proportions specified of non-metallic chemical substances used with said metals during the process of refining, as said non-metallic substances may be slightly varied, according to the quality of metal operated on, so long as substantially the same effect is produced on the metal by the ingredients specified, or others having equivalent properties.

We *claim* the employment, in combination, of the non-metallic substances, substantially as specified, or substances having equivalent properties in the refining of copper and its alloys, whereby the essential qualities specified are imparted to the copper or its alloy.

No. 18,201.—Adolph Hammer, of Reading, Pa.—*Improvement in Coolers for Breweries.*—Patent dated September 15, 1857.—The hot wort is admitted to this cooler at the head *g*, and passes through the channels between the partitions B, as indicated by the arrows, and escapes, when cooled, through hole *h*.

Claim.—The application thereto of the moveable partitions B B, rendered stationary in the manner substantially as described, and for the purpose set forth.

No. 17,968.—Adolph Hammer, of Reading, Pa.—*Improvement in Brewers' Steam Boiling Apparatus.*—Patent dated August 11, 1857.—The pipes, as represented in the engraving, are used in place of the coiled tubes for heating the water in boilers; steam enters pipe B^1, passes through the pipes in the direction of the arrows, and escapes at *l*. The pipes B can be turned from their horizontal position to a vertical position, for the purpose of cleansing them, by turning them on pipe B^1 as fulcrum, which rests in suitable bearings M of the tub.

The inventor says: Disclaiming connecting a series of branch pipes with and on to a main pipe, upon which said branch pipes may be rotated in the manner described by A. Stillman in his patent of May 16, 1846,

I *claim* arranging the steam pipe in boiling apparatus in two or more separate and distinct parts or series, in the manner substantially as described, whereby either both or all parts or series of pipes may be elevated by rotating the same upon axes of rotation at or near the centre of the tub, for the purpose specified.

No. 18,220.—Adam Wood, of Pittsburg, Pa.—*Improvement in Brewers' Coolers.*—Patent dated September 15, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim in the abstract, or separately considered, the corrugated sheet metal bottoms, viewed only as a means to compensate for the expansion and contraction of the metal; for this is a well known mode of obviating this difficulty, and is employed in metal plates for roofing and other purposes.

Neither do I claim the cooling of the liquor by means of cold water tubes with which the liquor is brought in contact, irrespective of the arrangement shown; for such means have been previously employed.

But I *claim* constructing the coolers in two parts A B, corrugated and placed in contact as shown, so that cold water or air passages *e f* are found between said bottoms, and the bottoms allowed to expand

and contract freely without injury, by which the bottom of the liquor within the cooler may be cooled as quickly as the top, or the heat rapidly absorbed from both surfaces, and the cooling of the whole mass or quantity therefore greatly expedited.

No. 18,338.—Henry Hoffman, of New York, N. Y.—*Improvement in Bronzing Liquids.*—Patent dated October 6, 1857.—The nature of this invention consists of a fluid bronze composition formed by combining metallic powder, known by the names of "gilding" and "bronze powder," with "collodion," which composition is capable of being applied as a bronze liquid to surfaces of wood, iron, or any solid material, for the purpose of coating the same for decoration and preservation.

The inventor says: I do not claim to be the first inventor of bronzing liquids, for I am aware that a compound for this purpose was patented in England January 13, 1844, by H. Bessemer; that compound, however, is expensive in its nature and difficult in its manufacture, having no ingredients analogous to mine, save the powdered metal; Bessemer's compound required the employment of a size in order to secure its proper application, but mine requires nothing of the kind; Bessemer's fluid also requires a long time for drying, but my fluid becomes dry within a few minutes after its application.

I claim the fluid or liquid bronze composition described for the purposes set forth.

No. 17,713.—Leonard Wray, of London, England.—*Improvement in Defecating Cane Juice.*—Patent dated June 30, 1857.—This process consists, first, in the cold defecation of the raw juice by means of lime, cream of lime, or other suitable combination of lime, immediately followed by filtration; and secondly, in the treatment of the clear juice resulting from this cold defecation, with infusion of nut galls, aided by heat in suitable vessels and subsequent filtration.

The inventor says: These comprise the whole of my treatment, and I submit that they constitute an entirely distinct and new process, being one whereby excellent crystallized sugar has been, and can always be, made from the plants I have before named; and I therefore claim the process set forth.

No. 18,381.—Morgan W. Brown, of Buffalo, N. Y.—*Improvement in Preparing Fats for Candle-Making.*—Patent dated October 13, 1857.—The nature of this invention consists, 1st. In converting animal and vegetable, fatty and oleaginous bodies into a *soluble soap*, preparatory to and for the purpose of converting the same into candles.

2d. In the employment and use of the sulphate of soda in admixture with soluble soap, and before its decomposition or change into fatty acids, for the purpose of economy, and as an auxiliary to the action of sulphuric acid in the succeeding degree in the process.

3d. In a decomposition or change of the soluble soap into the liberated fatty acids, by the employment and use of dilute sulphuric acid in admixture therewith.

4th. In the use of spirits of turpentine, camphene, or burning fluid, in admixture with the fatty acids while in a fluid state, before and preparatory to the expression of the acid oil therefrom by pressure.

5th. In the employment and use of alcohol in admixture with the stearic acid (in a liquid state), and after the stearic acid has been separated from the oleic acid as aforesaid, by pressure, for the purpose of purifying the same before it is moulded into candles.

The inventor says: I am aware that soluble soap for washing and cleansing purposes is well known, and has long been used; therefore I do not claim its manufacture, application, and use for any such purpose.

I am also aware that insoluble lime soap has heretofore been used in the manufacture of candles; therefore I do not claim its manufacture, application, or use for such purpose.

But I *claim*, first, the employment of a soluble soap as a base upon which to work my process for converting the same into stearic acid candles, substantially as set forth.

Second. I claim the application and use of the sulphate of soda and its equivalent corresponding salts in admixture with soluble soap, before a decomposition or change of the soluble soap into fatty acids, for the purpose and substantially as set forth.

Third. I claim the application and use of dilute sulphuric acid, or its equivalent, in admixture with soluble or detergent soap, for the purpose of decomposing or changing the soluble soap into fatty acids, substantially as set forth.

Fourth. I claim the use of spirits of turpentine, camphene, or burning fluid, in admixture with the fatty acids while in the liquid state, before and preparatory to the expression of the oleic acid oil therefrom by pressure, substantially as described.

No. 16,754.—Benjamin D. Sanders, of Holliday's Cove, Va. *Improved Mould Candle Machine.*—Patent dated March 3, 1857.—Figure 2 represents the mode of centreing the wick by sliding forward the notched plate C.

Claim.—Causing the wick centreing slide C to stretch and hold the wick in the mould by its operation on the wick when bent over the slide, and said bent portion of the wick having the drawn candle attached or suspended to it in rear of the notched edge of the slide, essentially as set forth.

No. 18,281.—Charles H. Hinckley, of Stonington, Conn.—*Improvement in Coating Hose-Pipe.*—Patent dated September 29, 1857.—The principle of this invention consists in a peculiar mode of applying a coating of vulcanized India rubber to the inside of a hose-pipe formed of fibrous materials. The pipe is prepared by having it woven in shape from strong hemp cord, or twine, or other suitable material; to the outer surface of the pipe a thin coating of vulcanized India rubber is applied by any of the known methods. The pipe is then turned so as to bring the coating within, by using a copper or brass pipe A $x\ x\ x$ of a size such as will just pass within the canvas pipe, and of a length equal to the greatest length of the pipe to be turned.

The drawing is a vertical section, showing the position of the hose-pipe during its transformation while passing on and through the metal pipe.

The inventor says: I *claim* the process of constructing pipe of textile and fibrous material, with an internal coating of vulcanized India rubber, viz: First applying the India rubber coating on the outside, and afterwards inverting the same by drawing it over and through a metallic cylinder.

No. 17,708.—James Thomson and William P. Wakelie, of New Hartford, N. Y.—*Improvement in Coloring Yarn in the Bobbin.*—Patent dated June 30, 1857.—The bobbins *i k l* are inserted within suitable holes in the plates *f h*. The air is then exhausted from the vessel in which the bobbins have been placed, by means of air-pump S T; and by then opening the faucets *a* the liquid dye rushes into the chambers *o*, and up through the hollow skewers *a b*, (fig. 2,) and, following the vacuum, it penetrates the yarn from inward, filling the boxes *r* and *g*, passing into boxes *m*, and escaping through pipes *u* V into the receivers W X, from which the air has previously been exhausted.

The inventors say: We are aware that a vacuum has been used to facilitate the admission of the dyeing material into the pores and around the fibres in the dyeing of cloth. We do not, therefore, claim the use of a vacuum for the purpose of dyeing generally.

We *claim* the use of a vacuum, in combination with our arrangement of apparatus to render the same available in the dyeing of yarn in the cop, bobbin, and the like, without first reeling it into hanks or skeins. as described; the whole apparatus being constructed and operating substantially in the manner and for the purposes set forth.

No. 16,918.—Joseph W. Harmon, of Brooklyn, N. Y.—*Improved Composition for Floor-Cloths.*—Patent dated March 31, 1857.—The ingredients of this compound consist of eight pounds of residuum from stills of candle factories, eight pounds of spirits of turpentine, eight pounds of rosin oil, sixteen pounds of yellow ochre, sixteen pounds of Venitian red, sixteen pounds of whiting, three pounds of oil cake, one and a half pound of umber, three pounds of fresh slacked lime, three-fourths of a pound of litharge, which are mixed and ground together, when they are ready for use.

Claim.—The use of this compound, or the application of the same to the making and manufacturing of floor-cloth carpets, substantially as set forth.

No. 18,270.—John J. Bate, of Brooklyn, N. Y., and Francis S. Low, of Jersey City, N. J.—*Improvement in Compositions for Covering Meats.*—Patent dated September 29, 1857.—The materials of which this composition is made, and the manner in which it is applied, are thus described by the inventors: Thirty pounds of the common rosin of commerce and two and a half pounds of beeswax are placed in a kettle over a slow fire and melted. Two and a half quarts of shellac varnish—formed by dissolving about two pounds of gum shellac in a gallon of alcohol, without heat—is then poured into the melted mixture; after this, six pounds of pulverized soapstone is added to, and thoroughly mixed with, the other ingredients, by stirring them about. When thoroughly mixed, as directed, the composition is ready to be applied either by inserting the meat or other article—previously covered with cloth, paper, or other flexible material—into it, and withdrawing the same with as much of the composition adhering to the covering as it will retain, or by putting it on the article with a common paint brush, as may be desired, in view of the quantity or size of the articles to be coated.

Claim.—The inventors do not claim broadly, as their invention, the covering of meats and other articles with paper, cloth, or other flexible material; nor do they claim protecting such articles, after being covered, by coating their covering with a composition to protect and preserve them from injury by water, dampness, or vapor; but what they do *claim* as their invention, and desire to secure by letters patent, is, the use of shellac varnish and beeswax, in combination with the materials described, and in about the proportions named, for the purpose of forming the composition as described.

No. 16,709.—Samuel Boorn, of Lowell, Mass.—*Improvement in Compositions for Shuttle Drivers.*—Patent dated March 3, 1857.—This driver is composed of pieces of leather *a, b, c, d, e*. These pieces, before their attachment, are introduced into a composition of two pounds of gum shellac, one pound of rosin, one-quarter of a pound of isinglass, and two ounces of gum arabic. These ingredients are dissolved in alcohol and spirits of turpentine. This will give the leather a certain strength and polish, and prevent the wearing of the striker by the nose of the shuttle.

Claim.—The described composition to be used in the manufacture of the striker of a shuttle driver, as described.

No. 18,199.—Edwin Gomez and William Mills, of New York, N. Y.—*Improvement in Safety-Fuse Compositions.*—Patent dated September 15, 1857.—Equal parts of chlorate of potash, in fine powder, and of ferroxyanide of lead, are mixed with alcohol to the consistency of a paint, and applied with a fine brush to a strip of paper; this is then encased within a winding of fibrous material that will keep the powder in place when dry, and which may be varnished to resist moisture.

Claim.—The explosive compound for safety trains, fuses, and similar purposes, formed of the ingredients, and substantially as specified.

No. 17,381.—John Leigh, of Manchester, England.—*Improvement in Sizing Compositions for Yarns, Paper, &c.*—Patent dated May 26, 1857.—This invention consists in the application of silicate of soda, or silicate of potash, to the sizing, dressing, or stiffening, or otherwise preparing yarns and woven fabrics; said silicates may be prepared by fusing together, in a suitable furnace, fine pure white silicious sand with caustic soda, carbonate of soda, or carbonate of potash, which is then dissolved by steam or hot water, and reduced to the proper consistency, when it is ready for use.

Claim.—As my invention, or discovery, the sizing and dressing of yarns, woven goods, and paper, by means of the alkaline silicates, as set forth.

No. 17,867.—Ira Carle, of Kingston Township, Pa.—*Improvement in Tanning Compositions.*—Patent dated July 28, 1857.—The liquor extracted from two cords and a half of hemlock or oak bark is put into a vat containing fifty sides of hides; to this is then added three pounds of nitric acid and twenty pounds of Glauber salts, so as to impregnate the whole contents of the vat.

Claim.—The use of hemlock or oak bark, nitric acid, and Glauber salts, all to be used in one bath, for the purpose of tanning leather from hides in a short space of time, as set forth.

No. 17,562.—A. K Eaton, of New York, N. Y.—*Improved Depilating Compound for Hides.*—Patent dated June 16, 1857.—For depilating a pack of fifty sides of cow hides, or one hundred and thirty calf skins, the following ingredients are to be used. Fifteen pounds of soda ash and thirty pounds of caustic lime are stirred in ten gallons of soft water; to this is then added one pound of sulphuret of potassium, dissolved in water. Of this mixture such a quantity is poured into the vat as will give the liquor the required strength to operate upon the hides.

Claim.—The depilating process described, consisting in the employment of the ingredients mentioned, in the manner set forth.

No. 17,392.—Louis S Robbins, of Brooklyn, N. Y.—*Improvement in Fertilizing Compounds.*—Patent dated May 26, 1857.—Two parts of greensand, which contains very little or no carbonate of lime, are mixed and ground with one part of phosphate of lime; and when thoroughly incorporated and pulverized, the mixture is ready for use as a fertilizer.

The inventor says: I do not claim the separate use of superphosphate of lime or of greensand, but the new composition of matter obtained by the intimate mixture of greensand and superphosphate of lime in a finely pulverized form, for the purpose specified.

No. 17,709.—Carter Van Vleck, of Macomb, Ill.—*Improvement in Resinous Compounds for Covering Hams.*—Patent dated June 30, 1857.—This composition consists of 40 parts of rosin, 5 parts of gutta-percha, and 4 parts of tallow, or other oleaginous matter.

Claim.—The described composition for covering hams and other provisions, or other bodies, for the purpose of preserving them from decay or decomposition, consisting of rosin, gutta-percha, and tallow, in the proportions substantially as specified.

No. 17,586.—John C. Fr. Salomon, of Baltimore, Md.—*Improvement in Condensing Apparatus for Salt and Gases.*—Patent dated June 16, 1857.—The operation of this apparatus, when connected with a steam-engine, is as follows: The fan *d* being put in motion, the exhaust from the engine is injected into the receiver k^1 at the opening *a*, where it comes in contact with the refrigerating surfaces of the corrugated globe C and blast pipes *c*; here it is partially condensed, and the liquid formed passes down through the tubes *i* into the receiver k^5, and the vaporous portion rises through tubes i^1 into receiver k^2, where it is further condensed, and the liquid passes down to the tubes i^2, to the receiver k^5; above this receiver k^2, the blast is allowed to escape into the air, and the uncondensed gas is forced through pipe *e*, down to the bottom of the receiver k^3, where its course is impeded by cup *l*, and is directed upwards, the condensed portion passing through diaphragm *f* and tubes *b* and i^3, into receiver k^5, the gaseous portion passing from receiver k^3, through tubes e^1, into receiver k^6, the water pipes c^1 completing the work of condensation, and the liquid there formed passes through tubes i^4 and *b* into receiver k^5, where the entire product of condensation is collected.

Claim.—The combination of a series of blast pipes *c* and free air or water passages c^1 with a succession of receivers *k*, arranged and operating substantially in the manner and for the purposes set forth.

No. 17,711.—John Walton, of Louisville, Ky.—*Improvement for Condensing Liquids in Gas Main Pipes.*—Patent dated June 30, 1857.—The gas passes from the main pipe B into the vessel A, which is filled with alcohol; and as the gas passes over the alcohol, the latter absorbs the aqueous vapor with which the gas is charged, and the gas then passes off through the service pipe C.

Claim.—The employment, substantially as described, at any convenient place or places in the gas pipes of one or more vessels or receptacles containing alcohol or other hygrometric agent, for the purpose specified.

No. 18,286.—William Johnston, of Brooklyn, (E. D.) N. Y.—*Improvement in Cork Sole Stuff.*—Patent dated September 29, 1857.—This improvement is described by the inventor as follows: I construct the cork cloth of cotton muslin, silk, leather, or other suitable material, which material is stretched on a solid frame; on the surface of the material is laid a priming of boiled oil, over which I sift a quantity of fine pulverized cork, and press it in with rollers before the oil is dry, and allow it to remain some time to dry. I then apply another coat of oil and sift another quantity of fine cork over it, which is pressed in as before, repeating this process until I obtain the substance required. The pulverized cork is made by grinding solid cork in a burr stone mill, or any other that will reduce it fine.

The claim is thus stated: I *claim* the making of cork cloth by the aforesaid process for inside soles and lining of boots, shoes, and other articles for which solid sheet cork has hitherto been applied, using for that purpose the aforesaid materials, or others substantially the same, to produce the same results.

No. 18,980.—James M. Legare, of Aiken, S. C.—*Improvement in Preparing Plastic Cotton for Moulding Purposes.*—Patent dated December 29, 1857.—The nature of this invention consists in rendering cotton, lignine, or any fibrous material whatever soft and plastic, capable of being worked up by hand without the use of moulds, and so converted into furniture of solid or open patterns and decorations of buildings, and into fire and water proof roofing.

In manufacturing this article, steep, in a hot solution of caustic alkali, the cotton or other fibrous product, until the lignine is in part freed from gummy and other matters; then wash in three or four waters, and dry, avoiding the use of acids.

The solutions required may be kept separately or united in proper proportions, as given below, and are thus composed:

½ lb. alum, dissolved in one gallon of water; 1 lb. sulph. of protox. of iron, dissolved in one gallon of water; ¼ lb. of glue, dissolved in one gallon of heated water; 1 lb. glue and one pint of gypsum, dissolved in a gallon of water.

Claim.—The process of rendering cotton and other fibrous materials, including lignines of all kinds, plastic, and capable of being worked by hand or applied to roofing and other kindred uses, in the manner and for the purposes set forth in the specification.

No. 17,974.—Nicolas Mary, ainé, of Philadelphia, Pa.—*Improvement in Silk Dyeing Machines.*—Patent dated August 11, 1857.—The fabric to be dyed passes from roller A into the steam box B, where it becomes slightly dampened by the steam; it then passes over the surface of the three felt covered rollers D E F, which are revolving in the dye, and transfer said dye to the fabric. From roller F, the fabric passes into box L, where it is subjected to the action of steam, which diffuses the color uniformly through the material, which is finally wound upon roller N.

Claim.—The combination of the steam chambers B and L with the friction surface of rollers D E and F, for preparing and dyeing the material; the whole being arranged and operating substantially as described.

No. 17,635.—Edward Pierce, of Philadelphia, Pa.—*Improvement in Enamelling Iron Pipes and Hollowware.*—Patent dated June 23, 1857.—The nature of this invention will be understood by reference to the claim.

Claim.—The enamelling of the interior surfaces of pipes or cast iron ware, by placing a vitrifiable compound on the core before the core is inserted into the mould, in the manner and substantially as described.

No. 17,548.—Charles W. Atkeson, of Henderson, Ky.—*Improvement in Basin Evaporators.*—Patent dated June 16, 1857.—The salt water is admitted into the boiler C through a pipe at the bottom or top of said boiler, and is heated by the fire of furnace A, the heated gases rising up the flue B and circulating through flues *a*. The enlargement D, at the top of the boiler, facilitates the evaporating process by furnishing an enlarged surface, from which the steam may freely rise and pass off into the heating tubes of the granulating vats.

The inventor says: I am aware that a series of horizontal tubes has been combined with the flue of a vertical cylindrical steam boiler, and therefore I do not claim said arrangement.

But I *claim* combining a series of horizontal heating tubes with a vertical flue or chimney, when said flue or chimney is combined with an enclosing vertical casing, which has an enlargement at its upper end, entirely above the uppermost of the said heating tubes, substantially as set forth.

No. 18,216.—Charles B. Warring, of Poughkeepsie, N. Y.—*Improvement in Illuminating Gas Apparatus.*—Patent dated September 15, 1857.—The pipe B passes through the top A of the retort to the bottom of the same, and is provided at its upper end with an eye-piece, through which the attendant can observe the color and degree of heat of the bottom of the retort; the gas passes through pipe L; M rises through the water in box E, and passes down through pipe H G, thence through the water in box D and pipe H^1 G^1 into the gas-holder

Claim, 1st. The eye piece and tube in combination, substantially as described.

2d. The peculiar apparatus described for conveying the gas into the gas-holder.

No. 16,544.—James Hansor, of the Wandsworth Road, England.—*Gas Generating Apparatus.*—Patent dated February 3, 1857; England, March 21, 1854.—The vapors are generated in retorts C C, wherefrom they rise through pipes D D into retort E, where they are exposed to a high temperature to be converted into permanent gas. Dampers L L L serve to regulate the heat of the several retorts. I I are test-pipes, with stop-cocks connected to the final exit pipe of the retort E, for ascertaining whether the heat of the retort is of the proper degree to convert the vapors into gas; the test is the ignition and bright burning of the gas on the application of a light. J J are pipes for testing the vapors in the retorts C C.

Claim.—The pipes I and J and the dampers L, as combined with the retorts C and E, operating in the manner substantially as described, for the purpose of readily ascertaining and regulating the progress of the operation of gas making, as set forth.

No. 16,830.—Alonzo M. Giles, of Boston, Mass.—*Improved Gas Generator.*—Patent dated March 17, 1857.—In the engravings at E the retort is closed and separated from the mouth-piece C by a tight fitting door, through which there are openings *g* corresponding to the extremities of the conduits D. By means of this door all passage from the gas and vapors from the retort to the mouth-piece is shut off, except through the conduits D, and the heat of the retort is rendered much more intense and uniform. This door is attached to the ordinary door F by means of rod *h*, the two being removed and replaced together. The gas formed at the rear end of the retort enters the conduits D at the point *f*, and any decomposed vapors and materials that arise from the colder end of the retort are forced to pass first into the hottest portion. Should any decomposed vapors remain mixed with the gas, they will be still more perfectly reduced during their passage through the conduits D.

Claim.—The inner door E, operating in the manner substantially as described, whereby the heat of the retort is rendered much more intense and uniform, as set forth. Second, the pipes D, in combination with the inner door E, arranged and operating in the manner substantially as set forth.

No. 17,309.—James A. Bruce, of Baltimore, Md., assignor to the Maryland Portable Gas Company, of same place.—*Improvement in Gas Generators*.—Patent dated May 12, 1857.—The oil from which the gas is to be generated is allowed to pass into the retort A, through pipe S; after the retort has been heated to a bright cherry-red heat, the oil is instantly converted into gas, which passes up through the perforated plate H and the purifying material G, by the angular pipe E, to the condenser B, and thence to the receiver. When the oil has thus run for some hours, the packing, the plate H, and the bottom of the retort become gummed by the impurities of the oil; and to remove these without letting the retort cool off, the flow of oil is turned, the stop-cock in the pipe F is opened, and the gas is allowed to pass off through the smoke-pipe c. By now opening valve a, and applying a match thereto, the gas in the smoke-pipe F burns off, the air being admitted by removing plug b of the retort A; the flame from above now descends into the retort, and burns off all the impurities which have collected therein.

The inventor says: I claim the new gas retort with smoke attachment, by which atmospheric air is admitted at the bottom to clean the retort and purifying material by combustion, substantially as set forth and represented. I do not intend to limit my claim to this or any particular form of retort.

No. 17,599.—Ezra W. Whitehead and James L. Conklin, of Newark, N. J.—*Improvement in Gas Generators.*—Patent dated June 16, 1857.—The material being placed in bucket f, the bucket is placed in the retort resting on the flanch d; and when the gas begins to form, it passes in the direction of the arrows into flue b, a, b^1, and escapes through pipe h to the condenser and washer.

Claim.—The construction and arrangement of the retort, as described, having two flues on opposite sides for strengthening the same, and leaving a larger portion of the walls of the retort for the direct action of the fire, in the manner and for the purposes specified.

No. 17,614.—Napoleon Aubin, of Albany, N. Y.—*Improvement in Gas Generators.*—Patent dated June 23, 1857.—The operation of this charger is as follows: The gas-making materials in the cavity of the charger F, being exposed to the heat of the retort A, soon evolve hydro-carbon vapors, which, by their own pressure, pass down through the aperture k, and, coming in contact with the bottom of the retort, are there transformed into gas, which, by its sudden expansion, raises the charger F, which, by falling again into its position, expels the gas from the space in which it was generated; and thus a continuous oscillating motion of the charger F and cover B is produced, which forces the hydro-carbon vapors to come in contact with the red-hot bottom of the retort, and at the same time prevents the newly generated gas from remaining exposed to the red heat of the retort.

The inventor says: I do not claim the mixing of materials for

making gas, nor the introduction of gas-making materials into a retort by means of a charger, nor the described method of closing the retort, nor the introduction of highly heated steam into the retort; for such devices have been either known, used, or patented before. I *claim* the use of a charger arranged and operated substantially as set forth.

No. 17,704.—John W. Smith, of Washington, D. C.—*Improvement in Gas Generators.*—Patent dated June 30, 1857.—The gas formed by the decomposition of the oil rises in the several compartments formed by the partitions F, and passes to the receiver, forming currents which unite and divide alternately; and the arrangement of the openings i retards the currents and purifies the gas in its passage to the receiver, by causing the impurities to settle upon the retort and sides of the partition.

Claim.—The combination of the retort B with the partitions F, when the said partitions are furnished with openings i, arranged in such a manner that the oil or other fatty matter, and the gas produced by its decomposition, shall flow through the retort in currents crossing each other, and alternately dividing and uniting in the manner described, and for the purpose specified.

No. 17,981.—Allan Pollock, of Washington, D. C.—*Improvement in Gas Generators.*—Patent dated August 11, 1857.—When the apparatus is in operation, the gas passes through the vent-holes j into the spaces h and gas-chamber i, the lid l extending down to or near the top of said vent-holes; by this arrangement the gas finds an exit from the middle of the retort, and none but the pure and well distilled gas is drawn off, leaving the cruder portion for further distillation.

Claim.—First, the peculiar form and arrangement of the retort with the grooves for the passage of the gas from the vent holes of the canister to the gas chamber. Second, the canister, with the vent holes above described, by which I take the gas from the centre of the canister, the lid extending down to or near the top of said vent holes.

No. 18,184.—John Butler, of Brooklyn, N. Y.—*Improvement in Gas Generators.*—Patent dated September 15, 1857.—A stream of carbon-hydrous material flows through tube E, which, falling directly upon the red hot fused metal F, is converted into gas, which, passing through the charcoal contained in basket C, receives a second heat while thus detained by the charcoal; from thence the gas passes directly to the purifier.

The inventor says: I am aware that a patent has been granted for the use of fused metals, by passing the products of the distillation of coal and other substances yielding carburetted hydrogen (gas) through said metals. I therefore disclaim the use of fused metals, fusible at a low state of temperature, for the purpose of passing the products of the destructive distillation of coal and other substances through said metals.

Nor do I claim said metals for bringing distilled carbon-hydrous vapors in immediate contact with the surface of the same.

Nor do I claim fused metal for the purpose of floating the carbonaceous matter usually deposited in retorts.

I *claim* generating illuminating gas in a retort over the surface of melted lead, or other fusible metal, in the manner set forth.

No. 18,414.—Salmon Skinner, of Yonkers, N. Y.—*Improvement in Gas Generators.*—Patent dated October 13, 1857.—In the drawings, letters *c c* represent a basket or frame-work of iron, for the limestone or other matter; so that the cover may be removed and replaced without disturbance to the substances contained therein, and used to keep the upper chamber cool. Letters *d d* represent the siphon pipe, for introducing oil or any other substance for generating gas. Letters *b b* represent the pipe for the escape of the gas from the retort to the condenser or gasometer.

The inventor says: I *claim* making the upper part of my retort dome-shaped, or any equivalent shape that will radiate its own heat; and in combination with such a retort, the interior protecting vessel *c c* and contents, or their equivalents, for the purpose of preventing the upper chamber of the retort from becoming unduly heated, thereby shielding the gas generated in the lower portion from decomposition before it can escape to the gasometer.

No. 17,574.—Augustus A. Hayes, of Boston, Mass.—*Improvement in the Construction of Gas Generators.*—Patent dated June 16, 1857.—As the coal in the retort B becomes heated, the gas is generated and passes through the passage *a* into conduit A, and thence into stand pipe C. By passing off the gas through small eduction pipes which prevent a ready exit, the usual products of distillation do not form in the vessels, but instead thereof nearly pure gaseous matter and aqueous vapor charged with vapors of ammoniacal salts are produced. The conduit can be varied in size to make the retort adaptable to the decomposition of different kinds of coal by inserting a rod into the conduit A, by which its size is diminished.

Claim.—My improved gas retort, substantially as described and represented, that is, with only one chamber and with a compression conduit, arranged wholly or partially outside of the chamber of the retort, and so as to pass directly into the stand pipe, and have an entrance or opening into its front end, to be closed either by the door of the retort or by a separate small door, or its equivalent, as circumstances may require.

Also combining with the gas retort and its compression conduit a means, substantially as described, for diminishing the internal area of the passage of the gas through the conduit, in order to produce the amount of compression of the vapors in the chamber which may be required, according to the kind of coal or other material used; the retort by such means being adapted to the decomposition, in the manner set forth, of any bituminous coal or other gas-producing material.

No. 17,435.—C. B. Loveless, of Syracuse, N. Y.—*Improvement in Feeding Gas Generators.*—Patent dated June 2, 1857.—By opening

or closing the valve V, by means of hand-wheel *w*, the rosin in the feeder H may be let into the retort R through pipe *a*, while the gas rising through pipe *b* will exert such a pressure on the material in feeder H as to force the rosin into the retort R, when the valve V is opened.

The inventor says: I make no claim to cut-off valves broadly.

But I *claim*, as an improvement in portable gas apparatus, the connexion of feeder H with the retort R, by the arrangement of pipes *a* and *b*, when combined with the cut-off valve V, the entire arrangement operating substantially as set forth.

No. 18,109.—Warren A. Simonds, of Boston, Mass.—*Improvement in Portable Gas Generators.*—Patent dated September 1, 1857.—The pipes B and C having become sufficiently heated, a jet of oil is forced through pipe L into pipe B, where it comes in contact with the heated metal and is converted into an imperfectly formed gas or vapor; thence this vapor passes through half-turn D into pipe C, where it is still further heated and converted into gas, which passes off through pipe F and cork G to the purifier.

Claim.—The tubular retorts B and C, of the form described, operating in the manner substantially as set forth, for the manufacture of oil gas.

No. 17,465.—Charles F. Werner, New York, N. Y.—*Improvement in Wood Gas Generators.*—Patent dated June 2, 1857.—The wood from which the gas is to be generated is placed in the retort B, which is exposed to the heat of an oven A; the gas passes through pipe *a* into the cylinder C, and, passing below the lower edge of the partition C, escapes through pipe *b* to the condensor and purifier. As the heat from the oven A passes as well outside as inside of the retort B, the wood is decomposed equally in all parts of the retort.

Claim.—The arrangement of a movable boiler or retort B and cylinder C, being combined in the manner and for the purpose as described.

No. 16,682.—Warren C. Choate and Charles N. Tyler, of Washington, D. C.—*Improvement in combining Hydrogen and Wood Gas.*—Patent dated February 24, 1857.—This improvement consists in commingling with the gaseous products of the wood, as it distils over from the retort B, a stream of hydrogen gas in a volume sufficient to dilute or thin the gas to such a degree as to render it fit for illumination.

Claim.—Combining hydrogen gas with the gaseous products evolved from the dry distillation of wood, in the manner substantially as and for the purposes described.

No. 17,090.—James O. Halsey, of Essex county, New Jersey.—*Improvement in Portable Apparatus for Generating Illuminating Gas.*—Patent dated April 21, 1857.—The perforations I in the door of the air chamber B admit a draft to said air chamber, and the gases which may escape from the retort C, in process of filling said retort, are carried off, through the perforation H, and pass out through the flue Z; thus no gas will enter the room where the apparatus is in operation.

Claim.—The air chamber B, constructed and operating as described to allow both the retort to be charred while the fire is in operation, and to carry off the gas that escapes from the retort, and prevent its entering the room.

No. 16,591.—James Hansor, of the Wandsworth Road, England.—*Gas-making process.*—Patent dated February 10, 1857; England, April 21, 1856.—The inventor produces gas from the following composition: Peat, twelve parts by weight; resin of commerce, twelve parts; coal tar, eight parts; and resin oil, or other oleaginous matter, sixteen parts.

Claim.—The treatment of the compound gas fuel made in the manner described, and worked in the retort as set forth.

No. 18.648.—Thomas I. Pitt, of New York, N. Y.—*Improved Gas Meter Indicator.*—Patent dated November 17, 1857.—On the metal plate B is inserted the axis C, for the wheels A and A^1. The wheel A is the registering dial which shows the tens, hundreds, and thousands in cubic feet. To the drum of the meter is securely attached the shaft I, working in proper bearings in the plates B and J; on this shaft there is an endless screw working in a pinion G on the shaft D. This shaft has proper bearings at *d d*, framed in pieces projecting sufficiently high to place the shaft in the proper position of the endless screw E, which is secured thereon to work the wheels A and A^1. At one end of the shaft D there is placed a small registry wheel to indicate the cubic feet of gas consumed.

Claim.—The employment of a rotary indicator, constructed and operated substantially as described, and applied to gas meters to register the consumption of gas, as set forth.

No. 16,922.—Hyam Jacob Hyams, of Stanhope street, Hampstead Road, England.—*Improvement in Dry Gas Meters.*—Patent dated March 31, 1857.—The gas is admitted to the cavity *r* in the circular rotating valve *m* from the supply pipe and the centre space *x*. The circular valve *m* is moved eccentrically, so as to uncover in rotation the several apertures *o*, *s*, &c., whereby the gas passes through the valve from one part of the meter to another. The gas passes down through the passage *s* into the chamber a^1 of the meter, forcing outwards the diaphragm b b^* (fig. 1) towards the chamber a^2, thus expelling the gas from the latter through the passage *o*, whence it passes to the supply pipe of the burner. As the diaphragms b and b^* are operated by the pressure of the gas, motion is transmitted by means of the links *e f* and lever *g* to the vertical shaft *h*, which motion is transmitted by means of crank *i*, pitman *j*, and crank *k*, to shaft *l*, which operates the circular valve by means of eccentric l^*.

The inventor says: I do not intend to confine myself to the exact form and arrangement of parts shown and described, as they may be varied without departing from the nature and object of my invention.

But I *claim* connecting together the rigid parts of the movable diaphragms, substantially as specified, in order that they may act together, as described.

I also claim the construction and arrangement of the rotating circular valve, as shown.

No. 17,936.—O. S. Lawson and A. A. Starr, of New York, N.Y.—*Improved Stop-cock Gas Regulator.*—Patent dated August 4, 1857.—The gas enters the cock F through pipe D, and the conical plug *b* is caused to revolve with a certain velocity, and the gas enters the conical groove F, and escapes through the passages e e^1 into pipe D^1; and the amount of gas to be burned is in proportion to the number of revolutions which the plug *b* makes in a given time.

Claim.—The cock F, with conical plug *b*, on which is cone-shaped groove *f* extending entirely around the same, in combination with the mechanical devices arranged and operating as described, and for the purpose of a portable gas apparatus for vessels, cars, &c.

No. 16,639.—John H. Cooper, of Philadelphia, Pa.—*Improvement in Gas Regulators.*—Patent dated February 17, 1857.—In this regulator the spring is preserved from the deteriorating effects of the gas.

The inventor says: I do not claim the combination of valve spring and inverted cup; with the upper and lower chambers, the same having been in use for years.

But I *claim* placing the spring *p* regulating the valve within the latter, made hollow for the purpose, in order to prevent the contact of the gas with the spring, in the manner and for the purpose substantially as specified.

No. 16,951.—Charles J. Halsted and John Coeyman, of New York, N. Y., assignors to Charles N. Decker, Francis Godine, and Charles J. Halsted, of the same place.—*Improved Gas Regulator.*—Patent dated March 31, 1857.—This gas regulator is attached to the main or service pipe leading to the meter. When the gas is lighted, it is drawn through the regulator and meter, and passes through the gauze wire screen G and perforated plate B, upon the valve C pressing said valve downwards until the gas escapes over the edge of valve C; it then passes down through the perforated plate D, thence through the lower gauze wire screen G to the meter and burner. When the burner is closed, drawing no gas from the regulator, the valve C prevents any escape of gas, as its edge bears tightly against plate B.

The inventors say: We are aware that a double compensating valve, actuated through the pressure of gas on a flexible diaphragm, has been used in a regulator. This we do not claim.

But we *claim* a gas regulator, to be located between the meter and main gas pipe, and composed of the perforated plate B, having a flange upon it provided with external and internal screw threads, and a plate D, similarly perforated and provided with a screw which runs into said internal screw thread on the plate D, and adjustable therein by its stem H; when said plates are combined with a single valve C and adjustable spring E, and the whole arranged within the shell A, substantially in the manner and for the purpose set forth.

No. 17,079.—Robert Cornelius, of Philadelphia, Pa.—*Improvement in Gas Regulators.*—Patent dated April 21, 1857.—The operation of this regulator is as follows: the gas enters at G from the main pipe and passes into chamber I; from I it passes through at O and O^1 to U, and thence to H, in the direction of the arrows. A portion of the gas also passes up through passage V V^1 and W W^1 into the interior of spring box E F, and thence through aperture T, down the tube K L, and between R R^1 and S S^1 into the chamber U, where it meets the gas flowing through O O^1. Thus when no burners are lighted on H, the pressure of the gas in I is communicated through V W and V^1 W^1 to the interior of spring box E F; and the spring plates E F being separated to their greatest extent, the valves O O^1 and S S^1 are drawn up almost to their seats. When the burner is lighted the gas flows through at P P^1, and also at R R^1; and this flow diminishes the pressure which was distending E F, and that box contracting slightly, the rod K L is pushed down on O O^1, and R R^1 is slightly opened.

Claim.—First, the employment of a spring box or boxes composed of two plates of corrugated metal, as shown, and placed intermediately, so as to communicate, on one hand, with the gas in the main chamber I, and, on the other hand, with the branch chamber U, being separated by throttled openings S S^1 and V V^1, in the manner and for the purpose set forth.

Second, the employment of the valve R R^1, in combination with the spring box for regulating the flow of gas, these being constructed and operating as and for the purposes substantially as described.

No. 17,317.—Robert Cornelius, of Philadelphia, Pennsylvania.—*Improvement in Gas Regulators.*—Patent dated May 19, 1857.—This is an improvement on an apparatus patented to the inventor, 21st April, 1857. The tube 12 13 causes the gas in the chambers 1, 2, 6, 5, to be of the same pressure as in the main pipe at G. As the pressure in the pipe G increases, the pressure on disk 5 6 increases and forces down spring 5 6 and stem and valve 7 8, contracting the passage for the escape of gas through 10 11 into the intermediate chamber R. As the quantity of gas which passes through 10 11 is checked, it tends in so much to diminish the pressure in the chamber U, which will permit an increased flow of gas through T L; and as the opening 10 11 is diminished, it will tend to diminish the pressure in the interior of the spring box E F, which permits the opening O O^1 to be increased by contraction of spring box E F forcing down the hollow stem K L. Thus, as the pressure in the main chamber G increases, the valve O O^1 is prevented from being too much closed by the counteraction of the gas through the tube 12 13 and spring box 5 6.

Claim.—The employment of the auxiliary spring box 5 6, communicating directly with the main chamber G, in combination with the valve 10 11, communicating with the middle chamber, for the purpose of preserving the uniform action of my regulator under considerable variation in the main pressure.

No. 17,671.—John H. Cooper, of Philadelphia, Pa.—*Improvement in Gas Regulators.*—Patent dated June 30, 1857.—The gas enters this regulator through pipe G; and when more than the desired quantity of gas is forced through said pipe, it passes through the annular opening between valve H and its seat and depresses cup C, which movement brings down valve H, thus reducing the pressure of the gas.

The inventor says: I do not claim the inverted cup spring and valve, as such are common to other gas regulators.

Neither do I claim broadly the hinging of the cup and valve to the interior of the casing.

But I *claim* the combination of the inverted cup C, arm D, and valve H, when both valve and cup are attached directly and permanently to an arm hinged to the interior of the casing, substantially in the manner set forth and for the purpose specified.

No. 18,008.—John H. Cooper, of Philadelphia, Pa.—*Improvement in Gas Regulators.*—Patent dated August 18, 1857.—When the pressure of the gas from the meter is excessive, that excess of gas acts upon the top of the inverted cup C so as to depress the same, and with it the valve *m*, thereby contracting the opening for the entrance of gas to the interior of the casing.

The inventor says: I do not desire to claim exclusively the employment, in connexion with a gas regulator, of a double reservoir and double rimmed inverted cup.

Neither do I claim broadly the employment of an adjustable spring for balancing the pressure on the cup.

But I *claim* the double rimmed inverted cup C with an inclined surface, said cup having a valve *m*, and an opening formed by the inner rim *h*, when the said opening and valve are concentric with the inlet formed by the inner flanges *e* of the casing.

No. 18,103.—John H. Powers, of Newark, N. J.—*Improvement in Gas Regulators.*—Patent dated September 1, 1857.—The gas enters regulator at E, and escapes through the unsubmerged portions of the openings *b* of valve D into chamber A, and thence to the outlet F. When the street pressure is low, the pressure in chamber A and under cup B is but little; the cup occupies a low position, and, by its connexion with valve D, holds up said valve, but little submerged, and allows a free supply of gas.

The inventor says: I do not claim the connexion of the valve with the inverted pressure cup by means of a lever.

But I *claim* the arrangement of the inverted cup-shaped valve D and its seat of quicksilver, and the lever H which connects the said valve with the pressure cup, all within the pressure cup substantially as described.

No. 16,651.—Michael J. Miller, of St. Louis, Mo.—*Improvement in Gas Retorts.*—Patent dated February 17, 1857.—As the gas begins to evolve, and rises to the top of the retort, it would escape if the pipe was in the top of the retort. But the pipe A being applied at the bottom, a more perfect decomposition takes place; because the gas in returning must pass through the fire and come in contact with the bottom of the retort before it can escape in the educting pipe A.

Claim.—The pipe A, inserted so as to receive the gas at the bottom of the retort, as shown and described.

No. 18,134.—Saunders Coates, of New York, N. Y.—*Improvement in Gas Retorts.*—Patent dated September 8, 1857.—When this retort has attained the proper degree of heat for the admission of the oil, the lead *b* will have become melted, and the iron plate *c* will be found floating upon the top; this arrangement permits the use of retorts in which the sides and bottom are cast in the same thickness.

Claim.—Forming a false bottom for gas retorts from metal of dissimilar degrees of fusibility, viz: one such as lead in combination with one such as iron, resting upon the easily fusible metal, substantially in the manner and for the purpose described.

No. 18,926.—Ariel Pevey, of Lowell, Mass.—*Improvement in Casting Gas Retorts.*—Patent dated December 22, 1857.—The nature of this invention consists in constructing, arranging, and operating the flask so as to allow of using the heat generated and contained in it, by pouring or casting one retort, to set or dry, the loam used for the next mould so as to give the desired form, thereby enabling the moulder to cast two retorts a day. And in constructing, self-centralizing, and suspending the cone so that it may be perfectly true with the inside of the flask, and leave consequently every part of the retort of an equal or desired thickness.

The inventor says: I disclaim the general principle of the formation of a mould without patterns by sweeping, or without flasks; as such is well known and forms no part of my claim.

Neither do I claim hanging cores in the cope or setting them for casting kettles in the ordinary manner; as that also forms no part whatever of my invention or claim.

But I *claim* my described flask, composed of the several parts A B C, and former H and I, constructed and relatively arranged and operated for moulding the retort, and for self-centralizing and setting the core, essentially in the manner as set forth and described.

No. 18,791.—Simmons W. Carpenter, of Yonkers, N. Y., assignor to William W. Woodworth, of Yonkers, N. Y.—*Improvement in Cleaning Gas Retorts.*—Patent dated December 1, 1857.—A is the retort; B C and D the pipes needing to be cleaned. By this invention the retort is heated until it is a bright cherry red; the stop cock E is then turned so as to shut off the connexion through the same to the gasometer O. Water is then introduced slowly into the retort A, through the siphon pipe S. The water on reaching the heated retort is instantly converted into steam, and by the force of its own pressure rushes through the pipes B C and D into the siphon box, and escapes through the siphon P, thus thoroughly cleaning every part of the gas apparatus.

The inventor says: I do not claim as my invention the principle of the use of steam or stame as a cleanser of gas apparatus.

But I *claim* the method or process of the introduction of water directly into the heated retort, (the charge being drawn or exhausted,) there to be converted into steam or stame, free to unite with and remove the carbonaceous or other deposits contained in the retort or pipes, substantially in the manner set forth.

No. 17,068.—N. Aubin, of Albany, N. Y.—*Improvement in Closing Gas Retorts.*—Patent dated April 21, 1857.—The cover B is secured to the retort A, by filling the groove *a* with a fusible alloy which will melt at a low temperature; and the cover B is then placed so that its rim a^1 dips into the alloy in said groove, thus forming a hermetic packing.

The inventor says: I do not claim the box for introducing the materials for generating gas; but I *claim* the cover B, with the compound rim a^1, fitting into the groove *a*, for the purposes set forth.

No. 18,154.—Charles Monson, of New Haven, Conn.—*Improvement in Extension Gas Tubes.*—Patent dated September 8, 1857.—The nature of this invention will be understood by reference to the claims and engravings.

The inventor says: I claim not the device of extension levers by itself, nor any particular form of tube by itself.

But I *claim* the combination of levers and tube or tubes, substantially as set forth.

The use and application to a gas tube of jointed extension levers, like, or operating substantially upon the principle of, those I have described.

The use and application thereof, as an instrument for extending the reach and contracting the reach of a gas tube, or of gas tubes, of whatever form, and for holding and guiding the same.

And finally, the use of said levers as an instrument for relieving or preventing the strain of traction or of weight upon said gas tube, and upon the joints thereof, substantially as shown.

No. 17,214.—Robert Haering, of New York, N. Y.—*Improved Process for Purifying Gutta Percha.*—Patent dated May 5, 1857.—One pound of caustic potash is dissolved in two gallons of water, and to this is added an ether formed from a solution of four ounces of chloride of lime in eight ounces of alcohol. Fifteen pounds of crude gutta percha are put into this mixture, and the whole is then heated to the boiling point; after which the gutta percha is removed from the liquor and treated between rollers under water, in the ordinary manner.

Claim.—The method of purifying gutta percha, by means of the ether and alkali used substantially as set forth.

No. 17,649.—Charles Winslow, of Lynn, Mass.—*Improvement in Preparing Elastic India Rubber Cloth.*—Patent dated June 23, 1857. This invention consists in marking on elastic cloth which presents an even smooth surface parallel lines in the direction of the shortest diagonal of the meshes formed by the thread of the cloth, for the purpose of guiding the workmen in cutting said cloth when it is to be worked up.

Claim.—The method of preparing elastic cloth for use by the application thereto of parallel lines in the direction of the shortest diagonal of the meshes formed by the threads of the cloth.

No. 16,601.—Gulielmus B. Millerd, of Colchester, Conn —*Improvement in Preparing India Rubber Cloth.*—Patent dated February 10, 1857.—The India rubber sheet *a a* is wound on cylinder B, and passes over rollers D C and spreading bar E under buffing cylinder A, and over drawing cylinder F on to receiving cylinder G.

The inventor says: I do not claim the process described of boiling caoutchouc in alkali to desulphurize its surface, nor the buffing or grinding of its surface to produce roughness thereon.

Neither do I claim the attachment of a sheet of caoutchouc to cloth, either in an extended state to produce an elastic fabric, or in a free state to produce an unelastic fabric, where the union is effected by the application of cement to the caoutchouc, or by subsequent vulcanization.

But I *claim* the application of a sheet of vulcanized caoutchouc, previously prepared by buffing its surface or surfaces substantially as described, to a sheet of cloth or between two sheets of cloth previously prepared by being thinly coated with an unvulcanizable solution of caoutchouc on the tangent side or sides, the sheet of caoutchouc being applied in an extended state to produce an extensible and elastic, or in a free state to produce an inelastic fabric by simple pressure, and without the use of cement or subsequent vulcanization.

No. 17,295.—Conrad Poppenhusen and Ludwig Held, of Brooklyn, N. Y.—*Improvement in Devulcanizing India Rubber.*—Patent dated May 12, 1857; antedated April 1, 1857.—A mixture of powdered sal ammoniac or sulphate of ammonia and lime, all in a dry state, are heated in a retort, and the dry gaseous ammonia generated by this process is conducted by means of a pipe to near the bottom of the vessel containing the softened India rubber and solvent. The dry gas is readily absorbed; the India rubber swells up and forms at last by the aid of constant stirring with the solvent a homogeneous gelatinous mass, which may be applied for practical purposes in the same way as usually solutions of the natural gums mixed with sulphur are used.

The inventors say: We do not claim the treating of vulcanized India rubber, gutta percha, and allied gums, or their compounds with any solvents of the native gums alone, as their effect on such vulcanized gums is well known.

But we *claim* the process described of rendering vulcanized India rubber, gutta percha, or allied gums, or their compounds, soluble and plastic, by the joint action of the solvents mentioned and dry ammonia gas.

No. 17,029.—Thomas B. De Forest, of Birmingham, Conn.—*Improvement in Machinery for Manufacturing India Rubber Hose.*—Patent dated April 14, 1857.—The principal features of this invention relating to the first five claims will be readily understood by reference to these claims and the engravings. The arrangement of the parts referred to in the sixth claim relates to the manner of winding the fillets in a spiral shape around the mandrel P, and to the manner of feeding said fillets to the machine.

The inventor says: I do not claim generally the combination of a rotating mandrel, pressure rollers, and guide rollers, for the purpose of forming India rubber hose.

But I *claim*, first, the employment of a pressure roller or rollers *e e* of a length equal to a comparatively small portion of the length of the mandrel, when such roller or rollers, or the mandrel, have a longitudinal movement, substantially as and for the purpose set forth.

Second, giving the mandrel a rotary motion independently of the pressure rollers, and causing the latter to derive motion from the mandrel, substantially as and for the purpose set forth.

Third, making the pressure rollers of a tapering form, so as to exert less pressure nearest where the laying or winding of the fillet or fillets takes place, and a gradually increasing pressure as the wound fillet advances further between them, substantially as described for the purpose set forth.

Fourth, the mode of operating the mandrel and the pressure and guide rollers, whereby the fillets are first wound upon the mandrel to form the hose, and the hose is afterwards pushed longitudinally off the mandrel, substantially as described, viz: by giving rotary motion to the mandrel while the carriage which contains or supports the rollers moves in one direction longitudinally in relation to the mandrel, and suspending the said rotatory motion while the rollers move in the opposite direction.

Fifth, the combination of the clamps *a a*, flanged collars *b b*, pins or screws *x*, springs *y y*, and elliptic collars *z*, applied and operating in the head stock C^1 to clamp the hose to the mandrel and liberate it therefrom, substantially as set forth.

Sixth, the combination of the two spring clutches $P\ P^1$ and Q Q, the levers P Q, the spring bolts *p q*, the tappets $t\ u\ u^1$, and the sliding bar T, the whole operating together, as described to cause the roller carriage to be driven in opposite directions alternately.

No. 17,037.—Robert Haering, of New York, N. Y.—*Improvement in Treating Gutta Percha.*—Patent dated April 14, 1857.—One pound of India rubber or gutta percha having been mixed with eight ounces of sulphur in the usual manner, eight ounces of pipe clay is added to it; and when distributed evenly, the mass may be vulcanized in from four to seven hours at a temperature of from 230 to 300 degrees Fahrenheit in the ordinary manner, when the clay will rapidly absorb all gases which are evolved by the action of the sulphur, thus enabling the operator to manufacture articles of large diameters, which are uniformly dense and compact throughout.

Claim.—In vulcanizing India rubber and similar gums the use of pipe-clay, or its equivalent, for the object set forth, in combination with sulphur, substantially in the manner and for the purpose described.

No. 17,931.—Dr. Ludwig Held, of Brooklyn, N. Y.—*Improvement in Factitious Ivory.*—Patent dated August 4, 1857.—Finely ground ivory dust, bones, or vegetable matter are digested with about one-half of their weight of common chlorohydric acid, till the jelly-like appearance of the mass indicates that the inorganic constituents of the bony substance are decomposed. To this is added a solution of chloride of zinc, which has been digested with one-half of its weight of oxyd of zinc, and the mixture is heated and stirred to a thick doughy mass. To this is then added finely powdered bleached shellac or gum copal, and the whole is kneaded together till it becomes hard and stiff. The material can now be pressed in heated metallic moulds to any desired shape, and will have the appearance and hardness of ivory.

The inventor says: I do not exactly confine myself to any of the proportions of materials mentioned above, nor to any of the gums enumerated; and I do not claim the combining of resinous substances or gums with bone or ivory powder, and with metallic oxyds, as has been, to my knowledge, prescribed for plastic compounds resembling ivory.

But I *claim* the ivory-like plastic compound, produced principally by a combination of cartilaginous substance or vegetable fibre with basic chloride of zinc and gum resins prepared and applied in the manner substantially as described.

No. 17,949.—William M. Welling, of New York, N. Y.—*Improvement in Factitious Ivory.*—Patent dated August 4, 1857.—10 ounces of white shellac, 4½ ounces of impalpable white (acetate of lead precipitated by sulphuric acid), 8 ounces of ivory dust, and 5 ounces of camphor are reduced to a powder, are heated and thoroughly incorporated; the mass is then brought into heated moulds to be manufactured into various articles.

Claim.—Forming artificial ivory by thoroughly mixing and combining the articles specified, or others having equivalent properties, while under the operation of heat, substantially as specified.

No. 17,519.—Julius A. Roth, of Philadelphia, Pa.—*Improvement in Making Lamp-Black.*—Patent dated June 9, 1857.—The retort A is charged with rosin through the door *a*, which rosin is ignited in said retort—the combustion of the rosin being kept up by a blast of air forced through pipe *b*. The smoke passes through flue D E into the flues *c d e* of the water tank F, and the lamp-black is forced into the water *f* of said tank; but owing to its oily nature it is lifted to the surface of the water, whence it may be run into a suitable receptacle.

Claim.—Supplying lamp-black ovens or the flues connected therewith with air pipes, substantially as described.

Also, the combination of the discharging flue or pipe with a tank or reservoir filled with water, for the purpose substantially as described.

No. 18,271.—John J. Bate, of Brooklyn, N. Y.—*Improvement in Lard-Rendering Kettles.*—Patent dated September 29, 1857.—A is the outer shell which surrounds and encloses the trying kettle, which may be supported or enclosed by brick, wood, or some other suitable covering the better to confine the heat. B is the trying kettle, fastened and secured to the shell A by being bolted through suitable flanges formed on the top edge of each. It is made enough smaller in diameter and less in height than the shell A, to form a space between the two into which steam can be introduced and circulated to heat the contents of the trying kettle. C is a detachable cover to the kettle, which may be removed at pleasure for the purpose of cleansing or filling the kettle. This cover has an opening in it, closed by a small cover, through which the progress of the operation of the kettle may be watched. E is a pipe from a steam boiler, which is connected to the bottom of the shell A at its central point, so that the steam introduced through it shall diffuse itself equally throughout the space between the kettle and shell. It has a stop-cock inserted in it, for the purpose of shutting off the steam from the boiler, when desired. F is the condensed water pipe, connected with the shell at its bottom and to the boiler below the water line, through which the water formed by the condensation of steam is returned to the boiler. G is a poppet-valve inserted in the upper part of the shell, which opens inwardly and serves both as a snifting and vacuum valve. It is attached to a weighted lever, so as to produce a slight pressure upon the valve, which opens it when the pressure of steam between the kettle and the shell is reduced below the pressure put upon the valve. H is a stop-cock at the bottom of the kettle, through which its contents may be withdrawn.

The inventor says he does not claim the construction and combination of the shell as described, nor the application and use of steam to heat the kettle, nor the use of a snifting valve to permit the air confined in the space around the kettle to be removed or discharged, nor the use of the vacuum valve to permit the air to fill the space around the kettle when a vacuum shall be formed there by the condensation of steam contained therein; but he *claims* the combination of the valve G, acting both as a snifting and a vacuum valve, with the shell A and kettle B, as and for the purposes set forth.

No. 18,622.—Allan Lapham, of Brooklyn, N. Y., assignor to Himself and Joseph B. Bennett, of Brooklyn, N. Y.—*Improvement in Lard-Rendering Kettles.*—Patent dated November 10, 1857.—The claim and engravings explain the nature of this invention.

Claim.—The inventor says: I am aware of the patent of J. J. Bate, October 21, 1856, wherein is claimed the combination of a double steam kettle with an annular chamber; and I therefore disclaim any part of his invention.

I claim, in combination with a steam kettle, a vertical hollow steam cylinder supported upon iron pipes D D, as described; whereby I am enabled to concentrate great heat upon the material rendering, thereby saving fuel, and making the kettle easy of access for the purpose of cleaning, as set forth and specified.

No. 16,766.—Anson Wolcott and A. Spencer Wolcott, of East Bloomfield, N. Y.—*Improved Devices for Aging Liquors.*—Patent dated March 3, 1857.—The liquor cask E is hung up in a suitably heated apartment, and gently swung to and fro by means of a revolving crank H and the intermediate connecting parts, G, F, I, D, the rod D being fastened to the cask.

Claim.—The employment of swinging shelves, or their equivalents, for the purpose of gently agitating the liquors, while they are exposed to a moderate heat, substantially as described.

No. 17,984.—Jesse Shilling, of Troy, Ohio.—*Improvement in Mash Cooling Machines.*—Patent dated August 11, 1857.—The mash, after being scalded, is cooled down to the proper temperature by means of a blast, which is generated by the fan in box H; said blast passing through pipe G into the hollow arms *b*, and down the hollow tube *c* into the mash.

Claim.—The hollow arms *b*, with the hollow teeth *c* attached, said teeth, some or all, having lateral shares or projections *f* attached, the hollow arms *b* being attached to a rotating shaft B, and communicating with a pipe G, which is connected with a fan box H, the whole being arranged substantially as described for the purposes set forth.

No. 18,160.—William Reisig, of Astoria, N. Y.—*Improvement in Wash Mixtures for Woollens, &c.*—Patent dated September 8, 1857.—This mixture is composed of 24 pounds of carbonate of soda, 24 pounds of common liquid ammonia, and two pounds of common whale oil soap, which are mixed in a proper vessel with two hundred pounds of water.

The inventor says: I do not claim any hard or solid soapy compound containing ammonia or soda ash; but I do claim an aqueous saponaceous composition, with the alkalies in excess, as described, and in about the proportions specified, for the purposes set forth.

No. 18,279.—Joseph W. Harmon, of Elizabethtown, N. J.—*Improvement in Factitious Oils.*—Patent dated September 29, 1857.—This compound is thus described by the patentee: I take the residuum of the stills of candle factories as the important basis of my compound, consisting of certain products from palm oil, lard, tallow, and other greasy matters, remaining after the materials have been acidified, washed, and the stearic acid has been taken off; the remainder being a thick and heavy residuum, above named, which is employed and made valuable in the following combination: To one gallon of this residuum I add one gallon of resin oil; these I heat together, melting and mixing the whole mass into a homogeneous compound; to which I add, either before or after melting, three-fourths of a pound of litharge and one pound and a half of umber, together with three pounds of slaked lime and three pounds of oil cake; this whole mass, when perfectly mixed and boiled properly, I allow to stand and cool and settle, after which I bring it to a proper consistency, by thinning it with the spirits of turpentine, to be used as a substitute for linseed oil.

Claim.—The inventor says: I do not wish to be understood as confining myself to the exact proportions described, as the quantity of the materials will require judgment in the compounding; but those named I have used with the most perfect success.

I claim the employment of the residuum of candle manufactories as named, compounded with the ingredients set forth, in the manufacture of a compound oil, as specified.

No. 17,181.—Halvor Halvorson, of Cambridge, Mass., assignor to Himself, Edward H. Baker, J. F. Athearn, and W. Tracey Eustis, of Boston, Mass.—*Improvement in Purifying Oils.*—Patent dated April 28, 1857.—Pork or any similar solid fat substance is submitted to a steam bath, barely sufficient to fuse the stearine; the melted portion is then skimmed off in another vessel, and while yet warm an alcoholic solution of an alkali is applied. On this solution with the oil, saponification instantly ensues, which leaves a clear, limpid, homogeneous mass for subsequent treatment.

Claim.—I do not claim clarifying oils by means of caustic lye, and subsequently washing out the stearine soap by means of alcohol.

But I *claim*, in the process of manufacturing or purifying oils, the employment of alcoholic solutions of alkali, in the manner substantially as set forth.

No. 19,006.—John M. Merrymon, of Logansport, Ind., assignor to Himself and J. H. Jordan, of Attica, Ind.—*Paint Compound.*—Patent dated December 29, 1857.—The essential materials of which this compound is composed are anhydrous, or what is commonly known as unslaked lime and resin or gum turpentine.

In preparing this article, a given quantity of unslaked lime, say thirty pounds or half a bushel, is placed in a strong vessel or pot; to which is added about two and a half or three pounds of common resin, coarsely powdered, or if gum turpentine is used instead of resin, a somewhat less quantity is used; then a sufficient quantity of water to cover the whole is poured into the vessel. After this the whole should be covered to confine the heat and steam arising from the process of slaking, and the action allowed to proceed without disturbance until it ceases, which soon takes place, when the compound will be found in the form of a soft, white mass, the resin during the process having united with the lime.

Claim.—The combination of quicklime and resin for a paint material, in the manner and for the purposes set forth.

No. 18,183.—William Butcher and William A. Butcher, of Philadelphia, Pa.—*Improvement in India Rubber Paint.*—Patent dated September 15, 1857.—One gallon of linseed oil, and from eight to twelve pounds of crude India rubber, are boiled until the rubber is entirely dissolved; this preparation is then ground in a paint mill, with any desired color, and is then thinned with painter's oil to the proper consistency, when it is ready for use.

Claim.—The composition prepared and composed of the materials as described, for the purpose of making water-proof paint.

No. 18,794.—Isaac Gattman, of Philadelphia, Pa., assignor to Himself, Jacob Breinig, and David E. Breinig, of Philadelphia, Pa.—*Improved Paint Vehicle.*—Patent dated December 1, 1857.—This invention consists in the employment, as a substitute for oil in thinning paints, of a solution of the alkaline salts of the fatty acids, (oleate, margarate, sterate of potash, soda, and like substances,) in order that paints thus thinned may spread easier, cover better, dry quicker, be free from all cracks when dry, at a less cost than paints thinned with oil.

The inventor says: I do not claim exclusively the use of watery solutions for mixing paints.

But I *claim* the employment of the alkaline salts of the fatty acids, oleate, margarate, sterate of potash, soda, and like substances, in combination with rosin and oil, as a thinner for paints instead of oil, substantially in the manner set forth and for the purpose specified.

No. 18,538.—William H. Dolson, of New York, N. Y.—*Improvement in Apparatus for Mixing and Grinding Oil Paints.*—Patent dated November 3, 1857.—This invention operates as follows: The pigment and oil being placed in the vat A, and the gate B in the side of the vat being shut, motion is given to the shaft D and the belt C, and the beaters in the vat are rotated by the bands *d* and *e* until the pigment and oil are thoroughly mixed. The grinding stones are now put in motion, the gate B is raised to a suitable height, and a stream of the mixed pigment is forced out by the action of the beaters upon the belt C, by which it is promptly drawn away from the gate and conveyed to the scraper G, which detaches it from the belt and permits it to run into the eye of the upper stone of the grinder in a continuous stream. The rate at which the pigment is thus fed into the grinder may be regulated by varying the height to which the gate B is raised.

The inventor says: I *claim* the combination of the mixer A and grinder F, with an intermediate endless belt C and scraper G, the whole arranged as set forth.

No. 17,865.—James C. Ayer, of Lowell, Mass.—*Improvement in Pill Machines.*—Patent dated July 28, 1857.—The materials from which the pills are to be made having been placed in cylinder H, wheel D is turned, and plunger A^2 forces a cylindrical rod D^2 of said material out through passage *e* and on to apron I. The knife F^2, actuated by cam M, cuts these rods to the requisite length; and then they are placed by hand upon and between the cylinders F G, by which they are formed into globules.

Claim.—The corrugated or grooved globule cylinders F and G, or their equivalents, for forming the rods of mass or semi-solid material into globules, when constructed, arranged, and operated essentially in the manner and for the purposes set forth. Also, the cylinder H, plunger A^2, and screw K, for forming the round rods D^2 of the desired size, arranged and operated substantially in the manner and for the purposes set forth.

Also, the knife F^2, or its equivalent, for cutting the rods D^2 of semi-solid substance the desired length; so arranged, as specified, that it will cut or sever the rods D^2, without its sticking to them, essentially in the manner and for the purposes set forth.

No. 17,291.—Antoine Murtineddu, of Marseilles, France.—*Improved Blasting Powder.*—Patent dated May 12, 1857.—This powder is composed of the following substances: 200 pounds of sulphur; 200 pounds of saltpetre; 100 pounds of saw-dust; 100 pounds of horse-dung; 20 pounds of salt. The saltpetre and salt are melted with a sufficient quantity of water at a brisk heat, and eight pounds of molasses are then added to every two hundred pounds of saltpetre and twenty pounds of salt. The fusion being accomplished, the whole is thrown upon the mass of compound previously prepared, and mixed in the above named proportions; and when thoroughly incorporated, it is exposed to a gentle heat, for the purpose of drying.

Claim.—The composition of matter herein specified.

No. 16,580.—Elisha B. Dodson, of Reading, Pa.—*Improved Gunpowder.*—Patent dated February 10, 1857.—The inventor pulverizes white ash anthracite coal, keeps this powder during twelve months in a dry place and freely exposed to the air, and then mixes it with pulverized nitrate of potass and pure sulphur, in the following proportions: Nitrate of potass, sixty parts; coal powder, ten parts; sulphur, ten parts. He then moistens the mixture with soft water, grinds it for at least twelve hours, presses the mass afterwards into cakes, and then granulates these cakes.

Claim.—The treatment of mineral coal, as described, preparatory to using the same, as a substitute for charcoal in the manufacture of gunpowder and blasting powder, as set forth.

No. 18,724.—Obadiah Rich, of Cambridge, Mass., assignor to Peter Cooper, of New York, N. Y.—*Improvement in Preparing Glue Stock.*—Patent dated November 24, 1857.—The first part of this invention consists in the use of soda or potash, instead of lime, as heretofore used, for the purpose of removing the blood, hair, and other impurities from the stock or glue pieces, previous to boiling the same into glue; and the second part consists in the use of mineral acid for the purpose of neutralizing the soda or potash employed to remove the blood and other impurities from the stock or glue pieces.

Claim.—The inventor says: I claim the cleansing of glue stock pieces, and preparing them for the manufacture of glue by the use of soda or potash, as set forth.

I also claim, in combination with the above, the use of a mineral acid for the purpose of effectually removing and neutralizing the alkali in the stock so prepared, as set forth.

No. 17,610.—John W. Perry, of Boston, Mass., assignor to James W. Gates.—*Improvement in Preparing Liquid Rose-Pink.*—Patent dated June 16, 1857.—One quarter of a pound of potash is dissolved in one gallon of water, and one quarter of a pound of red saunders wood is added thereto; when the color of the wood is extracted, two and a half pounds of gum shellac are added and dissolved therein over a quick fire; the mixture is then ready to be used on a ground work made with log-wood stain.

Claim.—The combination of the ingredients described for producing a transparent liquid rose-pink, to be used in imitating rose-wood, &c., the same consisting of potash, ground red saunders wood, and gum shellac and water, mixed substantially in the proportions described.

No. 16,480.—Robert Grant, of Brooklyn, N. Y.—*Process for Making Illuminating Gas.*—Patent dated January 27, 1857.—The nature of this invention consists in the use of fused metals *m*, in connexion with a suitable retort *d*, so constructed as to pass distilled carbono-hydrous vapors in contact with the surface of such fused metals, thereby facilitating the production of carburetted hydrogen gas, by presenting to the material to be formed into gas a fluid red hot metallic surface.

Claim.—Passing the products of the destructive distillation of coal and other substances yielding carburetted hydrogen gas through fused metals, fusible at a low temperature, in the manner and for the purpose substantially as described.

No. 18,409.—E. G. Pomeroy, of Philadelphia, Pa.—*Improved Process of Coating Iron.*—Patent dated October 13, 1857.—The nature of this improved process consists in uniting copper or other metals, such as gold, silver, nickel, zinc, tin, antimony, bismuth, and other alloys with the surface of iron.

The claim of the inventor gives an idea of his improved process.

Claim.—The inventor says: I *claim* the practical use and application of the described solution of hydrated sulphate of iron and copper brought in contact with the surface of the iron, in conjunction with the heat of the melted metal in the bath described, thereby producing a molecular separation of the particles of the iron, giving to them the susceptibility of forming a perfect flowing union or fusion together with the aforesaid metals in the bath in such a substantial manner as entirely to exclude a galvanic cement between the iron and the surrounding alloys, or any or either of them.

No. 18,244.—Henry Hannen, of Dubuque, Iowa.—*Improvement in the Process of Making White Lead.*—Patent dated September 22, 1857.—This improvement consists in subjecting the lead to the action of steam and atmospheric air for the purpose of oxydation, then to the vapor of acetic acid in order to form the sub-acetate, and afterwards to the action of carbonic acid, alternately and successively, until the operation is complete; whereby the metal becomes carbonated in a more speedy manner than when it is exposed to the action of the air, vapor of hydrated acetic acid, and carbonic acid conjointly. The drawing (figure 1) represents the plan of an apparatus suitable for carrying this improvement into effect: the top of one chamber A being removed to exhibit the arrangement of the parts of the interior; the top and slats *b* of another chamber A^1, for the support of the lead to be carbonated, being removed to show the arrangement of the pipes for the admission of the steam and vapor of acetic acid.

The inventor says: I *claim* subjecting the lead and compounds formed therefrom by the agents employed for this purpose to the action of steam and air, vapor of acetic acid, and carbonic acid gas, alternately and successively until the process is complete, in the manner substantially as and for the purposes set forth.

No. 17,237.—Charles Stearns, of New York, N. Y.—*Improved Process of Preparing Greensand Marl as a Fertilizer of Lands.*—Patent dated May 5, 1857.—The marl is first washed by agitation with water, which separates the alumina and useless earthy matter, leaving the greensand in a pure state. The greensand is then dried and pulverized and mixed with night soil and sulphate of lime, to which is then added a suitable amount of ammonia, when it is ready for use. The proportions are about six hundred pounds of night soil and one hundred pounds of sulphate of lime to one thousand pounds of greensand.

Claim.—In fertilizers consisting of greensand, marl, and animal matters, concentrating their fertilizing and stimulating properties by the previous separation of the useless matters of the marl and disintegration of the green sand, and the superaddition of ammonia, substantially as set forth.

No. 16,594.—Joseph C. Kent, of Cooper Iron Works, N. J.—*Process of Smelting Zinc Iron Ore.*—Patent dated February 10, 1857.—As soon as the furnace (charged, as usual, with iron ores containing oxyd of zinc, anthracite coal, and fluxing material) begins to show signs of cooling, the furnace commences to be charged with ordinary ores until the equilibrium of heat is restored and the furnace scoured, when the charging of zinc ores is resumed as before. The oxyd of zinc is received in the hot blast ovens and under the boilers, using one set of boilers and blast when charging the zinc ores, and another set when charging the ordinary ores; when using the latter, the zinc oxyd is cleaned from the boiler and oven, and collected in bags.

Claim.—The peculiar process of alternating in the blast furnace the Franklinite and other ores of iron and zinc with ordinary ores of iron, for the production of cast-iron and oxyd of zinc, by which process I maintain the equilibrium of heat, and keep the furnace in successful operation, as described.

No. 17,279.—Julius C. Hurd, of Medway, Mass.—*Improved Process of Treating Raw Cotton.*—Patent dated May 12, 1857.—The nature of this invention will be understood by reference to the claim.

Claim.—The treatment of cotton by bleaching previous to picking or carding it, for the purpose of removing the motes and trash, as set forth.

No. 16,882.—Lawrence Reid, of Barren Island, N. Y.—*Improvement in Processes for Preparing Fertilizers.*—Patent dated March 24, 1857.—The nature of this invention consists in making a combination of animal and earthy matters with saline ingredients in such proportion, and prepared in such manner, as will form a compound of salts of ammonia, super-phosphate of lime, sulphate, dried clay, and animal matters, producing this result by the treatment of animal or fish offal with sulphuric acid, water, bones, and clay.

The inventor says: In the patent of Robert Hare, the whole animal is treated, which requires so much acid as to render it too expensive for practice. I confine my action of acid to the liquid portion obtained by boiling or steaming with water. I do not claim treating the soft parts of animals with concentrated mineral acids, and then adding bone dust as absorbents for manure, that having been already done in the patent of Dr. Hare. But what I *claim* consists in treating with acid only the liquid parts of the animal matter, after the same has been boiled or treated with high pressure steam, and then treating the same with bone dust and absorbents, in the manner set forth.

No. 16,362.—Samuel Wetherill, of Bethlehem, Pa.—*Improvement in Processes for Reducing Zinc Ores.*—Patent dated January 6, 1857.—The mixed ore and coal is charged in each of the muffles *i*, and the doors *n* are closed so as to exclude atmospheric air. The heat from the fire-chamber *a*, in passing over and under the muffles *i*, decomposes the ore and vaporizes the metal, and the vapors thus given off pass over into the deoxydizing chamber *j*, and through the charge of incandescent coal on grate *q*, which takes up any oxygen; the vapors passing into channel *r*, where they are condensed to the metallic state, and run into condenser *t*.

The inventor says: Although I have described and represented a form of furnace in which to work my improved process, and which I have found to answer a good purpose, I do not wish to be understood as limiting my claim of invention to the working of the process in such a furnace, as other equivalent furnaces may be found to answer the purpose. I do not claim the said charcoal or carbonaceous matter for condensing in or upon it the said zinc vapor. I *claim*, in the process of obtaining metallic zinc directly from the ores of zinc, causing the metallic vapors of zinc, driven off from the ore, to pass through a charge of heated incandescent coal or other carbonaceous matter, substantially as and for the purpose specified.

No. 16,961.—Samuel Barker, of New York, N. Y.—*Improvement in Processes for Treating Moss for Mattrasses.*—Patent dated April 7, 1857.—The crude moss, having been cleaned by the usual machine from dirt and bark with which it is admixed, is submitted in a liquor prepared by dissolving fifty-six pounds of sulphate of iron in one hundred gallons of water. To this is then added sixty-five pounds of sulphate of soda, the whole being well mixed; in this the moss is kept from thirty-six to forty-eight hours, and when taken out it is washed in clear water, dried, and passed again through the cleaning machine, when it will be ready for use.

Claim.—The method of treating or preparing the moss of commerce to serve as a substitute for curled animal hair, substantially as set forth.

No. 17,011.—Alfred Monnier, of Camden, N. J., assignor to Himself and Isaac Gattmann, of Philadelphia, Pa.—*Improved Construction of a Retort.*—Patent dated April 7, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The method described of preventing the rapid destruction of retorts by placing the same within a fire-clay casing A, and packing the space intervening between the retort and said casing with any substance or mixture of substances incapable of combining, when heated, either with the clay or metal retorts B, as set forth.

No. 17,854.—James R. Floyd, of New York, N. Y., assignor to Theodore C. Kibbe, of the same place.—*Improvement in Retort Covers.*—Patent dated July 21, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Constructing gas retort covers of malleable iron, in the manner and for the purposes set forth.

No. 18,172.—Joseph Bour, of Forbach, France, assignor to Charles Parlange, of the parish of Point Coupeé, La.—*Improvement in Saccharine Evaporators.*—Patent dated September 8, 1857.—The hollow vessels *a*, by their revolution, and also by means of cups *e* at their peripheries, carry up the liquid contained in the trough A; the cups *e* discharge the liquid over the heated surfaces of the revolving vessels, and by these means cause the aqueous parts of the liquid to evaporate. The steam to heat the apparatus is introduced at one end of the hollow shaft *d*, and escapes at the other end of the apparatus.

The inventor says: I am aware that it is not new to cause liquids to be evaporated by the movement of surfaces into and from them, when placed in open vessels, various forms of apparatus for that purpose having before been proposed and used. In some cases the surfaces have been hollow and heated by steam internally, and in others the liquid has been heated. I mention these matters in order to state that I do not claim to evaporate liquids by such means, unless the apparatus be constructed and combined according to my improvements described.

I *claim* the combination of a series of hollow vessels *a a*, such as described, with apparatus on the interior thereof for raising the water to, and passing it off by, the central axis; and the further combination of such like surface *a a* with vessels or apparatus *e e* for raising the liquid to be evaporated, and distributing the same over the exterior of the revolving surfaces, as described.

No. 18,830.—William S. Worthington, of Newtown, N. Y.—*Improvement in Construction of Salt Pans.*—Patent dated December 8, 1857.—This invention has for its object the separation from the salt of what is termed the "bitterings," consisting of carbonate of lime and other impurities which are precipitated from the brine before crystalization commences. The claim and engraving will further show the nature of this invention.

Claim.—The employment, within a brine-evaporating pan, of a grating or perforated false bottom C C, substantially as and for the purpose specified.

No. 16,706.—John M. Ordway, assignor to The Roxbury Color and Chemical Manufactory, of Roxbury, Mass.—*Improvement in Preparing Alkaline Silicates.*—Patent dated February 24, 1857.—The composition consists of 100 parts of dry sulphate of soda, 94 parts of pure silicious sand, and 8 parts of fine charcoal or mineral coal.

Claim.—The manufacture of soluble silicates of soda or potash from the sulphates of soda or potash, by fluxing the same with silica and deoxydizing agents, in the manner substantially as set forth.

No. 17,955.—**Harmon Hibbard**, of Henrietta, N. Y.—*Improvement in Tawing and Coloring Skins and Furs.*—Patent dated August 4, 1857.—The skins are prepared and dressed in the usual manner; they are then spread out with the flesh side up; the flesh surface of the skin is then wetted with a fluid composed of one pound of soda dissolved in two quarts of warm water, with one ounce of sulphate of iron and four ounces of sulphuric acid. When the skins are saturated and nearly dry, they are treated with a mixture composed of equal parts of fish oil, alcohol, and spirits of turpentine. They are then placed in an iron kettle containing a fluid which, for a brown shade of the fur, is prepared of the following ingredients: Two gallons of hot water, one gallon of crude lixivium, one ounce of acetate of lead, one ounce of sulphate of iron, one ounce of prussiate of soda; the skins are agitated in this fluid and are then spread and dried.

Claim.—The process of compounding either of the above mentioned alkalies with the materials and in the manner as above described; and the process of applying those compounds, or either of them, to pelts, fur, wool, or hair, for tawing or coloring as described.

No. 16,750.—**Isaac Roraback**, of the parish of Caddo, La.—*Improved Soap Mixture.*—Patent dated March 3, 1857.—The mixture consists of five pounds opodeldoc soap, one-fourth pound sal soda, one table spoon of spirits of turpentine, one table spoon of spirits of wine, one table spoon of spirits of hartshorn, one and a half gallon of soft water.

Claim.—I claim the compounding of them in such proportions as to form a solid of suitable consistency, which I believe excels any other soap in its suitableness for cleansing clothes of every description, and for toilet purposes generally, as well as in point of cheapness, convenience, and dispatch with which it is made.

No. 17,303.—**Louis Wilman**, of Worcester, Mass.—*Improved Soap Substitute for Scouring Woollens.*—Patent dated May 12, 1857.—Thirty-six pounds of common soda ash, eighteen pounds of common salt, and ten pounds of wheat or rye bran, are boiled in one hundred and fifty gallons of soft rain water until rendered into a mucilaginous state. This compound is employed in the same manner as soap now is for scouring and fulling woollen goods.

The inventor says: I do not claim the exclusive use of bran in my composition, as this has been known.

But I *claim* the fulling and felting liquid composition composed of soda ash, salt, and bran, as described, for the purpose set forth.

No. 17,716.—**William Watt**, of Belfast, Ireland.—*Improvement in Starch from Maize.*—Patent dated June 30, 1857.—The nature of this invention will be understood by reference to the claim.

Claim.—The manufacture of starch from maize or Indian corn, substantially as set forth, by steeping the whole or uncrushed corn in water heated to a temperature of from seventy to one hundred and forty degrees Fahrenheit's thermometer, such water being changed several times during the steeping, or applied in continuous or intermittent streams; and then grinding or levigating it with water heated to a temperature of from seventy to one hundred and forty degrees of Fahrenheit's thermometer; and then separating the starch as described.

No. 18,094.—**Edward Herring**, of Walton-on-Thames, England.—*Improvement in Spirit Stills.*—Patent dated September 1, 1857.—When commencing distillation, the mash pump is set in operation to force the mash through the various coils of the mash pipe W, in column B, until it begins to flow into the top chamber of column A. The top return cock of the mash return pipe Y is then partially opened, so as to allow a little mash to fall into A and gradually cover its various chambers. As soon as the mash has covered the bottom plate of A, the pipe Y must be entirely opened and the stop-cock to column A closed. Hot air is now forced in through pipe K, and steam through pipe L, which rapidly vaporize the mash; and the heated vapor passing up through the various chambers of column A by the hot vapor pipes H, issues from the top chamber into pipe XV, which conducts it to the bottom chamber of column B, through the various chambers of which it rises, heating the mash contained in pipes W. The mash is now allowed to descend into A, and flows in a continuous stream into the various chambers of column A, and passes downwards through pipes F. The inclination of the diaphragms keeps up a constant flowing action, which continually exposes new surfaces to the most searching action of hot air and steam, which deprive the mash rapidly of its alcohol. By the time the mash reaches the lowest chamber of column A, it is completely deprived of its alcohol, and is discharged through pipe *b*.

Claim.—1st. Giving to the diaphragms which separate the chambers an inclination or fall towards alternate sides of the still, as described, for the purpose specified.

2d. The introduction of hot air, substantially in the manner described, for the purpose of aiding in the evaporation of the mash, and keeping it in agitation, to prevent the clogging of the still.

No. 17,933.—**Peter Holbrook**, of Whitingham, Vt.—*Improvement in Sugar Boilers.*—Patent dated August 4, 1857.—The sap of the tree is collected in the sap pan A, and steam being admitted to the steam pan B, the sap is boiled; the stop-cock C serving to let off the condensed water, while the syrup is drawn from pan A and let into pan E, by means of cock D, the syrup passing through hole *b* into pan E.

Claim.—The steam pan B in combination with the sap pan A and the cover F to the syrup pan E, and the stop-cocks C and D to the steam pan B and sap pan A, or their equivalents, and arranged substantially in the manner and for the purpose set forth.

No. 18,215.—John Turl, of New York, N. Y.—*Improvement in Drip Pots for Sugar Houses.*—Patent dated September 15, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—Constructing the pot of two metal parts or halves A A, formed, or "struck up," in proper shape by any proper means, and connected together by rivets *a*, by brazing, or in any suitable way, substantially as described.

No. 17,409.—John Turl, of New York, N. Y., assignor to Samuel Turl, of Brooklyn, N. Y.—*Improvement in Tips for Sugar Moulds.*—Patent dated May 26, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim the substitution of the wrought iron for cast iron in making the tips of sugar moulds.

But I *claim* the construction of the tip with a recess to receive the body of the mould, and with a conical mouth opening in a contrary direction to the regular conical form of the interior of the mould, when made in the manner substantially as set forth, and for the purpose described.

No. 17,021.—Merano Butterfield, of Indianapolis, Ind.—*Improved Preparation of Sugar, called Table Manna.*—Patent dated April 14, 1857.—Half an ounce of the sulphate of alumina and potassa is dissolved in a quart of water, and brought to a brisk boiling; to this is then added eight pounds of white sugar, and said mixture is subjected to boiling; and when cooled and strained it will serve as a substitute for honey.

Claim.—The use of the sulphate of alumina and potassa, or its equivalent, in the manufacture from white sugar of a substitute for honey.

No. 18,030.—Leo de La Peyrouse, of Paris, France, assignor to Michael Jean Adrian Guiet, of New York, N. Y.—*Improvement in Tanning Liquids.*—Patent dated August 18, 1857.—The skins after being properly prepared are placed for about twenty-four hours in a solution of tan which has been used before; to this is then added the required proportion of tan and chloride of tin, the quantity of the chloride of tin to be in proportion to that of the tan, which is to be augmented as the tanning progresses.

Claim.—Combining with the tanning solutions, or liquor, the chloride of tin or its equivalent, substantially in the manner and for the purposes set forth, in which the skins are handled as made known.

No. 18,203.—Eben N. Horsford, of Cambridge, Mass.—*Improvement in Treating Cotton and Linen Waste.*—Patent dated September 15, 1857.—The stock is immersed and boiled in a diluted solution of hydrochloric acid, to dissolve the metallic particles adhering to it; it is then pressed and drained clear from the solution, and carefully washed, after which it is to be boiled in a solution of soap and caustic lye to remove the resinous matter adhering to it.

The inventor says: I do not claim the use of acid for the purpose of removing any of the mordants or native resinous or coloring matters from raw, textile, or fibrous materials.

But I *claim* the use of acid to dissolve metallic particles in cotton and linen factory waste, substantially as described.

No. 17,448. August F. W. Partz, of New York, N. Y.—*Improved Apparatus for Condensing Vapors and Gases, and for Evaporating Liquids.*—Patent dated June 2, 1857.—The vessel *a* being filled with the absorbing liquid to be evaporated, the disks *d* elevate and suspend by their revolution a film of the liquid which adheres to them, and present the same to the vapors or gases that are led into the vessel by means of pipe *e*, and which are caused by the covering hood to disseminate among the perforated disks; thus promoting the absorption or evaporation. The opening F is for the escape of vapors generated in the apparatus, or such portions of the introduced vapors as are not to be absorbed.

Claim.—In apparatus for facilitating the absorption of vapors and gases, &c., and the evaporation of liquids, the combination of the revolving perforated disks or sheets, with the vessel containing the liquid of absorption or evaporation into which they dip, and the hood or cover which guides the vapor and gases that are introduced through the unimmersed portions of said disks, substantially in the manner and for the purpose described.

No. 18,133.—Ludwig Brumlen, of Hoboken, N. J.—*Improvement in Processes for Manufacturing Verdigris.*—Patent dated September 8, 1857.—A detailed description of this invention would take up too much space to be given here. The principal features thereof will be understood by reference to the claims.

Claim.—First. To use all these refuse liquids from chrome yellow and white lead to make verdigris of them.

Second. To use the remaining liquid from verdigris to make Paris green of.

Third. To use the remaining liquid from Paris green again for making chrome yellow.

Fourth. To use the refuse liquid from verdigris again for verdigris, in the manner described.

Fifth. I further claim the manufacture of verdigris, Paris green, and chrome yellow, from the different waste liquids specified, in the manner substantially as described.

V.—CALORIFICS.

No. 17,727.—Edward Conway, of Dayton, Ohio.—*Improved Alcohol Blow Pipe.*—Patent dated July 7, 1857.—The jet tube F passes into the furnace N, and up between the two wick tubes *g*, and jet tube G terminates near the wick tube *h*. By having the jet tube F discharge its vapor between the two flames of the tubes *g*, great intensity of heat is secured. The wick tube *h* serves for soldering purposes.

Claim.—The use of the compound regulator H I *f* of the safety valve, in combination with the tubes F G and three-way cock J of the boiler, all arranged and operating as described and for the purposes set forth.

No. 18,693.—A. E. HITCHINGS, of New York, N. Y.—*Improvement in Boilers for Heating Buildings.*—Patent dated November 24, 1857.—This boiler is of cast iron, and presents a very large heating surface, surrounded or covered by a small body of water, yet with a sufficient quantity to prevent its being carried out by a rapid generation of steam. And by this arrangement the heating surface is exposed not only to the contact of the flame and heated products of combustion from the fire, but also to the radiated heat from the bed of the fuel, the narrowness of the inner chamber D allowing the rays of heat to strike not only its own broad, flat sides, but the inclined inner surface of the water jacket.

The inventor says: I do not claim, of itself, the conical water jacket, with fire in the centre.

But I *claim* the arrangement within the upright conical water jacket A B of the upright, flat-sided, central water chamber D, extending nearly across the said jacket in one direction, but made narrow in a transverse direction, substantially as and for the purpose set forth.

No. 18,465.—OSCAR F. MORRILL, of Boston, Mass.—*Improved Air and Vapor Burner.*—Patent dated October 20, 1857.—In the engravings A shows the stand for supporting the operative parts of the apparatus. Underneath this stand is a reservoir B, furnished with a hollow standard C extending above it vertically, and having a flat tube D projecting from the standard horizontally, and opening into a cylindrical air-chamber E, raised on the stand A. The upper part of this air-chamber is furnished with a wire gauze disk or disseminator, or cup F, around and above which there may be a perforated or wire gauze chimney or tube G. This improvement will be further understood by an examination of the engravings and claim.

Claim.—The inventor says: I do not claim an air and gas burner, consisting of a cylindrical tube having a wire gauze or perforated disk, or disseminator, and combined with a tube for supplying it with olefiant gas, and being open so as to allow common air to mix with the gas, and pass through the disseminator with the gas, and be burned therein.

Nor do I claim combining with an air and gas burner a perforated or wire gauze chimney or tube to extend around and above the same, as this latter has been patented by William F. Shaw.

Nor do I claim a hydro-carbon vapor burner as made of a combination of an ordinary gas burner, a reservoir to hold the liquid hydrocarbon, a wick tube, and a secondary burner or lamp to heat the wick tube, and vaporize the liquid of its wick, in order that the vapor may pass into the gas burner, and there be burned unmixed with air.

But I *claim* the combination of the air and vapor burner E F of the kind described, with the reservoir B, wick-holder C D, and a lamp or burner to operate against the wick-holder and vaporize the liquid of its wick, the whole being constructed so that such vapor may be discharged into the air-receiving chamber E, and be mixed with air therein, and with such air be caused to flow upward through the meshes of the disseminator F, so as to be burned thereon, substantially as specified.

No. 17,622.—HORATIO FAIRBANKS, of South Brookfield, Mass.—*Improvement in Vapor Burners.*—Patent dated June 23, 1857.—When this burner is in use, the secondary gas jet K is enflamed and receives vapor from the vapor chamber C; the heat of the flame of said gas jet, by operating against the inner surfaces of the recess D, causes the vapor to be generated freely from the fluid of the wick L. This vapor, as it issues from the main gas jet H, may be inflamed so as to give forth a brilliant light.

The inventor says: I do not claim a burner formed with a vapor reservoir and one or more secondary jets or jet pipes, for the purpose of vaporizing the liquid of the wick, so that the vapors so produced from said liquid may be burned as they may issue from a gas burner or jet pipe leading out of the upper part of the vapor chamber.

I *claim* my improved hydro-carbon vapor burner, as constructed with a secondary burner K, pipe H, recess D formed as described, and a closing slide M arranged to rotate on the body of the burner concentrically therewith, and constructed so as to be capable of either entirely or partially closing the recess D so that air may be excluded more or less from the same, and heat be confined therein, substantially in manner and for the purpose as specified, when the said recess is provided with a secondary jet or burner, to operate as explained.

No. 17,916.—D. H. CARPENTER, of Wallingford, Conn.—*Improvement in Vapor Burners.*—Patent dated August 4, 1857.—The burning fluid flows from a suitable reservoir through check-valve *a* into pipe *b*, the gas passing through jet *c*, and mingling with atmospheric air which passes through the holes *n* of tube U. The gas being ignited on the burner *d*, the flame heats the ring *e*, which communicates a high degree of heat to the tube *b*, thus promoting the evaporation of the fluid.

Claim.—The bent pipe or equivalent mingling reservoir, for mixing the atmospheric air and vapor, as described, and bringing the jet *c* on a level with the igniting orifice *d*, by which means the proper draft commingling and heat are attained, and the combination therewith of the check-valve *a*, which supplies and regulates the quantity of vapor necessary to produce the maximum effect for the purposes designed.

No. 17,640.—TIMOTHY ROSE, of Cortlandville, N. Y.—*Improvement in Candlesticks.*—Patent dated June 23, 1857.—By this arrangement the melted tallow from the burning candle will be collected around its lower end and finally be consumed, instead of running over the outside of the candlestick.

Claim, 1st. Making the socket B of the candlestick and the sliding cup *a* within it of greater diameter than the candle intended to be used therein, for the purpose set forth.

2d. I claim the spur in the bottom of the cup combined with the stays *d*, on the inside of the top rims E, for the purpose of holding the candle in proper position, having space around it for the melted tallow to pass down into the cup, substantially as described.

No. 18,606.—JAMES SPRATT, of Cincinnati, Ohio.—*Improvement in Candlesticks.*—Patent dated November 10, 1857.—In this invention the customary flange or sconce *a* is made entire, extending over the whole top of the candlestick in the form of a shallow pan ; *b* is a ferule of conical form, provided with an external screw which screws into a circular bead or ring *c*, rising from the sconce *a*. Channels *d* are formed in the bead, and corresponding radial grooves in the sconce, which, with the dished form of the sconce, cause any melted tallow to run into the centre when the candle has nearly burned out, whereby it is all consumed and the candlestick left clean.

Claim.—The method of securing a candle by the conical ferule *b*, adapted within, to be drawn over the candle and tightly clasp its butt, and screwed or otherwise attached to the sconce *a*, substantially as set forth.

No. 18,100.—IRA MAYHEW, of Albion, Michigan.—*Improvement in Chimney Caps.*—Patent dated September 1, 1857.—The effect of the wind upon the action of this cap will be to close the windward valves D, and at the same time to open the opposite leeward valves D, thereby insuring a free draught.

Claim.—The constant openings A A A, immediately beneath the drip of the roof B B B, in combination with the larger variable openings C C C, which are furnished with valves D D D, hung at points F F F, and separated by the connecting rods below, as shown, for the purpose specified.

No. 16,644.—MOSES H. HALE and SAMUEL HORTON, of Newburyport, Massachusetts.—*Improved Chimney Cowl.*—Patent dated February 17, 1857.—The inventors say: We do not claim the ventilator or chimney cap above referred to as patented by Emerson ; but what we do *claim* as our invention is as follows, and although it is not new to make a chimney cap with passages extending around its mouth of discharge, and for the purpose of receiving currents of air and directing them up into or over the discharge flue, we have applied such in a particular way, and under a peculiar arrangement of parts which renders our ventilator new and advantageous in some respects.

We *claim* the improved cap, constructed substantially as described, viz: with a discharge pipe A, the inverted frustum E, the outer frustum B, its wind passages G G, and the shield or fender C, arranged together essentially as specified.

No. 17,077.—AUGUSTINE CAMPBELL, of Philadelphia, Pa.—*Improvement in Chimney Dampers.*—Patent dated April 21, 1857.—The valves *d* are pivoted to a frame A, and are hinged to the angular frame B D B¹ D¹, and they can be opened or closed by raising or lowering the latter frame by means of rod I and lever G.

Claim.—The angular frame provided with a series of valves or vanes *d d*, arranged, constructed, and operated substantially in the manner set forth and for the purpose specified.

No. 18,501.—JOHN R. DEIHM and JASPER SNELL, of Pottsville, Pa.—*Improvement in Machines for Breaking Coal.*—Patent dated October 27, 1857.—In the operation of this improved machine the coal is passed through the space F² and falls immediately on the grate bars C, the under sides of which are V-shaped, the spaces between them being equal to the spaces between their ends and the periphery of segments *a* on shaft D. As the coal falls on the grate the knives, as they revolve, meet it on a line above the shaft, and are so arranged that but one of them strikes the coal at the same time. The coal, as it lies across the spaces between the bars C, is broken, falls through on the screen, and is carried off and separated from the dirt.

The inventor says: We *claim* the inclined curved grate bars C, constructed as described, in combination with knives or dividers E, on segments *a*, placed spirally on shaft D, operating as described, and for the purposes set forth.

No. 17,294.—TOWNSEND POORE, of Carbondale, Pa.—*Improved Coal Cracker.*—Patent dated May 12, 1857.—The coal is thrown in at each end between the rocking crusher C and the gratings I ; and a rocking motion being imparted to crusher C, on its trunnions B, by power applied to cross-head F, the coal receives its first breaking on the grating I, and the broken coal is driven through the spaces *i* and *a* ; the remainder drops down between the crusher C and the swinging gratings J, which are made to vibrate on their trunnions *m* by means of connecting rods L, which alternately bring up one of the hinged portions J with a blow, thus causing a second breaking of the coal.

Claim.—The combination of the rocking cracker with the fixed and swinging gratings, substantially in the manner and for the purposes set forth.

No. 18,380.—EUGENE BORDA and DAVID GLOVER, of Woodside, Pa.—*Improved Machine for separating Slate and other foreign substances from Coal.*—Patent dated October 13, 1857.—In this invention a suitable frame work F sustains a cylindrical screen S. This screen is composed of two heads H, (which may be either opened or closed,) fixed upon a shaft working in boxes upon the frame ; these heads are connected by longitudinal bars arranged parallel to the axis of rotation of the cylinder at equal distances from each other to suit the size of the coal. An inclined chute A conveys the coal, &c., from the screen. An inclined chute C is placed under the screen, commencing at the forward part of the cylinder and extending to the rear of the machine. Another chute extends forward from the front of the cylinder. All the chutes are covered with sheet iron.

The inventor says: I *claim* separating coal from slate by the apparatus above described, or in any equivalent manner, when the mass to be separated is conveyed by an inclined plane to the outside of a horizontal revolving cylinder, composed of bars parallel to its axis of revolution, substantially as specified.

No. 18,082.—William D. Brown, of Weymouth, Mass.—*Improvement in Coal Sifters.*—Patent dated September 1, 1857.—The coal being thrown upon the sift I, and the cover being closed, the cam lever Q is turned, and slide P will be disengaged from catch *s*, and the hod C can be rocked on its fulcrum B, the ashes and dust falling upon plate L and into chamber N, the plate L retaining the ashes when the coal on the screen I is to be discharged.

Claim.—The combination of the screen J J, and the plates K and L, placed in a vessel or machine, to be used as a portable coal hod and sifter, so suspended on an axis as to allow of an oscillating or swinging movement, all arranged and operating as in the specification described.

No. 18,125.—Sanford Adams, of Boston, Mass.—*Improvement in Coal Sifters.*—Patent dated September 8, 1857.—Coal ashes or other substances being introduced into the cylinder B through the cover opening, and a reciprocating rotary motion being given to sieve A, by means of handle G and spindle C, the ashes fall through the meshes of the sieve into barrel E.

Claim.—Attaching the sieve to the bottom of the rotating spindle, and the spindle to the cover of a barrel, in the manner and for the purpose as above specified.

No. 18,430.—Samuel Booth, of New York, N. Y.—*Improvement in Coal Sifters.*—Patent dated October 20, 1857.—In operating with this improved sifter, the ashes are thrown into a hopper from a coal hod, being sent in a continuous stream; sliding directly down the chute-board *e*, it forces *i* open, and is projected with considerable force squarely upon the screen *c*, near its top. A considerable portion of the ashes passes through at at once, leaving the cinders free to roll down and fall into the receptacle *b*, the remaining ashes being screened out before they arrive at the bottom and fall into *a*. The jarring produced by the rolling down of irregular shaped cinders assists the operation, the screening thus being a self-operating performance.

The inventor says: I do not claim the different parts composing my improved apparatus, when separately considered.

But I *claim*, in my improved coal ash-sifter, the specific arrangement described, consisting of the inclined screen in such combination with the chute-board, which is also inclined, that the impact of the stream of ashes and cinders shall be perpendicular, or nearly so, to the surface of said screen; and this I claim when said arrangement is encased within a tight box having a flap or door to close automatically so soon as the ashes have been poured in, by which construction the separation of the cinders is effected by the mere operation of pouring, and by which, also, the dust incident to said operation is prevented from escaping, as set forth.

No. 18,687.—Jacob Gass, of Treverton, Pa., assignor to Himself and George Mowton, of Treverton, Pa.—*Improvement in Machines for Slating Coal.*—Patent dated November 24, 1857. The nature of this invention consists in the employment, in the process of slating coal, of an inclined cylinder B; said cylinder is constructed with the following peculiar features for united use, to wit: Checkered circumferentially near the centre of its length with small square openings, furnished with narrow oblong slats *a b* from its receiving end to the checkering, and with similar but wider slats from the discharge end to the checkering, and each or every other one of its slats furnished with a bevelled or V-shaped rib internally, which only extends from the checkering to the ends of the cylinder B.

Claim.—The inventor says: I am aware that a cylinder formed of bars placed further apart at one end than the other, so as to provide oblong slots of different widths, has been used for cleaning grain, also that a cylinder of this construction has been furnished with an intermediate perforated section, therefore I do not claim this.

But I claim the employment, in the process of slating coal, of the revolving inclined cylinder when constructed with the several peculiar features for united use, to wit: checkered circumferentially near the centre of its length with small square openings furnished with narrow oblong slots from its receiving end to the checkering, and with similar but wider slots from the discharge end to the checkering end, each or every other one of its slats furnished with a bevelled or V-shaped rib internally, which only extends from the checkering to the ends of the cylinder, as and for the purposes set forth.

No. 17,018.—John F. Burgin, of Northumberland, Pa.—*Improved Cooler for Wine, Beer, and other Liquids in Barrels.*—Patent dated April 14, 1857.—The receiver B is filled with ice through the opening *a*; and as the cylinders *c* and *d* are eccentrical, in respect to each other, the pieces of ice, as they become smaller in size and in quantity, by melting, are made to hug the cylinder *d* as they descend, and thus a very uniform refrigeration of the articles contained in barrel D is obtained.

The inventor says: I do not claim broadly the placing of one refrigerating vessel within another.

But I *claim* arranging the two cylinders *c d* eccentrically in respect to each other, when the widest portion of chamber B is directly below the opening *a*, as set forth.

No. 18,885.—John O'Brien, of New York, N. Y., assignor to Owen Collins and John Dunley, of New York, N. Y.—*Improvement in Grate Dampers.*—Patent dated December 15, 1857.—The claim and engravings explain the nature of this invention.

Claim.—The employment within a fire-place of a damper B, composed of two frames *a* and *d*, when one of said frames *d* is hinged to the other frame *a*, as and for the purposes specified.

No. 16,905.—John Booth, of Pawtucket, R. I.—*Improvement in Steam Drying Cylinders.*—Patent dated March 31, 1857.—The drying cylinder A is supplied with steam by means of the pipes *k* and *j*. The pipe *j* passes through a siphon pipe *c d e*, which passes through a stuffing box so as to fit the cylinder A steam tight; as soon as the condensed water in the cylinder A rises above the lower edge of the pipe *c*, it is forced out of said pipe and the pipes *d h i* by the pressure of the steam in the cylinder A.

Claim.—The arrangement of the steam and water pipes at one end of a drying cylinder, in the manner and for the purpose substantially as described.

No. 16,329.—John G. Ernst, of Harrisburg, Pa.—*Fire Hook.*—Patent dated January 6, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The hook E constructed of the two parts *b c*, and attached to the beam A, which is provided with rounds *a*, and mounted upon wheels, substantially as described for the purpose set forth.

No. 16,768.—Fountain E. Pitts, of Nashville, Tenn.—*Improvement in Back Plates for Fireplaces and Grates.*—Patent dated March 3, 1857.—This grate, to be placed in the throat of a chimney, consists of a series of angular ridges and furrows with a slot in the bottom of each furrow. This form of the bars secures a very effectual interception of the heat at the entrance of the chimney.

The inventor says: I am aware that grated, reticulated, and perforated plates (the last being described in the patent granted to Jacob Cohen, April 15, 1850) have heretofore been used in the throats of fireplaces or flues of stoves; also that a fire-back composed of metallic plates arranged like the slats of a window blind, is described in the patent for a cooking stove granted to G. Smith and H. Brown, May 15, 1847. I claim none of these. I am also aware that it has been proposed to place a grate with angular bars similar to mine in the flues of cooking ranges. I do not claim the plates so placed.

I *claim* the back plate for fireplaces and grates, constructed with the series of angular ridges, furrows, and slots, in the manner and for the purposes described.

No. 18,920.—Eugene Miannay, of New York, N. Y.—*Improvement in Artificial Fuel.*—Patent dated December 22, 1857.—This invention is called "the ligno-bituminous coal," and is composed of tar issuing from the distillation of coal in gas manufactories, &c., and also of dry tar; of dust of charcoal and wood of all sorts; of dust of coke proceeding from gas manufactories; and of dust of ordinary coal. The said artificial coal serving for the same purposes as coal and charcoal.

Claim.—The composition of a new coal or artificial fuel, by the said several ingredients mixed together in different proportions, called ligno-bituminous coal, and manufactured as described, for the intended given purpose.

No. 18,729.—Elizabeth Bellinger, of Mohawk, N. Y.—*Improvement in Composition Fuel.*—Patent dated December 1, 1857.—To make this composition, the operator takes kawri gum, rosin, and alcohol in the following proportions: kawri gum, one part; rosin, five parts; and alcohol, one part.

The whole is placed in a vessel together and subjected to a gentle heat until well dissolved and mixed, when sawdust enough is added and stirred up and well mixed until the whole forms a paste of as great a degree of consistency as can be conveniently moulded by pressure into cakes, blocks, or lumps of convenient size, which are left to dry in the atmosphere, after which they are ready for use.

The inventor says: I do not confine myself to the precise proportions of the several ingredients specified.

But I *claim* the inflammable composition formed by the union of kawri gum, rosin, and sawdust, in suitable proportions to give it the character specified.

No. 18,432.—John Case and Isaac Soules, of Amsterdam, N. Y.—*Improvement in Furnaces.*—Patent dated October 20, 1857.—The chief object of this invention is to economize fuel in the generation of steam; to diminish the quantity of smoke, and thereby lessen its capacity to carry off heat when it escapes; and incidentally to extinguish the sparks and prevent their escape.

The boiler consists of a cylindrical shell A and flue B, connected at one end with a fire-chamber C, and at the other with a smoke-box D. The flue forms a communication between the fire-chamber and smoke-box, through which the gaseous products of combustion pass with the sparks from the furnace to the smoke box. An orifice J, fitted with a valve by which it can be opened and closed at pleasure, enters the upper part of the smoke-box, with sufficient space around the fan case for the gases to enter freely. A pipe G on the outside of the boiler forms a communication between the smoke-box and the furnace through the fan case.

The fan F, made like the ordinary fan blower, is placed on one side of the smoke-box, with sufficient space around it for the gases to enter freely.

The inventors say: We *claim* the combination and arrangement of the fire and smoke boxes, direct and return flues, the valved atmospheric air orifice, an aperture for the escape of the spent gases, and the fan for maintaining the circulation of the air and gases, arranged substantially as declared.

No. 18,491.—Thomas Aldridge and John Aldridge, of Hudson, N. Y.—*Improvement in Furnaces.*—Patent dated October 27, 1857.—The nature and object of this invention consists in the application and use of mechanism, by which the smoke and gases that generally pass off through the chimney and are lost are withdrawn from the chimney, mixed with heated atmospheric air to promote their entire combustion, and then carried to and under the fire and consumed, thereby economizing fuel and obtaining an increased quantity of heat therefrom, and also in rendering the entire apparatus self-regulating or automatic.

In the engraving, A is an ordinary cylinder boiler set in the foundation B, the chimney C being, in this case, represented a little at one side of the rear end of the boiler; D is the furnace door, and E the door to the ash-pit underneath the fire. To the chimney, about where the smoke enters it, is attached a tube or smoke conductor F, the other end of which enters the ash-pit. To this conductor is attached a blower G; H is the mouth of the atmospheric air tube, and its position and its entrance into the smoke conductor F is shown by dotted lines *h h*.

The inventors say: We do not claim, generally, either the construction of smoke-consuming furnaces, as they are called, or returning the smoke, gases, &c., of the fire back to, or under, the fire or furnace, many differently arranged plans having been devised and used for such purpose.

Nor do we claim the mingling of atmospheric air with the products of combustion, as this has been effected, to a greater or less degree, by many inventions.

But we claim the combination and arrangement of the smoke and gas conductor F, the atmospheric air tube H, and the blower G, arranged and located substantially as and upon the principles declared, and for the uses and purposes set forth and described.

We also *claim* the connexion with such arrangement of the smoke conductor F and air tube H, regulating the velocity of the blower G, by and according to the pressure of the steam in the boiler, through the intervention of the conical pulleys, or their equivalent, substantially as and for the purposes set forth and described.

No. 18,951.—Benjamin F. Blood, of Port Jackson, N. Y.—*Improvement in Furnaces.*—Patent dated December 29, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I do not claim the returning of smoke to a fire, either with or without oxydation, whether under the grate or into the flames, whether through the boiler or outside of the boiler, all of which processes are old and unpatentable.

Neither do I claim placing a fan blower either within or without the smoke-box, smoke-stack, or any chimney flue, for the above purposes, or any of them.

First. I *claim* a scuttle G, in combination with the flues of the boiler, as heretofore described, as a protection, a guide, and a re-heater for the gases passing through the flues, substantially as set forth for the purpose specified, whether the said scuttle be made plain or indented, and whether it pass directly downward to the grate, or traverse some other portion of the inside surface of the fire-box.

Second. I am aware that David Matthew obtained a patent, May 15, 1855, for a pipe of less diameter than the inside of the base of the smoke-stack, set up in the same and extending downward to the vicinity of the bottom of the smoke-box, having the exhaust pipes beneath it, and an annular space between it and the base of the stack, the whole designed to draw the smoke from the top of the smoke-box into the annular space, and thence up the stack, and also to draw the sparks from the bottom of the smoke-box, lest they do injury thereto.

I do not claim such an arrangement, nor one that will effect the purpose for which he claims it.

I claim a downward bifurcated continuation of the smoke-stack, without any egress from the smoke box between this continuation and the base of the stack, and extending downward as far as may be without disturbing those heavier sparks which may have fallen to the bottom of the smoke-box, into which bifurcations the exhaust pipes turn upward, the whole being designed by closing egress for the smoke at the top, to give the sparks an opportunity to settle in the smoke-box, or be returned to the fire through the nozzle H; also to restrain the hot air and gas from immediately leaving the smoke-box at the top, at the same time that the legs K will select the matter of their draught from the cooler and lower, instead of the lighter and hotter gases of the top of the smoke-box.

No. 16,348.—Joseph D. Greene and Edward Ivers, assignors to Joseph D. Greene, Philadelphia, Pa.—*Improvement in Air-Heating Furnaces.*—Patent dated January 6, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventors say: We are aware that a single inverted hollow cone has been used in an auxiliary smoke-receiving drum, standing by the side of a furnace cylinder and upon the same ash-pit, for the purpose of conducting cold air into the top of said drum, to mingle with the smoke therein, and find its way in part through the bottom of said drum and the ash-pit to the furnace chamber, and the remainder pass off with the smoke and gaseous products of combustion, as represented in Wm. Ennis' patent of March 29, 1853, and therefore we do not claim to be the first to use a hollow cone in a hot-air furnace.

We *claim* the peculiar arrangement of the double series of smoke-conducting and air-heating tubes, with the other parts of our air-heating apparatus, viz: the series of smoke-conducting tubes being arranged around the exterior surface of the furnace chamber, with their induction smallest ends uppermost, and the series of air-heating tubes being arranged around the interior surface of the furnace chamber; with their induction smallest ends opening downwards, and both ends open to the atmosphere, all substantially as set forth.

No. 17,842.—George M. Longacre, of New Orleans, La.—*Improvement in Bagasse Furnaces.*—Patent dated July 21, 1857.—The furnace chamber A being supposed to be in full operation, the valve *g*, in ventilator F, will be closed, and the damper *v*, under boiler B, will be open. Meantime the chamber *a* having been charged with moist bagasse, damper v^1 will be closed, and the draught openings of this chamber also shut off. Valve g^1 will be open and will carry off the evaporated moisture of the bagasse, and by this drying bring it to a condition favorable to combustion; so that when the contents of chamber *a* have been consumed, damper v^1 will be opened, valve g^1 closed, and the draught openings of the furnace opened, while the chamber *a* will receive a fresh supply of bagasse which will be dried as described for chamber a^1.

Claim.—The constructon of bagasse furnaces with a space *c* around and communicating with the upper portion of the fuel chamber, substantially as described and for the purpose set forth.

No. 18,874.—Moses Thompson, of New York, N. Y.—*Improvement in Bagasse Furnaces.*—Patent dated December 15, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I *claim*, as my improvement in furnaces for burning bagasse and other fuels too wet to be conveniently burned in the usual and well known ways, first, the combination of two chambers, the one above the other, and separated by a grate, the lower one for the combustion of any known dry carbonaceous fuel, and the upper one in immediate proximity therewith to receive heat therefrom for heating and drying the charge of wet fuel, with a mixing chamber into which both continuously and simultaneously discharge their gases before reaching the thing to be heated, for mingling and mutual combustion.

I also claim, in combination with said fire chamber and wet fuel chamber, or drying chamber, making the grate upon which the wet charge rests, sufficiently open to allow the lower portion of the wet charge, as it becomes dry and charred, to fall through into the fire chamber, and keep a hot fire therein, supplying the place of other dry fuel, while the uncharred portion of the wet fuel is properly supported by the grate till dried as described.

I also claim placing the mixing chamber of combustion in substantially the same position described relatively to the fire and the wet charge, so that the products of combustion from the dry fuel may pass along the lower part of the wet charge, drying and charring it on their way to the mixing chamber, and reach it without being in any considerable degree obstructed or cooled by the wet charge, as shown.

I wish it distinctly understood that I make no claim to any of the parts or combinations specified, except in their application to the preparation and combustion of wet fuels.

No. 17,039.—James Hennington, of Richmond, Ind.—*Improvement in Apparatus for Feeding Fuel to Furnaces.*—Patent dated April 14, 1857.—The trunk G is supplied with sawdust through the aperture *j*, and the scrapers *i* attached to endless apron H, move the sawdust through passage *b* into box A, whence the revolving feeders *e* feed it into the furnace. The blades of these feeders are made to yield to some extent, in case of their meeting chips or others coarser articles.

The inventor says: I do not confine myself to the employment of a trunk H containing a series of moving blades or scrapers *i i*, to supply the box A, as any other suitable means of keeping it properly supplied may be used.

Nor do I confine myself to the use of any particular number of feeders *e e* upon each shaft.

But I *claim* attaching the feeders *e e* to their shafts by joints *f f*, and applying springs *g g* thereto, substantially as and for the purpose set forth.

No. 18,010.—Edward Dugdale, of Burlington, N. J.—*Improvement in Grate Bars of Furnaces.*—Patent dated August 18, 1857.—By operating the arm F of the lever E, the flexible grate bars B can be thrown into various positions; and when such a movement is produced, the position of most every piece of coal is changed, thereby preventing said coal from baking, while the ashes and cinder are removed by said movement

The inventor says: I am aware that turning or swinging grates have been used in stoves for the purpose of clearing the grates, but these work very imperfectly, chiefly when applied on a larger scale, besides having the inconvenience that coal will always be wedged in between the bearings and the rim of said grates, which prevents them from being closed again.

I do not confine myself to the use of chains, as any flexible metal combination, such as metal rope or linked rods, may be used with the same advantage.

Nor do I confine the application of my invention to locomotive furnaces only, as it may be applied with equal success to the furnace of any steam boiler, or any furnace in general.

I am aware that shaking and hinged grates have been used, and that a fire-box has been made to raise and lower, so as to change its position in relation to the boiler.

I am also aware that endless chains have been used for conveying coal into a furnace or fire-box; I do not claim any of these things.

But I *claim* the flexible grate bars described, when used in connexion with a raising and lowering or shaking apparatus, so as to change the position of the fire, prevent the baking of the coal, and sift out the ashes, cinders, &c., as set forth.

No. 17,022.—John H. Cahill, of Philadelphia, Pa.—*Improvement in Hot-Air Furnaces.*—Patent dated April 14, 1857.—The operation of this furnace is as follows: A fire being started in the cylinder A, the smoke and gas pass directly upward through the main flue L; and when the fuel is completely ignited, the damper K is closed, when the hot products of combustion pass through flues E down into the bottom radiator C; thence upward, through vertical flues D and horizontal radial flues *m*, to the centre of the upper radiator B, above the damper K; and thence directly upward, through main flue L, to the chimney.

The inventor says: I do not claim, generally, making a hot-air furnace surrounded with radiating flues, combined with a central chamber having a damper, by causing direct and indirect draught through the furnace, as such arrangements are common and well known.

I *claim* the clean-out holes I, in the lower radiator C, in combination with the short stopper tubes fitting adjustably within the same, and opening through the lower plate of the said radiator, substantially and for the purposes described.

No. 18 002.—Daniel P. Weeks, of Boston, Mass., assignor to Himself and Eben Seavey, of Charlestown, Mass.—*Improvements in Hot-Air Furnaces.*—Patent dated August 11, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim the invention of a tapering discharge pipe, nor arranging a series of such around the fire-pot, and so as to open at their bases into the same.

Nor do I claim combining and arranging with a fire-pot and such a series of pipes a conical or tapering radiator closed at its top, and placed within the series and directly over the fire, and so as to receive the volatile products of combustion from the fuel, and deflect them outwardly towards and into the mouths of the several discharge pipes.

Nor do I claim an annular radiator; nor do I claim conical or frustro-conical bases, or semi-cones combined with the fire-pot, and its series of tapering discharge pipes, and serving to support and open into said pipes, respectively; as I am aware that much if not all of such is used in the furnace of Gardner Chilson, and claimed by him in his patent dated September 26, 1854.

But I *claim* the combination and arrangement of the parachute radiator A, air chamber B, and pipes F F, with the fire chamber C, and the reverberating chamber D, having smoke passages or pipes E applied to the same, and leading into the radiator A, as described.

I also claim the manner of constructing the radiator A, viz: with a tapering tunnel *i*, an annular deflecting dome *f*, and a discharge passage or pipe *d*, arranged together, substantially as specified.

I also claim constructing the air chamber B, with a bulb or projection park *k*, when such chamber is arranged within a reverberating chamber D, made to communicate with the discharge pipes E E, and a chamber of combustion, and to surround the radiator A, opening at its lower end into the said chamber of combustion, essentially as set forth.

No. 18,054.—WILLIAM MOULTRIE, of New York, N. Y.—*Improvement in Water Vessels for imparting humidity to hot air, and vapor draught to the grate-bars of Hot-Air Furnaces.*—Patent dated August 25, 1857.—The water in the vessel M becomes heated by its vicinage to the ash-pit F, of fire-box C, and the steam generated thereby passes through the grate for the better support of the combustion as the passage O is opened. By closing the passage O, and opening passage P, the steam of the water vessel M passes into the furnace chamber for communicating moisture to said chamber.

The inventor says: I do not claim the placing of a water vessel within a furnace chamber simply for the purpose of imparting humidity to the air therein.

Nor do I claim to have discovered the utility of vapor draught for the support of combustion.

But I *claim* the structure, location, and application of the water vessel M, whereby either or both of said objects are attained, substantially as described, in connexion with furnaces and other heating apparatus.

No. 17,791.—ISAAC G. JOHNSON, of Spuyten Duyvel, N. Y.—*Improvement in the use of Coal Tar in Iron Furnaces*—Patent dated July 14, 1857.—A coal fire having been ignited on the grate, a quantity of coal tar is poured into the inclined pan *c*; and as said coal tar is ignited the flame passes into the furnace through the passage *b*, and the products of combustion pass directly over the burning coal together with a proper portion of atmospheric air to make a perfect combustion.

Claim.—The employment of coal tar in the air furnace, substantially in the manner and for the purposes set forth.

No. 17,132.—CHARLES H. JOHNSON, of Boston, Mass., assignor to Himself and JOSEPH G. HAMBLIN, of the same place.—*Improvement in Argand Burners*—Patent dated April 21, 1857.—The glass chimney and globe of this lamp rest upon the brackets E of the cylinder C, and by turning said globe, the brackets E, together with cylinder C; will be turned, and the register openings *d* will admit more or less air through the openings *c* of the burner *a*.

The inventor says: I do not claim applying an air regulator or series of valves to the orifices for admitting air into the inner tube of an argand burner.

Nor do I claim, separately therefrom, supporting the globe and chimney brackets by a tube encompassing the burner or outside tube thereof.

But I *claim* the improvement of constructing the supporting tubes of the brackets, so that it may not only sustain such brackets, or have them extended from it, as described, but at the same time admit the register to be operated by simply laying hold of and turning either the globe or chimney, when the friction thereof on the brackets may be sufficient for the purpose.

No. 17,035.—E. P. GLEASON, of Providence, R. I.—*Improvement in Gas-Burners*—Patent dated April 14, 1857.—The gas passes from the lower chamber D, through the two apertures *e*, into the tube I; and as the two jets meet, they produce a self-regulating effect on each other, which operates to check the flow of the gas at a high pressure; the gas escapes through the four apertures *i*- and passes into burner G.

The inventor says: I am aware that a combination of a central conducting pipe, with a capping pipe, has been patented by Brick; I therefore disclaim said device, irrespective of a combination with the peculiar self-regulating check.

I *claim* the peculiar arrangement of the holes *e e*, in combination with the connecting tube I and the perforations *i i i i*, for the purpose specified.

No. 17,530.—JOHN C. WALSH, of Lockport, N. Y.—*Improvement in Gas-Burners.*—Patent dated June 9. 1857.—The gas enters the burner through pipe *h*, passes up pillar *g*, through passages *k*, then up pillar *d*, through passages *k*, into chamber *a*, and finally escapes through burner B.

The inventor says: I am aware many devices have been used for the purpose of retarding the flow of gas through a burner, such as deflectors or circuitous passages. I lay no claim to these things.

But I do *claim* the arrangement within the burner of two or more hollow pillars *d* and *g* extending up into the chambers of the burner, with holes K made obliquely into the upper end of said pillars, as represented, for producing counter currents of gas as it flows through the burner to break its force and regulate the supply of gas to the tip of the burner, for the purposes mentioned.

No. 17,674.—ASA D. GATES, of Binghampton, N. Y.—*Improvement in Gas-Byrners.*—Patent dated June 30, 1857.—By placing the tube

C on a common gas-burner E, the gas is impregnated to a certain degree with atmospheric air; and when the gas is ignited, the intensity of the light is augmented without additional burning of the gas.

Claim.—Attaching to the top of, or slipping over the usual burner the conical or cylindrical supplemental chamber burner, as and for the purposes set forth.

No. 18,230.—William W. Batchelder, of New York, N Y.—*Improvement in Gas-Burners.*—Patent dated September 22, 1857.—The principal of this improvement consists in causing the gas to issue in succession from two apertures of different areas, placed near together, and so shaped that the gas shall be made to pass in a thin stratum from the first or lesser aperture to the next, or greater, in such a manner that the stream shall not be deviated in passing from one to and through the other.

In the drawings, at *a* is the first gas jet, of common construction, screwed upon the pipe as usual. This terminates into a fine slit a^1 at the top, which is the first of the two apertures in the improvement. Over this slit is placed a cover *b*, the interior of which is so large as to leave a clear space all around. This has a rounded top across, wherein is also cut a narrow slit b^1, but forming an opening several times the area of the inner slit a^1. Near the base of this the cap is pierced with several small holes *c*, and finally it is secured in place upon *a* by an adjusting screw or screws *d*.

The inventor says: I *claim* the improved method of burning gas described, viz: combining two apertures of different areas, so arranged that a flat stratum of gas issuing in the first instance from the lesser aperture shall impinge and press upon the second and larger aperture placed in the same plane with the issuing jet, and in such manner as to pass it without causing any deviation thereof.

No. 18,289.—William H. Lindsay, of Brooklyn, N. Y.—*Improvement in Gas-Burners.*—Patent dated September 29, 1857.—The nature of this invention consists in the use of certain deflectors with a fish-tail, or other burner of suitable construction, for producing a more perfect combustion of the gas with an increased light.

The angle pieces or deflectors C D, rising above and almost immediately over the orifices or slit in the burner B, are adjusted in the socket or ring E, by means of set screws, at or about right angles with the line of the flame from the burner, between which and the sockets of the burner their lower ends are inserted; or a slight steel spring attached to their lower ends, and pressing against the burner socket or the ring, answers the same purpose; by these means they can be adjusted so that the flame may be increased in breadth, which decreases the height, or *vice versa*, by bringing their ends over the burner closer and further apart.

The inventor says: I do not confine myself to the particular or precise form or arrangement of the several parts as described and shown, as the same may be modified in various ways, which I claim doing whilst producing results substantially the same.

I *claim* the application to a gas-burner or burners of angular pieces

or deflectors, or the equivalent thereof, substantially as described, for the purpose of increasing the light derived from one or more streams of gas issuing or escaping from a gas-burner or burners of any suitable construction, by altering and directing the current or currents of gas, and the form of flame.

No. 16,848.—John McHenry, of Cincinnati, Ohio.—*Improvement in the Construction of Gas-Burners.*—Patent dated March 17, 1857.—A is a case or shell which is made cylindrical, or slightly conical, somewhat larger than the pipe, ordinarily about three-quarters of an inch in diameter, and about one and a half inch long; the lower end of this shell has a reducing neck *i* for connecting it with the pipe, its upper end is fitted with a tip *h* forming any variety of burner; within the shell and occupying its entire cavity, except a small space *c* and *d*, at either end, is a plug *b* having a channel or groove of about one-eighth of an inch diameter, spirally around its periphery, and which forms the only communication between the spaces *c* and *d*; therefore the gas, in its passage from the pipe to the burner, is caused to pass the entire length of the spiral channel, about fifteen inches, in contact with the heated surfaces of the shell and plug, whereby it becomes sufficiently attenuated to effect a thorough and perfect combustion of the carbon.

Claim.—The removeable disk *e*, as a means of varying the size of the throat of the burner, as and for the purposes set forth.

No. 16,820.—Charles H. Johnson, assignor to Himself and James G. Hamblin, of Boston, Mass.—*Improved Device by which the Spigot of Gas Cocks may be Lubricated in their Seats.*—Patent dated March 10, 1857.

The inventor says: I do not confine my invention to making the stud *n* in the precise form and manner above set forth, as it may be otherwise constructed, so as to move into or out of the opening *o*.

I *claim*, when the tapering plug of the faucet or stop-cock is drawn into the tubular seat by the action of the spring *f*, as specified, combining with the seat tube *a*, an entrance passage *k* and groove *l*, and a moveable stop *n*, arranged substantially in the manner and for the purpose as specified; or, in other words, so as to enable a person to expeditiously lubricate the stop-cock, without the necessity of entirely removing its plug from its seat tube.

No. 17,251.—R. Snowden Andrews, of Baltimore, Md.—*Improved Apparatus for Heating and Cooking by Gas.*—Patent dated May 12, 1857.—The apparatus rests on the gas-burner E; the gas escapes through E into the cylinder *b*, and the atmospheric air enters through the apertures *c* of the bottom *p*; the mixed gas and air passes out through the apertures *b*, and, upon being ignited, the flame is made to play upwards and around the sides of the boiler, which rests on disk *f*. A current of air passes through the pipes *h*, which becomes heated as it passes through said pipes, and, escaping through the holes *p* of disk *f*, tends to impart great intensity to the fire, upon the principles of oxydation and hot draughts.

The inventor says: I do not claim the tubes *h h* and the hot-air chamber *g*, except as combined with my peculiar apparatus.

I *claim* the described article of manufacture, consisting of its tubes *h*, hot-air chamber *g*, perforated rim *d*, and spreading flange C C, constructing and operating as set forth.

No. 18,945.—SAMUEL GARDINER, Jr., of New York, N. Y.—*Mode of Lighting Gas by Electricity.*—Patent dated December 22, 1857.—This invention consists in placing a fine coil of platinum wire *l* over the burner *a*, which is made red-hot by the passage, and the gas impinging on it becomes ignited. F is the electro-magnet for operating the cock C, to turn off and on, and regulate the flow of gas. G is its armature; H the lever to which the armature is attached; I a standard supporting the lever H; J a pawl attached to the lever, and K a ratchet wheel on the cock C, with which the pawl G engages. *j* is a spring to remove the armature from contact with the poles of the electro-magnet, when the branch of the circuit in which the magnet is placed is open. *k* is an adjustable stop-screw to regulate the movement of the armature.

The inventor says: I do not confine myself to the particular method described of accomplishing my object.

But I *claim*, broadly, turning on or shutting off inflammable gas, by degrees, or gradually, through the agency of electricity, for such purposes as before alluded to.

No. 17,540.—DANIEL H. DEAN, of Lowell, Mass., assignor to WILLIAM T. COGGESHALL, of Fall River, Mass.—*Improvement in Fire-Grates or Linings of Fire-Pots.*—Patent dated June 9, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Arranging the inner surface of each ring of the fire-pot cylindrically or vertically, the edges of the rings inclining inwards in such manner as to bring the upper edge of one ring on or about on a level with the lower edge of the ring directly over it, as described, whereby advantages such as are stated are gained.

No. 17,076.—SIMEON BURGESS, of Wayne, Pa.—*Improvement in Cask-Heaters.*—Patent dated April 21, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—Combining with the fire-pot B the encompassing hearth A, with the adjustable pins S, for securing casks of different sizes in a concentric position, as set forth.

No. 18,026.—JOSEPH V. TIBBETS, of New York, N. Y.—*Improvement in Hot-Air Registers.*—Patent dated August 18, 1857.—By turning the handle of the screw rod F the valves *c d* may be adjusted and retained to any desired position, and thus the amount of air to pass through register *b* may be regulated.

The inventor says: I wish to be understood as not claiming a register with a valve for turning the heat, as such has been before essayed.

But I *claim* the valves *c d* placed in the ascending pipe *a*, at or near the centre, with independent movements, as and for the purposes set forth.

No. 18,356.—SYLVESTER J. SHERMAN, of New York, N. Y.—*Improvement in Hot-Air Registers.*—Patent dated October 6, 1857.—In the drawings, fig. 1 is a cross section of the register, showing the spring bar with the fans closed. Fig. 2 is a cross section of the register, showing the spring bar with the fans partly open. E is the spring bar, which connects at 3 with the connecting rod, and at 4 with the top or face of the register. F is the knob or handle attached to the spring bar passing and working on the slot G. The spring bar terminates at the upper end in the plate 5, so as to more evenly slide against the under side of the piece having the slot in it. The spring bar should be made of steel, and thin enough so as to be elastic.

The inventor says: I *claim* interposing between the top plate of hot-air registers and the spring bar, to which the fans are attached, either directly or by means of a connecting rod, a slide plate, to which the end of the spring bar nearest to said top plate on one side, and the knob or handle on the other side, are permanently fixed, substantially as described.

No. 17,989.—WILLIAM WESTLAKE, of Milwaukie, Wis.—*Improved Tea Kettle.*—Patent dated August 11, 1857.—The air passes through tube B into the fire chamber *c*, supplying the fire in said chamber with air while the draught passes through holes *b* and out through the stove pipe, the chamber *c* being fitted in the top of the stove.

The inventor says: I am aware that tea kettles have been made having lateral pipes attached for the admission of gas as a fuel. An example is seen in Bogget & Pettit's patent, April 18, 1854. I do not claim such tea kettles. They are quite different in construction from mine; are used for a different purpose, and operate in a different manner. No air would enter through the fine apertures of their burners. My kettle forms a highly useful household article, and is not dependent for its operation upon a pressure of coal gas.

I *claim*, as a new article of manufacture, a tea kettle made as described.

No. 16,981.—A. H. KNAPP, of Medford, Mass.—*Improvement in Lamp-Burners.*—Patent dated April 7, 1857.—The air which passes through the perforations of the screen B partly supplies the outer draught through the aperture in the cap immediately around the outer tube, while the other portion, being carried through the apertures *a* in the said tubes, passes up the inner tube D, and out beneath the button H. The said button, by which the height of the flame is regulated, rests upon the rod G, which is raised or lowered by arm *b* playing in the eccentric slot of the cam *d*, which can be turned by its knob F.

The inventor says: I do not claim any one of the features described, separately considered.

But I *claim* the arrangement in a removable burner, so that it may be applied to a common glass lamp, as described, of the perforated screen B, apertures *a a*, small column *c*, and cam *d*, provided with an eccentric slot, all arranged, combined and operating substantially as set forth, whereby I am enabled to produce a steady and even flame.

No. 18,307.—Isaac Suggitt, of Providence, R. I.—*Improved Hydrocarbon Vapor Lamp*.—Patent dated September 29, 1857.—The nature of this invention consists in the upper part of the tube A, from which one or more arms or projections B are fitted about one inch below the top. The arms or projections are drilled hollow, and provided with a slit or aperture C for the escape of vapor to supply the flame, also with a slit or aperture D to receive the vapor from the tube in case the ends E of the arms or projections get stopped up with particles of cotton. A screwed or sliding cap is made so as to fit into the arms or projections B, when only one is required to burn. The upper part of the tube is made rough, and of some dark color, for the better radiation of the heat. S is a corrugated metal hoop to assist the escape of the vapor, and prevent the cotton charring too quick. T is a screwed cap to close the tube.

Claim.—The inventor says: I do not confine myself to place the arms B one inch from the top of the tube A, as when there is only one arm it requires to be a little lower than when two or more arms or projections are made. I do not claim a tube alone, but I claim a tube in combination with arms or projections B, and corrugated hoop S, substantially as set forth, to be used in any container or lamp suitable for the above purpose.

No. 18,818.—Francis Leclair, of New York, N. Y.—*Improvement in Lamps*.—Patent dated December 8, 1857.—A is the lamp reservoir; B is a wick extending to the gas generating chamber C; D is the heating flame tube; E is the thimble for regulating the heating flame; F is the handle for turning the thimble E to raise or lower it on the heating tube D; G is the plane for the handle to move on; H is a shield for protecting the heating flame; J is the common or bat-wing burner, which is readily lighted after a short time of action of the heating flames; L or M is the separate wick, independent of wick B.

The inventor says: I am aware that shields have been used for protecting the heating flame in some instances; I therefore do not claim the shield itself as new.

But I *claim* the shield H, constructed and arranged as described, so as to be held in its position by the screw G, and operating between it and the top *a* of the reservoir A, as set forth.

No. 17,086.—Charles A. Greene, of Philadelphia, Pa.—*Improvement in Burners for Burning Fluid Lamps.*—Patent dated April 21, 1857.—The wick in the small tube E is, in the first instance, ignited, until sufficient heat is communicated to the conductor, the cap F, the burner G, and projection *g*, to generate a flammable gas from the fluid. This gas passes upwards through the passages *i* into the interior of the burner G, and passes through the slit on the top of the same. The gas being ignited, imparts sufficient heat to projection *g* to generate gas without the assistance of burner E. The brilliancy of the light can be adjusted by screwing or unscrewing cap F, and the extent to which the projection *g* enters the wick is thus increased or diminished.

The inventor says: I do not desire to lay any claim to the employment of a supplementary wick, in connexion with the lamps, or to the employment of plaster of Paris, or other non-conducting substance for surrounding the reservoir.

Neither do I desire to claim the exclusive use of a tapering spur for penetrating the wick.

But I *claim* the hollow burner G, with its rounded or hemi-spherical cap, and its projection *g*, when the whole is rendered adjustable to the main tube, in the manner and for the purpose set forth.

No. 16,398.—David F. Randall, of Chicopee, Mass.—*Improvement in the Construction of Burning Fluid Lamps.*—Patent dated January 13, 1857.—The volatile fluid escapes in form of gas through the slit *d* of the gas-burner *c*, and the arms *g* of the spur spread the flame and heat the spur *f*, which latter, when heated, aids in vaporizing the fluid, producing a more intense light than that produced in a common gas-burner.

The inventor says: I do not claim combining with a burner a piece of metal to extend down into the body of a lamp for the purpose of fluidizing the combustible matter therein.

Nor do I claim combining with the wick of a burner a metallic tube to extend around said wick, and down into the burner tube, and to be capped with a button, for spreading the flame, the heat of said button and the tube extending immediately around the wick, serving to vaporize the fluid within the wick.

But I *claim* so applying to the gas-burner a tapering spur that it may extend down into the body of the wick, and serve to conduct heat into the interior of the wick while the external sides of the wick are heated by the burner and wick tube, as specified; and when such spur is used, I claim making it with one or more branches at top, as shown and described.

No. 16,852.—Rufus W. Sargent, of Philadelphia, Pa.—*Improvement in the Burner of Burning Fluid Lamps.*—Patent dated March 17, 1857.—The claim of the inventor and the engravings fully explain the nature of this invention.

The inventor says: I do not claim the burner tube, chamber A the arrangement of the main wick, or tube *a*.

I claim, 1st, the making of the chamber for the heating flame in lamps in which burning fluid, spirit gas, or other highly volatile fluid is used, so that it nearly or wholly surrounds the chamber in which the gas is generated, in order that the heating flame, being sheltered from the outer air and confined within the outer chamber, and in immediate contact with the inner chamber, may effect its purpose more steadily and with less consumption of fluid, the form of the outer chamber being substantially as above, and as represented in the annexed drawings.

2d. I claim surrounding the tube with a wick and packing, substantially as above described, in order to supply the heating flame with fluid, and the making of the burner tube with a flange and shoulder, as described, in order to afford space fors aid wick and packing, and the perforating the burner tube with apertures, through which said wick may be supplied with fluid.

3d. I claim the regulator, substantially as above described, moveable up and down upon the burner tube, in order to regulate and control the heating flame.

No. 16,379.—M. B. Dyott, of Philadelphia, Pa.—*Improvement in Burning Fluid Lamps* —Patent dated January 13, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I do not claim the thermo-insulation of the burner, as this has heretofore been done; but I *claim* removing the metallic connexion between the main burner A and auxiliary burner B of a fluid lamp so far from the flame or heat, and interposing a non or bad conducting material between the burner A and lighter B, as that the heat of the main burner shall not be transmitted to the auxiliary, whilst the efficiency of the latter is in nowise impaired substantially for the purpose and in the manner described.

No. 17,658.—Henry Wright Adams, of New York, N. Y.—*Improvement in Fountain Lamps.*—Patent dated June 30, 1857.—In carrying this lamp carelessly and tilting it, the overflows of the oil at the burner cup E is prevented by the oil in said cup sealing the passage *a*, which thus prevents the air from entering the reservoir A, and to get above the oil.

Claim.—Providing the burner cup with an internal cylinder or lining E to leave an open bottomed but close topped passage *a a* around the burner, in communication with the tube or passage D, coming from the fountain or reservoir, said internal cylinder or lining being provided with an opening *c* opposite the tube or passage D, substantially as and for the purpose specified.

No. 16,524.—J. S. Brown, of Washington, D. C., assignor to Joseph Kent, of Baltimore, Md.—*Improvement in Lard Lamps.*—Patent dated February 3, 1857.—The brush of wires *h h h* serves to conduct the heat from the burning wick through the lard, and thus keep the latter liquid. When the wire brush has been removed for the purpose of filling the lamp, the ring *d* is pushed down, as represented in figure 2; the ring is then inserted into the neck *a* of the lamp, and the wire brush is pushed down, when the wires will again assume the position, figure 1.

Claim.—The loose ring *d*, in combination with the brush of wires, for the purpose set forth.

No. 16,825.—Isaac N. Coffin, of Washington, D. C.—*Improvement in Lard Lamps.*—Patent dated March 17, 1857.

The inventor says: I disclaim the arrangement of flat inclined wick tubes at right angles to each other, that having been done by H. W. Revely.

But I *claim* the combination of the flat inclined wick tubes *a a* at right angles to each other, with the concave reflector *i*, as described, for the purposes mentioned.

No. 16,384.—Lewis A. Hamblin, of Chicago, Ill.—*Improvement in Locomotive Lamps.*—Patent dated January 13, 1857.—The oil passes fromthe chambers A^1 and A^2, through passages B^1 and B^2, to the small central chamber A, to supply the burner C; by having the passages B^1 and B^2 not in line with one another, the oil will not be affected so much by the lateral motion of the engine, and an uniform feed will be effected.

The inventor says: I am aware that the reservoir or chamber of a locomotive lamp has been divided into a series of compartments by means of partitions, which extended from the top to near the centre of its depth, but this arrangement has been found not to accomplish the object desired, as a direct communication is necessarily left from end to end of the lamp below said partitions; and owing to this, as the oil is shot suddenly back and forth, that portion which is below the partitions rushes to one end of the lamp, and that above the bottom of the partitions falls into its place, and causes a too great and sudden pressure at the said end, and slopping or overflowing, and unsteady feeding to the burner are the results. Such an arrangement, therefore, I do not claim, as the same was patented to Irwin A. Williams on the 1[illegible]th October, 1854.

But I *claim*, as an improvement on the said Williams' lamp, making a locomotive lamp with three or more distinct chambers A A^1 A^2, said chambers all being arranged on the same level, and connected by two tubes B B^1, which run parallel, but not in line with one another, and provided with two elevated vent passages E E, which communicate with the ordinary vent passages D D, substantially as and for the purposes set forth.

No. 16,769.—Isaac Carleton of Brooklyn, N. Y., assignor to John Wyberd, of Baltimore, Md.—*Improvement in Reflectors for Locomotive and other Lamps.*—Patent dated March 3, 1857.—The object of this improvement is the protection of the metallic reflector C from atmospheric influence.

The inventor says: I make no claim to the passing of an air-tight tube through the reflector, separately considered, nor do I claim protecting the reflector, by a glass, conforming to its surface and hermetically sealed at the chimney openings and the rim of the reflector as shown in the patent of Alonzo Farron, dated April 14, 1844.

I *claim* the air-tight glass cylinder B, passing through the reflector, in combination with the glass G, hermetically sealing the mouth of the reflector, arranged and operating substantially as and for the purpose set forth.

No. 18,704.—William Pratt, of Baltimore, Md.—*Improvement in Safety Lamps.*—Patent dated November 24, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I do not claim any of the devices of others which I have referred to in the specification, or profess to be the discoverer of any of the principles involved in my own devices, separately considered.

But I *claim*, first protecting the orifices of vessels used in holding, pouring and burning inflammable liquids, with a volute of ribbed metal, wound upon itself, or made of strips of plain and currugated metal wound together, these so formed making most economically a series of regular tubes of great stability and conducting power, together with freedom of pouring through them the liquids used, and also presenting great facility of cleaning from any accidental obstructions.

In claiming the above, I do not claim protecting such orifices with wire gauze, perforated metal cylinders or chambers, packages or masses of shot, pumice stone, or masses of tangled wire, or of wire packed longitudinally in tubes, as all these devices have been known before, but do not fulfil all conditions which my device does.

Second. I claim the arrangement of the feeder tube and cap, and the wick tubes and cap, either by the intersection of their peripheries or stops, suitably placed in such a manner that the removal of the wick cap cannot take place till that which covers the protected orifice for replenishing the lamp is first taken off.

No. 18,456.—William Kimble, of New York, N. Y., and William H. C. Bartlett, of West Point, N. Y.—*Improvement in Shades for Lamps.*—Patent dated October 20, 1857.—This invention is for an improvement in the construction of glass shades for lamps, &c., and the object of it is to secure and concentrate in a horizontal direction all the rays projected above or below the radiant point.

In the engraving, the rays of light are shown as converging at B, but may be made to issue in parallel rays or diverging ones, according to the use the light is to be put. As the surfaces of the zones are polished, a portion of the light will necessarily be reflected; this shows that a prominent feature in this invention lies in the direction given by these reflected rays, viz: by projecting them back upon the source of light, whereby they are all saved and serve to increase the intensity of the illumination.

The inventors say: We *claim* the described method of constructing a refracting light shade—that is to say, having its interior so shaped hat all rays shall fall perpendicularly upon the receiving surfaces, in combination with an exterior refracting surface, by which only the rays shall be deviated into the required direction, substantially as described.

No. 17,507.—Joseph Hassell, of Brooklyn, N. Y.—*Improvement in Solar Lamps.*—Patent dated June 9, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim, separately, the elevating or depressing of the wick holder and its wick by turning the outer surrounding tube formed with a helix to act on a spring projecting from the wick-holder, and the wick-holder being prevented from turning

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by a pin projecting from its inner periphery, fitting and sliding in a vertical groove formed in the outer surface of the inner wick tube.

I claim making the outer and turning wick tube *j*, which surrounds the wick holder *g*, with a helix or helices *l*, to act on a pin or stud *m*, projecting from the said wick holder, and preventing the said wick holder from turning by a feather or feathers *h*, or equivalents therefor, on the outer surface of the inner wick tube, substantially as described in combination with the making of the upper end of the inner and outer wick tubes cylindrical and with unbroken surfaces in contact with the wick as described, the better to keep the upper end of the wick parallel with the upper end of the said wick tubes, and for the further purpose of having the surface of the said tubes where they are in contact or close proximity with the wick to present unbroken cylindrical surfaces as set forth.

And I also claim, in combination with the turning wick tube provided with a helix or helices, substantially as described, the employment of a movable nozzle, substantially as described.

No. 18,142.—Joseph G. Gilbert, of New York, N. Y.—*Improvement in Vapor Lamps.*—Patent dated September 8, 1857.—The conical cork D, having been pierced, is slid over the wick tube C, and the conical box E is slide over the cork D and its base is soldered to the screw top B, the space G is then filled with melted sulphur which, together with the cork, as nonconducting materials, will confine the heat to the wick tube.

The inventor says: I do not claim the use of cork alone, nor do I claim the outer cylinder, as they are both old devices; neither do I claim the form of the ring separately as a part of the heater or burner.

I claim the combination of the sulphur and cork, in the manner and substantially for the purposes set forth.

No. 18,719—Dexter H. Chamberlain, of West Roxbury, Mass., assignor to Himself and John Borrowcastle, of Boston, Mass.—*Improvement in Vapor-Burning Lamps.*—Patent dated November 24, 1857.—In this improvement the wick tube is formed, as shown in the engravings, of a central or main portion 4, which is secured to the cap C at *a*, and extends down into the lamp nearly to the bottom of it, and of an auxiliary casing or chamber 5, which surrounds the part 4, and extends from the top of it nearly down to the cap C at *a;* this chamber 5 is filled with wick, a few strands being coiled in it up to the point *f* where it is joined to the part 4.

Claim.—The auxiliary chamber or casing 5, in combination with the tube 4, constructed and arranged in the manner and for the purpose set forth.

No. 17,637.—John Reese and Charles N. Tyler, of Washington, D. C.—*Improved Lantern for Lighting Street Gas.*—Patent dated June 23, 1857.—In using this device the mouth of the shade D is entered into the funnel in the bottom of the gas lamp, and the burner C of the lighting lamp is pressed upward by means of handle G, the guard *e*, coming in contact with the valve which covers the aperture in the bottom of the street lamp, opens it to allow the burner C to pass up far enough to ignite the gas. On withdrawing the burner the spring E on tube B forces the shade D over the burner, and the light is thus protected from being extinguished as the lighting lamp is carried from one place to another.

Claim.—The gas lighter described, consisting of the sliding shade D, spring E, and guard *e*, arranged and operating in the manner and for the purposes set forth.

No 18,602.—JOHN R. PIERCE and LEAVITT B. AUSTIN, of Oswego, N. Y.—*Improved Signal Lantern.*—Patent dated November 10, 1857.—The bottom of the lantern A is connected to the top C by the front bars D D and side plates E E, which, with the cross bars F F, form the frame of the lantern. The ears G G are fastened to the top C for the bail G^1, by which the lantern may be suspended. The hoop H surrounds the perforated chimney I, and is fastened to the top C by the brackets H^1, so as to break the force of the wind, and prevent it from blowing into the chimney and extinguishing the light. The interior of the lantern is divided into three compartments by two horizontal partitions J J, opposite and fastened to the bars F F. These compartments may be provided with glass of different colors, so as to show light of the color required for the signal to be given.

Claim.—The combination of a traversing chimney and lamp so arranged as to avoid the bad effect of the lamp's smoke in signal lanterns, in the manner set forth.

No. 17,351.—WILLIAM G. RUSSELL, of New York, N. Y., assignor to WILLIAM SEWELL and WILLIAM G. RUSSELL, aforesaid.—*Combined Lantern and Oil Can.*—Patent dated May 19, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I do not claim either a lamp or an oil can.

But in view of the new and useful result obtained, and the security for life and limb by my illuminated oil can, I *claim*, as a new article of manufacture, the attachment of a lamp or light to an oil can or feeder for illuminating the place to be oiled, substantially as and for the purposes specified.

No. 18,105.—JOSEPH H. ROHRMAN, of Philadelphia, Pa.—*Improvement in Lanterns.*—Patent dated September 1, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—First. Constructing square frame lanterns with the corner uprights of square wire or metal rods, and the door frame of a single square wire or rod bent in U form, secured at its ends by a strip, the whole arranged as and for the purposes described.

Second. In combination with square wire corner uprights, the peculiar attachment of the guard wires *d* by simple grooves and dovetailed ends, as described, the whole constructed as and for the purposes set forth.

Third. Forming tongues *g* in the bottom and top plates, or either, for spring stops to secure the glasses in position, and also for the admission of air necessary to the combustion of the lamp flame, substantially in the manner set forth.

No. 18,784.—ABEL WILSON, of Philadelphia, Pa.—*Improvement in Gas-Lighting Lanterns.*—Patent dated December 1, 1857.—This invention relates to improvements in lanterns used by lamplighters for lighting gas, and consists in attaching to the top of the body or casing of the lantern, a hollow perforated cone open at the top, and above the latter a hollow corrugated or other suitably formed cone.

The interior of the lantern communicates with the interior of the perforated cone, and the space between the two cones, and with the external atmosphere.

This invention has for its object the instantaneous lighting of gas, by simply holding the lantern in such a position with regard to the open burner, that the gas from the same may enter the openings between the two cones.

The inventor says: I wish it to be understood that although I prefer three corrugated cones, I do not desire to confine myself to that precise number or form of cones, as one cone only will serve the desired purpose, and as the cones may be made plain instead of corrugated.

But what I *claim* is surmounting the body or casing of the lantern with its hollow perforated cone C, in combination with the cone D, when the same are arranged and constructed substantially in the manner set forth and for the purpose specified.

No. 16,880.—ANDREW RALSTON, of West Middletown, Pa.—*Improvement in Pocket Lanterns.*—Patent dated March 24, 1857.—F is a sliding cap which can be closed down on the ring E when the lamp is not in use, or raised when in use; it is provided with wires *p*, which pass through the openings in the ring E, and are bent at their lower ends so as to form eyes, made to slide on the wires *q*, the latter forming guiding rods for the cap F.

B is the cap of the lamp shown separately in the engravings; it consists of two disks *d* and *e*, of which the disk *d* has a longer diameter than the counter disk *e*; the centre portion of both is raised cone shape, so as not to touch or press on the end of the wick. They are riveted together in the centre, and a ring *f* of India rubber or any other elastic substance is firmly kept between them. The cap B is connected with the tube *b* by a hinge *g*; *h* is a spring which is hook-shaped at its upper end, and keeps the cap B firmly down when the lamp is not in use.

Claim.—The sliding cap F, the cap B, and the wick tube *a*, with its two rings or disks C C, arranged, combined, and operating in the manner set forth and described.

No. 17,696.—JOHN REESE and CHARLES N. TYLER, of Washington, D. C.—*Improvement in Street Lanterns.*—Patent dated June 30, 1857.—In lighting the lamp, the operator will turn the cock C by means of a key, and at the same time insert the burner of his hand lamp through the aperture D, by which the gas is ignited.

The inventors say: We do not claim the conical aperture or the valve in themselves.

But we *claim* the arrangement of the funnel-mouthed aperture D, and the valve F, in the bottom of the lamp, substantially as and for the purposes set forth.

No. 17,495.—John Chilcott, of Brooklyn, N. Y.—*Improvement in Bakers' Ovens.*—Patent dated June 9, 1857.—The bread to be baked is placed in the pans G; these pans are supported by cars F, the three wheels of which run on suitable rails; the cars and pans revolve with the platform D, and each car having made one-half of a revolution, starting from door K, the wrist-pin i^x of crank i passes through the curved slot v, as represented at figure 4, thereby causing the pan G to tilt on its bearings h, and to discharge the loaves thereon.

The inventor says: I do not claim a continuously operating oven, as I am aware that endless chains have been employed in ovens to convey the bread from one part, where it is received, to another part, whence it is discharged, after having been baked during its travel from one part to the other.

Nor do I claim, generally, the employment within an oven of a horizontal rotating table, as I am aware that small ovens have been provided with such tables, to turn a loaf or other article placed upon it, from time to time.

But I *claim* providing each car by which the bread is conveyed to and from the oven with a pan or tray, that is hung upon journals, and is overturned at a suitable stage in the baking process by the automatic mechanical agency described, for the purpose of inverting the position of the bread, and thus causing the bread to be baked more uniformly.

No. 18,429.—Hiram Berdan, of New York, N. Y.—*Improvement in Bakers' Ovens.*—Patent dated October 20, 1857.—A full description of this invention would be too long for publication in this volume, we can therefore only state that, in using this improved oven, the dough is placed on trays or other suitable receptacles, supported on carriages, which are conveyed by upright endless chains through the oven, and it takes these carriages just so long a time to pass through as is necessary to effect the baking of the bread. The oven doors are also made to open and shut, and the carriages introduced into and withdrawn from the oven, automatically, at regular and proper intervals. The heat of the oven is maintained at a uniform degree.

Claim.—The inventor says: I claim the employment in an oven of a system of endless chains, in connexion with other machinery, arranged and combined substantially as described, for the purpose of introducing dough, or other material to be baked, into the oven, keeping the same in motion therein, and delivering the same therefrom when baked.

No. 17,666.—J. H. Chester, of Cincinnati, Ohio.—*Improved Portable Steam Radiator for Heating Apartments.*—Patent dated June 30, 1857.—The boiler C is filled about one third with water through pipe D, and placed over a gauze gas-burner; in a few minutes the water will boil, the steam ascending in a straight column until, striking the deflector B, it is deflected to the right and left, thoroughly heating the lower corners, and passing around the ends of the deflectors, ascends to the steam chamber above; and, as the air cocks should be open, the cold air is expelled, and the steam-chamber filled with steam. The steam, on ascending, condenses on the inner surfaces of the radiator, giving out its heat, and descends to the boiler to be reconverted into steam.

The inventor says: I do not confine my claim to gas as the only means of heating the portable radiator, but intend to use any method of heating to secure the object as set forth.

I *claim* the portable radiator A, constructed with plain inner surfaces, the deflector B, boiler C, and tube D, all constructed and arranged substantially as and for the purposes set forth.

No. 16,459.—William Bennett, of New York, N. Y.—*Improvement in Radiators for Fireplace Grates and Franklin Stoves.*—Patent dated January 27, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I do not claim the perforated plate described in the patent issued to S. S. Savage, October 28, 1856.

Neither do I claim the use of wire gauze and perforated metal dampers in any form located in the flues of stoves or throats of chimneys, nor the gas apparatus of A. Bruce.

But I *claim* a perforated metallic plate or radiator, filling the fireplace with a flange of indefinite depth, and resting upon the fuel directly or upon the top bar of the grate, and against the fire back, in such manner that the whole shall come below the flue of the stove or throat of the chimney in which it is used, leaving the passage for the cold air to the chimney flue free and unobstructed, constructed and arranged substantially as and for the purpose set forth.

No. 17,456.—Charles J. Shepard, of Brooklyn, N. Y.—*Improvement in Cooking Ranges.*—Patent dated June 2, 1857.—The nature of this invention will be understood by referring to the claim and engravings.

The inventor says: I do not claim a metallic conductor between the fire and oven, as the same has been used in the form of a separate block on which the fire brick rested, but I am not aware that the side plate of the oven has ever before been formed with the thickened part at the point of curvature in said plate as specified, whereby the direct heat of the fire (which would cause burning) is intercepted, and the whole plate is heated by the conducted heat, which would not be the case if the plate and conductor (2) were in separate pieces, and by this means the oven is enlarged and rendered more efficient.

I *claim* forming the plate m that encloses the whole side of the oven next the fire, with the conductor and radiator 2, substantially as and for the purposes specified, whereby the said radiator 2, in contact with the fire, conducts the heat to and disperses the same throughout the side oven plate *m*, heating the oven more uniformly and preventing burning, at the same time that the oven is enlarged as specified.

No. 18,055.—Samuel Pierce, of Troy, N. Y.—*Improvement in Cooking Ranges.*—Patent dated August 25, 1857.—The current of air passes over the partition *h* through space *s*, so that the natural draft of the bottom flue *g* will aid in creating a current in the space between the ovens *o* and o^1, and the circulation will thus be made complete and cause the ovens to bake alike on every side.

Claim.—The combination of the recess *p* between the ovens, having a division plate therein open at the top, with the bottom flue, as set forth, so as, by the action of the draft of said bottom flue, to cause a circulation in said recess *p*, in the manner and for the purpose described.

No. 17,259.—John G. Brown and John P. Derby, of South Reading, Massachusetts.—*Improved Apparatus for Roasting Meat.*—Patent dated May 12, 1857.—The meat being secured to spit G, it can be held in any desired position by means of pawl P; by pressing down handle F the pawl P is removed from the ratchet K, and spit G can be turned by turning handle H.

The inventors say: We do not claim the use of a wheel with a socket attached, on or into which wheel a band or gears run, for the purpose of turning the spit, a device of that kind having before been used in the application of clock machinery, which is moved by a spring or weight.

Neither do we claim the various parts of the devices named, separated and disconnected from each other.

We *claim* a new article of manufacture, consisting of a pan with the handles A *a*, sockets B B, the removable standards E *e*, ratchet wheel, pawl, and spit for a roasting apparatus, all arranged and operating as described.

No. 18,241.—Edmund Gibbs, of Madison, Wisconsin.—*Improvement in Steam-heating Apparatus.*—Patent dated September 22, 1857.—This invention is of the nature of a stove, the upper part of which is arranged with boiler pipes and steam chambers set over a gas burner fixed in a cylinder supported on a basis with feet; this lower part, with the upper part, forming an upright cylindrical stove suitable for heating purposes in any apartment.

This stove, says the inventor, is arranged for a single gas burner; because it is more economical to use two stoves, when more heat is wanted, than to increase the size or burners for one stove.

The inventor *claims* the boiler E, with its trough F, operating in combination with the coil of pipe O, and its prongs P and Q, or their equivalents, arranged for the purpose specified.

No. 17,750.—Charles B. Sawyer, of Fitchburg, Massachusetts.—*Improved Air-heating Stove.*—Patent dated July 7, 1857.—The cold air enters the stove through pipe D, and becomes heated in passing through the hot-air flue F, and the heated air passes through pipes I into the rooms to be heated. The cold and vitiated air from the lower part of the rooms will pass through pipes J into chamber C, and up through chamber H into pipe *g*. In case the temperature of either room becomes too high, it may suddenly be lowered by opening the damper of pipe K, which will admit a volume of pure cold air.

The inventor says: I do not claim the hot-air pipes I, hot-air flue F, ventilating flue G, and air-heating chamber A, provided with cold-air pipe D; for these, arranged as shown, have been previously used and patented by John Sawyer.

Nor do I claim either of the parts described separately.

But I *claim* the pipes K for the admission of cold air direct into rooms, when said pipes are made to pass through the ventilating chambers G for the purpose of creating the necessary draught, as described and arranged, and used in connexion with the hot-air pipes I and ventilating pipes J, as shown.

I also claim the chamber H placed over the hot-air flue F and ventilating chamber G, when arranged relatively with the flue F, chamber G, and pipes *a g*, as shown for the purpose specified.

No. 18,321.—Hiram Carsley, of Lynn, Mass.—*Improvement in Stove Cover Stands.*—Patent dated October 6, 1857.—The objects to be accomplished by this invention are: To have a suitable receptacle for the covers of a cooking stove or range, while the holes to which they belong are being used; to have it so constructed as to be convenient to take the covers from and replace them with the common removable or other similar handles; to have it so constructed as to be easily taken apart and closely packed for transportation; to sufficiently protect the floor, stove, top of covers, and other articles which the covers are liable to come in contact with from smut, &c.; and so as to require but little material in the manufacture. The drawings and claim give the best idea of the construction of this invention.

Claim.—The inventor says: I claim the improved stove cover screen, composed of a series of shelves, each provided with the space *a*, and arranged in combination with the relatively enlarged and flanged base *b*, substantially in the manner and for the purposes set forth.

No. 17,767.—Patrick Mihan, of Boston, Mass., assignor to Robert B. Fitts, of the same place.—*Improved Gas Stoves.*—Patent dated July 7, 1857.—The gas enters the case E by pipe *h*, and the burner C is also supplied with an outer current of air which passes up through air conductor *c*. The flame passes up against the inverted bottom F, by which the heat is disseminated towards the sides of the oven and finally escapes through flue *c*.

Claim.—The combination and arrangement of the deflector *f*, with the conical or tapering cap *b*, the gas receiving case E, and the air passage *e*, the whole being substantially in manner and so as to operate as described.

Also, the combination and arrangement of the perforated open tube or conductor G, and the secondary top H, with the oven, substantially as specified; and so as to operate therewith, and not only improve its baking powers, but render it capable of applying heat to a kettle or other article placed in or on said part or tube G, as specified.

No. 16,538.—George W. Gardner, of Troy, N. Y.—*Improvement in Shaker-Bars of Stove-Grates.*—Patent dated February 3, 1857.—The inner end of bar E plays between two pins *g g* on the circular grate B, which latter is thereby caused to revolve about its centre *a*.

Claim.—The shaker-bar E, with the fulcrum *f*, or its equivalent, as described, for the purpose of revolving the grate without the usual slot in the stove, and confining the ashes in the stove, as set forth.

No. 17,756.—James Spear, of Philadelphia, Pa.—*Improved Railroad Car Stove.*—Patent dated July 7, 1857.—When the cars are in motion a current of air is forced into the tube H, raising one of the valves *a c*, and the air striking the top of furnace A passes down through space C and enters the car through openings *m*. When the car is at rest, the air enters the furnace through openings *m*, and becomes heated in passing up through space C, and escapes into the car through openings *n*.

The inventor says: I am aware that cars have been heated by a current of air caused by their motion, and admitted through the top of the car to a heater inside; but this I do not claim.

But I claim the combination of the cross tube H and its self-acting valves *a* and *b*, with the air tube E, so constructed and arranged as to conduct the external air to the heater when the cars are in rapid motion, either forward or backward, and to prevent the escape of the heated air when there is no descending current, as specified.

No. 17,483.—Asa Blood, of Norfolk, Va.—*Improved Steam-Heating Stove.*—Patent dated June 9, 1857.—The water to be converted into steam passes through pipes S into the chamber N, thence through pipe *b* into flue H^1, in the direction of the arrows; thence into chamber E; up pillar H into chamber L^1; then down pillar H^2, through chamber E, up pillar H^1, pipe *a*, tube M^1, and finally escapes through pipe R. The condensed water is collected in pipe a^1 and escapes through pipe R^1.

Claim.—The arrangement of the water chamber N, chambers E and L^1 and *o*, pillars H, H^1, and H^2, hollow grates and tubes R and R^1, as set forth.

No. 16,423.—Loftus Wood, of New York, N. Y.—*Improvement in Stove Thimbles or Deck Irons.*—Patent dated January 13, 1857.—The inner pipe A and outer cross pipe B are united on their lower ends, they being made of one piece of cast iron. This deck iron is inserted in the deck of the vessel and fastened to it by means of flange C, and the stove pipe passes through the inner pipe A; the space between the two pipes being filled with water, thus insulating the stove pipe.

The inventor says: I do not claim the mode or process of casting described, though I believe it to be, in some respects, new.

I *claim* the deck iron described, constructed substantially as set forth, irrespective of the mode or process of casting.

No. 18,434.—William T. Coggeshall, of Fall River, Mass.—*Improvement in Stove and Furnace Grates.*—Patent dated October 20, 1857.—This improvement is described by the engraving and claim.

Claim.—The inventor says: I lay no claim whatever to applying the grate to its drawer slide in such manner as to enable said grate to be either turned horizontally or tipped laterally, such not being my invention.

But I claim a new mode of combining the grate A with its drawer slide B, viz: by a supporting annulus C, separate from and arranged on the slide, and made to support the grate, substantially as explained; my invention affording a clear ash space under the grate, while it secures the advantage of allowing the grate to be either tipped laterally or to be turned or vibrated horizontally, as occasion may require.

No. 17,235.—Henry Seitz, of St. Mary's, Va.—*Improvement in Close or Open Stoves.*—Patent dated May 5, 1857.—The parts being in position as represented in full lines, this stove operates like an open grate stove, but when the plates O N Q R are moved in the position marked in dotted lines, and upon the apertures between the grate bars *a* being closed by bars *i*, the stove is transformed into a perfectly tight stove. The cold air from the room passes through openings *e* of the plates *b*, and thence through openings *p* into passages J, and in passing up said passages it becomes heated and escapes through openings *d* into the room. By opening the register K warm air will be admitted on the upper surface of the fire and all smoke will be consumed.

Claim.—The arrangement in a grate of the plates O N Q R, supplimentary grate bars *i*, dust flue S, air heating chambers X X I, and passages J J, when the whole are disposed as shown, for the purpose set forth.

No. 17,283.—Jno. C. Keller, of Philadelphia, Pa.—*Improvement in Coal Stoves.*—Patent dated May 12, 1857.—The air passing through the aperture D passes half around the cylinder P, through the chamber J, and entering groove L, the oxygen of the air is brought in contact with the carbonic acid of the fuel in the fire chamber A by the tubes K, upon which combustion takes place causing jets of flame to extend some six inches above the openings in the upper ends of tubes K.

The inventor says: Stoves provided with the hole D, chamber J, and perforations in the cylinder P some four inches below its top, are well known. I therefore do not claim the parts to which the letters D J and P refer.

But I *claim* the arrangement of the perforations D and O in the cylinders B and M situated opposite to each other, so that the current of air entering D shall be divided and heated by passing half around the cylinder M previous to entering the groove L through the perforation O, in the manner substantially as described.

No. 17,510.—John B. Kohler, of Philadelphia, Pennsylvania.—*Improvement in Coal Stoves.*—Patent dated June 9, 1857.—When the opening *m* is closed by lip *n* on the disk W, the products of combustion must pass through the openings m^1 m^2 into the chambers M^1 and

M^2; thence, through openings p^1 p^2, into the space between the casings B D, on one side of the partitions *q;* thence through the orifices *r*, returning through the space between the same casings, but on the opposite side of the partitions, to the chimney I. When the projection *n* is removed from the opening *m*, the products of combustion, instead of taking this circuitous route, will pass off direct to the chimney. The air to be heated passes through orifices *d* into the space between the casings C and D, thence through openings *t*, t^1, and t^2, into the chamber N, N^1,; and N^2 thence, through corresponding openings *u* and a grating V, to the room to be heated.

Claim.—The three cases B, C, D, the fire chambers M, M^1, and M^2, and their respective openings, the air chambers N, N^1, and N^2, with their openings, and the partitions *q* and q^1, when the whole is arranged and constructed substantially in the manner and for the purpose set forth.

No. 17,919.—J. A. Davis, of Syracuse, New York.—*Improvement in Coal Stoves.*—Patent dated August 4, 1857.—When the damper D is closed, the draught caused from the openings *v* descends downward through the fire which is on grate H, and, entering the bottom of the flues *e*, passes up through said flues, thence downward through flues M, and up through flues N and out at pipe B.

The inventor says: I do not wish to be understood as claiming the downward draft, as that is well known.

But I *claim* the combined arrangement of the shallow fire-box G, constructed as described, flues M M and N N, and dampers D and C, the whole constructed and operating as described.

No. 18,362.—William H. Stinson, of Baltimore, Maryland.—*Improvement in Coal Stoves.*—Patent dated October 6, 1857.—This invention consists in fitting within a common fireplace a suitably shaped head or cowl covering the throat of the chimney, the sides or jambs of the hearth peculiarly constructed, somewhat after the manner of the Franklin or Pennsylvania fire place; heating a current of air derived either from within or without the room in which the stove is placed, as the exigencies of the temperature may require; and by suitable devices dividing the current of air in such a manner that it shall necessarily pass over a great amount of heating surface, and the heating surface so arranged that it shall facilitate the passage of heated air into the room. The drawings and claim will give the reader an idea of this improvement.

The inventor says: I make no claim, broadly, to the heating of rooms by means of currents of air introduced from without, and circulating in chambers or passages around a stove situated within the fireplace.

Neither do I claim the introduction of cold air from without into a fire chamber, and thence into the room in a heated state, as these devices are well known in the Franklin stove and the stove of Feinour.

Neither do I claim the construction of a stove, with a vacant space around the stove, closed in front, except the space between the cylinder and sides, the heated air being forced out between the cylinder and sides, as in the stove of Latrobe; as these devices fail of effecting the purposes which are perfectly fulfilled by my invention, viz: the control of the source from whence the cold air is derived; the dividing and passing it over a great amount of heating surface; and, by the arrangement of the air passages, the aiding of its flow into the apartment in such volume and temperature as, while it is sufficient to warm the room, is not so heated as to vitiate its quality, while the radiated heat is thrown to the front of the stove, rendering it warm to the feet.

Neither do I claim, broadly, and as separate devices, the various parts, as described, and forming my stove, as these parts have been before and variously applied.

But I *claim* the arrangement of the air passage E, the division plate or partition H, and the inclined flue D, with its corresponding air passage F, made, combined, and operating substantially as described.

No. 18,469.—D. Christian Raub, of Davenport, Iowa.—*Improvement in Coal Stoves.*—Patent dated October 20, 1857.—This invention relates to a stove for burning coal or other material which packs down in the fire-box, and requires a regulated quantity of atmospheric air to promote proper combustion under all its conditions. This invention consists more especially in the means by which the draft is regulated, being intended to promote uniform combustion and an economical dissemination of heat.

The inventor says: I *claim* in combination with the fire-box D and its grates D^1, and perforated or slotted cone C, the slides F F^2 F^3 F^4 arranged and operating in connexion therewith substantially in the manner and for the purpose set forth.

No. 16,455.—John G. Treadwell, of Albany, N. Y.—*Improvement in Cooking Stoves.*—Patent dated January 20, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—In stoves with elevated ovens, having an escape flue below the elevated oven and none above it, the construction and arrangement of the damper *c d*, so that by turning it in one direction, it shall compel the flame and smoke to pass around the oven, and by turning it in another, may shut off the flame and smoke entirely from the oven, substantially as set forth and described.

No. 17,100.—Thomas King, of West Farms, N. Y.—*Improvement in Cooking Stoves.*—Patent dated April 21, 1857.—When the dampers T T^1 U are open, the products of combustion rise from the fire-pot A in the direction of the arrows, pass between the plates G N along the sides *e* of box G, under the edges of sides *e*, and up through box Q into the escape flue R. When the damper U is closed, the opening between the bottom of box Q and flue P is cut off; and the products of combustion, instead of passing under the edges of sides *e* of box Q, pass down into flue P, thence into flue K, where they spread and divide, rising through flues L into flue O, thence into box Q, and escaping through flue R. The dampers T serve to throw all the heat to one or the other side of the stove.

The inventor says: I do not claim broadly the surrounding of the oven in stoves with hot-air flues.

Nor do I claim the regulation of the draught of stoves by the admission of cold air into the escape flue, although I consider that my improvement is more perfect in these respects than other stoves.

I *claim* the arrangement and combination of the box Q, register or pot-hole S, and flues O P K and L L, all constructed and operating as set forth.

No. 17,371.—Joseph Hackett, of Louisville, Ky.—*Improvement in Cooking Stoves.*—Patent dated May 26, 1857.—By turning upwards knob *m* the bars *k* can be raised so as to pass out from between the lugs *n* and the dampers, $b\ b^1$ are raised and the openings $a\ a^1$ are closed.

The inventor says: I do not claim an oven with flues leading to flues in the door.

Neither do I claim operating the dampers by the opening and closing of the door.

But I *claim* the employment, in combination with the dampers of the oven and doors, of a rising and falling catch bar which has a turning knob, which is so arranged that in turning it shall rise over an inclined plane or stationary stop on the door, substantially as and for the purpose set forth.

No. 17,748.—William Reson, of Cincinnati, O.—*Improvement in Cooking Stoves.*—Patent dated July 7, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The described combination, with a customary reverting flue cooking stove, of the funnel shaped descending flues *d d*, enclosing a reverberatory chamber E communicating with the central or reverting flue *g*, on one side of a supplemental oven, and with the escape flue *h*, on the other side, substantially as described and for the purposes set forth.

No. 18,012.—Sidney Godley, of Lockport, N. Y.—*Improvement in Cooking Stoves.*—Patent dated August 18, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The arrangement of the stove A with the movable adjusting plate M, which is one of the entire sides of the stove, and detaching it for a cover to the baker B^1 when the same is used with stove A, the whole when arranged forming a complete cook and baker, as set forth.

Second. The adjustable extension chamber B to be attached to stove A, when it is desired to extend its cooking capacity, the stove A being a complete stove, with or without the attachment as set forth.

No. 18,586.—James R. Hyde, of Troy, N. Y.—*Improvement in Cooking Stoves.*—Patent dated November 10, 1857.—The engravings and claim explain the nature of this improvement.

Claim.—The inventor says: I wish it distinctly understood, that I do not broadly claim so constructing a stove that heated atmospheric air can be admitted at the same or at different times, into the fire-chamber, at different places above or beyond the fuel, from one or both of two separate air-heating chambers, by the use of the dampers by which the admission of cold air into such air-heating chambers is controlled, for the purpose of promoting the combustion in different parts of the fire chamber of the gases evolved by the burning fuel.

I *claim* the arrangement of the hot-air chambers A, B, and C, the chambers A and B being so constructed that the air can be admitted to or excluded from them, entirely independent of the chamber C, by means of the registers *c* and E, and being provided with apertures *a* and *b*, in the manner and for the purpose specified.

No. 18,737.—Rensselaer D. Granger, of Philadelphia, Pa.—*Improvement in Cooking Stoves.*—Patent dated December 1, 1857.—The claim and engravings explain the nature of this invention.

Claim —The inventor says: I do not desire to claim exclusively the dividing of the lower flue to the products of combustion.

But I *claim* as an improvement in the stove for which a patent was granted to me on the 1st of March, 1848, forming underneath the oven a chamber through which a current of cold air, entering at the rear of the stove, may pass into the space between the back of the fireplace and front of the oven, when the said chamber serves the purpose of dividing and dispersing the products of combustion as they pass through the lower flue to the chimney.

No. 18,859.—Samuel Pierce, of Troy, New York.—*Improvement in Cooking Stoves.*—Patent dated December 15, 1857.—The claim and engraving explain the nature of this invention.

Claim.—Equalizing the heat of an oven heated by a surrounding flue of hot air, by interposing between the fire chamber and that portion of the oven contiguous thereto an air chamber, or flue, *m w*, interior to the main flue *i*, between said main or exterior flue and the oven, so so as to shield that part of the oven from the intense heat of the exterior flue at that point, and thus equalize and diffuse the heat over the whole surface of the oven, as fully set forth.

No. 18,024.—P. P. Stewart, of Troy, New York.—*Improvement in Bakers for Cooking Stoves.*—Patent dated August 18, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The employment of the plate or pan *a*, with its legs *b*, to rest on a stove plate, its projecting wires *e* at the angles to guide the reflector F, and its aperture or slot *d* in the middle of the length, in combination with the tin reflector enclosing the whole and leaving a space all around, which, together with the slot in the middle of the plate or pan, will permit the heat radiated from the stove plate to be reflected on to the top of the articles to be baked or roasted; all substantially as specified.

No. 18,297.—Samuel Pierce, of Troy, N. Y.—*Improved apparatus for roasting on Cooking Stoves, Ranges, &c.*—Patent dated September 29, 1857.—The inventor, in describing his improvement, says: I form a bright tin kitchen somewhat in the shape of the ordinary article before in use, the difference being that I bring a curtain of tin in front at *a*, to the bottom, instead of leaving it open; at that point I insert a spit in the usual way at *b*, and under it is the usual dripping pan arrangement *d*, beyond which a space is left between said dripping pan and the front curtain *a*, as seen in the drawing. The roaster is furnished with handles and door for basting, as other articles of similar character.

Claim.—The inventor *claims* the construction and arrangement of the apparatus as specified, for the purpose of combining with a range or stove for the purpose of roasting, as set forth.

No. 16,349.—Daniel S. Beardsley, of New Haven, Conn., assignor to John D. Umberfield and Daniel S. Beardsley.—*Improvement in Ships' Cooking Stoves.*—Patent dated January 6, 1857.—The smoke and sparks from the fire chamber pass from the hollow pivots *a* into the flue *b*; upon these pivots the stove swings forward and back in the frame *c*. This frame is composed in part of the flue *b*, and swings laterally on the pivot *d* and the hollow pivot *e* resting in the chimney.

Claim.—Hanging a stove, to be used on ship-board, by means of the hollow pivots and flue, as described; so that the stove shall always maintain an upright position, and the draft not be interrupted.

No. 17,578.—John W. Lefferts, of Brooklyn, N. Y.—*Improvement in Foot Stove.*—Patent dated June 16, 1857.—The perforated plate *d* serves to distribute or spread the heat; and as the draught passes through the opening F, the top plate *h* will be evenly heated.

Claim.—The lamp D, fitted or placed within the cylindrical chamber C of the box B, the lamp being constructed in annular form, so as to have a passage *b* through its centre to feed the flame within, and the box B fitted within the case A, the box B being provided with the perforated or reticulated plate *d*, plate *e*, with passages *f*, and draught pipe *g*, the whole being arranged substantially as described for the purpose specified.

No. 18,580.—Samuel Fisher, of Canton, Mass.—*Improvement in Stoves for Burning Tan, Sawdust, &c.*—Patent dated November 10, 1857.—The claim and engravings show the nature of this invention.

Claim.—The inventor says: I do not claim combining with a fire pot or place an air flue or chamber for air to pass through and over the fuel, when the fire pot or chamber has a grate, and a current of air passing up through the grate and the fuel on the same; for in my stove there is no grate, and an upward current running through the entire mass of fuel would consume the fuel too fast, and render the stove liable to explode.

But I *claim* an improved stove of the kind and for the purpose as described or as constructed, not only with a fuel chamber without a grate or air passage or passages through its bottom, but with an air chamber arranged in front of the chamber of combustion, and made to communicate therewith and the external atmosphere and the side flues, whereby air can be supplied laterally to the chamber of combustion, and made to pass over the same and down into the flues, such air not only supporting slow downward combustion of the fuel, but serving to create draft down the flues, so as to carry off the smoke and combustible gases, and prevent explosion of the stove.

No. 16,939.—George W. Thompson, of Bordentown, N. J.—*Improvement in Stoves for Railway Cars.*—Patent dated March 31, 1857. When the car is in motion the air enters the stove through the hood J, and passing down through pipe I it opens the valve *v*, which depresses lever *h* and levers *j* and j^1, thereby bringing the valves *l* and l^1 in contact with the under side of cap B, and closing the perforations in the same, and the heated air is discharged into the car through the openings *b*. When the car stops, valve *v* is closed, and the cold air enters through the openings *b*, and the heated air escapes through the openings in cap B.

Claim.—The balanced valve *v*, as hinged to the interior of the pipe I, in combination with the lever *h*, levers *j* and j^1, their disk *l*, and the perforations in the cap B, the whole being arranged and constructed substantially in the manner and for the purpose set forth.

No. 17,608.—Patrick Mihan, of Boston, Mass., assignor to Himself and Robert B. Fitts, of the same place.—*Improvement in Gas Stoves.*—Patent dated June 16, 1857.—The gas enters the annular pipe G, and the atmospheric air enters through passages a^1, both are mixed and ignited at the outside of the wire gauze I; the flame passing up in the space F, and heating the air which is outside the stove and inside the radiator *c*, while the spent gases are discharged down the radiator K and pipe M.

The inventor says: I do not claim arranging a gas distributing tube and an air and gas mixer between two concentric surfaces provided with air inlets arranged so that air may pass with gas through the perforations of the mixer or cap only, as my arrangement involves something more than this.

Neither do I claim an annular gas burner arranged between two radiators, and having passages for air to pass between it and each radiator, and to the flame that may be generated above the exit holes of said burner, as I employ an air and gas burner, and not a mere gas burner.

Nor do I claim simply making the air and gas mixer or cap in a conical form; nor do I claim combining with a gas burner an ascending and descending flue, one being concentric with the other, and whether the descending flue is either within or without the other.

Nor do I claim the construction of gas stoves as described on pages 86 and 87 of Webster's Encyclopædia, my invention differing essentially therefrom.

I *claim* arranging an annular gas distributing tube G, a perforated or wire gauze mixer I, two radiators C and D, an air space within the radiator C, and air inlet spaces B E, the one leading air above, and the other below the surface of the mixer, substantially as described; this arrangement involving inclining the gas mixer I, and the radiator C, in opposite directions with respect to one another substantially as described.

I also claim the arrangement of the secondary radiator K, and its discharge tube M, with reference to the radiator C, the open air space within the latter and the chamber F, and the air and gas burning apparatus, disposed at the bottom of said chamber, as specified.

No. 17,771.—Thomas Watters, of Boston, Mass., assignor to Stephen Sherlock, of Eastport, Me.—*Improvement in Gas Stoves.*—Patent dated July 7, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The combination of the main chamber of combustion B, its air and gas burner or burners C, and the auxiliary chamber of combustion D, made to communicate (by one or more passages F) with the main chamber B, and having pipes E extending through the chamber B, and arranged so that air in passing through the said pipes may be heated by the heated products in the chamber B, as specified.

Also the air and gas burner G, and supply pipes H, in combination with the main and auxiliary chambers of combustion B and D, made to communicate with each other, as specified.

Also the combination of the reverberating bell or dome K, with its auxiliary chamber D, and the main chamber B when furnished with burners, and connected with one another and the external atmosphere, as specified.

No. 16,607.—Luther M. Parsons, of Wankan, Wis.—*Improvement in Ventilating Stoves.*—Patent dated February 10, 1857.—The fire is fed with the vitiated air from near the ceiling of the room by means of tubes H. Pure outside air is introduced into the stove by means of tube G, and when sufficiently warmed in its passage around the fire chamber A, it enters the room. At a certain temperature the expansion coil a^1 will operate lever K, closing pipe H, and opening pipe *d* to conduct off superfluous heat or vitiated air.

The inventor says: I do not claim separately the pipes H, bent pipe J, bar K, with its valves *e*, and expansion spiral rod a^1, for these separately, or in themselves considered, have been previously used.

But I *claim* the arrangement of the pipes H, bent pipe J, bar K, provided with valves *e*, and the expansion rod a^1, as shown and described, for the purpose specified.

No. 18,868.—H. G. Seekins, Sr., & H. G. Seekins, Jr., of Elyria, N. Y.—*Improvement in Feet Warmers.*—Patent dated December 15, 1857.—The nature of this invention consists in constructing a hydrocaloric foot stool, with separate compartments, one of which is filled with heated water and tightly corked, one of the others is designed for common atmospheric air, the other or outer compartment is filled with any non-conducting substance, the object of which is to prevent the absorption or escape of heat through the sides or bottom of the apparatus, and to retain the heat until it has passed through the top of the reservoir.

The inventors say: We do not claim the reservoir, the air chamber, or the non-conducting compartment.

But we *claim* the reservoir A, with a flange *e*, having perforations *c c*, which shall correspond with the perforations *f f*, in the flange F, in the manner and for the purpose set forth and described.

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JAMES B. STEEDMAN, PRINTER.
1858.

IN THE HOUSE OF REPRESENTATIVES,
April 28, 1858.

Resolved, That there be printed, for the use of the Members of the present House of Representatives, twenty thousand copies of the Mechanical portion of the Patent Office Report for the year 1857.

Attest:

J. C. ALLEN,
Clerk.

ERRATA IN CLASSIFIED LIST OF PATENTS FOR 1857.

On page 181, instead of 18326 read 18325.

On page 188, instead of 17355 read 17350.

On page 188, instead of 18140 read 18148.

On page 189, instead of 18109 read 18104.

On page 190, instead of 18525 read 18524.

On page 194, insert between 18598 and 17839 the following: 18604.—*Tree-protector*. P. C. Rowe.—November 10, 1857.

On page 194, instead of 17732 read 16732.

On page 195, instead of 16864 read 16868.

On page 198, instead of 17792 read 16792.

On page 199, instead of 18582 read 18542.

On page 216, instead of 18439 read 18430.

On page 226, instead of 17017 read 17016.

On page 226, instead of 18085 read 17085.

On page 231, insert between 17959 and 18352 the following: 16696.—*Dry Docks, floating, sectional.*—John Seely.—February 24, 1857.

On page 247, instead of 18926 read 18927.

On page 247, instead of 17555 read 17565.

On page 257, instead of 17139 read 17130.

On page 263, instead of 16566 read 16556.

On page 263, instead of 16559 read 16659.

On page 266, instead of 18526 read 18546.

On page 271, instead of 17738 read 16738.

On page 277, instead of 17101 read 17107.

On page 279, instead of 17553 read 17573.

On page 281, instead of 17147 read 17179.

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VI.—STEAM AND GAS ENGINES.

No. 17,636.—**William G. Pike** and **Isaac R. Scott**, of Waltham, Mass.—*Improvement in Safety Apparatus for Regulating Steam Boiler Furnaces.*—Patent dated June 23, 1857.—The steam is carried from boiler A, through pipe C, to the radiators which heat the building, and the safety valve *b* is set to blow off at a definite pressure; and when this valve is raised, the steam passes through pipe M and nozzle F into the fire-box, and dampens the fire. Should the valve *b* fail to operate, the pressure of the steam will blow the mercury which is in the top of pipe O out of said pipe into the jacket P, and the steam escapes, through pipes N and O and nozzle F, into the fire-box, and extinguishes the fire.

The inventors say: We do not claim regulating the intensity of furnace fires by closing the dampers in the draught and smoke pipes by means of a float within a water chamber.

But we do *claim* the described arrangement of the bent mercury tube O, with its float and the parts immediately connected therewith, and the steam pipe *f*, whereby the pressure within the boiler is indicated to the eye. The dampers are regulated to suit the pressure required, and when the pressure within the boiler becomes excessive, the fire is extinguished by the escaping steam, thereby forming a safety regulating apparatus not requiring the supervision of the attendant.

No. 17,436.—**James Edward McConnell**, of Wolverton, England.—*Improvement in Locomotive Boilers.*—Patent dated June 2, 1857; antedated December 2, 1856.—The object of having the fire-box A extending into the barrel B, is to diminish the length of the tubes C. As the locomotive is in motion, a current of air enters the funnel P, passing into chamber O in the smoke-box, and thence through pipe N into the fire chamber, whereby the products of combustion are consumed in a perfect manner. The vertical tubes E serve to connect the bottom and top of the extended portion of the fire-box, thereby increasing the heating surface and allowing a free circulation of water.

The inventor says: I do not confine or restrict myself to the precise details or arrangements which I have had occasion to describe or refer to, as many variations may be made therefrom without deviating from the principles or main features of my invention.

What I consider to be novel and original, and therefore *claim*, is the fire-box increased in size, so as to extend into the barrel of the boiler, and, in connexion therewith, the tubular stays conveying a supply of fresh air into the extension described, whereby the products of combustion are consumed in a more perfect manner, substantially as set forth.

I also claim the water tubes E, arranged in relation to the fire-box and the surrounding boiler in the manner and for the purpose specified.

No. 17,661.—Silvester Bennett, of New Orleans, La.—*Improved Machine for Riveting Boilers.*—Patent dated June 30, 1857.—The rivet being inserted in the holes made to receive it, and placed with its head upon the die *a*, and its point upwards, steam is admitted above the piston of the lower cylinder A, by which means the set F is forced downward upon the metal surrounding the rivet; and while the set remains upon the metal, steam is admitted above the piston of the upper cylinder A^1, which brings down the punch F^1 upon the point of the rivet, and at once completes the operation.

The inventor says: I do not claim, of itself, the employment of a set or tubular punch to close the metal around the rivet before the riveting operation, when such set is uncombined with the riveting punch or other devices, by which the upsetting or heading up of the rivet is effected, and has to be removed before the said punch or other device can be operated, as such sets are used in riveting by hand.

I *claim* the employment, in combination with a riveting punch or plunger, of a hollow set, fitted to slide upon the exterior of the same, and operated to close or set the metal around the rivet before the operation of the punch or plunger commences, and hold the same closed during such operation, substantially as described.

No. 16,693.—Jason J. Palmer, of Flushing, N. Y.—*Improvement in Steam Boilers.*—Patent dated February 24, 1857.

The inventor says: I am aware that the circulation of the water in steam boilers has been and is effected by the use and arrangement of heating flues; and therefore I do not claim generally producing such a circulation by the use of such flues.

I *claim* the particular arrangement of the flues B *b*, B *b*, substantially as described, close to the fire shell of the boiler, and admitting only a thin but continuous sheet of water between them and the fire shell; this thin sheet of water also connecting freely at top and bottom with the main body of water in the boiler, by which arrangement a more rapid and complete circulation is produced; this thin sheet of water being constantly forced towards and in contact with the sides and crown of the fire shell—*i. e.*, the hottest part of the boiler—and thus heated more rapidly and made to circulate the faster.

I also claim the arrangement of the perforated plate E, it being interposed between the furnace and low exit into the smoke box or stack.

No. 16,959.—Smith Baldwin, of St. Louis, Mo.—*Improvement in Steam Boilers.*—Patent dated April 7, 1857.—The fire on the grate B acts by radiation on a large portion of the exterior of the tubes *d d;* and the gaseous products of combustion circulate among and around the said tubes and around the interior of the cylinder *b*, which, with the exterior of the tubes, is all heating surface, and from thence escape

through the connexions *k* and flues *j j*, which are all heating surfaces, into the arched flue *m*, and from thence through the flue *n* to the chimney *q*.

Claim.—The arrangement of the cylinders *a b*, the water tubes *d d*, flues *j j*, *m* and *n*, in the manner substantially as described, to operate as set forth.

No. 17,042.—Nelson Johnson, of Jasper, N. Y.—*Improvement in Steam Boilers.*—Patent dated April 14, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—In combination with the employment of a direct internal flue B, and a direct passage F under the bottom of the boiler A, both leading from the fireplace C to the chimney E, the arrangement of the two dampers G and H, substantially as herein described, for the purpose of controlling the direction of the products of combustion, and using the boiler as a direct draught cylinder boiler or direct flue boiler.

No. 17,648.—Harry Whitaker, of Buffalo, N. Y.—*Improvement in Steam Boilers.*—Patent dated June 23, 1857.—The products of combustion pass upwards from the annular grate N to the top of the chamber P, and then descend the tubes F to the smoke-box Q, from whence they rise through the tubes H to the chimney.

The inventor says: I do not claim generally surrounding the fire by a water jacket. An example may be seen in E. Andrus's withdrawn application, May 27, 1850.

Nor do I claim annular fire chambers in boilers.

Nor do I claim, irrespective of the arrangement I have described, the employment of ascending and descending fire flues. Examples of such flues may be seen in the withdrawn applications of Thomas Greer, October, 1847, and Thomas E. Warren, July 19, 1852; but the arrangement of flues and parts therewith connected, in the above examples, is quite different from mine.

I *claim* the arrangement in an upright cylindrical boiler of an annular fire chamber P, a series of descending fire tubes F F, a smoke-box Q, and a series of ascending fire tubes H H, substantially as described, to convey the products of combustion from an external fire through the centre of the boiler.

No, 17,924.—Robert Ferguson, of New Orleans, La.—*Improvement in Steam Boilers.*—Patent dated August 4, 1857.—The construction of the flues P^1 and P^2 and the water-spaces A A^1 A^2 furnishes a large amount of heating surface, and the form of the water-spaces renders them capable of sustaining a very high degree of pressure without the use of stays.

Claim.—The eccentric arrangement of the water-spaces A A^1 A^2 connected with each other, and alternating with the flues of lune cross section, substantially as and for the purpose specified.

No. 18,276.—William M. Ellis and Jonas B. Ellis, of Washington, D. C.—*Improvement in Boilers.*—Patent dated September 29, 1857.—This invention consists in strengthening the body of the boiler at its junction with the water-legs in such a manner that the usual internal stays may be dispensed with, thus leaving more space for the tubes or flues, while, at the same time, the passages remain open, as before, for the circulation of the water through the legs and body of the boiler.

The accompanying drawings represent a portable steam boiler, embracing the improvement. The furnace is surrounded by the water-legs K, which, in this instance, rise perpendicularly to the boiler, so as to unite with it just above the low water line. The legs are connected with the cylindrical part of the body in the following manner: A strong stay plate N, of the same length as the shell of the boiler, is placed between the flanges of the water-legs and the shell of the boiler, and strongly riveted to both; holes are made through the stay-plate N to permit the water to circulate freely through the legs.

The inventors *claim* connecting the upper and lower parts of the shell of the body of the boiler by means of a strong perforated plate N, which performs the double office of staying the boiler and forming a passage for the circulation of the water and steam through the legs and body of the boiler.

No. 18,467.—WILLIAM GEORGE NORRIS, of Philadelphia, Pa.—*Improvement in Steam Boilers.*—Patent dated October 20, 1857.—In the engravings, F is the furnace, constructed in the usual way. A is the water-wall, connected on all sides with the water-space. B is the flue or perforations through which the heat passes from the fire-box. The chamber F^1 is formed between the tube-sheet of the boiler and the abovementioned perforated water-wall, and is for the purpose of effectually preventing the contact of the fuel with the tubes G, terminating at the tube-sheet C. G are the tubes of the boiler; D^1 the smoke chamber; the whole constructed in the ordinary manner.

The inventor says: I am aware that boilers have been constructed with a supplementary combustion chamber, forming part of the fire-box, having valves for the admission of the atmosphere, for the purpose of more effectually consuming the gases evolved from the combination of the furnace; but I disclaim any such arrangement; the chamber in my improvement, between the fire-box and tube-sheet, being *closed*, and for the express purpose of preventing any combustion from going on in actual contact with the tubes G of the boiler, and for the purpose of reverberating, and thereby equalizing, the heat before it reaches the tubes of the boiler.

I *claim* the combination with the ordinary steam boiler and fire-box of a close chamber, separated from the fire-box by a partition or perforated water-wall, constructed and operating as and for the purposes set forth.

No. 18,822.—DAVID MATTHEW, of Philadelphia, Pa.—*Improvement in Steam Boilers.*—Patent dated December 8, 1857.—In this invention a boiler A^2 is constructed of the usual form of shell, and furnace B^2, with combustion chamber C, running through the whole length of waist, having a flue-tube sheet, so as to have the flue tubes running

diagonally from the bottom to top, as shown in engravings. D thus forming, by means of tubes *a*, upper and lower chambers for gases, while the water has a regular ascending current or circulation, the fire and gases are drawn with great rapidity, by the exhaust steam and draught pipe, into the smoke-box, through, amongst the flue tubes in its passage from the furnace to the smoke-box. The draught or current is made to be equally divided the whole length of the tubes and combustion chamber by the draught-sheets *e f*, in its passage to the smoke-box and draught-pipe or sectional chimney in the smoke-box.

Claim.—The arrangement of the draught-plates *e* and *f* in relation to the inclined tubes or flues D, as and for the purposes set forth.

No. 18,875.—F. R. WALKER, of Tulley, Mo.—*Improvement in Steam Boilers.*—Patent dated December 15, 1857.—A is an upper water chamber. B is a lower water chamber. These two chambers are connected together and a communication formed between them by the flues C. These flues are made in the ordinary manner, and are fastened into the flue sheets D and E; one of these flue sheets forms the bottom of the upper water chamber, and the other forms the top of the lower water chamber. F F are partitions through the flues for the purpose of turning the fire in proper directions, to produce an equal and perfect circulation of heat among the flues.

Claim.—The arrangement of the vertical deflecting plates F, in relation to the water tubes C, the water spaces B and A, and the furnace and up-take, as set forth.

No. 18,897.—BENJAMIN L. GRIFFITH, of Hazleton, Pa.—*Arrangement of Air Tubes in Fire-Boxes of Steam Boilers.*—Patent dated December 22, 1857.—This invention consists in an improved method of admitting atmospheric air into the gas or combustion chamber of steam boilers. This is done by means of air tubes B, as shown in the engravings. These tubes are placed within the water table, and are closed at the inner or lower ends, but are open at the outer or upper ends, where the size of the opening is regulated as required by sliding dampers or other proper means. These tubes communicate with the interior of the fire-box by means of small hollow stay bolts, by which they are held in position. The atmospheric air is thus distributed or mixed with the gases through numerous small jets.

Claim.—The placing of air tubes within the water tables or series of water tubes, as described.

No. 17,288.—SYLVANUS V. LOWE, of Reading, Pa.—*Improved Machine for Boring Flue Sheets of Steam Boilers.*—Patent dated May 12, 1857.—The square part of mandrel A is applied to any ordinary drill stock, and the point of mandrel A is screwed into the centre mark, where a hole is desired to be cut into the boiler. By turning hand wheel B the operator causes cutter head C and the cutters D, on said cutter head, to cut a concentric circle through the object to be bored, leaving the centre of the hole solid.

Claim.—The attachment and use of mandrel A, when constructed, arranged, and adapted to this purpose only, and made to operate in a manner as substantially described and set forth.

No. 16,664.—William Webster, of Morrisania, N. Y.—*Improvement in Damper Regulators for Steam Boilers.*—Patent dated February 17, 1857.—N is a pipe communicating with the boiler. The steam, acting through said pipe upon diaphragm A, operates the weighted lever F by means of standard D. The lever operates the damper in the chimney.

The inventor says: I disclaim the use of any cylindrical casing for the enclosing of the piston, and also the piston, as described in the specification and represented by the drawing of Wm. T. Gale, patented July 1, 1856.

But I *claim* the arrangement of the several parts, as described, and for the purpose set forth.

No. 17,533.—Patrick White, of Brooklyn, New York.—*Improvement in Damper Regulators for Steam Boilers.*—Patent dated June 9, 1857.—The use of this machine is to open and shut the damper in the flue or draught chimneys by the pressure of steam in the flexible pipe C, to which the steam pipe K is secured; said pressure can be regulated by means of weighted lever F acting upon the plate E and clamps D, which hold the flexible pipe C between them.

Claim.—Securing the ends of the flexible tube by the clamps D D and metallic plugs K M, substantially as described.

No. 16,662.—Andrew J. Vandegrift, of Delaware, Ohio.—*Improvement in Feed-Water Apparatus to Steam Boilers.*—Patent dated February 17, 1857.—When valve I is opened by eccentric J and lever S, and the heated water, by its own specific gravity, descends through pipe K into exchange chamber B when it is filled, and valves I and G close simultaneously, and valve L is opened by eccentric M and lever V, and the steam ascends through pipe N into the exchange chamber, and equalizes the pressure on both sides of valve O; when valve O is opened by eccentric P and lever U, and the water descends through pipe Q to the bottom of boiler C, the steam ascending through pipe N takes the place of the water in exchange chamber B, and valves O and L close simultaneously. Valves I and G operate alternately with O and L; and the exchange of steam for water continues until the water in boiler C rises to the mouth of pipe N, which extends down to high water mark; when the exchange ceases, and chamber B remains full of water, until the quantity of water in the boiler is diminished, and the surplus water passing through heater A passes off through waste-pipe R.

The inventor says: I am aware that the heater, the exchange chamber, and three valves and three pipes, have been used for like purposes; these I do not claim.

But I *claim* the fourth valve G and the escape pipe H, in combination with the above described devices, or their equivalents, combined, arranged, and operated for the purpose and in the manner set forth, or in any other substantially the same.

No. 16,604.—Mighill Nutting, of Portland, Maine.—*Improvement in Gauges and Water Regulators for Steam Boilers.*—Patent dated February 10, 1857.

The inventor says: I do not confine myself to the use of water as the fluid to fill the expanding chamber, as alcohol, air, or other fluids may be used for this purpose.

I *claim* the arrangement of the expanding chamber B in relation to the opening for steam in the heating apartment A, so that the steam from the boiler, when it is admitted to this apartment, is suddenly brought into contact with the surface of the lower part of the chamber within the apartment, and remains in contact with the same until the water in the boiler rises to the top of the opening which admitted the steam, when the contact of the steam with the chamber is suddenly cut off, as described.

No. 17,046.—Robert McCafferty, of Lancaster, Pennsylvania.—*Improvement to Prevent Incrustations in Steam Boilers.*—Patent dated April 14, 1857.—Gum caoutchouc is put into a steam boiler in the proportion of half a pound to a one hundred horse power boiler, so that the water may be tinged light brown. Said gum will prevent or remove incrustation of the boiler.

Claim.—The application and use of gum caoutchouc to prevent and remove the incrustations in steam boilers and steam generators, in the mode and quantities described.

No. 16,596.—Lucius J. Knowles, of Warren, Massachusetts.—*Improvement in Safety-Indicators for Steam Boilers.*—Patent dated February 10, 1857.—By connecting pipe I with the feed pipe B, instead of with the boiler, it receives cool water from the pipe, instead of hot water from the boiler; the same tending to cause the expansion apparatus to operate to better advantage than it would were the hot boiler water to flow into it.

The inventor says: I do not claim arranging and connecting a tubular or elongated vessel C with a steam boiler, substantially as described, in combination with so supporting the said vessel C at one end or part of it, and applying to it a lever or other proper means, that it may expand and contract and operate said lever or means, essentially in manner and for the purpose specified.

I *claim* connecting the pipe I with the boiler by means of the feed pipe B, the same being productive of an advantage, as stated.

No. 17,472.—Datus E. Rugg, of New York, N. Y., assignor to Dexter N. Force and Datus E. Rugg, aforesaid.—*Improvement in Water Gauges for Steam Boilers.*—Patent dated June 2, 1857.—The glass tube *g*, which surrounds the pipe *b*, is filled with water; when the water in the boiler *a* descends below the level of the tube *g*, the water in said tube is heated to a boiling heat, and can, by its ebullition, serve to indicate the water level in boiler *a*.

The inventor says: I do not claim a metallic pipe connecting with the steam and water spaces of the boiler in itself. Neither do I claim a transparent water gauge in itself.

But I *claim* the combination of the metallic pipe, connected to the steam and water-spaces, with the surrounding transparent tube or cylinder to indicate, by the ebullition of the fluid in said cylinder, the water level of the boiler, substantially as and for the purposes specified.

No. 18,420.—Edward Whiteley, of Boston, Massachusetts.—*Improvement in Water Gauges for Steam Boilers.*—Patent dated October 13, 1857.—By this improvement the frequent breaking of the glass tube used in water gauges, caused by the unequal expansion of the tube and the metal, is remedied by placing a packing of India rubber, or other elastic substance, around the tube, where it is confined in the sockets C.

The inner end of each socket is formed with a screw *c*, on which screws the nut or cap E. Embracing the tube D, where it enters the sockets at each end, is a tube of India rubber, or other suitable elastic substance *f*, which forms a packing between the tube and the socket. One or more elastic washers *g* and a metal washer *i* are placed between the cap E, and the end of the socket and the cap is screwed down, as shown in the drawings, when the washers expand by the pressure of the cap, and firmly embrace the elastic tube *f*. This secures the tube D, allows a slight motion longitudinally to compensate for unequal expansion, thereby preventing the breakage of the glass tube.

The inventor says: I *claim* the arrangement of the elastic tube or packing around the glass tube, and the elastic disks or washers around the first, in the manner and for the purpose substantially as set forth.

I also claim the within described method of constructing and attaching the cage or guard which surrounds and protects the tube D.

No. 18,425.—F. B. Fournier and David Hinman, of Berea, Ohio, assignors to Themselves and J. Munroe, of the same place.—*Improvement in Water Indicators for Steam Boilers.*—Patent dated October 13, 1857.—In this improvement, in case of high water, the float A will rise to A^1, which raises the arm N^2 and rod N, so that the valve is opened or raised from L^1 to L, which allows the steam to pass through the pipe to the whistle, and thereby indicate too much water.

In case of low water, the float drops to A^2, the lever B then acts on the end of the rod N, and raises the valve in the manner as in high water, which gives a warning signal of low water.

The inventors say: We claim the rod N and arms N^1 and N^2, in combination with the pipe J and valve L, when the same is arranged in relation to and operated by the lever B, so as to signal high or low water by the whistle K, substantially as set forth.

No. 18,861.—Thomas Prosser, of New York, N. Y.—*Improvement in Surface Condensers.*—Patent dated December 15, 1857.—The claim and engravings explain the nature of this invention.

Claim.—The application of condensers, consisting of two hollow slabs, connected together by concentric tubes, and communicating with each other by means of the annular spaces formed by them, when, and at the same time, such condensers are combined with and placed in cisterns, so as to form one complete condensing apparatus, and operated in the manner and for the purposes set forth and described.

No. 18,532.—Henry W. Bill, of Cuyahoga Falls, Ohio.—*Arrangement of Feed-Water Pipe in the Bed of a Steam Engine.*—Patent dated November 3, 1857.—The engraving and claim explain the nature of this invention.

The inventor says: I am aware that steam and water passages have been made through the frame and bed of a steam engine; this I do not claim.

But I *claim* making the bed of a steam engine hollow, and so as to form a steam chamber, and arranging the feed water pipes in or through said chamber, so that the exhaust steam in the chamber shall heat the feed water in the pipes, as set forth.

No. 18,933.—Gambrill Sprenkel and Thomas W. Basford, of Harrisonburg, Va.—*Arrangement of Oscillating Engine and Pumps.*—Patent dated December 22, 1857.—The nature of this invention consists in locating the pump in the side of the main cylinder, so that it forms a portion of the same casting; the plunger of the same being attached to an extension of the crank pin, and the water being received and discharged through openings in the sides of a single trunnion. This invention also consists in the peculiar arrangement, whereby the trunnion receives and discharges the steam, allowing it to flow from the boiler through the trunnion to one end of the cylinder, while it escapes through the same trunnion from the other end, thus leaving the other trunnion at liberty to be used for the induction and eduction of water for the pump.

The inventors say; We *claim* the arrangement of the pump, in such relation to the main cylinder and crank of an engine, that its pistons and valves shall be operated simultaneously with the piston and valves of the cylinder, and by the same means that actuates them.

Second. The peculiar arrangement consisting of boxes, with inlet and outlet passages C^5 C^6, hollow trunnion with two chambers d d^1, formed by diagonal partition *e*, and with two sets of ports c^1 c^2 c^3 c^4, substantially as and for the purposes set forth.

No. 17,213.—Horace Gray, of Boston, Mass.—*Improvement in Locomotive Engines.*—Patent dated May 5, 1857.—The object of this invention is to increase the grate and fire surface to any extent necessary to an economical application of fuel, and to generate the steam of a quantity and tension desired by the extent of the grate and fire surface, with a moderate fire, instead of by a small extent of grate and fire surface, and great intensity of fire.

Claim.—Constructing locomotive steam engines with two or more boilers, or with one boiler having two or more separate fire-boxes or furnaces connected, and operating on the principle and for the purpose substantially as specified.

No. 18,255.—D. C. Turner, of Aztalan, Wis.—*Improvement in Rotary Steam Engines.*—Patent dated September 22, 1857.—A principal feature in this invention is the floating abutment, which, although answering all the requirements of a fixed one, will adjust itself to the changes caused by the wearing of the fans or other parts.

In this improvement the steam commences to operate on each piston just as it comes to the position shown in fig. 2—*i. e.*, as soon as it passes the valve K; until the piston reaches this position, the valve has been closed for a time by the projecting part *f* of the passage F, or by the piston itself. The piston continues to be acted upon by the pressure of steam until it arrives nearly at the eduction pipe L, by which time the projection *f* behind it will have arrived in contact with the valve and closed it, thus cutting off the supply of steam. The piston is returned to its recess in passing over the face of the piece H.

The inventor says: I do not claim making the engine with two sets of pistons working in separate steam channels.

But I *claim* the valve K, in its recessed seat, and the protuberant rim *f f*, as arranged with the steam channels, floating abutments, and hinged pistons, as fully specified.

No. 18,063.—GERARD SICKLES, of Brooklyn, N. Y.—*Improvement in the Packing of Rotary Steam Engines.*—Patent dated August 25, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The application of loose metal rings *g g*, in the manner substantially as described, to pack the revolving heads which carry the pistons to the stationary head of the cylinders of rotary engines and pumps.

No. 16,940.—SYLVANUS JAMES WETHRELL and EUSTIS P. MORGAN, of Biddeford, Me.—*Improvement in Shaping Engines.*—Patent dated March 31, 1857.—When the cutting tool *o* is in operation on a piece of work fixed on the mandrel P, the feed may be effected either by the operation of the double pawl *u*, or by the workman applying his hand to the hand-wheel *p*. When a piece of work placed on the platform B is to be planed, the pin *k* is inserted through the two gears *g* and *h*, which causes the feed of the tool over such work to take place either by the operation of the double pawl *u* or by moving the hand-wheel *p*.

The inventors say: We do not claim, for the purpose of feeding the main carriage along on its ways, a long revolving male screw, turned by a pawl and toothed wheel movement, (arranged at one end of the machine,) and made to revolve in a female screw fixed and made stationary on the main carriage.

Nor do we claim, for the purpose of turning the revolving mandrel, a rotary splined shaft, and an endless worm or screw made to work in a worm gear fixed on the mandrel—all the same making parts of the well known Whitworth's patent universal shaping machine.

But we *claim* to make the screw S a stationary male screw, and the female screw *c* (attached to the carriage D, and made to work on the screw S) a rotary screw, and to combine with them and the gear *g*, (by which and the gear X the shaft T is rotated) the gears Y and *h*, (the latter being made to rotate on the shaft *i*, and to be fixed to the former, as occasion may require, by a pin K, or its equivalent,) a rocker arm *r*, and double pawl *u*, (or mechanical equivalents therefor,) applied to the shaft *i*, and operated essentially as described; the whole being to enable a workman to control the operations of the machine as stated, without being obliged to go to the end of the frame, or leave his work in order to adjust or change the feed motion of the cutting tool, whether it be planing either plane or cylindrical work.

No. 16,781.—JOHN F. ALLEN, of New York, N. Y.—*Improvement in Cut-Offs of Steam Engines.*—Patent dated March 10, 1857.—This arrangement serves to cut off the steam instantaneously without any previous unnecessary contraction of the opening of the port, at any point between the commencement of the stroke and the half stroke of the piston.

The inventor says: I *claim*, first, the arrangement of the sliding cut-off valves A A^1, to work on a separate seat arranged inside of the seat of the main valve, and having a precisely similar arrangement of ports to the seat of the main slide valve, substantially as described.

Second. Though I do not claim the closing of the cut-off valves by steam pressure, I claim the foot pieces $k\ k^1$, and levers $l\ l^1$, attached to opposite ends of the main slide valve, and operating in connexion with pistons E E^1 that are attached to the cut-off valves, and working in cylinders connected with the main steam passages, and with spring catches $j\ j^1$, that retain the said pistons and adjustable sliding pieces $n\ n^1$, or their equivalents, substantially in the manner specified.

No. 18,919.—LEWIS MARTIN, of New York, N. Y.—*Improvement in Feed-Water Attachments for Steam Engines.*—Patent dated December 22, 1857.—The object of this invention is to force feed water, oil, spent steam, or other fluid into the boiler or steam chest F, against the pressure of the steam, by means of a cylinder or cylinders D, arranged so that they are free to oscillate in an annular rim of a disk or wheel A, which is enclosed in a tight chamber C, and revolves through an auxiliary feed channel; said cylinders having each a plunger *d*, which is connected to a fixed point *e*, and coincident with the centre of the wheel A, so that each plunger is successively drawn inward and made to leave an open chamber in the outer extremity of the corresponding cylinder during the half of each revolution that it is presented to the feed channel, and is forced outward and made to discharge the contents against the full pressure of the boiler during the other half of the revolution.

Claim.—The within described arrangement of the oscillating cylinders D, and plungers *d*, within a wheel A, whereby the plungers, when moving outward, are subjected to the full boiler pressure in every direction, or held in perfect equilibrium, in the manner above described and for the purpose set forth.

No. 18,997.—H. N. THROOP, of Pultneyville, N. Y.—*Improvement in Governor for Steam Engines.*—Patent dated December 29, 1857.—This invention consists of a wheel with a series of connected segments D, so applied as to be capable of moving from and towards its centre, or to form an expanding and contracting rim, and combined with a spring K, or springs acting in opposition to the centrifugal force generated in said segments or expanding rim by the revolution of the wheel, so that the segment or rim will have a tendency to move from or towards the axis, as the velocity of the wheel increases or diminishes with the increasing or diminishing velocity of the motor, and thus will act upon the regulator to diminish or increase the supply of steam.

Claim.—The combination A, or their equivalents, the expanding segments and links forming the expanding rim, and the springs, to operate as described.

No. 17,200.—George W. Cotton, of St. Louis, Mo.—*Improvement in Metal-Packed Pistons for Steam Engines.*—Patent dated May 5, 1857.—The thrust on this packing can be tightened in a true or radial direction by the introduction of a wedge behind any one or more of the sliding inner steps or blocks *a*.

Claim.—The arrangement for operation together on a single ring packing of the wedge *b*, with its sliding block M and radial stretchers *r*, spiral springs *n o* and inner sliding steps or blocks *x*, substantially as shown and described.

Further, forming the joint or break of the single ring packing with overlapping tongues *g* K and wedges *l*, of less depth than the packing, and fitting loosely between the bevelled ends of the packing and the tongues *g* K at the top and bottom on opposite edges of the packing ring, as set forth.

No. 18,136.—George H. Corliss, of Providence, R. I.—*Improvement in Metallic Packing for Pistons of Steam Engines.*—Patent dated September 8, 1857.—The cylindrical springs D exert a perfectly uniform outward pressure on all parts of the packing A of the piston.

The inventor says: I am aware that springs of circular form have been employed to force out the packing rings; but such springs have in their normal condition been either straight or nearly so, and their elasticity produces merely a tendency to straighten themselves, and acts with greater force at two opposite points than at any other points of the packing ring, and these springs cannot be considered as elastic in the direction of their circumference. To the invention of such springs, however, I lay no claim.

Nor do I claim the employment of air vessels placed within the piston, in order to assist the packing thereof, as in R. A. Stratton's device, rejected in 1851.

But I *claim* the arrangement within a piston of the cylindrical springs D, in the manner and for the purposes substantially as described.

No. 18,235.—Patrick Clark, of Rahway, N. J.—*Improvement in Metallic Packing Rings for Steam Engines.*—Patent dated September 22, 1857.—To make these rings, there is first prepared sheet metal in long strips of the requisite width, and sufficiently thin to be readily bent into the desired circle, or folded up, as shown in the drawing, by the fingers of the operator.

No. 36 "roll brass," of that kind denominated by the trade "low brass"—*i. e.* about 85 per cent. copper and 15 per cent. zinc—answers very well. Other alloys capable of being rolled to the requisite thinness may be used, and even pure copper or tin may answer under certain circumstances. These strips are tinned on both sides by drawing them through a belt of melted tin, which serves the important purpose of making the layers adhere to each other when the ring is in use, and thereby preventing the thin layers of metal from dragging out when worn through in any part by friction.

In the drawings, D is the rod; A A the packing ring; B B a little hemp or cotton wick above and below the ring, to prevent the India rubber from touching the rod; and C C the India rubber which serves to fill the balance of the stuffing box and compress the ring to the rod.

The inventor says: I *claim* constructing packing rings of a number or series of layers or lamina of sheet metal in the manner described, for the purpose of securing that flexibility necessary to enable me to bend around a rod a metallic ring having a sufficient quantity of material in it to insure the requisite durability.

No. 17,903.—John Wallace, of Pittsburg, Pa.—*Improvement in Oscillating Steam Engines.*—Patent dated July 28, 1857.—The stationary side pipes E are kept in steam-tight contact with the oscillating steam ports *g* by the application of elastic wedges A, which, at the expansion of the metal, can yield sufficiently to prevent a too great degree of friction between the working parts.

The inventor says: I wish it to be distinctly understood that I disclaim all such means that have been used before for adjusting and keeping up the "side pipe" against the seat surfaces on the cylinder, such as set screws, gib, and key, or any other devices which allow no yield to the side pipe.

But I *claim* the use of the elastic wedges A A, in contradistinction to the abovementioned unyielding devices, and as an improvement thereon, when constructed and arranged and operating on the side pipes substantially as described, and for the purpose set forth.

No. 17,422.—Patrick Clark, of Rahway, N. J.—*Improvement in Packing Pistons and Stuffing Boxes of Steam Engines.*—Patent dated June 2, 1857.—The nature of this invention consists in surrounding the rod A to be packed with several thicknesses of metal foil D in such a maner that the whole mass comes under the pressure of the surrounding hemp C, and constitutes a plastic mass of metal capable of being continually compressed to the rod A until it is all worn out.

Claim.—The foil or plastic sheet metal packing, as set forth.

No. 17,788.—George W. Hoagland, of Port Jervis, N. Y.—*Improvement in setting out the Packing of Pistons for Steam Engines.*—Patent dated July 14, 1857.—By screwing down the cone *c*, the arms B are expanded, and the packing A of the piston is set out.

Claim.—The setting out the packing by means of a tapering mandrel C placed in the centre of the piston rod, constructed and arranged substantially as described.

No. 16,613.—John B. Root, of Buffalo, N. Y.—*Improvement in Rotary Steam Engines.*—Patent dated February 10, 1857.—The general features of this improvement will be understood from the claims and engravings.

Claim.—First, the central hub A, when used as a support for friction rollers, in the manner and for the purpose set forth.

Second. The arrangement of friction rollers within the piston H upon the central hub A, substantially in the manner described.

Third. The piston H, when used and acting upon friction rollers, substantially in the manner described.

Fourth. The combination of the sliding-frame J, the self-adjustable boxes *i i*, the driving ring K, and the wedge L, for the purpose of regulating the bearing of the friction rollers upon the piston H and central hub A, substantially as set forth.

No. 18,989.—John B. Root, of Youngstown, N. Y.—*Improvement in Rotary Steam Engines.*—Patent dated December 29, 1857.—The steam is admitted into the valve chamber *c*, through the steam-pipe S, and, when the valve V is opened, passes from the pipe into the cylinder through the port *p*, and presses upon the piston P, forcing it around in the direction of the arrows until it passes the opening *b* under the abutment, and from there exhausts through the opening *b* into the abutment chamber D, and from thence passes off through the exhaust pipe E. While the piston is passing the abutment, there is no force exerted, which makes a dead point; this is overcome by the balance wheel B, which carries the piston past the port *p*, when it receives the pressure of the steam again, as before, and the motion of the engine is continued

Claim.—The arrangement of means for operating the oscillating abutment and the valve, as set forth.

No. 17,271.—C. B. Gallagher, of Allegheny City, Pa.—*Improvement in Semi-Rotative Steam Engines.*—Patent dated May 12, 1857.—A reciprocating rotary motion is imparted to piston J and sleeve I by the steam entering through ports R and escaping through chamber Q. This motion of sleeve I is converted into a continuous rotary motion by the arrangement of the wheels F and F^1, disks L, pawls M, and wheels G. Wheel F is keyed on to shaft E, while wheel F^1 runs loose on the same, the disks L being keyed on to sleeve I.

Claim.—The arrangement of means set forth for producing continuous rotary motion from the semi-rotative piston of the engine.

No. 16,779.—John T. Ackley, of Philadelphia, Pa.—*Improvement in Stop-Motions for Steam Engines.*—Patent dated March 10, 1857.—In case of an accident to the machinery, it is probable that the piston will ascend or descend beyond its usual originally regulated limits, and then the lug *b*, attached to the cross-head D, will strike either the upper or lower nut *e* or e^1. Should e^1 be struck, the fork *i* becomes the fulcrum of lever H, (see fig. 4;) should the lug strike nut *e*, the fork *h* becomes the fulcrum, (see fig. 3.) In both instances the projection *m* on lever L will be released, and spring M will be free to act on the lever L, so as to raise the rod N.

Claim.—The rod G, with its nuts *e* and e^1, in combination with the spring lever H, having two fulcrums *h* and *i*, and the spring catch lever L, the said rod G being operated, in case of accident, by the cross-head of the steam engine or other convenient working part of the same, and the said catch lever L being connected to the eccentric rod or to a stop valve in the steam pipe, and the whole being arranged and constructed substantially in the manner and for the purpose set forth.

No. 17,879.—Frederic W. Howe, of Newark, N. J.—*Improvement in Governor for Engines, &c.*—Patent dated July 28, 1857.—When the speed of the engine is too great, the balls U will be thrown outward; this will gradually compress the spiral spring c^1, and by degrees increase the friction of the cone B with the conical cavity of the column; and as the cone B is feathered and turns with shaft F, the increasing friction will retard the motion of shaft F, starting the hub S by the differential wheels I, which, by the cogged sector S^1, moves the sliding rack M, lifting weight P, which operates the valve to admit less steam.

The inventor says: I am aware that the arrangement of wheels described has been employed to regulate the admission of steam to an engine or water to a wheel, for the purpose of regulating the velocity by the motion of the intermediate wheel, induced by the difference between the motion of the motor and that of the governor.

And I am also aware that the centrifugal force of the pendulum ball of a governor has been employed to make friction to retard the motion of the governor, and the differential motion to regulate the supply of steam or water.

I am also aware that it has been proposed to regulate the supply of steam to steam engines by an arrangement which enables the fly ball governor, by an intermediate mechanism, to increase or decrease the throw of the eccentric which operates the valves; the governor slide being connected with a friction brake, so as to increase or decrease the friction thereof, to make it greater or less than another friction, thus determining the throw of the eccentric by the relations of the two frictions determined by the position of the fly balls as they are elevated or depressed by the velocity of the engine; but it will be seen that the arrangement and combination of these are materially different from what I have described as constituting my invention. I do not, however, wish to be understood as making claim broadly to the modes of operation above pointed out.

But I claim the arrangement of the vertical shaft receiving motion from the motor by the differential motion, substantially as described, to regulate the supply of steam to an engine or water to a wheel; the said shaft having arms, to which are suspended the arms of the fly balls, provided with cam-like projections, in combination with the sliding cap on the shaft, the friction cone feathered to the shaft, and fitted to a conical cavity of the column or standard, and the spring interposed between the friction cone and the cup, substantially as and for the purpose specified.

No. 17,817.—A. F. Ward, of Louisville, Ky.—*Improvement in Governors of Steam Engines, &c.*—Patent dated July 14, 1857.—When this governor has been adjusted to run the engine at a given speed, the clutch p will continue to rotate clear of the pins $n\ o$, so long as the variation of the speed is only very slight, and the regulation of the engine will be effected by the action of the balls C, without varying the length of connexion. If, however, the speed increases considerably, the balls will fall far enough to carry down the clutch p, till the pin O strikes it and carries rod f in the opposite direction to the governor, causing the screw f^1 to work in the screw socket h, and to force said socket downward, thus elongating the connexion with the valve, until the engine receives steam enough to bring it up to the desired velocity.

Claim.—The arrangement of the friction socket D, the female-screw socket H with its arms $q\ q^1$ and the clutch t on the governor rod f, the whole combining to operate as described, so that the female-screw socket h may be prevented from turning till the full supply of steam is given, or till the steam is cut off entirely, and afterwards be caused to turn with the governor rods.

No. 17,623.—Francis Gustine, of Medford, Mass.—*Improvement in Vane Governor for Steam Engines, &c.*—Patent dated June 23, 1857.—As the speed of the engine increases, the bars C with the vanes E are revolved rapidly, and the resistance of the atmosphere against said vanes causes them to be thrown back, as represented in figure 2, turning the arms D and raising the toes e, which lift the sleeve F; by the vertical motion of this sleeve, the closing of the steam valve is regulated.

Claim.—The disks or vanes E, operating directly upon the valve rod toes, as described, whereby the valve is actuated by the varying deflections of the vanes, as set forth.

No. 18,563.—Charles Whittier, of Roxbury, Mass.—*Improvement in Vane Governor for Steam Engines, &c.*—Patent dated November 3, 1857.—The claim and engravings show the nature of this invention.

Claim.—Suspending the fans or vanes D on the crank (or its equivalent) attached to the spindle of the regulator valve, whereby the resistance of the atmosphere causes them to operate the valve in the manner as set forth.

No. 17,560.—Joseph L. Eastman, of Boston, Mass.—*Improvement in Steam Pressure Gauges.*—Patent dated June 16, 1857.—The pressure of steam acting upon the sheet of India rubber I causes it to bulge and bear upon disk M, which, being connected with bent lever O, recedes a short distance, its motion being checked by the spring R at the same time. Rack V operates pinion W, and turns the index X.

The inventor says: I do not claim the elastic diaphragm, nor the disk bearing thereon, nor the multiplying lever bearing upon the disk, nor the compensating spring acting upon the lever, nor the mechanism which actuates the index.

But I *claim* the arrangement of diaphragm I, disk M bearing against the diaphragm, multiplying lever C, compensating spring R, and index, substantially as set forth.

No. 17,988.—D. G. Wells, of New York, N. Y.—*Improvement in Steam Gauges.*—Patent dated August 11, 1857.—The pressure to be measured is applied within the flattened elastic tube A, which is folded so as to present a series of layers of tubes, each layer operating against the succeeding layer in such a manner that the closed end of the tube will have a motion proportionate to the number of layers used. The motion thus attained is transmitted through toothed sector F, and a pinion shaft to an index which moves over a dial.

Claim.—The use of a flattened tube when constructed and arranged in layers, substantially as described and for the purposes set forth.

No. 16,428.—E. G. Allen, assignor to Henry O. Allen, of Boston, Mass.—*Improvement in Steam Pressure Gauges.*—Patent dated January 20, 1857.—The steam is admitted to the interior of the India rubber capsule C by means of cock G, and entering the capsule exerts its pressure on all parts thereof; but as the capsule C is confined laterally by spiral spring D, it can only be extended in an upward direction, in which direction the spring D yields. This movement operates rack g, and pinion b, which latter may be connected with a dial to indicate the degree of pressure.

The inventor says: I am aware that the use of elastic bags or capsules in steam gauges is old. It is seen in the rejected applications for patents of J. Lowe, October 17, 1851, and R. Lapham, August 2, 1855. I therefore distinctly disclaim the use of an impervious bag or capsule composed of rubber or other pliable material.

But the employment of a metallic helical spring dome D, in connexion with a capsule in steam gauges, forms an important and highly valuable improvement; and therefore disclaiming the use of springs in steam gauges, unless constituting a dome D, and disclaiming every part of my device described which is seen in any other steam gauge or analogous instrument,

I *claim* the helical dome D, constructed, arranged, and operating in the manner and for the purposes substantially as described.

No. 17,607.—Joseph H. Miller and John Kailey, of Canton, O., assignors to Themselves and John Danner, of the same place.—*Improvement in Steam Pressure Gauges.*—Patent dated June 16, 1857.—The pressure of the steam in the steam boiler causes the steam to pass through pipe K into chamber I, pressing against the India rubber diaphragm E on which the mercury rests, and forcing the mercury upwards in the mercury tube D.

Claim.—The bell-shaped end of the mercury tube d, and the manner of fastening the gum elastic floor to the bottom of said bell-shaped tube d by being clamped between the glass $d\ d$ and the metal P P, thus securely protecting the mercury from air, steam, and water; this we claim, when arranged and combined substantially as set forth for the purpose specified.

No. 18,272.—Henry Bates, of New London, Conn.—*Improvement in Steam Pressure Gauges.*—Patent dated September 29, 1857.—This improvement consists in the arrangement of the sector with teeth on its side face, and a radial bearing projection near its axis, on an axis which is at right angles to the shaft of the pinion that actuates the pointer, and in proper relation for united action to said pinion, and to a controlling stud I, which terminates in an eccentric curve. By this arrangement the necessity of employing a spring to return the sector and pointer to their original or starting positions, when pressure is withdrawn, is avoided, as the sector returns by its own gravity. Another advantage is also secured; namely, a compensation is provided for the decreasing specific action of the section on the pointer, under increased pressure, as the bearing projection changes its point of bearing, and thereby lengthens the leverage and increases the movement of the dial simultaneously and correspondingly with the increase of the pressure of steam, and the decrease in the movement of the disk not yielding equally in proportion to the different degrees of pressure, but requiring, as the pressure increases, a greater amount of additional pressure, owing to its capability of being extended, to produce the movement of the pointer to a position which will tell the true pressure of the steam.

Claim.—I do not claim an elastic disk for actuating the gearing which gives motion to the pointer.

Neither do I claim a sector for actuating the pointer, except it be arranged to return to its original position by its own gravity without the aid of a spring.

But I *claim* the arrangement of the sector with teeth on its side face, and radial bearing projection near its axis on an axis which is at right angles to the shaft of the pointer pinion, and in proper relation for united action to said pinion, and to a controlling stud which terminates in an eccentric curve, substantially as and for the purposes specified.

No. 18,526.—E. G. Allen, of Boston, Mass., assignor to Henry O. Allen, of Malden, Mass.—*Improvement in Steam Pressure Gauges.*—Patent dated October 27, 1857.—The volute spring *b b* is of peculiar shape, as it has an increasing width and thickness, as shown in the engraving, from its centre to its circumference. By giving this spring this peculiar shape it will at all times receive very nearly the same degree of play or movement from a stated number of pounds pressure, at whatever degree of compression of the spring the addition of the said number of pounds pressure be applied.

The inventor says: I *claim* the volute spring, as set forth, which increases both in width and thickness from its centre to its circumference, in combination with a disk of rubber or other elastic material, substantially in the manner and for the purpose specified.

No. 18,655.—John E. Wootton, of Philadelphia, Pa.—*Improvement in Steam Pressure Gauges.*—Patent dated November 17, 1857.—A represents a steam-tight pressure chamber, formed by securing at their edges two elastic metallic disks B C, one upon either side of a metallic ring D; to the ring D is attached a shank or stem E, through which is an opening F, by means of which communication is made between the pressure chamber and the steam boiler or other vessel containing pressure. P P P P are four legs, their purpose being to secure the exterior case to the instrument. G H are bars extending across the face of the disks B C; the bar G is firmly attached at its centre to the centre of disk B, the bar H extends across the face of the disk C, but at some little distance therefrom.

The inventor says: I do not claim separately the elastic metallic disk, as that, in one form or another, has for some time been in use.

But I *claim* the combined arrangement of the duplicate elastic metallic disks B C, with the bars G H, as described; for the purpose of giving motion to the index O, in the manner and for the purpose described.

No. 18,129.—E. H. Ashcroft, of Boston, Mass.—*Improvement in Tubes for Steam Pressure Gauges.*—Patent dated September 8, 1857.—Steam being admitted through passage *a*, it passes into the closed tube A, and the pressure of the steam within said tube increases the tendency of said tube to straighten, and will move the outer end at *b*, and will indicate the amount of pressure on a suitable dial. To obtain the required strength without a sacrifice of the proper elasticity, the tube is constructed of two thin tubes, one within the other, as represented in the engraving.

I *claim* as an improvement in pressure and vacuum gauges the described tube, formed by incasing one tube within another, as set forth for the purpose specified.

No. 16,458.—John Allcroft and Thomas Mighten, of New York, N. Y.—*Improvement in Steam and Pressure Gauges.*—Patent dated January 27, 1857.—The pressure of the steam entering the gauge through pipe *a* acts upon disk *c* and through it upon disk *d*, which assists in supporting and sustaining disk *c*, and transmits the pressure to lever *h*, which acts upon an index in the usual manner.

The inventors say: We do not claim the combination of two or more springs for any purpose when the springs are laid close together in the form of what are known as leaves.

But we *claim* the arrangement in pressure gauges of two or more corrugated elastic metal disks *c d*, at a distance apart, with an interposed ring or rings *g* between their edges, and one or more central bearings *i* between their centres, substantially as and for the purpose set forth.

No. 17,847.—Nathan Scholfield, of Norwich, Conn.—*Improvement in Governor for Water, Steam, and other Power.*—Patent dated July 21, 1857.—When the balls of the governor stand in a given position, so that the stud V shall revolve between the studs *t* without contact, and so that the clutch *g* shall revolve between the dogs *m n*, also without contact therewith, if the speed is reduced so that the balls of the governor descend, the stud V locks in with stud *t* of revolving thimble *h*, and the clutch *g* will also lock in with dog *m*, carrying with it wheel M, through which the supply of motive power is increased, and the thimble S soon returns to its normal position, by screwing upward on shaft C, where it remains, while the position of the governor is unchanged, and the stud V revolves between the studs I, but the clutch *g*, by the action of the differential screw *e*, will have returned through only part of the distance, moved by the normal action of the governor.

Claim.—The application of a compensating adjustment for so changing the normal or medium rate of action of a governor or regulator while in action to rectify a disturbed motion, that it shall cease to act on the supply of the motive power, while the speed of the wheel or machinery is returning from any extreme of variation, and before reaching its proper rate, or that in which its action commenced; and also that it may commence a reverse action thereon to counteract or anticipate any excess thereof, if the return of the speed is so rapid as to induce a tendency to pass its proper medium.

No. 18,578.—J. L. Eastman, of Boston, Mass.—*Improvement in attaching Steam Gauges to Locomotive Boilers.*—Patent dated November 10, 1857.—In the engravings A is the gauge. B is an upright metal tube attached to the guage, and serving to convey the steam into it; said tube having a tight collar or shoulder *a* near the top to rest upon the spring C, which is secured within a cylindrical box D, the tube passing entirely through the box, and having another shoulder *c* near the bottom, against which a ring or detachable collar *b* is secured by a nut *e*, screwing on to the bottom of the tube to attach the tube to the spring C.

The spring represented is made of India rubber, but may be of metal. It rests upon the bottom of the box, and is confined therein by a ring *d*.

Claim.—Interposing between the gauge and the boiler the elastic cushion or spring, so that the jar or vibrations of the engine shall not be transmitted to the gauge, as set forth and described.

No. 18,348.—James Mitchell, Osceola, Iowa.—*Improvement in Locomotive Cow-Catchers.*—Patent dated October 6, 1857.—The nature of this invention consists in a secondary catching apparatus behind the ordinary angular track clearer, which is brought into action when an obstruction lifts the clearer.

The object is to lift obstacles from the track that may be passed by the cow-catcher, thus preventing the engine being thrown from the track. The drawings will give an idea of the invention.

The inventor says: I *claim* the combination cow-catcher, composed of clearer A and grating C, so constructed that the latter will be brought into action by the lifting of the clearer, and all parts be made to resume their original position by the forward movement of the engine, substantially as set forth.

No. 18,966.—George S. Griggs, of Roxbury, Mass.—*Improvement in Locomotive Engine Wheels.*—Patent dated December 29, 1857.—The wheel is cast with the dovetail *c* upon its periphery; these dovetails are wider upon one side of the wheel than upon the other, and thus tapering recesses are formed between them, into which are driven the blocks *b b*. The wheel is then placed in a lathe, and the blocks turned off. The tire is then heated, and the wheel is dropped into it. This part of the operation is performed in a tight box, water in sufficient quantity to pour in, so soon as the wheel is in place.

The inventor says: I do not claim the introduction of wood between the rim and tire of locomotive and other railroad wheels.

But I *claim* confining the blocks of wood upon their sides, in the manner substantially as described, for the purpose of preventing them from being forced out and destroyed, as set forth.

No. 18,712.—Aaron Smethurst, of Philadelphia, Pennsylvania.—*Arrangement of Cylinders and their Connexions for Locomotive Engines.*—Patent dated November 24, 1857.—This invention consists in the arrangement of two cylinders A, on two cross section braces 4, in the centre of the frame-work commonly used for the working of steam engines, so as to drive two pistons D in each cylinder connected by the main rods G to two crank axles H, one ahead and the other aft the engine. In this arrangement the valve openings have two end openings Y Z in the steam chest B, and a centre opening 1; by which means the two pistons D^1 operate in one cylinder, and give direct power to two sets of drivers at the same time, ahead and aft the engine, thereby acquiring increased power and saving friction by avoiding an extra steam chest and valve gearing.

Claim.—The arrangement of the two double piston cylinders described, with their connecting means, in relation to the frame of the engine, as set forth.

No. 19,000.—Franz Windhausen, of Duderstadt, Hanover.—*Improvement in Locomotive Engines for Producing Increased Adhesion to the Rails when required.*—Patent dated December 29, 1857.—The nature of this invention consists in providing the smoke pipe D of locomotive engines with a fan blower, which is put in rapid motion by the escape of steam, which blows the smoke down on the rails in advance of the front wheels through pipes *c c*, the lower opening of which is within two inches of the upper surface of the rails.

The inventor says: In combination with the exhaust steam pipes of locomotive engines, I *claim* the apparatus described for drawing from the smoke box and forcing upon the rails in front of the driving wheels the products of combustion, when said apparatus is revolved to operate by the reaction due to the escape of steam from the cylinder, substantially as set forth.

I also claim the arrangement described for regulating the supply of hot air, smoke, and other products of combustion upon the rails, by causing the draught either through the chimney D or the pipes E, or both the chimney and the pipes, substantially in the manner specified.

No. 17,834.—John M. Hartnett, of Waukegan, Illinois.—*Arrangement of Means for Regulating the Fire of Coal-Burning Locomotives.*—Patent dated July 21, 1857.—When an intense heat is required, the valves *c* in the pipes M are closed, and the valve *b* in the pipe J is also closed, and consequently the valve b^1 in pipe K will be open; the fire will then be supplied with a blast, which passes down the pipe I, through pipe H, into fan box *c*; thence through pipe K into fire chamber D, below the grate L, and through flues C into smoke pipe B. When the temperature of the boiler requires to be reduced, the valves *a* b^1 are closed, and the valve *b* in pipe J and the valves *c* in pipes M are opened. The blast will then pass down the smoke pipe B, through flues C, into the upper part of the fire chamber D, and through pipes M into the fan box *a*, from whence it is discharged through pipe J.

Claim.—The fan F placed within the box G, connected with the pipes I H, M M, and J K, provided with valves, and arranged substantially as shown for the purpose set forth.

No. 18,953.—William H. Bullock, of Boston, Massachusetts.—*Arrangement of Deflecting Plates and Spark Receiver in Locomotives.*—Patent dated December 29, 1857.—A is a frame which supports the parts; B is a portion of the boiler; C the smoke arch, from which rises the chimney D; E the cylinders, from which the exhaust pipes lead to the central blast pipe F; *b* is the tube plate, the upper row outletting into the smoke arch at 2. Beneath the boiler and to the rear of the cylinder is suspended a reservoir G. This is provided with an outlet *c*, by which it may be emptied, and communicates with the bottom of the smoke arch by means of the bent pipe H, which enters the arch immediately in front of the tube plate. The front of the smoke arch, or that part furthest from the tube plate, is banked or built up as indicated by the curved lines 3 and 4. This backing inclines from all sides to the orifice of the pipe H; so that any cinders or ashes that may be drawn through the boiler tubes, and fall into the smoke arch, will be conducted by the inclined surface into the pipe, and through it to the reservoir G, from whence they may be removed at any convenient time.

The inventor says: I am aware that a high blast pipe has been used; but it is found it is not practicable in coal-burning engines as now constructed, without a means substantially such as described for freeing the smoke arch. Therefore, I do not claim the high or elongated blast pipe; but I *claim* the reservoir G, in connexion with the elongated blast pipe F, substantially as set forth.

No. 18,786.—John E. Wootton, of Philadelphia, Pennsylvania.—*Improvement in Driving Box for Locomotives.*—Patent dated December 1, 1857.—The divided journal box B B is fitted into the bevelled seat in such a manner as to leave a space for the adjusting plate C between the top of the divided journal box and the dividing box A.

Claim.—The adjusting plate C, or its equivalent, in combination with the divided journal box B B, as described, for the purpose and in the manner set forth.

No. 17,215.—Robert Hale, of Roxbury, Mass.—*Improvement in means for directing the Exhaust of Locomotives.*—Patent dated May 5, 1857.—In the engravings A represent the blast pipe, which enters the

chimney for the purpose of producing a blast therein. The block *b*, which slides between the ledges *a*, can be moved to one or the other side by means of a lever F; and thus the blast in the exhaust pipe A can be divided off by pipe D, so as to use a part of it for heating the feed-water of the boiler, while the greater portion of it passes up through the chimney of the locomotive.

Claim.—The described device for the purpose of leading off a portion of the exhaust steam, to heat the feed-water, without interrupting or changing the direction of that portion of the exhaust not so employed, in the manner substantially as set forth.

No. 18,373.—Edward R. Addison, of Baltimore, Md.—*Rotary Exhaust Regulator for Locomotives.*—Patent dated October 13, 1857.—In the drawings, fig. 2 is a section of this exhaust regulator in the line *y y* of fig. 1; and in connection therewith the said drawing also represents the respective parts of a locomotive with which said invention may be combined for the purpose of regulating the escape of steam from its engines into its chimney A in such a manner as may be required to increase or diminish its draught.

The claim gives a correct idea of this invention in connexion with the drawings.

The inventor says: I do not claim the employment merely of revolving nozzles of varying size to effect the change of the escape through them alone, as in the patent of A. W. Roberts, dated May 8, 1855; nor do I claim a sliding series of conical openings, as in the variable exhaust pipes of F. Espanshade, patented March 14, 1854.

But I *claim* the arrangement of a variable series of openings in a revolving skeleton wheel, moved by gearing from the outside of the locomotive steam boiler, substantially in the manner described, when combined with the close case for excluding the ashes from the wheel, and thus securing its perfect operation in the manner described.

No. 17,208.—Peter S. Ebbert, of Chicago, Ill.—*Improvement in Heating Feed-Water Apparatus of Locomotives.*—Patent dated May 5, 1857.—The exhaust steam of the cylinder passes through the pipes B, in the usual manner, up through the chimney C; a part of said exhaust steam, though, passes through the branch pipes *c* up into the casing E F, which is closed tightly at both ends by means of the heads *a b*. This casing E F contains a series of tubes or coiled pipes G, which are all in communication with each other, and through which the feed-water of the boiler passes. The exhaust steam through the pipes *c* fills the casing E F, heats the pipes G, and finally escapes through the pipes *d*, while the condensed water collects in a groove of the bottom *b*, and is carried off by pipe *f*.

Claim.—In combination with the chamber enclosing the heating pipes, the inlet and exit pipes *c d*, so arranged as to cause the steam to circulate over, around, or through the heating pipes before it escapes, as set forth and explained.

No. 18,315.—John Kimball, of Concord, N. H., assignor to Robert Hale, of Roxbury, Mass.—*Improved Tank for Locomotives.*—Patent dated September 29, 1857.—The drawing represents the tank, near one end of which a well or depression B is formed, into which a partition C descends, which divides them into two chambers D and E, between which there is no communication, except through the trap thus formed. The feed-water, being introduced into the chamber D, will flow through the trap and rise in chamber E. The exhaust steam is thrown into chamber D, the oil which it carries with it rising to the surface of the water; and the water for the engine is drawn off from chamber E, which will be constantly supplied through the trap from the bottom of the other chamber. No oil will pass into chamber E, as the trap will be constantly full of water, even when the tank is emptied for the purpose of cleaning.

In stating what he claims, the inventor says: I *claim* dividing the water tank into two compartments, thus introducing a trap between the two for the purpose of intercepting the passage of the oil to the boiler, as set forth.

No. 17,915.—Levi Bissell, of New York, N. Y.—*Improvement in Trucks for Locomotives.*—Patent dated August 4, 1857.—When the engine runs on a straight track, the blocks *n* rest in the lowest part of the double inclines *o*, thereby preventing any vibrations of the engine; and on coming on to a curve, the inertia of the engine is expended in going up the inclines *o*, as the truck moves laterally towards the inner part of the curve.

Claim.—Attaching trucks having four or more wheels to locomotive engines, in the manner substantially as described, so that the said truck is allowed a lateral motion under the engine, and moves upon a centre *h*, located between the drivers and the centre of the truck, in such a manner that the relative positions of the four or more truck wheels with the driving wheels, as determined by the straight or curved track, shall cause the body of the engine to assume the correct position relatively to said track, substantially as specified.

Also the inclined planes *o* or *q*, and blocks *n n* or *p*, or their equivalents, in combination with a truck of four or more wheels having a lateral motion under the locomotive engine; the whole constructed and acting substantially as and for the purposes specified.

No. 18,304.—Henry Skinner, of Fulton, N. Y.—*Improvement in Window for Locomotives, &c.*—Patent dated September 29, 1857.—The nature of this invention consists in providing the front part of a locomotive engine house, or the head light to a locomotive engine, with a window, the glass of which, by being heated with steam or hot air, will remain transparent when exposed to vapor or frost.

The inventor, in describing his improvement, says: I construct a tube in a cylindrical or any other desired form of about twelve inches in diameter and ten inches in length, I enclose within this another of about thirteen inches in diameter, and the two I enclose in another of about fourteen inches in diameter; all of the same length, as shown at *m*, *m*, *m*, in the drawings. To one end of these cylinders I adapt a strong, firm piece of plate glass, as shown at A. The chamber or cavity C, between the inside cylinder and the cylinder next thereto, I fill with steam or hot air so as to heat the glass or glasses A adapted to the ends of the cylinders. The chamber or cavity B, between the outside and middle cylinder, I fill with charcoal, or some other non-conducting substance, so as to prevent the rapid condensation of steam. I surround the perimeter of the glass with woollen cloth, or some other non-conductor, that the glass or glasses may heat gradually. I adapt to the cylinder one or more glasses, as convenience may require. I communicate to chamber C steam from the boiler upon the locomotive, or heat from any other source, through the faucet H^1. I hang the glass upon the hinge in any ordinary form, or adapt it permanently to the tube. I construct in the bottom a sink shown at T to conduct off whatever may collect in the tube, with an aperture, as shown at E, to discharge the same. The elasticity of the heated air is so great, as to tend to keep out of the cylinder falling sleet or snow while the locomotive is in motion, which also aids in preserving the transparency of the glass.

Claim.—The inventor claims the application of heat to glass to prevent vapor or frost from collecting thereon, substantially as described.

No. 17,859.—John F. Page, of Philadelphia, Pennsylvania, assignor to Himself and James Landy, of the same place.—*Improvement in Spark Arresters.*—Patent dated July 21, 1857.—The sparks, in passing up pipe A, will be deflected downward by the deflectors E F, and will pass through the side openings F, and through the openings E, in the bottom of part A, into the chamber H, which may be removed from the pipe and cleaned at any time.

The inventor says: I do not claim the arranging of a series of screens above, and so as to overlap one another, as in the spark arrester patented by George Holbrook in 1835.

Neither do I claim the use of two drums, placed one above the other, and each furnished with a screen, as in the spark arrester of Johannes Oberhauser.

But I *claim* the arrangement of parts relatively to one another, as specified, so as to effectually arrest the sparks of a locomotive, without obstructing the draught, as set forth.

No. 17,884.—Ethelred May, of Boston, Massachusetts.—*Improvement in Spark Arresters.*—Patent dated July 28, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim combining with a chimney of a railway locomotive steam-boiler woven netting to prevent the escape of sparks and cinders therefrom.

Nor do I claim arranging a perforated or woven wire cone in a chamber placed over a smoke-box of a locomotive engine boiler, and made to communicate with such a flue, surrounded and being concentric with such chamber, the same being shown in the patent of R. A. Wilder, dated October 31, 1854.

Nor do I claim surrounding the exhaust pipes with two cylinders, perforated or not, and having the outer one connected with rings, with the side of the smoke arch, as described in J. Williams's patent of March 6, 1855.

Nor do I claim prolonging an unperforated tubular smoke-stack down to near the bottom of the smoke-box, and providing it (the said stack) with one large opening for the reception of the smoke and products of combustion.

But I *claim* my arrangement of the spark arrester within the smoke-box of the locomotive steam-boiler, so that the stack or chimney shall be prolonged down into the smoke-box, and made of wire gauze or perforated plates, and otherwise so constructed as specified, that the entire track of the smoke shall be through the gauze or perforated plates.

No. 17,875.—Henry H. Graham, of Paterson, New Jersey.—*Improvement in Spark Arresters.*—Patent dated July 28, 1857.—The sparks, as they are deflected by the core *d* through the conductors *e*, travel in opposite directions to the mouths between the slats 1; but as they cannot escape, they are thrown against the deflectors *g*, by which they are slightly checked, so that they scatter and fall into the outer casing *b*, while the smoke and gases pass between the slats 1, through screens 2.

The inventor says: I do not claim radial spark conductors, screens, or slats, in themselves, nor their use in smoke pipes and spark arresters.

But I *claim* placing the slats 1 1 in the vertical sides of the radial spark conductors *e*, at a higher elevation than the screens connecting the bases of said conductors, and with the mouths between said slats opening towards the angle between said spark conductors, and in the opposite direction to the accelerated motion of the products of combustion, substantially as and for the purposes specified.

No. 18,613.—William Mt. Storm, of New York, N. Y.—*Improvement in Generating Anhydrous Steam.*—Patent dated November 10, 1857.—In the engravings, *a* is the steam space, X the water line, *b* the fire-box, *c* the grate, *d* the flues, *e* the feed-pipe for supplying water to the boilers, *f* the chimney; d^1 is a large flue, *h* is a long cylindrical vessel, or boiler, passing from the front of the main boiler, through the fire-box, directly on through the great flue, until it reaches the smoke-box I; *h* also has a steam dome *k* at the front of the main boiler, and is provided with a safety valve, or more properly a pressure valve *l*; the safety valve *m* of the main boiler acting as the common safety to both. *h* has also gauge cocks, feed pipe, &c., and in fact whatever may be necessary to render it complete as a separate boiler. The branch *n* of the feed-pipe supplies *h* with water. Z Z is the water line of *h*.

Claim.—The arrangement of means, substantially such as set forth, for rendering steam anhydrous, without the exposure of the tubes or drying vessel to the direct action of the fire or hot products of combustion.

No. 17,372.—Adolph Hammer, of Reading, Pa.—*Improved Sugar Boiling Apparatus.*—Patent dated May 26, 1857.—The pipes of this apparatus are arranged as represented in the engraving, the steam entering pipe B, and passing successively through pipes *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *k*, and escaping at *l*, as represented by the arrows. The main pipe rests in the bearings M and N, and, together with the branch pipes, can be turned into the upper part of the boiler, thus affording an opportunity of cleaning the bottom of the boiler without removing the pipes from said boiler.

The inventor says: Disclaiming connecting a series of branch pipes with and on to a main pipe, upon which said branch pipe may be rotated, in the manner described by Alfred Stillman, in his patent of May 16, 1846;

I *claim* the peculiar arrangement of pipes described, whereby the steam is caused so to travel as to force one continuous and unbroken stream through the pipes, and to form a proper compensation or equalization of temperature throughout the whole surface of the coil, substantially as set forth.

No. 17,142.—Bowen Eaton, of Roanoke, Ind.—*Arrangement of Ports in Steam Cylinders.*—Patent dated April 28, 1857.—The steam enters the cylinder A through one of the end ports *a*, which are opened and closed in the usual manner; and acting on piston B, it forces along said piston until it passes the escape orifice J, when the steam escapes. The steam then enters at the other end of the cylinder, and the motion of the piston is reversed.

Claim.—The arrangement of the central exhaust and end steam ports as set forth, for the admission of steam at each end of the cylinder only, and its eduction from the central port only, the latter being controlled entirely by the piston of the engine cylinder.

No. 16,747.—Charles F. Pond, of Hartford, Conn.—*Improvement in Generating Steam.*—Patent dated March 3, 1857.—E are the top plates of boxes, which boxes communicate with each other by means of pipes G, and with the steam in the boiler A by means of pipe C.

The inventor says: I do not claim, either singly or in combination, the boiler pumps, steam chest, or the surrounding of the same with steam or heated air; nor do I claim any part of said apparatus by itself, or the generation of steam by bringing water, either in large or small quantities, in contact with metal heated directly by fire.

I *claim* the method of generating steam from water introduced in numerous fine jets I, and thrown upon heated metallic surfaces E, substantially as described, when this is combined with the heating of the said metallic surface on which the jets of water are to be thrown to be evaporated by the contact of steam, generated in a separate boiler A connected therewith, for circulation and other purposes, substantially as described.

No. 18,319.—Julien François Belleville, of Nancy, France, assignor to Robert Murphy, of New Orleans, La.—*Improvement in Steam Generators.*—Patent dated October 6, 1857.—This improvement relates to generators evaporating water or any other liquid without danger of explosion, at a pressure that can be varied at pleasure. The chief peculiarity of this improvement consists in the arrangement of the tubes for generating steam. The tubes are arranged in a horizontal position with respect to the furnace. The generator consists of tubes or coiled pipes, in any suitable number, bent into any desired form, and having a greater or less number of cylindrical, elliptical, or other convolutions, and they may be either horizontal, vertical, or inclined.

The inventor *claims* the general disposition and arrangement of the steam generator, and the parts connected therewith, consisting of tubes in which water or other liquids are converted into steam, substantially as specified.

No. 18,460.—Alexander B. Latta, of Cincinnati, Ohio.—*Improvement in Steam Generators.*—Patent dated October 20, 1857.—The engravings and claim explain the nature of this invention.

The inventor says: I *claim* the application of the pump E to a coiled boiler, in combination with the pipes G and strainers D, the whole being arranged and operated in the manner substantially as described, for the purpose of causing the water to circulate through the coils from the lower part of the water jacket, and of separating the steam generated in the coils from the water, and then conducting it into the steam chamber or upper part of the water jacket, and of returning the water unconverted into steam back into the lower part of the water jacket, as set forth.

No. 17,675.—Robert Hale, of Roxbury, Mass.—*Improved apparatus for Separating the Oily Particles held in suspension by Steam.*—Patent dated June 30, 1857.—The steam entering by pipe B is thrown against the partition C, upon the surface of which the particles of oil which it contains are condensed, and running down the partition C, the oil passes through opening *a*, into chamber G and passage H, whence it escapes through outlet K to a suitable reservoir. Any particles of oil that may have fallen below the shelf D will be impelled against the partition C, and will pass through opening *b*. The steam passes to the centre of case A between partitions and shelves E^1, C^1, D^2, D^3; the remaining particles of oil pass through apertures a^1, b^1, into pipe K; while the steam escapes through pipe I.

Claim.—The described apparatus for separating oil from steam, operating in the manner substantially as set forth.

No. 17,683.—Daniel Lasher, of Brooklyn, N. Y.—*Improvement in Metallic Packing for Steam Pistons.*—Patent dated June 30, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim metallic springs intervening between the piston and the packing rings.

But I *claim* the manner described of constructing the bent or folded metallic springs *g*, to take an even and extended bearing on the inner side of the packing ring or rings *e f*, when provided with the lips or projections 2, to keep the springs properly in place, substantially as specified.

No. 18,048.—Lucius J. Knowles, of Warren, Mass.—*Improvement in Steam Pressure Regulators.*—Patent dated August 25, 1857.—When the pressure of the steam in pipe *b* is less then the amount indicated by weight B, then the apparatus is in the position as represented in the engraving, but as the pressure of the steam increases it acts upon the elastic disk *c*, thereby lifting cup H and lever F.

Claim.—Supporting the disk C by concentric rings I and rods *p*, in the manner substantially as set forth.

No. 17,855.—William S. Gale, of New York, N. Y., assignor to Peter Poillou, of the same place.—*Means for Rendering Joints Steam-tight.*—Patent dated July 21, 1857.—The steam, as it is let into the cylinder, rushes in between the piston and cylinder, and fills up the grooves *i* and the intervening spaces between the piston and cylinder, where it practically forms a complete packing.

The inventor says: I wish it to be understood that I do not claim the grooved surfaces in themselves, as these have before been used for other purposes, and have been used in connexion with air engines.

I *claim* the method described of causing steam to become a packing to itself in steam cylinders or other parts of steam machinery, by allowing the steam to act in one or more grooves, substantially as specified.

No. 17,069.—John Avery, jr., of Lowell, Mass.—*Improvement in Steam Traps for Relieving Steam Pipes of Water.*—Patent dated April 21, 1857.—The operation of this steam trap is as follows: When the engine is at rest, and the fires go down, the mercury in the holder B contracts by being cooled and falls within its holder. This allows the elastic diaphragm *d* to drop from collar *k*, and there is then a continuous opening through the trap by means of the openings *m*, holes *i* in the ring *e*, diaphragm *d*, and flange *c*, and the passages k^1, and the condensed water may escape. When steam is generated, or the boilers are heated up, the mercury in holder B forces diaphragm *d* against collar *k*, and closes up the opening *m*.

The inventor says: A pipe coupling has been made so that the expansion of a long pipe may be made to close or partially lose the opening between it and its fellow. But it is not convenient, except for certain purposes, to have this long pipe; and a short one will not, on account of its limited expansibility, serve the purpose. Besides, this only regulates the flow of water or steam, and does not admit of allowing the water of condensation to pass off whilst the steam is retained, and is not a steam trap in the sense in which I claim one. I make no claim to such an arrangement.

I *claim*, in combination with the outer case A, the enclosed mercury holder B, and diaphragm and openings *m* K^1, for the purpose set forth.

No. 17,656.—Sylvester W. Warren, of Brooklyn, (E. D.,) N. Y., assignor to Dexter N. Force, of New York, N. Y., and Sylvester W. Warren, aforesaid.—*Improvement in Steam Whistles.*—Patent dated June 23, 1857.—The steam from pipe *a* passes through passages *c*, and, escaping at the mouth 1, acts upon the whistling mouths *e*, the lower one of which serves to let off any condensed water, while the others are sufficiently high above cap *b* for the steam to act upon with a higher pressure, and to give a distinct sound.

Claim.—The cap *d*, and whistling mouth or mouths *e*, connected to the steam pipe, substantially as specified.

Also placing two or more whistling mouths or edges in the whistle at different distances from the orifices for the escape of steam; so as to adapt one whistle to different pressures without changing the position of any of the parts, substantially as specified.

No. 18,641.—J. R. Hopkins, of Lincoln, Me., assignor to Himself and Gustavus F. Sargent, of Bangor, Me.—*Improved Mechanism for Operating Pilot Bells on Steamers.*—Patent dated November 17, 1857.—This invention is intended for communication between the pilot house of a ship and the engine room or other place. It is so constructed that by pulling a knob C in the pilot house, a cylinder I is rotated in the engine room, on which cylinder is painted the desired signal, at the same time calling attention by a bell H. There are also two bell hammers N, which are arranged in such a way that the striking of them assures the rotation of the cylinder to the desired signal.

Claim.—First. The arrangement of the knob C and slotted plate B, substantially as shown, so that the several orders may be transmitted to the engineer, or the cylinder I rotated as desired, to present such orders by moving one and the same knob in different directions.

Second. The bars $o\ p\ q\ r\ u$, levers q^1, provided with pins u^1, plates L and o^1, segment rack K, pinions C^1, and rods *v*, on the shaft *w*, when the whole is arranged to operate as and for the purpose set forth.

Third. The employment or use of the two levers $M\ M^1$, provided with bell hammers N N, and operated by means of the bar x^1 attached to the plate L, and provided with springs $z^1\ z^1$ and the plate P, the bar and plate being provided respectively with the projections or shoulders $y^1\ y^1\ f^2\ f^2$, and the whole arranged as shown and described.

No. 18,847.—Moses C. Hawkins, Jacob W. Goodwin, and James Cummings, of Erie, Pa.—*Improved Spring Valve Cock.*—Patent dated December 15, 1857.—By this invention, in connexion with the ordinary air cock, there is employed, first, the air valve *z* as shown in the engravings; second, the valve gauge *y* and spiral spring *v*. These several parts form, in combination with each other and with the ordinary air cock, the peculiar mechanical contrivance called by the inventors a "valve air cock."

The inventors say: We do not claim any part of the air cock, constructed as described, when taken separately.

But we *claim* the valve Z, valve gauge *y*, with spiral spring V, in combination with the ordinary air cock, in the manner described and for the purpose set forth.

No. 17,583.—Benjamin L. Phillips, of Providence, R. I.—*Improvement in Valve Connexions for Steam Engines.*—Patent dated June 16, 1857.—By means of lever P the cams O and O^1 can be adjusted simultaneously to such a position that the rods L and L^1 will come in contact with them at different points of the strokes of the piston, and thereby cause the rods to be bent far enough for the centres *e* to pass the line of culmination between the centres of the connecting pins *f g*; then, by the action of the weights N and N^1, the steam valves I and I^1 are suddenly closed. The rods L and L^1 are straightened again by returning the movement of the connecting block F; thus, by adjusting the cams O and O^1 nearer the rods L and L^1, the steam will be cut off earlier in the stroke, and vice versa.

Claim.—Interposing the jointed bars or rods $L\ L^1$ to be operated upon by the cams $O\ O^1$, or their equivalents, between the valves and the connecting block F, substantially as and for the purposes set forth.

No. 18,211.—John C. Pennington, of Paterson, N. J.—*Improvement in Valve Gear for Oscillating Steam Engines.*—Patent dated September 15, 1857.—When this engine is in operation, a reciprocating motion is given to rod *h* and arc *k l*, and the valve rod *p* is operated by means of rod *n*, which is pivoted to slide *o*, which is secured to valve rod *p*. By operating rod *s* the crank lever *x r* can be turned on its fulcrum, and the position of pin *m*, within the slot of arc *k l*, may be adjusted, whereby the steam may be cut off at any desired point, and the motion of the machine may be reversed.

Claim.—A valve gear for an oscillating steam engine, composed of an eccentric set, substantially as described, and a slotted arc, the curve in which is concave towards the shaft, and provided with a sliding pin, which is connected with the valve, or the equivalents thereof; and this I claim whether the slot be long enough for reversal, or of such length as may be sufficient for running the engine in one direction only.

No. 18,258.—Norman W. Wheeler, of New York, N. Y.—*Improvement in Valve Gear for Oscillating Engines.*—Patent dated September 22, 1857.—In describing his improvement the inventor says: Upon the rock-arm M I place a secondary rock-shaft or arm, which can oscillate upon the bearing L, and takes hold of the valve-rod I at K. This secondary rock-shaft is actuated independently of the rock-arm M by means of the lead lever J, which is connected with and moved by the piston-rod through and by means of the link S and stud R. The motion in this manner derived from the piston-rod should equal the lap and desired lead of the valve F. The remainder of the desired valve-throw is derived directly from the oscillation of the working-cylinder, by means of and through the rock-shaft and rock-arms M and N, and the radius-rod O.

The inventor, in stating what he claims as new in this invention, says: I am aware that the "eccentric throw" and "piston head," and that the "oscillating throw" and "eccentric" or "cam lead," have been used before. These I do not claim.

But I *claim* actuating the valves of oscillating steam engines by the combined movements of the cylinder and piston-rod, substantially as described.

No. 17,689.—Sidney Maltby, of Dayton, O.—*Improvement in Valve Gear for Steam Engines.*—Patent dated June 30, 1857.—The valve crank-wrist H is secured to the sliding-plate *b* by moving the rod C in the direction of the arrow; the elbow-link *d* will be moved in the direction of arrow 2; this movement carries the valve crank-wrist from the centre of the crank to any point between said centre and the periphery of the same, and the throw of the valve will be changed; and by moving the plate so as to carry the wrist from one point near the periphery to another point directly opposite the same, the engine will be reversed, and the lead transferred to the opposite motion of the engine. By moving the sliding-plate I, by means of set-screw F, in the direction in which the engine is running, the wrist of the valve-crank will be thrown forward of a point at right angles to the engine crank-wrist.

The inventor says: I do not claim effecting the reverse and cut-off by having the wrist adjustable on a link or slotted arm; because with the first device great complication is necessary in order to produce the desired results, and in the second a like complication is necessary in order to effect the reverse and cut-off while running.

But I *claim* the means described for effecting the reverse cut-off and lead, when said means are arranged directly on the wrist of the engine crank, and used as a substitute for the common link and hook motions, substantially as and for the purposes set forth.

No. 16,809.—James P. Ross, of Lewisburgh, Pa.—*Improvement in Valve Gear of Direct-Action Steam Engines.*—Patent dated March 10, 1857.—This is an improvement upon the invention of James C. Ross, patented on the 22d day of January, 1856. By the action of the elastic lever I on the yoke H, a movement is suddenly given to start or give a lead to the valve, just at the termination of the stroke of the piston, in either direction, to admit steam to the cylinder for the return stroke of the piston. This elastic lever is applied instead of the two counterpoise levers and the weight described in said letters patent. The amount of lead given to the valve can be increased or diminished by adjusting the nuts n n^1 upon the rods l l^1.

Claim.—The elastic lever I, applied and operating substantially as described, in combination with the oscillating yoke H, the traveller p^1, and the roller r, or its equivalent, for the purposes set forth.

No. 17,585.—Samuel Swartz, of Buffalo, N. Y.—*Improvement in Valve Gear of Steam Engines.*—Patent dated June 16, 1857.—In order to vary the cut-off to any point of the stroke, the thimble P on the sleeve *r* of valve-stem I is raised or depressed, and consequently the outer end of valve-toe L is raised or depressed, and the point where the tappet *a* leaves the valve-toe is varied.

Claim.—First. The tappet or valve-lifter upon a wheel or segment, and giving said wheel or segment a rotary motion in combination with a reciprocating motion, for the purposes substantially as set forth.

Second. Arresting the reciprocating motion of the said wheel or segment, and commencing its rotary motion at a point where its rotary motion will cause the tappet to strike the valve-toe on a line, (or nearly so,) drawn through the centre of the joint, and perpendicular to the line of reciprocating motion, for the purposes and substantially as described.

No. 18,837.—Horatio Allen, of New York, N. Y.—*Improvement in Cut-off Valve Gear of Steam-Engines.*—Patent dated December 15, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I do not claim the use of a controlling chamber or dash pot, to break the fall of the valve, as they have long been used in connexion with valve gear.

But I *claim*, as an improvement on the cut-off valve gear, patented by Horatio Allen, February 9, 1849, and by Samuel H. Gilman, December 10, 1850, the combination of a plunger operating to force a fluid through an orifice, or of the dash pot with secondary chamber with the loose toe, whereby the fall of the toe, when tripped, is controlled, substantially in the manner and for the purpose set forth.

No. 16,515.—Peter S. Weimer and Samuel P. Francisco, assignors to Samuel P. Francisco, of Reading, Pa.—*Improvement in Operating the Valves of Steam Hammers.*—Patent dated January 27, 1857.—The object of the slots *d* and blocks *f* are to admit of the spreading or expanding of the levers V W, whilst they continue to be vibrated by the wrist pin *e* passing through them into the crank V. An eccentric *h* is arranged on the end of the shaft Q, which eccentric works in an open eccentric in the lever W, so that the turning of the shaft Q by the lever S^1 on one of its ends will also turn the expanding lever W on its other end. On the shaft P is also another eccentric *i*, which works in a similar manner with the expanding lever V; the shaft P being turned by its lever R on one end, also turns the expanding lever V on its opposite ends.

On the valve rod K are two toes *m m*, between which the levers V W vibrate. One of the levers V W represents the inlet port, and the other the escape, and consequently, just as they are spread apart, will they increase the motion of the slide valve L. The levers V W can be set independent of each other, so that the inlet and exhaust may be varied at pleasure.

The inventors say: We are aware that expanding wedges in a vibrating arm have been used for working the valve, and that a rod made adjustable by screws and nuts has also been used for this purpose; these we do not claim.

We *claim* so arranging the crank U, and the expanding levers V W on the axes or trunnions of the hammer stock, as that they can be separately adjusted thereon; but at the same time worked with the rocking or rolling of the hammer shaft, for the purpose of regulating at any time the power and motion of the hammer, by or through the movement of the slide valve, as set forth.

No. 16,593.—William H. Elliot, of Plattsburg, N. Y.—*Arrangement of Means for Controlling the Throttle Valve of Marine Engines.*—Patent dated February 10, 1857.—The chamber *a*, open at the bottom, is placed in the deadwood as near the lowest line of the wheel or propeller as possible. The cylinder *d*, pipe *b*, and all but the lower portion of *a* contain nothing but air; and as the stern of the vessel sinks into or rises from the wave, the pressure of the water upon the air in *a b d* operates the diaphragm piston *e h*, which latter is held down by spring *s* and the throttle valve rod *j*, for the purpose of equalizing the motion of the engine.

The inventor says: I do not claim regulating and controlling the supply of steam admitted to the cylinder of a marine engine by the varying pressure of the water, caused by the varying depths to which the vessel may be immersed; neither do I claim the devices employed by me for that purpose, separate from the combination and arrangement in which I use them.

But I *claim* the chamber A, cylinder D, plunger H, and spring S, when arranged in relation to the engine, and to the hull of the vessel and to each other, in the manner described, and for the purposes set forth.

No. 17,718.—M. E. Stacy, of Flemington, Ga., assignor to W. John Way, of the same place.—*Arrangement of Valves in Steam Cylinders.*—Patent dated June 30, 1857.—When the beam *b* oscillates, the balls S will alternately close and open the steam ports *a* and a^1; and when the steam port is closed, the channel *m* is opened for the escape of the exhaust steam; but when the port is opened, and valve S is in its lowest position, the exhaust passage *m* is closed.

Claim.—The arrangement of valves in steam cylinders described, operating in the manner and for the purpose set forth.

No. 16,570.—George H. Reynolds, of Medford, Mass., assignor to Himself and D. B. Hinckley, of Bangor, Me.—*Improvement in Operating Cut-off Valves of Steam Engines.*—Patent dated February 3, 1857.—A is the steam chest B; an ordinary slide valve, with steam and exhaust ports *a b*; *s* is the valve stem. F F^1 are balance puppet valves, their stems being provided with rolls *f* f^1, which latter work against slides H H^1; these slides are controlled by the arms D D^1, which, by means of ring E, are connected to the governor rod C. The broken lines represent another position of the parts D D^1, E.

Claim.—Operating the cut-off valves F F^1, in connexion with an ordinary slide valve by the inclined sliding dogs H H^1, or their equivalents, in the manner substantially as set forth.

No. 17,643.—James H. Simmons, of Erwin, N. Y.—*Improvement in Cylindrical Throttle Valves for Steam Engines.*—Patent dated June 23, 1857.—On starting the engine, the latch *h* is set to such a position by raising lever 5, that the steam ports *b* shall be fully open, and the latch *h* is then in contact with the upper shoulder of recess K, in cap D. In the event of any sudden stoppage of the crank shaft, the weight of the lever 5 will cause a change of position of the latch from its contact with the upper shoulder to the lower shoulder of the recess K, and, in its turning, the ports *b* are closed, and the motion of the engine is stopped.

Claim.—The arrangement of the latch *h* upon the stem of the valve, playing in the recess *k*, within the interior of the head of the cylinder, as set forth.

No. 16,351.—Cornall Bradley, of Manchester, Va.—*Improvement in Valves for Steam Engines.*—Patent dated January 6, 1857.—Steam being admitted into the steam chest B, it will press down the valve E^1 on its seat; but, as there is no part of the valve exposed to the action of the steam downwards except the part overlapping the ring D, there can only be as much pressure downwards as the area so exposed, at the same time the steam is pressing on the circular part of the same valve inwards into the ring or chamber, and the real pressure on the face of the steam valve is as the area exposed to downward pressure on the face G, less the area exposed to a contrary pressure into the chamber at G. The space between E^1 and E^2 is in communication with the atmospheric air by means of hollow stem J.

The inventor says: I do not confine myself to a circular chamber on the valve rod for the back of the valves to fit into, as any other form would work equally as well.

I am aware that valves have been made, heretofore, to work against the steam chest cover; this I make no claim to.

I *claim* making the valves of steam engines with two surfaces—one being exposed to the action of the steam downwards against the valve seat, the other surface exerting a contrary pressure into the chamber, the inside of said chamber being in communication with the atmosphere; the whole being arranged substantially as specified, for the purpose set forth.

No. 16,765.—Norman W. Wheeler, of Cincinnati, Ohio.—*Improvement in Operating Valves for Steam Engines.*—Patent dated March 3, 1857.—Steam being admitted through throttle valve 30, it will pass through 8, the openings *d d d d* in 15, through 11 and 5 into 1, thence out through 23 and 27 into 29, and press upon 16; and the area of 16 being greater than the opposing area of the opening in the seat 13, and the working piston standing over and closing the opening of 6 into 1, so that no steam can pass into the space between 12 and 16, 16 will be forced to its seat, and 17 opened, which, being accomplished, steam will pass through 30, 8, *d d d d*, 11, 5, 1, 7, 13, 9, and 31. This escape of steam will immediately cause 15 to be closed and 14 to be opened, for the sum of the areas of *d d d d* is less than any part of the passage beyond, and the area of 15 is greater than the opposing area of the opening in 10; hence the pressure in 8 will be greater than the pressure in 11 and 5. Let *a* equal the pressure in 8, and *x* that in 11 and 5; let *c* equal the area of $15—d+d+d+d$, and *e* the area of the opening in 10; then, when $a—x\times c$ is greater than $a\times e$, 15 will be seated, the escape of steam arrested, 14 opened, and steam introduced into 1 upon the opposite side of the working piston, and move it towards the right hand; soon after 23 is covered by the passage piston over it, 22 will be opened immediately before 6 is opened in like manner, and a pressure will be obtained in 29 before steam can pass through 6 into the space between 12 and 16, thus causing 16 to remain closed until the piston shall have passed over and beyond 20, when steam will pass into 28, close 17, open 16, release through 6 and 12, and cause the differential pressure to act upon 14 in the same manner as described for 15, thus procuring a continuous reciprocating motion of the piston.

The inventor says: I do not claim actuating simultaneously the induction and education valves by means of steam derived from the working cylinder. I do not claim the passage of the piston over the exhaust port at the termination of a stroke, when the object is merely to cushion and arrest the motion of the piston.

I *claim*, 1st, actuating the release valves of a steam engine by means of steam pressure derived from the working cylinder, and released therefrom by the passage of the working piston over and beyond appropriate ports, when the receiving valves are actuated by other means substantially as described, or in any equivalent way.

2d. Actuating the receiving valves of such engine by means of the differential pressure of steam flowing into the steam cylinder, when the resistance to be overcome arises in whole or in part from steam pressure upon one of a pair which are connected together substantially as described, or in any equivalent way.

3d. Opening the exhaust passages into the cylinder near each end thereof, but within the stroke of the piston, for the purposes set forth.

4th. Connecting puppet valves together in pairs, so that steam pressure upon the one which is closed will hold its fellow open, as set forth.

No. 18,925.—Horatio O. Perry, of Buffalo, N. Y.—*Improvement in Giving Motion to Valves of Steam Engines.*—Patent dated December 22, 1857.—The inventor says: My improvement applies to such engines, and such only, as employ semi-rotating or rolling valves, which are released and allowed to shut automatically. It relates to the means of shutting such valves when they are detached from the positive mechanism, and of stopping the motion without shock at the right point. Its effect is to shut such valves rapidly and quietly without necessitating any dash pots or air cushions to stop the motion.

Claim.—1st. The above described method of shutting a rolling or partially rotating valve by pulling on a link so attached that its effect in rotating the valve decreases as the valve assumes its most desirable shut position, and tends to revolve it in the reverse direction, when the valve revolves by momentum past such position, when operated substantially as and for the purpose set forth.

2d. The above described method of operating said link by the pressure of the steam, so that the whole amount of power available in shutting shall be always proportional, or very nearly proportional, to the resistance for the purpose of enabling the valve to stop in the proper position under all pressures of steam, as set forth.

No. 16,668.—Samuel R. Wimot, of Watertown, Conn.—*Improvement in Operating Valves of Steam Engines.*—Patent dated February 17, 1857.—The valve rod G is twisted at *f* and at *g*; its end being

pivoted in an arm *d* projecting from guide H, which guides the piston rod. *C* is the cylinder. The valve rod is twisted to an extent equal to the angular motion of the cone *m* of the valve. The flattened portion of the valve rod, between *f* and *g*, forms a traverse rod, which is traversed by a slide I that is pivoted in an arm *h* projecting from cross-head B; the movement of this slide is limited by stops *e* and *i*. The operation will be understood from the engravings. Pipe *a* leads to the boiler, *b* to the exhaust pipe, passage *j* into the cylinder, as also *k*, by means of pipe *c*.

Claim.—The valve motion described for operating the valves of steam engines, consisting essentially of a twisted traverse rod, of a travelling slide, and of the stops which limit the turning of the slide, or their equivalents, combined together, and operating substantially as set forth.

No. 18,197.—Robert H. Fletcher, of Brooklyn, N. Y.—*Improvement in Operating Valves of Steam Engines.*—Patent dated September 15, 1857.—The steam passes from steam chest F, through channel *d*, into space O, and forces piston K, together with piston P, to the right, thereby opening channel *a*. As the steam presses on piston B, the latter is moved to the right, the exhaust steam escaping through channels *b*, *x*, *p* and *g*. When the piston has arrived at the end of its course, the valve E is suddenly moved by an eccentric, or otherwise, so as to close passage *d* and to open passage *c*, when the movement of the valves will be reversed.

Claim.—The arrangement of the slide valve E with the pistons P and K and valves Z and M with their respective steam ways, operating together in the manner and for the purposes described.

No. 18,311.—S. Lloyd Wiegand, of Philadelphia, Pa.—*Improvement in Variable Eccentrics for Operating the Valves of Steam Engines.*—Patent dated September 29, 1857.—This improvement consists in the arrangement of a double oblique slide upon the shaft A, which carries the eccentric. The permanent eccentricity is produced in the example of this invention, represented in the drawing, byma king the slot in the eccentric which receives the double oblique slide out of the centre of the eccentric, as will be seen by reference to fig. 3. But the same eccentricity may be obtained by making the said slot in the centre, and making the double oblique slide eccentric in the proper direction to the shaft. The claim will complete the description of this invention.

The inventor says: I do not claim broadly the invention of variable eccentrics; an example of such a device is seen in B. H. Wright's patent, October 26, 1854. In this device the throw of the eccentric is varied by means of a pair of angular arms which pass through the eccentric. This method does not allow the stroke of the eccentric to be reversed; but in my improvement the eccentricity is at all times permanent, in consequence of placing the whole eccentric at right angles to the direction of the motion of adjustment, and the eccentricity is thus rendered unvarying, while the length and "lead" of the throw can at all times be changed by the simple movement of a lever without stopping the engine.

I *claim* the arrangement of the double oblique slide B upon the shaft A, said slide passing through the eccentric C, and otherwise operating substantially as set forth.

No. 17,348.—George P. Clarke, of Newark, New Jersey, assignor to Himself, and William M. Littell, of the same place.—*Arrangement of Safety-Valves within Steam Boilers.*—Patent dated May 19, 1857.

Claim.—The arrangement of the inverted valve *c* in globe A, pressed to its seat by the spring D, from below the clevis K and the escape pipe I, extending through the boiler P; all constructed and arranged within the boiler as described, and for the purpose set forth.

No. 17,712.—Thomas Winans, of Baltimore, Maryland.—*Improvement in Slide Valves for Steam Engines.*—Patent dated June 30, 1857.—The object of this improvement is to diminish the wire-drawing of steam, which occurs when a cut-off valve is closing, which is accomplished by connecting the two passages *c d* of the slide valve by a channel *b*, thereby allowing the steam to pass through both openings alternately into either end of the cylinder, the valve being so constructed as to close and open each opening at the same instant.

Claim.—The connecting of the passages through the ends of the main valve, denominated the Meyer's valve, by the channel or opening described.

No. 18,667.—Nathan Atherton, of Philadelphia, Pa.—*Improvein Slide Valves for Steam Engines.*—Patent dated November 24, 1857.—The claim and engravings explain the nature of this invention.

Claim.—The construction of the slide valve with curved edges, *a, b, c, d, e, f, g, h*, arranged with such a lap over the faces of the steam chest that the steam shall be admitted in front of the piston an instant before the stroke has been completed, and so that the exhaust shall not be made behind the piston until after the stroke has been entirely completed, substantially as described.

No. 16,358.—Robert H. Fletcher, of Brooklyn, N. Y.—*Improvement in Operating Slide Valves of Steam Engines.*—Patent dated January 6, 1857.—As represented in fig. 1, the steam passes from the induction chamber *a*, through passage 3, into chamber 6, keeping the slide, composed of pistons 7, 8, 9, and 10, and stems J, in its position; the steam enters the cylinder A, through passages 2 and *e*, and operates the piston, which, at the end of its stroke, operates lever *d*, moving the different parts into position of fig. 2, when the steam passes from passage 1 into chamber 4, and through passage *f* into cylinder A.

Claim.—The arrangement of the slide valve F and stem J, with their operative parts within the steam chest, as described, so that they may be operated from the piston head within the steam cylinder, by means such as set forth.

No. 18,225.—Barnabas Roberts and Alexander Crumbie, of Brooklyn, N. Y., assignors to Themselves and John Benson, of the same place.—*Improvement of Passages and Means for Working Steam Valves by the direct action of Steam.*—Patent dated September 15, 1857.—Steam being admitted to the steam chest A^1, it passes down into cavity *e*, at the left side, and thence under cavity *d* and cylinder A, as indicated by arrows, and starts the piston to the right, while the steam contained to the right of the piston is passing out at the exhaust port G; when the piston H has passed the opening *a* on the right, the steam passes up through channel *a*, moving piston J to the right, and operating valve H for the next stroke.

The inventors say: We are aware that the valves of steam engines actuated by steam pressure applied to pistons, other than the main working pistons, have been used, and therefore we disclaim such use. We are also aware of the patent of Norman W. Wheeler, July 31, 1853, and we therefore claim no part, device, or thing patented to him.

But we *claim* the arrangement of the steam channels *a, b, c*, which are opened and closed by the travel of the main piston, connecting the steam chest and cylinder as described, in combination with the pistons J J, of equal areas, or their equivalents, substantially as described and set forth.

No. 17,893.—John A. Reed, of Jersey City, N. J.—*Arrangement of Valves and Passages to the Cylinders of Steam Engines.*—Patent dated July 28, 1857.—When this arrangement is applied to an oscillating steam engine, the steam enters the cylinder through trunnion B, passages *a* and *i*, and ports *h*, the latter being opened or closed by means of ring valve E. The steam escapes through ports 1 and *k*, passage *b*, and trunnion C, the escape of the steam being governed by means of ring valve F.

Claim.—The employment in each cylinder head for the induction, cutting off, and eduction of steam, of two ring, valves with an arrangement of seats, ports, and passages, substantially as described.

VII.—NAVIGATION.

No. 16,776.—Edward L. Seymour, assignor to James G. Wright, Charles Wright, and Henry J. Geyer, of New York, N. Y.—*Nautical Alarm.*—Patent dated March 3, 1857.—The frame *a* is placed upon a buoy or boat, the motion of which will cause the pendulum *d* to swing upon its axis *e*. The ring *f* will then actuate the arms *g* of the hammer rods *h*, and the hammers *k* will strike the gongs *k*.

The inventor says: I *claim* the combinination of frame, rods, hammers, axles, springs, pendulum, levers, and gongs or bells, substantially as above described, to be placed upon buoys, floats, or vessels of any kind, for the purpose of causing alarms, and giving warning of rocks, shoals, or other dangers upon the coast or at sea; and I do not mean to confine myself to any particular materials in the construction of the same, nor to the placing of the ring, levers, and springs above or below the centre of oscillation, but to vary the position of the same, and of the gongs and their number, as I may deem desirable, so long as I adhere substantially to the description.

No. 16,821.—George Gilman, assignor to Himself and Henry R. Clinkard, Chelsea, Massachusetts.—*Second Anchor Shackle.*—Patent dated March 10, 1857.

The inventor says: I do not claim a hoisting block made with a pawl and tripping lever, so applied to the pawl as to enable a person to elevate the latter out of engagement with a chain when passing around the shear of the block.

But I *claim* my new improved anchor shackle, as made with a spring pawl D and trigger, or latching apparatus F F, &c., arranged with reference to the roller B, and made to operate substantially as described.

I also claim making the pawl forked, or with a recess C, so as to enable it to straddle the chain, as described.

No. 17,182.—John B. Holmes, of New York, N. Y., assignor to John R. Pratt and John B. Holmes, aforesaid.—*Improvement in Anchor Trippers.*—Patent dated April 28, 1857.—The chain, and the anchor attached to it, is kept suspended when the pin D passes through the link G of said chain, as represented in the engraving. By turning handle F half a revolution to the right, the screw E upon shaft D will cause the pin D to recede and disengage itself freely and with perfect safety from the chain.

The inventor says: I do not claim the various parts, when separately considered.

But I *claim* the combination of the thread or screw E, working in a spiral groove or nut, with the shaft or bolt D, when arranged in the manner and for the purpose substantially as described, whereby I am enabled to relieve the chain and trip the anchor at an instant, in the manner set forth.

No. 16,356.—Thomas L. Dalton, of New York, N. Y.—*Improvement in Anchors.*—Patent dated January 6, 1857.—The nature of this invention consists in the formation of an anchor having only one fluke D, with a curved guard B attached to shank A in such a manner that the action of the curved bar against the ground, when drawn forward, will turn the anchor to the right position for the fluke to take effect into the ground, and also in so forming the neck C as to bring the fluke into such a relative position to the shank A that when weighing anchor the fluke will not be likely to catch the side of the vessel.

Claim.—An anchor constructed substantially as described.

No. 18,044.—Henry Getty, of Brooklyn, N. Y.—*Improvement in Ships' Berths.*—Patent dated August 25, 1857.—The berth A can be turned into a horizontal or vertical position, as represented in figs. 1 and 2, by turning it on pivot *e* as its fulcrum, and when occupied it will swing freely as the ship swings by pulling the cords *r r'*; the berth will be placed into the position fig. 2, one side touching the back of the room, whereby it is prevented from swinging.

Claim.—Providing at each end or side of a state room of a steamer or vessel a pivoted bracket *d*, which is capable of vibrating in the path of a circle a certain distance, and connecting the berth to said brackets through swinging vertical screw rods *g g*, metal or rubber springs *t t*, and hollow standards *b b*, substantially as and for the purposes described.

No. 16,656.—Rufus Rode, of Manchester, Pa.—*Improvement in Boat Oars.*—Patent dated February 17, 1857.—Lever *a* is inserted in the hand end of the oar. The lever *a*, when depressed, operates lever B, which latter operates a spring C, so as to turn the oar to an angular position.

The inventor says: I *claim* the means by which I back water, when the oar is to be used for that purpose, the oar to return to its place, when feathering, by means of lever fulcrum and springs, as described.

No. 16,904.—Robert C. Buchanan, of Baltimore, Md.—*Portable Boats.*—Patent dated March 31, 1857.—The skeleton frame A of this boat, (a top view and longitudinal section of which is represented in the engraving,) can be folded up into a small compass to make it adaptable for transportation by land. When this boat is to be used, the sides and bottom of the frame A are covered with unprepared canvas, which is lashed to the lash-rails on the sides of the frame, as represented in the engraving.

Claim.—The portable boat, as described, the same consisting of the portable skeleton frame work and unprepared canvas, secured to the frame work by lashings, in manner set forth.

No. 18,694.—Reuben Jane, of Otsego, N. Y.—*Improvement in Attaching Paddle Wheels to Canal Boats.*—Patent dated November 24, 1457.—The claim and engraving explain the nature of this invention.

Claim.—The vertical slotted shaft N, hung on a pivot on the bow of the boat, arranged in relation to the wheel shaft C, to which is attached the twisted paddles B and gear wheel E, for the purpose of drawing boats on canals, &c., and which are put in motion by the engine by means of gear wheel H^1, arranged as set forth.

No. 18,107.—Andrew Seaman, of Amsterdam, N. Y.—*Improvement in Means for Attaching Whiffle Trees to the Tow Lines of Canal Boats.*—Patent dated September 1, 1857.—In case it is necessary to detach the horse suddenly from the tow-line G, the attendant moves loop *c* forward and raises lever F to the position shown in dotted lines, when the bow of bar E will be turned in a horizontal position, and free from the end of tongue D.

Claim.—The shaft C, with tongue D attached, in combination with the bar E, with lever F attached, the above parts being fitted to the rods B B, and the whole arranged substantially as and for the purpose specified.

No. 18,683.—Joseph C. Day, of Jersey City, N. J.—*Improvement in Means for Stopping and Starting Ferry-Boats.*—Patent dated November 24, 1857.—In this invention a set of timbers G G of any strong elastic wood is prepared; the length of each piece of timber being sufficient to reach from the outer end of the slip back two-thirds, or of its depth, to the bridge; the width a foot, more or less; and the thickness at one end a foot or thereabout, and at the other end six inches. Enough of these timbers should be strongly riveted together edgewise with bolts *f, f, f*, to give sufficient vertical breadth for receiving the gunwale of the boat in all the variations of the tide.

In order to complete the elasticity and power of resistance to any shock, air cylinders M M are located behind the free inner ends of the shields, as shown in fig. 2. These are firmly secured to the sides of the slip, and their pistons N N may be provided with friction rollers *b b*, like those in the pistons I I of the boat.

A self-acting grapple should be attached to the bridge B, and act upon a notched rack on the deck of the boat. The grapple is indicated at *i* and the catch rack at *h*, to show the manner in which they are to act.

The inventor says: I do not claim the use of a buffer for lessening the concussion produced by the collision of a boat with a wharf or other object, as I am aware of the previous employment of such a device.

But I *claim* the elastic shields G G constructed and applied to the slip, in the manner and for the purpose described.

I also claim the arrangement of the pistons or buffers I I, grapple *i*, and shields G G^1, operating together as specified.

No. 17,192.—Robert Bogle, of Rock Hall, Md.—*Improvement in Boats for Duck Shooting.*—Patent dated May 5, 1857.—The gunner within the boat A, having his legs in the leggings D, propels the boat by his feet or by means of the paddles E towards the game, and when within shooting distance he can pass his body between the India rubber covers *a* and *c*, and shoot the game.

Claim.—In combination with the hull the openings therein, and leggings attached, so that the gunner may propel his boat, substantially in the manner described.

No. 17,052.—Zachariah Oram, of Camden, N. J.—*Improvement in Ice-breaking Boats.*—Patent dated April 14, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I do not claim to be the inventor of the various parts described.

But I *claim* the arrangement of a series of pointed plungers operating vertically and in line with each other, whereby I have the advantage of the series for line or continuous splitting off the ice, instead of breaking in mass.

No. 18,832.—James D. Foster, of Cincinnati, Ohio, and H. C. Foster and John Q. Miller, of Springfield, Ohio.—*Improvement in Ice-breaking Boats.*—Patent dated December 8, 1857.—In this invention, as shown in the engravings, *g g g* are bars called by the inventors "breaker bars," supported near their centres on bearings *y*, and furnished at their front ends with arms projecting down at right angles with the bars, as represented by the dotted lines in figure 1, for breaking the ice away after it has been sawed. The bars are operated by the shaft *d*, which is furnished with arms on cams *f*, one for each bar, which cams strike and depress the inner ends of the bars, and, as the bars slip off, their front ends break the ice after it has been sawed.

Claim.—Making the breaking bars detachable, in the manner and for the purposes set forth.

No. 16,491.—Matthias Ludlum, of Essex, N. Y.—*Life-Boat.*—Patent dated January 27, 1857.—This life-boat is made with two parallel tubular air-tight floats A A, combined with a cam B resting and secured on them, and placed at such an elevation above the water line as to prevent passengers being washed overboard by the waves.

The inventor says: I do not claim the construction of vessels by placing a deck on two or more floats. Neither do I claim the use of two floats, as double vessels have long been known. Nor do I claim a propelling wheel between two vessels; nor having discovered any new method of giving buoyancy to vessels; nor to have discovered any new principle or method of applying any principle, or any new method of saving the lives of passengers at sea, or of protecting them from its waves; but a life-boat having iron floats arranged and constructed as described, is, to the best of my knowledge and belief, an entirely new article of manufacture.

I *claim* the life-boat described, when made and manufactured substantially as set forth.

No. 18,233.—Mortimer M. Camp, of New Haven, Conn.—*Improvement in Life-Boats.*—Patent dated September 22, 1857.—This invention is intended to be applied to life-boats having an inclined deck, to form a water-tight hold, in which persons can be placed for preservation in case of shipwreck or other disaster to a vessel at sea, or in which the crew of a shore life-boat may be placed to work and direct the boat; and it is used to prevent the water entering the hold, and the boat being swamped, either at the time of persons entering the hold or after they have entered it.

In the drawings, A is the hull of the boat; B is an enclosed deck; C is the bulkhead that divides the hold into two separate compartments D and E; F is a hatchway, forming an entrance to the hold E; the hatch is made into two lengths G and H; I is an aperture formed in the bulkhead.

The inventor *claims*, 1st. Dividing the hold of a life-boat into sections by the bulkhead C, and having an aperture I in the bulkhead, to be covered and closed by the swing hatch H, in the manner and for the purpose specified.

2d. Making the section H of the hatch to operate as a cover or valve to close the aperture I in the bulkhead C, as and for the purposes set forth.

3d. The combination of the movable combings with the hatch H and the aperture I in the bulkhead C, as described, and for the purposes set forth.

No. 17,592.—George W. Swartz, of Buffalo, N. Y.—*Improvement in Propeller Canal Boats.*—Patent dated June 16, 1857.—This invention relates to boats constructed, in part, of metal plates, and consists in so forming recesses J in said plates that they may protect the propeller wheel and give direction to the current of water.

The inventor says: I am aware that what are called iron boats have heretofore been constructed; I am also aware that boats are built of wood, using iron bolts, rods, bars, screws, &c., for the purpose of connecting and fastening the wood parts together, and for strengthening and protecting the same. I make no claim to such.

Neither do I claim the combination of iron and wood as material used in the construction of vessels.

Neither do I claim substituting iron for wood, or wood for iron, in the construction of any part or parts of a boat or vessel.

I *claim* so forming the recesses in the plates that they may protect the propeller and give direction to the current of water moved by the propeller, substantially as set forth.

No. 16,704.—D. Cumming, jr., assignor to D. Cumming, sr., of Mobile, Alabama.—*Improvement in Shoving Poles for Steamboats.*—Patent dated February 24, 1857.

The inventor says: I do not claim the suspending of bodies upon swivels or universal joints, as that is a very old method.

Neither do I claim the general application of steam in a direct manner to tool handles and other kinds of implements, for I am aware that steam has been thus applied to hammers, tree saws, pile-drivers, drills, &c.

Neither do I claim broadly the employment of a steam engine for operating poles for pushing boats along; an example of such employment is seen in John Dougherty's rejected application for a patent dated May 27, 1847.

In this device the engine is a stationary one, located in the central part of the vessel. A shaft which communicates with the engine extends across the vessel, as in other steamers. The poles are placed on the side and operated by the shaft. This is a very cumbersome and clumsy arrangement; it could not be used except with great difficulty for the purposes for which my improvement is applicable.

Other devices for pushing boats along have been invented, but the shoving pole or rod has never been combined directly with the piston of a movable or portable steam cylinder; such an arrangement is, therefore, a new combination. Nor has any other apparatus for shoving off boats ever been invented which was so well adapted to the purpose, and so highly useful, as that described by me.

A is the stern of the boat; P a flexible pipe leading to the boiler; *a* a universal joint.

I *claim* the combination of the shoving pole or rod C directly with the piston *a* of a portable or moveable steam cylinder, when the parts are arranged and employed in the manner and for the purposes substantially as described.

No. 18,095.—Richard C. Holmes, of Cape May, N. J.—*Improvement in Surf and Life-Boats.*—Patent dated September 1, 1857.—The weight of the water tank E keeps the boat in an upright position, while the water which she would ship in case of accident can escape through valves F.

The inventor says: I do not claim, separately, the buoyant chambers, the valves, or the water tank.

But I *claim* constructing a boat of the peculiar form described, and giving to a boat of that form buoyant end D D^1, ballasting tank, and freeing valves, all constructed and operating substantially as described and for the purposes specified.

No. 16,774.—John B. Holmes, assignor to John R. Pratt, of New York, N. Y.—*Improvement in Ships' Capstans.*—Patent dated March 3, 1857.—The spaces between the welps W being widest in the middle, the chain will be free to slide easily toward the middle of the barrel as fast as wound upon the same, thereby preventing one part of the chain from passing over the other.

Claim.—The vertical recesses C and welps, extending the whole length of the barrel of the capstan, and allowing of two or more turns of the cable around the capstan, as set forth.

No. 17,715.—Robert Dunbar and John F. Robertson, of Buffalo, N. Y., assignors to "The Buffalo Eagle Iron Works Company," of Buffalo aforesaid.—*Improvement in Ships' Capstans.*—Patent dated June 30, 1857.—If the pawls *e* are down upon the ratchet teeth *c*, on the upper end of the body C, and the pinion I is thrown out of gear with the stationary wheel A^1, on plate A, the cap D and body C will be connected, and both turn with each other; but if the pawls *e* be varied, and the pinion I thrown in gear with the wheel A^1, it will be seen that the cap D is connected with the body C, through the medium of the gearing *p*, J, I, A^1; and in the latter case the speed of the body C will be much slower than in the former case, when the cap was directly connected with the case.

The inventors say: We do not claim giving a variable movement to the capstan, irrespective of the particular means employed for effecting the purpose, for capstans have been so arranged as to have a variable movement.

But we *claim* the arrangement of the cam *j* and eccentric *h* upon the shaft G, operated by the lever *i*, for throwing in and out of gear the pinions J and I, as set forth.

No. 17,971.—David Knowlton, of Camden, Me.—*Improvement in Ships' Capstans.*—Patent dated August 11, 1857.—When this capstan is to be used as a power capstan, the pawl *n* is lifted by its head *p* from contact with the top of the barrel, and the head C is rotated by means of handspikes. As the head turns, pinion G turns pinions H and I in opposite directions, thereby operating pinions *u* and *v*. The pinions *u* and *v* have a tendency to turn the internal gear K, but that is prevented from turning, as pawl *n* bears against the teeth of ratchet M; and the consequence is, that the gears *u* and *v* themselves revolve around shaft B, and carry the barrel around in the same direction in which the power is applied to head C. By tripping pawl *p* into one of the notches on the top of the capstan barrel, the head and barrel turn together with the same speed, and the effect of the operation is the same as with the common capstan.

The inventor says: I do not claim making a power capstan to operate by means of a combination of gears, ratchets and pawls.

But I *claim*, in my improved capstan, the combination of the gear K, at the bottom of the capstan (when made and applied so as to be rotated or be made fast alternately, as described) with the gear or pinion G attached to and revolving with the capstan head C, they being connected by gears, and operating in the manner and for the purpose described.

No. 17,969.—SAMUEL HUSE, of New York, N. Y.—*Improvement in Ships' Capstans.*—Patent dated August 11, 1857.—The bars L can be raised or lowered by means of handle *m*. When they are raised, they connect the head *a* with the barrel B, so that they turn together, and a rapid motion may be given to them, the plate G turning as rapidly as D and E. By turning handle *m* and lowering the bars L, the drum head *a* turns independently of the barrel B, carrying with it the cylinder D and cog-wheel E, the latter meshing into cog-wheel H on the under side of plate G, moves plate G, and with it barrel B; plate G and barrel B being coupled together by bars L, and the wheel H, in turn, meshes into I, thus a slower motion is given to B than to *a*, thereby increasing the power of B in proportion of the radius of E and I.

The inventor says: I am aware that capstans have been arranged to give a more rapid motion, or one with increased power, by connecting or disconnecting the drum and barrel, and at the same time throwing into play or out of play internal gearing, or by changing the direction of motion of the drum and barrel, and therefore do not claim generally the construction of a capstan to accomplish these ends.

But I *claim* the arrangement and use of the hollow shaft D attached at one end to the drum or head, and in combination therewith the movable gear-plate G, constructed substantially as described, and worked by a pinion on the lower end of D.

Also, in combination with such hollow shaft and movable gear-plate, the arrangement of the clutch levers, or an equivalent thereof, for the purpose of connecting such movable gear-plate to the barrel, and at the same time disconnecting the head and barrel, or *vice versa*, and thus changing the action of the capstan to a quicker or more powerful one in a moment, and without changing its motion or displacing any gear.

No. 18,053.—CHARLES E. MARWICK, of Portland, Me.—*Improvement in Ships' Capstans.*—Patent dated August 25, 1857.—When the capstan bar *m* is inserted within one of the holes *e* of the key ring D, and so that its bitt *l* may be forced through the bitt recess *f* of the said hole, and into one of the recesses *d* of the lip C, the ring D will be locked to the capstan barrel A so as to enable the same to be put in rotation. If it should be desirable to augment the power for rotating the barrel, each capstan bar is inserted in its hole in such a manner that the bitt *l* may pass into recess *g*, and the end of the bar into one of the sockets *h*; by this the key ring D will be locked to the head E; and as both are turned, the shaft F will be rotated, and the rotary motion of the capstan barrel will be effected by means of the gearing G, H, I, K, M, N.

The inventor says: I do not claim a capstan having its barrel fitted to rotate either with or independently of a handspike or wheel, as this is not new.

Neither do I claim the application of gearing to a capstan, for the purpose of increasing the power by which the same may be put in operation.

But I *claim* the combination of the key ring D, the recessed lip C, and the socketed head E, as constructed, arranged together, and applied to the capstan barrel A and the driving shaft F, of the multiplying gearing, and operated by means substantially as specified.

No. 16,935.—JOHN SCHAFFER, of West Manchester, Pa.—*Improvement in Steamboat Capstans.*—Patent dated March 31, 1857.—The head H is secured permanently to shaft C; the drum E can be connected with shaft C by inserting pin K into the holes L and M. The drum D can be made to run with shaft C, by unshipping the wheel P, and fastening the drum E to the drum D by inserting a pin in the square socket N, one half of which is in the drum E and the other half in the drum D.

The inventor says: I do not claim the parts driving or driven, as separately considered.

Nor do I claim a capstan with a barrel divided into two or more drums rotated upon a stationary shaft.

I *claim* a capstan the shaft C of which rotates within the drums D and E, which can be rotated separately or in conjunction with and by, or independently of, said shaft, substantially in the manner and for the purposes described.

No. 18,260.—GEORGE WILLIAMSON, of Brooklyn, N. Y.—*Improvement in Diving Apparatus.*—Patent dated September 22, 1857.—By this invention, when the nautilus is suspended to the float K, the pull of the rope on the capstan *o* will tend to turn it with a force due to the sinking power of the nautilus, and the capstan is connected with the index-wheel *v* by the catch on the handle, and the index-arm *x* to the spring *y*, the pull on the rope due to the sinking force will be exerted on the spring which alone prevents the capstan from turning, and hence the index-hand *x* will indicate the weight actually suspended to the float; and if that be greater than the weight of an operative, he may get out of the nautilus without danger of its rising.

The inventor says: I do not wish to be understood as limiting my claim of invention to the special construction specified, as my invention of improvements may be applied by the substitution of equivalent means.

I *claim* the employment, in combination with the nautilus, of the channel-ways for the escape, at the sides, of the compressed air from the working chamber, substantially as described the said channel-ways being made in the thickness at the bottom of the nautilus—that is, between the floor of the working chamber and the outer bottom surface of the nautilus, as set forth and for the purpose specified.

I also claim combining the nautilus with, and suspending it to, a float or buoy, in the manner substantially as described, so that the apparatus for operating the connecting rope, or equivalent, may be worked from the inside of the nautilus, as described, and for the purpose specified.

And I also claim combining a spring balance or scale with the combined nautilus and float, substantially as specified and for the purpose set forth.

No. 18,458.—James Q. Kelly, of Sag Harbor, N. Y.—*Improvement in Harpoons.*—Patent dated October 20, 1857.—When the harpoon is ready for use, it is in the position represented in the engravings 1 and 2. When driven into the body of the whale, the flukes *c c* prevent the instrument from being drawn back, and the motion of the whale, in attempting to escape, causes the line to be straightened and the pin *d* to be broken, and then forces the point B forward into the flesh until the eye E reaches the slide G. The barbs *b b* being thus gradually turned in, the flesh cannot return in the cut made by their insertion, and consequently take a strong hold in the flesh of the whale.

By using the connecting rod *i*, the sliding socket C and the slide G are enabled to slide over any bends in the rod *a*, which are frequently caused by the turning or other violent motions of the whale.

The inventor says: I *claim* the arrangement of the eye, or point of attachment, of the line D to the harpoon, and the eye in the slide G through which the line passes at different angles on the harpoon when prepared for throwing, substantially as described, whereby a twisting movement is given to the point of the harpoon in the act of being thrust further into the whale, for the purpose set forth.

I also claim the connecting rod *i* and guide G, in connexion with the sliding socket C, whereby the advantages of a long socket or bearing are attained without the disadvantage of a continuous tube, in case of bending the rod or shaft which slides therein, substantially as specified.

No. 16,555.—Warren A. Simonds, of Boston, Mass.—*Improvement in Life-Preservers.*—Patent dated February 3, 1857.

Claim.—A life-preserving float, composed of separate and independent sectional chambers or air vessels E, covered and surrounded upon all sides by exterior sectional floats *g* filled with cork or other solid buoyant material, arranged in the manner substantially as set forth.

No. 17,434.—James Knight, of New York, Y. Y.—*Improvement in Life-Preservers.*—Patent dated June 2, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The construction of the supporter, to sustain the head in the position assumed by persons when swimming, thus relieving the wearer from muscular effort, and, attached to this supporter, a shield, to protect the mouth and nostrils from the violence of the waves, and this supporter and shield fitted to the ordinary life preservers as worn around the body, by having attached to them sheaths, as represented, one of them fitted with a sheath to admit the stem of the supporter for adjustment to the wearer. The whole, when combined, constitutes my improvement.

No. 18,274.—Charles J. Bunker, of New York, N. Y.—*Improvement in Life-Preservers.*—Patent dated September 29, 1857.—The form given to this improvement is that of a sack or shirt, which can be worn either as an outside or inside garment. The drawings represent a life-preserving shirt. Figures 1 and 2 of the drawings represent the outer and inner sheets of the fabric of which the life-preserver is made, and the cells of each. When these are placed together, the air cells of one occupy the spaces in the other not taken up by its air cells. The edges, marked 1 and 2, respectively, join each other. When intended for outside wear, this preserver can be made of India rubber cloth, or the like. Instead of being closed at the sides, under the arms, it may be open at the sides, fixed with straps and buckles, so as to be thrown over the head and secured to the person.

The inventor says: What I *claim* as new is a life-preserver constructed of two or more sheets of water-proof fabric, with the series of air cells arranged substantially as set forth, and so as to cover the vital parts of the body, for the uses and purposes set forth and described.

No. 18,809.—Abram J. Gibson, of Worcester, Mass.—*Improvement in Life-Preservers.*—Patent dated December 8, 1857.—This invention consists of a deep belt constructed of some water-proof air-tight material, constructed with air chambers, and having combined with it hollow floats, of similar material, which are of sufficient length to reach along a person's extended arm, and which terminate in hollow paddles, made to fit the hands, for the purpose of aiding the wearer in swimming.

The inventor says: I do not claim the belt, nor do I claim the construction of an inflated life-preserver with separate air chambers; neither do I claim of itself the use of buoyant paddles, fitted and attached to the hands as an aid in swimming.

But I *claim* a life-preserver, composed of a belt A, arm-floats B B, and buoyant paddles C C, arranged and connected and furnished with straps, or their equivalents, to attach it to the person, substantially as described.

No. 18,869.—James E. Serrell and William Davis, of New York, N. Y.—*Improvement in Life-Preservers.*—Patent dated December 15, 1857.—The inventors, in describing their improvement, say: We provide two pockets *f f* in the front of the jacket, and pockets *g g*, one under each arm, and also pockets *h h* on the back, similar to pockets *f f*. Into each of these pockets we insert a float of proper size and shape, made in the following manner: We take a bladder, or equivalent water-proof substance, and fill the same with shavings, and insert the same into the pockets, and sew the same into place.

Claim.—The manner described of forming floats for the pockets of life-preserving jackets, by filling bladders with shavings, or equivalent material, as and for the purposes specified.

No. 18.090.—ELBRIDGE FOSTER, of Hartford, Conn.—*Improvement in Life-Preserving Berths for Steam and other Vessels.*—Patent dated September 1, 1857.—When the berth A is used as a common bed, the valves *c* are opened for the escape of air. By turning the keels E to the position represented in fig. 1, the spaces E are filled with air, and the stops D are then turned, closing the openings *c* air-tight, thus imparting a high degree of buoyancy to the berth.

Claim.—The adjustable inflated keels, in the manner and for the purpose set forth.

No. 16.589.—LEWIS T. HOWARD, of Smith Mills, Mass.—*Improvement in Feathering Paddle-Wheels.*—Patent dated February 10, 1857.—It will be understood from the engravings that this improvement serves to keep the paddles *i* constantly vertical.

Claim.—Connecting the cranks of the paddle-shafts with each other around and with the stationary governing wheel E, by means of the connecting bars K K and the grooved rollers *l l*, or their equivalents, substantially as set forth.

No. 18,202.—LEWIS T. HOWARD, of Smith's Mills, Mass.—*Improvement in Feathering Paddle-Wheels.*—Patent dated September 15, 1857 —The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Contracting the hub *h* of the paddle wheel D, so as to dispense with an outside bearing, for the purpose of enabling me to place the feathering wheel *k l* outside of the paddle-wheel, and use any length of connecting arms *o*, between said feathering wheel and the buckets *i*, that may be deemed most effective, and as set forth and explained.

No. 17.943.—GEORGE W. SWARTZ, of Buffalo, N. Y.—*Improved Propeller-Blade.*—Patent dated August 4, 1857.—These propeller-blades, on their periphery, when revolving, describe the surface of a half globe, whatever may be the diameter of the wheel or the pitch of the blades; the blades are convex on their outer sides, and their inner surfaces are made slightly cylindrical.

Claim.—A propeller-blade constructed in such a manner as to embody said principles, substantially as set forth.

No. 17,276.—GEORGE HIRSCH, of Buffalo, N. Y.—*Improvement in Propeller Blades.*—Patent dated May 12, 1857 —This invention relates to the peculiar shape of the blades of a propeller-wheel, which shape is represented in the engravings.

Claim.—Constructing propeller-wheels having blades formed substantially as described and for the purposes set forth.

No. 17,017.—JONAS BOSENBURY, of Cherryville, N. J.—*Improved Boring Machine.*—Patent dated April 14, 1857.—The object to be bored is clamped between the dogs H and F; the dogs H are adjustable by means of the set screws S, and the dog F, which is attached to rack *c*, can be adjusted by turning spiral cam D by means of crank E. The auger shaft *n*, which turns in a frame *d b*, can be adjusted in a lateral direction by means of slide *g*, which can be moved on frame *a* by means of a tongue and groove joint, while it can be adjusted in a vertical direction by frame *b d* sliding on frame *c*. The uprights I can be adjusted laterally by turning cranks L.

Claim.—The arrangement of devices, as described, for the purposes set forth.

No 18,814.—ALMER JOHNSON, of Buffalo, New York.—*Improvement in Propellers.*—Patent dated December 8, 1857.—The line L, in the engravings, indicates the division between the stern and the fan. The arrow indicates the entering edge of the propeller. The arrow 2 indicates the direction in which the wheel revolves. The lines 1, 2, 3, &c., show the direction which the curves take on each surface of the stern.

The line M indicates the circumferential line of the fan which falls outside of the stern.

Claim.—Constructing propellers, which embody the distinctive features of my invention, substantially as set forth.

No. 18,314.—ETHAN CAMPBELL, of Boston, Massachusetts, assignor to WILLIAM P. PAGE, of Cambridge, Massachusetts, and EDWARD F. HODGES, of Boston Massachusetts, (in trust.)—*Improved Marine Propelling Apparatus.*—Patent dated September 29, 1857.—In the drawings, A represents a cylindrical case or vessel provided with two curved induction pipes, or passages, B and C, leading out of its lower part, and arranged, with respect to one another and the case, as shown in fig. 1. Through the axis of the said cylindrical case a shaft D extends and turns freely in the ends of the case. The said shaft has two circular heads E fixed upon it eccentrically, as shown in figs. 1 and 2, each of these heads being placed, as shown in fig. 2, in contact, or nearly so, with the adjacent head of the case A. A tubular cylinder F turns freely on the two heads E, it being arranged thereon as exhibited in figures 1 and 2. This cylinder has a wing or rectangular division plate G extended downward from it, and directly between the two passages B and C, such wing being constructed in its length to correspond to the distance between the heads of the case. This wing G is firmly attached to the cylinder F, and, when the apparatus is in operation, plays freely through a space arranged between the conducting passages B and C, as shown in fig. 1, the side of such space being so formed as to be in contact with those of wing G, in whatever position such wing may be.

When the shaft D is in motion, it will cause the two eccentric heads E to revolve with it and within the case A, such a movement of the heads, operating in connexion with the space and the wing G, serving to create in the tubular cylinder E a peculiar movement within the said case, by which the cylinder will be carried around against the entire surface of the case.

The inventor says: Now, I do not claim an eccentric cylinder and a wing and valve, arranged so as to rotate together in a cylindrical case, the wing, during such rotation, being made to slide in a recess formed in the eccentric cylinder.

Nor do I claim the principle of propelling a vessel by an apparatus for forcing jets of water against the water in which the vessel may be floating.

But I *claim* my improved propelling apparatus, constructed and operating so that its wing cylinder F and wing plate G may not only simultaneously rise and fall in their case A, but at the same time have lateral motions in contrary directions, and the wing operate against a space *b*, so formed in and applied to the case as not only to be in contact, or nearly so, with the opposite sides of the wing, but allow the vibratory, as well as the up and down movement [illegible] wing, as specified.

No. 17,156.—Thomas Kendall, sr., of San Francisco, Cal.—*Improvement in Submerged Propelling Wheels.*—Patent dated April 28, 1857.—When the wheel is in motion, the cam plates P, turning on their pivots T, pass from the inner circumference of ring *a* over the curved plates *z*; and by these transitions, the positions of the wings P are changed alternately, and each wing at proper intervals falls centreward, so as to encounter the resistance of the water outward and backward from the spaces between the arms, as the wing changes its position to enter the nich in its segmental form.

Claim.—The means described for feathering or changing the positions of the wings, consisting of the cam plates P, concentric ring *a a*, and curved plate Z Z, with its slopes or planes; the whole being arranged and operating substantially in the manner described.

No. 16,352.—A. B. Crossman, of Huntington, N. Y.—*Improvement in Rudders.*—Patent dated January 6, 1857.—The lower part of rudder A is provided with an extra extension piece B, which is attached to the cheek plates C; the piece B extending forward under the keel of the vessel and beyond the pintles of the rudder, and thus render the rudder self-balancing. The extension B can be raised on entering shoals, as represented in dotted lines.

The inventor says: I disclaim the making of a rudder in two parts, one of which is movable, for devices of this kind have long been known; an example is seen in "Newton's London Journal," conjoined series, vol. 26, page 158, plate 9, figs. 7 and 8. In this device the main rudder is provided with a movable attachment on its rear, so arranged that when the rudder strikes a rock or shoal, the movable piece will rise and prevent injury either to the vessel or rudder. Another example is seen in a French work, published by the French government, at Paris, in 1824, entitled "Memoirs of American Steam Vessels, by M. M. Morriestier." This consists of a movable piece attached to the rear of the rudder, and so arranged that it can be raised and lowered, so as to extend at pleasure the length of rudder surface presented to the water, and thus cause the water to obey the helm quicker. In smooth water, this device is perhaps advantageous, but it is evident that the power required for steering will be much inincreased by widening the rudder surface. This device, therefore, augments the very evil which mine is intended to obviate.

I *claim* the attachment to the rudder A of an extension piece B, when the said extension piece is so combined and employed as to render the rudder wholly or partially self-balanced, as set forth.

No. 17,572.—Robert S. Harris, of Galena, Ill.—*Improvement in Rudders.*—Patent dated June 16, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The application of an outer or second rudder attached to and working on the common rudder.

Also, the short tiller held and worked by stationary chains or ropes, as above described, for the purpose named.

No. 16.969.—Washington F. Davis, of Winthrop, Mass.—*Improvement in Reefing Sails.*—Patent dated April 7, 1857.—In order to reef this sail from the deck, the rope I should be set free, so as to allow the upper yard to be drawn downward. The rope H is then to be pulled on, and while it draws the upper yard B down to the reef band E, the latter will be held up by the reefing ropes, and the sail folded in plaits against the yard B. Thus the sail will not only be reefed, but at the same time it will be folded up by one set of lines.

The inventor says: I do not claim reefing at either the head or foot of a sail or topsail; nor do I claim reefing at the foot of a topsail, by means of a series of buntlines fastened to the reef band, and extended downward through grummets or guides, thence underneath the foot of the sail, and thence upward on the front of the sail, and to and through blocks or sheaves applied to the topmast, the said buntlines extending from thence to the vessel's deck, for such is an old contrivance. Nor do I claim the plans or methods of reefing as recently patented by William H. Foster and Isaac Boss, the topsail in them being reefed at its head, while all that part of the sail which is below the reef band is held up by lines of suspension passing upward through blocks or sheaves, directly supported by the topmast, the said suspension lines descending from thence to the deck. In these plans the upper yard is lowered down, so as to reef the sail, the draught, however, on the reefing lines, operates to a considerable extent to prevent the descent of the yard.

I am also aware that reef tackles have been run along the yard toward the mast, and thence down through the yard toward the deck; consequently I do not claim such; the reef tackles in such cases being used separately from the reefing lines, and for the purpose of drawing close up to the yard the outer edges of the sail after it has been reefed.

I *claim* arranging the ranges of folding eyes or grummets, and the reefing lines above the reef band, or with respect to the upper yard, as described, in order that the sail, when reefed, shall at the same time be folded or plaited against the upper yard, as specified.

I also claim the described arrangement of the lines of grummets or eyes, at unequal distances apart, in the manner as set forth, in order that the minor part of each fold of the sail may come underneath the yard, or the yard project beyond it, as described, when the sail is reefed.

No. 17,101.—Francis C. La Croix and Chauncey Barnes, of New York, N. Y.—*Improvement in Reefing Sails.*—Patent dated April 21, 1857.—If the topsail yard be lowered to the usual distance for a close reef, the act of lowering will take up the lines *b* and *f*, they being fastened at b^{11} and *o;* and the part of the sail below the close reef points will be kept as tightly stretched as if the yard were not in motion.

Claim.—Reducing sails by means of "tackles," arranged as described, both ends of the "falls" of which are secured to the yard, and which are operated in the manner set forth.

No. 18,219.—George W. La Baw, of Jersey City, N. J., assignor to Himself and Charles A. Durgin, of New York, N. Y.—*Arrangement of Means for Reefing and Furling Sails.*—Patent dated September 15, 1857.—By rotating shaft G, the vertical shaft D is also rotated; and by depressing lever J, the projections *g* can be moved into the notches of rollers E, and said rollers can be coupled with shaft D, when the sails can be wound up on said rollers.

The inventor says: I do not limit myself to any particular mechanism for operating the vertical rollers around which the sails wind, as such mechanism may be varied.

I *claim* the arrangement of vertical rollers in front or rear of the mast, and operated by mechanism from the deck of the vessel, and whereby I am enabled to operate separately or together the sails on each mast from the deck, substantially as described and set forth, irrespective of the mechanism employed for working the vertical rollers.

No. 17,616.—Thomas Batty, of Brooklyn, N. Y.—*Improvement in Means for Reducing Topsails.*—Patent dated June 23, 1857.—In reducing the sail, the yard D is lowered to the position represented in fig. 1, and then all the reef pennants are hauled tight to draw the edges of the sail close up to the yard, which causes the bunt of the sail to be plaited between the front of the yard and the still extended portion of the sail, as represented in fig. 2. As the yard D is lowered, the bunt of the sail is prevented from filling with wind by the position of the bunt pennants H, which are confined near the yard by the crane-neck piece I.

Claim.—1st. The arrangement of one or more bunt pennants H, connected with the front of the sail, passing up the front thereof, and connected with the yard; and of a crane-neck piece I, or its equivalent, attached to the yard to work up and down said pennant or pennants, substantially as set forth, so that in lowering the yard the wind may be expelled from the bunt of the sail towards the sides, in the manner substantially as represented in fig. 2.

2d. The arrangement of the flat blocks *c c*, through which the reef pennants run on the top of the yard, substantially as and for the purpose set forth.

No. 17,365.—James E. Cole, of New York, N. Y.—*Improvement in Means for Reefing Topsails.*—Patent dated May 26, 1857.—The sail A can be reduced by operating the supplementary shaft *e* from the deck of the vessel by windlass *h* and chain *g* passing over pulley *k*. The shaft *e*, as it is rotated, transmits motion to the roller spar *c*, whereby the sail is rolled up on said spar.

Claim.—The supplementary shaft, in combination with the roller-spar, for the purposes and in the manner substantially as set forth.

No. 17,977.—James W. Norcross, of Boston, Mass.—*Improvement in Reefing Topsails.*—Patent dated August 11, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim carrying the reef-tackles from the reef-band upward through blocks placed at or under cross-trees, and from thence down to the deck, whereby all that part of the sail which is below the reef-band is suspended or drawn tightly up while the yard is being lowered down to or towards the reef-band.

Nor do I claim reducing sails by means of an arrangement of reef-tackles, wherein each reef is fastened at one end of it to the topsail yard, is thence led down through a leading-block fastened to the reef-band of the sail, thence carried upward to and through the yard, and around a sheave placed thereon, and thence carried toward the mast, and through a leading-block affixed to the topsail yard near to the middle thereof, thence upward from the said leading-block to and through a leading-block affixed to the cross-tree, thence downward therefrom and fastened to the topsail yard.

But I *claim* my arrangement of reef-tackles described, the same consisting in fastening the said reef-tackles to the sail at or near the reef-band, thence leading them upward through sheaves, or blocks *c*, or their equivalents, applied to the topsail yard C, and from thence extending the said reef-bands upward and through blocks *d*, suspended to the cross-trees E, or that part of the topmast just below them, and thence leading the reef-tackles downward and fastening them to the topsail yard at or near its middle, substantially as described.

No. 18,085—Thomas J. Chubb, of New York, N. Y.—*Improved Ore-Separator.*—Patent dated September 1, 1857.—The material having been properly screened to the desired size is fed into the hopper Q, and received on the upper part of the inclined perforated table A.

The action of the bellows L, whose top plate J rises and falls at a rapid speed, causes the material to rise and fall at the same rate, rising always in a line perpendicular to the face of plate A, but falling vertically under the influence of gravitation, and consequently passing from the higher to the lower end of the inclined bed A. By this operation the heavier particles find their way in the channels *c*, towards the main channel D, while the lighter particles pass off through channels F into side channels G.

The inventor says: I do not claim the separation of substances of different specific gravity, by submitting them to the action of a blast of air through a screen.

But I *claim*, first, the employment, in combination with an inclined perforated table or bed, and a bellows, operating as specified, of a number of channels applied and arranged, substantially as described, relatively to the bed and to each other, to convey away the separated substances in different directions, as set forth.

Second. The division of a bellows, applied and operating in connexion with a perforated bed, for the separation of articles of different specific gravity into numerous chambers or compartments, each having its separate valve or valves, and constituting in itself a complete bellows, for the purpose specified.

No. 16,995.—William Randle, of Florida, N. Y.—*Improvement in Strings for Musical Instruments.*—Patent dated April 7, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The application of one or more springs applied to each string, as described, or its equivalent, and for the purpose set forth.

No. 16,707.—John Allender, of New London, Conn.—*Improvement for Sustaining Friction-Rollers in Ships' Blocks.*—Patent dated March 3, 1857.—The pieces F F are made of sheet metal and bent into the proper shape, as represented in figure 3. These pieces yield and spring so as to compensate for any difference there may be in the size of the rollers C.

Claim.—The pieces F F placed between the rollers, in combination with the flanges, or their equivalents, to hold the rollers in position endwise, substantially as described, and permit them to revolve, thereby dispensing with the pivots and rings heretofore used for that purpose.

No. 17,940.—Charles Perley, of New York, N. Y.—*Improvement in Compound-Capstans for Ships.*—Patent dated August 4, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim a capstan, windlass and wench combined; neither do I claim a horizontal heaver in itself.

But I *claim* the combination of the adjustable bearing block *o*, with the heaver or windlass *m*, so constructed as to receive the strain and weight of chain cable, and relieve the shaft *l* therefrom, leaving said shaft *l*, when disconnected from said heaver or windlass, free to rotate, and be used for other purposes without loss of power by the friction of said heaver or windlass, even when the vessel is riding at anchor by said heaver, substantially as and for the purposes specified.

I also claim the power capstan *n* and its coupling *q*, fitted to slide endways of the shaft *l*, combined with the heaver or windlass *m* and bearing block O, whereby the said power capstan *n* connects the shaft *l* and heaver *m*, or is itself free for use as a power capstan or bit, when connected to, or disconnected from, said heaver or windlass *m*, substantially as and for the purposes specified.

No. 17,228.—Robert R. Osgood, of Troy, N. Y., assignor to Jason C. Osgood, of the same place.—*Improvement in Ships' Hawse-Holes.*—Patent dated May 5, 1857.—The nature of this invention consists in hanging the pulley D on a rotating bed-plate A, and connecting therewith a tubular guide F, through which the rope or chain passes on or off the pulley, and which, in yielding to the direction of the rope, causes the bed-plate to rotate in such a manner that the axis of the pulley shall at all times be at right angles to the direction of the rope, to prevent it chafing on the edge of the pulley.

Claim.—Supporting a pulley on a rotating bed, and combining therewith a guide tube hinged on its axis for the rope to pass through, substantially as and for the purposes set forth.

No. 16,845.—Calvin Kline, of New York, N. Y.—*Mode of Compensating the Local Attraction of the Magnetic Needle on Ship.*—Patent dated March 17, 1857.—This invention consists in surrounding the compass needle with an insulated shield or steel, which the inventor says he has found to protect the needle against all attractions, while it is left to travel freely by the natural magnetism of the earth; and it is found that, with his device, the compass traverses as freely and settles as quickly as the ordinary compass where no local attraction is present.

Claim.—The surrounding metallic ring or rings *r*, or the modifications thereof, constructed, combined and arranged with the needle of a compass, substantially in the manner and for the purpose set forth.

No. 18,192.—Abraham Coates, of New York, N. Y., and Samuel M. Perry, of Brooklyn, N. Y.—*Improvement in Ships' Pumps.*—Patent dated September 15, 1857.—When, by the motion of the vessel, the shaft H and weight I swing on shaft K as fulcrum, the wheel G is turned, transmitting said motion to wheel F, shaft A, crank C, and pump rod E; or when the shaft H and weight I oscillate on shaft A as fulcrum, pump D is operated by the connexion of piston rod E with said shaft.

Claim.—The peculiar mechanism by which we obtain reciprocating motion between the pump and piston from each move of a lever having a combined horizontal and longitudinal motion, the same consisting of the shaft, the cross through which it passes, the universally moving lever attached by journals to the cross at right angles to the shaft, and the two bevel gears or section of gears—the one attached to the lever, the other to the shaft—or any other arrangement substantially the same and for the purpose specified.

No. 17,780.—James E. Cole, of Brooklyn, N. Y.—*Improvement in Rigging of Ships.*—Patent dated July 14, 1857.—The object of this invention is to prevent a twisting, wringing strain upon the mast when the yards C D are moved from side to side of the line of the keel.

Claim.—Placing the centres of motion of the yards of a square-rigged vessel in line with each other, in the manner and for the purposes set forth.

No. 17,031.—James Emerson, of Worcester, Mass.—*Improvement in Reefing Ships' Sails.*—Patent dated April 14, 1857.—To reef the sail one man goes aloft and unscrews the clamps D, then, by hauling the endless chain Y, which passes over pulley L down by the mast on deck, rollers R and pinions *f* and *c* are turned, and the roller O will roll the sail up as past as the yard is lowered by the halyards; the sail being spread by the rope passing through claws X, which are operated by right and left screws E. When the sail is to be unrolled, the pawls P are lifted out of the ratchets I, and the halyard is hoisted.

Claim.—The adjustable clamps D, when arranged so as to be enlarged or decreased, as required.

Secondly, I claim the screws E and claws X on the roller O, for spreading the sail.

No. 16,773.—John B. Holmes, assignor to John R. Pratt, of New York, N. Y.—*Improvement in Ships' Steering Apparatus*—Patent dated March 3, 1857.—The inventor says: I do not claim the manner of moving the rudder by means of a rack and pinion operated by gearing.

I *claim*, first, the arrangement of a pinion P on the end of the tiller B, working into a stationary curved rack R, attached to the deck of the vessel in connexion with a friction roller H, working against a smooth stationary surface G, to prevent the rudder from being pressed out of its place, in the manner substantially as described.

Secondly. I claim the arrangement of attaching the pinion to the end of the tiller, in connexion with a lever L, in such a manner as to be able to move said pinion further into a stationary rack by the action of said lever for the purpose of producing a friction sufficient to hold the rudder thereby in any desired position, at the same time to lock the gearing to prevent any back lash on the steering wheel.

No. 17,002.—Samuel N. Smith, of New York, N. Y.—*Improvement in Ships' Steering Apparatus.*—Patent dated April 7, 1857.—By turning wheel E, the tiller C will be operated either to the right or left, according to the direction in which the wheel E is turned in consequence of pinion F gearing into rack G, and the tiller C may be secured at any desired point by turning screw *d* of brake I.

The inventor says: I do not claim to be the first inventor of brakes for stopping the steering wheel, and holding it inany desired position; an example is seen in the rejected application of E. G. Otis, where the wheel is held by a strap, which is connected with the deck of the vessel.

I *claim* locating both of the bearings *a* of the wheel shaft D upon the tiller C.

I also claim locating the brake I *b* upon the tiller and wheel shaft C D, all as described.

No. 17,525.—Phinehas Smith, of Patchogue, N. Y.—*Improvement in Steering Apparatus for Ships.*—Patent dated June 9, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim the individual parts of the described apparatus.

But I *claim* the arrangement of the movable cogs *d d*, plate *c*, pinion *e*, and ropes, as set forth and shown in the drawings for operating the tiller by the steering wheel A.

No. 17,975.—Gideon B. Massey, of Mobile, Ala.—*Improvement in Instruments for Indicating the Depth of Water in Ships.*—Patent dated August 11, 1857.—When the float which is attached to the chain G is at the bottom of the vessel, the spring F is wound up like a clock spring and kept in that condition by the weight of said float; but as the float rises by reason of the increase of water in the hold of the vessel, the spring F unwinds itself and turns the barrel E upon arbor *a* and winds up the chain G, and the wheel J is rotated with the barrel, and the pins *i* are caused to act upon the arms $c\ c^1$ of the hammers $I\ I^1$, which thus strike upon the bell D.

Claim.—The arrangement of the parts cited relatively to one another for united operation to produce a leakage alarm and register for ships, to wit: the bell D arranged on a firm part of the vessel B, the spring F within the barrel E, and the barrel within the bell, the float chain G on the spring barrel E, the hammers $I\ I^1$ within the bell, the pin wheel J, and the mechanism by which they are operated and controlled on the arbor of the spring barrel, and the mechanism which measures the rise and fall of water alongside the signal mechanism, and so as to be actuated by the spring which sounds the alarm, substantially as and for the purposes set forth.

No. 16,885.—Norman Smith, of Stonington, Conn.—*Improvement in operating Ships' Windlass.*—Patent dated March 24, 1857.—A represents the upper deck of a vessel; B the topgallant forecastle; C the windlass, such as is commonly used; D one of the windlass bits; E is a double acting crank, connected to the extremity of the axis of the capstan F. This crank has a steadying journal *g*, corresponding with the axis of the capstan, acting in a box or supporting timber H. This crank is connected to the axis of the capstan, which is made square at the end to fit in a corresponding eye in the central axis of the crank, and this is secured in its place on this axis of the capstan by a pin or bolt *a* in such a manner that, by removing this pin, the crank may be disengaged therefrom by dropping downwards, the journal *g* pressing down into the step. L L are two levers, connected by a bolt *b*, as a fulcrum to the supporting beam H. On these levers are attached the pawls P P, which act in the ratchets R R; these ratchets being on the same axis, only one is seen in the engraving.

The inventors say: I do not claim the use of a ratchet to operate a windlass.

But I *claim* operating the windlass for raising anchors, and for other purposes on shipboard, by means of a crank or eccentric on the axis of a capstan F, or other upright shaft, through the medium of pawls P attached to levers L, and working in ratchets R on the windlass beam, substantially as described.

No. 17,633.—JOSEPH PEEVY and ABRAHAM SANBORN, of Bangor, Me.—*Improvement in Ships' Windlasses.*—Patent dated June 23, 1857.—By turning the right and left handed screws *b* and b^1 the fuclra of the pawls P and P^1 are adjusted simultaneously above and below the fulcrum F, of lever L, so as to adjust the rotation of the windlass W.

The inventor says: We disclaim the mere placing of the pawls above and below the fulcrum of the lever.

But we *claim* the attachment of the pawls to the slides *a* a^1, operated as and for the purpose specified.

No. 17,724.—DEXTER H. CHAMBERLAIN, of West Roxbury, Mass.—*Improvement in Steering Apparatus.*—Patent dated July 7, 1857.—As the nuts N are moved in opposite directions by the revolution of the screw-shafts E and G, the cap P of the rudder head *o* is rotated on an axis passing longitudinally through the middle of the rudder post; the feathers *q* slide in slits *c*, their arms *f*, turning in their bearings in the nuts N, allow the feathers to maintain a position radial to the circle of revolution of the cap P.

Claim.—The nuts N, with their vibrating feathers *q*, in combination with the parallel shafts E, F and G, when the said nuts rest against and are guided by the middle shaft F, as set forth.

No. 18,663.—T. M. RICHARDSON, of Searsport, Maine, assignor to Himself and J. W. HAVNER, Searsport, Maine.—*Improvement in Steering Apparatus.*—Patent dated November 17, 1857.—E is the pulley attached to axle F, whose periphery is grooved to correspond with the grooves in the sheaves L L. This pulley may be of greater or less diameter according to the power required; the smaller its diameter, compared with that of wheel D, the more power will be given by the latter to the former.

The rope or chain M, as will be seen by inspecting the engravings, passes once and a half round in each of the grooves of pulley E; once and a half round in each of the "fore"-grooves of the sheaves L L, and once round in each of the aft-grooves of the same.

The inventor says: I do not claim the slotted tiller, as that was patented November 28, 1842, by P. T. Share; nor do I claim any of the parts, separately considered.

But I *claim* the described combination and arrangement of the rope or chain M, with the stationary grooved sheaves L L, and the grooved pulley E.

No. 17,122.—WILLIAM WILCOX, of East Hartford, Conn.—*Improvement in Surge or Cable Springs.*—Patent dated April 21, 1857.—The chain A being secured to the capstan, and the anchor attached to cable B, the operation of this apparatus is as follows: When the strain comes upon chain B, the rod *g* secured to plate *k* compresses spring *d* and India rubber disks *c*; the latter thus being expanded will form a tight packing in the cylinder *a*, and, as the strain on chain B continues, the compressed air between the Inda rubber disks *c* serves to relieve the sudden check upon the cable or vessel produced by a heavy sea.

Claim.—I am aware that surge-spring relievers, constructed of spiral springs of India-rubber disks and the pneumatic springs separately, have been used.

I claim the arrangement of the springs *c* and the springs *d* within the cylinder, operating as and for the purpose set forth.

No. 16,650.—E. H. SINNELL, of Orleans, Mass.—*Improvement in Attaching Extra Topsails to Vessels*—Patent dated February 17, 1857.

The inventor says: I do not claim the use of an extra topsail yard, nor the holding it stationary—*i. e.*, so as not to be raised or lowered—as both the use of an extra topsail yard, and so holding it, have long been known.

But I *claim* attaching and handging the extra topsail yard *e* to the topmast *a* itself by means of the combination of the collars *f* and *g* turning on the topmast, the forked brace *h* connecting said collars, and the stationary annular plate h^1, on which the lower collar *g* rests and turns, so that said extra topsail yard shall swing from the axis of the topmast as a centre, and secure the advantages specified.

No. 17,209.—THOMAS ESTLACK, of Philadelphia, Pa.—*Improvement in Ice-cutting Attachments to Vessels.*—Patent dated May 5, 1857.—The share A is attached to the bow of the vessel C, by means of the chains D E F, in such a manner that its position may be adjusted as desired; and the cutters G are attached to the share A by means of swivels, that they may turn and adjust themselves in proper position whenever the vessel is turned.

The inventor says: I do not claim separately the share A, for that, or its equivalent, has been previously used.

But I *claim*, first, the cutters formed of the teeth *e*, constructed substantially as described, and attached to the inclined bars G, which are pivoted to the share A, as shown.

Second. The share A, when applied and secured to the bow of the vessel by the chains D D, E E, F F, and used in connexion with the cutters; the whole constructed and arranged as described for the purpose set forth.

No. 17,396.—JAMES E. SIMPSON, of East Boston, Mass.—*Improvement in Apparatus for Examining Vessels' Keels.*—Patent dated May 26, 1857.—When the vessel D is in place on the dry dock *c*, and before the water is pumped out, the rods G are depressed until the ends *a* of the levers F touch the keel of the vessel, and the exact contour of the sole of the keel may be instantly known by the positions of the levers

G, which are employed along the whole length of the dock in certain distances from each other.

Claim.—The described apparatus for examining keels of vessels, consisting essentially of the levers F and rods G, arranged and operating in the manner substantially as set forth.

No, 18,819.—Francis D. Lee, of Charleston, S. C.—*Arrangement of Life and Treasure Buoy for Vessels.*—Patent dated December 8, 1857.—The engraving represents the transverse section of a vessel, (N showing the middle deck, and O the upper deck,) on which is placed a metallic air-tight chamber D, so arranged as to float in case the vessel founders.

On the top of the buoy is a metallic box containing a small buoy of cork, marked I, attached and surrounded by a coil of cord, so arranged that in case some unforeseen accident may sink the larger buoy, the small one may float to the surface and mark the location of the lost treasure, provided it be sunk to such a depth as may insure its recovery.

Claim.—The arrangement of the buoy provided with the means and appliances set forth, in relation to the chest or safe and indicating buoy, and the decks of the vessels, as and for the purposes described.

No. 16,510.—Thomas J. Woodworth, of Salem, N. J.—*Improvement in Supporting Masts in the Decks of Vessels.*—Patent dated January 27, 1857.—The nature of this invention consists in surrounding the mast A with a solid metal case, or supporter with an octagonal vertical aperture through the same, large enough to admit eight wedges *f f* around the mast in order to secure it in such a manner as to be perfectly water-tight without opening the seams of the deck *g g*.

Claim.—Constructing the partner for the masts of vessels, as set forth.

No. 18,411.—John Quigley, of Saugerties, N. Y.—*Improvement Means for Flooding Vessels.*—Patent dated October 13, 1857.—This invention consists in arranging a tube in relation to a chamber in the hold of a vessel, and open to the water in which the vessel floats, that the tube may be detached from the chamber by any person on the deck, and the water have free admission into the vessel, or the tube may serve as a conduit, through which, by means of a pump affixed to its upper end, water may be readily drawn up to the deck of the vessel and distributed therefrom as may be needed.

In the drawings, A is the chamber, B is the tube connected by a screw thread H with the chamber.

The inventor says he *claims* the arrangement of the tube and chamber in relation to each other, to their parts and connexions, and to the vessel, substantially as and for the purposes set forth.

No. 17,598.—J. W. Wetmore, of Erie, Pa.—*Improvement in Means for Propelling Vessels in Shoal Water.*—Patent dated June 16, 1857.—The locomotive wheel W is propelled by the arrangement of cranks *k h*, which are operated by rods *e f* and *i j*, and the wheel will be enabled to follow the unevenness of the ground by the connexion of the self-adjusting rods *h g* and *k l*.

Claim.—The arrangement of the arms *g h* and *k l* and *e f* and *i j*, in relation to each other, and to the crank shaft and toothed wheel, as and for the purposes set forth.

No. 18,969.—Armigel W. Handcock, of Allegan county, Mich.—*Improvement in Mooring Vessels.*—Patent dated December 29, 1857.—A is the hull of a vessel riding at anchor; B is the hawser payed out at the bow; C is the hawser payed out at the hawser hole D, which is fixed at a point abaft the forechains; the said hawsers being attached—the one to a bow anchor, and the other to a waist anchor.

Claim.—Mooring a vessel during foul weather, by means of two hawsers B and C, payed out at the usual bow hawser hole, and at the hawser hole D, which I especially construct abaft the forechains, whereby a bow anchor and a waist anchor are arranged and operated substantially in the manner and for the purposes set forth.

No. 17,826.—Thomas Bell, of New York, N. Y.—*Improved arrangement of Camels for Raising Sunken Vessels.*—Patent dated July 21, 1857.—The camels or tanks being sunk and drawn to each end of the sunken vessel, the water is pumped out of said tanks by means of pumps *m*, and air is admitted to fill its place by means of tubes; the tanks, as the water is withdrawn, raise the sunken vessel to the surface.

The inventor says: I do not claim broadly the use of camels for raising sunken vessels, irrespective of the peculiar construction shown and described.

But I *claim* the arrangement of camels described, whereby great strength is secured to support a vessel while being raised and transported; and whereby the vessel will be lifted principally by the bow and stern, or where the greatest strength exists, and only partially fore and aft, or where the least strength exists; and whereby all the inconveniences attending the application and use of those devices which require that some of their parts shall be passed under the keel, or over or through the vessel, are avoided, and other numerous benefits secured, substantially as set forth.

No. 16,890.—George F. Trescott.—*Improvement in Rigging Vessels.*—Patent dated March 24, 1857.—The nature of this invention consists in the lengthening out of the lower mast, above the hounds, so as to allow a storm-sail and yard No. 6 to be hung in a similar manner to the lower yard No. 7, under the top No. 5; and in reducing the topmast No. 2 in reverse proportion to increase of lower mast, and by a division of the lower rigging or shrouds Nos. 3 and 4, to given points Nos. 8 and 9, or hounds of lower mast. The top No. 5 to be reduced in size in suitable proportions to the mast.

The inventor says: I do not claim the dividing the topsail, as in Forbes' or Howes' rig, so as to form a storm-sail, but a separate and distinct sail and yard, which I call a storm-yard and sail on the lower mast, so that in the event of a ship losing her topmast or head of lower mast, would still have her storm-sails to work off a lee shore, and by the division of the shrouds the masts are better secured, though longer, and no more weight aloft than usual.

No. 17,165.—George T. May, of Tompkinsville, N. Y.—*Improvement in Sails and Rigging of Vessels.*—Patent dated April 28, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I am aware that boats and small vessels having one or more masts unsupported by rigging, and depending for support upon the hull, have been fitted with sails that have or may have a full semi-circular sweep, and I do not, therefore, claim broadly the use of a sail having such sweep.

But I *claim* the use of a self-supporting "set" of masts, whether the same is composed of two or more masts, they being stayed and sustained by rigging whose spread at the line of the deck shall not exceed the lines of the distance between the forward part of the pivot mast and the forward part of the spring mast of the set, as set forth.

No. 18,816.—Edward S. Keyser, of New York, N. Y.—*Improvement in Securing Hatches of Vessels.*—Patent dated December 8, 1857.—The nature of this invention consists in covering the seams of vessels' hatches with an India rubber packing, which, by means of iron, or other metal covers or screws, fitted for the purpose, can be compressed upon the seams tight enough to prevent the passage of any water through them, thereby obviating the necessity of caulking and the use of tarpaulins.

Claim.—The securing of ship hatches, and making the joints water-tight, by means of the hollow flanged ribs B, and the rubber and plates contained within it, which are pressed down over the seams or joints by the screws *d*, substantially as set forth.

No. 17,852.—John Woodville, of Chillicothe, Ohio.—*Improvement in Means for Stopping Shot-Holes in Vessels.*—Patent dated July 21, 1857.—The pad or disk A, when rolled up, as represented in fig. 4, in a cross section, is passed through the shot-hole *k*, as represented in fig. 3, and when through the hole, the pin *i* is withdrawn from the loops *j* by means of string *i*; the pad A then, by its own elasticity, spreads out, and rod *m* is forced into the tubular rod E^1, and the catch F is thrown from recess *g*. The spring F now forces the tube E against the shank of pivot L, and throws the pad A around directly over the shot-hole, as represented in fig. 1. The rod E^1 is then unscrewed from rod D, and the end of said rod is passed through bar H, and a nut d^1 is placed on it by screwing up while the pad is firmly secured over the hole, as represented in fig. 5.

Claim. 1st. The arrangement of the disk A, formed of India rubber and whalebone slats *a*, the rigid bar B, the jointed rod D, the chains or cords *c c*, and the springs C, relatively to one another, in the manner substantially as and for the purpose set forth.

2d. The arrangement on the bar D of the slide E the tubular rod E, the slide G with catch *f*, the rod *m*, and the straps *h*, relatively to one another, and to the disk and its attachments, substantially as and for the purposes set forth.

No. 17,349.—David Hinman & F. B. Fournier, of Berea, O., assignors to Themselves and R. J. Parker, of Ogdensburg, N. Y.—*Improvement on Apparatus for Indicating the Speed of Vessels and Depth of Water.*—Patent dated May 19, 1857.—The pressure of the water upon the hinged wing D will be in proportion to the speed of the vessel through the water, the vessel moving in the direction of the arrow. The movement of wing D is transmitted to rack F by means of rod E, and the pinion *c*, being on the axes of an index, the latter indicates the velocity of the vessel.

Claim.—The arrangement of the movable wing D, with its joint *d*, the rod E and rack F, combined with the dial or indicator, substantially as described for the purpose set forth.

No. 18,835.—Charles Weed, of Boston, Mass., assignor to Himself and Stephen B. Cram, of Boston, Mass.—*Improvement in Steering Apparatus for Vessels.*—Patent dated December 8, 1857.—In this invention, if either of the gears G or H should break, the rudder could be operated by a single screw, and if one screw should fail, the steering wheel K could be shifted to the other, the shaft being prolonged for this purpose. The nuts M and N, where they rest on the bar L, are grooved so that they each partly embrace the bar; this prevents any lateral strain or torsion of the nuts from being thrown upon the screws and bar; each nut embraces the bar on both sides.

The inventor says: I *claim* placing the parallel screws E and F, one immediately over the other, and connecting them by the gears H and G, the steering wheel being attached to one of the screws, in the manner substantially as described.

Second, I claim the stationary guide bar L, as arranged with the grooved nuts M and N and bearing blocks D, as set forth.

No. 17,892.—John Ponton, of New York, N. Y.—*Improvement in the Mode of Raising Sunken Vessels.*—Patent dated July 28, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—I *claim* the arrangement of the adjustable and changeable supports D D, operating alone or in connexion with the slides *e e*, whereby the tanks A B may be brought more closely in connexion with, and the sustaining power of them more generally and uniformly distributed along, a vessel or body.

No. 16,487.—John P. Jourda, of New York, N. Y.—*Improvement in Raising Sunken Vessels.*—Patent dated January 27, 1857.

Claim.—I *claim* the arrangement and combination of the floats, chains, and chain bill or stopper, and chain dividers, for the purposes specified.

No. 18,539.—Robert Ferguson, of New Orleans, La.—*Improved Apparatus for Unloading Vessels.*—Patent dated November 3, 1857.—When this invention is in practical operation, the load being placed upon one car it descends by its own gravity, until, at the lower extremity of the rail, the long arm of lever *l* presses against an inclined stud S and causes projection *i* to be removed from under the platform, and the load to be discharged. The two cars C being connected by an endless chain F, the descent of the loaded car carries up the empty one, which, on being loaded, descends in its turn, disengaging the lever from the stud, and permitting spring *m* to carry projection *i* under the first platform.

Claim.—The combination of swinging platform *c*, arm *f*, lever *l*, and spring *m*, with the body of the carriage, operating as and for the purposes set forth.

No. 16,333.—Andrew B. Gray and Alexander H. Brown, of Washington, D. C.—*Improvement in Velocimeters for Vessels.*—Patent dated January 6, 1857.—This apparatus consists of a paddle-wheel E, the paddles 2 of which can be adjusted to any desired angle by means of eccentric S, and the connexion cranks between the paddles and said eccentric; and the revolutions of said paddle-wheel can be indicated by a registering apparatus, the entire apparatus serving as a velocimeter for vessels.

Claim.—The use of the adjustable paddle-wheel, which can be graduated to any number of revolutions by presenting more or less surface of paddle to the action of the water, in order, first, to fix it at its true point for registering correctly; and second, should any wear take place in the machinery for registering, it can at once be adjusted by changing the angle of the paddle.

No. 16,621.—William R. Warden, of Boston, Mass.—*Improvement in Apparatus for Indicating the Height of Water in the Holds of Vessels.*—Patent dated February 10, 1857.—The inclined plate *v*, which carries the ball *w*, is placed at such height as that when the water and float *h* shall have risen in the hold to a dangerous height, the ball shall have been raised up to the inclined tube E, and will slide off the plate *v*, and through the tube E, towards box F, which box may be placed in the cabin or other suitable place. The ball when striking lever *i* will tip it so as to release the bell hammer b^1, and set the alarm mechanism c^1, &c., in operation.

Claim.—Operating the alarm apparatus, situated as described, by means of the balls W, ball-carrier V, inclined tube E, and lever *i*, with their co-operating mechanism; the whole operating together in the manner set forth.

No. 16,992.—Jason C. Osgood, of Troy, N. Y.—*Improvement in Hawse-Holes for Vessels, &c.*—Patent dated April 7, 1857.—The nature of this invention consists in beveling the edges of pulleys so as to fit against each other, whereby a right or slightly obtuse angled edge is formed, which does not cut or chafe the rope or chain, as the acute angle formed by their merely touching at the edges would be.

Claim.—I do not claim arranging a series of pulleys in a circle.

But I *claim* beveling the edges of the pulleys, in the manner and for the purposes substantially as specified.

VIII.—MATHEMATICAL INSTRUMENTS, &c.

No. 18,692.—Thomas Hill, of Waltham, Mass.—*Improved Arithmometer.*—Patent dated November 24, 1857.—The process of addition by this invention is as follows: The wheels being each arranged with the character *o* opposite the openings *g*, the key *i*, which corresponds to the first figure of the column to be added, is depressed; then that one corresponding to the next figure, and so on through the column, using the first row of keys, or those belonging to the wheel C, when adding a single column, or one in the unit's place; each time a key, the wheel C, will be fed forward a distance corresponding to the number of the key depressed, and each time ten is counted on this wheel a tooth *n* on the wheel I will vibrate the arms H and G, and the wheel D will be fed forward one number, counting ten; and by a similar arrangement, when this wheel has moved a space of ten figures, it will operate the succeeding wheel of the series and count one on it, or one hundred. If several columns of figures are to be added, it is immaterial whether the figures are read from bottom to top or from side to side, the result will be the same, if the row of keys corresponding to the place of the figures, whether in the units, tens, or hundreds column, is used.

Claim.—First. The use in a mechanical calculator of the series of wheels C D, &c., having each a double row of characters, arranged in the manner and for the purposes substantially as set forth.

Second. Operating the said wheels by the keys *i*, the levers F, and pawls *b*, or their substantial equivalents, in the manner described.

Third. The wheel I, in combination with the arms H and G and pawl *l*, constructed and operating substantially as described for the purpose specified.

No. 18,675.—O. L. Castle, of Upper Alton, Ill.—*Improved Arithmometer for Adding.*—Patent dated November 24, 1857.—By means of this invention the operator can, by playing on nine keys, add any numbers together, and their result will be indicated on a dial. The ordinary ratchet arrangement is employed, and the extent of the addition is regulated by the number of index wheels, which can be increased at pleasure. The invention is further explained by the claim and engravings.

The inventor says: I *claim*, first, the combination of the repeater X, the stationary repeater stop 17, the sliding stop bars T^1 T^2, &c., and the stationary stop pin *w*, with the driving wheel D, or its equivalent, provided with a series of holes *e e*; the whole operating substantially as described to control the motion of the register.

Second. Combining the shaft of the driving wheel D, or its equivalent, with the keys S^1 S^2, &c., by means of a stronger spring *y* and a weaker spring R, and a lever 13 deriving motion from the keys; the whole operating substantially as described for the purpose set forth.

Third. Combining the keys with the sliding stop bars T^1 T^2, &c., by means of the wedges 8 8 attached to the keys, the arms U U sliding on guide bars V, and the collars 6 6 and springs 7 7 applied to the guide bars, substantially as and for the purpose specified.

Fourth. The loose teeth *r* applied to the wheels *o o*, and operating substantially as described for the purpose specified.

No. 18,560.—Theodore R. Timby, of Medina, N. Y.—*Improved Barometers.*—Patent dated November 3, 1857.—This invention consists in a mode of constructing barometers, whereby the liability to be broken from expansion of the mercury during transportation is entirely prevented; also, in suspending the barometer tube in the axis of a cylindrical case having a central hook, so as to serve the necessity of levelling or plumbing the instrument.

The inventor says: I *claim* the elastic tube between the stop cock and barometer tube, as set forth.

I claim the mechanical arrangement for supporting the barometer tube within the suspension glass case, the same consisting of the bracing rods *t t* passing through the glass and brass tubes *d* and *e*, and the wooden block *w*, the inner cap a^2, the blocks $w\ w^1$, the lower cap a^3, and the screw joint S, all arranged and co-operating as set forth.

No. 16,727.—James Fulton.—*Improvement in Chronometer Escapements.*—Patent dated March 3, 1857.—M L R represents part of the escape wheel; A the roller, (partially broken away to show the lifting pallet B below it;) N the pivots of the staff; P C D a lever or pivots at E, with the detent pallet placed on its upper side at P; C is a banking attached to the plate for the lever to rest against, so as to limit the depth of the locking; F D G is a small lever or click, with its pivots playing in the lever at D, and is held against a banking attached at the lever at H by the pressure of the spring K G against the part G of the chick. It will be seen that the same pressure of the spring K G will hold the lever against the banking C.

Claim.—The combination of two levers in such a way that one spring may perform the offices above described by acting on both of them.

No. 18,661.—Willford H. Neitleton, Charles Raymond, and Anson Hatch, assignors to W. H. Nettleton, of Bristol, Conn.—*Improved Machine for Turning Pillars for Clock Movements.*—Patent dated November 17, 1857.—The engravings and claim show the nature of this invention.

The inventors say: We do not claim the use of two chucks, simultaneously brought up to turn the ends of a wire to form a pillar shaft or arbor, as the same has been in use and on sale for many years.

Neither do we claim any particular device for holding the turning-tools into the chucks; neither do we claim any sliding mandrel or mandrel head, as these are well known for other purposes; neither do we claim the straightener *b*, as the same is well known.

But we *claim* the feeding slide *h*, in combination with the straightener *b*, having an endwise movement and returning spring, or its equivalent, substantially as specified, whereby the straightener is drawn along as the wire is fed forward, and straightens the wire as it is forced back by the said spring, or its equivalent, as specified.

We also claim the compound levers *i* and 19, made and acting in connexion with the feeding slide *h* and clamp 14, as and for the purposes specified.

We also claim the holding jaws *k* and 26, regulated in their action by the screws 28 and 29, and operating as and for the purposes specified.

We also claim the sliding gauge *m*, actuated by the cam 22, in combination with the holding jaw *k*, as specified, whereby the gauge *m* is withdrawn, while the pillar or arbor is being forced out of said holding jaws, but comes up to determine the length or position of the wire or blank that passes into said jaws, as set forth.

No. 18 890.—Robert P. Cunningham, of Eastford, Conn.—*Improvement in Clocks.*—Patent dated December 22, 1857.—In the engravings, *a* and a^1 show the spring pallets, the swing wheel shown at S *n*, the verge connected with the fork piece *q*, and arm $b\ p\ b^1$, and the extension *m*; the dampers are $d\ d^1$.

Fig. 2, in sections, shows pivoted pallets acting in the notch of the swing wheel S; *k* is a bridge, spreading each way from the pivot arbor, and connecting the two sides.

In fig. 3, *b*, formed as cover to a watch spring barrel, carries a slender return spring stop *i* projecting from a small stud *o*, standing inward from the cover as it is shut into the ring *j*; so the return part of the spring *i* bears evenly and lightly on the bridge *k* of the pallet, and thus is a guide to its middle or quiescent position, and this position is now adjusted by twisting the cover carrying the spring *i* within the ring *j*.

The inventor says: I *claim*, 1st, looped or slotted spring pallets acting tensively from the faces of the swing wheel teeth S.

2d. I claim the combination of the tensive pallets and swing wheel teeth, either with or without the stops *d d*, or with the stops $i\ i^1$, for the purposes shown in manner as set forth, or substantially their equivalents.

No. 16,418, M. J. Whitmore, of Potsdam, N. Y., assignor to Frank G. Johnson, of Brooklyn, N. Y., and M. J. Whitmore.—*Improvement in Calendar Clocks.*—Patent dated January 13, 1857.—The wheel A revolves twice in twenty-four hours, consequently turns the pivot B, by pinion F, one-half a turn to each revolution of the wheel A, the last half revolution being between 12 and 2 o'clock a. m. The revolving of the pivot brings the cog of the centre pinion E in contact with the cog of wheel C, and turns it forward one cog or one day, and so continuing to turn it forward one cog each day, until the 31 days have passed. When a month of 30 days is to occur, one of the inclines R will be brought under lever g^1, forcing down the upper fork H, so as to bring the upper pinion E in contact with the cog D, on the upper side of wheel C. Thus the three pinions E can be thrown in gear with the different cogs D, by means of the slides R and M, to indicate the month of February and the February of the leap year.

Claim.—Placing the intermittent cogs D upon the upper and lower faces of the calendar wheel C, and giving said cogs the necessary movements for accomplishing the intended purpose, by means of the sliding and stationary and intermitting pinions E E E on the shaft B, all being combined together, and operated in the manner and for the purposes set forth.

No. 16,628.—Edwin P. Monroe, of Albany, N Y., assignor to Gilbert H. Scribner, of New York, N. Y.—*Improvement in Calendar Clocks.*—Patent dated February 10, 1857.—The cards *a*, each provided with two holes, and eyelets *b c*, are suspended upon the wires *e d*. The arm *f* is made to slide in a slot in the casement of the clock, and is connected with the clock movement, so that at a certain time each day the arm *f* will be caused to descend, when the wedges *g* will enter between the first and second card, and push the first card forward against the action of a slight spring at the front end of wire *e*. As soon as the eyelet *c* has slipped over said spring, the card will fall down, and remain suspended, with its lower eyelet *b* upon wire d^1.

Claim.—The displacing of cards for the purpose of enumerating and designating the day, said cards being suspended upon wires, as described, and displaced by means of a hand, as set forth, moved and operated by the machinery of the common hour clock, or by any other machinery appropriate for the same purpose.

No. 18,665.—William H. Akins, of Berkshire, N. Y., and Joseph C. Burritt, of Ithaca, N. Y., assignors to Wait T. Huntington and Henry Platts, of Ithaca, N. Y.—*Improvement in Calendur Clocks.*—Patent dated November 17, 1857.—Upon the side of the corrugated disk I, between it and the plate J, is rigidly secured a wheel K, having forty-eight teeth, one for each month in every bissextile term. To the loose disk J is secured a plate *b*, having two lugs projecting over its side, through the upper one of which is passed a pin *c*, for the purpose of raising a weighted lever L, pivoted upon a stud *e* on the side frame, and having a pin *d* secured to its side, which, when the lever is allowed to drop as the lug revolves with the disk, engages with the teeth on the wheel K, and prevents it from being revolved more than one tooth at a time.

The disk I being rigidly secured to the wheel K, and the latter being caused to perform one forty-eighth part of a revolution at the expiration of every month, the former will also perform a revolution at the same time; and being provided with a number of elevations and depressions on its periphery, it causes the arm x^1 of the rock shaft X, which rests upon it, to rise and fall as it is raised by a ridge, or dragged down into a notch by the action of the spring x^2.

Claim.—The quadrennially revolving corrugated disk I, when operating in the manner substantially as and for the purposes set forth.

No. 16,902.—George R. Clark and Samuel Adams, of Antioch, Mich.—*Improvement in Grade Delineators.*—Patent dated March 31, 1857.—The purpose of this invention is to describe the grade of that part of the country to be surveyed, by driving over it with a wagon, the hind axle of which is connected with a driving shaft A which gives motion to the machinery of the grade delineator.

The claims and engravings will give the reader an idea of the nature of this invention.

Claim.—First. The use of the pendulum L, or its equivalent, operated upon by gravitation, in combination with the cones C D E, and the friction wheels G and H, or their equivalent.

Second. In combination with the pendulum L and the cones C D E, the arrangement of the arms *a b c*, the bars *d e f*, and the slides M, to move the friction rollers along the cones, substantially as described.

Third. The pendulum L, or its equivalent, with the paper rolls and grade pen, or either of them, in such a manner that their respective motions, as set forth, may produce correct horizontal or vertical scales, or a profile of the ground travelled over by the carriage.

No. 18,908.—George Juengst, of New York, N. Y.—*Improved Dynamometer.*—Patent dated December 22, 1857.—In operating this invention, a belt is arranged over the pulley B, so as to turn it with power in the direction of the arrow. The pulley, which turns with its hub loosely on the tube *z*, next pulls the belt R, which, drawing the sliding frame D, compresses the springs *g*, till the force applied is sufficient to overcome the resistance of the shaft by the corresponding pressure on the support roller E. The more power the pulley has to give out for this purpose, the further the belt R will be drawn from the support, the more will the springs be compressed, and the sliding frame with its ring F will be removed from its original position, so that the ring will stand more or less eccentric to the shaft A, in exact proportion to the power working on the pulley. According to the degree of eccentricity, the rod I and lever, with the disk L, will be moved more or less, and with it the attached registering apparatus. On lessening the power, the spring *g* will move the sliding frame, with its appurtenances, more towards the original position, make the movements of the lever smaller, and work accordingly on the registering apparatus.

Claim.—The connexion of the loose pulley B with belt R, the support C with the spring *g*, sliding frame D with ring F, and the connexion of F with disk L by lever and nipping pawl, and with a counting apparatus, or their several equivalents, by which arrangement the amount of working power is registered for the whole time of its action, substantially in the manner as set forth.

No. 17,185.—John W. Cochran, of New York, N. Y.—*Improvement in Gauges for Casks.*—Patent dated April 28, 1857.—This instrument being inserted in the bung-hole of the cask B, as represented in fig 1, the arms *h* can be extended so as to touch the sides or ends of the cask by sliding thumb-screws *b* down on rods *a*, and the distance the points of arms *h* are apart will be known by reference to a scale marked on rods *a*, from which the measurement of the cask can be calculated. When the bung-hole is not in the centre of the cask, the pin p is withdrawn from thumb-screws b, and each of the plungers d can now be operated separately; the measurement of one arm h must be added to that of the other to get the mean diameter of the cask.

The inventor says: I do not intend to confine myself to this particular manner of constructing my gauge, but in any way, so long as it is substantially the same in effect.

I *claim*, first, the arrangement of the sliding plungers and set-screws, in relation to the connecting rods and measuring arms, by which I am enabled to work each arm independent from the other and gauge casks or vessels, whether the bung-hole is in the centre, in the head, or elsewhere.

Second. Making the measuring arms adjustable, as set forth.

No. 18,931.—Forrest Sheperd, of New Haven, Conn.—*Improved Apparatus for Illustrating Conic Sections and the Lines of the Globe.*—Patent dated December 22, 1857.—This invention consists in mounting the globe with an extended tabular horizon, and movable, graduated meridians made of materials transparent, translucent, or opaque, capable of being written on with a pencil, and of having the writing, or work, easily wiped or rubbed off; and connecting with the globe a surface, divided into zones, &c., capable of being written upon with a pencil, and having the writing wiped off; and having the hollow cone so constructed that the pole of the globe may be elevated so as to mark the visible horizon from any latitude, or to mark the ecliptic.

The claim and engravings will further describe this invention.

The inventor says: I *claim* the combination of the globe, with an extended horizon or surface, as the base or convex surface of the cone, or any other extended surface on which may be written any geographical or other exercise with the globe, and be easily wiped or rubbed off, when constructed, arranged, and combined substantially as described.

I also claim the combination of the globe with the cone, when the cone is made in three or more segments, and the upper segment so cut as to illustrate the conic sections, and the whole is constructed, arranged, and rendered susceptible of the various uses as described and set forth.

No. 17,481.—Samuel C. Bishop, of New York, N. Y.—*Improvement in Machines for Covering Insulated Wire with Lead or other Ductile Metal.*—Patent dated June 9, 1857.—A current of water being started through the water-courses entering pipe m in the direction of the arrow, and passing down between pipes c and j, then rising in pipe c and escaping through pipe n, the wire 5, covered with gum, is entered through tube c and pushed down until it enters die F; melted metal is then poured into recess M, and ram E is forced down by hydraulic pressure, whereupon the metal will be forced out of chamber M through the die, and as it leaves the steel point 2, it is closed around the gum with sufficient impingement to draw the wire down as the metal advances, so that each part of the insulated wire in succession is caused to pass the point where the metal leaves the steel point 2, and is therefore at that point exposed to the action of the metal, and this,

too, after the proper condition of temperature has been obtained between them.

Claim.—Causing the metal and insulated wire to move in separate channels toward a die, where they are to be united, and preventing the gum from being heated while it and the lead advance toward the die by a current of fluid passing in a suitable vessel or vessels between the metal and gum to receive and carry off the caloric, all substantially as described.

No. 18,572.—Edward Cavendy, of New York, N. Y.—*Improved Method of Determining Approximate Latitude at Sea.*—Patent dated November 10, 1857.—The engravings represent the tube A as suspended by gimbals placed within an aperture in the top C of a tripod.

The tube is suspended in a self-adjusting vertical position at such a height that the observer can stand beneath its lower end, and, with his quadrant or sextant, reflect the sun to a point in the heavens directly over the axis of the tube, when by the appearance of the shadow thrown into the upper end of said tube from a ring placed a short distance above the same, he is able to indicate the very instant the sun attains its highest altitude, and to measure the number of degrees that the sun, at the said instant of time, is below the zenith, which sum, when deducted from ninety degrees, will give the exact altitude of the sun above the horizon.

Claim.—The described method of determining approximately the zenith of the observer, under the circumstances set forth.

No. 18,963.—J. B. Elliott, of Philadelphia, Pa.—*Improved Device for Attaching Lightning Rods.*—Patent dated December 29, 1857.—The two wires $g\ g^1$ are secured in the head of a malleable cast iron spike or nail i, which is driven into the building, and this spike or nail may be cast around the wire. The wires are formed of ordinary iron wire, which, being a worse conductor than copper, prevents the fluid from passing into the building. On the shank of the nail or spike i there is placed a piece of gutta-percha j to prevent moisture from working in around the spike.

The inventor says: I do not claim forming a conductor of corrugated metal strips or plates, for they have been previously used.

Neither do I claim serrating or notching the edges of the strips which form the conductor, nor do I claim the manner of connecting said strips.

But I *claim* connecting the conductor to the building by means of the wires $g\ g^1$, bent as shown, and secured in the head of the spike or nail i, for the purpose set forth.

No 17,606.—Samuel C. Hubbard, of Middletown, Conn., assignor to Charles C. Hubbard, of the same place.—*Improvement in Machines for Graduating Lineal Measures.*—Patent dated June 16, 1857.—The rule to be graduated is placed upon the dies on bed B, said dies having the lines and characters formed upon them in relief, which it is desired to imprint on the rule; by turning crank G, a reciprocating motion is given bed B by means of bands E, and the cylinder D presses the rule on the die, while at the same time the points P mark the longitudinal lines on the rule. In order that the indentations on the disk may always meet the joints of the rule, it is necessary that the disk should begin its motion in a determinate position. To insure this, the side of the disk is fitted with a pin K, which strikes against a stop L on the frame, and is held there by the tension of spring M coiled around shaft N; and as the disk D is turned by friction alone, it always commences turning when the rule on the dies bears against it in passing under; in this way, the position of the disk in starting, with respect to the rule, is always the same.

Claim.—In combination with dies for imprinting the figures and transverse lines upon the rule, graves or points, arranged and held as described, for marking the gauge or longitudinal lines on the rule, as described.

Also, the pressure disk D, with one or more indentations on its periphery corresponding to the knuckles of the joints of folding rules when this is combined with giving to the disk thus constructed a self-acting reverse motion, to bring it back after each impression of a rule to the precise point whence it started, substantially in the manner and for the purpose specified.

No 16,359.—JAMES JONES, of Rochester, N. Y.—*Improvement in Instruments for Measuring Boards.*—Patent dated January 6, 1857.—A detailed description of this invention would take up too much space to be given here; the principal features thereof will be understood by reference to the claim and engravings.

The inventor says: I am aware that the quantities of areas have been indicated by means of the combination of a cone or disk, with a roller sliding thereon; therefore I disclaim the use of the above elements, either separately or when combined with a single index, as in the machine of M. Ernest, described in the "Bulletin de la Societe de l'Industrie Nationale."—Vol 40, pl. 841.

But, in all the cases which have come under my observation, the instrument constructed on the above principle has been used only for application to plans or drawings of the area to be measured; and therefore I *claim* my means of so adapting the instrument that it may be applied to the actual surface, whether of a board or other article, such means consisting of the outer and inner disks D and B, combined with the two indexes—one of said indexes being intended to regulate the position of the friction roller R on the inner disk, and the other for indicating the quantity measured.

No. 18,313.—WILLIAM W. WYTHES, of St. Clair, Pa.—*Improvement in Machines for Measuring Cloth.*—Patent dated September 29, 1857.—This improvement consists in the employment of a measuring roller and pressure roller, the latter being hung to a spindle in such a manner that the edge of the fabric to be measured may be readily introduced between the two rollers and maintained in contact with the measuring roller. As the fabric is drawn along, the measuring roller revolves and communicates motion to a pointer as well as to a numbered plate, so that the exact amount of fabric passed through the rollers can at once be ascertained.

The inventor says: I do not claim, exclusively, the employment of rollers in connexion with an index for measuring fabrics.

But I *claim*, first, the arrangement of the measuring roller A, with the pressure roller B, when the latter is hung loosely on a hinged spindle, and acted upon by a spring, and when it is exposed at the end for the admission of the fabric, substantially in the manner set forth.

Second, the combination of the shaft *i*, wheel *d*, lever *l*, shaft *j*, wheels *e* and *h*, numbered plate *m*, index *p*, and pointer *b*, when the whole are arranged substantially in the manner set forth and for the purpose specified.

No 18,711.—JAMES D. SMITH, of Brantingham, N. Y.—*Improved Machine for Multiplying Numbers.*—Patent dated November 24, 1857.—The object of this invention is to enable persons readily to ascertain the gross value of articles when a certain price for fractional parts is given. The invention consists in having a rotary disk, graduated on one side and numbered, so as to form a table; said table being used in connexion with a graduated stationary index.

The inventor says, this device is used as follows: Suppose, for instance, that the gross sum or value of an article is required to be known, the article weighing 10 lbs. and the price 6 cents per lb.; the disk A is turned until the line *d*, numbered 10 at the periphery of the disk, is brought in line with the left edge of the index or bar C, and the amount opposite, or by the side of figure 6, on the bar or index, will be the gross or aggregate sum, viz: 60 cents.

Claim.—The combination of the rotating disk A, and stationary index or bar C, graduated and numbered, as described, for the purpose set forth.

No. 17,870.—CALVIN COLE, of Tarrytown, N. Y.—*Improvement in Adjustments Applied to Pendulum Levels.*—Patent dated July 28, 1857.—The position of the spiral level L, at right angles to the pendulum F, can be adjusted and secured by set screw J and spring K.

The inventor says: I do not claim the use of a pendulum to give indications of level or angular surfaces; nor do I claim the use of a spirit level, disconnected from the combination in which I use it.

But I *claim*, first, the adjusting platform H, with its attached set screw J and spring K, as described, and for the purpose set forth.

Second. The adjustment of the dial C, plate around the axis of the pendulum by the set screws D D^1, as described.

No. 17,023.—THOMAS A. CHANDLER, of Rockford, Ill —*Improvement in Levels or Inclinometers.*—Patent dated April 14, 1857.—The index F is attached to shaft G, and serves to indicate the degrees on the graduated circle B. The pendulum I is also hung upon shaft I, and when said pendulum is at rest, the index F has the position as represented in the engraving. The apparatus is fitted within a stock A, and the manner of using it will be readily understood by reference to the engraving.

The inventor says: I *claim* the combination of an entire graduated circle, provided with a pendulum and index, with the two parallel sides of the level stock, whereby I am enabled to apply either side of said stock to the surface whose direction is to be ascertained, and at the same time have the index facing the operator, in whatever position he may be placed.

I do not claim the level stock, with its opposite sides parallel, nor the graduated indicating circle or dial, nor the indicator with two horizontal and one vertical pointer, nor the knife-edge bearing, upon which the indicator and pendulum are mounted, nor the pendulum, because separately, and for other purposes, they are all well known; but they have never before been combined to form a level, nor has a level of any kind ever before been made capable of performing the functions of this combination.

Therefore I claim the level composed of the before enumerated parts in combination, whereby, among other things, either edge of the instrument may be used uppermost, with its face or dial towards the operator; and when any two of the pointers are screened from sight by an intervening body, the third will indicate the inclination of the surface to which the instrument is applied, and the angles at the head and foot of a rafter will be indicated at the same time.

No. 18,701.—Robert Norris and Frederick Peters, of New York, N. Y.—*Improved Pendulum Quadrant.*—Patent dated November 24, 1857.—This instrument consists of a quadrant frame C, an arch or limb D, a pendulum A, with a tell-tale B, a stopper E, with a wind protector K, a sight tube H, and an index F, with a nonius G. The quadrant frame and the arch, which comprises a quarter of a circle graduated in the usual manner, and the index with its nonius, are constructed like the same parts in similar instruments.

The inventors say: We do not claim a quadrant for taking altitudes without the aid of a natural horizon.

But we *claim* the pendulum with its tell-tale, in combination with the index, the sight tube, and the other parts of the quadrant, as described.

No. 17,253.—R. P. Baily, of Niagara, N. Y.—*Improvement in Signal Lamps.*—Patent dated May 12, 1857.—This invention consists in providing a common hand lamp, with colored cylinders D E, which may be raised up into the darkened part of the lamp, thereby showing nothing more than the common light, while, by disengaging the spring fastenings *j*, and thereby allowing the movable ring F to turn and drop the tube over the burners *s* by means of the chains H, a signal may be given in case of danger or other emergencies.

The inventor says: I do not claim the common globe or hand lamp, as that has been in use a long time.

But I *claim* the means employed to raise and lower the colored tubes, as set forth, by means of the rings and chains H H, so constructed and attached that one tube or cylinder may play or move up and down within the other, and independent of each other, thereby allowing the different colors to be changed without obstructing each other.

No 18,159.—Albert Potts, of Philadelphia, Pa.—*Improvement in Signals for Steamboats.*—Patent dated September 8, 1857.—The signal light is mounted by means of a movable crane M, upon the paddle-box B, of the steamer, and is revolved by means of gearings Q R P U T S, which latter is secured to the main shaft of the engine.

Claim.—The system of signals for steamers formed, as set forth, by lights mounted upon movable cranes, and rotated from the paddle-wheel or propeller-shaft.

No. 18,194.—George N. Cummings, of Hartford, Conn.—*Improved Machine for Expanding Spectacle Bows.*—Patent dated September 15, 1857.—A partly formed eye-rim, which is made smaller than when finished, is placed upon the platform E, over the top of the jaws A, when closed. By turning crank-shaft B, the jaws will open by the action of the oval part of said shaft, and stretch the eye-rim to its proper size and shape; the jaws then close by the reaction of spiral spring C.

Claim.—The spectacle eye-former made in two parts, as described, the circumference of the two parts when closed being smaller than the eye, and being expanded by the double former to the required size, in the manner and for the purpose as herein set forth.

No. 18,327.—Samuel Darling, of Bangor, Me.—*Improvement in the Manufacture of Metallic Squares.*—Patent dated October 6, 1857.—Figures 1 and 2, in the drawings, represent in perspective the square in question, showing the tongue and beam separate and united together. The leading feature in the manufacture of this square consists in uniting the tongue and beam together by solder.

Figure 1 is the beam of the square, which may be made of any kind of metal. B is the tongue thereof, which is made of steel. Figure 2 represents a modification of the plan shown in figure 1 for making the beam. The tongue B is made of steel, but not hardened except at the edges. The edges of the tongue are hardened by placing it between two pieces of thick iron, allowing the edges of the tongue to project on all sides; the tongue and side pieces are then heated sufficiently for the purpose, and afterwards plunged into water, which hardens the edges and leaves the centre soft.

The inventor says: What I *claim* as new is a square, when constructed substantially as set forth and described.

No. 17,991.—Joel Whitney, of Winchester, Mass.—*Improvement in Adjustments for Try-Squares.*—Patent dated August 11, 1857.—The beam *b* are composed of the three parts F F *g*, which are secured together by means of screws *e*, said screws securing also the tongue *a* to beam *b*. By unscrewing the screws, which pass through holes *j k*, the tongue *a* can be adjusted to the beam by turning the eccentric pin *d* by means of a screwdriver.

Claim.—The flattened pin C working in the slot, in combination with the eccentric pin, arranged substantially in the manner and for the purpose described.

No. 18,728.—CHRISTOPHER BECKER, of Brooklyn, N. Y.—*Improved Surveying Level.*—Patent dated December 1, 1857.—The engravings and claim show the nature of this invention.

The inventor says: I *claim*, 1st, the constructing of the telescope with square surfaces *a a*, resting upon small points or surfaces upon the supports, and attached to the same in the manner and for the purposes described.

2d. I claim the arrangement, construction, and manner of operating the spider threads by one screw only, as described.

3d. I claim the arrangement of the set screws S, acting directly upon and square to the axis of the instrument, in the manner specified.

4th. I claim the arrangement and construction of the micrometer and tangent screws, so as to prevent any dead movement, in the manner described.

No. 18,608.—JAMES M. LILLEY, of Greenville, Va.—*Improved Instrument for Surveying and Calculating Areas.*—Patent dated November 10, 1857.—In this invention the graduated rule C and quadrant E can be shifted along the groove M to either end of the limb B, at the pleasure of the operator; the position in the slide will not interfere with the accuracy of the instrument. In shifting the rule C from one end of the limb B to the other, the rule C has to be inverted, and the slot L, in the opposite end, placed in the groove.

Claim.—The combination of three scales A, B, C, and quadrant E, as used for the purposes already set forth.

No. 17,355.—WILLIAM F. CHANNING, of Boston, Mass., and MOSES G. FARMER, of Salem, Mass., assignors to WILLIAM F. CHANNING aforesaid.—*Improvement in Fire-Alarm Telegraph.*—Patent dated May 19, 1857.—If a fire is discovered in the vicinity of a signal station *z*, an authorized person opens the signal box, and turns crank a^1 a number of times; the teeth b^1 b^2, on the circuit wheel, depressing the key c^1 c^2, and in this manner break and restore the circuit at definite intervals, the key returning by its own elasticity; this operation causes the electro-magnet and armature of the central station Y, by repeated strokes on *r*, to indicate the number of the district and station whence the alarm designates. The operator at the central station Y, by turning crank A, operates the transmitting apparatus A B, causing the bells at the alarm station V to give the alarm, and, by tapping on key m^1 m^2, the number of the signal station originating the alarm may be transmitted to any of the signal stations *z*.

Claim.—1st. The signal system described, consisting of a series of signal stations scattered at intervals through a whole city or town, or any part thereof, and telegraphically connected with a common centre or point, or with each other, by one or more signal circuits, by which means a constant communication may be established and maintained between all parts of a city or town, however extended; and with the centre or centres at which the signal circuit or circuits converge or meet, so that the moment the fire occurs, its existence and locality may at once be known at the centre of the system, and efforts for subduing it properly directed.

2d. The alarm system described, consisting of a series of alarm stations, suitably distributed throughout a whole city or town, or any part thereof, and telegraphically connected with a central station by one or more alarm circuits, by which means a public alarm of the existence and locality of a fire may be given at different points.

3d. In combination with the alarm system, for striking the number of the district upon the alarm bells, the signal system for communicating the number of the station at which the fire occurs to all the signal stations, as well as for communicating an alarm to the central station.

No. 18,022.—JOHN E. SMITH, of Troy, N. Y.—*Improvement in Telegraphic Repeaters.*—Patent dated August 18, 1857.—A detailed description of this invention would take up too much space to be given here; the principal features thereof will be understood by reference to the claims and engravings.

The inventor says: I do not claim the opening and closing of the local circuit by magnetism produced by the opening and closing of the main circuit.

But I *claim* the connexion of a battery at each station with the line wire, and with two local cross connexions, in such manner that, by means of the key and relay lever, the cross connexions through the register magnet and the other cross connexions are alternately broken, and the battery thrown upon the main line, and its current caused to operate the relays on the line wire, like a main current, till shut from the line by the relay lever, as described, whereby each battery is made to perform the duty of an ordinary local battery while not wanted on the line wire, and to perform the duty of a main battery while not wanted as a local.

Second. The key placed in the local circuit and constructed, as described, to open and close the said circuit in two branches, to give two directions to the current over the line wire, substantially as and for the purpose set forth.

No. 18,626.—EDWARD C. CLAY, of Boston, Mass.—*Improved Device in Telegraphic Fire-Alarm Apparatus.*—Patent dated November 17, 1857.—In operating this invention, the operator at the central station, having received the alarm from one of the minor stations, sets the hand F at 60, and the hand E at the number of the district in which the fire may be, (say at 2;) this places the snail K in the position shown in the engraving, when the pin *e* will strike against the second step on the periphery of the snail K, and allow the escapement I to be drawn over by its springs *d*, in the direction of the arrow, just so far that it will require to be fed up two notches by the shaft M, before the pin *e* is again brought into the path of the arm *l*; when this occurs, the revolutions of the shaft are arrested.

Having thus arranged the hands, the operator moves the key U against the resistance of spring V; this moves the long bent rod T, and vibrates the lever S, and lifts the pin *n* clear of the segment *f*, when the spring *d* immediately draws near the escapement I, until the pin *e* rests against the snail K. As soon as the pin *n* has been lifted, and the escapement I has vibrated, the key U is released by the operator, and the pin *n* falls again into the segment *f*, and acts as a retaining pawl. When the pin *e* is drawn out of the way of the arm *l*, the shaft M revolves. Each movement of the shaft causes the bells to strike once, moves forward the index hand one mark, and feeds up the segment *f* one notch; now, as the position of the segment *f* is repeated by the index hand, the number of the district will be struck and counted, when the pin *e* will again be brought into the path of the arm *l*, and the operation be stopped.

Claim.—The snail K, or its equivalent, and dial plate, in combination with the single key U.

No. 16,828.—Moses G. Farmer and Asa F. Woodman, of Portland, Me.—*Improvement in Telegraphic Repeaters.*—Patent dated March 17, 1857.—In engraving, fig 1, A^2, A^3, two distant stations, this invention is supposed to be placed at an intermediate one. If the independent circuit be broken by an operator at A^2, the relay magnet at B^2 will be discharged, and this will discharge the local magnet at C^2, and break the dependent circuit at X^2. This will cause the lever B to be tipped, and thereby prevent the independent circuit being broken at the instrument, or at X^4. From this it will be seen that the main circuit, which is first broken, (which may be called the independent circuit,) determines which way the beam B shall incline, and that this inclination, while it allows the instrument to break the dependent circuit, prevents it from breaking the independent circuit.

Claim.—The use of a mechanical obstacle, essentially in the manner as set forth, whereby, when the independent circuit has broken the dependent circuit at the instrument, the dependent circuit is prevented from breaking the independent circuit.

No. 18,149.—John P. Humaston, of New Haven, Conn.—*Machine for Punching Paper-Fillets for Transmitting Telegraphic Signals*—Patent dated September 8, 1857.—A detailed description of this invention would take up too much space to be given here; the principal features thereof will be understood by reference to the claims and engravings.

Claim.—First. The manner of operating the punches for perforating the characters in the paper, consisting of the revolving type-wheel, or other equivalent means of indicating characters, in combination with the punches, as described.

Second. The method of regulating the feed of paper, consisting of the graduated stop-wheel, or equivalent series of stops, in combination with the type-wheel, and with the means for propelling the paper-fillet past the punches, as described.

Third. The manner of forming the cutting ends of the punches—that is to say, having its advancing end formed into two cutting edges, by means of the V-shaped recess, in combination with a second pair

of cutting edges opposite to them, formed in like manner and upon the same plate, but in position at a right angle to the first pair; thus making the other half of the shear, in conjunction with an adjoining punch, substantially in the manner set forth.

No. 18,131.—Samuel C. Bishop, of New York, N. Y.—*Improvement in Insulated Telegraphic Wires, enclosed in Metallic Tubing.*—Patent dated September 8, 1857.—A current of water is started through the water-courses 5, in the direction of the arrows, and the wire covered with gum is entered into the inner tube through cup *l*, and pushed down until it enters die F. The melted metal is then poured into recess M, and the ram E is forced down; whereupon the metal will be forced out of chamber M, and, as it leaves the steel point 2, is closed around the gum with sufficient impingement to draw the wire down.

Claim.—The article above described as a new manufacture, consisting of wire insulated by a covering of gutta percha, or India-rubber, firmly enclosed in a coating of lead or other ductile metal.

No. 18,147.—Henry Hochstrasser, of Philadelphia, Pa.—*Improvement in Attaching Wires to Bell Telegraphs.*—Patent dated September 8, 1857.—The spring C is interposed between the purchase crank A and the machine to be moved; so that if the wires are pulled further than the machine will admit, the strain will come upon the intermediate springs, and not on the cranks.

The inventor says: I do not claim any improvement on any machine to which the intermediate springs may be attached.

I *claim* the intermediate spring, or its equivalent, substantially as described.

No. 16,665.—William D. Wesson, of Chillicothe, O.—*Improvement in Electric Telegraphs.*—Patent dated February 17, 1857.—A are posts along the whole road. The metal elbows D D are insulated from the brackets C B, to which they are pivoted at *a*. The elbows are only allowed to play slightly between pins *b c*, which are also insulated. Each elbow is connected with the nearest elbow on the next post A by conducting wires E. The wires E are fringed with fine iron wires *f*, which hang down and vibrate freely. The pendulum I is swung forward by the circuit-breaker L on the vehicle V, (as the latter passes along,) and is thus caused to turn the shaft G far enough for the crank *g* to raise the movable conductor or circuit-closer H out of contact with the elbows D D, and thus break the circuit in the line of wires E. The circuit-receivers upon the vehicle consist each of a horse-shoe electromagnet J J, having iron plates *k k* attached to its poles; these plates are in constant contact with the wires *f*. The circuit-receivers are connected by a conducting wire *y*, having a telegraphing apparatus in its circuit.

Claim.—Constructing the stationary telegraph line of a series of immovable and interposed movable conductors; and furnishing the vehicle with a circuit-breaker, circuit-receivers, and conductors, arranged to operate substantially as set forth, for the purpose of breaking the circuit through the main line at a point or points where the vehicle is passing, and completing the circle through, so that by suitable telegraphing instruments or apparatus carried by the vehicle, communications may be transmitted and received by the vehicle to and from other vehicles, or to and from stations at a distance, either while the vehicle or vehicles are stationary or in motion, as set forth.

No. 17,673.—Harrison Gray Dyar, of New York, N. Y.—*Improvement in Electric Telegraphs.*—Patent dated June 30, 1857.—A detailed description of this invention would take up too much space to be given here; the principal features thereof will be understood by reference to the claim and engravings.

The inventor says: I do not claim any particular mode of obtaining the synchronism of the vibrations; nor confine myself to vibrations or any particular form of motion to produce the like effect; nor the use of any particular means for obtaining the electric action; nor the kind of signals, signs, marks, or recording; nor particular modes of arranging the apparatus; leaving it to those who use my invention to employ such apparatus, whether vibratory, rotary, or oscillatory, as they may deem best suited to accomplish the object desired under the different circumstances which may arise.

But I *claim* constructing and operating signalizing telegraphic apparatus in such manner that electric pulsations representing signals, resulting from the actions of two or more operators at work at the same time, are imparted alternately and successively to a single main conductor or wire of communication, and received therefrom and distributed in the same alternating succession, whereby a single main conductor may be made the instrument by which two or more operators can be simultaneously employed in sending different messages, either in the same or opposite directions, substantially as set forth.

I also claim transmitting different electric signals, resulting from the actions of two or more operators working at the same time, at the same or opposite ends of a single main conductor, by means of a single main conductor combined with two or more sets of corresponding signal-sending and signal-receiving conductors, which represent the different signals in use, and are appropriated to different operators by means of intermediate circuit-making and circuit-breaking apparatus, which are moved in harmony at the signal-sending and signal-receiving stations, in such manner as to present themselves successively in all the positions required to permit currents of electricity to be passed alternately through the corresponding members of the signal-sending and signal-receiving conductors, whereby the apparatus at each station can at the same time be employed in transmitting and receiving signals representing messages, substantially as set forth.

I also claim transmitting electric pulsations to a main conductor, and distributing them from the same main conductor by two sets of circuit-making and circuit-breaking apparatus, which are moved in harmony with each other, but are moved by the mechanism independently of the other portions of the telegraphic apparatus, in such manner that the harmonious movement of the circuit-making and circuit-breaking apparatus at either end of the main conductor is not impeded or controlled by the irregular movement of other parts of the telegraphic apparatus.

I also claim sending and receiving signals, as stated, by apparatus so arranged and combined with the main conductor that, in operating, the impulse that closes or opens the circuit shall last but for a moment, while the contact maintained at the station where the signal is received shall last a longer period, so as to advise of the necessity of exact synchronism in the movements of the mechanism at the two stations.

No. 17,997.—Benjamin T. Harris, of Brooklyn, N. Y., assignor to John McKillop, of Brooklyn, aforesaid.—*Improvement in Machines for Marking Time of Attendance of Workmen.*—Patent dated August 11, 1857.—The cylinder C, which is operated by the hour-wheel of a clock-work within the case A, has a paper wound up on its circumference, which is ruled and marked, corresponding with the motion of the cylinder and hours of the day. The workman, upon entering the shop, presses the upper marker I, through slot *j*, against the ink pad *g*; raises it till it is opposite his number on the plate E, and prints the letter I opposite his number. When the workman leaves the shop, he makes an impression opposite its number with the marker O, and, as these markers cannot be moved to the right or left, the impression upon the paper on cylinder C must indicate the time at which it was made.

Claim.—1st. The combination of the registering surface operated by clock-work with the movable markers, when the latter are arranged as set forth.

2d. The combination of the movable markers and their arms *k* and *l* with the indicators *u* and their concomitant parts, as set forth.

No. 16,344.—James Tuerlingx, of New York, N. Y.—*Improvement in Maintaining Power for Time-pieces.*—Patent dated January 6, 1857.—The weight F runs down the incline or spiral *e*, and the power thus derived is applied to clock-works by the guide rods *g* connecting the head 4 and wheel *h*, said guide rods passing freely through holes in the weight F; the winding up of this clock is effected by elevating the weight F, which can be done by raising rod *n*, fork *o*, and fingers 8; and when this is done, the power of the weight to rotate the clock is relieved. To keep the clock running during the time of winding up, a spring 10 is employed, which acts in the direction of the revolution of wheel *h* against one of the guide rods *g*, said spring receiving its tension by the running down of the clock.

The inventor says: I do not claim giving motion to wheels or other articles by means of a sliding nut or weight on a screw or circular incline, as that is not new. But such an arrangement is objectionable as applied to a clock, because the weight, hanging on a moving screw, would cause so much friction as quickly to wear out the parts and derange the same, particularly if the clock be moved about; but by having a fixed screw or circular incline, down and around which the weight moves, all the strain and friction is taken by the said incline as a fixture, and the weight only acts on the parts of the clock through the medium of the rods *g g*, or their equivalents, with the power required for propelling the clock.

Therefore, I *claim* the fixed screw or circular incline *e*, carrying the weight *f*, combined with the rod *g g*, or their equivalents, for communicating the motion and power from the said revolving weight to the wheel *h*, substantially as specified.

Also, the retaining spring 10 on the weight *f*, combined with the fork *o* and fingers *g*, or their equivalents, that will lift the weight up bodily, and allow said retaining power to act, substantially as specified.

No. 17,055.—George P. Reed, of Waltham, Mass.—*Improvement in Watches.*—Patent dated April 14, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—Arranging and fastening the barrel B, with respect to the pillar plate A, essentially as described; that is, so that it shall extend through the pillar plate and be fastened to the dial side of it; in combination with arranging the main gear-wheel G so that it shall operate as a barrel head or cover to the barrel, and have the retaining power applied to it, substantially as set forth.

IX.—CIVIL ENGINEERING.

No. 18,395.—Joshua E. Hall, of Cleveland, Ohio.—*Improved Apparatus for Barns, Stables, &c., for Rescuing Horses and other Stock from Fire.*—Patent dated October 13, 1857.—In using this improvement, the animal is tied to post U, above the spring V; this is a light spring of sufficient strength to hold up the halter. When the frame E is released, the post and spring assume the position indicated by *u* and *v*, in fig. 1. In this position, as the animal pulls to get away, the halter slips under the spring, and over the post, so that the animal is at large.

As the section *e* descends, the section E¹ moves correspondingly; so that the section *e* touches the animal on the haunches or tail, and the animal is pushed from behind, while he is being drawn by the bridle attached to the post.

While the animal is under the frame, when it is at E^2, he is protected from the flames or falling brands, as the covering of the section E^1 forms a kind of shed, when in the position at E^2.

The inventor *claims* the swing frames E E^1, arm J, and cord H, and also in combination with the spring V and post T, when the same is arranged substantially as set forth for the purpose specified.

No. 17,256.—Matthias F. Brantingham, of Sangamon county, Ill.—*Improved Portable Barrack.*—Patent dated May 12, 1857.—The upright posts A B C D are inserted in the ground, and the crops of whatever kind are stacked around them, until the stacks are as high as desired; the rings *a* are then secured to said posts, by means of bolts *b*, as represented in fig. 2; and the beams *d* are attached to said rings by means of hooks. The rafters 3 and 4 are then secured to beams *d*, and beams 2 to rafters 3 and 4, by means of pins, when the framing of the roof is ready to receive any suitable covering.

Claim.—The combination of separate and detached pieces of material, as described, so as to form a barrack, which can be used for the protection of crops from the weather, and which can be readily separated again for removal from place to place, and then reconstructed.

No. 16,473.—James B. Eads, of St. Louis, Mo.—*Improved Apparatas for Blasting Rocks under Water.*—Patent dated January 27, 1857.—The charge of powder is secured in the chamber B, and the mortar A, together with the charge, is let down on the rock to be blasted, the charge being fired by a fuse, which passes through passage *b*.

The inventor says: I am aware that weights and braces have been essayed as auxiliaries in blasting rocks on land; these I do not claim, nor do I claim blasting on land, or dry blasting, at all.

I *claim*, in combination with the column of water over the rock or other material to be blasted, a mortar or weight of greater specific gravity than the water, to act as an auxiliary in holding the blast to the rock, as set forth.

No. 18,037.—John Carpenter, of Stonington, Conn.—*Improved Device for Piercing Blind Slats to Receive the Staples.*—Patent dated August 25, 1857.—A detailed description of this invention would take up too much space to be given here; the principal features thereof will be understood by reference to the claim and engravings.

The inventor says: I am aware that machines have been constructed for cutting the tenons simultaneously at both ends of blind slats, as in the machine patented by Hastings, Bumsey, & Chamberlain, February 20, 1855; and also for cutting the tenons and piercing the slats for wire staples simultaneously, as in the machine patented to T. G. Stagg, March 28, 1854; but I do not claim any device or action included in either of these machines referred to.

I do not claim the application of a sliding dog to clamp and hold the slat, while another dog or other device independent of this is used for piercing the slats for the staple.

But I *claim* the application of the piercing points *h* to the sliding dog, so that the slat may be pierced for the wire staples by the same action as that by which they are held secure for forming tenons thereon, as described.

No. 17,064.—Jesse N. Bolles, of Philadelphia, Pa., assignor to M. W. Bolles, of the same place.—*Improvement in Apparatus for Boring Artesian Wells.*—Patent dated April 14, 1857.—This boring tool being operated in the usual manner, the cutter A, at the bottom, strikes the rock with sufficient force; and, on its being raised again, the valves J close and bring up the detritus; which, by its continued operation, causes an upward current of water, carrying with it all the cuttings, and discharging them through the apertures N in the upper rod G.

Claim.—The combination of cylindrical boring rods with cutters and valves so constructed as to discharge the detritus upon the surface of the ground at every stroke of the drill, as described, or any other mode substantially the same, which will produce the same effect.

No. 16,572.—Thomas W. H. Mosely, of Covington, Ky.—*Improved Bridge.*—Patent dated February 3, 1857.

Claim.—First. The compound arch constructed substantially as set forth.

Second. The saddle pieces S S, in combination with the stirrups E E and said compound arch.

Third. The sliding suspension plate D, in combination with the chord M and radial suspension rods, as set forth.

Fourth. The corrugated shoes *k k*, as set forth.

No. 18,253.—Abram S. Swartz, of Buffalo, N. Y.—*Improvement in the Trussed Bridge.*—Patent dated September 22, 1857.—The nature of this invention consists in making an iron tower to support the arch, the base of which is held against the thrust of the arch by wrought iron horizontal tension bars, and the top thereof by a suspension rod C. The tower A, the horizontal tension bar B, and the suspension rod C, when taken together, make a figure in the form of a right angled triangle, the foot of the arch D resting upon the tower within this triangle.

The inventor says: I *claim* the arrangement of the parts described, so that the tower A, the tension bars B, and the suspension rod C, when taken together, will present the distinctive feature of a triangle with the foot of the arch D resting upon the tower within the triangle, substantially as set forth.

No. 16,728.—Albert Fink, of Parkersburg, Va.—*Improvement in Bridge Trusses.*—Patent dated March 3, 1857.—The inventor says: I do not confine myself to the particular form of the shoe casting *d*, or the mode of connecting the suspension rod with the same. This may be varied according to circumstances to carry out the object in view, viz., the support of either the upper or lower chord of truss.

I do not claim the general arrangement of the parts *b b*, *c c*, *a a*, or any of the details of their connexion with each other; but what I do *claim* is the use of an auxiliary truss which is to consist of the lower part c^1, of the counterbrace $c\ c^1$, and of a piece c^2, placed between the two main braces *b b*, independent of these braces, substantially as herein set forth.

No. 16,446.—D. C. McCallum, of Owego, N. Y.—*Improvement in Bridges.*—Patent dated January 20, 1857.—The nature of this invention consists in combining the arch braces A B with the arch chord A C, the top horizontal surface of the abutment or pier, and the lower chord L C, by means of a cast iron shoe S and the tension rods T *r*, whereby the thrust of the arched chord is thrown down upon the abutment, and any deflection in the lower chord is counteracted by an upward force at each end of the tension rods; and also in the method of lengthening or shortening the braces C B of a bridge-girder by means of plates *a* and *b*, straining pieces *c*, and screw nuts *d*, by which the truss may be elevated or compressed as required.

Claim.—So combining the arch brace with the arched chord or beam, the top horizontal surface of the abutment or pier, and the lower chord or tie, by means of the iron shoe and tension rods, as that the thrust of the arched chord shall be thrown down upon the abutment, and any deflection in the lower chord be counteracted by an upward force at each end of the tension rods, substantially as described.

Also, the method of lengthening or shortening the braces of a bridge truss or girder, by which the truss may be elevated or depressed, as required, by means of the yoke *a*, the plate *b* on the end of the brace, and the straining pieces *c c*, with their nuts *d*, substantially in the manner described.

No. 18,196.—Charles H. Earle, of Green Bay, Wisconsin.—*Improvement in Bridges.*—Patent dated September 15, 1857.—The sections of this bridge can swing on their hinged parts *a* in the abutments A, and can be raised by heavy pressure from below, the cap *c* sliding on pile b^1 up and down, according to the height of the water.

The inventor says: I do not claim making a bridge in sections.

Nor do I claim the attachment of sections of bridges to their abutments by knuckle joints or hinges, as I am aware that drawbridges have been constructed with such attachments.

But I *claim* the supporting of those ends of the several sections B B of the bridge which are not connected directly with the abutments, by attaching them to cap pieces *c*, or their equivalents, fitted to rise and descend on piers, in combination with the attachment of the sections next the abutments, with knuckles or hinges, whereby the bridge is rendered self-adjusting, and prevented being carried away by accumulations of ice, floods, or other causes leading to lift the bridge from its place.

No. 17,684.—Francis C. Lowthorp, of Trenton, N. J.—*Improvement in Iron Truss Frames for Bridges.*—Patent dated June 30, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not desire to confine myself to the precise form of straining plate described, as the same may be adapted to receive a greater or lesser number of lower chord rods, or to any description or number of diagonals and verticals.

But I *claim* the straining plate B, in combination with the rods G and H, when the latter are connected to the plate substantially in the manner set forth, and when the said plate is arranged to receive the vertical or verticals A and diagonals D^1 E of iron truss frame bridges.

No. 17,722.—Josiah Brown, Jr., of Buffalo, N. Y.—*Improvement in Truss Bridges.*—Patent dated July 7, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim broadly furnishing the main or counter braces with gains, and passing them between the timbers of the cords.

But I *claim* providing each of the main and counter braces C D with two gains *c* at top and bottom, and each of the timbers of the chord A B with a gain *b* at a point where the braces are applied, corresponding with the gains in the braces, and passing the braces thus formed up between the timbers, with the gains of the braces in such relation to the gains of the timbers that when the timbers of the chords are brought together, they are combined, and become, as it were, only one piece, no part of which can be operated upon or affected independently of the other by the downward and upward thrusts common to truss bridges, even if the bolt which passes laterally through and intersects each set of braces and the timbers of the chords were removed, substantially as and for the purposes set forth.

No. 18,548.—Francis C. Lowthorp, of Trenton, N. J.—*Improvement in Iron Truss Frames for Bridges, &c.*—Patent dated November 3, 1857.—This invention relates to improvements in iron truss frames composed of upper and lower chords, vertical posts, diagonals and counter diagonals and consists in so constructing and arranging the vertical posts that they may be allowed to vibrate in the upper and lower chords, and that the bottom of the end posts may be allowed to vibrate on the piers or foundations. These improvements have for their object facility of erecting the frames, avoiding the injurious effects of expansion and contraction on the structure as well as on the piers, and also preventing the effects of sudden shocks from passing trains and other sources; these improvements are also intended for the purpose of avoiding the planing, fitting, and turning, and other work generally required in the construction of other truss frames.

The engravings and claim further show the nature of this invention.

The inventor says: I do not wish to confine myself to the precise form or size of the parts described.

I *claim*, first, arranging and constructing the vertical posts of iron truss frame girders for bridges and other structures, in relation to the upper and lower chord, substantially in the manner set forth, in order that the said posts may be allowed to vibrate on the chords, for the purpose specified.

Second. Allowing the end posts of truss frame bridges to vibrate on the piers or foundation, for the purpose set forth.

No. 17,864.—George S. Avery, of Lewisboro', N. Y.—*Improvement in Segmental Truss for Bridges, &c.*—Patent dated July 28, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I *claim* an improvement in segmental truss bridges by a combination of the arched top chord, horizontal bottom chord X, braces, vertical tie-rods, packing blockings A, and self-adjusting shoes B; the whole constructed, as described, into a segmental truss, of greater strength and stability than such as are generally used with the same amount of building material.

I distinctly disclaim the invention of the several devices taken in the construction of my bridge trusses.

But I *claim* the combined arrangement of the different parts, as described and set forth.

No. 17,962.—Lewis Fisher, of Buffalo, N. Y.—*Improvement in Water Closets.*—Patent dated August 11, 1857.—When a person occupies this chair, the seat will be brought down by the weight of the person, and the spring B will simultaneously withdraw the cover A; on rising, the seat is thrown into the position represented in the engraving, by the action of the spring B, which also slides the cover A over the pot K.

The inventor says: I disclaim removing the cover by the weight of the person upon the seat, broadly considered; as this has heretofore been done in the construction of water closets.

I *claim* the arrangement of the sliding cover A with the jointed seat D and springs B, for the purposes and substantially as described.

No. 18,550.—Francis McGhan, of Washington, D. C.—*Improvement in Water Closets.*—Patent dated November 3, 1857.—Chamber C, being in communication with the supply pipe by pipe *d*, will fill with water above the valve *b*; and as the upper surface of the valve is greater than the area of opening *a*, the valve will rest close to its seat, and no water be permitted to pass to pipe D. Pressure downward on the spindle S will force water through the pipe *d* into the pipe D, against the head of water; and on the removal of this pressure, the head of water through pipe D will lift valve *b*, and water will flow to the pan A. This flow of water will continue until sufficient passes through pipe *d* to fill the displacement in chamber C, and close valve *b*. This time will depend on the size of opening regulated by the stop-cock K.

The inventor says: I claim the adjustable communication *d k*, between the supply pipe D and the chamber B, above the valve *b*, in combination with the displacing diaphragm *f*, or its equivalent, arranged and operating as set forth.

No. 18,972.—James T. Henry and William P. Campbell, of Philadelphia, Pa.—*Improvement in Water Closets.*—Patent dated December 29, 1857.—A is an oblong box; B its cover; *a* the usual opening in the same; and *b* the hinged lid for said opening. Within the box are situated the basin C, valved chamber D, and cistern E. The basin C has a curved pipe *c*, communicating with the chamber D and exit pipe *e*. Attached to the valve *d* is a spindle *f*, guided by a cross bar *h* in the pipe *g*, which terminates at an opening *i* in the cover B, the spindle being finished at the top with a handle *j*, by means of which the valve *d* may be lifted at pleasure. A pipe F forms a communication between the cistern E and the curved pipe *c* of the basin C.

The inventors say: Disclaiming the discharging of a stream of water into the pipe communicating with the basin from a cistern, the level of water in which is the same as that required in the basin when the valve is closed, as such a device is shown in the English patent of John Ody, sealed May 13, 1855.

We *claim* the chamber D, with its valve *d*, in combination with the pipe *c* of the basin C, the cistern E, and communicating pipe F, when the same are constructed and arranged in respect to each other in the manner set forth and for the purpose specified.

No. 18,404.—JAMES MITCHELL, of Osceola, Iowa.—*Improved Digging Machine.*—Patent dated October 13, 1857.—This improved machine is best described by the manner in which it operates, which is as follows: The machine rests upon rails to facilitate its movements. The shaft *a* is rotated in the direction of the arrow, producing the alternate rise and fall of the picks P. Taking the position of fig. 1, where they are elevated, the continued movement of shaft *a* causes them to penetrate the earth, as shown in fig. 2. Meanwhile stud S presses upon arm *m*, and throws bar E rearward, causing the picks at the time of their penetration to move to the rear and loosen the earth behind them. As the shaft C rocks toward the rear of the machine, producing the elevation of the picks, arms *e* of this shaft move forward and cause pawls *f f* to turn ratchets *g g*, and with them wheels B B. This moves the machine forward a sufficient distance for the picks to penetrate unbroken ground on their next descent.

The inventor says: I *claim* passing the pick handles through the rock shaft C, and attaching them to the traversing bar E, in combination with the arms *m* and *n* of shaft G, studs S, and springs *h* actuating said bar, the arrangement and operation being substantially as set forth.

No. 18,398.—EDWARD HOLMES and BRITAIN HOLMES, of Buffalo, N. Y.—*Improvement in Ditching Machines.*—Patent dated October 13, 1857.—When this machine, as improved, is at work, the elevating belt A *a* and the compressing belt H move in the same direction, consequently the compressing belt will assist in carrying up the dirt. It will also serve to prevent the dirt from falling off at the sides. The plough is composed of several parts or distinct pieces, namely: the horizontal cutting blade D, the expanding side cutters E, the side pieces D *d*, and the elevating apron *b*.

The inventors say: We *claim* the horizontal blade D, the expanding side cutters F, and elevating apron *b*, when arranged and operating together substantially as set forth.

We claim the combination of the elevating belt A *a* and compressing belt H, or equivalents, with the elevating apron *b*, for the purpose of taking the dirt from the apron, and continuing its passage up, until dropped on to the horizontal conveyer, substantially as set forth.

We claim the scraper *u*, for the purpose of scraping the dirt from the elevating belt, and giving it direction so that it will fall upon the transverse conveyer, substantially as described.

No. 18,689.—JOSEPH GRAY, of Raymond, Miss.—*Improved Levelling Instrument for Ditching, &c.*—Patent dated November 24, 1857.—In using this invention, having marked out the lines for a number of ditches, the bars D E are adjusted to a horizontal position, and the lines for the furrows, or a suitable number of them to serve as sufficient guide for the ploughman, are marked in the same manner as the ditches.

As the bars D E are of considerable length, say one foot or more, the grade, or level, may be marked for a considerable distance along the face of a hill without moving the stand of the instrument; and when this is necessary, the same lines can be continued to any distance. Instead of the bar D having a slit *j*, it may have a hair-line like the bar E.

Claim.—The combination of the two adjustable bars D E, provided with graduated sectors, with the table A and bar C, or other equivalent support, capable of being adjusted in a level position, for the purpose of laying out levels or grades in a direction transverse to the line of vision, as described.

No. 18,627.—WILLIAM N. CLARK, of Chester, Conn.—*Elastic Door-Guard.*—Patent dated November 17, 1857.—A simple form of this improvement is shown in the illustrations. A represents a hemispherical piece of India rubber, surrounded by an escutcheon or ring B, which, by means of screws C, fastens the rubber to the wall in such a manner or position that the ordinary knob of the door may strike the guard when the door opens wide.

The inventor says: I *claim* the elastic door-guard described, for the purposes set forth.

No. 17,242.—HENRY TRYON, of Steuben, Pa.—*Improved Arrangement of Door-Sill and Door-Strip.*—Patent dated May 5, 1857.—The door-strip C is secured to the bottom of the door; and when the door is closed, said strip works against the cast iron sill D, and removes the snow, ice, or dirt, from the sill, and any snow that may collect between the end E of the door-strip and the jamb H will pass behind the circular flange C.

Claim.—The construction of my door-strip, as shown at C, in connexion with the sill, constructed as described, or any other construction substantially the same, and which will produce the same result.

No. 17,513.—ALBERT W. MORSE, of Eaton, N. Y.—*Improvement in the Mode of Hanging Doors.*—Patent dated June 9, 1857.—The bar *b* is pivoted to the plate *a*, which is attached to the door, and can play loosely on its pivot; thus when the door warps, it has no influence on the position of the roller or rollers *c*, which at all times can run true on their rails *d*.

The inventor says: I am aware that doors have been suspended upon rollers by means of a standard permanently attached to the door; therefore, I make no claim to this.

Nor do I claim the standard roller or any of the parts, of themselves.

But I *claim* giving the roller C an independent motion of the door, thereby allowing the roller to adjust itself to the rail, and revolve on it with its plane parallel with said rail, in the manner and for the purposes set forth.

Not intending in these claims to limit myself to the precise arrangement of parts described, but to vary the same at pleasure, while the same ends are attained by means substantially the same.

No. 18,554.—M. C. Root, of Toledo, Ohio.—*Improvement in Iron Shutters for Doors, Windows, &c.*—Patent dated November 3, 1857.—In the engravings, A represents a window-casing, and B a sash fitted therein. C represents the shutter. The shutter is constructed of iron slats *a*, the upper and lower edges of which are folded or bent at opposite sides, as shown in a^1, the upper edge of one slat fitting in the lower edge of the one immediately above it, as shown. At the end of each slat, and at its upper part, a loop or hook *b* is formed.

Underneath the sill *d* of the window or door, a box or recess D is formed, the upper part of which has a slide *e* placed over it; and in the upper cross piece *f* of the casing a slide-catch *g* is placed, the slide having a spiral spring *h* attached to it, and a knob is attached to its inner end.

The inventor says: I do not claim broadly the making of metallic shutters in such a manner that the slats shall fold and unfold in a self-acting manner when raised or lowered. Examples of devices of this character may be seen in the rejected case of Richard Murdock, May, 1851, and in King's case, June 10, 1856.

I *claim* the construction of metallic shutters in the manner described.

No. 16,341.—James Smith, of Cleveland, Ohio.—*Improved Weather-Strips for Doors, Windows, &c.*—Patent dated January 6, 1857.—In closing the door A, the ends *d* of the rods *b* come to bear against the set screws *g*; and, in consequence thereof, the rods *b* are bent at their joints *c*, as represented by the dotted position in fig. 4, which movement forces the weather-strips D and D^1 down to the floor. On opening the door, the rods *b* expand to their straight position, and the weather-strips are raised from the floor by the action of springs *a* and a^1. The set screws *g* can be screwed in the frame B, so as to be out of reach of the ends *d*; the door-strips do not operate then, and remain raised from the floor on opening and closing the door.

Claim.—In combination with a weather-strip hung to its springs, a jointed rod and set screw for operating it, when said rod is made to press down the strip at one point only, as set forth; and this I claim, whether the strip be arranged in the door, or in or under a shield on the door, or both, substantially as set forth.

No. 16,874.—John T. Foster, Jacob J. Banta, of Jersey City, N. J., and James H. Banta, of Piermont, N. Y.—*Improvement in Weather-Strips for Doors, Windows, &c.*—Patent dated March 24, 1857.—The nature of this invention consists in the use of one or more strips of metal or similar substance, inserted in deep narrow grooves or mortises in one or more sides of a door or window, and sustained by pins in diagonal slots in such a manner that the shutting of the door or window forces out the metallic strip or bar, bringing its edge in contact with the sill or door of the post, excluding wind, dust, &c.

The inventors say: We *claim* constructing weather-strips with diagonal slots, taking pins in the door in such a manner that an endwise motion given to said strip in shutting the door shall cause the weather-strip to press on to the sill or casing, substantially as and for the purposes specified; it being distinctly understood that we lay no claim to a bar having a similar movement, but actuated by levers, rods, or links.

We also claim the manner specified of hanging the vertical weather-strip *f* in connexion with the upper and lower weather strip *b* and *e*, so that the endwise motion of the latter strips shall force said strip *f* against the vertical door post, as specified.

No. 17,809.—A. P. Routt, of Somerset, Va.—*Draining Machine.*—Patent dated July 14, 1857.—The soil displaced by the mould-boards is prevented from falling back into the furrow by the action of roller A; and thus, by once passing over the soil, perfect drains for conducting the water are formed.

Claim.—The employment in connexion with a double mould-board plough of a heavy V-shaped or taper roller G, said roller being hung so as to run behind and between the two mould-boards, and so as to be capable of revolving and adjusting itself to the different depths at which the plough may be set to cut, substantially as and for the purpose set forth.

No. 16,886.—Augustus Stoner, of Mount, Pa.—*Improved Grappling or Dredging Machine.*—Patent dated March 24, 1857.—To operate the machine, the ends K of the cross or centre-piece A^1 or A^2 are let down under the nozzles S or projections of the uprights c^1 c^2 or c^3; then, by any ordinary tackle raising the machine, its entire weight is borne by the chains *g* and cross-piece A, and the levers drop of their own weight, spreading out the hooks or shovels attached; thus set, it can be lowered any depth, and so soon as the machine lodges, the pressure is removed from the cross-piece A, and points S (which sustained the machine while in the air or water) now drop and lodge on the ring B. Upon again hoisting the machine, the cross-piece, either by coming with the arms *k* over the levers F, or the drop-kneed upright c^2 being down, with their points S resting on the ring, so that in either case the chains *g* now operate on their respective levers, causes the hooks, shovels, or buckets to move inwards to a common centre on their respective fulcra *f*, and firmly grasp and hold mud or anything that may come in thier way. The machine, which is now sustained by levers F, can be hoisted and lowered to where its contents are to be lodged.

Claim.—The combination of the machine, the supporting and lever-shifting cross-piece A, and the mitred shovels D, when combined in the manner set forth; the ring B, or its equivalent, to sustain the apparatus and chains, so linked and constructed to operate all the levers simultaneously, and sustaining the cross-piece A aforesaid; said combination being substantially in the manner and for the purposes set forth.

No. 17,959.—Asa Blood, Sr., of Norfolk, Va.—*Improved Dredging Machine.*—Patent dated August 11, 1857.—The rope J being attached to a spar of the vessel, the apparatus is lowered when the parts are in the position represented in figure 1. As soon as the apparatus reaches the bottom, the hook of dog E is unhooked from rod *a* by arms D C moving upward; and by now pulling on rope J, the arms D close on the material to be elevated, as shown in figure 2, and the apparatus and material can now be elevated by means of a tackle.

Claim.—First. The dog E, in combination with the beam A and rod *a*, operating as described; for the purpose of holding the dredge open in descending, and for relieving its hold by its own weight as soon as the weight is taken off the chain or rope.

Second. The combination of the levers B C and C^1 with beam A and rod *e*, operating as described; for the purpose of opening and closing the dredge, as described.

No. 18,352.—William Plumer, of Boston, Mass.—*Improved Rock-Cutting and Drilling Machine.*—Patent dated October 6, 1857.—This invention consists in a new arrangement of devices for cutting and drilling stone, copper, &c., and more particularly for cutting out pillars and blocks of stone; the cutter being operated in such a manner as to work out a circular pillar of any diameter, and also to cut out a square, or rectangular, or irregular-shaped block, by working on all sides of the same. In this invention the cutter will operate and be fed along as well horizontally at right angles to the cut as in every other direction.

The inventor says: I *claim*, first, feeding the cutter laterally in a direction at right angles to the cut, or nearly so, whether the cutting tool be situated horizontally, vertically, or at any angle, by the devices described or their equivalents, so arranged that the cutter or drill can be turned at right angles to the straight track of the machine, and also the requisite feeding motion be obtained, as set forth.

Second. I claim the slotted arms c^1 d^1 and e^1 f^1, so arranged and constructed as to permit the whole cutting apparatus to be turned at right angles to the cut, and to communicate, when fastened together, the lateral feeding motion to the frame *r r*.

Third. I also claim the arrangement of devices described, whereby I am enabled to feed the cutter working vertically in a circular direction, and set the cutter at any desired distance from the centre upon which the machine turns, by which blocks or pillars of any desired diameter can be cut out, as set forth.

No. 17,766.—Lemuel P. Jenks, of Boston, Mass., and George Arthur Gardner, of New York, N. Y., assignor of George A. Gardner, aforesaid.—*Improvement in Rock Drilling Machines.*—Patent dated July 7, 1857.—As the shaft B is rotated, the mandrel W has a reciprocating motion imparted to it by cam C operating against the roller X of said mandrel. The feed of the drill is effected by means of feed-screw P, which is operated by pawl M and ratchet O, and the turning of the drill after each stroke is accomplished by the action of pawl T and ratchet V; both pawls T and M are operated by eccentric E on shaft B, rods F I and lever T^2, turning on fulcrum K.

Claim.—The peculiar combination and arrangement of the devices described, whereby the rotation of the mandrel and drill, as well as the gradual and proper advancement of both drill, mandrel, and frame, or either of them, is effected by means of a single eccentric on the cam shaft B, in the manner and for the purpose set forth.

No. 17,765.—Lemuel P. Jenks, of Boston, Mass., assignor to George A. Gardner, of the same place.—*Improvement in Rock-Drilling Machines.*—Patent dated July 7, 1857.—Rotary motion being given to the shaft B, the cams D press against the bars E, and the crosshead C is pressed back, the spindle I passing through the head-piece J as the India rubber spring K is compressed on said spindle; as the cams D revolve further, the heads E are set free, and the India rubber spring K expanding propels the plunger H, rod L, crosshead M, mandrel N, and drill O, against the rock to be operated upon.

The inventor says: I do not claim India rubber springs. Neither do I claim the use of metallic springs in rock-drilling machines.

But I *claim* the use and application of the India rubber K, when interposed in such manner that its expansive force shall operate the drill in rock-drilling machines, substantially as described.

No. 17,896.—Moses T. Rowlands, of Pittston, Pa.—*Improvement in Machines for Drilling Rock.*—Patent dated July 28, 1857.—Motion being given to shaft M, wheel N is rotated, and with it the helve S of hammer P, which is hinged to the periphery of wheel N; and the hammer is caused to vibrate between the spring T and stand U of the wheel N, and is thrown outward and caused to strike drill V; at each revolution of the wheel, the spring W of the wheel N pressing the drill to the rock, when the drill recoils from the stone after each blow.

Claim.—The combination of the vibrating centrifugal hammer with the rotating spring W and loosely attached drill V, arranged to operate in relation to each other, for the purpose of facilitating the drilling of rock, as described.

No. 16,787.—Thomas H. Burridge, of St. Louis, Mo.—*Improvement in Rock-Drills.*—Patent dated March 10, 1857.—The rod *b* is secured to the head L, and works freely through the sliding head N, so that the drill-bar in descending brings the nut S in contact with the head N, and forces it down just the distance the drill cuts in the rock, thus allowing the drill to feed itself and keep the end of the bumper O always the same distance from the top of the drill-bar. The bumper O works freely through the head N, and has a collar around it, above the head, upon which the spring R takes its bearing. The drill-bar in rising strikes the end of the bumper O, and compresses the spring R, by which the energy of the blow is regulated. In the inside of the slide M is a ratchet, and to the head N is attached a spring T, which works in this ratchet and prevents the head from rising when the drill-bar strikes the bumper O.

Claim.—The combination of the sliding head N; with the ratchet guide-piece M, bumper O, spring R, rod *b*, and drill-bar A^1, when said parts are constructed and arranged for joint operation substantially as set forth.

No. 17,304.—John D. Hope, of Niagara Falls, N. Y., assignor to G. Arthur Gardner, of New York, N. Y.—*Improvement in Rock-Drills.*—Patent dated May 12, 1857.—The ridge A is raised on the two transverse corners of the flattened part of the drill, and the edges of the centre and the wings are brought to a cutting surface, as represented in fig. 2.

The inventor says: I do not claim the shaping the cutting point of the drill into the shape of the letter Z, as that form of drill has long been in use.

But I *claim* the formation and shaping of the wings or ridges on the transverse corners of the drill, substantially as described.

No. 18,561.—George H. Wood, of Green Bay, Wis.—*Improvement in Rock-Drills.*—Patent dated November 3, 1857.—The operation of this invention is as follows: The frame E is first adjusted, or turned and secured in proper position for the drill to act upon the rock, and motion is given to the shaft I; and as said shaft rotates, the arms *e* of the tappet K strike successively the roller *n* in the frame L, and draw back the box N; and as the strap M is attached to the end of the box N, said box will, as it is drawn back, be inclined, as will also the plate *y*, and this oblique position into which the plate is drawn by the strap, causes the aperture at the centre of the plate to clutch the drill G, which is consequently drawn back with the box N. As the box is drawn back, the spring P is compressed; and as the arms *v* of the tappet pass the roller *w*, the drill is forced against the rock by the spring P, and is rotated a certain distance in consequence of the roller *d* on the box N^1 actuating the lever H, which communicates motion to the ratchet *u*, through the medium of the pawl *r*.

Claim.—The employment, in combination with a drill, raised, turned, and operated as above described, of the supplementary spring R, for the purpose of controlling the rebounding of the drill G, in the manner as set forth.

No. 18,763.—Joseph E. Nesen, of New York, N. Y.—*Improvement in Rock-Drills.*—Patent dated December 1, 1857.—This invention is an improvement in the method of mounting rock-drills, so that they may be readily adjusted to the direction that it is desired the hole may be bored in the rock.

The inventor says: I am aware that rock-drills have been previously mounted so as to be capable of being adjusted in one direction only, viz: in a vertical plane, longitudinal with the frame on which they are placed; and I am also aware that means similar to that described have been employed for effecting the purpose. The ratchet Q and pawls R R have also been used.

I therefore do not claim the ratchet Q and pawls R R.

Nor do I claim the slotted semi-circular plates M M, and their connexion with the frame N, as shown, when separately considered.

Nor do I claim the wiper or tappet L.

But I *claim* attaching the semi-circular slotted plates M M and frame N to the adjustable frame E, fitted to the uprights *c c* of the frame A, as shown, and for the purpose set forth.

No. 18,573.—John Cowdon, of New Orleans, La.—*Improved Earth-Moving Machine.*—Patent dated November 10, 1857.—The claim and engravings will explain the nature of this invention.

The inventor says: I *claim* the combined arrangement of the gear-wheels 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 and 16, and pulleys 17, 18, 19 20. 44, 45 and 46, and the chains or cords *f h* and J, all arranged on the shafts, as represented, or substantially the same, and for the purpose of giving and regulating the forward motion of the machine and movement of the elevators, in the manner and for the purposes mentioned.

I also claim the construction of the elevators by dividing them into three, more or less, pieces, and arranging the pieces 31, 32 and 33 to the chain 26 and hook pieces 34, as specified and represented, or substantially the same, for the purpose of causing them to expand or spread for freeing the dirt from the elevators when being discharged, in the manner and for the purposes specified.

I also claim the combination and arrangement of the parts with, and employed for carrying the end of, the conveyor frame, consisting of the carriage P, cord *o*, and pulley stake 59, friction rolls 30 30, and driving pulley 50, or substantially the same, operated in the manner and for the purposes specified.

I also claim the combined arrangement of the shaft 37, nut 38, wheel axis 39, with the frame-work 41, as represented, for elevating and lowering the rear end of the frame of the machine preparatory for steering and giving the machine direction, as specified.

No. 18,113.—James A. Watrous, of Green Spring, Ohio.—*Improved Apparatus for Suspending Eave Troughs.*—Patent dated September 1, 1857.—The bar B^1 of the trough is suspended to the loop of the metal strap D^1, the ends of which strap are passed through the slotted plate C^1, and are turned down to the right and left respectively.

The inventor says: I do not claim the suspending of eave troughs by bolts and nuts, as patented by Woodruff.

But I *claim* the employment of a metal strap D^1, in combination with the cross bar and slotted plate C^1, for securing and readily adjusting eave troughs.

No. 16,519.—Jonathan R. Anderson, of Chicago, Ill.—*Improved Excavating and Dredging Machine.*—Patent dated February 3, 1857.—The nature of this improvement will be understood from the claims and engravings.

Claim.—The so arranging of the dipper with a travelling carriage as that they may be automatically moved in and out on the arms, for the purpose of insuring the filling of the bucket when the material to be excavated is hard, as set forth and explained.

I also claim, in combination with the lever p, the sliding piece U, clutch bar T, and pawl r, with their several appliances, so that by a single lever the attendant has entire control of the machine, as set forth.

No. 17,595.—Alonzo Taggart, of Warrenton, Mo.—*Improvement in Excavating Machines.*—Patent dated June 16, 1857.—As the machine is drawn along, the scraper B scrapes off the surface of the earth; and when said scraper is filled, it is elevated to the horizontal position represented in fig. 2, by turning windlass r, when it can be carried to the place of deposit. On unhooking one of the stay-chains b or b^1, the scraper can be tilted and unloaded.

Claim.—The free draught connexion of the scraper by chains c c, in combination with the balancing suspension chains a a and the opposite stay-chains b b, arranged and operating in connexion with frame and windlass, substantially as and for the purposes set forth.

No. 16,652.—Jesse C. Osgood, of Troy, N. Y.—*Improved Machinery for Excavating Rock.*—Patent dated February 17, 1857.—The chisel A is attached to a head B, which guides it up and down on ways C C, and is raised and let fall by means of monkey D. The head B contains an India rubber or other elastic packing E, against which the upper end of the chisel rests, for the purpose of protecting the head from the concussions accompanying the operation of the chisel; the head of the chisel is made in the form of the frustrum of a cone inverted, which, in connexion with the attachment m s u n, allows the chisel to swing sideways in any direction.

Fig. 3 represents the whole chisel on a smaller scale.

Claim.—First. Excavating rock under water by means of the wedge-shaped chisel, whose length is greater than the depth of water, when operated in the manner specified.

Second. The spring head B, or its equivalent, in combination with the chisel, operating in the manner substantially as set forth.

Third. The arrangement of the spring S within the loop or strap o of the turn buckle, in combination with the sliding nut u, in the manner described.

No. 17,650.—Charles Wilson, of Springfield, Mass.—*Improved Machine for Excavating Tunnels.*—Patent dated June 23, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I do not claim a single set of one or more rotary disk cutters applied to a common revolving shaft, and made to pass across a stone and to take a succession of chips or cuts from it, essentially as represented and described.

I do not claim the drill W^1 Y^1 Y^1, as the same might be used by hand, or in any other machine, and becomes a separate invention that may hereafter be secured by letters patent.

I *claim*, first, forming grooves in stone, or other mineral substance, by means of rolling disk cutters c c^3 e^4 d^2 d^3 on axes, set in alternate opposite directions, and acting substantially as and for the purposes specified.

Second. Arranging a series of rolling disk cutters, revolving in such a manner as to cut a deep annular groove into the rock, substantially as specified.

Third. The arrangement of the scoops A^2 and buckets B^2, in combination with the cylindrical wheel I and rotary cutters, to free the annular groove of the chips and dirt abraded by said cutters, substantially as and for the purposes specified.

Fourth. A bed-plate G, secured in place by the jackscrews L^2 M^2, or their equivalents, in combination with a sliding-frame F, or its equivalent, projected as the cutting progresses by means of a screw K acting the fixed and moving parts, substantially as and for the purposes specified.

No. 17,174.—Samuel W. Soule, of St. Louis, Mo.—*Improved Excavator.*—Patent dated April 28, 1857.—As the cart is moved along, the scraper e will fill with earth until the lug g on the wheel c, in revolving, grapples with the lug h, thereby raising the scraper e over the body of the cart, and discharges therein, it being turned by lug j^1 and projection k. The lugs g and k now pass each other, and the scraper falls back to position again for filling it, it being arrested in its fall by rod i.

Claim.—The frame d, lever d^1, lugs g h, rod i, and pins or lugs j and j^1, and projection k, or their equivalents, for the purpose of mechanically operating a scraper, as described.

No. 17,669.—Curtius Colby, of Wilson, N. Y.—*Improved Earth Excavator.*—Patent dated June 30, 1857.—The desired height of the cutting edge of the scoop G is regulated by the dog W falling in between the teeth of wheel D, and said dog is operated by means of lever E. When the excavator is filled with earth, the wheels D and C are brought in gear by raising the lever F; and as the machine moves on, wheel D is turned, and chains Y raise the scoop into the position represented in figure 1, where it is retained by operating again levers E F. The load can now be taken to any desired place of deposit, and the earth is liberated by pressing the foot upon lever O. The excavator is caused to reassume its position for loading by pressing upon spring T, by which the lever E is depressed, undogging the wheel D, when the excavator is brought down by its own gravity.

The inventor says: I do not claim the mounting and using an excavator upon wheels; nor suspending its sides upon pivots or gudgeons; neither for escape of the earth by letting the bottom free; as I am aware of there being machines used with those principles.

Neither do I claim the method of elevating the excavator by the cog-wheels C and D acting upon the drums H H, or the chains attached thereto; nor the method of varying the direction of the machine by the tiller K.

But I *claim*, first, the use of the levers E and F, with their combination, for the purposes set forth.

Second. The suspending the arms S S to the frame at a point P above the level of the top of the excavator, thus securing the elevation of the hind as well as the fore part at the same time.

Third. Causing the return of the bottom of the excavator to its proper position for reloading by means of the strap I and roller L, as described.

No. 17,306.—Wm. Kennish, of Brooklyn, N. Y., assignor to Andrew B. Gray, of San Diego, Cal.—*Improved Submarine Excavator.*—Patent dated May 12, 1857.—The receiver A being at the bottom of the river or harbor, the mud, stones, &c., are rushing up pipe B into chamber 9, the air which was previously there having nearly all passed up through hose H, and cocks R and P, into the vacuous space N. When the chamber 9 is charged with material to be lifted, the cock R is turned off, and the cocks G and S are opened, thus forming a communication between the chamber 8 and cylinder M. The cock *a* is then turned on, admitting steam into M, forcing the included air into the chamber 8, until the water previously there is expelled through the holes *z*, when the receiver A rises to the surface of the water. The excavator is then towed to the place where the material is to be deposited; and having arrived there, the weights 7 are elevated by means of chains F, when the weight of the material in chamber 9 opens the valves *c*, allowing the material to fall out, and the water to take its place.

The inventor says: 1st. I *claim* the combination and arrangement of the chambers 8 and 9, with their pipe B, valves C C, and weights 7 7, or of any equivalents thereof, for the purposes specified.

2d. I claim the arrangements of the cylinders N and M, with their pipes and hose, or the equivalents thereof, whereby the mud chamber 9 and floating chamber 8 are alternately filled with or emptied of air, as the means of collecting and floating off the excavated material.

I do not claim as new forming a vacuum by steam, as this has been done before.

Nor do I claim to be the first to use such vacuum for the purpose of excavation.

No. 16,397.—William Provines, of Columbia, Mo.—*Improvement in Excavators.*—Patent dated January 13, 1857.—As the machine is drawn along, rotary motion is imparted to the wheel L on shaft K, to the arms M, of which are attached the excavating cutters *a* and a^1, which are followed closely by the scoops O, so as to take up the earth loosened by said cutters. As the wheel L rotates, the trigger Q attached to a permanent brace P depresses the springs *d*, actuating rods *b*, and causing the scoops O to turn on their fulcra *c*.

Claim.—In combination with the scoops that cast their contents from them, the trigger Q and spring *d*, for the purpose of regulating the point at which the scoops shall divest themselves of their load, so as to raise it higher, or cast it further from the trench that is being cut, as described.

No. 18,185.—Ze Butt, of Lincolnton, N. C.—*Improvement in Excavators.*—Patent dated September 15, 1857.—By releasing the catch *e* from ratchet O, the excavator D drops to the ground to receive its load, and in so doing, winds the rope *m* around the pulley K; as the horses attached to tongue *z* are moved forward, the excavator is filled; the horses are now detached from the tongue, and the hook *y* drops into ring S, and, by moving the horses a few steps forward, they will pull on rope *m*, thus turn pulley K, and elevate scraper D. To unload, the driver pulls rod F upward and forward, thereby raising catch *h*, and opening gate *i* to permit the load to drop out behind.

Claim.—The attaching the posts G G^1, in combination with the cross-bar *p*, resting upon the frame to the scoop itself by pivots or otherwise, for the purpose of bearing and supporting it whilst loading and regulating the depth it is to enter the ground, and for taking the strain of the chains and windlass.

Again, I claim as my invention the elevation of the loaded excavator by horse power, in the manner described, or any other method substantially the same.

I likewise claim the arrangement and combination of the gate catch rod and lever, so that the gate can be opened and closed by the driver without his leaving his seat, substantially as shown and described.

No. 18,551.—Gilbert H. Moore, of Rochester, New York.—*Improved Rotary Excavator.*—Patent dated November 3, 1857.—The action of this improved machine is as follows: The digging-wheel in the centre, being dropped on the ground, rolls forward, the points of the spades being pressed into the earth by its weight. The shield F fills the spades in consequence of its shape at the anterior part, and retains the earth upon the spades as they rise by its shape at the posterior part. The earth leaves the spades by its own gravity, and falls upon the apron or inclined plane P P, and is thereby conveyed into the carriers B B. When a sufficient quantity has been loaded, the centre or digging-wheel is relieved from its work by elevating the crank C by a lever or other power. The earth is emptied from the carriers or receivers by pressing the levers A A at each end of said carriers towards the axle.

The inventor says: I *claim*, first, the construction of the carriers or receivers, as described, viz: the support and hinging of the bodies upon the axle in such a manner that they may be dumped by elevating the two extremities.

Second. The construction and mode of attaching the shield F by either of the methods, substantially as described.

Third. The combination of the digging-wheel, the carriers, and the shield, for the purposes set forth.

No. 17,692.—James Moore, of Pittsburg, Pennsylvania.—*Improved Fence.*—Patent dated June 30, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim the use of wire or other metallic wire as being new in the construction of fences.

But I *claim* the use of lozenge-formed slats B, and the alternate twisting of the wires A between the slats, as herein described and for the purposes set forth.

No. 16,598.—G. R. McElroy, of Covington, Kentucky.—*Improved Fence, Adaptable to Uneven Ground.*—Patent dated February 10, 1857.

Claim.—The combination of the adjustable bar and oblique pin with an angularly braced panel and bearer, or any ordinary panel, as seen in figures 1 and 2, on which the angular or other bar may be supported, so that the panels may be moved sideways at the bottom, so as to bring them perpendicular upon uneven ground, and secured in that position by one or two adjustable bars or seats, substantially as described.

No. 16,369.—Seneca H. Bennett, of Belleville, Pa.—*Improved Field Fence.*—Patent dated January 13, 1857.—The posts *a* are secured in the sills *b* and the rails *h* are fastened in corresponding notches *k* of the posts *a*. The posts are secured to each other by means of the top rails *c*, which pass through mortises *d* in said posts.

Claim.—The combination posts, secured firmly in their places by the top rails of the fence being let into the mortises in the top of the posts, substantially as set forth.

No. 16,996.—Samuel Bains, of Lancaster county, Va.—*Improved Field Fence.*—Patent dated April 7, 1857.—The panels of this fence are fastened together by a tongue and groove connexion at the ends of the rails; and by having the ends of said rails fastened together by means of a key E, which has the shape of a drawing knife, and is provided with a sharp edge so as to enter the wood and hold fast thereto to prevent the panels from working or slipping.

Claim.—The making a fence without posts, when panels are fastened together in the manner described.

No. 18,858.—Thomas B. Page, of Laurel, Ohio.—*Improved Portable Field Fence.*—Patent dated December 15, 1857.—The object of this invention is to construct a portable fence that will stand vertically and firmly on unlevel ground. The engravings and claim more fully explain the nature of this invention.

Claim.—The base or chair, composed of two members C D and C D^1 in combination, substantially as described, with the panels A *a* B A^1 a^1 B^1 and link E *e*, or its equivalent.

No. 18,934.—H. F. Stanard, of Wayne, Mich.—*Improved Portable Field Fence.*—Patent dated December 22, 1857.—The claim and engravings explain the nature of this invention.

Claim.—Attaching or securing the fence to the ground, substantially as shown and described, to wit: by means of the inclined bars or braces D D attached to the posts, and connected by cross-ties E E, in connexion with the stakes F, provided with mortises and the wedges G.

No. 18,064.—William Pierce Thomas, of Whitewater, Ind.—*Improved Fence for Poultry Yards.*—Patent dated August 25, 1857.—This invention consists in providing the upper portion of a fence with a swinging frame C D E F G, so poised that when a domestic fowl lights upon the bar, upon the side of approach, the swinging frame will turn in such a manner as to throw the fowl to the earth upon the same side from which it made the attempt to cross.

Claim.—First. The combination of the swinging frame C D E E F G with posts A A, in the manner and for the purposes set forth.

Second. The swinging board F, in combination with the swinging frame C D E E G, in the manner shown and described.

No. 17,514.—William Morrison, of Carlisle, Pa.—*Improved Portable Fence.*—Patent dated June 9, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Confining the panels together, and also to the braces D and sill B, by means of a single bolt *d*, in the manner described.

No. 17,201.—Ezra Cole, of Fairfield, Mich.—*Improved Portable Field Fence.*—Patent dated May 5, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The post B for use, in connexion with picket or panel sections C C of a fence, formed of two thin planks B^1 B^2; one of said planks being arranged on the one side of transverse sill A, and the other on the opposite side of the same, and one bearing, when the sections are locked together, against the inner face of one of the sections, and the other against the outer face of the adjoining section, substantially as and for the purposes set forth.

No. 17,302.—Seth G. Tufts, of Mainville, Ohio.—*Improved Portable Field Fence.* - Patent dated May 12, 1857.—The coupling blocks G rest upon the chairs E, and the panels of the fence are secured together by means of wedges or pins *c* bearing against the fence post B.

Claim.—Supporting the panels vertically upon the coupling blocks G; also providing the chairs E with upright cleats *d*, all as described.

No. 16,486.—Frank G. Johnson, of Brooklyn, N. Y.—*Improved Method of Constructing Fence Posts.*—Patent dated January 27, 1857.—The bricks *m n*, *m n*, (which form the posts of the fence,) have a common slot *o* to receive the key C that holds the rails *a a a* in place. By filling the mortises J with water, before the tenons J^1 enter, the mortar, by hardening, will firmly key one brick to another.

The inventor says: I do not claim the employment of the mixture of lime, gravel, and cobble stones in making posts, nor the mould or case in which to form the posts.

I *claim* the post B, formed and constructed as described, in combination with the keys C and rails *a a*, as described.

No. 16,406.—Oded Spencer, of Jacksonburg, Ohio.—*Improved Bore or Support for Posts of Field Fences.*—Patent dated January 13, 1857.—The posts *c* are set in between the ties *b* b^1 and B B^1, and are thus firmly supported, independently of the rails *e*.

Claim.—The chair or base formed of the pieces *a* a^1, and ties or battens *b* b^1, B B^1, in the described combination with the posts, for the purposes explained.

No. 17,742.—Samuel F. Jones, of Milford, Ind.—*Improved Method of Connecting the Panels of Field Fences.*—Patent dated July 7, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim the brace, and bottom slat, and notch, as the same have before been known and used.

But I *claim* the method of connecting the panels of a field fence by tongues and grooves *g h* and hook *r r*, combined as set forth and shown.

No. 16,675.—C. P. Garlick, of Minnesota Territory, and M. G. Blackstone, of Mainville, Ohio.—*Improved Mode of Securing to each other the Panels of Field Fences.*—Patent dated February 17, 1857.—*a f*, *a f* represent the ends of two fence panels.

Claim.—The combined uses of the mortises S and wedges W W, in the chair *g*, when arranged with and used for connecting the lower part of the panels of the fence together, all as and for the purposes described.

No. 17,010.—William S. Fuller, of Millbury, Mass., assignor to William D. Cutler, of Worcester, Mass.—*Improved Method of Constructing Iron Fences.*—Patent dated April 7, 1857.—The nature of this invention consists in making the pieces A with lugs B, or similar projections with a partial cavity on the back to fit on rods D, and then fitting the rings or collars *c* so as to embrace two adjacent lugs, and clasp them and the rod, the rods D being made with screws and nuts near the ends to retain the parts in place.

Claim.—The manner of connecting the pieces and rods together by means of the lugs and collars, when constructed and operating substantially as set forth.

No. 17,075.—William B. Bennett, of Lyons, N. Y.—*Improved Method of Clamping and Unclamping Panels of Portable Field Fences.*—Patent dated April 21, 1857.—The panels A of this fence are secured together by means of clamps D, which are formed with a hook *u* at one end, and with a button *e* at the other end; said button can be turned on its pivot and fastened to the clamp by inserting pin *i* into the oblique slot *o*, one half of which is formed in the button, and the other half in the clamp.

Claim.—The turn button clamp, or its equivalent, for connecting the trays of a portable fence, constructed, arranged, and operating substantially as set forth.

No. 18,952.—John H. Bruen, of Elmira, N. Y.—*Improved Method of Connecting the Panels of Portable Field Fences.*—Patent dated December 29, 1857.—The inventor, in describing his improvement, says: I construct a series of panels composed of inch boards of any convenient length and width, secured by being nailed to an upright or batten at each end, of two inches square, or thereabouts. A third may be nailed to the middle of the panel to stiffen it, or a strip of board will answer the same purpose. The end battens should project at the lower side a few inches, and may have a dovetail tenon cut upon them. A small strip of plank, having a corresponding dovetail mortise made through the centre, answers for a bed piece, and a strip of board C, figure 1, one inch by about five or six, and about four feet long, with a notch cut in one end, is required as a brace for each panel.

Claim.—The button *e*, in combination with the other devices described, for locking and securing the panels of field fences, in the manner set forth.

No. 17,210.—Isaac D. Garlick, of Lyons, N.Y.—*Improved Method of Uniting and Sustaining the Panels of Portable Field Fences.*—Patent dated May 5, 1857.—The panels composed of the boards *b* are secured to the posts *c d e f* f^1 in the respective positions represented in the drawings, the clamping piece *g* being secured to the bevelled surfaces of the posts *d c* in such a position that when a couple of panels are united to each other, said clamp will fit in between a couple of boards *b* at the end of the matching panel, and embrace the post *c*.

Claim.—My improved portable field fence, constructed substanstantially as represented and described.

No. 17,459.—Charles Van De Mark, of Oak's Corners, N. Y.—*Improved Method of Uniting the Panels of Portable Fences.*—Patent dated June 2, 1857.—The panels of this fence are locked together by inserting the piece *h* and projecting rails *g* through the opening of the next panel between the posts *c* and the board *d*, and swinging the panels round until the locking board *h* comes against the post *c*, and the locking board *d* against the post *a*, thus forming a zigzag fence, the locking boards *h* and *d* drawing tightly against the end post *c* and *a*.

Claim.—The end locking piece or board *h* combined with the locking board *d* and rails *e f* and *g*; the whole constructed and operating substantially as and for the purpose specified.

No. 18,301.—J. B. Reyman, of Bloomington, Ill.—*Improvement in the Construction of Wire Fences.*—Patent dated September 29, 1857.—The fence consists of two strands of wire *n n*, extending through its entire length, and supported at the ends and at intervals by common posts B. As the wires will be continually shortened when the pickets are being fastened on, it is necessary to provide a means whereby they may slacken as the occasion may require. This is accomplished by fastening the ends of the wire permanently to the post at the beginning, and extending them along the line of the fence, and fastening the other ends temporarily to a post by simply drawing them through holes bored for the purpose and driving pins loosely by their sides. The posts being set and the wires thus arranged are ready for fastening on the pickets. The pickets *a* are of the usual form and size, and have slanting notches cut across them near the ends for the reception of the wire; these slanting notches kink or bend the wires at their junction with the pickets, and prevent them slipping or sliding down the wires.

Claim.—What the inventor claims is, bending or kinking the wires by the means and in the manner and for the purpose described.

No. 17,335.—GEORGE W. MCGILL, of Buffalo, N. Y.—*Improved Approach-Opening Gate.*—Patent dated May 19, 1857.—When a vehicle approaches this gate, it passes on lever G, (being then the only one that is up,) which sinks, thereby drawing the rope C, and opening the gate. The vehicle then passes through, and drives on lever K, which has been raised by the sinking of lever G, which causes the gate to shut.

Claim.—The combination of levers G H I K, rack B, and cog-wheel A, as set forth and described, for operating a gate.

No. 18,283.—CHARLES A. HOWARD, of Pontiac, Mich.—*Improved Approach-Opening Gate.*—Patent dated September 29, 1857.—This invention consists in the peculiar arrangement of means employed for applying the power to the gate, said means being so connected with the parts for operating the latch or catch, that, as the latter is actuated and the gate set free, when in a closed state, the weight or spring is simultaneously set free and allowed to operate the gate.

In stating his claim the inventor says: I do not claim broadly the operating of the latch or catch by means of the weight of the vehicle as it approaches the gate, and also after it has passed through it.

Neither do I claim broadly the operating of the gate by means of a weight or spring.

But I *claim* applying the power of a weight or spring to the gate, through the medium of the crank shaft K, connecting rods *g g* and *f f*, in combination with the latch or catch D, arranged with the levers *r r* and bars S S, so as to operate conjointly, as and for the purpose specified.

No. 18,932.—C. W. SMART, of Watertown, N. Y.—*Improved Approach-Opening Farm Gate.*—Patent dated December 22, 1857.—This invention consists in combining the catch of the bolt F, which secures the gate in an open and closed state, with a spring E, which actuates the gate, the parts being so arranged that, as the catch bolt is withdrawn and the gate released, the spring will, by the same mechanism, be wound up and receive sufficient strength to actuate the gate.

The inventor says: I do not claim broadly the actuating of a bolt or catch, and the opening and closing of a gate automatically by the passing of the wheels of a vehicle over levers or projections to actuate mechanism arranged for the purpose, for various plans have been devised for effecting this object Nor do I claim the arrangement of levers and cords for withdrawing and then pulling open the gate, as in J. K. Webber's patent, 1855.

But I *claim* the combination of the slide bolt F and spring E, arranged and actuated as shown, or in any equivalent way, so that, by the withdrawal of the slide bolt, the spring will be wound up or contracted, and have sufficient strength to throw open and close the gate by the time the bolt is fully withdrawn, and the gate released.

No. 16,978.—JAMES G. HUNT, of Cincinnati, Ohio.—*Improved Gate-Post, Attachable to any Panel of its Corresponding Field Fence.*—Patent dated April 7, 1857.—The arms B of the gate post A are inserted between the battens C and bars D of a fence, and secured therein by means of pins; the gate post being secured to the fence in this manner, the gate may be hung upon the hooks F.

Claim.—The application of a portable post to a fence, whether portable or permanent, when arranged substantially as described, for the purpose of hanging or fastening thereon a gate, as set forth.

No. 16,386.—ROYAL E. HOUSE, of Binghamton, N. Y.—*Improved Device by which Persons Approaching may Open Gates.*—Patent dated January 13, 1857.—In opening the gate, the pulling of the draught cord O or P towards the gate, causes shaft L to turn, and with it the cam arms *a b c d*; the cam arm *a b* being pressed against the respective end of the block *o p q r*, causing said block to recede from shaft L, and conveying with it the alternating rod R, which, by the connexions *v w* and *x*, fig. 2, opens the gate, the shaft L ascending the inclined plane on box *f*, by means of wheel *i*. By reversing the motion of the arms M N, the arms *e d* press against the respective sides of curved block *s t u*, reversing the motion of shaft K, and closing the gate; lowering the same as shaft L descends the inclined plane of box *f*, and thus bringing the bolt of the gate in connexion with a corresponding latch.

Claim.—The process, as described, for opening and closing road gates while riding on horseback, or in a vehicle, through the gate passage, and also the apparatus, arranged as described, for the purposes set forth.

No. 16,791.—DENNIS E. FENN, of Tallmadge, Ohio.—*Improved Devices for Raising or Lowering Farm Gates to allow them to Open over Obstacles.*—Patent dated March 10, 1857.

Claim.—The section H, with the slot *h*, spring J, stud *g*, section I, arm I^1, and the notched plate K, when arranged and operating substantially as described, for the purpose set forth.

Also, the slide E and pawl E^1, when combined, in the manner and for the purpose set forth.

No. 16,400.—ISAAC S. ROLAND, of West Earl, Pa.—*Improved Method of Hanging Farm Gates.*—Patent dated January 13, 1857.—The bracket pivots play loosely in the eyes of the hinges *a* and *h* of the gate, and the gate can thus be set into any desired inclined position; and the object of this invention consists in retaining said gate in any desired inclined position, which is accomplished by the arrangement of parts, as described in the claim.

Claim.—Constructing the upper hinge of said gate, of the peculiarly shaped hinge arm *a*, the pawl *b*, and the cam *c*, when the said parts are combined and operated with each other, in connexion with the loose play of the bracket pivots in the eyes of the upper and lower hinge arms, substantially in the manner and for the purpose set forth.

No. 18,449.—THOMAS B. HAND, of Madison, Ind.—*Improved Mode of Closing Farm Gates*.—Patent dated October 20, 1857.—The inventor, in describing his improvement, says: I construct a platform or case P, on or in which is placed a horizontal or grooved pulley-wheel, as shown at A, around which, and over a vertical wheel D, works a cord or chain *c*, with a weight attached to one end W; the other end of the cord or chain is fastened to one end of the grooved brace B, the other end of the brace being attached by hinge or staple, as at *g*, to the gate or other object. The brace to be made of a length, and fastened to the gate at a point that will make the back end of the brace touch the fence, just so as to keep the gate from striking the machine.

The inventor says: I *claim* the application of the semi-grooved tangent brace or lever, with pulleys and weighted cord, for the closing of farm gates, and other similar purposes, (as in the several modes specified,) and in such a manner as to secure a great equality and permanency of force, and the amount of which can be regulated at pleasure, and using any material that will answer the purpose.

No. 17,699.—WILLIAM SHERWOOD, of Beloit, Wis.—*Improved Mode of Opening and Closing Farm Gates*.—Patent dated June 30, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The use of the crank M^1 M^2, in combination with the latch N, or its equivalent, and the weight W, for the purpose of opening and shutting a sliding gate E^1, in which arrangement the gate E^1 is opened by one half revolution of the crank M^1 and shut by the other half revolution of the same; the latch N stopping the crank M^1 M^2 at the end of each half revolution, and the whole being set in motion by a weight W, which may be wound up when necessary, like the weight of a clock.

Also, the arrangement and combination of the lever Z, and the connecting rods Y^2, Y^3, with the two parts of the gate E^1 and E^2, by means of which one part of the gate E^1, when moving in one direction, opens or closes the other part of the gate E^2, by a corresponding motion at the same time in the opposite direction, as described.

No. 17,202.—SOLOMON COLE, of Rochester, N. Y.—*Improved Method of Opening and Closing Gates by Approaching Vehicles*.—Patent dated May 5, 1857.—As the vehicle passes over the piece *e*, the pin P under said piece is depressed, causing the bar *c* to turn on its fulcrum 3 and to raise the ends *f* of the ways W W^1, causing the gate to glide on their rollers *r* and thus to open; the reversed operation is performed by the vehicle passing over *m* by an arrangement similar to that represented at pin P^1, and compound levers *a b* of fulcra 4 and 5, which, on the depression of pin P^1, depress the ends *f* of the rails, causing the gates to close.

Claim.—The arrangement of levers *a b c*, and ways or rails W W^1, and tilting pins P^1, or *n* P, or *e d m*, whereby the gate is not only opened and kept open, but the tilting pins on the other side of the gate are placed in a proper position to tilt the rails and close the gate on the passage of a vehicle.

No. 18,308.—FRANCIS THRASHER and HENRY B. HORTON, of Akron, O.—*Improved Method of Opening and Closing Vertico-lateral Folding Gates*.—Patent dated September 29, 1857.—In the drawings, fig. 1 represents the gate when closed; C and D are merely a pedestal to support A and B; E and F are the main bars fastened to the post B by pivots *d* and *e*, which may slide in the slots *j* and *i*. The slats G G are pivoted to the bars E and F, so that the gate may be raised and folded into the post B, as seen in fig. 2. By means of the weight N the whole gate is overbalanced and made to rise and remain up until it is drawn down by the hand placed upon the cord near the small weight S or T. When the gate is raised, the end of the upper rail E may move downward with its pivot *d* along the slot *j*; therefore, the whole weight of the gate rests upon the lower bar E and its pivot *e* in slot *i*. When the gate is shut down, the spring I, acting against the pivot *e*, pushes the bar F into a notch *c*, in fig. 3, in post A, so as to fasten the gate. In order to close the gate, either the cord Q or R is pulled so as to raise the quadrant plate K, thus closing the gate with the same cord by which it was opened.

The inventors say: We *claim*, 1st, balancing the gate upon a single fulcrum pin, whilst the gate is held to the post, and guided by another pin working in a slot, thus giving a steady motion to the gate in folding and unfolding.

2d. The eccentric quadrant plate K, by means of which the action of weight N, and also the action of the hand, (when pulling upon either of the cords Q or R,) are varied so as to easily set the gate in motion, and yet prevent the gate from opening or closing with violence, as described.

3d. The combination of the crooked lever *h* with the spring J and cords L Q and R, whereby a slight pull upon either of the cords Q and R will unlock the gate and let it fly open, whilst a stronger pull uponthe same cord will close the gate, as set forth.

No. 17,551.—JAMES BRIDGE, of Augusta, Me.—*Improved Safety Attachment for Hatchways*.—Patent dated June 16, 1857.—By this device, the hatchway, when open, will be sufficiently guarded, and accidents will be avoided. When the doors B are closed, the guards C are thrown back against the under side of the doors by means of springs E and inclined flanches *f*.

Claim.—The guards or fenders C attached to the arbors D, which are secured to the underside of the doors B and connected with the flooring by the chains *b*; the above parts being used in connexion with the inclined flanches *f* and springs E, substantially as described for the purpose set forth.

No. 17,270.—Daniel Fitzgerald, of New York, N. Y.—*Improved Mode of Constructing Portable Houses.*—Patent dated May 12, 1857.—In this construction of houses, the posts are made solid, and have channels cut into them to receive the weather-boarding and the door frames. F represents a section of the roof referred to in the claim.

Claim.—First. Uniting the roof in sections to render it portable, in the manner substantially as described.

Second. Cutting down a space in the sill, and tenoning each side so that the door frame will set close down and be held firm in the manner described.

No. 16,425.—John G. Vaughan, mediate assignor to Isaac M. Singer.—*Improved Mode of Lathing and Plastering.*—Patent dated January 13, 1857.—The plastering entering the oblique interstices S of the laths O, thus forms a series of efficient ties to hold the coating applied to said laths.

The inventor says: I do not claim the sawing of laths, nor as limiting my claim of invention to making laths of the form specified by sawing, as they may be made otherwise than by sawing; nor to the making of such laths of wood, as other materials may be substituted, although I prefer wood.

Nor do I claim broadly the securing of plastering by dovetailed interstices between laths, or analogous devices.

But I *claim* plastering ceilings or other surfaces on lathing formed and secured so as to leave interstices between them with parallel sides oblique to the surface of the plastering, when put on substantially as and for the purpose specified.

No. 16,702.—William E. Worthen, of New York, N. Y.—*Improved Metallic Lathing.*—Patent dated February 24, 1857.—The corrugated beams *a a* are pierced in the folds thereof so as to leave free small tongues *t*, which are afterwards bent horizontally, and at the same time dished or concaved, so as to make them stronger. These tongues will then serve as studding and lathing.

The inventor says: I know that corrugated iron has been used for floors; it is also employed for partitions, but it is, as far as I know, lathed either with iron or wooden laths riveted on. I know also that iron lathing, having a section like a C, and other sorts of iron lathing, have been used. I therefore claim none of these as my invention.

But I *claim* corrugated metal provided with tongues slit out of the body thereof, and bent away from their original position, substantially as specified, and constituting, as a whole, an article to be used in building, substantially in the manner and for the purpose set forth.

I also claim such tongues formed substantially in such a manner, on and out of corrugated metal, when they are dished or concaved, substantially in the manner and for the purposes described.

No. 17,550.—John L. Brabyn, of New York, N. Y.—*Improvement in Laths for Buildings.*—Patent dated June 16, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The forming of the interstices in the form of a dovetail, or its equivalent, and the back support for the mortar in the laths themselves, and entirely independent of anything that may be placed behind them, by grooving one or both edges of the lath on one side, and leaving the other side the full width, so that when the same are in place their edges shall join at the back side, to prevent the plastering material from pressing through between the laths, the grooves forming the clinches to hold the mortar firmly in place, substantially as set forth.

No. 18,555.—Samuel J. Seeley, of New York, N. Y.—*Improvement in Canal Lock Gates.*—Patent dated November 3, 1857.—The claim and engravings show the nature of this invention.

The inventor says: I do not wish to be understood as limiting my claim of invention to the special form specified, but claim the privilege of modifying the same so long as I attain the same end by means substantially the same.

I *claim* the method, substantially as specified, of connecting the upper journals of canal lock gates to the masonry of the lock, by means of adjustable boxes, and for the purpose specified.

I also claim suspending the outer or swing edges of the gate to the upper journal boxes by diagonal suspension braces, in the manner and for the purpose as specified.

I also claim connecting the top flaps of the gate with each other, so that the two shall move together by means of a joint link and arm, or other equivalent means, substantially as described, in combination with the connexion with a capstan at the side of the lock by a jointed rack, or other equivalent means, as described, and for the purpose set forth.

No. 17,065.—Edmund M. Ivens, of Tamaqua, Pa., assignor to Himself and Lucien H. Allen, of the same place.—*Improvement in Winding Machinery for Mines.*—Patent dated April 14, 1857.—Motion being imparted to the bevel wheels A and A^1 by a pinion on driving-shaft D, the rollers J on the arms K of the bevel wheels come in contact with the ribs L, on the inner circumference of the drums H and H, causing said drums to revolve in opposite directions at the same time that they move on shaft B in opposite directions, whereby the position of the unwinding part of the rope R is maintained stationary.

The inventor says: I am aware that rotating drums have been made to travel laterally by means of a screw around their axis. This, therefore, I do not claim.

But I *claim* the arrangement of the travelling drums on concentric axes, when operated in the manner and for the purposes substantially as described.

I also claim rotating the travelling drums by means of the rollers J and ribs or guides L, arranged at or near their inner periphery, or in any equivalent manner, whereby their hubs and axes are used merely as guides, as set forth.

No. 18,417.—S. H. Titus and O. Des Granges, of St. Louis, Mo.—*Improved Cellular Iron Pavements.*—Patent dated October 13, 1857.—Letters *g*, in the drawings, indicate the metallic ribs, and letters *h* indicate the hollow compartments or cells of the block. The ribs are made thinner in the lower part, with a shoulder marked S.

The lower part of the periphery of the block is square, while the upper part is composed of projections and recesses, which are produced by the six-sided, or other shaped compartments or cells, into which the block is divided by the ribs.

The inventors say: We do not claim a cellular pavement presenting uniformity in the construction of its upper surface as such.

But we *claim* constructing each cell perfect in itself, and by such construction making the cells of the upper periphery of the block not only uniform, but answering as ledges to support the same upon the adjoining block, and thereby distributing the superincumbent weight equally along the whole side of the block, substantially in the firm manner described.

No. 17,138.—John B. Cornell, of New York, N. Y.—*Improved Side-walk Pavement.*—Patent dated April 28, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Casting in one piece the section of a street gutter and curbs, of suitable shape and proportions, substantially as set forth.

Also, forming the side-walk pavement of a series of metallic plates *a a*, when said plates are combined with each other, and with the aforesaid metallic street gutter and curb, substantially as set forth.

No. 16,757.—Charles J. Shepard, of Brooklyn, N. Y.—*Improvement in Cast-Iron Pavements.*—Patent dated March 3, 1857.

The inventor says: I do not claim double inclines in themselves, as wooden paving blocks have been formed as pairs of double wedges set in alternate opposite directions. But I am not aware of any metallic paving block having ever before been formed in a polygonal shape with the vertical or nearly vertical sides to steady the blocks, and with the inclines around the upper parts of said sides taking projections from the adjoining blocks, which projections are unequal distances from the angles of the blocks to prevent any two coming opposite to each other, when laid as specified.

I *claim* forming polygonal metallic paving blocks with the inclines 2 2 at the upper part of the straight sides, and with the projections 3 3, to take the inclines of the adjoining blocks at unequal distances from the angles of said block, substantially as and for the purposes specified.

No. 16,692.—Charles Mettam, of New York, N. Y.—*Improvement in Iron Pavements.*—Patent dated February 24, 1857.

The inventor says: I do not claim the casting of the blocks or plates with lateral projections on the lower parts to extend under the adjacent blocks or plates; neither do I claim the casting of the blocks or plates with tenons to enter mortises in the adjacent blocks or plates, when such tenons stand out laterally from the sides of the blocks or plates.

But I *claim* casting each block or plate with a number of hooks *a* standing out laterally from below the general level of the bottom thereof, and turning upwards in the form of vertical tenons, and with a corresponding number of mortises *b* in the lower faces; so that when the plates are laid together the vertical tenons of one block or plate enter mortises in adjacent ones, and the mortises receive tenons of adjacent ones, while the laterally projecting portions of the blocks or plates make them mutually supporting, substantially as described.

No. 17,662.—George W. Bishup, of Brooklyn, N. Y.—*Improvement in Iron Pavements for Streets.*—Patent dated June 30, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not limit my claim to the use of all the features of my invention in connexion, as good results may be obtained by the use of some of them without the others; but the best results will be obtained when all the parts are used in connexion. Nor do I limit myself to the making of the blocks of a quadrangular form, as other forms, such as the hexagonal, may be substituted, although I prefer the quadrangular form. I do not claim paving streets with blocks of cast iron.

But I *claim* making cast iron paving blocks, with a series of transverse draining grooves *b*, substantially as described, which, when completed and laid, will form grooves running from the middle of the street towards the side gutters or sewers, as set forth.

I also claim forming the surface of iron paving blocks with a series of inclined planes *d* and shoulders *e*, substantially as described, to prevent horses from slipping, while at the same time carriages will roll over the surface without serious impediment or concussions.

And I also claim the said series of inclined planes and shoulders, in combination with the lateral grooves for draining, but which also answer the purpose of preventing horses from slipping, as set forth.

And, finally, I claim the manner of uniting the iron blocks in laying a pavement, by the alternating over and underlapping of the series of blocks, substantially as described; whereby the blocks are enabled to sustain one another, and thereby more effectually maintain the required grade.

No. 18,251.—Barzillai C. Smith, of Burlington, N. J.—*Improvement in the Mode of Connecting and Disconnecting the Blocks of Iron or other Pavements.*—Patent dated September 22, 1857.—The blocks *a* are cast about four feet by two, and weigh about two hundred pounds per square yard. The upper surface of the blocks is ribbed, so as to form suitable grooves for the reception of water and dirt, and to prevent the slipping of horses, the ribs running across the street to carry the water to the sides of the street. The lower surface of the block is furnished with four or more flanges, which form the sides of the cells *c*, which are to act as air cells, so that in case of a very heavy load upon the block, the confined air will tend to resist the depression of the block.

The inventor says: I do not claim securing plates together by means of dowels and channels, or strips or bars, and grooves to receive them.

But I *claim* the mode set forth of locking the plates or blocks of iron pavements, the same consisting of the locking bar *e* and grooves *d d*, one of which is of sufficient depth to cover the entire width of the bar *e*, while the other is of half that depth; and in combination therewith, I claim the grooves *s* and *m*, in the manner and for the purposes set forth.

No. 16,490.—Charles T. Liernur, of Mobile, Ala.—*Improvement in Compound Rail for Railroads.*—Patent dated January 27, 1857.—The nature of this invention will be understood from the claim and the engravings. H represents a section of car-wheel, showing its position on the rail.

The inventor says: I am aware that a great many "two-part" compound rails have been designed and brought into use, more or less resembling my improvement; but none have the merit of such great simplicity of combination and ease of manufacture, or of application and removal, nor have they the material so advantageously disposed. I do not claim the employment of a two-part rail with unbroken top and bottom, and with the division effected principally through the middle web.

I *claim* the combination of a two-part compound rail for railroads, in which the head of the top rail and the lower flange of the bottom rail are each left undivided, the head of the top rail not resting on the upper part of the vertical rib B of the bottom rail, but supported alone by its own vertical rib in such a manner that the upper part A of the vertical B of the bottom rail can be used as a temporary rail during track laying, so that no deterioration resulting therefrom shall prevent the well fitting of both rails, and thus also giving to the top rail a support unaffected by the variations of dimensions occurring in the process of manufacture, through the rapid wearing of the rollers and the unequal heating of the iron.

No. 16,605.—Samuel Nicolson, of Boston, Mass.—*Improvement in Rail for Street Railroads.*—Patent dated February 10, 1857.

Claim.—The street rail, constructed essentially as described, or with recesses *k k l l* in its side or sides, for the reception of the paving blocks B, each recess of one side being opposite either a recess of the other side or space, between two recesses of the other side essentially as explained.

No. 17,478.—Lyman Beebe & George F. Smith, of Michigan City, Ind.—*Improved Machine for Repairing Railroad Cars.*—Patent dated June 9, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The wedge-shaped jaws C fitted to the iron E, to be worked in combination with the iron bed block B fitted to receive them, into which they slide, and by which they are firmly held.

Also, the two jaws C, in combination with the double levers D, in which they rest, and by which they are readily opened by raising to receive and discharge the rails.

No. 17,178.—Corydon Winch, of Jersey City, N. J.—*Improvement in Railroad Chair Machines.*—Patent dated April 28, 1857.—The bar Y, being properly heated, is passed through opening *f*; motion being given to shaft K, cam N raises die E, and knives *e* and *g* cut the blank, which is then grasped between plate C and face of die E. Cam G now depresses die D, and cutters *b* cut and bend down lip a^*, as represented in figure 2; and cams *o* raising bars Q, the upper ends of the latter bend the lips a^* inward, as represented in figure 3, compressing the metal in such a manner as to make the angles b^1 thicker than any other portion of the chair.

The inventor says: I am aware that a number of machines have been devised for making railroad chairs from wrought iron; and dies operated by cams, or their equivalents, have been used and arranged in various ways in connexion with cutters, benders, &c. I therefore do not claim separately, or in itself considered, either of the parts described, irrespective of the peculiar construction and arrangement of the same.

But I *claim* the two bending and upsetting arms or bars Q Q, having their upper surfaces made inclined, and provided with ledges or flanches *k k* at their inner edges, the bars being operated or moved as shown and described, so as to both bend and upset the lips *a*, and thereby increase the thickness and consequently the strength of the lips where most required, viz., at the junction of the lips with the plate or base of the chair.

No. 18,023.—Edward W. Stephens & Richard Jenkins, of Covington, Ky.—*Improvement in Railroad Rail.*—Patent dated August 18, 1857.—The successive stages of formation of this rail by means of suitable rolls are represented in figure 2.

The inventors say: We are aware that it has been proposed to construct railway rails by bending the sides of a U-rail in such manner as to nearly or quite meet at the base, as in the English patent of T. A. Kinder, No. 2730, 1853, and do not wish to be understood as claiming any devices where the sides remain unwelded, an essential feature of our invention being the formation of an entire and complete T-rail web.

We *claim* the tubular T railroad rail, constructed in form and manner substantially as herein set forth; that is to say, having the two portions of its web welded together at the neck, and branching to the outer and inner edges, respectively, of the tread or track of the rail.

No. 17,580.—S. Y. Ludlum, of Oyster Bay, N. Y.—*Improvement in Railroad Snow Excavators.*—Patent dated June 16, 1857.—The truck A is placed in front of the locomotive, and is shoved along by it; and when the box F is filled with snow, the locomotive is reversed; and, as it is moved back, the cord *r* will depress the slide E, and rod

D will be elevated within the frame *d*, as represented in figure 2, and pass up to the upper end of the box F, and by this motion detach the snow which is within the box F from that which is without. The rope *r* which is attached to the locomotive will now elevate box F; and when said box has reached a certain point, the end of catch *n* will strike against pin *b**, and the end of box F will strike against projection *c**. By this means the side *o* of the box will open, and the box will be tilted, as shown in figure 3, and its contents will be discharged at one side of the track.

Claim.—The tilting box or scoop F, attached to the sliding frame B, and provided with the rod or cutter D and hinge sides *o*, one or both; the frame being attached to the truck A, and the box F and rod or cutter D operated by the locomotive through the medium of the cord or chain *r;* the whole being arranged substantially as described for the purpose set forth.

No. 17,492.—WILLIAM L. CAWTHRON, of Harper's Ferry, Va.—*Railroad Switch Lock.*—Patent dated June 9, 1857.—The switch lever B is confined against the post P, and the lip *f* of the arm A passes through plate L and receives the bolt of a lock by which the arm A can be locked or unlocked; when the arm A is released from the bolt, it can be swung back, leaving lever B free to drop.

Claim.—The arrangement upon the lock plate of the curved securing-arm A, constructed and operating as described for the purpose specified.

No. 16,898.—HIRAM CARPENTER, of New York, N. Y., assignor to the AMERICAN IRON RAILWAY COMPANY.—*Improvement in Railroads.*—Patent dated March 24, 1857.—The claim and engravings show the nature of this invention.

The inventor says: I am aware a cast iron cross tie, with chairs attached, is not new; nor are cast iron pedestals new; nor is the interposition of an elastic material between the rails and their supports new. All these things have been essayed in some separate form or other, and I do not claim them separately.

I *claim*, in combination with the tie and pedestals cast in one piece, the chairs so constructed as to fit in or on said pedestals, and to hold the rails without the use of bolts, spikes, or keys, substantially as described.

No. 18,144.—RICHARD B. HARRISON, of Vicksburg, Miss.—*Improved Machine for Ramming under the Cross-ties of Railroads.*—Patent dated September 8, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The movable machine for ramming earthy matter under the cross-ties of railroads, said machine being composed of reciprocating rams *c* and suitable actuating levers E, combined with a platform car A, substantially as set forth.

No. 16,623.—JOEL WISNER, of Aurora, N. Y.—*Improvement in Locomotive Cow-catchers for Railroads.*—Patent dated February 10, 1857.—This invention consists in placing over and attached to the common cow-catcher a heavy bar B operated by springs D D, the bar to be supported by the knuckle-jointed arms I H, the latter H being hinged to the cow-catcher at L. Should any animal come into contact with the arms, the knuckle-joint will give way, and allow the bar to fall and hold the animal until removed.

Claim.—First. The bar or jaw B, legs G, feet J, and teeth C, when operated by the springs D, or their equivalents, in combination with the forward end beam of the locomotive.

Second. The stud H and joint I, in combination with the bar B, when constructed and operated substantially in the manner and for the purposes described.

No. 16,343.—ANDREW TEAL, of Aurora, Ill.—*Improvement in Metallic Cross-ties and Chairs for Railroads as a new Manufacture.*—Patent dated January 6, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—As a new manufacture, my improved adjustable double chair for supporting the rails of railways, and at the same time securing said rails in any position, the said double chair being composed of T-shaped metallic rails *a* of a suitable length, combined with duplicate pairs of transversely grooved clamping blocks *c*, substantially as set forth.

No. 16,376.—JOSEPH T. DAVENPORT, of Augusta, Ga.—*Arrangement of Fixed Rails as a substitute for Railroad Switches.*—Patent dated January 13, 1857.—The train to enter sideling A will advance on the main track $c\ c^1$, in the direction of arrow 1, until the last car has passed the guard *o o o*. The train will then back, when the guard *o o o* acting upon the wheels will cause the train to move in the direction of arrow 2 till the engine has passed guard-rail *o o*, and then advance; the guard-rail *o o* will cause the train to enter the sideling A A.

Claim.—I *claim* the arrangement and form of the rails and guards to produce the described connexion between the sidelings and the main track on railroads, and for the purpose described.

No. 18,494.—SIDNEY A. BEERS, of Brooklyn, N. Y.—*Improvement in the Construction of Railways.*—Patent dated October 27, 1857.—This invention relates to the construction of railways with a cast iron foundation rail, of the form of a series of upright arches, resting on stone foundations, and tied together laterally by upright iron ties, and with a wrought iron coping rail fitting on to top of said foundation rail, and extending downwards on each side thereof, terminating at the bottom in flanges to receive clamps which are held and tightened upon said flanges, and caused to confine the coping rail to the foundation rail by means of keys, or their equivalents; the said coping rail breaking joint with the foundation rail, so as to form a continuously connected track, and having lock-joints of such form and construction that the adjacent ends of two lengths of rail cannot rise independently of each other, and that the breaks in the face of the track, at the junction of the several lengths of rail, are oblique, and not directly across the face of the rail.

The inventor says: I do not claim the several parts or devices separately, as set forth, but in combination.

But I *claim* the construction of a continuous iron rail of successive sections of upright arches, the upper surface of which shall form a plane, and held in position by upright iron ties, with tenon and wedge or keys on the outside, and surmounted and bound together by a wrought iron rail, which last mentioned rail is held in place by hooks and key-wedges, or their equivalents, as set forth.

No. 18,577.—Timothy Dwight, of New Haven, Conn.—*Improvement in Rails for Railways.*—Patent dated November 10, 1857.—In the engravings, *c* represents the cross-ties, *s* the sills, *r* the rails, *b* the bolts, *t* the tongue or rib of the sills, *i* the iron support, *f* the flanches of the rail, and f^1 the enlarged groove on the inside of the track. By thus making room in the sill for the flanch of the wheel, this flanch will work against the flanch of the rail. The object of this invention is to add strength and permanence to the T-rail track, at a diminished price.

Claim.—The rail with its flanch or flanches, in combination with the sill adapted to fit the lower part of the rail, as described; and these I also claim in combination with the screw-bolt and nut, as described.

No. 17,003 —George W. Thomas, of Wickford, R. I.—*Improved Road-Scraper.*—Patent dated April 7, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The adjustable side scrapers E, in combination with the front release scrapers B, when so arranged as to throw the dirt inwardly towards the centre of the road, and in a crowning form, for the purpose of giving a natural drainage to the road, as set forth.

No. 16,963.—Chauncey Blakeslee, of Ashtabula, Ohio.—*Improved Road-Scraper.*—Patent dated April 7, 1857.—The adjustable blade F may be set so as to take more or less earth, according to the nature of the soil, by means of the set screw *a*. In ditching, the sides or runners A may move along on the sod, while the blade F is so set as to excavate the earth between the sides.

Claim.—The grading blade F, arranged as described, and combined with the runners A A, with the draught forward of the edge of the blade; for the purpose of causing said runners to serve as guides or gauges thereto, and preventing the blade from dropping into furrows or depressions, substantially in the manner and for the purpose set forth.

No. 17,529.—Hiram Van Pelt, of Bath, N. Y.—*Improved Road-Scraper.*—Patent dated June 9, 1857.—This scraper is drawn by power applied to chains E, the rings of which can slide on the rods C. After the scoop I of the scraper has been filled with earth, the scraper is thrown over and deposits its contents on the ground; the team is then changed to the rear end, and the other scoop I is filled.

The inventor says: I am aware that a scraper has been made to revolve upon pivots placed within a suitable frame, and therefore I do not claim such.

But I do *claim* the alternate arrangement of the scoops I I, in combination with the draught-rods D D, substantially in the manner and for the purpose set forth.

No. 16,767.—William E. Worthen, of New York, N. Y.—*Improved Metallic Roof.*—Patent dated March 3, 1857.

Claim.—A roof composed of U-shaped metallic beams *a*, which themselves are a portion of the covering, and of arching metallic plates *c*, plain or corrugated, connecting said beams, and composing the rest of the covering; the whole being constructed substantially in the manner described.

No. 18,278 —Robert T. Havens, of Casstown, Ohio.—*Improvement in Preparing Roofing Cements.*—Patent dated September 29, 1857.—The nature of this invention consists in combining coal tar and sand, sifted through a bolting cloth or other suitable material, with paper or wood in the following manner: The temperature of the tar is raised to a boiling heat, and then cooled, when an oily substance is found on the top, which is skimmed from the tar. To one gallon of tar thus prepared are added three gallons, or nearly in that proportion, of sand as aforesaid, prepared and stirred well together. Sheets of paper or very thin wood, in pieces of suitable size, are put into a rolling machine, which the inventor has prepared for the purpose; the mixture is poured into the hopper of said machine. The mixture and paper, or wood, are then passed together between the rollers of the machine, which is so contrived as to press the mixture upon and into the substance of the wood or paper on both sides.

The hopper is divided into three apartments E E and F. The mixture above described is poured into the compartments E E, and the wood or paper placed in F, the three apartments uniting just above the rollers C C; so that at this place of union the mixture shall come in contact with the wood or paper on each side thereof, before passing between the rollers C C. In turning the rollers, the mixture is pressed into the pores of the wood or into the paper on each side, making a smooth surface. The product passes from the press in the direction H.

The inventor says: I do not claim that the ingredients specified have not been used before in compositions, but do claim that they have not been so combined as to produce any article identical with, or equivalent or similar to the above.

I *claim* the process of combining and pressing coal tar and sand with paper or wood, in the manner described and represented for the production of an artificial slate.

No. 17,851.—John B. Wands, of Chicago, Ill.—*Improvement in Roofing Compositions.*—Patent dated July 21, 1857.—This composition consists of the following ingredients: One square foot of cotton is to be covered with a mixture of one pint of coal tar with one pint of clean sand, one gill of residuary gum, one-half of an ounce of litharge, one ounce of water lime cement, one ounce of quick lime, and one half of an ounce of rosin.

Claim.—The combination of the various ingredients in the proportions before set forth.

No. 16,739.—CHARLES R. MILKS, of Detroit, Michigan.—*Improvement in Mastic Roofing Compounds.*—Patent dated March 3, 1857.—

The compound consists of 20 gallons of coal tar, asphaltum as much as can be dissolved in 2 gallons of strong alcohol, raw India rubber as much as can be dissolved in 2 gallons purified spirits turpentine, 1½ gallon linseed oil boiled, 10 pounds pulverized soapstone, 5 pounds sugar of lead, one peck of plaster of Paris.

The inventor says: I am aware that most, if not all, of the articles named have been used in like compositions, and I am also aware that in some roof compositions heat has been applied to the articles separately, just before they have been put upon the roof.

I *claim* the composition for roofing, made up of the ingredients in the proportions and in the manner set forth.

No. 17,497.—J. B. DRISCOLE, of Knoxville, Tenn.—*Improvement in Roofing Machines.*—Patent dated June 9, 1857.—In using this implement, the edge of the bar A is placed against the side of the higher bent edge *g* of the metal plates K, which are placed on the roof. The bar E is then drawn inward by operating its lever H, said bar pressing snugly against the shorter bent edge *h* of the adjoining plate K. The bar I is then turned over by moving handle J, and bends the upper part of edge *g* over the edge *h*, as represented in figure 2. Bar E is then moved outward, and bar I is turned around in its bearings till the upper bent portion of the edge is pressed snugly against the upper part of the edge *h* of the adjoining plate.

The inventor says: In view of G. W. Burling's patent, October 28, 1856, I disclaim the broad idea of folding the edges of metallic plates by means of a bar interposed between two parallel bars, one of which is movable.

I *claim* the employment of a swinging bar E hinged or swinging between the frame or side plates D D, in the manner and for the purposes substantially as described.

No. 18,186.—WILLIAM H. CARVER, of Covington, Ky., and J. BECKLEY, of Cincinnati, O.—*Improvement in Mastic Roofing.*—Patent dated September 15, 1857.—One thickness of dry roofing paper is laid on the sheating board, and on this one thickness of saturated paper; the tarred paper and canvas are to form a foundation for the cement. To this is applied a coat containing coal tar and quicklime, boiled together in the proportions of forty gallons of tar to twelve pounds of quicklime and six pounds of beeswax; the second coat applied contains the same ingredients as the first, with the addition of two and a half gallons of India rubber solution; the third coat contains the same ingredients as the second coat, and the addition of eight pounds of shellac solution.

The inventors say: We are aware that nearly all, if not all, the ingredients, composing our cement have been used, and therefore do not wish to be understood as claiming any of them when taken separately, nor the whole of them when used together.

But we *claim* the precise manner employed of mixing and compounding the ingredients composing the cement, when combined with the proportions of ingredients as specified; by which process of mixing and compounding and combination of ingredients, and applying the cement to use, we are enabled to decompose or destroy the ammonia contained in the coal tar to prevent it from destroying the cement and eating the canvas on which it is spread, and at the same time produce a cement that is not brittle and subject to cracking, but hard enough to resist forces that roofs are generally subject to, and at the same time elastic enough to expand and contract to suit all conditions of heat and cold, and make the cement water-proof.

No. 17,883.—SAMUEL K. LIGHTER and JAMES A. MORRELL, of Hamilton, O.—*Improvement in Mastic Roofing Compositions.*—Patent dated July 28, 1857.—Twelve parts of linseed oil are put into a kettle and are heated to the boiling point; to this is added six parts of litharge and twelve parts of fire-proof mineral, together with twelve parts of yellow ochre; the mixture is well stirred until the whole is thoroughly melted. To this is then added three parts of beeswax, twelve parts of rosin, one hundred parts of coal tar, fifty parts of pitch tar; and the whole is stirred and fused together. To this is then added six parts of India rubber and six parts of gutta percha dissolved in spirits of turpentine, and six parts of gum shellac dissolved in alcohol; twelve parts of asphaltum are then added, and the mixture is then ready for use as a roofing composition.

Claim.—The roofing compositions described, composed of the several substances in substantially the proportions specified, prepared and used in the manner set forth.

No. 16,770.—NATHAN A. DYAR, assignor to Himself and SETH D. WOODBURY, of Lynn, Mass.—*Improvement in Mastic Roofing Materials.*—Patent dated March 3, 1857.—The mixture consists of thirty gallons of gas tar, one hundred and eighty pounds of yellow ochre, one gallon of whale oil, and fifty pounds of sulphuric acid. This mixture will produce an *elastic* body.

Claim.—The employment of sulphuric acid (or an acid having a similar effect) in the treatment of substances or compositions containing hydro-carbons, in the manner and for the purposes essentially as described.

No. 16,614.—BENJAMIN ROSS and JOHN C. CAMPBELL.—*Improved Metallic Roofing.*—Patent dated February 10, 1857.—The nature of this improvement will be understood from the engravings.

Claim.—The method described of connecting together metallic plates, or shingles for roofing, by their own weight, when the series of plates so connected are fastened only at the upper and lower edge of the roof.

No. 18,677.—JOHN B. CORNELL, of New York, N. Y.—*Improvement in Metallic Roofing for Subterranean Vaults.*—Patent dated Novembe

24, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I *claim* my improved metallic roofing for an apartment located under a sidewalk and a portion of a street carriage-way, the said roofing being constructed of the metallic beams G K L L L, the metallic sectional plates B B B, and the metallic plate C, in such a manner that the united inner surfaces of the said parts form the ceiling to said apartment, at the same time that the sectional plates B B B form an illuminating water-tight street sidewalk, and the plate C forms a safe support for the portion of the carriage-way immediately over said apartment, substantially as set forth.

I also claim the arrangement of my improved metallic roofing for subterranean apartments, which enables the beam G to serve as the main support of said roof, at the same time that the exposed portion thereof forms the street curb, substantially as set forth.

No. 17,874.—Lucian Fay, of Cincinnati, O.—*Improved Machine for Seaming Sheet Metal Roofs.*—Patent dated July 28, 1857.—The sheets being laid on the roof in the customary manner, the machine is taken to the ridge of the roof, and, being presented towards the eave with the rollers a a^1, confining between them the standing joint, fig. 3, the machine is allowed to travel down the roof until the standing joint engages between the burring rollers b b^1. The crank *g* being then rotated, the action of the rollers *b b* propels the machine forward, and at the same time turns the higher edge of the joint over to a right angle, as represented in fig. 4. The folding roller next bends it into the position shown in fig. 5, and the seaming rollers D D^1 then complete the single seam, as represented in fig. 6.

Claim.—The use of the burring, folding, and seaming rollers b b^1 c D d D^1 d^1, constructed with or without adjustable elastic bearings, arranged substantially as described, in connexion with the movable platform or carriage, and operating in the manner specified.

No. 17,331.—Asa Johnson, of Cairo, N. Y., assignor to Himself and William Higbie & Henry Link, of Little Falls, N. Y.—*Improved Method of Fastening Sheet Metal on Roofs, &c.*—Patent dated May 19, 1857.—These studs, as represented in the engraving, are inserted in holes in the boards of the roof, which are made of such a size as to allow said studs to move when the metal expands or contracts. The metal sheet *i* is fastened to the studs by means of screws 1, and the studs are secured to the boards by means of screws S. The metal, as it expands or contracts, can move the block 2 on its shaft *a*, and said shaft is free to play in the groove *b*, thus affording a free motion in three directions.

Claim.—The self-adjusting fastener, as described, for the purpose of attaching metallic coverings to buildings, and accommodating itself to the contraction and expansion of the metal, and for fastening metals in any and all other places where the contraction and expansion demand accommodation, substantially as set forth, or any mechanical device equivalent thereto.

No. 18,703.—Joseph R. Payson, of Covington, Ky.—*Improved Arrangement in Sash Balance.*—Patent dated November 24, 1857.—The claim and engravings show the nature of this invention.

Claim.—I do not claim any of the parts or arrangements in themselves alone, separately considered.

But I *claim* combining the arrangement of cord *g* and pulleys *d d d d*, attached to the sides of balanced sashes *b c* and frame *a*, as shown, with the arrangement of the open weight or weighted tassel *e*, substantially as shown; by which means the sashes can be diversely operated in counterbalance with the weight, conjointly and separately as specified, and also by which means is furnished to the trade and the public a new economical and useful mode of counterbalancing sashes with one-fourth of the usual weight, and in the common plain frame without boxes, after the building is finished, without change in the frame or injury to the finish.

No. 18,223.—John McMurtry, of Lexington, Ky., assignor to Daniel Wiehl, of Fayette county, Ky.—*Improved Mode of Controlling Cog-Gear Sash Balance.*—Patent dated September 15, 1857.—When the gears are in the position represented in dotted lines, both sashes can be operated by turning knob J; by then drawing knob J to the position represented in full lines, the burr of plate F will be thrown between the belts of the pinion H, and will thus lock the sashes securely.

Claim.—Arranging the cog gears F^1 H^1 of the lower sash C^1 on the shaft G^1, which is capable of turning vertically and sliding horizontally, and which has arranged on its back end a locking plate I, which slides with it, but which cannot turn with it; said plate having a bar or cog *f* on its edge, which serves as a stop to hold both or either of the sashes in any desired position when geared together or separated, substantially as and for the purposes set forth.

No. 18,376.—Nathaniel E. Baker, of Holyoke, Mass.—*Improved Sash Supporter.*—Patent dated October 13, 1857.—This improvement relates to window-sash holders, in which friction is employed as a means for retaining the sash.

The object of the invention is to obviate the difficulties heretofore attending such devices, viz: the abrasion of either the sash or the window frame by undue friction, and the slipping down of the sash to an insufficiency thereof, caused by wear or otherwise.

The invention consists in having a clamp attached to one side of the sash, which clamp is made to sustain or hold the sash by grasping a cord which is placed within one of the jamb posts or stiles of the window frame.

The inventor says: I do not confine myself to any precise form of spring to be applied to the plates C D, nor to any precise material for the cord E.

I *claim* the clamp formed of the plates C D, attached to the sash B, in combination with the cord E, arranged substantially as and for the purpose set forth.

No. 18,275.—William Croasdale, of Hartsville, Pa.—*Improvement in the Cribs of Horses' Stables.*—Patent dated September 29, 1857.—This improvement consists of a roller A, attached to the striker B by means of the screw or axle D, upon which it turns when seized by the animal; also, a striker B attached to the roller A, as above described, and also to the strap C by the pin F, upon which it freely turns. The strap C is firmly screwed to the crib. The striker B, at the point of connexion with the pin F, is shaped at an angle of about 120 degrees.

The operation of the machine is as follows: The roller A and striker B being in the position as shown by fig. 1, the roller A is seized by the animal, which causes it to turn upon axle D, and striker B upon the pin F, and throws up the striker B, the upper portion of which strikes the animal and causes him to relax his hold, the weight of the upper part of the striker being sufficient to cause it to fall back into the crib.

The inventor says: I *claim* the revolving roller A, in connexion with the striker B, as described.

No. 16,982.—Joseph B. Latham, of Phœnixville, Conn.—*Improved Arrangement of Staging Brackets.*—Patent dated April 7, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The use or employment of the brackets E, the strap D, and dog B, substantially in the manner and for the purpose as set forth.

No. 16,380.—Augustus Eliaers, of Boston, Mass.—*Improvement in Staircases.*—Patent dated January 13, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The described improvement in the construction of staircases; the same consisting in forming separate and independent string pieces *c*, between which the treads *b* are held and griped, the whole being secured by a screw-bolt that forms a part of or is attached to the baluster, as set forth.

No. 18,110.—George S. Stewart, of Meadville, Pa.—*Improvement in Instruments for Drawing the Curve of Circular Stair Railings.*—Patent dated September 1, 1857.—A detailed description of the operation of this instrument would take up too much space to be given here, the principal features thereof will be understood by reference to the claim and engravings.

Claim.—The construction of a machine with an adjustable table D C and the graduated post B, and arm T, adjusted with the set screws Q *i* and the semi-circle F, constructed as described; or any other substantially the same, and which will produce the same results.

No. 17,234.—Charles Robinson, of Cambridgeport, Mass.—*Improved Arrangement of Stairsteps.*—Patent dated May 5, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Beneath each step a spring or springs, so as to give an elastic movement thereto in ascending and descending upon the stairs, for the purposes specified.

No. 16,357.—Henry Eddy, of North Bridgewater, Mass.—*Improved Mode of Constructing Stalls for Horses.*—Patent dated January 6, 1857.—The hay rests between the inclined pieces H and the sides B, and the animal takes away the hay through the openings *p*; thus the head of the animal is protected from becoming soiled by the hay; the breath of the horse can escape through the openings I and O.

The inventor says: I claim nothing original in the construction of the main body of the stall, and nothing original in the combination of a deep crib or manger with an oblong hole for the insertion of the head and neck of the horse.

I *claim* a crib, or manger, with the inclined planes H H, constructed and arranged substantially as described.

Also, the space *g h k*, partially enclosed by the inclined planes H H, with a vertical opening I, substantially as described and for the purpose set forth.

No. 17,627.—William L. Johnson, of Peytonsville, Tenn.—*Improved Mode of Constructing Stores.*—Patent dated June 23, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I am aware that stores or other buildings have been before constructed in such manner as that the fronts could be thrown open, being hinged at their sides as doors, and that the shelves, counters, &c., have been built on trucks running or resting on rails laid in the floor of the building, and do not wish to be understood as laying any claim thereto.

I *claim* constructing the fronts A A with rails *b* corresponding to those on the floor, and hinged or pivoted thereto, for the purpose of throwing down the said fronts in the plain of the floor, and forming a continuous road or track on which the trucks containing the counters, goods, &c., may be readily run out or clear of the building, as described.

No. 18,118.—Asa Blood, Sen., of Norfolk, Va., and Robert W. Brown, of Washington, D. C.—*Improved Mode of Removing Stores, &c., in case of Fire.*—Patent dated September 1, 1857.—When the rod F is drawn back, owing to power applied to lever E, said rod slides freely through the hinged clinch H, the face of the spring I holding it at a perpendicular line while rod F is being drawn back. When lever E is raised, rod F is thrown forward, throwing clinch H in an angular position, causing it to clinch rod F, and the stalls and stores A B C are moved on their rollers J on the tracks O.

Claim.—We *claim* the manner described for moving the adjustable stalls by means of the lever E, rod F, and clinch H, on rollers J and track O, as set forth and described.

No. 16,563.—**Jason S. Wood**, of Washington Township, N. J.—*Improved Stump Extractor.*—Patent dated February 3, 1857.—The chains H and I are respectively fastened to the levers F and G, which latter are operated by cams C and D. When the chain H has been pulled back to the full extent of the eccentricity of cam H, (see position represented in the figure,) then the slack chain I is to be unhooked, and its front end link is to be secured to the furthest link in the chain K to which it can be extended. Then the lever E is turned back, so as to cause cam D to push back lever G, and thereby to pull back chain I and K, leaving chain H slack, which latter is then to be attached to a further link in chain K. The lever E is then again turned, and so forth.

Claim.—The employment of the cams C C and D D, in combination with the levers F and G and the chains H and I, the whole being arranged substantially in the manner and for the purpose specified.

No. 17,528.—**Peter Traxler**, of Scottsburg, N. Y.—*Improved Stump Extractor.*—Patent dated June 9, 1857.—The operation of this apparatus is as follows: The chain, one end of which is secured to the stump, is fastened by its other end to the piece K. By raising the end E of lever *l*, said lever will turn on pin *e* as fulcrum, and end G will be depressed; this movement will raise bars *a* and *b* a certain height, and bar *a* can be secured in its position by inserting a pin *p* into the hole above bar B. By then reversing the motion of lever *l*, it will turn on pin e^1 as fulcrum, and bar *c* will be raised; and as bar *b* is also raised when bar *a* or *c* is elevated, said movement is imparted to the chain, which is secured to the stump to be extracted.

The inventor says: I *claim* the combination of the three bars *a b c*, with the slotted beam B and lever *l*, said beam B being free to revolve in the manner described.

I am aware of the construction of the lever of Lagrousse, and several modifications thereof, and do not claim the reciprocating lever thus used, but simply my combination, substantially as set forth.

No. 17,512.—**E. T. Miller**, of Chelsea, Mass.—*Improved Machine for Felling Trees by Hand.*—Patent dated June 9, 1857.—This implement being attached to the tree in the manner represented in the engraving, the bar F is vibrated by hand, said bar working on pin *l*. At each vibration of the bar F, it strikes the ends of the bar *i*, alternately causing thereby the pawls *h*, in slide E, to feed the bar F towards the tree, and the cutters *n* and chisels *o* attached to the end of bar F cut down the tree I. When the tree is cut through, the operator, by pulling rope *g*, actuates the bars *f*, and withdraws the shoulders *e* from the lips *d* on the nuts *b*, thereby allowing the nuts *b* to move outward, causing the implement to be detached from the tree.

Claim.—The vibrating bar F, with cutter G attached, constructed as shown; the bar F being pivoted in the sliding collar E, provided with the pawls *h h*, and fited on the rack bar B, which is attached to the tree I, by means of the brace H and clamp formed of the screw rods D passing through the nuts *p* attached to the segment bar A, and retained in proper position by the bars *f*, substantially as described, for the purpose set forth.

No. 18,383.—**Ze Butt**, of Lincolnton, N. C.—*Improved Arrangement of Self-Dumping Trucks.*—Patent dated October 13, 1857.—This invention is intended to be used in combination with the railway or inclined plane, for moving earth and other matter a short distance, and can be substituted for the common wheelbarrow in forming the earth bed for roads, and in loading carts, &c.

In the drawings, fig. 1 is a side view of the double inclined plane, showing the trucks at work thereon, throwing up the earth bed for a road, together with the ropes, pulleys, &c. At the top of the inclined plane is a pulley or pulleys, for the purpose of receiving the cord or cords attached to the trucks. C is a pulley attached to the outside of the shaft which supports the pulley $e\ e^1$; *m* is an endless chain or rope, which passes over pulleys C C; m^1 is a ring on endless rope or chain, for the purpose of attaching the horse, which, walking backward and forward alternately, raises and lowers the trucks B B; are the wheels of the truck which run upon the frame. E is the bail or loop to which the cord is fastened, which operates the trucks, and which, in the left-hand truck, has a latch or catch *g* attached thereto, which supports the front ends of the truck, and is here shown dumping its load; *f* is an adjusting loop or rod, for the purpose of opening the latch or catch, and thus dropping the front of the truck at any required point.

The inventor says: I *claim* as my invention the self-dumping trucks, as shown and described; also, the adjustable double inclined plane, with ropes, pulleys, &c., together forming an improved horse-run.

No. 16,579.—**Reuben Comins**, of Troy, N. Y.—*Improvement in Shoes for Truss-Frames.*—Patent dated February 10, 1857.—The object of this improvement is to prevent the end thrust of the diagonal braces on the bottom and top stringers of the frame.

Claim.—Furnishing that description of shoe D which, at the part where the braces B rest, is of an inverted T or angular or curved form, with two projecting plates E on its under side, which, in their horizontal section, are of T-form; said plates passing through the stringers A on each side of the vertical rods C, and thus forming an opening or jaws for the vertical rods to pass between, and extending down from the surface of the shoe, which rests upon the stringers, to the nuts and washers F upon the under side of the stringers, substantially as and for the purposes set forth.

No. 17,198.—**John B. Cornell**, of New York, N. Y.—*Improved Vault Cover.*—Patent dated May 5, 1857.—The object of the inclined position of the glasses in this vault cover is to cause the water falling upon it to run off freely.

Claim.—Arranging the respective glasses or tiers of glasses in an illuminating vault cover in inclined positions, to be the straight base of said cover, substantially as represented and described, and for the purposes set forth.

No. 17,199.—John B. Cornell, of New York, N. Y.—*Improvement in Vault Covers.*—Patent dated May 5, 1857.—The object of the gutters *c* is to receive and collect the moisture which condenses upon the under surface of the vault cover.

Claim.—Combining a series of gutters *c c* with the under surface of an illuminating vault cover, substantially in the manner and for the purpose set forth.

No. 17,096.—George R. Jackson, of Rye, N. Y.—*Improvement in Vault Covers.*—Patent dated April 21, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—Combining glasses of an inverted pyramidal or polygonal form with the sash or metallic portion of an illuminating vault cover, or its equivalent, for the purpose of producing a wider and more perfect diffusion of the light which may pass through said cover into the apartment beneath, substantially as set forth.

No. 18,851.—George R. Jackson, New York, N. Y.—*Improvement in Vault-Light Covers.*—Patent dated December 15, 1857.—The principal feature of novelty in this improved skylight consists in the peculiar shape of each of the glasses *b b* which form the illuminating portion thereof. This novel shape of each glass consists in giving to the concave under surface thereof the form of a hollow cone or pyramid, or the frustum of a hollow cone or pyramid, for the purpose of enabling the straight diagonal sides of the said concave surface to laterally refract and disperse the rays of light which pass through the same, to the greatest possible degree.

Claim.—An improved manufacture, the described skylight, the essential feature of novelty therein consisting in combining with a metallic frame a series of glasses, whose upper surfaces are flat, or nearly so, whilst the under surface of each glass is in the form of a concavity whose sides are bounded by diagonally descending straight lines, or planes, substantially as set forth.

No. 17,613.—John G. Wolvin, of New York, N. Y., assignor to George Peckham and John G. Wolvin, aforesaid.—*Improved Ventilating Vault and Platform Light.*—Patent dated June 16, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim ventilating holes and a gutter for vault lights in itself, as these have before been used.

But I *claim* the manner specified of securing the glass sections in place, by the combined operation of the rebate 1 and clamping plate *f*, as specified.

I also claim the groove 3, in the flange 2, on which the glass rests, to retain a cord of India rubber or other elastic material, or cement, and make a tight joint with the glass, as specified.

I also claim the gutter 5, formed at the centre *c* of the radial bars *b*, in combination with the perforated clamping plate *f* and pipe *g*, as specified.

No. 16,451.—Emil R. Pichler, of Boston, Mass.—*Improvement in Reflectors for Vaults.*—Patent dated January 20, 1857.—This reflector consists of two glass plates *a* and *b*, each of which is formed with parallel single corrugations, the glass plates being fastened in the frame A in such a manner that the corrugations stand at right angles to each other, thus having the appearance of one single glass plate with double corrugations. The reflecting material is applied to the lower glass plate *b*; fig. 2 represents a section of the glass plates in line *x x*, and fig. 3 a section in line *y y*.

The inventor says: I am aware that glass plates with single corrugations have been used. I do not claim such plates.

But I *claim* the so arranging of the glass plates herein described, in a frame or frames, as to have the appearance and effect of double corrugations, when said plates are backed by any reflecting material, as set forth.

No. 17,097.—George R. Jackson, of Rye, N. Y.—*Improved Method of Ventilating Vaults.*—Patent dated April 21, 1857.—The annular vault cover A is connected by means of the tube H, which is located beneath the paving of the side-walk of the street, with a ventilating lamp-post C, which excludes water, snow, and dust, from said vault.

Claim.—Connecting the aforesaid elevated recesses in the ceilings of subterranean apartments with ventilating lamp-posts, or with the flues of a building, substantially in the manner and for the purpose set forth.

No. 16,827.—George B. Field, of St. Louis, Mo., and Benjamin Field, of Beloit, Wis.—*Improved Mode of Veneering the Walls of Buildings.*—Patent dated March 17, 1857.

The inventors say: We are aware that veneering of walls and buildings with iron and stone plates, of itself, is not new; and we therefore do not claim it.

But we *claim* the mode or manner described of securing these thin plates of slate or marble to the walls and ceilings of buildings which have been previously built, meaning the combined arrangement of the strips of wood, cement, and screws, or the alternative method of the angle irons or window and door casings, pilasters, cornice string courses, or other ornamental attachments, combined with the cement, for the same purpose.

No. 16,548.—Otis Needham and Wales Needham, of New Haven, Conn.—*Improvement in Boxes for Pise-Work Walls.*—Patent dated February 3, 1857.—The box is placed, with the lower edges of the plates *a* all on a level, upon the level surface or foundation prepared to receive the wall, the end nearest the bolt *c* being placed where the corner or end of the wall is to come. It is then filled with the composition of which the wall is to be made, the said composition being rammed continually, as the filling proceeds, to make the wall solid. When the box has been properly filled, the bolt *d* is slackened to allow the plate nearest to bolt *c* to be removed, so as to allow the box to be moved horizontally along the foundation (see dotted position in fig. 2). When mouldings are to be made, an additional plate *m* is used, (see fig. 3,) of a projection equal to the thickness of the moulding, and the form of the moulding is cut out in the lower edge of plate *m*.

Claim.—First. The construction of the box with the movable end plates *b b*, fitting to grooves in the side plates *a a*, and with a roller *e* at one end near the top, and another *f* at the other end near the bottom, the one to run on the finished part of a course of work which is in progress, and the other on a finished course, or on the foundation of the wall, to guide the box in a horizontal line, while the plates keep it from deviating laterally from a straight line, substantially as specified.

Second. The plate *m*, applied and operating substantially as described, in combination with the other parts of the box, to produce window caps, mouldings, or other projections.

No. 17,937.—William S. Mayo, of New York, N. Y.—*Improved Window-Blind Slat-Holder.*—Patent dated August 4, 1857.—The arms of the piece B, embracing the lower end of the rod C, allow it to slide up and down freely, and hold it still with sufficient firmness in any required position.

The inventor says: I do not confine myself to the form here indicated; they may be made of many different forms.

But I *claim* the construction and application to the rods of window-blinds of springs or friction pieces of metal, to hold the slats in any given position, substantially after the manner and form indicated.

No. 18,569.—Thomas C. Ball, of Keene, N. H.—*Improved Device for Forming Round Tenons on Window-Blind Slats.*—Patent dated November 10, 1857.—Shoulder cutters K K K K are carried by and made to project from the two carriages C D, and to operate in connexion with the tubular sliding journal cutters L L, arranged as seen in the engravings, and supported in stationary poppet heads M M. To each of these latter cutters a longitudinal movement is given by means of a rod *a* and a crank-pin *b*, which connect the cutter with the adjacent lever F, and so that, by the movement of said lever in such manner as to cause the two carriages to approach one another, the cutter L shall be moved towards the journal cutters.

The inventor says: I do not claim the combination of machinery for pricking the staple holes and forming the journals and shoulders.

But I *claim* the arrangement and combination of sliding shoulder cutters, or their equivalents, and sliding tubular journal cutters, to operate together, substantially as specified.

No. 16,527.—Alexander M. Cochran, of New York, N. Y.—*Improvement in Window-Blinds.*—Patent dated February 3, 1857.

Claim.—1st. The fitting of the tenons in one side of the blind to oblique slotted mortises *b b*, and securing them all in place by a long rod or wire *d*, substantially as and for the purposes described.

2d. Effecting the connexion between the slats D D and rods E E, by making the rods of metal tubing with slits *s s*, providing ears *f f* to enter the said slits *s s*, and passing a wire *g* through the tubular rods and the ears *f f*, substantially as and for the purpose specified.

3d. The confining of the slats in a closed or open condition by means of bail-shaped bars F F, applied and operating as described, in combination with notches *h i* in the backs of the rods E E, as set forth.

No. 16,632.—Daniel Kelly and William Livingston, of Grand Rapids, Michigan.—*Improved Window-Blinds.*—Patent dated February 10, 1857.

Claim.—Constructing the slats D, as shown, and having strips *e* attached to the stiles, as described; whereby the slats, when closed, will overlap and be flush with each other at each side, and the slats rendered perfectly weather-proof and the light excluded.

No. 17,938.—James McMackin, of New York, N. Y.—*Improved Device for Operating Window-Blinds.*—Patent dated August 4, 1857.—When this blind is to be opened, the cover *n* is raised by turning it on pivot *o*, and bar *c* is drawn out and turned in line with pieces *a b*, the projection *k* passing into slot *i*; the bar E is then pushed outward, as represented in dotted lines, which movement opens the blind A, turning it on its hinge C.

Claim.—The bar E, constructed of three pieces *a b c*, provided with the fastening formed of the slotted plate *f* on the piece *c*, and the ledge *k* on the piece *b*, the bar E being applied to the blind A, and fitted within the sill D, substantially as shown, for the purpose set forth.

No. 16,966.—Sylvanus S. Clark, of Manchester, N. H.—*Improvement in Folding Window-Blinds.*—Patent dated April 7, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—First. The employment of movable upright pieces E E, containing notches *c c* to receive and constitute bearings for the tenons of the blind slats, arranged to operate, substantially as described, within the stationary sides D D of the blind or shutter framing; for the purpose of confining the tenons of the slats when the blind or shutter is down, or of liberating the tenons to allow the blind or shutter to be drawn up or folded.

Second. The guide plates *x x*, for conducting the tenons of the bottom slat clear of the notches *c c* during the drawing up of the blind; such plates being attached to portions of the tenons of the said slat that extend beyond the ends of the tenons of the other slats into cavities that are made within the stationary side pieces of the blind, for the cords or chains *p p*, by which the blind is raised or folded, to work through, substantially as described.

Third. The construction of the chains G G, with stops *h h* on the links, arranged in such manner as to allow the links to fold freely inwards or away from the slats, and prevent them folding between the slats, substantially as described.

Fourth. The application of the spring *z* and cord *y* to the upper slat, substantially as described, in combination with the connexion of the slats by the chains G G at their inner edges, for the purpose of effecting the closing of the slats when the blind or shutter is down, and keeping them closed, unless held open by other means.

Fifth. The suspension of the top slat from fixed pins *w w* in the cap of the frame of the blind or shutter, by slotted plates I I, of a form substantially as described, which admits of all the movements specified.

Sixth. The curved lever 16, and sliding ratchet bar 18, applied, as described, to operate upon the lower slat, and open the blind or shutter from the interior of the window.

Seventh. The hook J attached to the inner edge of one of the slats, and operating in combination with the spring *z* and cord *y*, to hold open the slats of the upper portion of the blind or shutter while the lower portion remains closed, substantially as described.

No. 17,922.—Lucius N. Fay and William Mason, of Warren, Mass.—*Improved Mode of Opening and Closing Window-Blinds.*—Patent dated August 4, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventors say: We are aware that a worm-wheel and screw have been used for a similar purpose; but the operation of the screw is rather slow, and if a quick threaded screw is employed, considerable power is required to operate it. Our device operates the blind quickly, and not much power is required to operate it, as but little friction is created by the working parts.

We *claim* operating the blind A by means of the worm-wheel F and flanched plate I, arranged and applied to the blind and jamb-post substantially as shown, for the purpose specified,

We further claim attaching the worm-wheel F to the rod E, which is secured to the lower part of the blind and curved, as shown; whereby the gearing or wheel F, and flanched plate I, or any other device gearing into wheel F, may be perfectly protected from the weather and dust, in consequence of the rod E passing through the under side of the shell J, as described.

No. 17,923.—Lucius N. Fay and William Mason, of Warren, Mass.—*Improved Device for Operating Slats of Window-Blinds.*—Patent dated August 4, 1857.—By sliding the knob B back and forth on rod *b*, the slat rod *d* will be moved up and down, thereby opening and closing the slats.

Claim.—The sliding head or knob B, placed on the guide rod *b*, which is attached to the cross-rail *a* of the blind, the head or knob being connected with the slat rod *d* by the rod *e*, the slat rod being braced or supported by a rod *f* attached to a rod *d* and the stile *g*, substantially as and for the purpose set forth.

No. 17,730.—Joseph B. Dodge, of St. Louis, Mo.—*Improved Box Window-Frame.*—Patent dated July 7, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim the balancing of sash by weights, pulleys, and box frame; and therefore I disclaim the original invention thereof.

Nor do I claim the substitution of grooving to form the box for the weights instead of framing, for framing was originally substituted for grooving in window-frames to form the box for the weights.

But I *claim* the employment of the beads commonly used in window-frames to hold the sash to their places, to form the box for the weights, using grooves for that purpose on the inside of the jamb and on the underside of the beads placed together, as shown at A A and B B, forms the box for the weights.

No. 18,611.—Francis Thrasher and Henry Bishop Horton, of Akron, Ohio.—*Improvement in Window-Sash.*—Patent dated November 10, 1857.—When the lever E is raised, the pin K is pushed up so as to strike the window-frame upon raising the sash to its full height, thus unlocking the strip D. The lower friction strip, figs. 1 and 4, has a spring F, which locks the sash down by entering a notch in the jamb casing. A projection upon this spring has a pin which enters the eccentric slot S in lever E, by which means the spring F and the friction strip itself are moved by the lever.

Claim.—The locking friction strip, for the purpose of raising the window with ease, and sustaining it at any height, substantially as set forth.

No. 18,200.—John C. Grant, of Salem, Mass.—*Improved Mode of Operating Window Sash.*—Patent dated September 15, 1857.—As the sash is raised or lowered, the rack *i* attached to said sash operates the loose gear wheel *k* and wheel d^1; the pulley d^2 winds up cord *e* around this pulley, unwinding it from the larger pulley *d*; this, turning slower than pulley d^2, winds up spring *h*, which tends to force the window up, and sustains it at any point of elevation.

The inventor says: I do not claim balancing the sash by means of a spring, as that is not new.

But I *claim* combining with the window frame and sash the rack *i*, gears $k\ d^1$, pulleys $d\ d^1$, and spring *h*, all arranged and operating substantially as above set forth.

No. 18,182.—Edward T. Briggs, of Salem, Mass.—*Improved Mode of Sustaining Window-Sash.*—Patent dated September 15, 1857.—The support *b* is pressed by means of spring *c* against the sides *d* of the strip *g*, and thus it sustains the sash at any desired height.

Claim.—Furnishing the sash with the metal strip *g*, in combination with the angular grooved support *b* and spring *c*, in the manner and for the purpose set forth.

No. 16,559.—William Webster, of Morrisania, N. Y.—*Improved Mode of Hanging Window-Sashes.*—Patent dated February 3, 1857.—The object of the hole C in the face of the sash B is to admit of the knot made in the end of the cord. The hole and knot may be covered by a thin metal disk.

Claim.—The constructing of window sashes with holes *c c* on their inner face, in connexion with the holes and grooves G G, in the manner described.

No. 16,998.—D. Rohan, of Cincinnati, O.—*Improved Mode of Arranging and Operating Window-Shutters.*—Patent dated April 7, 1857.—When the slide C and shutter D are shoved within the box B, the outer end of the shutter will be flush with the ledge *k*. When the shutter D is drawn out from the box B, the two bars E are drawn out with it to a certain distance; as the catches E^1 connect the slide C and bars E together, the bars E move outward with the slide until the weighted ends *f* are raised by the projecting surfaces *i* on the blocks *h*, by which motion the hooks *g* are thrown out of their recesses in the slide C. The shutter can now be elevated to cover the window A, and the bars E are shoved back within the box B.

Claim.—Attaching the lower end of the shutter D to the slide C, or its equivalent, which is fitted on the box B below the sill of the window casing A; the bars E E being used in connexion with the slide, and connected at the proper time to the slide by the catches E 1, which are actuated by the weights *f* and blocks *h*, substantially as described, for the purpose set forth.

X.—LAND CONVEYANCE.

No. 16,499.—Alfred E. Smith, of Bronxville, N. Y.—*Improvement in Axle-Boxes.*—Patent dated January 27, 1857.—In the accompanying drawings, *a* represents the hub, which is driven on to a metallic pipe-box *b*. The bore of this box is made to fit the arm *e* of the axle *f*. Between the ends *c* and *d*, the pipe-box is corrugated, or fluted, so as to leave the ribs and flutes *g* longitudinal, with the edges of the ribs inside to fit the arm of the axle, the grooves or flutes forming oil cells all around the arm of the axle to keep and distribute the oil.

Claim.—Making metallic pipe-boxes for carriage wheel hubs with the two ends cylindrical, or conical, to fit the arm of the axle; when these two sections are connected and combined with the intermediate part corrugated or fluted inside and outside, substantially as described, for the three-fold purpose of giving greater strength with a given weight of metal, to form a series of longitudinal oil cells all around the arm of the axle, and to form longitudinal ribs all around on the outside to enter the wood when driven in, that it may be effectually held and bound in the hub, substantially as set forth.

No. 16,661.—Alfred E. Smith, of Bronxville, N. Y.—*Improved Mode of Securing Hubs on Axles.*—Patent dated February, 17, 1857.

Claim.—The mode of securing the pipe-box and hub on the axle, by forming the inner end of the pipe-box with a flanch fitted to enter a recess in a collar fitted and secured into the inner end of the hub, substantially as described, when this is combined with a projecting collar on the axle and a loop ring on the axle, the collar on the hub being connected by turn buttons, or equivalents therefor, substantially as and for the purpose set forth.

No. 16,891.—James M. White, of Xenia, Ohio.—*Improved Mode of Attaching Hubs to Axles.*—Patent dated March 24, 1857.—The nature of this invention consists in a new device for attaching hubs to axles, with a view to secure attachment, being easily detached, running freely and easily; to prevent the pipe-box being jerked out of the hub as the wheel vibrates in towards and out from the cart or carriage body; to prevent the back of the hub cutting against and on the shoulder of the axle, and with a view of being easily repaired.

The inventor says: I *claim* the combination of the parts marked *a b c d e f g h i*, arranged as described and for the purposes set forth.

No. 17,063.—Lorenzo Winslow, of Rochester, N. Y.—*Improved Mode of Attaching Hubs to Axles.*—Patent dated April 14, 1857.—The ring *a* is secured to the axle by means of pin P, and ring *b* is secured to the box by means of pins C; the axle may easily be secured in or detached from the box by inserting or withdrawing, respectively, pin P.

Claim.—The method described of attaching the boxes of carriages to the axles thereof, by means of a ring *a* and pin *p*, operating in combination with the ring *b* and pin or pins *c c*, in the manner set forth.

No. 17,247.—Leonard J. Worden, of Utica, N. Y.—*Improved Mode of Securing Hubs to Axles.*—Patent dated May 5, 1857.—The nut A^1 is secured to skane A in the following manner: The nut A^1 is slipped over neck C, and then, by turning nut A^1 slightly, the eccentric curves *k* will bear against the curves of nut A, and thus secure the latter; the cap L is then screwed on in front by means of a screw passing into the tap G, in the end of the axle.

Claim.—Making on the front end of the skane or bush A a neck C of peculiar form, that is to say, having two or more parts of its periphery of a cylindrical shape, whilst the remaining parts are both camshaped and conical; when used in connexion with a nut A^1, whose internal periphery corresponds with the external periphery of the neck C, lock plate L, or its equivalent; the whole being arranged, constructed, and operating in the manner and for the purposes substantially as set forth.

No. 16,404.—Alfred E. Smith, of Bronxville, N. Y.—*Improved Mode of Constructing Mail-Axles and Hubs.*—Patent dated January 13, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The described method of constructing a mail-axle, that is to say, making the end of the box *c* abut against the inner side of the collar, instead of against the holding plate, whereby the wear of the washer between the collar *a* and the holding plate may be compensated for by setting up the bolts substantially in the manner set forth.

No. 17,410.—Thomas W. Williams, of Philadelphia, Pa., assignor to Himself and Henry T. Hoyt, of same place.—*Improvement in Securing Nuts on Axles.*—Patent dated May 26, 1857.—When the nut E is screwed up to its place, the lever key C is thrown into position represented in fig. 1, which prevents the nut from being unscrewed To unscrew the nut E, the lever key *c* is turned to a horizontal position by entering a small iron pin through hole *h*, when the nut can be readily unscrewed.

Claim.—Securing nuts upon axles by means of the lever key *c* and the mortises or recesses *e* and *f*, the same being constructed and arranged so as to operate together in combination, substantially in the manner set forth.

No. 18,248.—George A. Prentiss, of Cambridge, Mass.—*Improvement in Journals of Axles with Friction Rollers.*—Patent dated September 22, 1857.—The nature of this invention consists in an addition to the common solid axle and friction rollers within the wheel, consisting of a separate securing journal, or steady pin, moving vertically so as to enable the bearing surfaces to run in contact, whatever may be the amount of wear.

In the engravings, A is a solid axle; B the wheels thereof; C the bearers or bearing rings of the axle; D the sets of friction rollers ; and E the cylindrical recesses for the reception of the friction rollers, the said recesses being formed within the wheels, as shown.

The inventor says: I *claim* securing journals, applied to the solid axle and friction rollers.

No. 17,899.—John B. Slawson, of New Orleans, La.—*Improvement in Receiving-Boxes for Passengers' Fares.*—Patent dated July 28, 1857.—The apron *f* being in a horizontal position, the passenger drops his fare down through passage *e* of the glass plate *d*, which can be seen by the driver through glass plate *c*, who then pushes lever G backward, thereby turning shaft F and bringing apron *f* into an inclined position, by which the money is deposited in the sealed drawer I. Should the money deposited prove to be spurious, the driver raises the apron *f* to a vertical position, thereby exposing said money to the examination of the passenger.

Claim.—The method set forth of preventing fraud upon proprietors of public conveyances on the part of conductors, drivers, or passengers, by means of the plate or apron *f*, glass plates *c* and *d*, lever G, and drawer I, when arranged and operating in the manner substantially as and for the purposes described.

No. 18,715.—Alfred T. Toulmin, of Ellicott's Mills, Md.—*Improvement in Automatic Railroad Brake.*—Patent dated November 24, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I do not claim the application of brakes to railroad cars as new or novel.

Nor do I claim springs, or ratchet and cog-wheels, as new, in winding up the chain attached to brakes of railroad cars.

Neither do I claim as my invention the transmission of power derived from the revolution of the car or tender wheels.

But I *claim* the self-adjusting or self-regulating action of disengaging the revolving spring axle, about which the brake chain is wound up, from further contact with the motive or winding power, so

soon as the brakes are put down sufficiently to offer a great resistance to the progress of the cars, but before the braking point of the brake chain is reached; this disengaging being effected by means of the tension from the combination and connexion of a revolving spring axle on one end of the brake chain, and at the other end the resistance offered to the brakes by the revolution of the car wheel, substantially as described.

No. 18,516.—Philander Perry, of Troy, N. Y.—*Improvement in Operating Railroad Brakes.*—Patent dated October 27, 1857.—The claim and engravings show the nature of this invention.

The inventor says: I *claim* the use of the sets of nuts and screws, arranged upon the under side of the car body, worked by the hand wheel and chain, and operating upon the pairs of brake rubbers as described, for the purpose specified.

I also claim arranging springs R between the bottom of the car body and the brake rubbers, as described, so as to prevent jolting or jarring of the car body while its weight presses the brake rubbers upon the top of the car wheels, and also to facilitate the application of the brake rubbers, as specified.

No. 17,058.—Richard L. Smith, of Philadelphia, Pa.—*Improvement in Railroad Car-Brake.*—Patent dated April 14, 1857.—When it is desirable to stop the train of cars as quickly as possible, the brakesman depresses rod S, and with it lever *g* and bar Q, bringing the pointed end of arm R in contact with the ground; and, consequently, arm R and rod T are forced suddenly back such a distance that the end of arm R may be freed from the ground by the action of roller *t* on arm S. This movement of rod T is communicated to rod U, sliding-rods J and I of each of the cars of the train, and to the bars H, the inclined planes of which act on the rollers *j* of shaft G in such a manner as to depress the same, and with it the hangers F and the rubbers E, thus bringing the latter to bear hard on the wheels D. When a slow stoppage of the train is required, the rod W is withdrawn from the bumper of the car by turning spindle *z*, when, on the retarding of the engine, the cars will, through their momentum, cause the ends of the sliding-rods J to be forced against the end of rod U, causing the sliding-bars throughout the train to move and the rubbers to bear upon the wheels.

The inventor says: I do not claim the employment of sliding-rods for causing a simultaneous braking of the wheels of the cars throughout the whole train; neither do I claim exclusively the use of inclined planes for operating the rubbers.

But I *claim* the sliding-rods I I and J J, with the bars H H having double inclined planes, in combination with the rollers *j j* and the rollers K K, when the latter are hung to the axles; the whole being arranged and constructed substantially in the manner and for the purpose set forth.

No. 18,018.—James Mitchell, of Osceola, Iowa.—*Improvement in Railroad Car-Brake.*—Patent dated August 18, 1857.—On the running of the cars from the track, and the disengaging of the coupling pin *v* of lever S, the collar *l* will be drawn against the upright arm of lever F, and the holding point *i* will release the chain *e*, and the shoes S^1 S^2 will fall upon the rails to the position represented in fig. 2, thereby arresting the motion of the car.

The inventor says: I do not claim the use of movable shoes, as stated.

Neither do I claim broadly the actuating of the braking apparatus by the removal of a detent.

But I *claim* the combination of the lever detent *f*, hooked rod *h*, adjustable collar *l*, standard *p*, rod *o*, slotted table *q*, and bent lever *s*, when said parts are arranged for joint operation with each other and with the shoe-suspending apparatus, substantially as set forth.

No. 18,150.—W. R. Jackson, of Baltimore, Md.—*Improvement in Automatic Railroad Car-Brake.*—Patent dated September 8, 1857.—When the locomotive goes ahead, the coupling pin W is drawn to the forward part of slot X, and the lever N is drawn forward, and, by arm of levers N^1 and N^2, brings the toggle joint M to an angle, shortening spring L, which, through levers I H, takes the spread of cams E from the brake-blocks D, and, so long as the locomotive pulls, brakes are up; as soon as the speed of the locomotive is checked, the cars will crowd together, and the brakes will be applied.

The inventor says: The improved coupling described I do not claim under this application; as I have made a separate application, of even date herewith, for that part of the apparatus.

But I *claim* as my invention the mode described of controlling the action of the spring or springs which bring the brake-blocks to bear upon the tread of the wheels by the operation of the tractive force, or its suspension; so that the wheels shall be free when the vehicle is being drawn forward or backed, and the brakes applied by the momentum of the train when the tractive or the backing force is withdrawn.

No. 17,004.—Robert M. Wade, of Wadesville, Va.—*Improvement in Railroad Car-Brakes.*—Patent dated April 7, 1857.—By forcing down rod *l*, lever *k* is turned on its fulcrum, and the rod and wedge *i* are forced upwards, bringing rod *c* in gear with pinion *e*, which is secured to the shaft of pinion *d*. By now turning shaft *g*, the spring *s* is taken up. The strengthening of chain *c* causes the instantaneous application of all the rubbers *r* to the wheels.

The inventor says: I disclaim the application of the brake-rubbers by springs, and the drawing up of the springs by means of rack and pinion.

I *claim* the wedge *i*, lever *k*, and bar *l*, constructed, arranged, and operating substantially as described, in combination with the rack *c*, for the purposes specified.

Also, the aforesaid wedge, lever, and bar, in combination with the slack chain, for effecting the simultaneous application of the brake-rubbers throughout the train, substantially as set forth.

No. 17,257.—Louis Brauer, of Somerville, Tenn.—*Improvement in Bumper Railroad Car-Brakes.*—Patent dated May 12, 1857.—When the train is in motion, the flanges of two contiguous bumper heads are fastened together by means of a clamp *w*. If the train shall be braked it is only necessary to retard the velocity of the locomotive, when the bumper heads *a* of each car begin to press against each other, which pressure will be transmitted by the elastic hinge h^1 to the bar *d*, and from there to lever *g*, which, by the connexion of rods *l* and *k*, applies the brakes *i* to the wheels. When the train is set in motion, a reversed movement of these parts takes place, until the brakes *i* are arrested by stop-pieces *z*.

The inventor says: I lay no claim to the principle of operating railroad car brakes by means of the momentum inherent to cars when in motion.

Nor do I claim the use of an elastic substance for the purpose to diminish the effect of the push to which bumper heads are exposed when a train is stopped, as all this has been known before.

But I *claim* the sliding bumper *a f*, in connexion with clamp *w* and stop-piece Z, constructed and operating as described within.

2d. The elastic hinge h^1 within the tapering sleeve, operating as described and for the purpose set forth.

No. 17,983.—E. R. Roe, of Bloomington, Ill.—*Improvement in Mechanism for Operating Railroad Car-Brakes.*—Patent dated August 11, 1857.—By a rope attached to either of the arms *m* M, they can be moved in either direction. The cam Q causes pin U to press by its foot against the end of arm E, depressing it and the anchor F. The wheel C, as it revolves, brings pin G into contact with anchor F, and carries it around with it; thus drawing the pitman rod H a distance nearly equal to the diameter of the wheel C, and by means of the bent lever N, figure 2, pulling down the brakes W^1. When it is desired to let up the brakes, the rope attached to arm *m* is slackened, when arms *m* M return to their perpendicular position by means of their own weight. The action of cam P, in returning to the perpendicular, depresses the pin T, whose fingers detach the detent spring, and the action of rod H brings back the arm and anchor to their original position.

Claim.—The combination of the "anchor" F, in its connexion with the arm E and the pin G, and operated as described by the cams and pins, in connexion with the wheel C, in the manner described, and for the purpose described.

No. 17,763.—Ira J. Webber, of Salem, Mass.—*Improvement in Method of Applying Railroad Car-Brakes.*—Patent dated July 7, 1857.—The block frame A is attached to the under side of the car body of each car, the chains *b* and *c* being fastened to the brake levers of the forward car and rear car. By applying the brakes of the rear car the chain *c* is retracted, and with it spiral spring *c* and chains *d*; these latter throw the catches E into the position represented in figure 2, causing the bolt B to be locked; and, as the rear car is being checked, the brakes will be applied to the other cars by the pull on chain *b*

Claim.—The apparatus described, for the purpose of applying railroad car-brakes, consisting essentially of the sliding bolt B and the dogs E, or their equivalents, operating in the manner substantially as set forth.

No. 18,435.—Henry M. Collier, of Binghamton, N. Y.—*Improvement in the Rubbers of Railroad Car-Brakes.*—Patent dated October 20, 1857.—The recess, as shown in engraving, has its sides cast of a dovetail or mitred form its entire length to confine the wooden rubber, as represented at X X in end plan. The back of this recess V V is cast solid, and of a circular form, corresponding with the periphery of the car wheel, which forms a support to the wooden shoe B^1, and serves to relieve the cap S and the end S^1 from the strain caused by the carrying tendency of the friction with the wheel in the direction of its motion.

The inventor says: I do not claim a metallic head or socket to hold a wooden shoe or rubber; nor a wooden shoe or rubber, presenting the end of grain or fibre as a friction surface; nor the scrapers *o o*; nor a dovetail for securing a removable piece, as heretofore used or described.

But I *claim* the serrated circular back V V of recess in B and the sliding cap S, as described and for the purposes set forth.

No. 18,990.—John F. Rague, of Dubuque, Iowa.—*Improvement in Railroad Car-Coupling.*—Patent dated December 29, 1857.—This invention consists in the employment of a revolving hook E placed within the draw-head C D, and used in connexion with a buffer K, also placed within the draw-head.

The inventor says: I do not confine myself to any particular mode of operating or rotating the hooks E, for that may be done in various ways.

But I *claim* the rotating or revolving hook E, in combination with the buffers K; the above parts being placed within the draw-head, and arranged as shown for the purpose specified.

No. 18,132.—Joseph Boothroyd, of Michigan City, Ind.—*Improvement in Reversible Railroad Car-Coupling.*—Patent dated September 8, 1857.—The bell mouth A receives the coupling rod J, which is secured to it by means of pin O, which rests on lever B; the mouth A can be turned on shaft C, and will adjust itself to higher or lower cars by means of spring *m*.

The inventor says: I do not claim merely the arrangement for obtaining play in the coupling, nor do I claim coupling by the falling pin or latch.

But I *claim* the device, as described, by which my couplings revolve, so as to present either a bell mouth or a link, and at the same time admit of all necessary play to accommodate the motion of the cars.

No. 16,654.—Joshua C. Price, of New Philadelphia, Ohio.—*Improvement in Self-Disengaging Car-Coupling.*—Patent dated February 17, 1857.—The engraving represents a bottom view, in which A A are the bottoms of two cars. If one of the cars runs off the track, (see dotted lines,) one of the head blocks or stop-bars G of one car will strike one of the other cars, and thereby cause the link F to slide over the bevel projections *c c* of the hinged bar D, and cause them and the bar to recede into recess E, (see dotted lines in fig. 3,) and consequently the pin H to rise sufficiently high to stand above the buffer head, and thus leave the latter free to pass out of its socket.

The inventor says: I am aware that sliding bars or bumpers have been used on either side of the platforms, for the purpose of disconnecting the car couplings. This I do not claim, nor the device for detaching the link by means of inclined or wedging surfaces for lifting out the coupling pin by an oblique strain upon the draw bar, as such a device was patented by James Turner, July 20, 1852.

But I *claim* the employment of two obliquely set sliding head blocks, or stop-bars, connected by a turning link or plate, which is hollowed out and bevelled inward on each of its edges; in combination with the hinged buffer pin plate, which is furnished with two outwardly bevelling projections on its under side; said parts being arranged relatively to the buffer head, and operating in the manner and for the purposes set forth.

No. 17,845.—Wellington Prosser, of Kendall, N. Y.—*Improvement in Railroad Car-Couplings.*—Patent dated July 21, 1857.—So long as the shackle bar H remains parallel with the jaws J, no force short of fracture will disengage it. But if it be slid to one side, as is the case when the engine or any car leaves the track, so that the head H can pass the ends *a* of the projections, it will instantly become disengaged.

The inventor says: I *claim* the combination of the jaws *j j*, hoop or band B, and link or shackle bar H, the whole being constructed and operated substantially as described.

It being understood that I do not claim the combination of the jaws *j j* with the link H alone, but the combination of these elements with the band B.

No. 17,796.—D. W. Long, of Baltimore, Md.—*Seal for Car Doors, &c.*—Patent dated July 14, 1857.—The seal *a* is applied to the sliding door B and stile D, as represented in the engraving, and said seal is then covered by means of hollow hasp *b* to protect it from injury.

The inventor says: Though I have represented the same hasp that covers the seal as securing the doors, I do not confine my claim to this peculiar arrangement, as there may be other or additional locks for securing the doors; nor do I confine myself to the peculiar form of the hasp.

But I *claim* effectually securing the seals of car or other doors from accidental or designed injury, substantially as set forth.

No. 18,743.—George W. Hart, of Aurora, Ind.—*Improvement in Dumping Car.*—Patent dated December 1, 1857.—The operation of this invention is as follows: The loaded car having been run forward over the tender by means of the crank E, the dog P is elevated, and the hand wheel and pinion M N rotated in the direction of the arrow, fig. 1; the rack O carrying them towards the rear of the car, and with the reel J, which the attachment of the slat 1 causes to rotate in the direction of the arrow, in fig. 2. The slats are thus, one by one, disengaged from the lugs I, and wound on the reel, resulting in the discharge of the load, either in a body, or in such quantities, and at such speed, as may be desired. While this is taking place, the car may be shifted by means of the crank E, or the discharge may be at any moment arrested, and the car removed to another spot to deliver the load.

Claim.—In combination with the reel J, the slatted folding floor 1, 2, 3, 4, 5, 6, supported and operated in the manner set forth.

No. 18,961.—George Douglass, of Scranton, Pa.—*Improvement in Railroad Car or Carriage Springs.*—Patent dated December 29, 1857. The claim and engravings explain the nature of this invention.

The inventor says: I do not claim broadly the causing of one leaf of a spring to overlap another. An example of this is seen in the device of S. S. Barry, rejected 1852, in which the ends of the upper spring overlap those of the under spring, the two ends fitting together on the tongue and groove plan.

The employment of the tongue and groove avoids the necessity of eyes and bolts to connect the ends of the springs; in other respects the above plan resembles the elliptic spring, the weight being applied in the middle of the upper and lower leaves.

My improvement is quite different, as the upper leaves serve chiefly as horizontal cords to prevent the too wide opening of the lower leaves. The strain upon the upper leaves is chiefly in a horizontal direction.

Nor do I claim the broad idea of suspending the load upon the ends of elliptical springs.

But, to the best of my knowledge, it is a new feature in elliptical carriage springs, so to arrange them as that one set of the leaves shall serve as horizontally elastic cords to prevent the under opening of the other set of leaves.

I *claim* as a new article of manufacture a carriage spring made substantially as set forth.

No 17,794.—Bernard J. La Mothe, of New York, N. Y.—*Improvement in Railroad Car Seats.*—Patent dated July 14, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Constructing seats with elliptical springs *c c* at the sides, receiving the cushions on the upper part of said springs, when combined with the friction rollers Q Q, or their equivalents, whereby a lateral motion is allowed to said seat, substantially as and for the purpose specified.

Also, constructing the back of the seat by an enclosing frame formed of the double bent rod *h*, with eyes at both ends, through which eyes, and between the bends of which rod, the sustaining pipe or rod *g* passes, substantially as and for the purposes specified. It being understood that I do not claim a surrounding metallic rod receiving padding to form the backs of chairs, as this has heretofore been made use of; but I am not aware that a metallic frame for receiving padding to form the backs of car seats has ever before been formed as herein specified, whereby great strength and lightness are combined, and the back adapted to resist pressure from either side.

No. 18,252.—J. H. Swan, of New York, N. Y.—*Improvement in Railroad Car Seats.*—Patent dated September 22, 1857.—This improved seat operates thus: By placing the pins b^2 on the lower corner of the back at the ends of the grooves of the segment a^3, and bringing the seat level, we have an upright back day seat with low back. To turn this into a high back seat, it is raised until the pins b^2 enter the notches; then if the back is thrown into a reclining position, the lever a^2 swings back with it at the top, carrying its lower end forward, which elevates and moves forward the seat into proper position for reclining comfortably. If the back is swung clear over to the opposite side so as to face the other way, all the relative parts and their action are exactly the same in the reversed position.

The inventor says: I *claim* the combination of the reversible back and seat by means of the lever a^2, substantially in the manner and for the purposes set forth.

I also claim the combination of the levers a^2, the arms b^1, and segments a^3, with their attachment for reversing the back, as specified.

No. 18,375.—Charles P. Bailey, of Zanesville, O.—*Improvement in Railroad Car Seats.*—Patent dated October 13, 1857.—In the drawings, A represents the support of the car seat. Upon this support, or frame, are placed the seats B B, said seats having pivoted pins *a a* in them, which pass into slots or gains *c c* cut in the frame A; so that the seat which is supported on said pins may rock upon one set or the other, as the occupier may, for the time being, be sitting. Upon each of the seats B there are four cast-iron lugs or projections *e*, and at their front or back two mortises or openings *i i*; over the lugs or projections *e*, two hooked arms *f f*, on the rails of the back *c*, catch; whilst the two tongues *m*, also on said back, enter the mortises or openings *i i*, which firmly hold the back and seat together, but at the same time admit of the ready removal of the back when it is necessary to reverse it.

The inventor says: I am aware that an entire car seat has been made which was reversible on its supports; this I do not claim.

But I *claim* a detached reversible back to a car seat, when combined with a seat in such manner that said back and seat may have a falling or backward adjustment together, though separately connected to the frame, substantially in the manner and for the purpose set forth.

No.18,122.—William M. McCauley, of Washington, D. C., assignor to J. N. McIntire, of the same place.—*Improvement in Head-Rests for Railroad Car Seats.*—Patent dated September 1, 1857.—

The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Pivoting the rocker or shank A of the head-plate in the stationary holder C, in combination with the segmental spring *e*, whereby the head-plate accommodates itself to any inclination of the head, and forms a springing or elastic support, the whole constructed and operating substantially as described.

I do not broadly claim pivoting the head-plate to the stationary holder.

No. 16,916.—Perry G. Gardiner, of New York, N. Y.—*Machine for Disengaging Railway Car-Springs from Mandrel.*—Patent dated March 31, 1857.—The cone mandrel, with the coil attached, on being removed from the coiling machine, is set perpendicularly upon the sliding-plate *m*, with the slot of the mandrel and the lower part of the slot *l* of the disengaging tool L exactly in line; and upon the tool L being forced downward, it forces the straight part of the mandrel through the cone until the slot is cleared of the steel plate, when that part of the steel plate which was in the slot of the mandrel meets the inclined part of the slot $l\,l^2$ of the tool L, and by this inclined part is either turned back out of the centre of the coil or is broken off. The straight part of the mandrel is thus pushed through and disengaged from the coil.

Claim.—The peculiar construction of the disengaging tool L, and the manner of constructing the platform M, when operating, in connexion with spindle S, for detaching the coil, in the manner described.

No. 18,515.—Henry M. Paine, of Worcester, Mass.—*Improvement in Railroad Car-Springs.*—Patent dated October 27, 1857.—The inventor, in showing how he manufactures his invention, says: I make the tie-rod A of iron tubing of the required length and diameter, and cut on either end a screw thread, on which are fitted nuts B B. The nuts work against and draw together two metallic plates C C, which plates condense the fibrous disks D to the required density.

The hollow tie-rod A receives the spring bolt E, and thus secures the cylinder disk firmly in its place without impairing its qualities as a spring.

Claim.—The combination of fibrous disks with the hollow tie-bar A, nuts B B, and metallic plates C C, substantially as specified and set forth.

No. 16,915.—Perry G. Gardiner, of New York, N. Y.—*Machine for Creasing Plates for Railway Car-Springs.*—Patent dated March 31, 1857.—Motion being given to the rollers T and N, the steel plate is placed upon the carriage W, against the side of the guide plate *a*, and its end against the stop plate S. The carriage W is then moved forward towards the rollers, and the steel plate is thereby carried between the rollers T and N, by which it receives the required indentation upon its surface.

Claim.—The use of the V-shaped roller T, and flat-faced roller N, for creasing the plates, as described, when operating in connexion with the carriage W, the plates S, and guide or stop plate *a*, in the manner and for the purposes specified.

No. 17,442.—Albert L. Mowry, of Cincinnati, Ohio.—*Improvement in Cast Iron Car Wheels.*—Patent dated June 2, 1857.—The hub *a* is first cast, as represented in the engraving, and placed as a core in the centre of the mould of the wheel; the mould is then filled with metal, which completes the wheel in its parts, as represented in fig. 1, the wheel shrinking around the hub sufficiently tight to prevent shaking loose by use.

Claim.—Providing the hub *a* with a concave or other formed channel around the centre of the circumference; and arranging in the said channel the bead *f f* and ribs *g g*, and therewith the hub thus constructed; uniting it with the wheels, as specified, when the parts of the wheels are made and proportioned all as and for the purposes mentioned.

No. 16,851.—James M. Ross, of Springfield, Mass.—*Improvement in Cast Iron Car Wheels for Railroads.*—Patent dated March 17, 1857.—The illustration and claim give an idea of the nature of this invention.

The inventor says: I claim nothing in Mr. J. M. Sigourney's mode of constructing his wheel.

But I *claim* my mode of constructing the plate A, viz: by gradually increasing the thickness of the disk as it recedes from the hub and tread of the wheel, in the manner and for the purposes substantially described.

No. 18,752.—A. B. Latta, of Cincinnati, Ohio.—*Improvement in Railroad Car Wheels.*—Patent dated December 1, 1857.—The nature of this improvement consists in constructing the wheel in such a manner as to make the two dished wrought iron plates bind the rim together for giving it additional strength, and is effected, after uniting the parts of the wheel together, by drawing the dished wrought iron plates out at their centre, thus holding them; which drawing outward and holding contracts the dished wrought iron plates at their periphery where they are united to the rim, and, with the tension of the plates thus given, draws all points of the rim toward the centre of the wheel and binds it together, increasing its strength.

Claim.—The wheel constructed, as represented, in its parts, for the purpose of producing a tension stress on the dished wrought iron plates B B, for binding the rims together, by drawing the plates B B apart in the centre and holding them by the ring *g*, as represented, and substantially for purposes specified.

No. 18,767.—Michael Phelan, of the borough of Bridgewater, Beaver county, Pa.—*Improvement in Railroad Car Wheels.*—Patent dated December 1, 1857.—The claim and engravings explain the nature of this invention.

Claim.—The curved projections on the disk of four reversed sines, forming arms, in combination with braces and a series of arches, so arranged on the disk or front plate of four reversed sines, as to give a uniform spring to all parts of the casting in cooling, relieving the wheel from all contingent strain, and giving the greatest possible strength for the weight of iron used; and the application of said curved projections and combination of arches and braces, without a front plate, in casting car wheels, as described.

No. 17,250.—G. W. Alden, of New York, N. Y.—*Improvement in Wrought Iron Plate Railroad Car Wheels.*—Patent dated May 12, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I do not claim the construction of railroad wheels of two wrought iron plates united with a hub, as described, or of two plates otherwise formed and united than as described.

But I *claim* constructing the tread and flange of the wheel, and connecting the same with the hub or centre thereof, by the combination of the two plates A and B, formed substantially as described, and uniting in the flange of the wheel, as specified.

No. 16,724.—James Evans, of Portsmouth, Ohio.—*Improvement in Making Tire for Railway Car Wheels.*—Patent dated March 3, 1857.—The tapering pieces *d* are piled up, as represented, and placed between two rings A A. This pile is then heated in the furnace and afterwards welded together. Figure 1 represents the finished tire.

Claim.—The use of the rings A A, in connexion with the segments *d* of iron, as herein described; the same being cut and piled and prepared for forging in the manner set forth, for making tire for railroad car wheels, locomotives, and other purposes.

No. 17,506.—George Hauck, of Mechanicsburg, Pa.—*Improvement in Carriage-Brakes.*—Patent dated June 9, 1857.—By this arrangement the locking block D is prevented from canting when brought into contact with hub *a*, and is caused to bear squarely upon said hub.

The inventor says: I do not claim the arranging of a lock on the axle of a wagon; neither do I claim locking the wheel by means of a pin attached to a lever arranged in the axle.

Nor do I claim locking the wheel by means of a sliding-clutch; both of said methods being old and objectionable, on account of causing the wheel to be stopped suddenly, without allowing it a chance to slide, and thus causing damage to the lock by the breaking off of the stop pin or teeth of the clutch.

But I *claim* providing the semi-circular locking block D with an extension arm E, and pivoting it to a bracket of the axle some distance from the point of contact with the hub, and arranging it relatively to the lever F and spring G substantially as and for the purpose set forth.

No. 17,376.—Gilbert Hubbard, of Sandersfield, Mass.—*Improved Apparatus for Discharging a Horse and Shafts from a Carriage.*—Patent dated May 26, 1857.—By the pressure of the foot against the tail *f* of the lever-latch *d*, the foot-cam *b* may be unlatched; which, by the

connexions of slide *g*, arm *h*, lever-frame *i*, lever *w*, cam *y*, and slider *n*, causes the bolts *u* to be withdrawn from their bearings *v*, and thus to separate the shafts E from the forward axle. The retraction of the bolt *u* will so move lever d^1 as to cause the bolt c^1 to be drawn back in such a manner as to allow the leg a^1 to drop into the position represented in dotted lines, so as to support the shafts and prevent their cross bar F from dropping down on the hind legs of the horse.

Claim.—The shaft-rests, or legs, in combination with the shafts and bolting apparatus, and operated thereby substantially in the manner and for the purpose of supporting the shafts after their detachment from the carriage as described.

Also, the combination and arrangement of mechanism for attaching the shafts to and detaching them from the axle connexions, as specified; such combination consisting of the bolts *u u*, the sectors *p p*, the turning lever-frame *i*, and the rotary foot-cam *b*, connected and made to operate together substantially as explained.

Also, the combination of the lever *w* and hold-fast cam *y* with the turning pawl *i* and the slider *n* connected with the latter, substantially as specified.

No. 18,421.—John W. Wiler, Stephen B. Sturges, and G. McFall, of Mansfield, Ohio.—*Improved Hose Carriage.*—Patent dated October 13, 1857.—This invention consists in the construction of a hose carriage so that the axle is common to both the reel and the travelling wheels; and whilst the reel is fixed to the axle, the latter will revolve freely in both the frame of the carriage and the travelling wheels.

In the drawings, the wheels are shown at A, the frame at C, the bells at E, the rim of the reel at B, and the hubs at L. The hubs and the axle of the reel are fixed upon the main axle I; whilst the frame is connected with a short journal of the axle by means of the box N, held by screws. By this arrangement, the axle, which is straight, may freely revolve in the wheels and frame, carrying the reel around with it. This revolution of the axle and reel does not interfere with the carriage. Both ends of the axle are square, in order to receive the cranks G, by which the axle and reel are easily turned.

The inventors say: We *claim* making the axle of the travelling wheels capable of revolving with the reel, independently of the frame and wheels, so that cranks may be used on the ends of the common axle, for the purpose of more conveniently and efficiently winding up the hose, substantially as set forth.

No. 17,360.—Sylvester W. Beach, of Chicago, Ill.—*Improvement in Carriage Hubs.*—Patent dated May 26, 1857.—By turning screw-plate *e* to the right, the movable plate *c* is forced upon the stationary plate *d*; and the conical wedge *a*, expanding the elastic ring *b*, forces the spokes of the wheel through the dovetail apertures *g*, tightening the tire and at the same time the spoke in the hub.

The inventor says: I do not claim broadly the application of a conical wedge and elastic ring as new.

But I *claim* the combination of a conical wedge and elastic ring with the dovetail form of the spoke apertures in the hub, as described, and substantially as set forth.

No. 18,893.—Zina Doolittle, of Perry, Geo.—*Improved Machine for Turning the Band Portions of Carriage Hubs.*—Patent dated December 22, 1857.—A represents a socket, nut, or handle, which receives the screw G on the end of B; B is a square strap wrench as represented at D at one end, and the screw G at the other; C is a bar, with a strap E at one end, through which B passes. The other end is secured to the handle by the clasp F. Opposite the strap E, on the bar C, is a projection, upon which the cutter H is secured by the bolt I, thus making the bar C act as a sliding rest.

The inventor says: I do not claim the exclusive use of any of the parts, taken as parts of the machine described and shown, but only in so far as the same is used in combination for the purpose of my invention.

But I *claim* the exclusive use and combination of the strap wrench D, the handle A, and the sliding rest C, with the cutter H; the whole arranged and shown for the purpose set forth.

No. 17,846.—Alexander Rickart, of Schoharie, N. Y.—*Improved Method of Turning Carriage Hubs.*—Patent dated July 21, 1857.—By having the mandrel A connected, by means of gearing in the frame H, with the driving shaft D, motion may be given to both the cutter-head C and stuff I from the same shaft D; and at the same time the carriage E may be moved by the operator towards the cutter-head, and the stuff consequently fed to the cutters, without interfering with the gearing which rotates the stuff.

The inventor says: I do not claim, separately, the rotating cutter-head.

But I *claim* the frame H placed on the driving or power shaft D, and connected with the mandrel G by the arms $m\ m$, the frame H being provided with the gearing, as shown, to connect the shaft D with the mandrel G, which mandrel is placed on the sliding carriage E, when the above parts are used in connexion with the rotating cutter-head C; the whole being arranged substantially as and for the purpose set forth.

No. 18,254.—Chauncey Thomas, of West Newbury, Mass.—*Improved Carriage Prop.*—Patent dated September 22, 1857.—The standard A is provided with a male screw C, which is furnished with a screw cap or tapering nut D, that screws upon it, as shown in the engraving. The tapering screw, nut, or cap, besides forming a finish to the prop, serves to confine the leather to the bow, and also as a shoulder for one of the joint bars G H to rest against.

The inventor says: I *claim* an improved carriage prop, as constructed with a screw shoulder cap D, combined with a joint bar standard A, and arranged between the leather L and the joint bars G H, and so as to screw upon the said standard, substantially in manner as described.

No. 18,451.—Bold R. Hood, of Clinton, N. C.—*Improvement in Carriage Springs.*—Patent dated October 20, 1857.—This invention consists in two auxiliary springs coiled in opposite directions in the path of vertical scrolls around a horizontal central pin or support of the reach, and attached by their outer terminating ends, one to the front and the other to the rear elliptic springs of a carriage.

In the engravings, A A are the axles, B the reach, and C C brace bars; D D are ordinary elliptic springs attached to the front and hind axles; E is the frame which rests upon the springs and supports the body; F F are the central auxiliary springs; they are made preferably of round steel rods, which are coiled vertically so as to form a series of scrolls of gradually increasing size.

The inventor says: I am aware that auxiliary springs have been carried from the centre of the reach to the ends of the carriage body, or connected with the transverse springs; therefore, I do not claim broadly the use of auxiliary springs, irrespective of their peculiar construction and arrangement.

But I *claim* the combination and arrangement of the springs F F with the springs D D, as described, for the purposes set forth.

No. 16,802.—Charles A. McElroy, of Delaware, Ohio.—*Improved Arrangement of Carriage Springs.*—Patent dated March 10, 1857.—The springs $o\ o^1$ are pivoted on the circular head-block b, together with the stirrups $n\ n^1$, which serve to keep the springs in their proper position, there being sufficient space left between the springs and the stirrups to allow the springs to adjust themselves to the positions of the vehicle. Figure 2 represents a top view of the apparatus on a smaller scale.

Claim.—The springs o, pivoted as described, and stirrups n, all arranged and operated in the manner and for the purposes set forth.

No. 16,986.—Rinehart P. March, of Jeffersonville, Pa.—*Improved Arrangement of Carriage Springs.*—Patent dated April 7, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I do not claim the combination of wooden and metallic springs as new, nor do I claim the form of springs as new, as both have been known before.

But I *claim* the arrangement of the combination spring B C, axle A, slotted bar E, and guide pin F, for the purpose of supporting the spring and preventing lateral strain, and for making of equal strength a much cheaper and lighter carriage than usual.

No. 16,919.—John S. Hall, of Pittsburg, Pa.—*Improved Steam Carriage.*—Patent dated March 31, 1857.—The oscillating engines G drive the main shaft M, the pinion P of which meshes into the intermediate gears O, which operate the pinions b of the boxes H^2; said boxes drive the square axle E, to which the carriage wheels F are attached. By operating the hand-wheel j, shaft T is turned, the pinion D of which turns the toothed sector C, (fig. 2,) causing the wheel frames to swivel on their centres Z, and thus changing the direction of the carriage; the pawls k and n are pressed by spiral spring l against the ratchet wheel i, preventing it from returning to its former position. When the carriage is required to run fast, the intermediate gears O are thrown out, and the pulleys N are made fast to the shaft M by means of the clutches S.

Claim.—1st. So combining and arranging the driving machinery and body of the carriage with the wheels and axles as described, so that the latter may be both swiveled, moved, or adjusted in any and all directions, without in the least changing the relation of all parts of or otherwise affecting the said driving machinery, or body of the carriage.

2d. The stationary, universal driving bearings or boxes H^2 H^3, or their equivalents, whereby the axles and wheels may be readily rotated or driven in all their variable relative positions with the driving machinery and body of the carriage.

3d. The double ratchet wheel *i*, in combination with the pawls *k* and *n*, and spiral spring, constructed and operating as set forth.

No. 17,680.—R. S. Jennings, of Waterbury, Conn.—*Improved Carriage Top.*—Patent dated June 30, 1857.—The hood is attached to the front bow A^1 of the carriage, by placing loops F over the buttons *g*, and having the tenons *e* fitted in the staples *h* attached to the front bow A^1 of the carriage. When the hood is not required, it is detached from the front bow A^1, and can be folded together, owing to the hinged joints *c d*.

Claim.—The hood or attachment, constructed of the jointed bow A, provided with the screen or apron C, and provided with loops *f* at its upper part and tenons *e* at its lower part, and applied to the top, as shown and described, for the purpose set forth.

No. 16,925.—R. S. Jennings, of Waterbury, Conn.—*Improvement in Carriage Tops.*—Patent dated March 31, 1857.—When the tenons *f* are fitted in the mortises *g*, and the bars *c* adjusted as represented in figure 2, the carriage top will be permanently secured to the vehicle. To detach the top, the tenons *f* are withdrawn from their recesses, the bars *c* are detached from the centre bow C, and the bows may then be folded as represented in dotted lines in figure 3.

The inventor says: I do not claim having carriage covers to fold up into a smaller compass, or in a manner to reduce their length by falling back.

Neither do I claim having them to fold so as to reduce their height, by means of a joint in the vertical portion of the front bows, as in Scripture's arrangement.

I *claim* the employment of a transverse hinge-joint *b* on each of the bows B C D, at the centre of their top or horizontal portion, in combination with staples *d d* and two pairs of bars *c c c c*, which are pivoted at one end to the front bows, and at the other end are each provided with a slot e^1, and furnished with a hook *e*, substantially as and for the purposes set forth.

No. 16,467.—George Cook and David Cook, of New Haven, Conn.—*Improvement in Calash Carriage Tops.*—Patent dated January 27, 1857. The spaces to receive the wooden bows E are stitched in the cover of the calash top; the ends of said wooden bows are then passed through the stitched spaces in the leather, and the flat shanks D are inserted into the slots *b*; the screws *c* are inserted in holes *d* of the wood, and holes *a* of the shanks D, and fastened; the joints B and C are then connected, and the whole is secured to the carriage body by a screw-bolt passing through the eye A.

Claim.—The combination of the independent joints with the method of inserting the flat part of the shank, or slat iron, into the slot in the bow, and securing it there, so that the leather may be stitched and the bows and shanks afterwards inserted and secured, when the whole is constructed and combined substantially as described.

No. 18,992.—A. C. Shelton & Byron Tuttle, of Plymouth, Conn.—*Improvement in Joints for Carriage Tops.*—Patent dated December 29, 1857.—In this invention the plates *a b c d* form, when combined together, a barrel, and the shoulder *e* of each arm rests upon and extends across the entire length of said barrel. The shoulders *e* are thus made to form a wide base for the arms, so that any injury from a lateral movement of the arms may be prevented.

Claim.—Providing the lower ends of the arms A B C D with circular plates *a b c d* and shoulders *e*, said plates being so arranged as to constitute a barrel over which the shoulders *e* may move, said shoulders giving support to the arms A B C D, all as described.

No. 18,558.—Reuben W. Stone, of Solsville, N. Y.—*Improvement in Joints of Carriage Tops.*—Patent dated November 3, 1857.—A A^1 B B^1 represent two pairs of metal bars curved slightly, as shown in the engraving, or of an approximate form. The bars A^1 B^1 of each pair are somewhat longer than the others, and the two bars of each pair are connected by a rivet *a*, said rivets passing through the bars a short distance from their inner ends. At the inner end of each bar a loop or hook *b* is formed; these loops or hooks are formed at opposite sides of the bars, that is, the loops at the ends of the bars A^1 B^1 are formed at their outer sides, and those of the bars A B at their inner sides, so that when the two bars are distended each loop will receive and support the bar of its fellow loop.

Claim.—The bars A A^1 B B^1 connected by the joints *a*, and provided with loops or hooks *b b*, arranged substantially as and for the purpose set forth.

No. 18,106.—C. W. Saladee, of Columbus, O.—*Improved Mode of Adjusting Carriage Tops.*—Patent dated September 1, 1857.—The nature of this invention will be understood by reference to the claims and engravings.

The inventor says: I do not claim the lateral rod D D when placed on the outside of the seat back, for the purpose of adjusting the top, as new; letters patent having been granted to me for the same, dated September 9, 1856.

But I *claim* extending the top prop A back of the rest iron B a sufficient length to form the lever C in combination with the lateral rod D D, as shown.

I also claim the scroll spring E, in combination with the pivot iron L and the back bow H, (or either of the other three bows,) for the purpose of assisting in raising the top, and likewise to prevent its falling with the full force of its own weight, when in the act of throwing it back, substantially as set forth.

No. 17,520.—James D. Sarven, of Columbia, Tenn.—*Improved Carriage Wheel.*—Patent dated June 9, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I *claim* the improvement in carriage wheels, which consists in the employment of flanged metallic collars H, as described, or other equivalent devices, in combination with a wooden hub G, and these in combination with the arrangement of the spokes at the hub, as described; by which means strength and support are given both to the hub and to the spokes at or near the hub, and by which means I am enabled to use any desired number of spokes in each wheel, thereby preventing indentations being made in the rim of the wheel between the spokes, and by which means I am also enabled to use a much smaller hub than those in general use, and at the same time retain a sufficient degree of strength at the hub; the whole being constructed and arranged substantially as and for the purposes set forth.

Also, the flanged collars, as described, or other equivalent devices, when used in combination with a wooden hub, if the spokes are arranged as set forth, or in any other manner.

No. 18,097.—James W. Jackson and Luther W. Burchinal, of Smithfield, Pa.—*Improved Hub for Carriage Wheels.*—Patent dated September 1, 1857.—When the plates A and B are fitted together on shaft F, the ends of the tenons C pass into corresponding mortises *a* in said plates; and by forcing together the plates A B, by means of screw bolts F, the tenons C will be expanded, and the inserted spokes will be grasped on four sides simultaneously.

The inventors say: We do not claim a hub composed of two plates and corresponding tenons, within which the spokes are to be inserted.

But we *claim* making the mortises of the hub adjustable in two different directions, so that the spokes of the wheel shall be grasped on their four sides simultaneously when the two plates of the hub are forced together by the screw bolts, in the manner substantially as set forth.

No. 18,855.—Cornelius Merry, of New York, N. Y.—*Improvement in Hubs of Carriage Wheels.*—Patent dated December 15, 1857.—In the engravings, H is the hub; in each extremity of the hub is a box B, each with two inferior flanges *a* and *b*. The axle arm A is of small diameter, and has secured to it two small wheels C C^1, which rest in the grooves between the flanges of the boxes B. The axle arm passes eccentrically through two other wheels W W^1, which rest upon and bear against the flanges. The wheel W is hung upon a journal *c*, attached to an end plate P secured to the hub, the axis of this journal being coincident with that of the hub. Wheel W^1 is kept in position by the ring R secured to the inner end of the hub.

By this construction the surfaces in contact are the flanges *a* and wheels W W^1, the boxes moving upon the wheels; the wheels C C^1, resting in the grooves between the flanges *a b*, serve to support the axle arms, and strengthen the system.

Claim —The combination of boxes B, wheels W W^1, securing plates P and R, and wheels C C^1, with the small axle arm A, constructed and operated as described.

No. 18,556.—N. J. Skaggs, of Talladega, Ala.—*Improved Mode of Tightening Tires on Carriage Wheels.*—Patent dated November 3, 1857.—The claim and engravings fully describe this invention.

The inventor says: I do not claim, separately, connecting the ends of the tire together by means of a screw, for this has been previously done.

But I *claim* forming the ends of the tire, with the heads *a a*, recess *e*, and projecting portion *f*, as shown; in connexion with the screw rod E, by which the ends are secured together, and the tire contracted as may be desired, and a continuous or perfect joint or connexion obtained.

No. 16,353.—John W. Crannell, of Olivet, Mich.—*Improvement in Carriages.*—Patent dated January 6, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The mode of constructing the carriage body in two parts, the inner ends chamfered or rounded below; said bodies being attached to two elastic bars J, in combination with the independent seat frame, rounded as at I, and carrying inside two springs F F, or their equivalents, in either a horizontal or vertical position, but whose action is horizontal and against the chamfered and detached ends of the carriage bodies, for the purposes, as described and set forth, of producing a gentle and undulating horizontal movement in the seat, or any other device whose effect may be substantially the same.

Also, the use of the stop plates G G, operated by screws or otherwise, for the purposes, as described, of regulating the elasticity of the springs F F.

No. 17,191.—Sherlock H. Bishop, of Orange, Conn.—*Improved Adjustable Pole for Carriages.*—Patent dated May 5, 1857.—The braces C and D are attached to the pole A by means of joints *g*, and to the arch piece B by means of eye-bolts *e*, which pass through slots *c* of the arch piece.

Claim.—The method described of adjusting the braces by means of the joints, slots, and eye-bolts; when the whole is constructed, arranged, and made to operate substantially as set forth.

No. 16,528.—George Cook and David Cook, of New Haven, Conn.—*Improved Adjustable Seats for Carriages.*—Patent dated February 3, 1857.—The operation of this apparatus will be understood from the claim and engravings.

Claim—Constructing, attaching, and locating the seats, so as to preserve the perfect symmetry of the carriage, whether it be used with one or two seats, without any necessity of securing the movable seat, when the whole is constructed, and arranged, and made to operate substantially as described.

No. 17,638.—Luther Otway Rice, of Castorville, Canada West.—*Improved Central Draught Joint of Carriages.*—Patent dated June 23, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not wish to confine myself to the precise arrangement and construction herein set forth, but would include all modifications which substantially embrace my invention.

I *claim* the central draught joint P, when constructed, arranged, and used substantially as described.

No. 17,805.—Rufus Nutting, of Randolph, Vt.—*Improved Mode of Constructing Carriages.*—Patent dated July 14, 1857.—The nature of this invention will be understood by reference to the claims and engravings.

The inventor says: I am aware that springs have been applied so as to converge from near the extremities of the hind axle to the fifth wheel on the front axle, so as to obviate the necessity of the usual reach, and also that springs of double curvature for producing a compensating effect, are in themselves not new.

But I *claim* the arrangement of compensating springs, substantially as described and specified, with the front axle N and rear axle B; so that while the axles are retained in their proper positions, the action of the compensating spring prevents the spreading of the axles on one side of the vehicle, and thereby tends to preserve the accurate tracking of the hind wheels.

I also claim the combination of the guard with the hinder part of the springs, substantially as set forth, and for the purposes specified.

No. 17,337.—Richard Murdoch, of Baltimore, Md.—*Improvement in Running-Gear of Carriages.*—Patent dated May 19, 1857.—The short axles *a* of the front wheels are attached to the extremities of the cross-bar C by bolts *e* through the brace levers *f*, which are fastened by straps to the axle *a*, as represented in fig. 2. Upon turning the vehicle, the axles *a* can be made to slide, by means of their boxes *b*, on the swivel-bar *c*, when the several parts will assume the positions represented in the engraving.

The inventor says: I disclaim the short axles and the manner of turning them about their attachment.

I also disclaim supporting the extremities during their movement on stationary train ways.

I also disclaim the swivel-bar *c* and boxes *b b*, in combination with the short axles *a a* connected with the extremities of the cross-bar, as described; this having been secured to me by letters patent of the United States, bearing date the 24th day of June, 1856.

I disclaim also all devices in which the fore wheels remain parallel to each other while the vehicle is turning.

I disclaim projecting the brace levers backwards and inwards from the short axles, as that has been done before, and is inferior to my plan, inasmuch as it has a more limited range of motion, and gives less control over the wheels when turning, and greater irregularity in their motion, and increased strain upon the tongue.

But I *claim* giving to the brace levers *f f* a forward and outward projection from the short axles, substantially in the manner and for the purpose specified.

No. 18,403.—Thomas Miller, of Worcester Township, Pa.—*Improved Mode of Fastening Shafts and Poles to Carriages.*—Patent dated October 13, 1857.—In using this invention, it is necessary to have a hinge hook, which is fastened to the axle in the usual way by a clip securely screwed on the hinge hook, being made of different sizes to suit the different vehicles to which it is applied; the shaft or tongue has an eye such as is commonly made. The projection or increased width is made all on one side, which is not, however, essential; the hook has a slit of about half an inch long and one-eighth wide, shown in drawing, at B. The eye also has a slit in it, of the same width and half the length as the hook, and that is put in on the side nearest the shaft or tongue, so that the key A will slip into the slit in the hook or pin when the shaft or tongue is held perpendicular or nearly so; then the shaft or tongue being lowered to the position when in use, the eye covers the projection in the key, and thus keeps it in place very securely.

The inventor *claims* the combination and arrangement of key *a* and the slit B in the hook or pin, to be used in connexion with the other parts, so as to constitute an improvement in, and a new mode of fastening tongues or shafts to, axles in carriages and all kind of vehicles.

No. 17,970.—Edward C. Jones, of Pittsburg, Pa.—*Improved Steering Apparatus of Steam Carriages.*—Patent dated August 11, 1857.—By turning pinion E in the direction of the arrow, the swivel wheel B is turned to the position represented in the engraving; the same turning on pivot *a* at the same time that sector M is moved in the direction of the arrow, and the several parts are thrown into the positions represented in the engraving, whereby the clutch J^1 disconnects the wheel G^1 from the axle H; thus the wheel G only is revolved by the action of the engine, turning the carriage in the direction of arrow *z*.

The inventor says: I am aware that the lever arrangement which communicates the motion from the parts operating the steering wheel to the clutches of the driving wheels may be modified and changed in many different ways, by various mechanical means; I therefore do not confine myself to any particular, or to the special lever arrangements described, to effect said communication of motion or power.

But I *claim*, first, operating the clutches J J^1 of the driving wheels by the same parts by which the steering wheel is operated, in such a manner as to disengage (by operating the said clutches) the one or the other of the driving wheels simultaneously with the turning of the steering wheel to the right or left, substantially as set forth.

Second. I claim the arrangement of the lever M, links P P^1, levers N N^1, with their arms O O^1 connected therewith by a butt hinge joint, and the springs Q Q^1, when constructed, combined, and operating in connexion with the pinion E and the clutches J J^1, substantially as described and for the purpose set forth.

Third. I claim the arrangement of a pivot *a*, in or near the centre of the steering wheel, and passing through its axle, for the purpose set forth.

No. 18,153.—J. George Lefler, of Philadelphia, Pa.—*Improved Wear Iron for Carriages.*—Patent dated September 8, 1857.—The cast iron guards B B^1 permit the wheels D of the front axle F to run sufficiently under the body A to admit of the carriage being turned in a small circle.

The inventor says: Disclaiming a guard broadly, or allowing the wheels to pass partially under the body of the wagon.

Claim.—The peculiar construction of the metallic recess guards B, with the flanges *a a*, bearing against the bottom and sides of the body of a plain carriage or wagon, and arranged with the latter as and for the purposes set forth.

No. 18,781.—Henry G. Vanderwerken, of Greenbush, N. Y.—*Improvement in Propelling Cars and Carriages by Horse-power.*—Patent dated December 1, 1857.—The nature of this invention consists, first, in applying the propelling power uniformly and continuously to the upper side of the axle; thereby giving the greatest amount of leverage, without decreasing the velocity or effect produced. Secondly, in hanging the endless chain platform H in such a manner that when animal power is applied thereon, it forms a self-adjusting inclined plane whichever way the animal turns.

The inventor says: I *claim*, first, so arranging the endless belt platform on a frame, independent of the truck, that the return part or under side of the belt may rest upon and gear into pinions on one or both axles, and thus cause them to rotate in the direction in which the horse is apparently walking, without the use of any intermediate gearing, in the manner substantially as specified.

Second. I claim supporting the endless belt platform on the axles of the truck in such manner, that when the horse is at work, it will assume an inclined position, and when at rest a horizontal one, in the manner and for the purposes set forth.

No. 17,793.—Charles T. Kipp and John Lawrenson, of New York, N. Y.—*Improvement in Applying Fly-Wheel to Hand Cars.*—Patent dated July 14, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The arrangement of levers B and rods C, attached to crank wheel F, for operating the fly-wheel A; the whole constructed and operated as described and for the purpose set forth.

No. 16,762.—John B. Wickersham, of New York, N. Y.—*Improvement in Guide-Wheels for Railroad Cars.*—Patent dated March 3, 1857.

The inventor says: I do not claim guide-wheels, as these have before been used against the inner sides of the track. But I am not aware that said guide-wheels have ever before been used in connexion with a grooved rail, thereby lessening the liability for the car to run off the track, as set forth, when said guide-wheels are each provided with a separate attachment for allowing of their rise and fall independently of each other, to pass any obstructions, as specified.

I *claim* the guide-wheels D D, at the front and rear ends of the car, when combined with the grooved rail and attached to the car in the manner and substantially as and for the purposes specified.

No. 18,884.—Robert McWilliams, of Philadelphia, Pa., assignor to Himself and Adam J. Frederick, of Philadelphia, Pa.—*Improvement in Journal-Boxes for Railroad Cars.*—Patent dated December 15, 1857.—N is a hole in the lugs of the box. When the oil-chamber is in place, a bolt having a rivet head at one end is passed through and secured by a nut and binding nut at the other end. This bolt is all the fastening that the oil chamber requires; and by removing it, said chamber may be withdrawn, and the journal and the whole internal arrangement of the box exposed. By inclining the grooves, the lower section of the box or oil chamber is secure.

Claim.—The combination of the lower or oil chamber of the box, with the inclined tapering grooves in the outsides thereof, on a line above the lower line of the journal, so that the latter may easily and quickly be exposed for filling, at the same time giving easy access to the packing, as set forth.

No. 16,806.—Philip M. Pyfer, of Baltimore, Md.—*Improved Method of Preventing Dust, &c., from Entering the Windows of Railroad Cars.*—Patent dated March 10, 1857.—The upper wings of the fans D are protected by a hood E that runs along the whole length of the car. When the cars are in motion, the fans will be revolved by the action of the air upon the lower wings of the fans. This is intended to create a rapid current of air across the window C, and thereby to prevent cinders and dust from entering the cars.

Claim.—The arrangement of rotary fans D D, or their equivalent, upon the outside of the body of the car, when employed in conjunction with the windows thereof, substantially in the manner and for the purposes set forth.

No. 17,114.—William Pearce and John Lowrie, of Piedmont, Va.—*Improved Mode of Dumping Railroad Cars.*—Patent dated April 21, 1857.—The loaded car D being run on the rails within the rockers *c*, and the wheels of the car being secured to the housing by means of ribs *j*, the rockers *c* together with car D are turned into the position represented in dotted lines, the projections *h* falling into the grooves *x* of the frame. As the catches *l* of the housing come in contact with projections *n*, the doors *w* are opened, and the coal or material contained in car D passes over the side of said car, and, through the housing, down the chute M. The motion of the rockers *c* is checked by means of break-lever *t* and break-wheel *s*, checking the motion of pinion *q*, rack *p*, and pitman *o*, and the car D can be raised to its former position by operating pinion *q*.

Claim.—First. The method of discharging cargo from cars by means of a rocking track, substantially as specified.

Second. We *claim* the mine car, as described, constructed without any openings in its sides, ends, or bottom, for discharging its cargo, and with its ends raised higher than its sides, for the purposes set forth.

Third. The ribs or flanges *j*, in combination with the rocking track, for the purposes and in the manner substantially as specified.

Fourth. We claim the shoes *g*, in combination with the projections *h*, for steadying the rocking track whilst the cars are run on and off, substantially as set forth.

Fifth. The method of braking the rocking car, (as it is capsized to discharge the coal and afterwards raised,) by means of the brake *u* and wheel *s*, the latter being mounted on the shaft of a pinion *q*, operated by means of rack *p* and pitman *o*, or their equivalents, substantially as specified.

Sixth. We claim the arrangement of the cam-stud *u*, in combination with the latch-bar K, by which the doors *w* of the rocking car are released when it is brought into proper position to discharge its cargo into the chute, as set forth.

No. 17,953.—Daniel H. Feger, of New York, N. Y., assignor to Himself and Daniel Shepherd, of the same place.—*Improved Pedestal for Railway Cars and Locomotives.*—Patent dated August 4, 1857.—By detaching the jaw B from the brace G, and lifting it back on the hinge-bolt C, the axle-tree and wheels with the journal-box can be rolled out and removed, provided the weight of the truck be ever so little taken from the journals.

Claim.—The employment of a loose or movable jaw to the pedestal, constructed and operating substantially as described and for the purposes set forth.

No. 16,520.—Edward H. Anderson, of Milford, Del.—*Safety Coupling for Railroad Cars.*—Patent dated February 3, 1857.—To uncouple the cars, the pin *g* is removed, and the bolt *b* is pushed forward by working the lever *m*; then the bolt *c* will also move forward by the outward tension of the springs connected with said bolt by the arms *d d*, and the cars are uncoupled. This arrangement also permits the cars to uncouple automatically in case of an accident. If one of the cars runs off the track, it assumes an oblique position towards the other, and thus the bolt *b* is jerked out of the socket of bolt *c*, and the cars are uncoupled in the manner as above described; the obliquity of the bearing parts being adapted to keep them in place for any contemplated motion on the track.

The inventor says: I do not claim spring catches for couplings.

Nor do I claim the principle of self-separation when the cars get off the track.

But I *claim* the special mode set forth of effecting the self-coupling and self-uncoupling by the combined action of the following parts, to wit: catches *a a*, bolt *b* with its rounded end, bolt *c* with its concave end, jointed arms *d d*, and spring catches or jaws *e e*, all constructed and operating as set forth.

No. 18,950.—John C. Blair, of Pittsburg, Pa.—*Improvement in Springs for Railroad Cars.*—Patent dated December 29, 1857.—The nature of this invention consists in forming a car or carriage spring of a pile of steel plates or leaves *a a*, when each plate is so bent as to form a series of reversed semi-ellipses, and the plates so piled one upon the other that the highest parts of one plate shall be in contact with the lowest parts of its fellow or next adjacent plate, and *vice versa;* each leaf or plate forming several points of contact for the plate overlying it, and thus disseminating through the pile both the lateral and vertical pressure upon the spring.

Claim.—A spring composed of a series of leaves or plates so bent or curved, that, when piled one upon another, the highest and lowest points of one leaf shall be in contact with the highest and lowest points, respectively, of the next adjacent leaf or plate, and so on throughout the series, substantially as described.

No. 16,884.—Theophilus E. Sickels, of Kennett Square, Pa.—*Improvement in Steam Brakes for Railroad Cars.*—Patent dated March 24, 1857.—The operation of this invention is thus described by the inventor. When the cars are detached from the engine, the weight W, suspended by the chain E, draws the brakes against the wheels with a force sufficient to cause the wheels to slide, instead of rotating, if motion is communicated to the car. Should it be desirable to suspend the action of this weight, it may be done by winding the brake-wheel until the weight W is so far elevated as to cause all pressure by the brakes against the car wheels to be removed. When a train is all connected together and to the locomotive in the ordinary manner, the first operation is to connect the pipes P between each car, and also a pipe leading to the steam chamber of the locomotive. Next, the hand-brake wheels are unwound, so that the weights W may cause pressure of the brakes against the wheels of the cars. When the train is ready to start, the engineer admits steam into the pipes, and thereby to the under sides of pistons T T. These being forced upward by a pressure considerably greater than that of the weights, acting in a contrary direction, they are raised; whereby the brakes are removed from the wheels of the cars, and the train is free to start.

The inventor says: I am aware that steam brakes have been used which are brought into use by the action of steam in forcing them against the car wheels, and also that brakes have been used which were forced against the car wheels by the action of a spring; but the use of a spring, or mechanical equivalent, bringing the brakes into operation, in combination with the use of steam or other gases for arresting the operation of the brakes, is new and original with me.

I do not claim the use of steam for holding the brakes to the wheels of railroad cars, as this has been done.

But I *claim* the so combining the use of steam, or its equivalent, with the brakes of railroad cars, as that the steam shall hold the brakes from the wheels, and its partial use or disuse admit a weight or spring to apply said brakes, in a manner substantially as described.

No. 17,982.—**Albert Potts**, of Philadelphia, Pa.—*Improvement in Safety Tops for Railway Cars*.—Patent dated August 11, 1857.—The top C of the car rests with suitable flanches within the groove M of the rail A B, which is fitted to and rests upon the rail E F of the car, both these rails running in a longitudinal direction on the top of the car; the joints at the front and rear are represented in figure 2, at A G and B K; when the car is inclined, or thrown over laterally, the pendulum P will swing clear of the arc R, releasing the top C, and permitting it to fall off when the car falls on either side or end.

Claim.—First. The mode or manner of constructing railway passenger cars with the tops and bodies disconnected for the special purpose specified.

Second. The metallic plates or grooved and bevelled rails, as above described, for uniting the tops with the body of the car, as specified.

Thirdly. The combination of the pendulums, as fully described in figures 3 and 9, for the purpose of holding the tops to the bodies of the cars, substantially as specified.

No. 17,801.—**Henry D. Mears** and **William Houlton, Jr.**, of Baltimore, Md.—*Seal for Railroad Freight Cars, &c.*—Patent dated July 14, 1857.—The disk B is passed through the staples a, and the strip a is then doubled so as to bring the hole b^1 over the rivet c^1; the disks are then brought together and the rivet is clinched, and an impression is then stamped on the disks by means of dies.

Claim.—The device for sealing described, the same consisting of soft metallic disks connected by a strip or wire of harder metal, as described; the whole constructed and operated substantially in the manner set forth, and applied to the purposes specified.

No. 17,802.—**Henry D. Mears** and **William Houlton, Jr.**, of Baltimore, Md.—*Seal for Railroad Freight Cars, &c.*—Patent dated July 14, 1857.—The wire B is passed through the staples attached to the door and door frame; the ends of the wire are then bent and passed into holes or slots in the soft metal disk A, which is then struck with a proper die, confining the wires firmly within the disk A.

Claim.—The seal described, the same consisting of a disk of soft metal having one or more holes or slots through it for the reception of the ends of a wire or metallic strip, which are confined by the compression of the disk; all constructed and operated substantially in the manner described, and applied to the purposes specified.

No. 18,400.—**F. W. A. Krause**, of Baltimore, Md.—*Implement for Sealing Railroad Cars, &c.*—Patent dated October 13, 1857.—By this improvement a portable hand implement is furnished for impressing a suitable device upon metallic blanks, and compressing the same upon wire cord passed through said blanks in such a manner that the removal of the wire cannot be effected without disfigurement of the seal, thus furnishing a ready mode of sealing railroad cars, &c.

In the drawing, A is the upper handle of the implement, having its end so formed that it presents a flat face b. The lower handle B is provided with two uprights c c, rising at right angles thereto; these [illegible] through the uprights, and also through the end of the handle A, thus connecting them. Through the cross-piece d a cylindrical hole is [illegible] of the wire cord and [illegible] attached to the lower handle, [illegible] a hole in the [illegible] of the cylinder forming the upper die; the spring is guided by the [illegible] opening in the cross-piece d.

The inventor says: I claim the employment of the dies f g, when provided with holes [illegible] therein for the protection of the wire cord, and when said dies form a portion of the press for the purpose of impressing devices upon and compressing the metal of the seal upon wire, substantially in the manner and for the purposes set forth.

No. 18,984.—**James A. Norris**, of Philadelphia, Pa.—*Improvement in Journal Boxes for Railroad Cars.*—Patent dated December 29, 1857.—The claim and engravings explain the nature of this invention.

Claim.—The combination of an ordinary gland and stuffing box with the journal box of a railroad car, whereby the oil is retained, and the admission of the dust rendered impossible; the whole constructed and arranged as and for the purpose specified.

No. 17,456.—**J. S. Brown**, of Washington, D. C.—*Improved Dirt-Loading Cart.*—Patent dated June 9, 1857.—As the machine is drawn along on the wheels B, the scraper E cuts a slice from the ground; and the elevators C, being revolved by bevel wheels G H I, take the earth from the scraper, elevate it, and discharge it into the receptacle [illegible]. When it is desired to move the machine from one locality to another, the crank O is turned, causing cranks M to turn with shaft L, whereby the bars Q and hangers S are raised, the bars Q being retained in a horizontal position by the secondary cranks l. The scraper E can be retained in its elevated position by bringing the stops [illegible] up against the cranks l, when said cranks are in their highest positions.

The inventor says: I do not claim a revolving elevator nor a scraper alone.

But I *claim* the combination of a revolving elevator and a scraper, substantially in the manner specified.

I also claim the employment of the cranks M M on the axle, for the purpose of raising and lowering the elevator and scraper by simply turning the axle half a revolution.

I also claim the use of the winch [illegible] attached to the projecting end of the axle, for the purpose of giving the proper movement to the said axle, in the manner described.

I also claim the arrangement of the lifting bars Q Q, cranks M M l l, hangers S S, and brace bars [illegible], substantially in the manner and for the purpose set forth.

I also claim the stops *m m* on the frame A, arranged in combination with the crank *l l*, substantially in the manner and for the purposes specified.

No. 18,519.—John S. Robinson, Levi Herendeen, and George Sheldon, of Canandaigua, N. Y.—*Improvement in Railroad Chair.*—Patent dated October 27, 1857.—This improvement is on that kind of chair usually called "a key chair," in which a wooden pin or key is driven in by the side of the rails, to tighten them in their places and deaden the sound, &c. The improvement consists in placing the spike holes nearly or directly under the key when it is in its place; so that when the spikes and key are both in their places, the heads of the spikes will be in contact with the key, which prevents them from jarring out, and they, in their turn, prevent the key from jarring out.

The inventors say: We do not claim as our invention the application of a key to a chair to deaden the sound, &c.

Nor do we claim placing the spike holes so that the spikes will catch in the notches in the rails.

But we *claim* the placing of the spike holes nearly or directly under the key, so that the spike heads can come in contact with it, and the spikes themselves pass through the notches in the rails, if desired; and thus causing the key to hold the spikes from working up; and also, in the manner described, causing the spikes to prevent the key from working out.

No. 17,773.—Robert Archer, of Richmond, Va.—*Improved Machine for Making Railroad Chairs.*—Patent dated July 14, 1857.—As the spur wheels C are rotated back and forth, the cutters A cut the lips of the chair, which rests upon the bed H; and when this operation is performed, the swages B accurately bend down the lips upon the mandrel. The levers D serve the purpose of centralizing and adjusting the chair plate when placed on the mandrel resting on the support H.

Claim.—The use of the swages B, constructed and operating in the manner specified, and operating in connexion with the adjusting levers D, whereby uniformity in length of the lips is secured, without reference to the length of the plate.

No. 16,813.—Zalmon B. Wakeman, of Beloit, Wis.—*Improved Mode of Supporting the Tongues of Coaches.*—Patent dated March 10, 1857.—The rods F F are attached to the perch A at G, and slide through the braces J J. The spiral springs E surround the rods, abutting against the braces at one end, and against set nuts H at the other end; by adjusting the nuts upon the screw-threaded portion of the rods, the springs will be more or less compressed, and thus hold up the perch with more or less force. The springs and rods also serve to steady the perch in a lateral direction.

Claim.—I desire the use of the brace or braces, or their equivalent, attached to the reach (or perch) of a wagon or other carriage, in combination with a spiral spring, or spiral springs, applied to the tongue of a wagon or other carriages, and pressing against the reach; for the purpose of giving direction and steadiness to the tongue, by checking its motion sidewise, keeping it in a straight line with the reach, (or perch,) while it supports it, and also preserving the set of axle in its true position, as set forth in the specification.

But I do not claim a patent for raising or sustaining the tongue in itself, as this has been done before in various ways; but I claim the arrangement and combination of parts, as set forth, for the purpose of giving direction and steadiness to the tongue while it supports it; nor do I claim said parts, or any other arrangement or combination of parts not used or described in this specification.

No. 16,408.—Augustus Stoner, of Mount Joy, Pa.—*Improved Mode of Tightening Fellies in Wheels.*—Patent dated January 13, 1857.—Two chucks A are inserted into the shrunken felly, and forced apart by means of a pair of wedges E; the chucks A resting on the tire F of the wheel. The centre wedge D is then driven in, the side wedges E are withdrawn, and their spaces filled with molten metal; after which the centre wedge D is withdrawn, and its space filled with metal.

Claim.—The construction and operation of the metallic cheeks A, when constructed as described. Also, the manner of securing them in their place, when applied to the fellies of wheels, by the use of melted metal of any kind filling the grooves *b b* to keep them secure in their place, substantially in the manner and for the purpose set forth.

No. 18,998.—Elisha Waters, of Troy, N. Y.—*Improvement in Head-Rests.*—Patent dated December 29, 1857.—A represents a strap of sufficient length to pass around an ordinary car seat back B, and furnished with a buckle C and loop *d*, if so desired, to unite it thereto. A socket *a* is formed on the strap by doubling the material of which it is composed at the desired point, or by sewing or otherwise affixing thereto any proper material. Into this socket or long loop *a* the end *c* of the bar D is inserted and supported, and may be lowered or raised to give the head support the proper height. To the bar D is hinged at *e* a second bar E, the upper end of which fits into a socket, formed in the head supporter F. A loop *i* is placed in the bar E, so that when the two bars are straightened out, said loop may slip over the projection *n* of the lower bar, and thus hold the two bars in their straightened out position.

Claim.—The within described folding portable head-rest for car and other seats, when made adjustable in, on, or by a strap buckled or otherwise fastened to the back of the seat, as set forth.

No. 17,206.—Joseph T. Curtis, of New York, N. Y.—*Omnibus Coffer.*—Patent dated May 5, 1857.—When the coffer G is raised to a level, as represented in fig. 3, or in dotted lines in fig. 1, the driver, by operating this apparatus slightly, raises handle J, so as to disengage the spur L, and, pushing back the rod I, causes the coffer G to descend into the body of the vehicle; whence, after receiving its fare, it is withdrawn by a reverse motion of the rod I, and restored to its original position, in which it is secured by spur L, and thus brought within ready reach of the driver's hand, through hole C.

Claim.—The application and employment of a movable transmitting coffer, substantially such as described, in combination with omnibuses and other vehicles, when used in the manner substantially and for the uses mentioned.

No. 18,615.—Jesse Urmy, of Wilmington, Del.—*Improvement in Revolving Snow Excavators for Railroads.*—Patent dated November 10, 1857.—The claim and engravings show the nature of this invention.

Claim.—1st. The obliquely set side paddle-wheels C C, whose axis lies in a plane vertical to and at right angles with the track, and diverges downward from a point over the centre of the track, and whose arms, radiating in a plane at right angles with said axis, have upon their extremities edged or toothed paddles *e e*, so arranged as that each one shall, when at the lowest point of the plane in which it revolves, be in a horizontal plane and oblique to the rail of the track, substantially as and for the purposes set forth.

2d. The central paddle-wheel E, revolving in a vertical plane at right angles with the track, in combination with the obliquely set side paddle-wheels C C; the whole arranged substantially as and for the purpose described.

No. 17,751.—Edwin F. Shoenberger, of Germantown, Pa.—*Shaft Coupling.*—Patent dated July 7, 1857.—When the shaft B is to be attached to the carriage, the levers D are lowered until the groove L of roller E is set opposite to the opening N of the eye F, and the bolt C of the shaft iron B is dropped into the groove L; the levers D are then buckled to the shaft B, to hold the India rubber springs J, for the purpose of preventing rattling.

Claim.—The combination and arrangement of the levers D D with their half roller E, box *m*, clip G, and slot H, substantially as described, for the purpose of being applied to shaft couplings for safety and to prevent rattling.

No. 16,577.—J. M. Batchelor, of Foxcroft, Me.—*Improved Mode of Attaching Thills to Sleighs.*—Patent dated February 10, 1857.—The object of this improvement is to adjust the thills of a sleigh at any point to suit the circumstances of the track.

The inventor says: I am aware that thills have been previously attached to sleighs in such a manner that the thills may be adjusted or moved to either side of the sleigh; but the modes previously adopted have been complicated, and the thills could not be adjusted without considerable difficulty. My improvement is extremely simple, may be applied to sleighs at a small cost, and the thills may be adjusted with the greatest facility.

I *claim* attaching the thills G to the bar E, which bar is fitted within a grooved bar D attached to the sleigh, the bar E being allowed to slide within the grooved bar D, and secured at the desired points by the spring catch H, substantially as described, for the purpose set forth.

No. 17,232.—Lewis B. Randall, of Penn Yan, N. Y.—*Improvement in Sleighs and Cutters.*—Patent dated May 5, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The parts designated by the letters A, B, C, D, E, F, G, H, I, L, and *o*, combined as and for the purposes set forth.

No. 18,882.—Newcomb Demary, Jr., of Attica, N. Y., assignor to James Yates, of Philadelphia, Pa.—*Improvement in Snow Ploughs.*—Patent dated December 15, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I *claim*, 1st. The combination of the mouldboard and the inclined plane elevator, open at the sides, and so arranged as to elevate the snow from the track, about to the level of the top of the surrounding snow, before it is pressed laterally by the mould-boards.

2d. The side cutters E E, arranged so as not to project in front of the elevator, or to obstruct the lateral escape of snow at the side of the elevator, in the manner and for the purpose substantially as above described.

No. 18,903.—Andrew Hotchkiss, of Sharon Valley, Conn.—*Improvement in Railroad Snow Plough.*—Patent dated December 22, 1857.—The claim and engravings will explain the nature of this invention.

Claim.—1st. The employment of a plunger, composed substantially of a frame D and share E, which is moved back out of the way when the machine is driven into the snow to receive a load, but which may be pushed forward to force out the snow when unloading; the whole consisting of a snow plough and excavator capable of being directly loaded and unloaded by the force of the locomotive.

2d. The combination of the cutting frame H with the frame B, as described; so that after the machine has been run into the drift and filled, the cutting frame H may be swung over in front and made to cut down through the snow, thus completely detaching that portion contained in the machine from the main body of the drift.

No. 17,314.—Ze Butt, of Lincolnton, N. C.—*Improved Hand Truck.*—Patent dated May 19, 1857.—This truck can be loaded in the same manner as a common wheelbarrow; or if the articles are loose, such as grain or sand, the truck is placed in position as represented in the engraving, and the scoop D is thrust under the article to be loaded. To unload this truck, the notch *t* is removed from its connexion with the cross-piece *h*, and the body can be tilted, as represented in dotted lines.

Claim.—The manner described of constructing, arranging, combining and operating the dumping truck, or any other manner or method essentially the same.

No. 18,865.—C. W. Saladee, of Columbus, Ohio.—*Improvement in Bracing Springs for Vehicles.*—Patent dated December 15, 1857.—

The rear ends of the springs *a a* are permanently combined with the hind axle, and the forward ends of said spring are combined to the bolster *c* over the front axle by means of eyes formed at said ends, which embrace journals at each end of the bolster. This method of securing the said springs to the bolster is to enable the shafts to be permanently secured to the forward axle, and prevent its turning movements from exerting any influence upon the springs.

Claim.—The combination of the central portions of the side springs *a a* with the hind axle by means of the diagonal tension rods *b b*, in the manner and for the purpose set forth.

No. 17,358.—Charles Atkinson, of Danville, Ill., and Gilbert S. Manning, of Springfield, Ill.—*Improved Construction of Vehicles.*—Patent dated May 26, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventors say: We *claim* the construction of the vehicle shown, viz: the two pairs of springs F F D D attached to the ends of the front and back axles A B; the springs D of the back axle being attached directly to the bed E, and the springs F of the front axle A attached to the bed E by the ball and socket joint; the inner ends of said spring F being attached to a plate G, provided with a friction roller C, which rests or bears upon a segment guide H.

We do not claim separately, or in itself considered, either of the parts above named, but only the several parts when considered as a whole, and arranged as described.

No. 17,918.—S. T. J. Coleman and J. W. Sibbet, of Cincinnati, Ohio.—*Improved Coupling of Thills to Vehicles.*—Patent dated August 4, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Securing or adjusting the heads A in the loops or hooks B by means of the boxes C and bars D provided with the screws E, substantially as and for the purpose set forth.

No. 18,426.—W. D. Mayfield, of Bloomington, Ill., assignor to S. D. Porter, of Clarksville, Tenn., and W. D. Mayfield, of said Bloomington.—*Improved Mode of Detaching Horses from Vehicles.*—Patent dated October 13, 1857.—In the drawing, A is the whiffletree, having the piece *a*, with double inclined planes *b* suspended between jaws *c*, attached to the rear of the whiffletree; *d d* are the pins over which the trace loops pass; plates *e e*, attached to rods *f f*, held by eyes *g g*, pass over these pins; and when the trace is attached, the plate is against the end of the whiffletree, as shown in the drawing. These rods *f* abut against the flanges *b b*, and move outward when the piece *a* is lifted by the cord *h*. This moving outward of the rods *f* throws plates *e e* from the ends of the whiffletree, and causes them to throw the trace clear of pins *d* when the horse is detached.

The inventor says: I *claim* the swinging piece *a*, with flanges *b*, as described; in combination with the plates *d d* and rods *f f*, operating together as and for the purposes set forth.

No. 16,625.—Darius Babcock, assignor to Thomas Harrop and Darius Babcock, of Homer, N. Y.—*Improved Arrangement of Springs for Vehicles.*—Patent dated February 10, 1857.

Claim.—The combination of the C-springs B B and sinuous spring D, connected by rigid bars E to the body of the vehicle, substantially as shown and described.

No. 18,077.—Philipe Baillau, of New York, N. Y.—*Improvement in Thills for Two-wheeled Vehicles.*—Patent dated September 1, 1857.—The object of this invention is to prevent the constant jolting caused by the motion of the horse being felt by the occupant of a two-wheeled carriage.

Claim.—The flat spring *a*, or its equivalent, at the back end of the thills *b*, arranged and operating in the manner and for the purpose substantially as described.

No. 18,386.—Melvin C. Chamberlin, of Johnsonsburg, N. Y.—*Improved Wagon-Brake.*—Patent dated October 13, 1857.—In this improvement, when the brake wheel A comes in contact with the wheel of the vehicle in its forward motion, the ratchet on the ratchet wheel B will prevent its moving, and it becomes a stationary brake block; but when the motion of the wheel of the vehicle takes a backward motion, the pressure on the wheel A is removed, and not being obstructed by the ratchet, it turns around freely with the wheel of the vehicle, and thus offers no resistance to its backing.

The inventor *claims* the arrangement of circular, revolving, or stationary brake wheel A with ratchet wheel B and ratchet C; the ratchet so operating the ratchet wheel, when in use, that the wheel A will change its position every time the brake arms, being acted upon by the pressure of the wagon on the horses, are reversed; wheel A being a stationary brake block when the wagon is going down hill, but revolving with the wheel when the wagon is backed.

No. 17,493.—M. C. Chamberlin, of Johnsonsburg, N. Y.—*Improved Self-acting Wagon-Brake.*—Patent dated June 9, 1857.—In going down hill, the vehicle presses against the horse; this brings the weight of the vehicle on the neck-yoke P, consequently operating chain N, which runs over pulley M, rod L, chain K, rod I, and levers H, which, being pivoted in the bearer E, press against the ends of the brake bars G, which are thus moved together with slotted arms O up to the wheels A, thus arresting the motion of said wheels.

Claim.—The arrangement of brake bars G, slotted arms O, and levers H, when used for self-acting brakes for vehicles; all operating in the manner and for the purposes set forth.

No. 17,369.—W. D. Guseman, of Morgantown, Va.—*Improvement in Wagon-Couplings.*—Patent dated May 26, 1857.—The distance between the axles A and B can be increased or diminished by adjusting the piece G and the reach C, and the leverage in regard to pivot O will be increased or diminished, causing the hind wheels to follow the track of the fore wheels in a true manner.

Claim.—Coupling the hind and fore wheels of a wagon by means of an adjustable reach C and a correspondingly adjustable piece G on the front hounds, to which the rear hounds are pivoted; the whole being combined and operating together substantially in the manner set forth.

No. 18,438.—Mathias Y. Cope and Thomas J. Cope, of Centrebridge, Pa.—*Improved Dumping Wagon.*—Patent dated October 20, 1857.—The nature of this invention consists in dividing the body of the wagon transversely at or near the centre of its length, and hinging the sections so that they shall be capable of being tilted independently of each other. A sliding locking bar J and hinged catches *a a* being provided to hold the sections in place and together at the line of division, and the framing and bracing being so constructed and arranged as to admit of the body being divided as stated, and still support it perfectly.

The inventors say: We do not claim dumping at the centre of the body by dividing the body longitudinally, or furnishing it with a falling hinged bottom; as such arrangements are common, and not useful in common road wagons or carts which require to be used for hauling various objects or materials which necessarily must be dumped from the end of the body.

But we *claim* the arrangement consisting of the hinged divided body G G^1, framing D D E, bracing K L M, sliding locking bar J, and catches *a a*, or their equivalents, substantially as and for the purposes set forth.

No. 18,431.—John L. Blinn, of Austin, Texas.—*Improved Mode of Constructing the Tires of Wagon Wheels.*—Patent dated October 20, 1857.—To tighten the tires by this invention, all that is necessary is to loosen the screw C, take out one or more, as the case may require, of the slips E, replace the screw, and draw together the space occupied by the slip or slips removed; the result is a pressure of the spokes, pressing all together firmly in the hub, and tightening the wheel and tire at the same time.

The inventor says: I do not claim drawing the ends of the tire together by a screw, so as to reduce its circumference and tighten up the fellies.

But I *claim* the removable slips or plates constructed, arranged, and held in place substantially as described and shown, for the purpose of producing a complete unbroken tire, as it were, and at the same time affording facilities for decreasing the circumference of the same, and thus tightening up the fellies without the labor of upsetting, substantially as set forth.

No. 17,700.—Hugh Slater, of Auburn, N. Y.—*Improved Brake for Wagons.*—Patent dated June 30, 1857.—The brakes G are applied to the wheels of the wagon by the animals holding back upon the tongue or pole *a*.

Claim.—The peculiar arrangement and combination of devices by means of the tongue or pole *a a*, the hinge *b b*, the V-shaped connexion *c c c c*, the brake rod or bar D D, and the connexions with the brake arms, substantially as described.

Also, the combination of the pole or tongue *a'a* and stop-bar *o o* with the sliding bar D D, or its equivalent, whereby the stop is raised when the carriage is backed, and lowered when it is moved forward, substantially as described.

No. 16,523.—Jacob Boyers, of Grandville, Va.—*Improvement in Couplings for Wagons.*—Patent dated February 3, 1857.

Claim.—In combination with the ordinary coupling pole C of a wagon, the rod, bar, or pole H, connected to the front axle, and passing through the bow or hounds G, and through the rear axle, for the purpose of causing the rear wheels to track after the front ones, and so that the two axles can be coupled shorter or longer, without in any way affecting the proper tracking of the wheels, as set forth.

No. 16,648.—Edgar Huson, of Ithaca, N. Y.—*Improved Gearing for Wagons.*—Patent dated February 17, 1857.—The engraving represents the front wheels of the wagon only.

Claim.—So making the frame described as to leave the forward extremities *a a* of said frame open so as to receive the pole or thills *g* between and back of the forward ends of the side springs—thus bringing the animal nearer the wagon, and thereby making the draught easier, and requiring less room in which to turn.

No. 18,242.—Philander Gilbert, of Alexandria, Ohio.—*Improved Apparatus for Loading Logs on Wagons.*—Patent dated September 22, 1857.—This apparatus is placed upon the carriage of a wagon of common construction which has "bolsters" and vertical "stakes." In operating it, a rope or chain is attached to the windlass W, which in operation is passed over the upper side and round the log on the opposite side of the wagon, and hooked into a ring L, the weight of the log keeping the windlass in position. But when the log is taken from the other side of the carriage, the bars C are drawn out and reinserted in the mortises from the opposite direction. Two skids may be placed to form an inclined plane to clear the wheels. After the log is raised and placed in the concaves, the rope can be hooked in the opposite hook and tightened by the windlass to secure the log upon the wagon.

The inventor says: I do not claim any of the parts, separately considered; but I *claim* the peculiar construction and arrangement of the portable frame herein described, when combined with a windlass and its appurtenances, capable of being shifted to either side of a wagon, in the manner and for the purpose specified.

No. 18,448.—Chauncey H. Guard, of Brownsville, N. Y.—*Improved Wheelwright Machine.*—Patent dated October 20, 1857.—The apparatus, mounted on the plate J, by a slight change of position, and by shifting the operating tools, can perfectly perform the following functions, viz: bore and mortise a hub; bore the necessary number of holes in a felly, and form tenons on the ends of the spokes after they have been driven into the hub, whilst it is supported by the holders *s s*. The said apparatus is composed of the chisel and auger-holder *j*, which works in the open-mouthed box *m*, and is so combined with the lever *e* and with the toothed crank wheel *h* that longitudinal reciprocating movements may be separately or simultaneously imparted to said holder. The construction of the apparatus which enables these movements to be accomplished is as follows: A metallic sleeve *y* embraces the central portion of the chisel and auger-holder, and from the said sleeve an inclined arm *l* rises, which terminates in a horizontal journal that receives the toothed wheel *h*, and supports it immediately above the pinion *i*, at the outer end of the chisel and auger-holder.

The inventor says: I *claim* the arrangement of the respective movements thereof with each other and with the frame of the machine, in such a manner that the several parts of the wheel may first be separately operated upon, and then be combined with each other, as set forth.

No. 17,509.—E. N. Kilpatrick, of Byhalia, Miss.—*Improved Wheelwrights' Machine.*—Patent dated June 9, 1857.—The mortise holes are bored into hub M by means of auger O; and after each operation of said auger, the spring *p* is raised to withdraw pin *o* from plate H, and the plate H is turned until pin *o* drops into the next following hole *y* on disk H, when the next mortise hole can be bored into hub M. The length of the spokes can be marked by placing them on the adjustable table E against post *h*, the table E being provided with a proper gauge. The tenons on the spokes are cut by means of a hollow auger Q, which can be secured to auger shaft N.

Claim.—The combined arrangement of the spoke-marking apparatus, cutter frames, gauge rod, and hub-holders, in such relation to each other as to enable the tenons of the spokes to be marked and formed with entire uniformity and unerring accuracy, substantially as specified.

No. 18,138.—James M. Dick, of Buffalo, N. Y.—*Improved Mode of Tightening Tires of Carriage Wheels.*—Patent dated September 8, 1857.—By turning screw-nut G, the wedge E is forced down between the pieces D, expanding the fellies C, and tightening the tire.

Claim.—The combination of the wedge E and bolt F, or their eqivalents, with the fellies and tire, substantially as set forth.

No. 17,532.—John H. Williams, of Pleasant Hill, Ohio.—*Improved Machine for Setting Tires on Wheels.*—Patent dated June 9, 1857.—The wheel W on which the tire is to be set is placed against the arms E, they being then in a vertical position, as represented in dotted lines in the engravings, and the wheel is fastened to the frame by means of screw lever *l*. The spring rack Q is now pressed to the rear, and the arms P are disengaged from the teeth of said rack; and by pressing down levers P, the ends of levers N are raised, and with them trough N, and the water in said trough comes in contact with the fellies of the wheel. By turning the wheel on shaft C, the fellies are passed through the water, and the wheel is then turned into a horizontal position by turning shaft B on its bearings *a*, in which position the tire can be put on the wheel.

Claim.—Hanging the frame to which the wheel is secured to a revolving shaft, so that the wheel may be turned up into a horizontal position for the facility of working at it, and then into a vertical position, to bring the perimeter of the wheel into the water trough, substantially in the manner and for the purpose as described.

No. 17,668.—Anthony Cooley, of Paw Paw, Michigan.—*Improved Whiffletree Hook.*—Patent dated June 30, 1857.—To open the hook B, in order to introduce the tug, the snap G has to be forced into position represented in figure 2.

Claim.—Providing the outer extremity of the hook socket A with an open slot C and spring seat D, and fitting the feather spring F and the shank of the snap G in the same, substantially as and for the purposes set forth.

2d. Furnishing internally each of the cheek pieces of the open slot C of the hook socket A with a scroll slot H, and the snap G with two short journals I, and fitting these journals in said slots, and holding them in place by means of the feather spring F, substantially as and the purpose set forth.

No. 17,752.—David A. Smith, of Washington, D. C.—*Improved Whiffletrees.*—Patent dated July 7, 1857.—By inserting the traces in the slots E, and by then turning lever C to the left, the ends of the rods B and B^1 pass through the eyes of the traces and secure them to the whiffletree.

Claim.—The lever G attached to a movable fulcrum on plate *o* and sliding in slotted plate F, for operating the spring bars B and B^1 alternately, as described and for the purpose set forth.

XI.—HYDRAULICS AND PNEUMATICS.

No. 16,645.—Isaiah J. Hendryx, of New York, N. Y.—*Improved Method of Generating Air-Blast.*—Patent dated February 17, 1857.—Figure 2 represents the elevated end of the cylinder with the valves *v v* and the chambers F F^1, the upper two F F being filled with air, and the lower two F^1 F^1 being filled with water, K K being the water level; figure 3 represents the lower or immersed end of the cylinder.

The inventor says: I *claim*, first, the cylinder constructed with a hollow shaft A, and divided into compartments B B B B, either on a line with the shaft or spirally around it, said cylinder being partly immersed in water or other liquor, and revolving at an angle as described.

Second. The cylinder with or without a hollow shaft, and extending the air chamber F above and around the cylinder, said chamber passing far enough below the water line to prevent the escape of the air; the air being supplied to the cylinder through the hollow shaft, or by pipes passing along it to the outside of the chamber, said pipes having valves opening inwards or immersing, as described.

Third. The cylinder revolving at an angle without being immersed with the liquor inside said cylinder, as described.

Fourth. The application and use of the cylinder, its case, and contents, as herein described, for the purpose of passing air through hydrocarbons and their vapors, or mixing air with other gases, for heating or illuminating, or any other purpose requiring a steady blast. I do not limit myself to the form of a cylinder, but claim any other shaped vessel, constructed of metal or other material and operated as herein described, which will produce the intended effect.

No. 17,664.—JOHN BRAUGH, of Aurora, Illinois.—*Improved Blast-Blower.*—Patent dated June 30, 1857.—The hoods *i* serve to catch the air as the plates *b* are rotated and cause it to be forced within the wheel, the bucket or piston *d* forcing the wind out through orifice *a*.

Claim —The wind or blast wheel constructed of the circular plates *b b*, having openings *h* made through them, and provided with hoods *i*; the plates having a bucket or piston *d*, one or more, secured between them; when the wheel thus constructed is fitted within the fan box A constructed in the form of a scroll, substantially as described, for the purpose set forth.

No. 16,736.—ROBERT LEITCH, of Baltimore, Md.—*Improved Basin Cock.*—Patent dated March 3, 1857.—The object of this improvement is to prevent leakage.

Claim.—The arrangement of the loose stop piece *c*, constructed with a male screw thread on the periphery, and the means for operating it vertically without turning by the fixed square F on the stem A, and a corresponding female screw thread, or its equivalent, in the rotating globe of the cock B, substantially as and for the purpose set forth.

No. 17,539.—EDWARD G. BURNHAM, of Springfield, Mass., assignor to Himself and HENRY A. CHAPIN, of the same place.—*Improved Valvular Arrangement for Basin, &c., Cocks.*—Patent dated June 9, 1857.—By turning the nozzle B of this hydrant, the cam *a* will operate the cam *b* of pipe D, forcing pipe D downward beyond the casing A^2, and the water in pipe A^1 can pass through passages *e*, and escape through nozzle B. On returning the nozzle to its first position, the spring *g* presses pipe D upwards, thus closing the passages *e*.

The inventor says: I do not claim operating a valve by means of a cam, as this is found in various faucets.

Nor do I claim a faucet or basin cock as made with a turning bib or nozzle, and a tubular stem having a rotary valve working against a concentric seat, as such is liable to leakage.

But I *claim* the described new manufacture of basin cock or faucet as made with a turning bib or nozzle, a sliding valve, and a tubular stem, operated by means substantially as described.

No. 17,433.—LUCIUS J. KNOWLES, of Warren, Mass.—*Improved Faucet.*—Patent dated June 2, 1857.—This faucet may be inserted into the vessel from which the liquid is to be drawn by screw *a*, and the faucet can be opened or closed by operating valve-stem B and valve C, the spiral spring *h* tending to keep it constantly closed. When the faucet is to be opened, the hooks on clutch *i* are hooked together, which will keep the valve C open; and as the liquid escapes through passage *b*, the pressure will force it between the shoulder *f* and the body A, and, passing into space *d*, it eventually escapes by the drip passage D.

Claim.—Combining with or arranging with respect to the valve stem and eduction passage of the body of the faucet, as described, the secondary chamber or drip passage D, the same being for the purpose or to operate as specified.

Also, arranging an annular groove *g* in that part of the valve stem which slides in and out of the recess *d* of the body of the faucet, the same being for the purpose as specified.

No. 17,604.—DAVID N. B. COFFIN, jr., of Newton Centre, Mass., assignor to the BOSTON FAUCET COMPANY.—*Improved Faucet.*—Patent dated June 16, 1857.—By turning handle A, the piece K can be turned, when the lifters J begin to act upon pin *h*; and the guide *g* preventing it with the valve-stem from being turned around, the valve *b* is lifted from its seat, until the pin has reached the highest point of the inclines; when, if turned either way, it will close again, or if left on either incline it will close itself by the force of the India rubber spring *e*.

Claim.—The combination of the annular lifter or lifters, guide, and pin, substantially as described, with or without the top incline for closing the valve shown in fig. 3. I also claim pivoting the annular lifter or lifters at *m*.

No. 17,342.—ERASTUS STEBBINS, of Chicopee, Mass.—*Improved Basin Faucet.*—Patent dated May 19, 1857.—By turning discharge tube A and spindle B, projection *h* is carried against projection *i*, and the valve C is raised, permitting the fluid to escape through passage *g*, pipe G, and tube A. By reversing the motion of spindle B, the valve is depressed by the action of cams *k l*, and the flow of the fluid is stopped.

Claim.—Combining and arranging the tubular bearer K with the spindle, the valve case, and adjusting screw, substantially in the manner and for the purpose specified. The combination and arrangement of the elevating and depressing cams, or their equivalents *h i k l*, and the plane or bearing surfaces *m n*, the same being applied to the spindle and valve, and made to operate together, essentially in the manner as explained.

No. 17,511.—WILLIAM C. MARSHALL and HORACE W. SMITH, of Hartford, Conn.—*Improved Basin Faucet.*—Patent dated June 9, 1857.—The pipe B leads to the boiler containing the hot water, and the pipe H to the cold water reservoir. By turning the nozzle to the position 1, in fig. 2, the hot water can pass from pipe B, up through slot E, at the same time that slot K is covered, and the passage of the cold water is prevented. When the nozzle is turned to the position

2, in fig 2, the cold water can pass through slot K, and the slot E is closed up, thus preventing the passage of hot water through the nozzle.

Claim.—The arrangement, application, and combination, as herein described, for drawing hot or cold water through one nozzle, in the manner and for the purpose substantially as set forth and described.

No. 18,091.—Henry Getty, of Brooklyn, N. Y.—*Improved Device for Locking Faucets.*—Patent dated September 1, 1857.—When the ends of the bar F are in the vertical grooves *e e*, the valve B is retained in a closed state by spring E, and the pressure of the fluid against acts the under side of the valve; the valve being opened by pressing no part *c*.

Claim.—In combination, the L-shaped grooves *e h*, at the upper part of the spring barrel, stop bar *f*, and the secret stop arm K, placed loosely over the valve-stem, and attached to the screw collar; whereby facilities are offered for fastening the faucet closed, and also, when necessary, of placing it beyond the control of servants and others not entrusted with its management.

No. 17,074.—James E. Boyle, of Richmond, Va.—*Improved Waste-way in Faucets.*—Patent dated April 21, 1857.—When the liquid is to be drawn from P to P^1, the handle I of the cock is turned parallel with the pipes, as represented in fig. 2. When the flow is to be stopped, the handle I is at an angle of 90° with the pipe, as represented in fig. 1; in this latter position the liquid remaining in the pipe P will flow out in passing into the recess *r*, through channel *m*, and *c* through the way W and orifice *o* into a reservoir, placed there for the collection of the waste.

Claim.—The recess *v* and orifice *o*, in combination with the channels *m c*, when constructed and arranged in relation to the ordinary component parts of the stop cocks in the manner specified.

No. 17,973.—John C. Macdonald, of Cincinnati, O.—*Improved Valvular Arrangement in Faucets, &c.*—Patent dated August 11, 1857.—The opening and closing movement of the valve H is effected by turning screw C in one or the other direction.

Claim.—The arrangement of the valve-stem H^1, the nut *o*, the valve guide F, the screw C, and the cap or screw and nut guide Q, which also contains the stuffing box *m*, for the purposes set forth.

No. 17,987.—John A. Thompson, of Cayuga, N. Y.—*Improved Filter.*—Patent dated August 11, 1857.—The water passes from the receiving vessel A, through the holes near the bottom of said reservoir, then through the filtering material in the cask, and through the holes near the bottom of the reservoir B, whence it can be drawn by means of faucet H.

The inventor says: I do not claim the ordinary cask filter with pot or reservoir, with attachable metallic air and draught tubes, the whole fitted with charcoal, alternated with gravel, sand, &c.; the same having been known and used.

But I *claim* the combination of the receiving vessel or upper filter; the reservoir with flange or rim F, and attachable air and draught pipes to same, substantially as described; not confining myself to any particular mode or material which shall produce like effects and results.

No. 18,031.—William W. Ayres, of Worcester, Mass.—*Improved Filter.*—Patent dated August 25, 1857.—The casing C being attached to the discharge pipe of a hydrant by means of screw *a*, the water passes through passages *e n* into cylinder B, and, passing through the filtering medium *c*, finally escapes through passage F, as represented by arrows in fig. 1. By turning the spindle S 180°, the water will take the course as indicated by arrows in fig. 2, will pass through the filtering medium from the outside, will remove the impurities adhering to it, and carry them off through passage F.

Claim.—The combination of cylinders B and C with the spindle S, when constructed with reception and discharge cavities *d f*, openings *e g*, and channels *m n*, *m*^{1} *n*^{1}, arranged and operating substantially as and for the purposes set forth.

No. 17,028.—Benjamin Nadault de Buffon, of Paris, France.—*Improved Apparatus for Filtering Liquids.*—Patent dated April 14, 1857.—The metal tube A is surrounded by a cylinder F of wire gauze, containing charcoal or other filtering material. The apparatus, which may be immersed in or float upon the impure water, allows the latter to pass through the external wire gauze and the filtering materials, to the internal perforated tube A, which it reaches in a purified state, and from which it escapes through pipe or hose E, the air tube C admitting air to tube A, and insuring a constant flow of the water. The filtering material is compressed by means of the staves H and tightening hoops I, and also by the heads K, which are connected to each other by means of rods, and which can be tightened by screws and nuts.

Claim.—First. The general arrangement and construction of tritular apparatus for filtering water and other liquids, as described and shown.

Secondly. The mode of constructing stationary and tubular filters, in which the impure water to be clarified is passed from the exterior to the interior of the filter, as described.

Thirdly. The compressing of the filtering material, as described.

No. 16,330.—James Fernald, of Boston, Mass.—*Improved Method of Attaching Filters to Supply-Pipes.*—Patent dated January 6, 1857.—The cocks B and C of the main pipe being open, and the cocks G and I of the waste and connecting pipes being closed, the unfiltered water enters the main pipe A, and is pressed upwards through the filter in a purified state. When the filter is supposed to have become clogged, the cock B is closed, and cocks I and G are opened; the water will then rush up through pipe H, down pipe A, carrying with it all foreign matter which may have collected in the lower part of the filter, and escaping through waste pipe F.

Claim.—The combination with the main water pipe of a house, of a filter, an auxiliary pipe, and a waste pipe; the pipes being provided

2, in fig 2, the cold water can pass through slot K, and the slot E is closed up, thus preventing the passage of hot water through the nozzle.

Claim.—The arrangement, application, and combination, as herein described, for drawing hot or cold water through one nozzle, in the manner and for the purpose substantially as set forth and described.

No. 18,091.—HENRY GETTY, of Brooklyn, N. Y.—*Improved Device for Locking Faucets.*—Patent dated September 1, 1857.—When the ends of the bar F are in the vertical grooves *e e*, the valve B is retained in a closed state by spring E, and the pressure of the fluid against acts the under side of the valve; the valve being opened by pressing no part *c*.

Claim.—In combination, the L-shaped grooves *e h*, at the upper part of the spring barrel, stop bar *f*, and the secret stop arm K, placed loosely over the valve-stem, and attached to the screw collar; whereby facilities are offered for fastening the faucet closed, and also, when necessary, of placing it beyond the control of servants and others not entrusted with its management.

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Claim.—The recess *v* and orifice *o*, in combination with the channels *m c*, when constructed and arranged in relation to the ordinary component parts of the stop cocks in the manner specified.

No. 17,973.—JOHN C. MACDONALD, of Cincinnati, O.—*Improved Valvular Arrangement in Faucets, &c.*—Patent dated August 11, 1857.—The opening and closing movement of the valve H is effected by turning screw C in one or the other direction.

Claim.—The arrangement of the valve-stem H^1, the nut *o*, the valve guide F, the screw C, and the cap or screw and nut guide Q, which also contains the stuffing box *m*, for the purposes set forth.

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The inventor says: I do not claim the ordinary cask filter with pot or reservoir, with attachable metallic air and draught tubes, the whole fitted with charcoal, alternated with gravel, sand, &c.; the same having been known and used.

But I *claim* the combination of the receiving vessel or upper filter; the reservoir with flange or rim F, and attachable air and draught pipes to same, substantially as described; not confining myself to any particular mode or material which shall produce like effects and results.

No. 18,031.—WILLIAM W. AYRES, of Worcester, Mass.—*Improved Filter.*—Patent dated August 25, 1857.—The casing C being attached to the discharge pipe of a hydrant by means of screw *a*, the water passes through passages *e n* into cylinder B, and, passing through the filtering medium *c*, finally escapes through passage F, as represented by arrows in fig. 1. By turning the spindle S 180°, the water will take the course as indicated by arrows in fig. 2, will pass through the filtering medium from the outside, will remove the impurities adhering to it, and carry them off through passage F.

Claim.—The combination of cylinders B and C with the spindle S, when constructed with reception and discharge cavities *d f*, openings *e g*, and channels $m\ n$, $m^1\ n^1$, arranged and operating substantially as and for the purposes set forth.

No. 17,028.—BENJAMIN NADAULT DE BUFFON, of Paris, France.—*Improved Apparatus for Filtering Liquids.*—Patent dated April 14, 1857.—The metal tube A is surrounded by a cylinder F of wire gauze, containing charcoal or other filtering material. The apparatus, which may be immersed in or float upon the impure water, allows the latter to pass through the external wire gauze and the filtering materials, to the internal perforated tube A, which it reaches in a purified state, and from which it escapes through pipe or hose E, the air tube C admitting air to tube A, and insuring a constant flow of the water. The filtering material is compressed by means of the staves H and tightening hoops I, and also by the heads K, which are connected to each other by means of rods, and which can be tightened by screws and nuts.

Claim.—First. The general arrangement and construction of tritular apparatus for filtering water and other liquids, as described and shown.

Secondly. The mode of constructing stationary and tubular filters, in which the impure water to be clarified is passed from the exterior to the interior of the filter, as described.

Thirdly. The compressing of the filtering material, as described.

No. 16,330.—JAMES FERNALD, of Boston, Mass.—*Improved Method of Attaching Filters to Supply-Pipes.*—Patent dated January 6, 1857.—The cocks B and C of the main pipe being open, and the cocks G and I of the waste and connecting pipes being closed, the unfiltered water enters the main pipe A, and is pressed upwards through the filter in a purified state. When the filter is supposed to have become clogged, the cock B is closed, and cocks I and G are opened; the water will then rush up through pipe H, down pipe A, carrying with it all foreign matter which may have collected in the lower part of the filter, and escaping through waste pipe F.

Claim.—The combination with the main water pipe of a house, of a filter, an auxiliary pipe, and a waste pipe; the pipes being provided with cocks, and the whole arranged substantially in manner and for the purposes set forth.

No. 18,595.—LUCIEN MOSS, of Philadelphia, Pa.—*Improvement in Fire Plugs.*—Patent dated November 10, 1857.—The claim and engravings show the nature of this invention.

Claim.—The arrangement of the fire-plugs so that a gas pipe may be introduced within the metallic or other non-combustible casing surrounding the water pipe, or plug proper; said gas pipe being so arranged with openings or burners that the flame and heat produced thereby, caused by the gas flowing from them being ignited, may be made to act upon the water pipe, and cause the water therein to be thawed, if it should, by accident, or from neglect have become frozen, or to produce within the metallic or other non-combustible casing a temperature that will prevent the water in the plug proper from becoming frozen during times of extreme cold.

No. 16,810.—JARED W. SMITH, of Hartford, Conn.—*Improved Fluid Gates or Fuucets.*—Patent dated March 10, 1857.

Claim.—The slide A, guided, secured, and made adjustable, as described, by the screw pin D and nut *e*, having a guiding flange *d* to travel within guide strips *f*, when the same are used in connexion with a separating lever E, loosely connected by recess *g* with said slide; for the more convenient removal of the parts and retention of the slide in case of breakage of the lever, and for the more free and independent operation of the parts, and so that the one bolt D holds the slide without the aid of the lever.

Also, int he combination of the lever E and slide A, or therewith the fulcrums *i* and *k*, at different distances from the centre of the slide and slotted arm *h*, for operating in the manner and for the purposes substantially as set forth.

No. 16,945.—JAMES COCHRANE, of New York, N. Y.—*Improved Fluid Metre.*—Patent dated March 31, 1857.—The orifice I is connected by a pipe with a reservoir of liquids, while the orifice O may be connected with a series of pipes to be governed by a single cock. Liquid is permitted to flow into the receiving chamber r^3 through I, which rises and passes over the top of R, flowing down through *r* into one or the other of the tilting pans M, which are separated by a partition *s*; these, when full to a certain extent, will tilt on pivot *g*, dropping their contained water into the air-tight vessel A. By connexion of lever *t* with tilting lever L, the valve V will be operated with the tilting pans; the water entering through c^1 and through orifice 2, and thence through *c* into the cavity of the valve, displacing the air contained therein, which will thus be forced into the air-tight vessel; but when the valve descends, opening c^1 will be opposite opening 1 in the seat, and opening *c* in the face will be opposite opening 3 in the seat. The valve cavity v^2 will thus fill wholly or partially with air, which will be displaced by water, which finds its way into the air-tight vessel A.

Claim.—First. In combination with a tilting measuring vessel, or its equivalent, enclosed within an air-tight vessel, a secondary air-tight vessel connected with the former, substantially in the manner and for the purposes described.

And combining with a measuring vessel, located in and combined with an air chamber, an apparatus substantially such as is described, which shall from time to time introduce portions of the outer air into the interior of the air chamber; the whole being and operating substantially in the manner and for the purposes specified.

No. 17,127.—SAMUEL J. BURR, of Brooklyn, N. Y., assignor to Himself and HENRY F. READ, of the same place.—*Improved Fluid Metre.*—Patent dated April 21, 1857.—The fluid to be measured enters at G, passes through E into opening *t*, which is turned to and fro so as to connect alternately with each of the double openings U. The water, in taking the passage *a*, fills the side A of the metre box, pressing the flexible partition close to the right hand wall of the box, as represented at *b*, and filling the whole space in the metre box; while the fluid is forced through passage *d*, and out at the discharge H. As the shifter O is forced over with the partition, it turns shaft *c* and arms M, which turn the valve throw L; and when shifter O reaches the opposite wall of the box, it changes the position of the opening *t*, and the double openings V serve to reverse the course of the entering and escaping fluid.

Claim.—First. The combination of the flexible partition with shifter O, for the purpose of opening and closing the valves or apertures to admit and discharge the fluid; so that the apartments shall be alternately filled and emptied, in the particular manner described and shown.

Second. The combination of the valves, tube, and flexible partition, substantially as described; so as to make the entering fluid discharge the fluid alternately in each apartment, by its pressure upon the opposite sides of the flexible partition.

Third. The shifter O, whether as set forth or in any other form producing the same result, and placed between the two portions of the flexible partition; and the packing of the tube by the outer edges of the two portions of the flexible partition, protecting shaft *c* and shifter O from contact with the packing, and allowing the said shaft to work freely at the same time.

Fourth. The combination of the shaft *c*, enclosed in the tube *f*, with the valve throw, substantially as described and for the purpose set forth.

No. 17,443.—JAMES R. MAXWELL, of Cincinnati, Ohio.—*Improved Fluid Metre.*—Patent dated June 2, 1857.—The slide valve *g* is formed like an ordinary slide valve of a steam engine, and works on the same principle in receiving water into and discharging it from cylinder *a*. As represented in the engraving, the water is discharged from the metre through passage 3, while the water enters the metre through passage 4, and, acting on piston B, it forces round said piston in the cylinder *a*, until it strikes the end of rod *f*, which operates pinion J on shaft *m*, until valve rod *n* and *o* is just brought beyond a vertical position, when, by the action of spring P on pin R, the lever *h* is agitated, moving valve *g* to the opposite side of the valve chamber, thereby causing the water to take an opposite direction through the metre. The water enters the metre through pipe X, is measured by the process described, and is finally discharged through pipe *b*.

Claim.—The arrangement of the piston with the parts employed for moving the valve *g*, all arranged as represented, and for the purposes mentioned.

No. 17,394.—William A. Royce, of Newburgh, N. Y.—*Improved Machinery for Compressing Gaseous Bodies.*—Patent dated May 26, 1857.—By the downward motion of piston *b* and piston rod *a*, cold air enters the valve *h* of the piston rod, and, passing up into the hollow piston *b* around the core *c* and up the rod *a*, finally escapes through the passages *d*; this current of air serves to cool the rod and piston during the act of compressing the air. The air enters through the ingress pipe L, and enters the cylinder through the valves *e*, while it is forced out through the valves e^1 and through the coiled pipes *f*, the lower coils of which are placed in water for the purpose of keeping them cool; the air finally passes from pipes *f* into a reservoir for further use.

Claim.—The described apparatus, for compressing or packing gaseous media, substantially as described and shown.

No. 16,450.—Lodner D. Phillips, of Chicago, Ill.—*Improvement in Hose Couplings.*—Patent dated January 20, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The combination of the sections *a a* of the hose coupling (having conical tubes *b b* on the exterior ends thereof) with the conical sleeves *d d*, as herein described, and for the purposes set forth.

No. 16,448.—James G. Morgan, of Brooklyn, N. Y.—*Improved Hydrant.*—Patent dated January 20, 1857.—By turning handle F, cock G is opened or closed; the air in air chamber C is compressed as the crank H on shaft *i* raises the bottom *d* of said air chamber; and the air then passes through pipe *a* into the cistern B, thereby forcing the water in the cistern into the discharge pipe *b*. By releasing the air chamber from such compression, the water in the discharge pipe *b* will run into the cistern.

The inventor says: I am aware that hydrants have been constructed with cisterns to receive and retain the water at the discharge pipe at a point below the surface of the ground where it will not be frozen; and that they have been provided with flexible and metal pistons, or valves, to force the water again into the discharge pipe when the cock is about to be opened, and to receive the water from the discharge pipe when the cock is closed.

I am also aware that air chambers have been applied to discharge pipes to break the force of the water, and maintain a constant stream; I therefore do not broadly claim such as my invention.

I am not aware that air chambers have been applied to hydrants in such a manner as to admit of being compressed, and thereby forcing the water from the cistern into the discharge pipe, and, by releasing them from the compression, allowing the water in the discharge pipe to run back into the cistern, and the air in the air chamber to fill the discharge pipe, whereby the machinery and cock can be placed above the ground convenient to access, and whereby the flexible air chamber (which takes the place of the flexible valve or metal pistons used by others) is subject to no greater leakage pressure than what is due from the height of water in the discharge pipe above the cistern.

I *claim* the combination of a cistern to receive and retain the waste water of a hydrant with one or more air or gas chamber or chambers, arranged in such a manner that by compressing the air chamber the air therein will be forced into the cistern, thereby forcing the water in the cistern into the discharge pipe; and by releasing the air chamber from such compression, the water in the discharge pipe will run into the cistern. Nor do I limit my claim to a flexible air chamber, as I consider a piston and cylinder a mechanical equivalent.

I also claim the peculiar method of compressing and releasing the flexible air chamber in connexion with the opening and closing of the cock, substantially as described.

No. 16,536.—William Fields and Solomon Gerhard, of Wilmington, Del.—*Improved Hydrant.*—Patent dated February 3, 1857.—On depressing B, the waste water in cylinder A will be forced up pipe K. As soon as the lever L strikes the end *o* of the valve rod *r*, and begins to lift the valve *p*, fresh water will be admitted and flow up through K.

Claim.—First. The combination of the lever L with the rods R and *r* operating the plungers B and *p* in the manner specified.

Also, the plunger valve V, when arranged in relation to the bent pipe P and constructed in the manner described, and when operated in connexion with the plunger B, and not otherwise, substantially as set forth.

No. 17,093.—Abraham Hoagland, of Jersey City, N. J.—*Improved Hydrant.*—Patent dated April 21, 1857.—To operate this hydrant, the crank X is turned, causing the pulley H to force down by friction the hollow rod B with its piston C to the bottom of pipe A. When it reaches the valve D, the crank is turned till the projections N catch upon collar O and then the crank forces down the hollow rod, opening valve D and causing the water to flow into pipe A and out at spout L. When sufficient water is drawn, the crank is released, and the weight G draws piston C up with the water which is in the pipe A, and empties it out at the spout L.

Claim.—First. The emptying of the pipe A by a self-acting valved piston C with hollow rod B, in the manner described.

Second. The construction and use of the valve D, made of an ordinary bevel winged valve, with the flexible valve E added at the bottom, and the cushion P added at the top, for the purpose described.

Third. The combination of the catch N upon the large friction pulley H with the collar O, to enable the operator to force down, by the crank, the piston upon the valve D, and open it against pressure, as described.

No. 17,415.—William W. Binny, of Seneca Falls, N. Y.—*Improved Hydrant.*—Patent dated June 2, 1857.—When the lever *l* is left free, the hydrant is closed by spring *h*, in connexion with the pressure of water, keeping the valve *f* snugly up against its seat *e*. When the pipe D is forced downward by actuating lever *l*, the water will rush through the passages formed by the concave sides of the valve, and pass through the holes g^1 up through the pipe D; the leather *j* fitting over the upper end of tube *d* prevents the water from escaping into the case A from between the tube *d* and pipe D. On releasing lever *l*, the pipe D will ascend, and the water within the pipe D will descend and pass upward between the neck *d* and pipe D, and escape into the case A.

Claim.—The pipe D fitted within the case A and within the tube or neck *d*, the pipe having a flanch or collar *i* upon it above the neck *d*, and provided with a valve *f* at its perforated lower end, said pipe being fitted within the neck or tube *d*, and used in connexion with the box or chest C and spring *h*; the whole being arranged, as shown, for the purpose set forth.

No. 17,552.—Joel Bryant, of Brooklyn, N. Y.—*Improved Hydrant.*—Patent dated June 16, 1857.—By turning handle H so as to bring the passages *g* over the passages *e*, the water can enter the hydrant from the supply pipe L; and by turning the handles so as to bring the passages *g* over passages *d*, the water from pipe L is shut off from the hydrant, and the water in said hydrant can escape through passages *d* into a sewer or reservoir, thus leaving the hydrant entirely empty when not in operation.

The inventor says: I do not claim anti-freezing hydrants or water pipes.

But I *claim* hydrants and water pipes with two main cylinders A and B, and a cylindrical bottom part F, with openings *g g* in cylinder B, and openings *e e* and *d d* in the bottom part F, operating in connexion with each other for the admission and discharge of water, substantially as described and for the purpose set forth.

No. 17,632.—George P. Perrine and James E. Boyle, of Richmond, Va.—*Improved Hydrant.*—Patent dated June 23, 1857.—By turning level K downward, so as to move pipe R and plunger P, and *p* downward to the position represented in dotted lines, the piston *p* has cleared the orifice *o*, and the water enters pipe R, and escapes through passages *x* and nozzle N. When the lever K is released, the pressure of the water forces piston P upward to its former position, and by this movement a partial vacuum is created between pistons P and *p*, and the water in pipe R escapes through passages *x* into cylinder A, thus keeping the pipe R empty when the hydrant is not in use.

Claim.—The hollow piston rod and nozzle, when so constructed and arranged, in combination with cylinders of unequal diameters and their corresponding pistons or plungers, that they will be elevated by the pressure of the water from the supply pipe upon the under surface of the piston *p*, and the water withdrawn therefrom, for the purpose specified.

No. 17,538.—William Bramwell, of New York, N. Y., assignor to Samuel P. Ayres, of New Rochelle, N. Y.—*Improved Method of Incasing Hydrants.*—Patent dated June 9, 1857.—In case of accident, the whole of this hydrant can be lifted out of the casing *c*, after having unscrewed the screws *p*.

Claim.—The casing or pipe C, with its seat *e* and elastic washer *f*, in combination with the hydrant pipes *g* and screws *p p*, substantially in the manner and for the purposes specified.

No. 17,447.—August F. W. Partz, of New York, N. Y.—*Improved Hydraulic Blast Generator.*—Patent dated June 2, 1857.—The vessel *a*, being filled with water to about the height of shaft *h*, and power being applied to pulley *k*, the wheel *c d e* is revolved in the direction indicated by the arrow; the coiled compartments 3 successively take in, through their openings at the periphery, portions of air and water, which are forced towards the centre of the wheel, whence they are discharged through the hollow shaft *f* into chamber 1, the water flowing back through opening 4 into chamber 2, and the air, under the pressure of the water in compartments 3, passes out through opening 5.

The inventor says: I do not claim a wheel or cylinder composed of coiled or turbinated compartments, which communicate with a hollow shaft.

Nor do I claim a vessel containing the fluid wherein said wheel is partially immersed.

I *claim*, 1st. The arrangement of the several parts of my machine.

2d. A chamber attached to and communicating near its bottom with the vessel enclosing the wheel, into which chamber the hollow shaft of said wheel opens and discharges, and which contains one outlet for the air accumulating in its upper part, substantially in the manner and for the purpose described.

No. 18,280.—John D. Heaton, of Dixon, Ill.—*Improved Hydraulic Engine.*—Patent dated September 29, 1857.—The operation of this engine is as follows: Being situated at the terminus of a water channel having a sufficient fall, and arranged so that the running volume of water shall be conducted through pipes or tubes, and enter into the central tube P^2 of the air chamber, and thence pass down through the neck *o o*, enter and fill the hollow valve *k k*; observing that, on starting the engine, the valves must be open, or past the dead point, as shown in fig. 3. Having charged the engine with water throughout all its ramifications, the balance wheel is set in motion; this causes the cylinder part and chambers to oscillate around the stationary valves, which movement causes the ports *h h* alternately to be opened and closed above and below, the position of the stationary valves being as shown in fig. 3.

The inventor says: I *claim* the peculiarly constructed form and application, and the arrangement of the stationary valves *k k m n o*, as operated.

I also claim the construction and arrangement of the water chambers *e e e*, pressure compartments *g g*, and cylinder *f f*, combined in one single piece, substantially as shown and described.

No. 16,756.—Homer H. Stuart, of New York, N. Y.—*Improved Method of Operating the Supply and Discharge Valves of Hydraulic Engines.*—Patent dated March 3, 1857.

Claim.—Arranging the four flap valves on the rock shaft R, to operate in the separate compartments of the two valve boxes F, placed at one end of the cylinder, and operating the same by means of the sliding arch piece G, connected with arms at opposite ends of the said rock shaft R, and driven by the vibrating arm D of the main rock shaft B of the engine, substantially as set forth.

No. 16,801.—George Linsay, of New York, N. Y.—*Improved Hydraulic Jack.*—Patent dated March 10, 1857.—The solid arrows show the direction of the water when acted upon by the pumps, and the dotted arrows show the direction of the water when the plunger D is depressed. The jacket is filled with water through a cock a^*.

The inventor says: I do not claim the device or arrangements of the pumps or working parts, or the safety and lowering valve.

Nor do I claim the device or arrangements of the piston rod H or of the ram D.

But I *claim* the arrangement of them all combined, as constituting the specific whole machine, as shown and set forth.

No. 18,912.—Alonzo R. Ketcham, of Buffalo, N. Y.—*Improved Hydraulic Valve.*—Patent dated December 22, 1857.—This invention consists in providing a chamber, in connexion with a water pipe A, or cylinder, for the purpose of affording protection to and allowing of a sufficient movement of a geared sector C, the sector being connected with a valve B, and operated by a worm or screw D.

The inventor says: I do not claim the combination of the screw D, geared sector C, and valve B, when broadly considered.

But I *claim* the arrangement of the chamber F on the pipe or cylinder A, for the purpose of protecting the sector and valve, and to allow of a proper movement thereof, the same being operated by the screw D, or equivalent, as described.

No. 17,383.—Francis C. Lowthorp, of Trenton, N. J.—*Improved Hydro-dynamic Machine for Testing Strength of Materials.*—Patent dated May 26, 1857.—If it is required to test the tensile strain of a rod X, motion is imparted to crank shafts V and V^1, which, by means of gearings S Q T and T^1, cause the screw shafts O to turn, drawing the cross-head P towards cross-head N, cross-head V being retained stationary by means of wedges *w*. The piston in cylinder K, which is attached to piston rod L, compresses the water which is between said piston and the cylinder head *g*; which acts upon a pressure gauge M, and thus indicates the amount of strain applied to rod X.

The inventor says: I do not desire to confine myself to the precise form of the framework, or to the material of which it is constructed, to the precise arrangement of gearing shown, or to any particular construction of indicator; as the system of gearing may be modified without altering the result, and as a weighted valve or other indicator may be used instead of a pressure gauge.

But I *claim* the combining of gearing and other suitable mechanism for applying strains for forces to the object to be tested, with a piston or plunger operating against a body of water within a cylinder or barrel, in such a manner that, on applying the said force or strain, such a pressure shall be transmitted to the fluid, and to any suitable indicator communicating with the same, that the amount of strain or force on the object may be readily calculated.

No. 16,983.—Otto G. Leopold, of Cincinnati, Ohio.—*Improved Liquid Metre.*—Patent dated April 7, 1857.—The water enters this metre through pipe *a*, and passes through the apertures a^1, by which it is divided into several jets, and is conducted to the circumference of the floating wheel *c*, which is rotated by the action of the water on its curved buckets. The worm *g* acts upon a worm wheel which operates spindle *h*, said spindle being connected with an indicating apparatus in the usual manner.

The inventor says: I neither confine myself to the materials employed, nor to the particular form or arrangement of the several parts of which the same consists, provided the wheel or drum is peculiarly adapted to the registering of the flow of liquids.

But I *claim*, first, suspending the wheel or drum in the manner described; and floating it, so as to reduce the friction of its bearings to the smallest possible amount; and thus, in addition to the other means before described, rendering it peculiarly adaptable to the registering of the flow of liquids.

Second. Also, the arrangement of dividing the inlet-opening into an appropriate number of small apertures, so as to protect the wheel from the gross impurities of the water, and thus prevent its free motion from being disturbed.

No. 17,073.—Absalom F. Boyd, of Muskingum county, Ohio.—*Improved Method of Excluding Air from Liquors on Tap.*—Patent dated April 21, 1857.—The India rubber bag B is attached to pipe A of the bunghole of a cask, and when the barrel is filled with liquor, the bag will float on its surface; and, being of a yielding nature, the atmosphere will press upon the liquor without coming in contact with it.

Claim.—The application of the bag B to a cask or barrel, as shown and described; for the purpose of preserving the flavor of liquors by excluding the atmosphere from them when the cask is on "tap," as described.

No. 16,558.—Ambrose Tower, of New York, N. Y.—*Improved Pump.*—Patent dated February 3, 1857.—G is the air chamber; A A are the pump barrels, and C C the pistons; B B are wires to prevent the ball valves D from rising too high.

The inventor says: I do not claim the raised or projective valve seat and ebb water as new, when the water and other fluids, substances, &c., are not discharged from the water-way L, below the surface of the top of ihe valve seat; as it will be perceived that foreign or heavy substances will flow over the valve seat, and soon fill the ebb water-way, and then come in contact with and choke the valve; therefore,

What I *claim* is, the raised or projective seat K, and ebb water-way L, when the water, &c., is discharged from the ebb water-way below the surface of the top of the raised or projective seat, thereby allowing all foreign or heavy substances that flow over the seat to be instantly forced out; consequently the valve at all times has free play, and cannot become choked.

No. 16,785.—JOHN F. BRICKLEY, of Winchester, Ind.—*Improvement in Converting a Lifting Pump into a Suction and Forcing Pump, or vice versa.*—Patent dated March 10, 1857.—Fig. 1 represents the arrangement of parts, when used as a common lifting pump, of which B is the ordinary foot valve, and F the nozzle. To change it into a lifting and forcing pump, the rod D is detached from the handle C, and it is turned round (there being a screw thread at its lower end, and a female nut *b* attached to the valve box E) until its lower end abuts against the flap valve *d*, as shown in fig 2. E acts now as a solid plug, and the water will be forced up through pipe G.

Claim.—Arranging a rod in connexion with the valve of the pump so that said valve may be closed or opened at pleasure by the user, for converting a ordinary lifting pump into a lifting and forcing pump, or *vice versa*, as set forth, and for the purpose explained.

No. 18,705.—WASHBURN RACE, of Seneca Falls, N. Y.—*Improvement in Pump Packings.*—Patent dated November 24, 1857.—This improvement consists in causing the wedge which holds the two lower valves in place, to serve also as a packing for the oscillating shaft; and in causing the lower valves, in the act of tripping, to strike against the pendulous valve, and trip that also.

The inventor says: I do not claim to be the first inventor of pumps having a hollow shaft and hollow oscillating piston. Nor do I claim tripping the valves E E' by means of the oscillating piston C.

But, to the best of my knowledge and belief, it is a new feature in pumps of this description to cause a wedge piece to hold the lower valves in place, and serve also as packing for the oscillating shaft. It is also a new feature to cause the lower valves to trip the pendulous valve.

I *claim* causing the wedge piece G, which holds the two lower valves E E' and piece *c* in place, to serve, also, in combination with said piece *c*, as a packing for the oscillating shaft B, as described.

No. 17,516.—ROBERT RAMSDEN, of South Easton, Pa.—*Improvement in Rotary Pumps.*—Patent dated June 9, 1857.—Rotary motion being given to the screw B, the piston D is rotated in consequence of the projections *m* fitting in the space formed by thread *e*. By this rotation of the piston D a suction is formed behind each projection *m*, and the water is drawn up through pipe *b* into the cylinder A, and is forced out through pipe E. If the screw B becomes loose in the cylinder A by wear, it may be snugly adjusted therein by pressing the larger end of the screw towards the smaller end of the cylinder.

Claim.—The combination of a revolving piston D and taper-shaped screw B, in the manner and for the purpose substantially as described.

No. 17,423.—GEORGE H. CORLISS, of Providence, R. I.—*Improvement in Steam Pumping Apparatus.*—Patent dated June 2, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The arrangement of a series of steam cylinders A and pumps C combined radially around a central crank shaft B, with a central crank N and crank shaft, with which the whole series of pumps and steam cylinders are connected, substantially in the manner and for the purpose herein described.

Also, the method herein described, of forming the connexion between the pistons of a series of cylinders and a single crank pin *a*, by means of a disk-ended connecting rod L, which is appropriated to one piston in the series, and which is fitted with a series of pins S, to which the remaining connecting rods M are applied, thus obviating the direct application of all the connecting rods in the series to the same crank pin.

No. 18,718.—JOHN S. BARDEN, of New Haven, Conn., assignor to Himself and AARON W. ROCKWOOD, of Boston, Mass.—*Improvement in Steam Pumping Engines.*—Patent dated November 24, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I am aware that it is not new to so combine a pump and a steam engine that the piston of the former may be operated by the latter; also that it is not new to arrange the axis of the cylinder of a steam engine in line with that of the barrel of the pump, and so connect the pistons of the two that a reciprocating rectilinear movement of the steam engine cylinder may create a corresponding movement of the pump piston. Therefore I do not claim such.

I do not claim a partitioned hollow semi-cylindrical chamber, and two series of induction and eduction passages, arranged with respect to the partition of said chamber substantially as described, in combination with three or any other suitable number of oscillatory cylinders and pistons connected together by three connected cranks, and applied to the partitioned semi-cylindric vessel as described, such being the subject of claim in my letters patent, hereinbefore named.

Nor do I claim the rotary pump for which a patent was granted to Hosea Lindsay, December 4, 1855.

Nor do I claim the reciprocating pump represented in Henry L. Russell's application for a patent, rejected October 25, 1854, for in neither of the engines of McMurtrie, Lindsay and Russell is there any three-fold bell; crank and these pumps operating together, and

The inventor says: I do not desire to confine myself to the precise form of the framework, or to the material of which it is constructed, to the precise arrangement of gearing shown, or to any particular construction of indicator; as the system of gearing may be modified without altering the result, and as a weighted valve or other indicator may be used instead of a pressure gauge.

But I *claim* the combining of gearing and other suitable mechanism for applying strains for forces to the object to be tested, with a piston or plunger operating against a body of water within a cylinder or barrel, in such a manner that, on applying the said force or strain, such a pressure shall be transmitted to the fluid, and to any suitable indicator communicating with the same, that the amount of strain or force on the object may be readily calculated.

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The inventor says: I neither confine myself to the materials employed, nor to the particular form or arrangement of the several parts of which the same consists, provided the wheel or drum is peculiarly adapted to the registering of the flow of liquids.

But I *claim*, first, suspending the wheel or drum in the manner described; and floating it, so as to reduce the friction of its bearings to the smallest possible amount; and thus, in addition to the other means before described, rendering it peculiarly adaptable to the registering of the flow of liquids.

Second. Also, the arrangement of dividing the inlet opening into an appropriate number of small apertures, so as to protect the wheel from the gross impurities of the water, and thus prevent its free motion from being disturbed.

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Claim.—The application of the bag B to a cask or barrel, as shown and described; for the purpose of preserving the flavor of liquors by excluding the atmosphere from them when the cask is on "tap," as described.

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The inventor says: I do not claim the raised or projective valve seat and ebb water as new, when the water and other fluids, substances, &c., are not discharged from the water-way L, below the surface of the top of ihe valve seat; as it will be perceived that foreign or heavy substances will flow over the valve seat, and soon fill the ebb water-way, and then come in contact with and choke the valve; therefore,

What I *claim* is, the raised or projective seat K, and ebb water-way L, when the water, &c., is discharged from the ebb water-way below the surface of the top of the raised or projective seat, thereby allowing all foreign or heavy substances that flow over the seat to be instantiy forced out; consequently the valve at all times has free play, and cannot become choked.

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Claim.—Arranging a rod in connexion with the valve of the pump so that said valve may be closed or opened at pleasure by the user, for converting a ordinary lifting pump into a lifting and forcing pump, or *vice versa*, as set forth, and for the purpose explained.

No. 18,705.—Washburn Race, of Seneca Falls, N. Y.—*Improvement in Pump Packings.*—Patent dated November 24, 1857.—This improvement consists in causing the wedge which holds the two lower valves in place, to serve also as a packing for the oscillating shaft; and in causing the lower valves, in the act of tripping, to strike against the pendulous valve, and trip that also.

The inventor says: I do not claim to be the first inventor of pumps having a hollow shaft and hollow oscillating piston. Nor do I claim tripping the valves E E' by means of the oscillating piston C.

But, to the best of my knowledge and belief, it is a new feature in pumps of this description to cause a wedge piece to hold the lower valves in place, and serve also as packing for the oscillating shaft. It is also a new feature to cause the lower valves to trip the pendulous valve.

I *claim* causing the wedge piece G, which holds the two lower valves E E' and piece *c* in place, to serve, also, in combination with said piece *c*, as a packing for the oscillating shaft B, as described.

No. 17,516.—Robert Ramsden, of South Easton, Pa.—*Improvement in Rotary Pumps.*—Patent dated June 9, 1857.—Rotary motion being given to the screw B, the piston D is rotated in consequence of the projections *m* fitting in the space formed by thread *e*. By this rotation of the piston D a suction is formed behind each projection *m*, and the water is drawn up through pipe *b* into the cylinder A, and is forced out through pipe E. If the screw B becomes loose in the cylinder A by wear, it may be snugly adjusted therein by pressing the larger end of the screw towards the smaller end of the cylinder.

Claim.—The combination of a revolving piston D and taper-shaped screw B, in the manner and for the purpose substantially as described.

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Claim.—The arrangement of a series of steam cylinders A and pumps C combined radially around a central crank shaft B, with a central crank N and crank shaft, with which the whole series of pumps and steam cylinders are connected, substantially in the manner and for the purpose herein described.

Also, the method herein described, of forming the connexion between the pistons of a series of cylinders and a single crank pin *a*, by means of a disk-ended connecting rod L, which is appropriated to one piston in the series, and which is fitted with a series of pins S, to which the remaining connecting rods M are applied, thus obviating the direct application of all the connecting rods in the series to the same crank pin.

No. 18,718.—John S. Barden, of New Haven, Conn., assignor to Himself and Aaron W. Rockwood, of Boston, Mass.—*Improvement in Steam Pumping Engines.*—Patent dated November 24, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I am aware that it is not new to so combine a pump and a steam engine that the piston of the former may be operated by the latter; also that it is not new to arrange the axis of the cylinder of a steam engine in line with that of the barrel of the pump, and so connect the pistons of the two that a reciprocating rectilinear movement of the steam engine cylinder may create a corresponding movement of the pump piston. Therefore I do not claim such.

I do not claim a partitioned hollow semi-cylindrical chamber, and two series of induction and eduction passages, arranged with respect to the partition of said chamber substantially as described, in combination with three or any other suitable number of oscillatory cylinders and pistons connected together by three connected cranks, and applied to the partitioned semi-cylindric vessel as described, such being the subject of claim in my letters patent, hereinbefore named.

Nor do I claim the rotary pump for which a patent was granted to Hosea Lindsay, December 4, 1855.

Nor do I claim the reciprocating pump represented in Henry L. Russell's application for a patent, rejected October 25, 1854, for in neither of the engines of McMurtrie, Lindsay and Russell is there any three-fold bell; crank and these pumps operating together, and in connexion with a semi-cylindric case, I employ three pumps, one semi-cylindric case, and with one engine, made as specified; the semi-cylindric case connecting all the pumps together, so that the fluid which each pump may elevate is drawn into one end of the common case, and forced out of the other end of it, while but one three-fold crank is used in the construction of my apparatus.

Therefore, it is this peculiar apparatus, as composed of the three pumps arranged on one common case, and combined with the peculiar steam engine, in manner as described, and so as to make but one three-fold crank necessary to the operation of the three pumps during each entire revolution of the crank, that I *claim*.

No. 16,366.—G. W. B. Gedney, of New York, N. Y.—*Improvement in Pumps.*—Patent dated January 6, 1857.—As the piston b^1 descends, it forces the water in the cylinder a^1 through the discharge pipe K, while the induction pipe *i* is in communication with cylinder *a*; and at the moment that the motion of said pistons is reversed, the leaf valve *h* is turned in the position marked in dotted lines, when the water passes from induction pipe *i* to cylinder a^1, and from cylinder *a* to discharge pipe *k*, the movement of said valve being effected by connexions n and n^1 and lever *p*.

The inventor says: I do not claim a double-action pump, with a slide valve and independent valve motion; as that is not new, but is found in the patent granted to J. H. Webster, February 12, 1854.

But I *claim* the working leaf valve, or four-way cock, constructed as specified, and arranged with respect to the two cylinders and solid pistons so as to give a more direct and unobstructed course to the water, than is obtained in the slide valve pump patented by Webster, in the manner and for the purposes set forth.

No. 16,373.—James S. Burnham, of Yorkville, N. Y.—*Improvement in Pumps.*—Patent dated January 13, 1857.—By operating lever I, the air vessel G can be raised and lowered; as the leather B^1 rises, the valve *e* opens, and the water passes from pail A into chamber J; as the leather is depressed, the valve *d* opens, and the water in chamber J is forced up through chamber E, air vessel G, and pipe H.

The inventor says: I disclaim the pumping of liquids or other substances by means of a flexible diaphragm, as pumps of this description are old. I disclaim the placing of pump valves under water, or arranging them in any particular manner. I disclaim everything heretofore known in connexion with diaphragm pumps. I also disclaim the use of an air vessel in diaphragm pumps.

I confine myself exclusively to the combination of the air chamber directly with the diaphragm, so that the air chamber rides upon the diaphragm, as shown

In the patent of McPherson & Joyce, 1856, a corrugated diaphragm is used, vibrated by a plunger. I claim no such device, neither is my invention, viz: an air chamber riding upon the diaphragm, anywhere shown in this patent.

In application for a patent of Hyzer & Parks, 1856, rejected, an ordinary pump is employed, the valves being placed under water. As before stated, I disclaim all such devices.

I am aware that in Chapman Warner's patent, July 7, 1856, the air chamber is attached to and moves with the piston, and I therefore disclaim a movable air chamber.

I *claim* combining the air chamber G directly with the diaphragm B^1, so that the air chamber rides upon the diaphragm, in the manner and for the purposes set forth.

No. 17,327.—Silas Hewit, of Seneca Falls, N. Y.—*Improvement in Pumps.*—Patent dated May 19, 1857.—The plunger of this pump is composed of the combined piston head R and tubes E, and valves F^1 and F^1. On the downward motion of the plunger, valve F is closed, valve F^1 is opened, and valve F^1 is closed outward and opened inward; and the water from the lower part of N passes up through tube E, openings S, chamber O, and out through spout P. On the upward motion of the plunger, valve F is opened, and valves F^1 and F^1 are closed; and the water in the lower part of N is forced up, while the water passes from chamber M into the lower part of chamber N.

Claim.—The arrangement of tubes E E, piston head R, and valves F^1 and F^1, constructed and operated in the manner and for the purposes set forth.

No. 17,625.—William Henry Harrison, of Philadelphia, Pa.—*Improvement in Pumps.*—Patent dated June 23, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not desire to confine myself to the precise form of valve or bucket shown, as the same may be considerably varied without changing the result.

Neither do I claim the employment of two buckets moved simultaneously in different directions.

But I *claim* the combination of the chamber A, barrels *a* and a^1, valved buckets H and I, rock shaft C, lever E, and rods G and F, when the whole are arranged and constructed for joint operation, substantially in the manner and for the purpose specified.

No. 17,768.—Henry Pease, of Brookport, N. Y., assignor to Eckler Buswell & Co., of the same place.—*Improvement in Pumps.*—Patent dated July 7, 1857.—Rotary motion being given the crank shaft K, a reciprocating motion is imparted to the piston *p* by means of crank O; and when the parts are in the position represented in the engraving, the induction valve 32 is closed, and eduction valve 34 is opened, and the water is forced through discharge pipe E; and as the piston is receding, it draws the water through the induction pipe D, the valve 8 being open, and valve 10 being closed.

Claim.—The guide rods *m m*, constructed and arranged as described, for the purpose of preventing the rotation of the piston, and of facilitating the attachment and detachment of the shaft to and from the crank O.

No. 17,820.—Birdsill Holly, of Seneca Falls, N. Y., assignor to Silsby, Mynderse, and Shoemaker, of the same place.—*Improvement in Pumps.*—Patent dated July 14, 1857.—By adjusting the leather *e* so that the passage 4 is exposed, the waste water is allowed to escape from the cylinder A into the suction pipe F, and the pump cannot be frozen up during the winter. In summer, the leather is so adjusted as to cover the passage 4, so that the packing of the valve may not shrink.

Claim.—The leather *e* placed over the perforations *d* in the top of the base E and the chamber *h*, which is placed on the leather; said leather being provided with a flanch *f*, provided with holes 1 2, either of which is fitted on the pin 3, for the purpose of exposing or closing the passage 4, substantially as described, for the purpose specified.

No. 18,309.—J. D. West, of New York, N. Y.—*Improvement in Pumps.*—Patent dated September 29, 1857.—As the pistons of this pump are drawn up, the water rushes into the chamber *a* from the suction pipe e^1, through valve *f*, and, flowing over, runs under the valve seat of valve *f* at *x*, and then, passing up through valve f^1, it enters the inner cylinder a^2; thence it goes through the plunger box *p* as the plungers descend, and passes off at the spout *s*.

The inventor says: I do not claim air chambers with a pump, as they have before been used, but not in so compact or perfectly constructed a form as I have devised; therefore,

I *claim* the combination of the air chamber with two inner cylinders and duplicate foot valves, substantially in the manner and for the purpose set forth.

No. 18,559.—Noah Sutton, of New York, N. Y.—*Improvement in Pumps.*—Patent dated November 3, 1857.—This invention consists in giving a variable motion to the pump pistons, so that their downward movement will be quicker than their upward movement; the two pump cylinders being connected by a water passage, and the pistons, which work in opposite directions, provided with valves; the whole so arranged that the pump will throw a continuous stream of water, and one of equal volume, at all points of the strokes of the pistons.

The inventor says: I am aware that two pistons having a variable movement, and fitted within one cylinder, have been previously used; therefore, I do not claim giving a variable movement to the pistons, irrespective of the arrangement shown.

But I *claim* the peculiar means employed for operating the pistons, or giving them the variable movement, as described, viz: the pulleys Q Q, R R connected with the bars I of the pistons F G by means of the chains S T; the pulleys Q Q, R R being placed loosely on their shafts and connected alternately therewith, by means of the bars *f* connected with the spring *g*, the projections *h* on the wheels P, and the bevelled projections *i j* on the bars V; the whole being arranged as described.

No. 18,870.—Harmon A. Sheldon, of Middlebury, Vt.—*Improvement in Pumps.*—Patent dated December 15, 1857.—This invention

consists in the employment or use of a supplementary cylinder, or air chamber, connected with the pump cylinder, and so arranged that the liquid or fluid acted upon by the pump will not be brought into contact with its cylinder and piston. By this means the pump may be used for pumping or forcing up corrosive fluids, without being injured or acted upon in so being used.

The inventor says: I do not claim the employment or use of valves constructed of glass or other acid-resisting materials, for they have been previously used.

But I *claim* the employment or use of the supplementary cylinder or air chamber E communicating with the pump cylinder A by means of the pipe F, and having the induction and force pipes G I attached, which are provided respectively with the valves H J, as and for the purpose set forth.

No. 18,916.—Hosea Lindsey, of Ashville, N. C.—*Improvement in Pumps.*—Patent dated December 22, 1857.—A is the pump barrel placed horizontally at the bottom of the well, and made to revolve by means of the hollow water-conducting shaft B; C C are pistons made tubular, and open at their outer end, and furnished with a valve at their inner end; D D are screw-rods connecting the pistons together, the rods slide through *a a* of the barrel A; E is the stationary eccentric set horizontally below the barrel A; F is the pin of the same, it serves as an axis for the barrel to turn on; G is the turning ring or collar fitted loosely around the eccentric, and confined by means of the friction wheels *b b*; H is the strap connecting this ring to one of the pistons, as shown in the engravings.

The inventor says: I do not claim in this application the operating of the pistons of a pump arranged at the bottom of a well by means of a double inclined plane, as the same was shown in my patent of 1855.

But I *claim* the attaching of the axis F of the pump cylinder A eccentrically to a stationary circle plate E, in combination with the attaching of the pistons C C of said cylinder to said circle plate by means of a loose ring or collar G, connecting rod or strap H, and sliding frame D D, substantially as and for the purposes set forth.

No. 19,003.—Francis G. Wynkoop, of Corning, N. Y.—*Improvement in Pumps.*—Patent dated December 29, 1857.—This invention lies in the construction of the stuffing box. It consists in forming the packing *r* of India rubber, between a fixed base *f* and a loose stuffer *h*, with which the connexion on the piston P comes in contact at each stroke; the packing serving the double purpose of spring and packing.

Claim.—The combination of seat *f*, loose piece *h*, and rubber packing *r*, as set forth.

No. 17,653.—Charles N. Lewis, of Seneca Falls, N. Y., assignor to George C. King, of the same place.—*Improved Method of Attaching Air Chambers to Pumps.*—Patent dated June 23, 1857.—The air chamber C is permanently secured to the cylinder A by screwing the follower

H in the stuffing box G, and the chamber C may be turned so that the spout D may be brought into any desired position.

The inventor says: I do not claim arranging the air chamber C so that it may be turned on the cylinder, and the spout D brought in any desired position; for that has been previously done.

But I *claim* connecting the air chamber C with the cylinder A by means of the stuffing box G and follower H applied to the pump, and arranged relatively with the several parts, as shown and described, for the purpose set forth.

No. 17,154.—**Levi Keiler**, of Catawissa, Pa.—*Improvement in Atmospheric Pumps.*—Patent dated April 28, 1857.—Air is forced into chamber A through pipe H, forcing the water in cylinder A out through discharge pipe B, the valve *b* being closed during the operation. When the chamber A is emptied, valve *n* is closed, as represented in the engraving; and a fresh supply of water will then rush into chamber A through passage *a*, the air passing out through opening *r*.

The inventor says: I am aware that the elevation of water by condensation of air is not new, and do not claim anything more than the combination of the water receiver A and air induction pipe with the valve *n*, acting with respect to the openings *o* and *r*, as set forth, when said parts are arranged with respect to air condenser and discharge pipe substantially as described.

No. 16,603.—**Edmund Morris**, of Burlington, N. J.—*Improvement in Chain Pumps.*—Patent dated February 10, 1857.—The piston 4 travels in an India rubber tube B, the flanches D of which tube are fastened to the top and bottom of chamber A. This chamber being filled with water, the piston is always kept tightly packed.

Claim.—The application of an elastic flexible tube, arranged as set forth, in combination with the box or chamber in which it is enclosed, for the purpose of retaining water to assist in packing the pump, substantially as described.

No. 17,217.—**James Harrison**, Jr., of New York, N. Y.—*Improvement in Chain Pumps.*—Patent dated May 5, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I do not claim broadly the use of ropes composed of wire; but, to the best of my knowledge, I believe it is new to combine the buckets of chain pumps with a lifting cord composed of coiled wire, as shown.

I *claim* the use, in combination with the buckets B, of a lifting cord A composed of coiled wire, as described.

No. 16,875.—**George W. Griswold**, of Carbondale, Pa.—*Improvement in Rotary Pumps.*—Patent dated March 24, 1857.—The two eccentrics B B are placed diametrically opposite to each other on the shaft C. These two eccentrics, with their disks or plates *a c*, may all be cast or wrought in one piece, and this one piece constitutes the whole interior of the drum or cylinder which it should snugly fill.

D D are two cut-offs, one for each eccentric. These cut-offs are operated by the eccentrics themselves, one eccentric keeping the cut-off of its fellow eccentric in action. The cut-offs operate in concert with each other and with their eccentrics through the series of rollers *e e e*.

The inventor says: I am aware two separate eccentrics with a fixed or stationary partition between them have been used in a pump cylinder this I do not claim.

But I *claim* the double eccentrics with their disks or plates formed in one piece, when operating in a drum or cylinder, substantially in the manner and for the purpose set forth.

No. 16,869.—**Abel Barker**, of Honesdale, Pa.—*Improvement in Rotary Pumps.*—Patent dated March 24, 1857.—This improved rotary pump has two sliding valves *a* a^1, which are combined with a rotating valve box placed within the centre of the pump casing. This valve box is composed of a cylindrical casing *l*, divided into two chambers by the disk partition A. The said valve box is confined between the two annular and angular shaped sections *b b* of the pump case; which sections, in connexion with the periphery of the valve box, form the water-way C of the pump, as shown in the engravings. The said casing sections are of such a shape that they can readily be combined with each other, and when suited to each other they hold the valve box within their inner angles *o o* in such a manner that the valve box can be freely rotated.

Claim.—Operating the two valves by means of independent attachments, which are actuated by cam grooves in the side casings of the pump, when the said valves are made to work in separate chambers in such a manner that if either valve should get out of order the said valve and its attachments, and also the side casing on that side of the pump, may be detached from the pump without interfering with the perfect action of the other valve.

No. 16,974.—**Richard Gilbert**, of Rochester, N. Y.—*Improvement in Rotary Pumps.*—Patent dated April 7, 1857.—Motion being imparted to shaft Y, the arm F on said shaft acts on the inner circumference of the eccentric ring D, and presses said ring against the inner circumference of the shell A, forcing the water from the induction pipe M into the induction pipe O. The ring D is prevented from turning by being connected to the shell by means of a link J.

The inventor says: I do not claim the annular piston of itself.

Neither do I claim a radial arm.

But I *claim* the vibrating link or arm J, in combination with the annular piston D, as described, and for the purpose specified.

No. 18,488.—**Henry Pease**, of Brockport, N. Y., assignor to Himself, **John Eckler**, **Ebenezer B. Buswell**, and **Frederick Belden**, of the same place.—*Improvement in Rotary Pumps.*—Patent dated October 20, 1857.—When motion is given to the pump, in the direction of the arrows, the piston draws the water in at B, and drives it out at D. When the piston has moved round far enough to come in contact with the stop P, which drives the piston down into the chamber 40, or nearly so, when it also comes in contact with the abutment, which insures its going as far as necessary for the purpose of passing the abutment, it is then thrown out of the shell again, or nearly so, by means of the segment B, always keeping one piston in full operation.

The valves are constructed in such a manner as to compensate for their natural wear, which is done by hanging them eccentrically as follows: measuring on a line from 26 to pin *a*, then on a line to 27; the short side to work against the shell, and the long side to work in chamber 40. The hangers are made in such proper shape as to close the valves before the cylindrical portion reaches the abutment, thereby preventing injury or obstruction to the valves.

The inventor says: I *claim* the valve *x x*, constructed substantially as described—that is, hanging the valve eccentrically on the pin *a*, to compensate for the natural wear.

The hanger portion or heads of the valve, constructed as described, to close the valve before the cylindrical portion reaches the abutment.

The construction of the wearing surface of the valve, as described, for the purpose of obtaining a large wearing surface, and securing it from injury while passing the abutment.

No. 18,986.—Oliver Palmer, of Buffalo, N. Y.—*Improvement in Rotary Pumps.*—Patent dated December 29, 1857.—B B^2 are the pistons, made of cast iron or other metal, and revolving within the case A upon separate shafts. Each piston differs slightly from the other in the lines of its periphery; but the periphery of each is convex and concave, and so formed that the two will revolve on their respective shafts, and keep their peripheries in contact.

C is the metallic packing; this is made of brass or other soft metal; it is located in a suitable chamber, in the extremities of the pistons. It is allowed to play quite loosely in the chamber, so that the centrifugal force created by the revolution of the pistons will throw the packing outwardly against the inner periphery of the case, and thereby secure a water-tight contact between the pistons and the case in all parts of the revolution where the same is required.

Claim.—The pistons B B^2, constructed as described, in combination with the metallic packing C, operated as described, said pistons and packing revolving together, in the manner and for the purpose set forth.

No. 19,004.—William A. Young, of Charlotte, N. C.—*Improvement in Rotary Pumps.*—Patent dated December 29, 1857.—This improved pump is intended to be submerged, and is operated by means of a series of valves F placed within a circular rotating head D, which is placed eccentrically within a cylindrical case or box A, whereby the valves are made self-acting.

The inventor says: I am aware that sliding pistons have been fitted in rotating heads, placed eccentrically within cylindrical caves or boxes, and arranged in various ways, said devices being employed both for rotating pumps and rotary engines. I therefore do not claim broadly the employment or use of sliding valves or buckets placed within a head fitted eccentrically in a case or box.

But I *claim* placing the sliding valves or buckets F within the rotating head D tangentially with its shaft E, or tangential with a circle concentric therewith and with the head; the head being placed eccentrically within the bar or case A, which is provided with the induction and eduction passages *a b*, as and for the purpose set forth.

I further claim the curved projections *h* at the outer ends of the valves or buckets F, as and for the purpose specified.

No. 18,660.—Charles N. Lewis, of Seneca Falls, N. Y., assignor to Himself and G. C. King, of Seneca Falls, N. Y.—*Improved Ventilating Attachment to be Applied to Pumps.*—Patent dated November 17, 1857.—The nature of this invention is shown by the engravings and claim.

The inventor says: I do not claim broadly the ventilation of wells by means of air tubes leading from the surface of the ground to the interior of the well, for I am aware that it is old. An example may be seen in the patent of D. Bartlett, 1856.

But to the best of my knowledge and belief, it is a new combination to unite a perforated ventilating chamber and base with the pump-barrel in such a manner that the ventilator shall constitute a part of the pump; whereby, when the pump is applied, the ventilator is also applied, and becomes operative from the moment the pump is set.

I *claim* the arrangement and combination of the perforated base D, cap G, and perforated tube *g*, with the pump-barrel A, as set forth, whereby the ventilator becomes attached to and forms a part of the pump, all as specified.

No. 17,009.—William Wright, of Hartford, Conn.—*Improved Method of Working Pumps.*—Patent dated April 7, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—I do not claim as the equivalent of my invention the use of two spiral cams, operating directly upon the heads of the piston rods, in the manner shown in the aforesaid patent of Root & Dickinson; but inasmuch as that arrangement on a large scale is mechanically inoperative, and therefore useless,

I do *claim* to have devised the method referred to as in use at the Hartford Water Works; that is to say, I claim as my invention the described arrangement for working a double bucket pump, consisting of a cam A placed centrally over said pump, and combined with the buckets thereof by bell-cranks B C, so situated that one arm of each of said cranks bears at the same time upon opposite or nearly opposite points of the edge of the cam, whereby the necessary strength and stability may be given to the several parts, while preserving the regular throw of the buckets, the whole being arranged and operating substantially in the manner set forth.

of the arrows, the piston draws the water in at B, and drives it out at D. When the piston has moved round far enough to come in contact with the stop P, which drives the piston down into the chamber 40, or nearly so, when it also comes in contact with the abutment, which insures its going as far as necessary for the purpose of passing the abutment, it is then thrown out of the shell again, or nearly so, by means of the segment R, always keeping one piston in full operation.

The valves are constructed in such a manner as to compensate for their natural wear, which is done by hanging them eccentrically as follows: measuring on a line from 26 to pin *a*, then on a line to 27; the short side to work against the shell, and the long side to work in chamber 40. The hangers are made in such proper shape as to close the valves before the cylindrical portion reaches the abutment, thereby preventing injury or obstruction to the valves.

The inventor says: I *claim* the valve *n n*, constructed substantially as described—that is, hanging the valve eccentrically on the pin *a*, to compensate for the natural wear.

The hanger portion or heads of the valve, constructed as described, to close the valve before the cylindrical portion reaches the abutment.

The construction of the wearing surface of the valve, as described, for the purpose of obtaining a large wearing surface, and securing it from injury while passing the abutment.

No. 18,986.—Oliver Palmer, of Buffalo, N. Y.—*Improvement in Rotary Pumps.*—Patent dated December 29, 1857.—B B^2 are the pistons, made of cast iron or other metal, and revolving within the case A upon separate shafts. Each piston differs slightly from the other in the lines of its periphery; but the periphery of each is convex and concave, and so formed that the two will revolve on their respective shafts, and keep their peripheries in contact.

C is the metallic packing; this is made of brass or other soft metal; it is located in a suitable chamber, in the extremities of the pistons. It is allowed to play quite loosely in the chamber, so that the centrifugal force created by the revolution of the pistons will throw the packing outwardly against the inner periphery of the case, and thereby secure a water-tight contact between the pistons and the case in all parts of the revolution where the same is required.

Claim.—The pistons B B^2, constructed as described, in combination with the metallic packing C, operated as described, said pistons and packing revolving together, in the manner and for the purpose set forth.

No. 19,004.—William A. Young, of Charlotte, N. C.—*Improvement in Rotary Pumps.*—Patent dated December 29, 1857.—This improved pump is intended to be submerged, and is operated by means of a series of valves F placed within a circular rotating head D, which is placed eccentrically within a cylindrical case or box A, whereby the valves are made self-acting.

The inventor says: I am aware that sliding pistons have been fitted in rotating heads, placed eccentrically within cylindrical caves or boxes, and arranged in various ways, said devices being employed both for rotating pumps and rotary engines. I therefore do not claim broadly the employment or use of sliding valves or buckets placed within a head fitted eccentrically in a case or box.

But I *claim* placing the sliding valves or buckets F within the rotating head D tangentially with its shaft E, or tangential with a circle concentric therewith and with the head; the head being placed eccentrically within the bar or case A, which is provided with the induction and eduction passages *a b*, as and for the purpose set forth.

I further claim the curved projections *h* at the outer ends of the valves or buckets F, as and for the purpose specified.

No. 18,660.—Charles N. Lewis, of Seneca Falls, N. Y., assignor to Himself and G. C. King, of Seneca Falls, N. Y.—*Improved Ventilating Attachment to be Applied to Pumps.*—Patent dated November 17, 1857.—The nature of this invention is shown by the engravings and claim.

The inventor says: I do not claim broadly the ventilation of wells by means of air tubes leading from the surface of the ground to the interior of the well, for I am aware that it is old. An example may be seen in the patent of D. Bartlett, 1856.

But to the best of my knowledge and belief, it is a new combination to unite a perforated ventilating chamber and base with the pump-barrel in such a manner that the ventilator shall constitute a part of the pump; whereby, when the pump is applied, the ventilator is also applied, and becomes operative from the moment the pump is set.

I *claim* the arrangement and combination of the perforated base D, cap G, and perforated tube *g*, with the pump-barrel A, as set forth, whereby the ventilator becomes attached to and forms a part of the pump, all as specified.

No. 17,009.—William Wright, of Hartford, Conn.—*Improved Method of Working Pumps.*—Patent dated April 7, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—I do not claim as the equivalent of my invention the use of two spiral cams, operating directly upon the heads of the piston rods, in the manner shown in the aforesaid patent of Root & Dickinson; but inasmuch as that arrangement on a large scale is mechanically inoperative, and therefore useless,

I do *claim* to have devised the method referred to as in use at the Hartford Water Works; that is to say, I claim as my invention the described arrangement for working a double bucket pump, consisting of a cam A placed centrally over said pump, and combined with the buckets thereof by bell-cranks B C, so situated that one arm of each of said cranks bears at the same time upon opposite or nearly opposite points of the edge of the cam, whereby the necessary strength and stability may be given to the several parts, while preserving the regular throw of the buckets, the whole being arranged and operating substantially in the manner set forth.

No. 17,188.—N. R. Bates, of New York, N. Y.—*Improvement in Stuffing-Boxes.*—Patent dated May 5, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim constructing a stuffing-box for the purpose of allowing a lateral motion of the piston, as that has been done before.

But I *claim* the combination and arrangement of the plate F with the wires H H surrounding it, and the screw rods L l and nuts J J, as described, for the purpose of compressing evenly around the piston the packing as it wears.

No. 17,503.—Joseph Hyde and William Stearns, of Wilmington, Delaware. — *Improved Method of Guiding and Cushioning Puppet Valves.*—Patent dated June 9, 1857.—When the valve A is operated, it is guided in rising and falling by rod B, working in a cushion or chamber O by means of a head C, which prevents the mashing and bruising of the stems.

Claim. — The application to steam engine pump-valves of the V-brace, with the piston working into the chamber or cushion, in the precise manner set forth and described, to prevent mashing or bruising of the valves.

No. 17,401.—S. H. Whitaker and Ezra Cope, of Cincinnati, O.—*Improved Thermo-pneumatic Safety-Valve.*—Patent dated May 26, 1857.—When the beeswax in the chamber A is melted by the heat of the steam, the diaphragm *a* is raised by the expansion thereof, closing the passage B and preventing the escape of steam to the radiator D; but when the radiator cools by the steam being shut off, or the fire going down, the beeswax cools and contracts, drawing down the diaphragm *a*, and opening the passage B for the admission of air to the radiator through opening *c*.

The inventors say: We do not claim generally the operation of an air valve for steam-heating apparatus by the expansion of fluid bodies by heat; as we are aware that the thermo-expansive properties of quicksilver, air, and other fluid bodies have been employed for this purpose with partial success.

Neither do we claim the use of beeswax or other substance of similar character for the purposes described.

But we *claim* the described self-acting air valve, consisting of a chamber, whose top is composed of a flexible diaphragm, or its equivalent, filled with beeswax or other fusible substance that solidifies at atmospheric temperatures, but is expansible by heat, and that will act upon the diaphragm to open and close the passage through the combined agencies of expansion and contraction by heat, gravitation, and cohesive attraction, as specified.

No. 17,624.—Edward Hamilton, of Chicago, Ill.—*Improved Valvular Arrangement for Faucets, &c.*—Patent dated June 23, 1857.—To open this, cock valve *b* is turned, by means of handle *b*, until the orifice *f* is brought coincident with the channel in the chamber *a*, and the water then can pass through the water-way *g* of the faucet.

The inventor says: I do not claim broadly the employment of conical valves in water-cocks, nor broadly the arrangement of valves in such a manner as that the pressure of the fluid shall keep the valves tight in their seats. An example of both of these features may be seen in C. A. Fautz's faucet, 1853.

But I *claim* the employment of a hollow conical perforated valve *b*, in the manner substantially as described.

No. 18,842.—Isaac C. Foster, of Union City, Tenn.—*Improvement in Machinery for Lifting Water.*—Patent dated December 15, 1857.—The inventor describes the action of his improved apparatus as follows: Suppose the windlass to be moving in the direction indicated by the arrow, the line *e* which is attached to the ring on the ascending end of the rope will, when the knot *i* or its equivalent draws upon the ring *k*, raise the pawl G and carry it over the highest point until it falls on the other side of the pivot, so as to be ready to hold the windlass when turned in the opposite direction for raising the other bucket. In the same manner the action of the opposite end of the rope C, operating on the line *f*, reverses the position of the catch; thus the pawl is shifted to opposite sides of the windlass automatically.

Claim.—The arrangement of the double pawl G, and of the lines *e* and *f*, the sliding rings *k k*, and knots *i i*, or their equivalents, in combination; so as to automatically shift said pawl alternately to opposite sides of the windlass, and thereby prevent each ascending bucket in turn from returning into the well, substantially as specified.

No. 17,654.—Peter H. Niles, of Boston, Mass., assignor to Himself and Alfred Douglass, jr., of the same place.—*Improved Water Metre.*—Patent dated June 23, 1857.—The water, being admitted to the metre by the pipe H, fills the chambers G G^1; thence it flows through the opening *a* into the chamber E, the air escaping through the opening *n*. When the water reaches the top of the cylinder, the openings *n* are closed by their floating valves. The pressure now exerted upon the piston C forces it and piston C^1 in the direction of the arrow, until the adjusting screw *h* bears against the sleeve R, and carries with it the pistons C C^1, the pin *i* moving freely along the slot *g* in the standard T. As the sleeve R moves, it vibrates the shaft P, and the pin *e* traverses the slot *f*, thereby depressing shaft O and diaphragm N. The reciprocating motion of shaft O is made to act upon the registering mechanism by means of a rod *p*. The motion of the pistons C C^1 is reversed by the action of sliding valve K, which is operated by the action of the differential piston or diaphragm N, which is actuated by the difference of the pressure of the water in the chambers G^1 and M.

Claim.—The two pistons operating in a single cylinder, in the manner substantially as set forth, in combination with the differential piston N, as described.

Second. I *claim* the air chamber F between the pistons C C^1, operating in the manner substantially as set forth.

Third. I claim float valve *w*, in combination with the two-way cock

U, whereby, when the water is shut off, all the chambers of the mètre are emptied, as set forth.

No. 17,593.—ARCHIBALD THOMSON, of Detroit, Mich.—*Improved Method of Elevating Water by Compressed Air.*—Patent dated June 16, 1857.—The reservoir or tank A is immersed in a stream or well from which the water is to be raised. When air is forced down into compartment *b*, by operating a pump at the upper end of pipe B, the water in *b* will be forced up through pipe C to the desired spot. As the level of the water descends, the buoy *j* descends, and opens the valves *e g*. As the pipe *d* is opened, there will be an equal pressure of air on the surface of the water in both compartments, and the water from *c* will pass through passage *f* into *b*, and when the necessary supply is in *b*, the buoy *j* will close valves *e g*, the water in *c* being reduced sufficiently to cause the buoy *q* to open the valves *l m*; the air in the upper part of *c* will now escape through pipe *n*, and the water will rush through the opening in the bottom of *c*, which compartment will in consequence be replenished; the buoy *q* closing the valves *l m* when the requisite quantity of water is within said compartment.

The inventor says: I do not claim the raising of water by compressing or forcing air into a chamber or reservoir irrespective of the means employed for attaining efficiently said result.

But I *claim* the reservoir or tank A formed or provided with two compartments *b c*, which are provided respectively with valves *e g l m*, operated as shown, the compartment *b* being provided with the air forcing pipe B and eduction pipe C, the two compartments by the action of the valves communicating intermittently by means of the pipe *d* and passage *f*, the whole being arranged substantially as described for the purpose set forth.

No. 18,293.—JAMES NAUGHTEN, of Cincinnati, O.—*Improved Apparatus for Separating Oily Matter from Water.*—Patent dated September 29, 1857.—The box can be set at any convenient place and connect with the sink or vessel in which the dishes, &c. are washed, and the water made to run from the sink into the chamber A through the pipe attached to the side, and near the upper part of the chamber A, as represented in figure 2; as the greasy water is admitted into chamber A, it fills and forces itself into chamber B until it rises up and flows over the division board, and from thence flows into chamber C, and is conducted through opening *h* in the bottom of this chamber. The arrows marked in the drawing show the flow of water through the different chambers.

The inventor *claims* the arrangement of the chambers *a*, B, and C, when the chambers *a* and B are connected with the opening *d*, as represented, and all used in the manner and for the purposes specified.

No. 17,338.—ANDREW NICOL, of Carbondale, Pa.—*Improved Valvular Arrangement in Apparatus for Raising Water.*—Patent dated May 19, 1857.—A vacuum being produced in the pipe D, and rotary motion being given to the shaft H, the two rods F G have an opposite reciprocating motion given them by the reverse cranks *o*, so that when the valves *q* of the two chambers A B are open, the opposite ones are closed, and *vice versa*. When the valves of the chambers A^1 B^1 are closed, as shown in the engraving, a vacuum is produced in the chamber A^1, and the water passes up pipe E through valve *l* and fills chamber A^1. While this chamber is being filled, the valve *q* of the chamber A is open, and the water in said chamber, which was drawn into it previously to filling the chamber A^1, is forced up by the pressure of the atmosphere through valve *g* into tube *e*, and through valve *d* into chamber B^1. While the water is being forced from chamber A into chamber B^1, a vacuum is produced in chamber A^1, and said chamber is being filled with water, while the water in A is being forced from it. As the valves *q* of the chambers B B^1 open, the water is forced out through openings *x*, which can be closed by gates *y*.

Claim.—The rods F G provided with the valves *q q*, and operated as shown, in combination with the chambers or vessels A A^1 B B^1, suction pipe D, and branch pipe *j*, and the tube *c a b e f*, provided with the valves *e d g h*, the whole being arranged as described for the purpose specified.

No. 16,669.—DANIEL K. WINDER, of Cincinnati, Ohio.—*Improved Method of Raising Water.*—Patent dated February 17, 1857.—When a greater quantity of water is desired, the tube *l* and plunger *j* are depressed, compelling the water contained in the central space to enter the plunger, and the annular chamber *f*. The water contained in the plunger is driven up the tube by the reaction of the air; meanwhile, valve *i*, shutting up the water in the annular chamber, causes it to be retained there under pressure of the confined air for future use. If afterwards a small quantity of water is desired, the cock *r* is to be opened by lifting handle *t*, when water will pass up through tube *p* into *j*, and cause an equal volume of water to pass up through *l*.

Claim.—The arrangement and combination, substantially as described, of annular reservoir *f* with the plunger *j*, tube *l*, flexible pipe *p*, valves *h i k*, and cock *r*, for the purposes explained.

No. 16,686.—THOMAS HANSON, of New York, N. Y.—*Improved Apparatus for Supplying the Upper Stories of Houses with Water.*—Patent dated February 24, 1857.—The object of this improvement is to pump water into a reservoir or reservoirs *v*, in the upper part of a building, for the supply of the upper stories, by drawing water for the supply of the lower stories; *s s* represents the water level of the city reservoir.

Claim.—The combination of a hydraulic engine with and interposed between the supply pipe from the street main, receiving water from a head, and the house pipe or pipes and cock or cocks for supplying water to the lower story or stories of a house by the force of the said head, and the pump operated by the said engine, and receiving water from the same head, and discharging it into a reservoir or reservoirs for the supply of the upper stories of the house, substantially as and for the purpose specified.

No. 16,881.—Samuel Reynolds, of Oswego, N. Y.—*Improved Water-Wheel.*—Patent dated March 24, 1857.—The nature of this improvement in water wheels consists in arranging a series of radial floats E E above a horizontal plane F, in combination with a series of floats or buckets H H arranged below said plane, made narrowest where they join the radial floats, and gradually increasing in width outwards and in depth downwards, with an inclination towards the centre, to their termination, so as to make an outlet or discharge deeper towards the centre than towards the periphery.

Claim.—The radial floats above the horizontal plane, in combination with the buckets or floats below said plane, constructed substantially as described, that is narrowest where they join the radial floats, gradually increasing in width outwardly and in depth downwards, with an inclination towards the centre, to their termination, making the outlet to discharge the water deeper towards the centre than towards the periphery.

No. 17,426.—Reuben Daniels, of Woodstock, Vt.—*Improved Water-Wheel.*—Patent dated June 2, 1857.—The water passes through the flume D and acts upon the inner sides of the buckets *b*, and passing between them escapes at the outer side of the wheel. The flanch *c* confines the water sufficiently so that it is all made to act against the buckets as it passes out of the flume.

The inventor says: I am aware that it is common in all wheels to bind or hold the ends of the buckets by means of narrow rims which cover the ends of the buckets; and therefore I do not claim such rims.

I also disclaim broadly confining the stream of water to its effective course. An example of this is seen in E. Parker's patent, dated July 24, 1847.

I also disclaim broadly the admitting of water within the wheel, and discharging from its periphery, as such wheels are in general use.

I also disclaim any special form of the buckets.

I also disclaim every feature of the described invention which is seen in any other water-wheel of this class.

But, to the best of my belief, no wheel has ever been made of the class now shown, in which a flanch *c* was employed in the manner and for the purpose described. The use of such a flanch causes the wheel to present new virtues of a great and important character.

I *claim* the use of a flanch *c*, or its equivalent, in the manner and for the purposes substantially as described.

No. 18,507.—William Henley, of New Salem, N. C.—*Improved Water-Wheel.*—Patent dated October 27, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I am aware that the shafts of water wheels have been passed through cylinders, and that a top vent wheel has been devised; these I do not claim independent of each other, or of the manner in which I arrange them with the curb and water way.

But I *claim* so arranging a wheel on the top of a curb that has an open centre, and the water way of which diminishes from its bottom towards the point where it meets the buckets of the wheel, as that the points of the buckets shall project into and be struck by the live water, and the whole wheel lifted up to counteract the weight of the dead or back water, as set forth.

No. 16,432.—E. G. Cushing, of Dryden, N. Y.—*Improved Centre-Vent Water-Wheel.*—Patent dated January 20, 1857.—D and C represent the buckets of this water-wheel. When the gate is shut so that no water can enter the spaces between the buckets, then the springs F tend to close said spaces, turning the buckets in the position of buckets C; when the water is let on to the wheel said spaces are enlarged, as represented in the position of buckets D. This arrangement permits the use of a variable quantity of water on the same wheel.

The inventor says: I do not claim any particular shaped bucket, as I am of the opinion that one stated curve is not adapted to all heads with equal results.

But I *claim* making a bucket with a back of such a curve that it forms a space of regular contraction from the outside to the inside of the wheel.

2d. Hanging the buckets, combined with a spring, in such a manner that the discharge orifice is regulated by the quantity of water let into the scroll and the amount of power required, and closing together when the gate is shut.

No. 17,119.—Thomas Stamp, of Wetumpka, Ala.—*Improved Current Water-Wheel.*—Patent dated April 21, 1857.—By turning pinion *h*, rack *e*, together with hub F of the water wheel *b*, and consequently the water-wheel itself, may be raised or lowered, and thus exposed to a greater or smaller quantity of water acting upon it.

Claim.—So constructing a current water-wheel that it may be raised and lowered, as set forth, in combination with the method described for regulating the force of current acting thereon, all arranged and combined as set forth.

No. 17,041.—J. R. Howell, of Alexandria, Va.—*Improved Method of Attaching Adjustable Buckets to the Shafts of Water-Wheels.*—Patent dated April 14, 1857.—The buckets A can be adjusted on the arms C by means of the bolts E passing through the slots D, and thus the diameter of the wheel can be enlarged or reduced.

Claim.—The method described of adjusting and securing the buckets A to the arms *c* of the water wheel, that is to say, the arrangement of the ribs B, mortises, or their equivalents, and bolts E, in combination with the flanged ends *a* of the arms *c* of the wheel, substantially as set forth.

No. 16,465.—Tenison Chesher, of Middleburg, Ohio.—*Improved Method of Inserting the Buckets in the Shafts of Direct Horizontal Water-Wheels.*—Patent dated January 27, 1857.—Mortises *e f* are made at right angles with each other through shaft A, through which two corresponding mortises in cylinder *a*, the buckets C slide with a reciprocating motion. This motion is effected by means of the curved piece D, when coming in contact with the end of the bucket.

Claim.—The sliding buckets C, when constructed and arranged as described, and combined with the mortises *e* and *f*, in the manner and for the purpose specified.

No. 17,726.—Thomas Clark, of Philadelphia, Pa.—*Improved Air Chamber to effect Uniformity of Flow of Water, &c., through Pipes.*—Patent dated July 7, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—I am aware that an elastic medium in connection with a perforated pipe or head has been used as a spring to ease the strain on the hose or pipe. This I do not claim.

But I claim the arranging of an elastic or extensible sack or bag J in the line of a pipe or water way, when said sack is surrounded with a casing and air chamber for the purpose of effecting a uniform flow of water through pipes.

No. 16,535.—Daniel P. Farnham, of Milton, Wis.—*Improved Self-Operating Device for Tilting Buckets in Raising Water from Wells.*—Patent dated February 3, 1857.—The rod *e* on striking rod H will be released from the loop *g*, and the bucket will tilt as represented in dotted lines.

The inventor says: I do not claim attaching buckets to endless chains for raising water, for that is an old and well known device.

But I *claim* the fastening formed of the rods *e* attached to the cross-pieces *d* of the links C, and the loops *g* on the buckets F, in combination with the pendent or swinging rod H, placed within the framing or curb A¹, the above parts being arranged a sdescribed, and for the purpose set forth.

No. 16,975.—James H. Hanchett, of Beloit, Wis.—*Improved Current and Paddle Wheel.*—Patent dated April 7, 1857.—The paddle wheel, consisting of the sides B and B¹ and the floats C, is suspended by means of radius bars H, so that said wheel will be free to rise and fall, by oscillating on the axis of said radius bars, thus passing over any obstructions which may be under water. The wheel as it rises and falls, by oscillating on the axis of the radius bars, turns equally said radius bars and the floats C, by means of their crank connexions *b*, so that their parallelism to each other is maintained in all positions of the wheel.

Claim.—First. Suspending water and paddle wheels by means of radius bars, substantially as described.

Second. The method of maintaining the planes of the faces of the floats of wheels that oscillate, as described, in a determinate relation to the radius of oscillation of the wheel, as described.

No. 17,246.—L. M. Wright, of Niagara Falls, N. Y.—*Improved Mode of Operating the Gate of Turbine Wheels.*—Patent dated May 5, 1857.—The circular gate A is attached to the sliding collar C, and thus, by operating lever L, the position of the gate A can be adjusted to any desired degree.

The inventor says: I do not claim the parts separately.

But I *claim* their arrangement in the manner described, and for the purposes set forth.

No. 17,168.—Rufus Nutting, of Randolph, Vt.—*Improved Wind-Mill.*—Patent dated April 28, 1857.—When it is desired to close the wings D² in part or entirely, the lever O is pressed down, bringing clasps G against the ratchets S upon the back of the wings, and, as soon as they are closed by coming against the wind, prevents them from reopening until lever O is raised. The parts E F G constitute the regulator, which governs the speed of the machine by preventing the wings from opening wider than is necessary to receive sufficient wind to propel it with the desired velocity, the amount of centrifugal force necessary to bring the regulator towards the back of the wings being graduated by the weight of F G, in connexion with the distance the upper axis of E is in the rear of its base.

Claim.—The construction of a horizontal wind power, with a regulator or clasp, operated by centrifugal force, which shall regulate the amount of surface of wing or sail opened to the wind, substantially as described.

Also, an arrangement by which the regulator or clasp may be conveniently set at any time by the operator in such position as to prevent the wings from opening too far, or at all, as is desired.

No. 18,368.—William Zimmerman, of Quincy, Ill.—*Improved Wind-Wheel.*—Patent dated October 6, 1857.—The nature of this invention consists in a wind wheel with radical sails arranged upon an upright shaft, and provided with a regulating apparatus to change the position of the sails and adapt them to the force of the wind, or the resistance of the machinery operated; and in devices to receive the wind and to guide it on to the wheel in the right direction to propel it with the greatest force; also, in a vacuum escape-cap above or around the wheel, for the wind to pass through out of the wheel; also, in arranging doors at the rear of the wheel-house, closed by a weight or spring, so as to yield and open for the surplus wind in the wheel-house to escape; and in some revolving wind receivers, or catchers, provided with flues to conduct the wind caught in the wheel-house. The drawings and claim will give a fuller idea of the improvements.

The inventor says: I *claim* a wind-wheel with radial sails arranged upon an upright shaft, when provided with the regulating apparatus first described, or its equivalent.

I claim the arrangements of the partitions and inclined guides which conduct the wind received at the front of the wheel-house on to the four quarters, or the several parts of the wind wheel, substantially as described.

I claim a vacuum escape-cap above or around a wind wheel, for the purpose set forth, substantially as described, whether made adjustable so as to enlarge the vacuum area or otherwise.

I claim the revolving wind receivers, or catchers, with their conducting flues, for the purpose of catching the wind and supplying it to the wheel, substantially as described.

No. 16,492.—John M. May, of Janesville, Wis.—*Improved Self-Regulating Wind-Mill.*—Patent dated January 27, 1857.—The nature of this invention consists in making solid elbows L R, one arm L of each elbow having attached to it a sail M, and the other arm R having attached to it a ball S.

As the revolutions are increased, the weights S, acted upon by centrifugal force, turn the sails. The velocity of the wind-wheel being now somewhat checked, the weights S, aided by the weight of the shackle, the connecting rod, and the horizontal lever V below, and also aided by the upward inclination of the horizontal shaft, are caused to return to their former position, and in so doing gradually revolve each sail towards its original position.

The inventor says: I do not claim the separate devices for regulating the wind-wheels independent of their connexion with each other.

I *claim* the arrangement of the devices which are connected with each other, as described, for the purpose of regulating the velocity of the wind-wheel, and also for the purpose of controlling the wind-wheel independently of the self-regulating properties.

No. 16,943.—J. C. Wilson and T. G. Wilson, of Cedar Hill, Texas.—*Improved Method of Feathering the Sails or Vanes of Wind-Mills.*—Patent dated March 31, 1857.—The engraving represents one of the wings W of a wind wheel in a side view, with the driving-shaft A in section; the wheel is rotated as the wind acts upon the oblique sides of the wings W. When storms occur, the crank *g* is held by the miller, causing the rotation of the wheel to produce the outward movement of the screw *m*, which, acting on rods *c*, will draw the edges *n* of the wings in the direction of the outer extremity of the shaft A, and cause the wings to lie in planes passing through the axes of arms *a* and main shaft A; the wind will then be able to act on their edges only, doing no damage to the wheel.

Claim.—The combination of the traversing screw *m*, having stops *e* and *f*, as described, with the slide piece and rods leading to the wing; the construction and arrangement being substantially as and for the purposes described.

No. 16,346.—Henry S. Wentworth, of Napoleon, Mich.—*Improved Self-Regulating Wind-Director for Wind-Mills.*—Patent dated January 6, 1857.—The wind operates the upper portion only of the fans of the wind-wheel K, it being prevented from affecting the lower portion of the same by the semi-circular screen L, which partially encloses it, and is hung upon the same centre with the wheel. When the force of the wind is so great as to drive the wheel too rapidly, it operates the fan M which is connected with screen L, thus raising the latter and shutting the wind partially off from the upper portion of the wind-wheel.

Claim.—A semi-circular revolving balance screen, operated variably, as set forth, by the power of the wind upon the revolving extra fan M, for the purpose of admitting only the requisite current of air to the wheel, substantially as described, whether placed in a horizontal or vertical form.

No. 17,862.—Ethan Allen, of Worcester, Mass.—*Improvement in Governor for Regulating the Work of Wind-Mills, &c.*—Patent dated July 28, 1857.—When the wind-mill is revolved with its average velocity, the balls of the regulator are in such a position as to bring the clutch N between the gears K and L, affecting neither; they will then turn with shaft J with the same velocity as the shaft D, thus leaving the pinion H and screw G still holding the crank pin E midway from its centre of motion to its length of slide, giving a medium length of stroke. When the force of the wind increases, the balls of the regulator are raised and throw the clutch N down, which, catching the gear L, drives the shaft J and turns the screw G, moving the pin E on its slide further from its centre of motion, thus increasing its length of stroke and work.

The inventor says: I am aware that the employment of a centrifugal governor, to regulate the stroke of a pump or the amount of work by the available power of a windmill, is not new. This, therefore, I do not claim.

But I *claim*, in combination with the adjustable or expanding crank, the projection U attached to the slide of the crank pin, and the sliding rod W upon which it acts for the purpose of engaging a grooved collar upon the spindle of the governor, whereby its adjusting power is confined within a certain proper range, substantially as set forth.

No. 17,384.—James Mitchell, of Woodsfield, O.—*Improved Wind-Wheel.*—Patent dated May 26, 1857.—A detailed description of this invention would take up too much space to be given here; the principal features thereof will be understood by reference to the claim and engravings.

The inventor says: I am aware that weights have been applied to the fans of said wheels, and connected to sliding heads, and so arranged as to render them self-regulating. I do not claim, therefore, a weight thus applied.

Neither do I claim the levers *f* applied to the fans as shown, nor the stopping cord *m*; for they or their equivalents have been previously used.

But I *claim*, first. Placing the arms L of the fans obliquely, so as to have a proper degree of inclination with the shaft E, for the purpose specified.

Second. Attaching the arms L to the levers K, and connecting said levers to the sliding collar N, operated as shown, for the purpose of adjusting the arms L more or less obliquely with the shaft E as desired.

No. 16,616.—Edward A. Tuttle, of Brooklyn, N. Y.—*Improved Self-Adjusting Wind-Wheel.*—Patent dated February 10, 1857.—The revolutions of the wind-wheel impart to the sails a rotation about their axes *c c* in an opposite direction, at the rate of one rotation of the sails to two revolutions of the wind-wheel, by which means the sails are to be retained in the best possible position before the wind.

By means of vane *v*, the shifting of the wind causes the sails to accelerate or retard their rotary motion, so as to maintain the same angle to the wind, however the latter may be changed.

In suspending the sails upon vibratory shafts o o^1, they are allowed to incline from the perpendicular in either direction, at the same time they are rotating upon their axes *c c*, and around with the wind-wheel, being weighted and balanced by bars *w*, (which latter can be adjusted by turning them more or less on their pivots *p p*,) so as to turn edgewise by a greater or less force of wind as desired.

The offsets y y^2 serve the double purpose of weighting the sails, and also of assisting them to perform the rotations around their axes, by offering to the wind a greater resisting surface upon the receding side of the sail, when they are anywise inclined from the perpendicular by the force of the wind.

The inventor says: I do not claim a horizontally revolving wind-wheel as such, or suspending them upon a second horizontal shaft simply.

I *claim* placing the sails D D, or a greater number, in a position before the wind, as shown, and then causing them to perform complete rotations upon their axes *c c*, in the time relatively with those of the wind-wheel and in the direction as specified, by connecting them with the crown-wheel E, in any manner producing the same result, for the purpose set forth.

I also claim the particular mechanism shown and described, viz: the crown-wheel E and vane *v*, connected with the sails D D by means of the pinion wheels *h h* and *l l*, and wheels F F, arranged in the manner substantially as shown for the purpose set forth.

I also claim combining with the horizontal rotary motion of the sails upon their axes *c c* the perpendicular adjustable vibratory motion described; by which they are rendered self-regulating in a most simple manner, although presenting reverse sides to the wind at each succeeding revolution of the wind-wheel.

I also claim the method of assisting the sails to perform their rotations upon their axes *c c*, by means of the reverse projecting rims y y^2 upon the bottom edges, and operating in the manner described.

No. 16,818.—Abner P. Wilson, of Solon, Ill.—*Improved Self-Regulating Wind-Wheel.*—Patent dated March 10, 1857.—When the force of the wind increases too much, it will overcome the gravity of the weights G, and raise the outer ends of the parts F of the sails, and thereby cause an opening of sufficient capacity to regulate the velocity of the sails.

The inventor says: I do not claim, broadly, the application of weights to adjustable sails, whereby the sails, by the action of the wind, are adjusted so as to present a greater or less surface to it, according to its velocity; for weights have been applied and arranged in various ways for effecting the purpose.

But I *claim* constructing the sails of two parts E F, attached or fitted to inclined frames, which are secured to the arms C D, the upper parts F of the sails being hinged to their frames *a*, and having weights G and cords *d* attached, substantially as shown and described for the purpose set forth.

No. 16,378.—Joseph Dunkley, of Carrollton, Mo.—*Improved Automatic Regulator for Wind-Wheels.*—Patent dated January 13, 1857.—At the starting of the wheel, the weight *m* will draw the slide *l* to the outer portion of wing *g*; the weight *c*, in connexion with the resistance of the air to the slide *l*, overcoming the weight *n*, the slats *s* being held close against each other by said weight *c*, and thus receiving the full force of the current of air. As the velocity of the wheel increases, weight *m* gradually rises, being held by cord *q*; this rise of weight *m* causes weight *n* to draw the slide *l* inward; and as the slide *l* moves inward, the arm of lever of the resistance of the wing *g* to the air behind diminishes, causing the weight *n* to draw the wing and lift the slats *s* of the arm A, with which it is connected.

Claim.—The employment of the slide wing *g*, arranged and operating substantially as described for the purposes specified.

No. 16,723.—Joseph De Sendzimir, of South Oyster Bay, N. Y.—*Improved Method of Suspending Wind-Wheels in Self-Revolving Adjusting Frames.*—Patent dated March 3, 1857.—The wind-wheel A is placed within the frame *b c*, which latter is pivoted at top and bottom, at *l* and *k*, for the purpose of allowing the wheel to be turned to the wind with perfect freedom.

The inventor says: I do not claim the regulation of the sails by weights, levers, and cranks; nor the use of brakes for stopping the wind-wheel; nor communicating power by pulleys, bands, cones, &c.; neither do I claim any part or feature of the machine described which is seen in any other wind-mill.

But, to the best of my knowledge, it is new to suspend the wind-wheel within a revolving frame, in the manner and for the purposes already described.

I *claim* suspending the wind-wheel A within a revolving frame *b c*, in the manner and for the purposes substantially as set forth.

No. 16,893.—Frederick W. Witting, of Twelve Mile Colett's Gin, Texas.—*Improved Mode of Regulating the Velocity and Furling the Sails of Wind Wheels.*—Patent dated March 24, 1857.—The claim and engraving explain the nature of this invention.

The inventor says: I *claim* connecting the spindles E to the sliding rod F by means of the part pinions or segments *c* and rack *d*, arranged as described. But I disclaim the spindles so arranged as to turn in their hub, and also the weight when not used in connexion with the segment and rack.

I further claim furling and unfurling the sails H by means of the drums *j k* attached to the rod F, and the cords *p t* attached to the drums and sails, as shown and described.

No. 18,440.—Jesse M. Clock, of Atlanticville, N. Y.—*Improved Vane for Wind-Wheels.*—Patent dated October 20, 1857.—This invention consists in an improved construction of the vane, whereby the wheel is quickly adjusted to face the wind during sudden changes of the same, and the tendency of the wheel to be deflected or turned from its proper position relatively with the direction of the wind, in consequence of the resistance offered to the revolutions of the wheel, by the application of machinery thereto, effectually prevented. The engraving and claim further describe this improvement.

Claim.—I do not claim, broadly, the application of a weight to the wings or sails of a wind-wheel, for the purpose of rendering them self-regulating; for this has been done in various ways.

Neither do I claim the sails arranged and applied to the wheels, as shown.

But I *claim* the vane I, formed of two parts a^1 b^1, the part b^1 having an oblique position relatively with the part a^1, and either hinged to said part a^1 or attached permanently to it, for the purpose specified.

No. 16,895.—A. W. Wood, of Milwaukie, Wis.—*Improved Method of Regulating Velocity of Wind-Wheels.*—Patent dated March 24, 1857.—The claim and engraving show the nature of this invention.

Claim.—Enclosing the wind-wheel A within a cylindrical case B, formed of two rows or series of vertical slats C D, one row or series of which is placed in a reverse position to the other; and encompassing said case with a gate G, which may be raised or lowered on said case in any proper manner; the above parts being constructed and arranged substantially as shown, and for the purpose of regulating the speed of the wind-wheel, as set forth.

No. 18,210.—Francis Peabody, of Salem, Mass.—*Improved Method of Regulating the Velocity of Wind-Wheels.*—Patent dated September 15, 1857.—The position of the sections E^1 and E^2 of the disk E may be adjusted behind the vertical wind-wheel B by pulling ropes G; and thus a greater or less way may be opened for the passage of the wind behind the wheel, thus affording the means of regulating the speed of the wheel.

Claim.—As an improvement in regulating the action of wind-wheels, the sectional disk, operating in the manner substantially as set forth.

XII.—LEVER, SCREW, &c.

No. 16,390.—H. Maranville, of Clinton, Ohio.—*Improvement in Balance for Detecting Counterfeit Coin.*—Patent dated January 13, 1857.—This implement is used as follows: In weighing, for instance, a silver dime, the coin is placed upon disk A, the edge of the dime being placed against the ledges *c*; the slide C is then adjusted so that the line marked 10, in the part marked "cts." on the slide, will be even with the outer edge of the plate B. If the coin be genuine, its edge will be precisely over the line marked 10 in the disk, and disk A and slide C will be evenly balanced. The thickness of the coin is indicated by figures on the ledges *c*, the ledges being of taper or inclined form.

Claim.—The graduated disk A and slide C, connected as shown, and hung in the ears or lugs *b*, the disk having ledges or guides *c c* attached to its face, and the whole arranged as shown and described for the purpose set forth.

No. 17,252.—Z. W. Avery and Otis Avery, of Bethany, Pa.—*Improvement in Self-Indicating Balance.*—Patent dated May 12, 1857.—When the scale-dish *h* is pressed downward by a weight therein, the scale-beam *b* is raised, causing the arm *c* to turn on its shaft *f*, and the poise *a* to roll out and balance whatever is placed in the dish *h*, the index *e* pointing out the amount of weight on the graduated scale-beam.

Claim.—The combination of the rolling poise *a* with the smooth beam *b* and the armature *c*, operating and arranged substantially in the manner and for the purpose set forth.

No. 18,973.—Ferdinand J. Herpers, of Newark, N. J.—*Improvement in Balances for Detecting Counterfeit Money.*—Patent dated December 29, 1857.—A is the base of the implement, and B B are two uprights attached to the base. C C represent two vertical rods, which are placed at the inner sides of the uprights, one to each upright. The lower ends of these rods are connected to the ends of a horizontal rod D, which is attached to the inner end of a lever E, said lever being pivoted at *a* to the base A, and having a spring F underneath it, the spring keeping the outer end of the lever elevated, and consequently the inner end depressed.

To the bar G the scale-beam J is attached; one end on part *f* of this scale-beam is graduated, or has small holes *g* made in it to receive the point of a weight K, said holes being made in the beam at proper points, and numbered corresponding to the different denominations of United States coin. The opposite end of the scale-beam is formed of a plate *h*, having slots *i* made in it, said slots corresponding in length and width to the several United States gold coins. To the under side of the plate *h*, a vertical plate *j* is attached, said plate being slotted vertically, the vertical slots corresponding in width to the slots *i*, and being in line with them.

The inventor says: I do not claim to be the inventor of swinging index bars for weighing machines, and therefore I disclaim the same as used in my apparatus. Their employment is not essential, as my instrument can be made and used either with or without the same, as may be desired.

I *claim* as a new article of manufacture a coin balance, when constructed as described.

No. 17,485.—Asa O. Broad, of Louisville, Ky.—*Improvement in Metallic Band Fastening for Bales, &c.*—Patent dated June 9, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—A metallic hoop or band, whose ends are united by the bows or curves *a a*, slide B, and pin C, as set forth.

No. 18,514.—WILLIAM MINER, of Houma, La.—*Improvement in Fastening for Metallic Bands for Cotton Bales, &c.*—Patent dated October 27, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I claim securing the ends of metal bale hoops together by forming loops or eyes in the ends of said hoops, by cutting parallel slits *b* through them, and bending outward the intervening portions *b*¹, the loops overlapping each other as the ends of the hoops are overlapped, and a transverse wedge or key *c* passed through the loops, substantially as shown and described.

No. 18,299.—CHARLES J. PROVOST, of Lardis, Ala.—*Improvement in Fastening for Metallic Bands of Cotton Bales, &c.*—Patent dated September 29, 1857.—The nature of this invention relates more especially to the slide which covers the lock of the hoop, said slide being formed with a slot at each end, so that with a tool of the proper kind the ends of said slide may be struck down against the bow or bend of the locks, and thus prevent them from slipping apart; whilst neither said slide nor the ends of the hoop have any corners or projections on them that catch into the bolts or bagging when rolled over each other, nor can there be unloosing of the band or hoop by transportation or handling.

A represents the hoop or band, made of ordinary hoop iron, and having a half-lock A A formed on each of its ends.

B is a slide having slots or scores C cut in its ends.

When the hoop is passed around the bale, and its two bent ends hooked into each other to form the lock, the slide B, which had been previously slipped on to the hoop, is then drawn over the lock A A, and a tool applied to each of its ends, which drives down a portion of said slide against the bow or ends of the locks. Thus the lock cannot separate, nor can the slide move.

The inventor says: I do not claim a slide in combination with the locks on the end of the hoop.

But I *claim* so forming the slide as that its ends may be struck down behind the bow or bend of the locks, and thus not only prevent the lock from separating, but also hold the slide to the lock, substantially as herein set forth.

No. 17,034.—GEORGE FOCHT, of Reading, Pa.—*Improved Hoisting Bucket for Coal, &c.*—Patent dated April 14, 1857.—In discharging coal or grain from a vessel, the bucket A is lowered, and resting on the rolls *a*, as shown in fig. 3, it is forced into the heap of material; when the bucket is sufficiently charged, it is elevated by running up cord *d*¹, and its forward end will be brought into the position shown at fig. 1. By pulling cord *e*, the notch in the end of bar E is disengaged from the roll *b*, and the bucket drops into the position of fig. 2, and discharges its contents.

Claim.—First. The knife-edged bar E, arranged with a link C and and hook D, whereby the handle is clasped with the front edge of the bucket, as before described, or any arrangement substantially the same.

Second. Pivoting the handle to the sides of the bucket near the bottom, as herein described, and clasping said handle to the front of bucket; whereby said bucket is completely inverted, when said clasp is unlocked from said bucket, and whereby the tendency of any weight in the bucket is to keep said handle clasped with said bucket, as set forth.

No. 16,501.—ISAAC VAN HAGEN, of New York, N. Y.—*Improvement in Oil Cans.*—Patent dated January 27, 1857.—When the can is turned so as to discharge the oil through its spout, the flow can be instantly checked by bearing upon the thumb piece *e*, which first stops the flow of air into the can, and then closes the valve C; when the can is turned up and the thumb removed, the valve falls, and the oil in the tube runs back into the can.

Claim.—The double tube B *b*, the loose valve C, and ventilator thumb piece *e*, constructed, arranged, and combined in the manner and for the purposes set forth.

No. 17,124.—HIRAM WELLS, of Florence, Mass.—*Improvement in Oil Cans.*—Patent dated April 21, 1857.—The oil which descends on the outside of the spout D will run through holes F and G back into the can B; and when the can is turned down to deliver the oil, the passage G is closed by ball L pressing down plate I and rod H.

Claim.—The conical cup and ball so arranged as to close the valve, substantially as described, when the can is turned down to deliver the oil contained in it.

No. 17,810.—GEORGE W. SIMMONS and GEORGE H. SIMMONS, of Bennington, Vt.—*Improvement in Oil Cans.*—Patent dated July 14, 1857.—As this can is inverted the oil will pass out through discharge pipe P, while the air enters the oil can through tube A.

The inventors say: We do not claim the interior tubes of the can. Nor do we claim, generally, the fastening of the air vents of an oil can to the stopper.

But we *claim* fastening the air vessel or tube T to the oil tube A, and the oil tube to the stopper S, so that the whole may be removed together for the purpose of cleansing or repairs, by which means we produce a better article of manufacture than when said tubes are fastened to the can and are not removable; the whole being made as set forth.

No. 18,949.—Joseph Francis Bérendorf, of Paris, France.—*Improvement in Oil Cans.*—Patent dated December 29, 1857.—A is the can or case, B a hollow cylinder fixed on it at the upper part by means of a flange *a*, on which the cover C of the can rests. At the centre of this cover a hole is made of sufficient diameter to admit the rod E of a piston F to pass through, which piston is made of leather or hard India rubber, or of any other convenient material. The oil is admitted into the can through the opening D into the space existing between the external case A and the cylinder B. The oil is made to ascend into this cylinder through the annular space *g* between the bottom of the can and the edge of the cylinder B by the suction of the piston, which had been brought to its lowest position, and is made to ascend back.

Claim.—The construction of oil cans provided with an internal cylinder and piston, and the spring, in the manner and for the objects substantially as described.

No. 18,353.—Pierce Porter, of Hooksett, N. H.—*Improvement in Extension Elevators.*—Patent dated October 6, 1857.—The object of this invention is an expeditious means of elevating persons or weights to considerable heights, as, for instance, to assist firemen in the discharge of their duties, to serve as a fire escape, or to raise workmen when they are employed on the ceilings of lofty buildings, or for other kindred purposes. Any necessary power may be applied to windlass E, and the axis B^2 may be raised by any other equivalent mechanical means. The drawing and claim, to a great extent, describe this invention.

The inventor says: I do not claim any of the above described devices separately.

But I *claim* the employment of a truss frame, extending in a vertical direction, composed of the strips A A, &c, the cross ties R R, &c., and the axes B B^1 B^2 and B^3, the axis B^3 being confined in the vertical posts H and H^1, and the axis B^2 free to move vertically in the slots L and L^1, in combination with the pulley F and the windlass E, or their mechanical equivalents; the whole constructed and operating substantially in the manner and for the purpose set forth and described.

No. 17,289.—George Mann, jr., of Ottawa, Ill.—*Improvement in Clearing-Guard of Grain Elevators.*—Patent dated May 12, 1857.—The sliding grate D is placed over the feed opening *a* of the bin A, and in front of the usual slide C, the bars of the grate being bent at their lower ends, so as to form a sort of scoop to retain the foreign substances which are mixed with the grain; when the scoop is full, the foreign substances are elevated to the upper part of the bin A, by raising grate D, and removed therefrom; the slide C being closed over the feed opening *a*, when the screen is raised.

Claim.—The sliding grate or screen D having its lower part curved or bent, as shown, and used in connexion with the slide C, substantially as described, for the purpose set forth.

No. 18,575.—John Crawshaw, of Rochester, N. Y.—*Improvement in Hoisting Apparatus for Bricks, &c.*—Patent dated November 10, 1857.—The claim and engravings show the nature of this invention.

The inventor says: I *claim* elevating articles within a vertical trunk, by means of the mechanism shown, or any equivalent device, so that the articles will be raised with a continuous motion within said trunk.

I further claim the reciprocating plunger C, clamps I I, and arm *n*, operated by the cams E G J, or their equivalents, and used in connexion with the dogs M, the whole being arranged to operate conjointly as and for the purpose set forth.

No. 18,540.—George Focht, of Reading, Pa.—*Improvement in Hoisting Buckets.*—Patent dated November 3, 1857.—The bucket A is made of sheet iron, or any other suitable material of the form shown in the engraving. The handle B is hinged by the pivots *a* to either side of the bucket, near its centre, and at the top is furnished with an eye or other suitable contrivance to hoist it by. The catch lever *g* is at one end, and jointed to the handle, just behind the suspension point, and is curved so as to fit around the back of the bucket, the disengaged end being formed into a hook, which, when the handle is thrown forward until it strikes the stops *c*, just reaches and falls into the lip and roller *b*; in which position shown in the engraving, when the bucket is suspended by the handle, any weight has a tendency to hold it more securely.

Claim.—Catch lever *g*, in combination with the lip or roller *b* and the staple *d*, the whole being arranged as and for the purposes set forth.

No. 17,536.—C. P. S. Wardwell, of Lake Village, N. H.—*Improvement in Cheese Hoops.*—Patent dated June 9, 1857.—The operation of this hoop is as follows: The hasp D is closed by means of button *e*, and the cheese curd is put into the hoops A, in the usual manner for pressing, and submitted to the pressing process. When it is desired to remove the cheese from the hoop, the hasp P is raised by means of knob L, which will force the hoop open sufficiently far to allow of its easy removal.

Claim.—The combination of the hasps D having a bridge or bar K at the outer end of its slot, arranged as described, with the oblong button *e*, the two operating together, substantially in the manner and for the purpose specified.

No. 18,779.—James R. Speer, of Pittsburg, Pa.—*Improvement in Clasps for Metallic Hoops.*—Patent dated December 1, 1857.—The claim and engravings explain the nature of this invention.

Claim.—The use of a hollow clasp or fastening for metallic bands, of the shape shown in the drawings, through which the ends of the hoop are passed in opposite directions, and the projecting extremities bent over the clasp, and inserted into an aperture in the middle of the clasp, in the manner before described.

No. 17,024.—John S. Chesnut, of Philadelphia, Pa.—*Improvement in Lifting Jack.*—Patent dated April 14, 1857.—The lever C is turned by hand, and the lifting end *w* serves to raise the weight, by pressing down the thumb lever E; the longer arm of said lever will lift the bracket D, and handle C can be raised; and on releasing thumb lever E, the bracket D will retain lever C in any desired position.

Claim.—In combination with the rack lever C and the bracket D, the thumb lever E, so that the user may, with one and the same hand work the jack, and throw the bracket in and out of gear with the rack at pleasure, the whole being combined in the manner and for the purpose set forth.

No. 17,027.—Robert W. Davis and Daniel Davis, of Yellow Springs, Ohio.—*Improvement in Lifting Jack.*—Patent dated April 14, 1857.—When lever C is raised, the gripe D connected with lever C, by rods G, which are pivoted to said lever at *l*, slides down on the rack bar, and its pawl *d* takes into a lower notch of the rack *g*; then, by pressing down lever C to a horizontal position, the gripe D is raised and lifts the rack bar B with it, the stationary pawl F retaining the rack bar at the height to which it is moved, while lever C is raised again for a new hold.

The inventors say: We do not claim the ratch-bar gripe, pawls, or connecting rods, described.

But we *claim* the application of the power centrally, beneath the self-clutching gripe or collar, whereby its action is directed in the line of the axis of the ratch bar, for the purpose specified.

Also, the free upright connecting rods G G, upon which the reciprocating gripe rests, arranged and operating in combination with said gripe and the lever substantially as specified.

No. 17,344.—William Thomas, of Hingham, Mass.—*Improvement in Lifting Jack.*—Patent dated May 19, 1857.—The standard A is placed underneath the article to be raised, and bar D is raised by moving pawl E outward so that it will be free from the teeth *e* of the bar D, the upper end of bar D being placed against the article to be raised. By depressing lever J, the chain *l* forces up the bars C D, they being retained by pawl F, which catches underneath the teeth *h*, by weight F depressing arm F^1.

Claim.—The retaining pawl F, provided with the weighted arm F^1, attached to the standard A, arranged relatively with the pawl E and catch G substantially as shown, for the purpose set forth.

No. 17,757.—Heber G. Seekins and Charles H. Goss, of Elyria, Ohio.—*Improvement in Lifting Jack.*—Patent dated July 7, 1857.—This jack, owing to the peculiar combination of the concave and convex surfaces of the wedge B, and the convex surface of the upright C, will sustain a weight at any angle, equally well.

The inventors say: We do not claim the application of a wedge for the purpose of supporting the lever.

But we *claim* the concave and convex surfaces of the wedge, in combination with the concave surface of the upright, for the purpose of equalizing the direction of the pressure, as described.

No. 18,592.—Lucius J. Knowles, of Warren, Mass.—*Improvement in Lifting Jack.*—Patent dated November 10, 1857.—This improvement consists in the arrangement and combination of a loose collar C, having a series of teeth *b* formed on its inner face, and arranged in a circle at regular distances apart, and mounted on the neck of the lifting screw, with a disk or screw head D properly secured to the outer end of the screw shank, carrying a slide or drop crutch *d*, by means of which and the lever motion is communicated to the screw without change of position to the operator.

Claim.—The loose collar C, having a series of teeth arranged upon its inner face, in combination with a screw head D, carrying a drop clutch, when arranged and operating in the manner and for the purposes as described.

No. 18,955.—John Callaghan, of Stroud Glades, Va.—*Improvement in Lifting Jacks.*—Patent dated December 29, 1857.—The nature of this invention consists in constructing a lifting apparatus wherein is employed a lever *g*, alternating or changing its fulcrum; said lever also ascending in its course of action. The lever is detached, and merely rests on its fulcra. Two moveable fulcrums d^1, in the form of two bolts or pins, are employed; these are inserted in suitable holes *c*, arranged equi-distant from each other, but not opposite horizontally, yet are so arranged that if lines or dots be drawn from one hole to another, across an angle of 30 degrees, said lines or dots will indicate a right angle triangular position, as shown in the engraving, below the bolts or pins.

Claim.—The construction of a lifting jack, provided with series of perforations *c c c c*, and movable alternating fulcrums *d d e e*, the double notched lever *g g g*, fig. 2, combined with the chain J J J K, and stay-hole L L L, substantially as shown, and in the manner described.

No. 18,760.—David L. Miller, of Madison, N. J.—*Improvement in Lifting Jacks.*—Patent dated December 1, 1857.—Fig. 1 is an exterior view of the jack, partly raised, as shown from H to C. Fig. 2 is a vertical section of the same, showing the operation of the screw A and gearing E and F during the process of raising a heavy body, either upon the foot C, or upon the head of the outer cylinder B, which moves up and down with the screw A, when revolved by means of the bevel gearing E and F, operated by the crank I. The gear F is attached to the screw, and forms a part of the same; and the male gear E, which is attached to the crank, and connects with the corresponding gear F, through the outer or movable cylinder B at G, which moves up or down with the screw, thus keeping the bevel gearing in gear and at a fixed point upon the lifting screw, near the top B^1 of cylinder B, which has a recess to receive and support the top of the screw, thus preventing any lateral movement when the screw is at its highest points; the base being supported by the stationary nut K, in the inner cylinder or standard D that is attached to the base H.

The inventor says: I do not claim to be the inventor of the individual or separate parts of the described screw jack.

But I *claim* the adjustable cylinder B, shoe C, inner cylinder or adjustable standard D, in combination with the main or lifting screw A and gearing E and F, arranged and operated as described and shown in the drawings.

No. 18,364.—Albert A. Vedder, of Lysander, N. Y.—*Improvement in Lubricating Carriage Axles.*—Patent dated October 6, 1857.—In describing the construction and operation of this improvement, the inventor says: I construct my axle in any of the known forms, and construct a reservoir at a convenient point, as at B, in the accompanying drawing, in which I place a screw A, leaving a space for the grease or oil. C is a tube or channel leading from the top of the space B to the aperture at D. From D to E there is a groove which tapers, and runs out at E to distribute the grease or oil evenly over the whole surface as the wheel turns.

The inventor *claims* the manner of lubricating axles by means of a reservoir, screw, and suitable conduit, as described, or any other manner substantially the same, and which will produce the intended effect.

No. 18,863.—Enoch N. Roland, of Baltimore, Md.—*Improvement in Lubricating Oil Cups.*—Patent dated December 15, 1857.—In this improvement, the valve *b*, at its lowest extremity, is of such a shape that it fits accurately to the shoulder *i*, when it is turned down to its lowest position; and the face of the valve *d* is of such a shape that it perfectly closes the aperture of the neck *g*, which descends from the lower section B of the oil cup. The valve *b* is operated by means of the crank *j*, and the valve *d* by means of the crank *k*.

Claim.—The peculiar combination of the screw valves *b d* with each other, and with the funnel neck and other portions of said oil cup, substantially as set forth.

No. 16,871.—Jacob D. Custer, of Norristown, Pa.—*Improved Method of Lubricating under Pressure.*—Patent dated March 24, 1857.—The nature of this invention consists in forming a chambered oil cup for oiling steam chests, cylinders, hammers, &c., by using a globe or oil chamber, and an upper and lower centre stop, or valve operated by a vertical revolving cup, or a vertical cylindrical stem, a vertical stuffing box, vertical screws, and two horizontal handles.

Claim.—The vertical revolving cap attached to the vertical revolving cylindrical stem C C C, the grinding or solid center valve E at the bottom; the screw G and its grinding or solid centre valve F, the handles I and H, and the stuffing box B, all so combined as to form a substantial vertical centre stop, revolving cup, steam chest, and steam cylinder; oil cup for steam engines, steam hammers, &c., using for that purpose brass, or any other metal that may be deemed best, substantially as described.

No. 16,553.—Norman W. Pomeroy, of Meriden, Conn.—*Improved Lubricator.*—Patent dated February 3, 1857.—The valve rod *g* rests on the inside of the elastic disk C, which serves as the bottom of the oil vessel A; so that by pressing the disk inward it will move the valve rod, and open the valve *c*, and allow the oil to escape. The spring *f* will close the valve, when the pressure is removed.

Claim.—The method of working the valve *c*, by means of the spiral spring *f* and elastic disk or bottom C, when the whole is constructed, arranged, and made to operate substantially as described.

No. 17,118.—Hiram Strait, of Covington, Ky.—*Improved Lubricator.*—Patent dated April 21, 1857.—The oil is poured on the lid L, and then passes down into sponge S, and then its flow on to the parts to be lubricated is regulated by the pressure given by the thumb screw T.

Claim.—The oil cup X, with its sliding bottom B, thumb screw T, guides G G, in combination with porous oil bags or pieces of sponge S, or any other porous and elastic material saturated with oil, and the spring Y, substantially as specified.

No. 17,822.—Henry J. Hawkins, of Mobile, Ala.—*Improved Lubricator.*—Patent dated July 14, 1857.—By pressing down the rod B to the position represented in the engraving, the valve D closes the passage leading from the oil cup A; while the valve C opens the lower passage, and the oil contained in the lower part of cup A escapes, in the manner represented in the engraving.

The inventor says: I do not claim the origination of lubricating steam engines by a stationary or movable machine, as some such method has long been in use. I *claim* the general arrangement of this lubricator, with its mode and manner of admitting the lubricating substances, so as to strike at once on all parts of the interior surface of the cylinder.

No. 17,957.—William Baker, of Utica, N. Y.—*Improvement in Automatic Lubricator for Railroad Car Axles.*—Patent dated August 11, 1857.—When the car or locomotive is in motion, the concussions of the wheels against the rails cause the piston C to swing slightly on its supporting spring *e*, and at each vibration it forces a small supply of oil from the reservoir *a*, through passage *p*, up to the journal J.

The inventor says: I am aware that machines have been constructed to lubricate car journals, by conveying the oil, or other lubricating material, from a reservoir below to the journal, by means of capillary attraction, by the use of cotton wicking, cotton cloth, cotton waste, coarse wool, or other porous or spongy substance, applied between the oil and the journal, and also by the action of various mechanical agencies and constructions placed under and around the journal, and depending for their action upon motion to be communicated to them by the revolving action of the journal.

I do not, therefore, claim any such agency, and whatever contrivances may have been constructed by the use of bobs or pendulums to convey the oil to the journal, and moved in any manner by the motion of the cars, I disclaim.

But I *claim* the mode described of conveying and applying the lubricating material to the journals of railroad cars and locomotives, by ejecting the same from the reservoir to the journal by the use of the piston, as described, which is moved directly by the jar or concussion when the car or locomotive is in motion, without the aid of capillary attraction, or the use of any absorbent whatever, or any mechanical agency, to be propelled by the revolving action of the journal, the same being arranged and operating substantially as set forth.

No. 17,972.—ALEXANDER B. LATTA, of Cincinnati, O.—*Improvement in Automatic Lubricator for Railroad Car Axles.*—Patent dated August 11, 1857.—The vertical vibrating motion of the cars operates the oiling arm J in the box case, by flapping oil up against the axle B through the medium of spring *x*, rod *w*, and lever *v*.

Claim.—The arrangement of the lever *v*, rod *w*, and spring *x*, combined with the car *y*, as represented, or their equivalents, for actuating the lubricator by the vertical vibrating motion of the cars, as and for the purposes mentioned.

No. 16,796.—JOHN HENWOOD, of New York, N. Y.—*Improvement in Lubricators for Steam Engine Cylinders.*—Patent dated March 10, 1857.

Claim.—The piston B, having the oil cup attached by a hollow stem and provided with a valve *j* working in an oil cylinder C, that is provided with an arrangement of passages *e f f*, substantially such as described, leading to the steam cylinder, valve-chest, or other part to be lubricated, and with a cock having an arrangement of passages e^* f^* f^* *h k*, to correspond with said passages from the oil cylinder, the whole operating substantially as specified.

No. 18,322.—CHARLES CARLISLE, of Woodstock, Vt.—*Improvement in Machine for Packing Wool.*—Patent dated October 6, 1857.—To operate this improved machine an open fleece of wool is spread upon the table and leaves B C B; the sides of the fleece are then folded inwards, partly by hand, or by folding the leaves inwards upon the table, as the case may require, until the fleece is packed straight and even upon the table, which is then moved to the right, and the end of the fleece is brought under and folded around the shaft G; the wrench H being now turned in the direction of the arrow, the fleece is wound compactly and neatly around the shaft G.

The inventor *claims:* First. The shaft G weighted on its bearings and so adjusted as to rise or recede from the movable table B while the fleece is being wound around it, substantially in the manner and for the purpose specified.

Second. The movable table C for the purpose of conveying the fleece to and under the shaft G, while in the process of being wound up.

Third. The oblique anti-friction rollers F F, for the purpose specified.

Fourth. The folding leaves B B as detached from the movable table C, and yet so adjusted as to fold the fleece over and upon the table, and thus to straighten and compress it, preparatory to its being wound up.

Fifth. The method of adjusting the binding twine *c c* so as to bring it under the fleece in position for a neat and expeditious binding of the same.

No. 18,328.—ALBERT DORR, of Orleans, Mich.—*Improvement in Machine for Packing Wool.*—Patent dated October 6, 1857.—The improvements in this invention are shown in the drawings and claim.

The inventor, in setting forth his claims, says: I do not claim the movable or folding leaves *h i j* and K, as my invention; but I do *claim*, First. The press follower H, as in combination with said leaves, or any other box or apparatus for folding or holding wool, and being the bottom of the same, and so constructed as to be raised up for the purpose of pressing the wool, and may be operated by rack W, pinions *v* and Q, spur wheel T, and crank O, as herein set forth, or in any other convenient way.

Second. I claim the rack W, pinions *v* and Q, spur wheel T, ratchet S, ratchet wheel R, the spring *r*, crank O with the shafts P and U, the rack rod G, as described, for the purpose of operating the follower H, as set forth.

Third. I claim the crank X, shaft Y, pinion Z, segment *a*, and spring *p*, substantially in the manner and for the purposes set forth.

Fourth. I claim the treadle *b*, arm *d*, and the rods *e m* and *n*, or their equivalents, for the purposes set forth.

Fifth. I claim the slide twine holders *o o o* and bales *l l*, as described and for the purposes set forth.

No. 18,004.—WILLIAM WILSON, Jr., of Brandywine, Del., assignor to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr.—*Improved Drop Press.*—Patent dated August 11, 1857.—As the drop C descends, it forces the spring E back from the die; and as the drop rises, the spring throws the pressed article from the die *b*.

Claim.—The employment of the spring E, when so arranged with the drop C as to effect the delivery of the article stamped, substantially in the manner set forth.

No. 17,978.—WILLIAM NEEDHAM and JAMES KITE, of Vauxhall, England.—*Improvement in Filtration Press for Expressing Liquids from Substances.*—Patent dated August 11, 1857.—The material to be acted upon is forced by a force pump up the supply pipe *a*, and through the conducting pipes *b*, into the corresponding bags, which are within the chambers of the press; the pump continuing to work until the liquid, yielding to the pressure, finds vent through the cloth, runs along the channels *i* and *j*, and makes its escape, leaving the more solid parts between the floats until the press refuses to receive any more.

The inventors say: We do not claim the exclusive use of any of the parts, taken as parts of the apparatus described and shown, but only in so far as the same is used in combination, for the purpose of our invention.

We *claim* the exclusive use of the combination of parts described, forming apparatus or machinery for expressing liquids or moisture from substances.

No. 16,391.—William W. Marsh, of Jacksonville, Ill.—*Improvement in Oil Press.*—Patent dated January 13, 1857.—The boxes F being filled with seed, the pump is started, and the plunger B rises lifting the several trusses E in succession, and causing the pistons *b* to enter the interposed boxes F and express the oil from the seed, which, passing through the perforations *n* into the gutters *c*, thence into gutters *d*, drops through holes *g*, from one truss E to another, and is all collected in the bottom gutter *h*, from whence it escapes by pipe *i* into a suitable receptacle.

The inventor says: I am aware that boxes having hinged sides or ends have long been used in connexion with various kinds of presses, and I therefore disclaim them. But I am not aware that the pistons of oil presses have been provided with flanges or side pieces, extending below the line of the bottom of the piston surfaces, for the purposes set forth.

I *claim* providing the lower or piston surfaces *b* of the trusses E with vertical flanges or side pieces *e e*, when a space is left between said side pieces and the bottom piston surfaces *b*, in the manner and for the purposes specified.

No. 18,502.—T. J. De Yampert, of Mobile, Ala.—*Improvement in Steam Cotton Press.*—Patent dated October 27, 1857.—This invention consists in the arrangement and combination of four piston rods, which unitedly operate the followers of the press, with a central axis and cross-levers located within the steam chest.

The claim of the inventor and the engravings will give an idea of this improvement.

The inventor says: I do not claim the toggle levers *d* and cross levers Q Q, separately or in themselves considered; for they have been previously used and applied in various ways to presses.

Nor do I claim broadly the application of steam power to presses as a motor for presses; an example may be seen in S. G. Cabbell's and A. Seely's rejected application, 1854.

Nor do I claim broadly the union of the upper and lower platens of presses, by means of toggle links; an example may be seen in Aaron Hale's patent, June 26, 1832.

But I *claim* the arrangement and combination of four piston rods F H N N, which unitedly operate the followers of the press, with a central axis R and cross levers Q *d*, located within the steam chest C, as described.

No. 18,864.—John Roy, of New Orleans, La.—*Improvement in Steam Cotton Press.*—Patent dated December 15, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I am aware that steam has been directly applied to the followers of cotton and other presses, and I do not claim broadly the employment or use of steam cylinders for such purpose.

But I *claim* the employment or use of a plurality of steam cylinders of different dimensions, arranged and applied to the press as shown, or in an equivalent way, so that the cylinders of small capacity may be first used, or used at the commencement of the stroke, and the larger one used near the completion of the stroke, whereby the steam is applied in quantities commensurate with the power required at different parts of the stroke, and a saving of steam thereby effected.

I also claim connecting the piston P^1 with the cross-head E by means of the cylinder S and hollow rod P^2, arranged as shown, and in connexion with the tank or cistern U, and the loaded valve V with levers W attached, whereby a compensating piston rod is obtained, the rod being allowed to contract as the cross-head descends, and to expand as it ascends, and at the same time when expanded or drawn out, being, in consequence of the hydraulic arrangement described, perfectly rigid, so that the full effective force exerted against the piston P^1 will be communicated to the cross-head E and follower D.

No. 18,895.—John Eiberweiser, of Cincinnati, O.—*Improvements in Wine and Cider Press.*—Patent dated December 22, 1857.—These improvements consist in constructing the platform so that no wine or cider will be wasted, that it may flow easily to the receiver, and that the sides of the double box may be taken away the more easily in order to remove the dregs without disturbing the platform, or any of the other sides of the box; the double box L M N O is so constructed as to let the juice flow freely from the grape. It also consists of a screw and its appendages, so constructed that the foot of the screw, being conical, will prevent any loss of juice through the hole through which it passes in the platform F G H, and as to its appendages by applying iron balls between the smooth surfaces *e* and *c* to give greater power and prevent nearly all friction.

Claim.—The peculiar construction and arrangement of the platform and the double box on a wine and cider press, constructed in such a manner as described.

No. 16,389.—Rodolphus Kinsley, of Springfield, Mass.—*Improvement in Presses.*—Patent dated January 13, 1857.—The article to be pressed is placed upon the platen *r*; and on turning the lever F to a horizontal position, the platen will be raised until struts *s* rest on the highest points of cams *d*; at this point the segment *k* comes in gear with pinion *m*, which by its revolution turns the cam *e* a quarter turn, which slowly lifts the platen *r* still higher off cams *d*, and gives the last powerful pressure.

Claim.—The compound action of the cam and eccentric, or their equivalents, arranged and combined substantially in the manner and for the purposes set forth.

No. 18,862 —C. H. ROBERTSON, of Middleport, N. Y.—*Improvement in Cheese Presses.*—Patent dated December 15, 1857.—The nature of this invention consists in the arrangement of certain devices for the purpose of making a cheese press with movable fulcrums to its levers. The object of this arrangement is to obtain more pressing space with the same power than could be done otherwise.

The inventor says: I *claim* the employment of the slotted box *a* attached to the cross-piece A, for the purpose of confining the levers B, and allowing them to slip on end by means of the slots in said box; thus changing position and gaining the length of the slot in downward motion, in addition to the fixed distance of the levers before a change of the nuts D on the screws C is necessary.

I also claim the combination of the cord E, pulleys *c*, levers B, and slotted box *a*, when arranged with the cross-piece A, and screws C, and nuts D, for the purpose of making a cheese press, such as described and set forth.

No. 16,494.—M. L. PARRY, of Galveston, Texas.—*Improvement in Cotton Presses.*—Patent dated January 27, 1857.—One of the pinions I being thrown in gear with the rim *c*, and motion being given to the driving shaft H, the nut D will be turned, and the follower B will be forced down. The follower is raised by shifting the pinion I by means of the lever J, so that it may gear into the teeth *a* on the nut D, and a reverse motion will be given the nut, and the screw C and follower elevated with a comparatively quick motion.

The inventor says: I am aware that various devices have been invented for changing the motion of revolving wheels and shafts by means of shifting pinions. But I am not aware that a press has ever been made in which there was combined with the screw a nut of the peculiar construction, shown and operating in conjunction with a shifting pinion, as described.

I disclaim the raising and lowering of a screw by means of a nut which is caused to revolve in different directions.

I *claim* the double geared nut D working in combination with screw C, and operated by one or more shifting pinions F, in the manner and for the purposes substantially as set forth.

No. 18,995.—RILEY SMITH, of Towanda, Pa.—*Improvement in Cotton Presses.*—Patent dated December 29, 1857.—The nature of this invention will be understood by an examination of the claim and engravings.

The inventor says: I *claim* so combining a set of falling weights, or their equivalents, with a movable cotton or pressing box and its levers, as that when the united force of said weights is applied to said box, it shall start it up, and draw in its levers, and admit of a better application of the first moving power of the press, as set forth.

I also claim the so applying of the ropes or chains that draw down and force up the pressing-box to the follower, as that the slack of one shall lead or be in advance of the winding up of the other, as set forth, and for the purpose explained.

I also claim the application of the roller T, with its excentric *w*, and pins 1 2 3, for the double purpose of a fastening to said door, and as a means of tightening up the bale ropes, as set forth.

No. 18,766.—GEORGE W. PENNISTON, of North Vernon, Indiana.—*Improvement in Cotton and Hay Presses.*—Patent dated December 1, 1857.—The claim and engravings explain the nature of this invention.

Claim.—Connecting each of the ropes which operate the toggle to work the press and draw back the plunger to separate and independent capstan barrels, arranged to turn freely on the same shaft, provided with a device to lock either of them to said shaft when desired, as described; so as to save three fourths of the time heretofore required to retract the press, and the time and labor of reversing the horse twice for each bale pressed.

No. 18,854.—JAMES MASSEY, of Thomasville, Ga.—*Improvement in Cotton and Hay Presses.*—Patent dated December 15, 1857.—In the engravings A is the cross-sill, to which are fastened the upright posts by means of the cross-tie braces, by means of a staple and key; B are the upright wrought iron posts; *a* the cross-ties or braces; D the ends of the side braces; C^1 the tie braces of iron for strengthening the frame; E the screw; F the top side braces and block through which the screw passes; *b* the adjustable stands; F^1 the boxes.

Claim.—The manner of constructing a portable press by means of the slotted cross-ties let into the posts B, and fastened by keys, as described, thus forming a permanent self-supporting press, readily adjusting, without the use of either bolts or screws to fasten it together, as set forth.

No. 17,053.—GEORGE W. PENNISTON, of North Vernon, Ind.—*Improvement in Self-Releasing Doors of Cotton Presses.*—Patent dated April 14, 1857.—When the plunger *d* arrives at the end of its stroke, the arm *i* attached to the plunger pushes forward rod *e*, and withdraws key *f* from confining the button *g*; the pressure from within then operating against button *g*, causes the latch *h* to fly back, and to open the side doors *m* automatically for the cording of the bale.

The inventor says: I do not claim the duplex toggle joint, nor the mode of operating it described.

But I *claim* the traversing bar *e*, in connexion with the arm *i* of the plunger, for the purpose of retracting the key *f* to release the doors when the plunger arrives at the proper point to make the bale being pressed the size required.

No 17,411.—MILO PECK, of New Haven, Conn.—*Improvement in Drop Presses.*—Patent dated May 26, 1857.—Motion being imparted to the driving gear wheel *j*, the crank *e* raises the drop A to its highest point, when just as the crank *e* passes its centre, the locking sweep *g* is caught, and held by lock *m*, at the same time the dog *a* is tripped out of ratchet *k* by back guard ring *b*, so that the drop A is held suspended; the hub *i*, ratchet *k*, and wheel *j* revolving on the crank shaft. By operating the treadle *z z*, the dog *a* is disengaged from ratchet *k*, and the drop falls with its whole weight to the anvil B. By operating rod *r*, the guard ring *c*, fig. 3 is drawn outwards, and the dog *a* is thrown out of the ratchet at the bottom; and as the crank *e* revolves, the drop remains on the anvil. By pressing wheel *t* against wheel *h*, the shafts *s* and *d* are locked together by the friction of said wheels, and the fall of the drop is regulated, so that it is made to descend as slowly as the crank *e* revolves, by which arrangement the force of the drop may be adjusted.

The inventor says: I am aware that the V wheels by themselves are common property, and that a patent has been granted to Henry Bushnell for operating a drop by means of V wheels, with a section of one wheel removed, so as to lift the drop by means of the V wheels, and permit it to fall with its full force and I do not claim them when used in any such manner.

I *claim* the combination of the male and female V wheels, with the sweep shaft *d*, the ratchet wheel *k*, the dog *a*, and the guard ring *b*, or their equivalents, so that the fall of the drop can be regulated and controlled substantially in the manner and for the purpose set forth.

Also, the movable guard ring *c*, in combination with the sweep shaft *d*, the ratchet wheel K, and the dog *a*, or their equivalents, by means of which the time the drop shall remain upon the anvil can be regulated and controlled, substantially in the manner and for the purpose set forth.

No. 17,278.—Henry Hughes, Port Gibson, Miss.—*Improvement in Presses for Cotton, &c.*—Patent dated May 12, 1857.—By turning plate D, the rods E¹ are brought to the position represented in dotted lines, and the follower F is raised. It will be seen by the shape of the grooves *a* that the speed of the follower F is quick at first, and gradually diminishes as the substance is compressed.

Claim.—The employment of a grooved plate D, or its equivalent, having a horizontal or other formed surface with grooves thereupon; for the purpose of operating the levers E¹ E¹, in the manner and for the purpose substantially as described.

No. 17,161.—William W. Marsh, of Jacksonville, Ill.—*Improvement in Securing and Guiding the Boxes of Oil Presses.*—Patent dated April 28, 1857.—The guide bars B standing above the trusses C, at the sides of the meal boxes D, and fitting snugly thereto, serve to guide the boxes in and out of the trusses, and also to confine the hinged sides *d* against the outward pressure that is produced upon them by the expressing operation; and at the same time by their tongued form *b*, entering the grooves *e* in the boxes, they connect the trusses with the boxes above them, in such a manner, that when the ram which is at the bottom of the press is withdrawn in a downward direction, each truss is left suspended from the box above it, and consequently adds its great weight to that of the box to assist in drawing the box off the piston, which renders it imperative upon the box to descend.

The inventor says: I do not claim generally the use of longitudinal guides or flanges at the sides of the trusses to guide the boxes to and from the trusses, and keep the hinged side of the boxes closed.

But I *claim* the employment upon the upper sides of the trusses of the longitudinal guides B B, of such form, substantially as described, that while they serve to conduct the boxes to and from the press, and to confine the hinged sides against the outward pressure, they also serve to connect the trusses with the boxes, for the purpose specified.

No. 17,108.—Cornelius Martratt, of New Baltimore, N. Y.—*Improvement in Method of Securing the Doors of Hay Presses, &c.*—Patent dated April 21, 1857.—The door D is hinged at K to the frame of the press, and is secured at its other end to said frame, by means of loop E passing over the rounded ends of the battons C. When the bale is pressed within this press, the door B can be opened by operating handle H, which by means of link G withdraws loop E, and causes the door C to open gradually, thus preventing injury to the operators.

Claim.—The form of crank or loop E, the elliptic or eccentric form of the ends of battens C C, and the combination of the one with the other, for the purpose of securing a door or hatch, and for the purpose of preventing a sudden and dangerous start of the door in opening, by means of the gradual movement of the battens outward, as the loop is turned off from them, substantially as described.

No. 16,422.—William Wilber, of New Orleans, La.—*Improvement in Oil-pressing Machinery.*—Patent dated January 13, 1857; England, June 12, 1856.—The reduced and heated material, passing out of the end of the concave O of the reducer P, drops on to a heavy hair-cloth belt R, which passes around the two rollers S and T, and being pressed against the leather belt W, the oil is extracted from the material passing through the hair cloth and suitable conduits in the roller T to the ends of said roller, whence it runs into the receiver X. The material then passes between the hair cloths R and *k*; the oil dropping, at this operation, into receiver *l*, while the cake passes out along the bed *p*.

Claim.—Extracting or expressing the oil from tempered oleaginous seeds or other vegetable matter, by pinching and carrying said tempered material between two belts or aprons made of hair cloth or similar heavy porous materials, and thus forcing it through, between compressing rollers, substantially as described; and this I claim, whether the oil be cold pressed or hot pressed, or both, as set forth, or whether used in connection with a reducing apparatus or separate therefrom.

No. 18,367.—William Wilber, of New York, N. Y.—*Improvement in Oil-pressing Machinery.*—Patent dated October 6, 1857.—The inventor, in describing the operation of his improvement, says: Steam passes from the boiler, through the pipe O, into the chamber *n n*, through which the coil *m* passes. It parts with its heat to the coil and becomes condensed, and the water of condensation is drawn off through the pipe *p*. The fan J, being put in operation, draws cold air from the cold air compartment of chamber R, and drives it through pipe *l* and coil *m*. Here the air becomes heated and passes through pipe *q* into the hot air compartment of chamber R, whence it is distributed as follows: A portion of it goes by pipe *r* to the further end of the rollers, and, after heating, returns by the pipe *s* to the cold air compartment; another portion is driven through the pipe *t*, and supplies, by one branch pipe *u*, the blast between the rollers, and by another *w*, that in hopper *c*; pipe *t* itself supplying the crushing and tempering mill. The air lost in these operations is supplied by pipe *x* communication with the cold air compartment of the chamber.

The inventor *claims* the arrangement described of a system of chambers and tubes, in connexion with a fan or other proper blowing or exhausting apparatus, for the purpose of circulating hot air through various parts of the machine, and applying it directly to the seeds and pulp, substantially in the manner specified.

No. 16,381.—THADDEUS FAIRBANKS, of St. Johnsbury, Vermont.—*Improvement in Platform Scales.*—Patent dated January 13, 1857.—The levers C are supported at one end by the arched bridges D, and are suspended at the other to the knife-edge bearings *g* of one of the longitudinal levers E F, E^1 F^1 which are connected to a steelyard lever H, in the usual manner. The platform *c* is supported by the levers C, and the article to be weighed being placed upon it exerts its pressure upon levers *c* and E F.

The inventor says: I do not claim a combination of levers wherein four platform bearing levers are multiplying levers, and radiate from one common centre, and are there suspended to the multiplying lever connected with an equalizing lever, as I am aware that such is a common method of making a platform sclale.

Nor do I claim the combination of a multiplying lever, an equalizing lever, and an equalizing and multiplying lever, as I am aware that such have been employed, and the platform thereof upheld by being made to rest directly on the first and last of said levers. This differs essentially from my combination and arrangement, as by such I am enabled to employ an additional series of levers, viz: the transverse levers C C C, whereby I gain an extra or manifold increase of leverage, and thus render the weighing apparatus useful for determining the weights of railway carriages.

Nor do I claim the employment of a series of transverse and multiplying levers, with a lever composed of a long longitudinal shaft, and an arm arranged transversely and projecting from such shaft, the transverse bearing levers of the platform being applied to the long shaft with reference to its axis, as described.

But I *claim* my improved arrangement and combination of four bearing multiplying levers C C C C, a multiplying lever E, and a lever F, made as described, so as to act at the same time as an equalizing and multiplying lever, the whole being applied to a steelyard weighing lever by means substantially as set forth.

I also claim arranging the suspension bridge so that its arched standards shall extend upward by the sides of the platform, and between it and the sides of the pit, in manner as stated, in combination with arranging the transverse levers C C, and their bearings below

the platform, the same affording the necessary room for the vertical play of the longitudinal levers, while it secures an advantage as regards the depth of the pit as stated.

No. 17,230.—RUFUS PORTER, of Washington, D. C.—*Improvement in the Buckets of Automatic Grain-Weighing Machines.*—Patent dated May 5, 1857.—The apparatus being in the position represented in the engraving, the grain passes from hopper A into bucket E, and the left balance beam F is brought to an horizontal position, the horn *h* depressing wing *k*, whereby the valve L is brought into such a position that the stream of grain from hopper A is divided, and three-fourths thereof is conducted to bucket E^1; in this position all the weights W, with the exception of one, are elevated; but when the bucket E preponderates and raises the bottom weight of the left series, the horn *g* trips the catch lever T, and the valve plate L, being thus liberated, falls into its left position, suspending the descent of the grain in that direction and elevating the tripping point *s*, thereby tripping the left knuckle braces *i j*, and discharging the grain from bucket E, then the trap door *m* instantly closes, and the knuckle-braces resume their ordinary position. The same process is repeated with the bucket E^1, and the index Z is moved one point by the reciprocal motion of fingers *f*.

Claim.—First, the combination of the tripping rods S with the valve plate N, and knuckle braces *i* and *j*, whereby the movement of the valve gate L (which is operated by means of the scale beams F) causes the contents of the buckets E to be discharged alternately, as set forth.

Second. The knuckle braces *i* and *j* in combination with the trap doors *m*, whereby the latter are spontaneously closed and fastened immediately after the grain is discharged, as set forth.

XIII.—GRINDING, MILLS, &c.

No. 18,753.—CHARLES LENZMANN, of Brooklyn, N. Y.—*Improvement in Machine Banding.*—Patent dated December 1, 1857.—This banding is impregnated and covered with a composition of which linseed oil and cement, together with a slow drier, form the principal ingredients; a single web and woven of any suitable fibrous materials is used in a manner peculiar in these respects, viz: First, that it shall be woven of the width of the desired band. Second, that the filling shall be covered by the warp threads. Third, that the filling shall be of threads of greater diameter than the warp threads, and may be of coarser material; this is for the purpose of giving stiffness to the band in the line of its width.

The composition above stated may be varied by substituting other similar figments to form the body of the composition without essentially changing its character of pliability when dry.

The inventor says: I do not claim the web or the composition separately; neither do I claim broadly saturating webs woven from fibrous materials with the composition above described.

But I do *claim* as a new manufacture the machine banding, substantially as before described.

No. 17,743.—Lucius J. Knowles, of Warren, Mass.—*Improvement in Belt-Shifter for Machinery.*—Patent dated July 7, 1857.—By shifting the frame *e* to the position represented in dotted lines, the belt K will be shifted from pulley D to pulley D^1, as shown in dotted lines, by reason of the tendency of the rollers H I to move the belt K in a line at right angles to the axes on which they turn.

The inventor says: I am aware that a device employing a single roller, and arranged to be capable of being canted, has been used in combination with guard arms on a belt for the purpose of preventing the belt changing its position laterally upon the pulley, or for causing the belt to traverse directly over the turning point of the roller frame, and for righting the belt in case it should deviate from the centre to either one side or the other of the pulley, and I therefore do not claim such an arrangement, as the same was patented by Samuel Sawyer in 1833.

I *claim*, first, shifting a belt or band from one pulley to another by means of two rollers capable of vibration, so as to be set slightly oblique either to the right or left to a line at right angles with the edge of the belt or band, substantially as set forth.

Second. The peculiar construction of the upper roller G, substantially as and for the purpose set forth.

Third. Having the roller H capable of sliding on its axle as it shifts the belt, substantially as and for the purpose set forth.

No. 17,216.—Robert Hale, of Roxbury, Mass.—*Improvements in Machines for Making India Rubber Belting.*—Patent dated May 5, 1857.—The prepared material being cut in strips of the double width of the intended belt is wound upon a hollow shaft a^1, and passes between rollers G, thence between rollers *c*, where it is bent in the shape represented in figure 2; thence between rollers c^1, figures 1 and 3, which bend it further; thence between the rollers *f* and rollers c^2, which bring the edges nearly together, they being kept separated by means of a blade b^1 on plate *x*. The belt then passes between the pressing rollers M, and thence over the roller O; this roller O has a strip of cloth wound around it, which is constantly moistened with camphene from a suitable vessel *m*, and the belt as it passes over said roller has its seam moistened by said cloth, and upon passing between the rollers R a strip of India rubber *x* passing through tube Q is cemented to the belt by the pressure of the rollers R, and the seam is thus closed. The teeth of one of the rollers S complete this process of cementing, and the belt then passes into a box Z filled with powdered soapstone, to prevent the parts of it from striking together when coiled; the belt is then discharged from the machine. To form a three or four-ply belt, a single or double strip h^1 is fed on the strip g^1 between the rollers G, which is thus enclosed between strip g^1.

Claim.—The manufacture of machine belting by folding and cementing strips of India rubber cloth by a series of mechanical devices, substantially such as described.

Second. The method described of moistening the seam and applying the India rubber strip thereto, for the purpose set forth.

Third. The manner described of applying the middle for a belt of three or more plys by means of guides, the two being united in the manner set forth.

No. 18,650.—Lewis Smith, of Buffalo, N. Y.—*Improved Fastening for Machine Belting.*—Patent dated November 17, 1857.—The claim and engravings show the nature of this invention.

Claim.—A series of curved arms A with faced end fingers C, extending from a bar B on either side and at right angles thereto, composed of one entire piece of metal, being a new article of manufacture, and constituting a belt clasp to be used in joining the two ends of belts in running machinery, in the manner specified.

No. 18,941.—Benjamin Chester, of New York, N. Y., assignor to W. H. Burnap, of Lowell, Mass.—*Improvement in Mode of Belting.*—Patent dated December 22, 1857.—The claim and engraving explain the nature of this invention.

The inventor says: I do not claim an intermediate pulley between a driving pulley and a pulley to be driven by an endless belt, when such intermediate pulley is merely a guide pulley.

Nor do I claim broadly the winding of belts several times around the peripheries of windlasses, for the purpose of obtaining additional friction. Examples of ropes and chains thus arranged may be seen in Dingler's Polytechnic Journal, vol. 81, page 4; H. O. Nicholls' device rejected, 1845; and that of Richards & Winsor, 1854.

But I *claim* the arrangement and combination of a pulley C with the pulleys A B, when the driving belt, after passing around the small pulley B, is led therefrom to and around the pulley C, thence around pulley B to and around pulley A, as and for the purposes described.

No. 18,179.—N. Baumann, of Elmore, Ill.—*Improvement in Flour Bolt.*—Patent dated September 15, 1857.—The ground grain passes into case B, through passage *h*, and as shaft C is rotated the beaters *k* will throw the ground grain into recess *c*, the ledge *d* serving to arrest it, and by the concussion the flour will be detached from the bran, the former passing through the cloth F, the latter being fed towards spout *g* by the spiral form of beaters *k*.

The inventor says: I am aware that beaters placed both parallel and spirally with their shaft have been used for similar purposes; I therefore do not claim said beaters separately.

But I *claim* the shell or case B, carved or formed as shown, in combination with the rotating beaters K and frame *e* with bolting cloth *f* attached, the whole being arranged, as shown, for the purposes set forth.

No. 17,126.—JOHN WOODVILLE, of Chillicothe, O.—*Improvement in Mode of Attaching Bolting-Cloths to Reels.*—Patent dated April 21, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—Forming the cloth in sections C, and securing the sections to the reel by means of rod K *i* and the bars C, which are attached to the bars *a*, bolts *d*, and the bars *m*, which are attached to the rim *o* by screws *n*, the whole being arranged, as shown, and described for the purpose set forth.

I further claim the bolts *d* provided with the oblong and T-shaped heads *h* and washers *f*, when arranged specifically, as shown, for the purpose set forth.

No. 16,748.—RENSSELAER REYNOLDS, of Stockport, N. Y.—*Improvement in Centrifugal Friction Clutch.*—Patent dated March 3, 1857.—The nature of this improvement will be understood from the claim and engravings.

Claim.—The employment in the combination, substantially as specified, of the sector friction brakes sliding radially in the wheel or pulley which rotates before the clutching takes place, and usually termed the loose pulley, that the other wheel or fast pulley may be clutched by the friction of the brakes due to the centrifugal force generated by the rotation, and by which they are forced onward against the inner periphery of the wheel to be clutched, as described, thereby clutching the parts by a force no greater than that due to the friction produced by the centrifugal force under the determined proportions, weight, and rotative velocity of the friction brakes.

No. 18,927.—GEORGE M. PHELPS, of Troy, N. Y.—*Improvement in Governors for Machinery.*—Patent dated December 22, 1857.—In this invention the device, employed to lessen the speed of the shaft D whenever it becomes too fast, consists of the brake-pad *h* on the lever *i*, hung to the post *j*, so that by pressing up the end *k* of that lever the brake is pressed against the disk *g*, fast on the shaft D, and by pressing the end K down the brake is lifted from the plate *g*. The segment G does not by its own centrifugal power press the brake-pad *h* against the plate *g*—its force is too feeble; but the segment G governs the application of the brake by controlling, by means of the valve I mounted upon and moving with the rod *d*, the motive action or pressure of a current of air, pressing through the conduits *l* and *o q* in the direction of the arrows therein, upon the piston H, arranged within the cylinder O to work the brake lever *i*.

Claim.—Causing the described centrifugal governor, or its equivalent, to regulate the rotary motion of the shaft with which the governor is positively driven by making the governor control by means of a valve the motive action of a current of air or other gaseous fluid upon a piston, or an analagous device arranged to work the mechanical contrivance by which the speed of the said shaft to be regulated is immediately changed, substantially as set forth.

No. 17,325.—J. R. GATES, Eckmansville, Ohio.—*Improvement in Machines for Cleaning Grain.*—Patent dated May 19, 1857.—The grain passes from hopper *e* into the part *b* of the box H, and drops on to screen b^1, whence it is conducted into box A. While the grain is passing down part *b*, the blast generated by fan F draws the light matter, chaff, &c., up over the top of the partition *d*, and the light imperfect grain falls out at the lower end of part *c*, while the lighter substances are drawn into the fan-box E, and forced out of its discharge spout. The sound grain passes into the box A, is scoured by beaters *a* and burr-stones B, and the grain falls through opening *j*, while the dirt is drawn through the perforated cover *l*, by the fan G, and forced out through the discharge spout of the fan-box D.

The inventor says: I *claim* the box H, divided into two compartments by the partition *d*, the fan-box E, and scouring box A, provided with the stones B, and rotating beaters *a*, when the parts are arranged relatively with each other, as shown.

It being understood that I do not claim separately either of the parts specified, but all the said parts, when arranged and combined so as to operate conjointly, as shown, for the purpose set forth.

No. 17,363.—SAMUEL CANBY, of Ellicott's Mills, Md.—*Improvement in Grain Scourers and Separators.*—Patent dated May 26, 1857.—The grain is fed to the machine at *p*, and passes through hopper L to the centre of the upper scouring disk I, and being operated upon by spikes *e* it passes over the edge of the disk I into the upper scouring hopper F; the dust, already separated, passing through the perforations *b*, whence it is carried off by the fan blast created by fan P. In this manner the grain passes in successions over the entire series of disks and scouring hoppers. On passing off the lower disk, the grain falls into the blast coming in from below, and a final separation of all impurities takes place, the cleaned grain passing from the machine through spring trap Q, while the impurities are discharged through mouth M of the fan-chamber.

The inventor says: I do not claim, of themselves, scouring disks or rubbers, as such are elements well known in all smut machines.

But I *claim* the series of scouring disks I, and self-adjusting conical rubbers J, on the same shaft and alternating with the disks, in combination with the hoppers F, performing the double function of rubbing and concentrating the grain; the perforated casing G surrounding all of the disks except the lower, and the tight outer casing A, arranged and operating substantially as described, to effect a progressive cleaning and final separation of the grain.

No. 16,439.—GEORGE HEBERLING, of Quincy, Ill.—*Improvement in Grain Separators.*—Patent dated January 20, 1857.—The grain is fed into the opening *a*, and acted upon by teeth *d* and corrugations *e*, which clean the grain from dust, and passing between plate C and revolving cone D it falls over the edge of cone D, where it is caught by fan beaters F, by which it is thrown and beat around until it falls on the curved rim M; it is then conveyed to the sides of cone C, operated upon by beaters G, and, when scoured, passes out into the spout

J; here it is acted upon by a blast from fan H, which drives the light grains up the vertical portion of spout J, where the light grains fall over behind the plates *h*, while the cheat and shrunk grains fall behind the valve F.

Claim.—I distinctly disclaim the invention of the separate devices described, as no one of them is new; but—

I *claim* the arrangment in a grain-cleaning machine of the plate C armed with teeth *d* and rubbers *e*, the conical cylinder D, with beaters and fans F and G, attached chute or rim M, plate N, tubes *b*, and fan H, all constructed and operated substantially in the manner set forth.

No. 16,471.—Michael De Camp, of South Bend, Ind.—*Improvement in Grain Separators.*—Patent dated January 27, 1857.—The shaft 6 being set in rapid motion, the fan 8 9, divided into two parts by disk 10, creates a vacuum both above and below the disk, by expelling the air through one common outlet 12. The air rushes in with force through the indraught screen 2, to supply the vacuums above the disk, meeting the grain which is fed in at hopper 1. The sound, heavy grain descends through spout 20 into the scouring mill D, where it is subjected to the action of the beaters 16, but the light grain, dust, &c., are carried up through flue 22 into the chamber 25; the current here dividing and passing into flue 23 and 24 is so much diminished in strength that the light grain, cheat, &c., will fall into chamber 25, while the dust, chaff, &c., is carried up through flues 23 and 24 to the fan, whence it is discharged into the open air.

The inventor says: I *claim*, first, the combination of the flue 22 with the flues 23 and 24 and chamber 25, constructed and arranged, as herein described, for the purpose of separating light grain, wheat, &c., from still lighter substances, by dividing the current of air in the manner described.

Second. I do not claim two fans upon the same shaft, separated from each other by a fixed partition; but I claim the construction of the fan by combining with a disk attached to a rotating shaft leaves fixed upon each side of the disk, as specified.

No. 17,498.—Elisha Doud, of Oshkosh, Wis.—*Improvement in Grain Separators.*—Patent dated June 9, 1857.—The grain to be cleaned passes through hopper P, and as the machine is set in motion the screens *g* and O are vibrated, and the larger foreign particles are drawn by the blast of fan F over the end of board *b* down the trunk D, and are discharged at the bottom of the fan-box E. The grain drops on to screen O, and the cockle, which will not be acted upon by the suction, on account of its gravity, will pass through the inner part of screen O, and will be discharged from the end of board *h*.

The inventor says: I am aware that fans have been employed in various ways for generating blasts, and screens have also been used and applied in various ways in grain separating machines.

I therefore do not claim either of the parts described separately or in themselves considered.

I *claim* the vibrating shoe N, provided with the screens *g o*, and arranged relatively with the box or chest C and deflecting board *b*, as shown, in combination with trunk D and fan E, for the purpose set forth.

No. 17,728.—Amasa Curtis, of Lena, Ill.—*Improvement in Grain Separators.*—Patent dated July 7, 1857.—When the grain is mixed with considerable chaff, straw, and light foreign matter, the valves *i* and *h* should be adjusted in such a manner that valve *i* is opened, and valve *h* is closed, and the blast may pass through the screens *e* F from below, in order to prevent them from being choked. But when the grain is mixed with dust, and finer, heavier substances, the valves *i* and *h* should be adjusted as represented in the engravings, and the blast will pass over and between the screens *e* F.

The inventor says: I do not claim the adjustable slats *m*, nor the valves *i h* in the fan-box C, that is, separately, or in themselves considered, for they, or their equivalents, have been previously used.

But I *claim* the auxiliary shoe D, provided with the adjustable slats *m*, in combination with the valves *i h* in the fan-box C, the above parts being arranged, as shown, for the purpose set forth.

No. 17,853.—William Zimmerman, of Quincy, Ill.—*Improvement in Grain Separators.*—Patent dated July 21, 1857.—The grain passes from hopper R down on to the rotating disk P, and is thrown by the centrifugal power of said disk within the tube L; at the same time the fan A causes a current of air to pass into the machine between the tube Z and the spreader Y, which, passing up through pipe L, comes in contact with the descending grain in L, carrying the cheat up to sittle in box S, while the grain escapes below.

Claim.—The perforated rotating disk P, with its diamond-shaped ring, or its equivalent, on the same shaft, with the fan arranged and operated so as to throw the grain by centrifugal force into the blast-pipe horizontally, substantially as described. The cheat box W around the suction pipe, in combination with the tunnel-shaped delivering tube X and spreader Y, arranged substantially as described, so as to make the grain descend through the blast of air and through a tunnel-shaped pipe, substantially as and for the purpose specified.

A conical plug V, arranged so that it can be adjusted in the suction pipe, substantially as described, to graduate the flow of the blast in the suction pipe, and regulate it as desired.

No. 18,761.—John R. Moffat, of St. Louis, Missouri.—*Improvement in Grain Separators.*—Patent dated December 1, 1857.—The operation of the falling sections is as follows: At the upper or advancing part of their motion, the sections B^1 remain closed by their own weight, forming a continuous conveyor for the straw; but after passing over the large carrying roller on pulley D they are supported by the chute-board C until their return motion; approaching the lower end of the apron, where the greatest accumulation of matter takes place, they escape from the chute-board, and at this point the beater A, rotating in the direction indicated by the arrow, operates in connection with the falling section and effectually removes any such accumulation.

Claim.—The construction and arrangement, substantially as described, of the rotary beater A within the apron, in combination with the falling sections B^1, operating in the manner and for the purposes set forth.

No. 18,444.—Abram Gaar, of Richmond, Ind.—*Improvement in Screens for Grain Separators.*—Patent dated October 20, 1857.—The straw chaff and grain being indiscriminately thrown upon the screen the straw will ride along over the top of the strips, and the blast from the fan-blower, passing up through openings C, is directed forward by the strips D, and meeting the chaff and light material blows it out, whilst the heavy grains roll down the upper inclined sides of the strips, falls through the apertures C, and is conveyed by a chute or spout out of the machine in the usual manner.

The inventor says: I am aware that a riddle has been made of slats alone; and I am also aware that a screen has been made out of a punched plate, and in some cases that a tongue has been left in the aperture, which was bent upward to direct the blast, but that in this latter plan the grain had little or no facility for passing through the apertures. I claim none of these things.

But I *claim* a screen composed of a thin piece of metal punched with suitably shaped apertures, with narrow strips of metal extending across and riveted to said plate of metal, and overhanging said apertures at any angle greater than that of the plate, for the purpose of allowing the grain to pass through the apertures of said plate, giving direction to the blast, and at the same time preventing straw or chaff from entering said apertures, as set forth.

No. 18,137.—Christian Custer, of Philadelphia, Pa.—*Improved Machine for Drying Grain, &c.*—Patent dated September 8, 1857.—The grain passes from hopper L down on shoe M, and on to the upper plate K, passing down said plate over its edge on to the lower plates K, and escapes through spout J. The shaft E and plates K, as they revolve, have a vertical reciprocating motion imparted to them by means of tappet C, which operates lever F of fulcrum *b*; the grain is thus caused to pass in a thin sheet through the machine, and is dried as it passes between the heated plates and pans.

The inventor says: I am aware that kilns, or devices provided with drying cylinders or chambers heated artificially or by stoves, have been arranged in various ways, and therefore I do not claim separately or independent of their construction and arrangement, the parts shown and described.

But I *claim* the rotating and vertically reciprocating drying chamber, formed of the series of vessels or pans J and guide-plates K, placed on the shaft E, and constructed and arranged as shown, in combination with the furnace B, drum A, and hot air chamber D, the above parts being arranged relatively with each other, as and for the purpose set forth.

No. 17,966.—J. B. Gowdy and J. A. Welsh, of Xenia, Ohio.—*Improvement in Hominy Mills.*—Patent dated August 11, 1857.—The corn is fed continuously into the upper end of case A, through opening

l; and motion being given to shaft C, the corn is acted upon by the beaters *f*, which scour and crack it as it passes down, as indicated by the solid arrows, the flanches *e* preventing the corn from rising. The flour and dust is blown out through the slots *c* by the blast generated by screw *a*, the blast passing down shaft C and out through holes *b*, as indicated by the dotted arrows. The hominy is discharged by the beaters *i* through gate *j*.

The inventors say: We are aware that beaters secured to rotating shafts, and placed within a case, have been previously used for cracking corn, and for analogous purposes. We therefore do not claim the beaters *f* attached to the shaft C separately or in themselves considered.

But we *claim* the shaft C, provided with the beaters *f* and flanches *e*, in combination with the horizontal plates *d* within the perforated case A, substantially, as shown, for the purpose set forth.

No. 18,232.—George C. Burt, Abram Wright, and George F. Wright, of Harvard, Mass.—*Improvement in Horse Powers.*—Patent dated September 22, 1857.—This improvement consists in giving such a shape to the ends of the side tracks to horse powers that closely-fitted platform chains of any desired width of sections can be fitted tightly to said tract, and yet pass over their extremities with a perfect and unvarying smoothness, not embracing the track more tightly at one point than at another; this is shown by the exact position of the links, wheels, and tracks. In fig. 2 it will be seen by the position of the platform sections of chain marked *g* that the flexible joints at their angles are on the semi-circular line; but when moved forward one-half the length of a link or section, as represented by the lines marked *i*, the flexible joints of the sections or links come within the semi-circular line sufficiently to allow the end of the link to arrive at *j*, as represented in the drawing.

The tension of the chain and the position of the links being equal, also the position of the links marked *m* being moved forward three-fourths the length of a link, the flexible joints can come within the semi-circular line in proportion to their position, the wheels all resting on the improved shaped track, and the ends of the links meeting at their proper points, as shown in the drawing, obviates all unequal strains or motion.

The inventors *claim* the method by which we are enabled to unerringly give such a shape to the ends of the tracks of said machine that closely-fitted platform chains may be operated upon them without producing any variation of tension or irregularity in the movement of said chains, substantially as set forth.

No. 16,612.—Cyrus Roberts, of Belleville, Ill.—*Improvement in Attaching the Arms of Horse Powers.*—Patent dated February 10, 1857.—When the machine is at rest, each sweep J is suspended between two arms I by means of the link rods K. When the machine is in motion, each sweep will be suspended behind to the arm I, and in front by the traces to the horse. Thus the sweeps will be relieved from sudden jerks of the horses, and all the parts may therefore be made lighter than in other horse powers where the sweeps are rigidly attached.

Claim.—The combination of the radial rigid arms I and intermediate hinged and suspended sweeps J with the master wheel A, substantially as set forth.

No 18,028.—Daniel Woodbury, of Rochester, N. Y.—*Improvement in Portable Horse Powers.*—Patent dated August 18, 1857.—Whilst this horse power is being transported from place to place, the hinged bars K, in connexion with their cross bar *r* and the lever G, serve to protect the horse power from being tilted over backwards.

Claim.—Poising the frame of said horse power upon a pair of journals or spindles which are received into the hubs of suitable transporting wheels, when the said frame is combined with the jointed bars K K, and the jointed frame J J, substantially in the manner and for the purpose set forth.

No. 17,706.—Daniel Taylor, of Carbondale, Pa., assignor to H. A. Chambers and Daniel Taylor aforesaid.—*Improvement in Manufacture of Journal Boxes for Shafting, &c.*—Patent dated June 30, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—As a new article of manufacture a journal box or section of a journal box composed of a brass lining and an iron body, when the two are solidly united together by casting the latter upon the former, substantially as set forth.

No. 17,333.—William H. Main, of Litchfield, O.—*Improvement in Friction Rollers for Journals of Shafts, Axles, &c.*—Patent dated May 19, 1857.—The friction wheels C are set to turn within the grooves E of the hub B, and flanges F of the wheel D are round rings which are held together by means of the journals c^1 of the friction wheels C, these rings thus forming a circular chain which is supported by the friction wheels themselves.

Claim.—Arranging the two series of friction wheels at any suitable angle with the line of the journal, so that when they (the said wheels) are placed in a suitable box or wheel, the journal of said shaft may be supported and braced in all directions—the friction wheels having their journals supported by a series of embracing rings, which thus form their rolling bearings in the manner described.

No. 18,734.—Abram C. Frederick, of Clarendon, N. Y.—*Improvement in Mechanical Movements for Regulating the Action of a Fly Wheel on the Working Parts of Machinery Connected with it.*—Patent dated December 1, 1857.—In this invention the balance wheel N is not fixed immovably upon its shaft *e*, the shaft being round and the wheel fitted but not keyed to it, and kept in place by the adjustable friction spring bar N. When the machine is brought to proper place for operation, and the drill adjusted in the guide M, motion is given to the shaft J by any desirable power applied in the ordinary way; and the cam H upon the shaft strikes the roller S and through it gives the beam G, which is hung in brackets at O, a vertical motion, and thus the cord D operating the drill. At the same time motion is communicated to the shaft of the balance by the gearing before named, which wheel acts as a regulator of the motion and the power applied in operating the drill.

Claim.—Attaching a fly wheel to the machinery upon which it is intended to concetrate its force by the medium of a friction brake, as and for the purpose set forth.

No. 16,847.—Samuel Males, of Cincinnati, O.—*Improvement in Convertible Cider Mill.*—Patent dated March 17, 1857.—A is the frame and B a rotating "cylinder," smaller in the centre than at the ends, and armed with teeth C arranged around the cylinder in rows parallel with its rotation, and furnished also between the rows with smaller teeth or short longitudinal ribs 14; D, the concave, is of form to suit the shape of the cylinder, and is provided over its whole surface with oblique ribs N 13, and two more rows of teeth 11 near its lower edge. The frame, cylinder, cog wheel *d*, fly wheel d^1, pinion *f*, and crank *g* are the same in both uses of the machine. The whole machine is readily convertible from a cider mill to a corn sheller.

The inventor says: I do not claim as new any improvements in the separate machine.

But I *claim* rendering the machine readily convertible from a cider mill to a corn sheller, and vice versa, by making the concaves D K I, hoppers H *n*, and cross beam *m*, in the described form, the "cylinder" and driving gear being the same in both cases as set forth.

No. 16,988.—Richard F. Maynard, of Baltimore, Md.—*Improvement in Corn and Cob Mill.*—Patent dated April 7, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I do not claim the form of the grinding teeth set forth.

But I *claim* the arrangement of these teeth so as to break points, and to form a series of interrupted screw threads by their inclined points, as set forth.

No. 18,844.—Harvey Hall, of Mansfield, O.—*Improvement in Corn and Cob Mill.*—Patent dated December 15, 1857.—This invention consists in strengthening the cone L without an increase of metal by casting the cone and the trough M in one piece; and also in the combination of a stationary cob cutter with the cutting edges upon the front of the revolving arms D D of the shell A of the mill for cutting cobs, regulating the feed, diminishing the power required, and increasing the rapidity of the grinding.

Claim.—The cone and meal trough cast in one piece for the purpose of strengthening the cone, and giving a firm base for its attachment, as set forth.

No. 18,574.—James M. Clark, of Lancaster, Pa.—*Improvement in Distributiug Apparatus in Flouring Mills.*—Patent dated November 10, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I do not wish to be understood to claim a double series of spouts and valves, as that has been done before.

But I *claim* the adjustable or hinged spout, or series of adjustable or hinged spouts, as described, for the purpose of rejecting, mixing, separating, re-jolting, or re-grinding and re-bolting any portion of the lower grades of flour, as set forth.

Second. I claim the combination of the adjustable or hinged spout, or series of adjustable or hinged spouts, with a single series of slide valves or valve, the circular division *y*, the conveyor J, and scraper N, as set forth.

No. 16,325.—James Culbertson, of Covington, Ky.—*Improvement in Grinding Mill.*—Patent dated January 6, 1857.—The feeding channels *n* on the periphery of the burr C, in connexion with the feeding channels *u* on the inner surface of schell B, allow grains of corn and pieces of cobs of considerable size to be admitted for pulverizing; these grooves become filled with coarse grain and particles at the top, while the finer particles sift down between the coarser ones. The meal at the bottom of these feeding channels, which is about fine enough to be discharged, is only subjected to so much grinding surface as exists between the respective feeding channels *n* and the next following discharging channels *x*, and then drops out, whereas otherwise it would continue between the grinding surfaces till it is slowly discharged by the furrows.

Claim.—The combination of the long feeding channels *w w* in the grinding surface of the burr, with the discharging channels *x x* situated in positions just preceding the feeding channels in the revolution of the burr, arranged and operating substantially in the manner and for the purposes specified.

No 17,619.—Ezra Coleman, of Philadelphia, Pa.—*Improvement in Grinding Mill.*—Patent dated June 23, 1857.—To regulate the cut of the revolving cutter F, the concave G can be adjusted on its bed circularly by means of slot *m* in the bed and set-screw *n*, whereby the teeth *h* of the concave may be set in longer or shorter gear with the teeth *g* of the rotary cutter.' The grinder D can be adjusted longitudinally by operating set-screw *z*, said grinder being secured firmly on shaft C; and in adjusting the grinder, the position of the cutter F is not effected, as it is kept in its proper place by means of collar *k*, and is connected with shaft C by means of a key sliding in a groove *l*.

The inventor says: I am aware that concaves have been adjusted eccentrically in order to grind finer or coaser, but not to grind faster or slower; therefore I do not claim an eccentric adjustment of the concave of a grinder.

I *claim* having the concave of a cob cutter adjusted in a circular line concentric with its axis and relatively to the mouth of the feed hopper, by means substantially as specified, so that it may be set to grind faster or slower, substantially as and for the purposes set forth.

The means specified for insuring the rotation of the cob cutter with the grinder, and its retention in proper place where the grinder is adjusted longitudinally, substantially as and for the purposes set forth.

No. 18,178.—Aaron Arnold, of Troy, N.Y.—*Improvement in Grinding Mill.*—Patent dated September 15, 1857.—The material to be ground is fed into hopper O, and as the cone J revolves, the material drops into the spaces *g*, and is carried around by said cone, and ground by the grinding surfaces of the cone J, concave G, disk I, and flange F; the disk I and cone J are secured to plate H by means of screws *b*.

Claim.—The combination of the rotating disk or plate I, and cut or sectional cone J, with the interior of the concave G, and flange F, for the purpose of feeding into the mill, and grinding large substances, such as corn on the cob, and as set forth.

Also securing the cone and disk or plate I to the shaft through the intervention of the face plate H, substantially as set forth, so that said cone and disk may at any time be removed and replaced by others when they become dull or worn away.

No. 18,610.—Charles Tripp, of Ann Arbor, Mich.—*Improvement in Grinding Mill.*—Patent dated November 10, 1857.—The operation of this invention is as follows: The grain or substance to be ground is placed into the hopper E, which passes of its own gravity down the inclined sides *f* of the projection *e* and into the recesses *h*, where it is ground or cut by the burr F, the ground material passing through the edges *q* of the rests of the openings *l*, through which it passes into annular trough I. The edges *q* are adjusted nearer to or further from the burr E, so that the substance may be ground coarse or fine, as desired, by turning the ring H; the wedged-shaped projection *j* at the under side of the ring, acting against the projection *i* on the rests G, move the rests inward, and the pins m^1, in consequence of fitting in the slats n^1, draw them outward.

The inventor says: I do not claim a burr formed of a series of saws for grinding, for such device has been previously used; although perhaps preferable thus constructed is not absolutely necessary in my improvement, as burrs constructed in other ways, and of a different material—such as stone—may be used with success.

But I *claim* the adjustable rests G, placed between the projection *e* and the plate C, constructed substantially as shown, and provided with the discharge throats I, in combination with the burr F, it being understood that I do not confine myself to the ring H, and other parts shown and described, for adjusting the rests G, but claim such means or any other means arranged to effect the same purpose.

No. 18,923.—John R. Morrison, of East Springfield, Ohio.—*Improvement in Grinding Mill.*—Patent dated December 22, 1857.—The claim and engravings explain the nature of the invention.

The inventor says: First. I *claim* hanging the bed stones C C on cleats or pins *r r*, and operating said stones by means of said pins in slots or grooves in the frame, for the purpose of adjusting the stones, as set forth and described.

Second. I claim the combination and arrangement of the lever G, screw *h*, and sleeve n^1, with the stones $C\ C^1$, when arranged and operated as set forth and for the purpose described.

Third. I claim the arrangement of the runner C between two bed stones C C, when said runner has a flouring dress on one side and a chop dress on the other, for the purpose of grinding different kinds of grain and feed at the same time, as set forth.

No. 16,383.—Sandford E. Fitch and Theodore Sharp, of Greenbush, N. Y.—*Improvement in Flour Bolt as applied to Grinding Mill.*—Patent dated January 13, 1857.—The shelf M receives the meal as it is thrown out from the part of the cylinder B nearest the supply end into division 1, and carries it upon the first division of bolt N, from which place particles not running through the bolt pass by the oblique slots F into the mill to be reground; this operation be repeated in reference to each successive division of shelf M and bolt N.

The inventors say: Disclaiming any arrangement of the oblique ribs, for the purpose of returning the material being ground, or part of the same, to the mill, for regrinding, other than that specially set forth.

We *claim* the employment of the shelf M and bolter N, constructed and arraged in reference to each other, so as to take the meal from the mill and bolt it in successive and graduated portions, so as to prevent the finer portions of the meal from continuing unnecessarily in the mill, whilst the coarse particles return to the cylinder to be reground, or in certain cases the substitution of a shelf in place of the bolter, for the purposes and in manner and form as set forth.

No. 18,637.—W. W. Hamer, of Cincinnati, Ohio.—*Improvement in Flour Distributing Bolt for Grinding Mill.*—Patent dated November 17, 1857.—In the engraving, *a* represents the bolting chest provided with a reel B B, and conveyors *d* and *f* are put in motion with the gear wheels 5 6 and 7, which wheels receive their motion from the mill spindle.

The nature of this improvement consists in the precise combination of the conveyors and their compartments joined with each other, and with the bolting chest for passing the middlings, &c., directly from the "flour conveyor" into the ground grain conveyor for rebolting the middlings, shorts, &c., by being carried up with the ground grain and deposited again in the reel for rebolting.

The inventor says: I disclaim the use of the conveyors for mere conveying purposes, as they have often been used for such before.

But I *claim* the exact combined arrangement of the conveyors *d* and *f* and their compartments, when united together with the openings *g*, as represented and specified in the specification, for the purposes before mentioned.

No. 18,412.—William S. Reeder, of St. Louis, Mo.—*Improvement in Elastic Coupling for Mill Shafting, &c.*—Patent dated October 13, 1857.—This improvement consists in the use of a driver or drivers *d*, secured in any suitable manner to the shaft of the driving pulley, when used in connection with a plate or arms securely attached to the shaft upon which the saw is mounted, having mortises through it, or their equivalents, through which the drivers pass, and with which they engage driving the saw, friction rolls being suitably arranged, against which the drivers play in the longitudinal motion of the saw shaft, it being for this purpose supported and working in bearings independent of the bearings of the pulley shaft, by means of which the saw shaft is so arranged as to have the free end play whilst the other has its journal boxes fitted closely to its shoulders, thus preventing freedom of motion. This improvement further consists in the arrangement and combination of adjustable springs *g g*, with the drivers *d*, and mortised disk C, by means of which the end play of the saw is adjusted and regulated.

The inventor says: I *claim*, first, The method, substantially as herein described, of coupling and driving shafts for the purposes set forth.

Second. The arrangement of springs *g* and *g*, or any equivalent arrangement, when used in connection with shaft couplings, substantially as set forth.

No. 18,234.—Edwin Clark, of Lancaster, Pa.—*Improvement in Bearings for Mill-Stone Drivers.*—Patent dated September 22, 1857.—This improvement refers to bearings for drivers for mill-stones, described as follows by the inventor: Within a suitable recess or cavity in the upper stone *a* I insert a metallic bearing block *b*, in which is held the rocking bearing *c* constructed as follows: this bearing consists of a cylindrical portion *d* and a wing portion *e*. The cylindrical portion is inserted in a suitable cavity or box in the bearing block, and turns in this box to the extent of the opening or slot *n*, through which the wing portion projects. On opposite faces of the extremities of the mill-driver *a* are recesses *m* to receive the bearing edges of the wing portion of the rocking bearing *e*. When the stone and drivers are set up and in place it will be seen that as the shaft revolves the driver presses upon the edges of the rocking bearings, and the combined action of the rocking bearings and the pivot bearing *p* gives the advantages of a universal joint in regulating the running of the stones, while the construction is more economical and efficient. Sufficient space is left on either side of the driver to admit of its various positions in the rising and falling of the stone from obstructions or disturbing causes.

The inventor says: I *claim* the rocking bearing, consisting of a cylindrical portion *d*, inserted within a cavity in the bearing block *b*, and a winged portion E passing through a slot in said bearing block, in combination with the bearing recess *m* in the driver, as set forth.

No. 18,741.—Joseph H. Glover, of Skeggs Creek, Ky.—*Improved Balance Iron for Mill-Stones.*—Patent dated December 1, 1857.—The engravings and claim show the nature of this invention.

The inventor says: I am aware that the bails of mill-stones have been provided with blocks which, were interposed between the point of the mill spindle and the interior surface of the bail.

But, to the best of my knowledge and belief, it is new to render such blocks adjustable by means of screws, whereby the stone may at all times be readily balanced, and a better operation of the parts be thus secured, and the quality of the flour improved.

In the patent of E. R. Benton, March 31, 1840, a block is interposed between the point of the spindle and the bail. I disclaim everything contained in the patent of said Benton which resembles my improvement.

I *claim* the block B, when made adjustable from the exterior of the bail by means of screws *d*, as and for the purposes set forth.

No. 18,848.—Nelson Hayward, of Cleveland, Ohio.—*Improvement in Dress of Mill-Stones.*—Patent dated December 15, 1857.—The engravings and claim explain the nature of this invention.

The inventor says: I *claim* making the deep portion of the furrows sufficiently wide from the eye half way to the periphery or thereabouts, with a flat or nearly flat bottom, parallel or nearly parallel to the face of the stone, as described.

I also claim lands made in the form represented, or in an equivalent form, whether used in combination with furrows having parallel bottoms, as described, or otherwise.

No. 16,615.—Benjamin D. Sanders, of Holliday's Cove, Va.—*Improvement in Instruments for Facilitating the Facing of Mill-Stones.*—Patent dated February 10, 1857.—The arm D carries at its lower end a quill or other elastic pointer *i*, which, in being moved over the stone, will indicate by sound its contact with any irregular raised portion in its surface, without disturbing the adjustment of the swinging beam, &c. The adjustment, by means of slots *f h* and set screws *d g*, will be understood without further description.

The device may be placed at one side of the stone, as seen in fig. 2, for the purpose of detecting convexity or concavity generally in the surface of the stone.

The inventor says: I do not claim any of the parts described, used separately.

But I *claim* the instrument described, consisting of the slotted beam C, cross arm D, elastic pointer *i*, box B, carrying the adjusting screw *b*, spindle *a*, and adjustable base or stand A, or the equivalent of these devices, constructed and arranged in relation to each other for joint operation, substantially in the manner for the purpose set forth.

No. 17,446.—Milton Painter and Charles Painter, of Owing's Mills, Md.—*Improvement in Feeding Grain to Mill-Stones.*—Patent dated June 2, 1857.—The grain from hopper H passes through the tube I into the cup L, and as the runner A rotates the cup L is swayed or inclined in varying positions, and the grain is pushed out of the cup and passes therefrom down through the tube K between the two stones; the amount of feed being regulated by raising the bearings *a*, and thereby giving the cup L a greater or less inclination, as may be necessary.

The inventors say: We disclaim every part and feature of our device which is seen in any other grain feeding apparatus.

But, to the best of our knowledge and belief, it is new to regulate the feed of the grain by the swaying of a cup L, which is located and combined with and at the mouth of a swinging tube, as described.

We *claim* in grain feeders, regulating the feed of the grain by the swaying of the cup L, in the manner substantially as described.

No. 18,191.—Edwin Clark, of Lancaster, Pa.—*Improvement in Hanging Mill Stones.*—Patent dated September 15, 1857.—The stone J is hung in ring I by pivots *e*, and can swing on these pivots; the ring I is hung to the boxes F by means of pivots H and *c*, which are at right angles to pivots *d;* the position of stone J can be adjusted by turning crank G, and said stone will adjust itself to a horizontal position by freely swinging on pivots *e d*.

The inventor says: I do not claim hanging the upper stone in a balanced rim or gimbal joint, as this has heretofore been done.

But I *claim* so uniting the rim which supports the upper stone to the frame of the mill by sliding blocks or followers, as to allow an upward play or automatic adjustment of the upper stone, and at the same time admit the usual hand adjustment by set screws, if desired, substantially as described.

No. 17,421.—Wm. A. Clark, Samuel D. Porter, and Wm. D. Simpson, of St. Louis, Mo.—*Improvement in Method of Hanging Mill-stones.*—Patent dated June 2, 1857.—The upper grinding stone A is suspended to a portion of the frame of the mill by means of a ball and socket joint D E, and the eye of said stone loosely embraces the upper end of the spindle N of the runner S, which is secured thereto by means of an elastic packing P, which acts with sufficient force to retain said stone in such a position as to keep its face parallel with the face of the running stone, when the mill runs empty; the packing P yields to any extent, for the purpose of equalizing the work throughout the entire surface of the stones.

Claim.—Suspending the upper stone from above by means of a ball and socket joint, or its equivalent, when the eye of the said stone is made to embrace the upper portion of the spindle of the running stone, and is secured thereto with a sufficient degree of rigidity by means of an elastic packing, substantially in the manner and for the purpose set forth.

No. 17,326.—W. Y. Gill, of Henderson, Ky.—*Improvement in Machines for Re-dressing Millstones.*—Patent dated May 19, 1857.—To dress the lands of a millstone, the apparatus is placed on the millstone so that the picks E will move from the eye towards the periphery. By turning crank D, screw D causes the picks to move in a line from the eye to the periphery, while the cams *h* operate the picks, which thus cut a radial line until they are stopped by the sill b^1. To dress the furrows, it is simply necessary to have the picks traverse from end to end, and to adjust them to the gradually increasing depth.

Claim.—The combination of two or more picks E E with the guiding and operating screw shaft B and lifting cams *h h*, when said parts are constructed, and arranged, and operated in manner and for the purpose set forth.

No. 18,993.—H. O. Sheidley, of Republic, Ohio.—*Improvement in Cider Mills.*—Patent dated December 29, 1857.—The cap piece G is moved downward by the action of the cam lever L having a movable ratchet piece I. This rachet piece moves downward between the cheek-pieces *g g*, and is held in any desired position to resist upward pressure by the ratchet *r*. The levers *l l*, having the small cams *c c* upon them, force the ratchet piece I back upon the ratchet *r* when said piece is to be held firm. When these levers are in the position shown by l^1, the ratchet piece can be moved forward and allowed to drop; stem *d* is hollow, and has openings leading from outside to inside. Within the curb A is a follower F which rests upon the pomace, and is forced down by the descent of the cap piece G passing over the stem *d*.

The inventor says: I *claim* the hollow stem *d* in communication with the interior of the curb in combination with the follower and curb, substantially as and for the purposes set forth.

I also claim the combination of the cap piece G, ratchet piece I, ratchet *r* with its cheeks *g g*, cam lever L, and secondary levers *l l*, arranged and operating as set forth.

No. 17,667.—Alfred T. Clark, of Lancaster, Pa.—*Improvement in Distributing Apparatus of Flouring Mills.*—Patent dated June 30, 1857.—The spouts D are arranged in succession under the lower end of a bolt C, for the purpose of discharging the various qualities of flour separately into their proper receptacles. The flour to be run off is discharged through *a*, the valve a^3 being open and valve a^4 being shut. If the flour is to be returned for further sifting, the valves a^3 and a^4 are both open, and the flour passes into conveyor A to be returned to the bolt; and when it is necessary to return the bran or any other quality to the mill, the valve a^3 is shut, and the flour or bran drops into conveyor B.

The inventor says: I am aware that a single series of spouts has been connected with a bolt, as in the patent of E. and J. M. Clark, patented June 5, 1854. I shall not therefore lay any claim to this device, but limit my claim to the double series of spouts and valves, so arranged in connexion with the bolt and open conveyor A as to give me facilities for separation and mixing not attainable by a single series.

I *claim* as my improvement on the mill of E. and J. M. Clark, patented June 6, 1854, the double series of spouts and valves, arranged and connected with the bolting chamber, substantially as set forth.

Also the arrangement of the conveyor A in combination with the double series of valves and spouts, as set forth.

No. 16,508.—William Wilber, of New Orleans, La.—*Improvement in Mills for Tempering Oleaginous Seeds.*—Patent dated January 27, 1857; England, June 12, 1856.—A jet of steam enters from steam pipe *r* into the chamber T, thereby heating the concave *g g*, and with

it the seed, during the process of grinding. The seed passes then up to plate K, and thence into the cylinder L. This cylinder has a hollow shell, which contains the space *s*, into which steam is introduced by means of pipe M; the stirring apparatus N prevents the ground seed from getting overheated. The ground seed, passing through the inclined cylinder, leaves through opening *s*, and passes into the sliding box P. The chamber R, being filled with steam, keeps the ground seed contained in box P hot.

Claim.—The arrangement of machinery by which oleaginous seeds, as they are being tempered, shall be subjected to the direct action of steam, in their transmission through the machine from the grinding to where they are taken preparatory to their being pressed, as described

No. 17,985.—Otis W. Stanford, of Cincinnati, Ohio.—*Improvement in Dress of Grinding Surfaces for Grain Mills.*—Patent dated August 11, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not wish to be understood as claiming any particular number of concentric channels *f* and grinding surfaces *g*, nor the shape of said channels and the manner of furnishing the grinding surfaces with teeth.

But I *claim* the alternate channels *f* and grinding surfaces *g*, as represented on the surfaces of the plates *d* and *h*, when said alternate channels *f* and grinding surfaces *g* are made concentric with the centre of motion given to the plates, and when arranged with each other and operated in the manner and for the purposes shown in the specification.

No. 17,116.—Ezra Ripley, of Troy, N. Y.—*Improvement in Grinding Mills.*—Patent dated April 21, 1857.—When the mill is turned, the axis of plate F is carried in a circle, by the eccentric E, around that of the constantly revolving plate D, so as to thereby feed the material to be ground outward in every direction from the centre of the plates. In connexion with this movement, the plate F is, at the same time, oscillated about its point of connexion with the check bar G as a centre, across the face of the rotary plate D, so that the lower portion of the plate F may have a more active and extensive vibratory movement to prevent clogging than any other part thereof.

Claim.—Giving to the grinding plate F, when it is applied to a constantly revolving grinding plate D, the positive twofold eccentric and swinging movement described, substantially in the manner and for the purposes set forth; in contradistinction from giving to the grinding plate F, when used with a rotary grinder D, a simple eccentric swinging or reciprocating motion, or any other simple or compound movement heretofore positively communicated thereto in grinding mills.

No. 18,163.—William Stauffer, of Middleburg, Ind.—*Improvement in Grinding Mills.*—Patent dated September 8, 1857.—The arm *a* is made to lie on one side of the hopper by the weight of the grain therein; and when the grain is run out, said arm rises, causing arm *b* to descend and to come in contact with cam I of shaft G^1; which cam gives the arm *b* a lateral motion, which causes lever *c* to slide, and allows beam J to rise; and by the arrangement of beam J with rod *m*, the gate F of the water wheel, in combination with the connecting beam K^1, the weight F, and roller *g*, causes rod *m* to descend and stop the flow of the water to the wheel by gate F being shut down in flume E.

Claim.—The combination and arrangement of the arm *a* with the arm *b* and the sliding rod *e*, together with the cam I on the shaft G^1, the beam J, the rod *m*, the weight *f*, and the connecting beam K^1, for the purpose of arresting the motion of the mill, substantially in the manner shown.

Also the arrangement of the cord *i* with the shaft *j* and the springs, for the purpose of ringing the bell *h*, to notify the attendant when the grain is nearly run out of the hopper, substantially as herein set forth.

No. 18,985.—Franklin Olds, of Providence, R. I.—*Improvement in Grinding Mills.*—Patent dated December 29, 1857.—L is the upper or stationary stone, which is secured within the upper part *a* of the curb. The stone L has an iron band *g* around its upper end, and projecting bars *h* are attached to said band. Through the projecting bars *h* screw rods *i* pass, the rods passing through the top plate of the curb A.

The lower stone K may be raised and lowered, so that the stone may grind finer or coarser, by merely turning the hand-wheel F; and as the step G is raised and lowered in a vertical line, the stone K will be raised and lowered in a vertical position.

The inventor says: I do not claim to be the first inventor of mills in which the upper stone was made adjustable But, so far as I am aware, no grinding mill has ever been made in which the upper stone is held and adjusted in the manner described by me; nor has any mill been made which contained the several other features of novelty which I have set forth.

But I *claim* a grinding mill made substantially as set forth.

No. 16,987.—Richard F. Maynard, of Baltimore, Md.—*Improvement in Securing the Legs of Sectional Corn and Cob Mills.*—Patent dated April 7, 1857.—The two parts *a* and *b* of the concave are secured together by means of lugs *c* passing within the bevelled edges of the ears F on piece *b*. The projections *r* of the legs *d* bear against the lower edge of the concave *b*, where they are prevented from moving to one or the other side by the ears *h*; the upper end of the legs *d* bears against the ears F and lugs *c*.

Claim.—The mode set forth of securing the legs and the parts of the concave together.

No. 17,995.—Manasseh Grover, of Clyde, Ohio, assignor to Himself and Hurlbut Seely, of Hudson, Mich.—*Improvement in Winnowing Mills.*—Patent dated August 11, 1857.—The object of this invention is to force the air from the centre of the fan wheel, thus preventing it from being carried around with the wheel, and to discharge the ull volume of the blast which is created by the fan wings.

Claim.—Arranging in the throat or opening of the fan case a series of troughs or scoops *c*, in combination with the obtuse angles *e* of the fan blades, in the manner and for the purposes fully described.

No. 18,006.—Zachariah Allen, of Providence, R. I.—*Improvement in Tubular Shafting for Mills, &c.*—Patent dated August 18, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The improved hollow shafting described, forming a continuous line of mill shaft and pulley or belt drum, substantially as set forth.

No. 17,565.—George P. Gordon and Frederick O. Degener, of New York, N. Y.—*Improvement in Motion for Preserving Rolling Contact, &c.*—Patent dated June 16, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Supporting or hanging a reciprocating bed or plate B upon supports C C, placed obliquely, or out of parallel with each other, substantially as described, so that the face of such bed or plate shall, as it is moved back and forth, work in contact with the periphery of a cylinder, or with a fixed point or line, or act intermittently against a swinging bed or plate, as set forth.

No. 17,222.—Matthaus Kaefer, of Alexandria, Pa.—*Improvement in Transmitting Motion.*—Patent dated May 5, 1857.—The fly wheel I receives its motion by means of pitman L of the motor; and as the fly wheel is rotated, it causes the carriage C to travel forth and back on its ways B by means of crank M and connecting rod N, which latter is pivoted at *c* to the standard O of the frame A; the travelling carriage C transmits a reciprocating motion to rod G.

Claim.—Hanging a loaded fly or balance wheel on a travelling carriage, so that said carriage shall yield to the momentum of the fly wheel as it passes the dead points, substantially in the manner set forth.

No. 18,496.—Oliver I. Butts, of Georgetown, S. C.—*Improvements in Machines for Brushing Rice.*—Patent dated October 27, 1857.—The frame work of this machine is constructed of wood. The brush D is a cast-iron plate faced at the bottom side with wood, to which the wool and basils are attached by tacks; the wool, being first cut into segments, is tacked on one edge of the same upon the wooden facings of the runner and closely around its edge; the basils, being also cut into segments, are tacked in like manner upon wooden facings over the wool, which forms a soft cushion for brushing the rice. The stuffing box H is a cast-iron centre or spider, with four or more arms, the upper edge of which is faced with wood, the centre of the spider forming the stuffing box; the wire, being tacked to the upper edge of these arms, forms the wire bed G G.

Claim.—The application of a flat brush for brushing rice, consisting of a flat runner dressed with sheep skins and basils in connexion with a wire bed, constructed and operating as described.

No. 18,374.—Wilson Ager, of Rohrsburg, Pa.—*Improved Machine for Cleaning Rice.*—Patent dated October 13, 1857.—The nature of this invention consists in constructing the reticulated concave in the form of a right frustum of cone, and of employing within it a rubber of the same form with the surface of its upper portion, a brush, and its lower portion having a sheepskin covering; the entire rubber having a vertical adjustment to compensate for the wear, the two portions being susceptible of a further relative adjustment to accommodate the unequal wear of the brush and sheep skin.

The inventor says: I am aware that reticulated concaves have been used, and make no claim for that portion of my machine; neither do I claim an independent adjustment of rubbers, such as is shown in the patent of Clark Jacobs, 1846; nor do I claim broadly the construction of the rubbers with brush and sheepskin surface.

But I *claim* the conical rubbers R R^1, having the separate adjustment described, in combination with a single reticulated casing, operating substantially as and for the purposes set forth.

No. 17,646.—John F. Taylor, of Charleston, S. C.—*Improvement in Machines for Cleaning Rice.*—Patent dated June 23, 1857.—The rice to be cleaned is placed within the vessel A; and as the shaft C is rotated the rice below the screw C is forced downward, and the spiral projections *b* deflect the rice outward and force it upward at the sides of the vessel; and the rice will pass down through the cylinder G, and again underneath the screw, which causes it to move in a regular current, as indicated by the arrows.

The inventor says: I do not claim separately the screw F, for that has been previously used.

Neither do I claim the peculiar form of the vessel A, for both have been previously used for the same or analogous purposes.

I *claim* the screw F and cylinder G placed on the rotating shaft C, in combination with the spiral projections or ledges *b*, formed on the plate E, and placed at the bottom of the vessel A; the whole being arranged so as to operate conjointly as and for the purpose set forth.

No. 17,882.—Philip R. Lachicotte and T. B. Bowman, of Charleston, S. C.—*Improvement in Machines for Cleaning Rice.*—Patent dated July 28, 1857.—The rice is placed in the upper part of the cylinder A, and the cylinder F^1 is rotated in any proper manner, and the rice is pressed down by the action of the flange *f g*, and underneath the lower edge of cylinder F^1, and upward through the centre of said cylinder, and over its upper edge, to be forced down again by the flanches; the process being continued until the flour is completely detached from the grain by the friction produced by one kernel rubbing against the other.

The inventors say: We do not claim separately the employment or use of a screw for the purpose specified.

Neither do we claim a cylinder in connexion with the screw, irrespective of its arrangement and its connexion with the parts specified.

But we *claim* the rotating and adjustable cylinder F^1 provided with the screw or spiral flanches *f g*, and placed within the cylindrical case A, in combination with the stationary wings E E attached to the bar D on the bed B, the wings being within the cylinder F, and the whole arranged substantially as and for the purpose set forth.

No. 18,177.—Wilson Ager, of Rohrsburg, Pa.—*Improvement in Machines for Cleaning Rice.*—Patent dated September 15, 1857.—For the description of the operation of this machine see No. 18,176.

Claim.—The method of cleansing rice by submitting the mixture of grain and husk resulting from the hulling process to an alternate packing and loosening action produced by surfaces dressed and operating substantially as set forth.

No. 18,176.—Wilson Ager, of Rohrsburg, Pa.—*Improvement in Machines for Hulling Rice.*—Patent dated September 15, 1857.—The rice is fed in by hopper *i*, and shell S and burr B are rotated in opposite directions. On passing through the openings i^1 of the shell, the rice is conveyed by flanch *l* to the space between the hulling portion of the shell and the burr. The grain on entering this space will be turned by the deflecting blocks *m*, which will turn it across the axis of the burr, and in so doing cause one end of the grain to enter a cavity *n* in the shell as the other is caught by a similar cavity in the burr, as represented in figure 4. The rotation of the shell and burr causes a pressure in the direction of the length of the grain, effecting a separation of the husk. The grain and husk then pass onward to the spiral flange *o*, which conveys them to the cleaner; there the rice and husk pack together, as the shell and burr, represented in figure 3, rotate in opposite directions, the rough surfaces of the husk rubbing upon the grain and acting as a file to remove the coating during the transit of the mixture from s^2 to s^3; and the cleaned rice and husk are discharged through passage k^1.

Claim.—Removing the rice husk by the pressure in direction of the length of the grain, effected by the action of a shell and burr, dressed and operating substantially as set forth.

No. 18,099.—William P. Maxson and Jacob E. B. Maxson, of Albion, Wis —*Improvement in Sack Fastener.*—Patent dated September 1, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—A bag or sack fastener, consisting of a spring tongue F pressing the string against a side flange or projection *c*, so as to form a self-holding nipper clutch, when the said sash fastener is made of a single piece of metal, cut and bent in the manner substantially as described.

No. 18,419.—James A. Watrous, of Green Spring, O.—*Improvement in String Fastening for Sacks, &c.*—Patent dated October 13, 1857.—This machine consists of two parallel plates, which support the inside work, and are made any shape and of any metal or other strong material, each plate having a lip projecting from one edge, turned at right angles with it, through which is made a hole for fastening the machine to the bag.

There are in each plate three holes to receive the rivets projecting from the fixed jaw A, and by which it is made fast to the same; there is also in each plate a slot *d* to receive the projecting guards of the movable jaw B, and lever C D is a side plate, with the holes *c* for the rivets *b b* of the fixed jaw, and also for the slot *d*. Figure 2 represents the fixed jaw consisting of the curved plate T T and leg A.

The inventor says: I *claim* the means of crimping or fastening the string or cord by means of the fixed and movable jaws with their elevated compressors, the movable jaw rising and falling in the slots in obedience to the lever, thereby fastening the string firmly at any point desired without chafing or cutting the same, when applied to the fastening of bags.

No. 17,236.—William Sellers and Coleman Sellers, of Philadelphia, Pa.—*Improvement in Coupling for Shafting.*—Patent dated May 5, 1857.—To loosen this coupling the nuts *k* have to be unscrewed and a wedge driven through the hole I, thereby forcing the sleeves F apart and relaxing them from the shafts.

The inventors say: We do not claim the use of a conical sleeve within an external sleeve to hold to a shaft.

But we *claim* the use of two conical sleeves within one external sleeve, when they are so arranged as to compress the ends of the coupled shafts separately, whether the shafts be of the same or different diameters, substantially as described.

Also bolting said conical sleeves together, as described, or in any other mode substantially the same, whereby the bolts may serve as keys to prevent the internal cones from turning in the external sleeve.

No. 17,716.—George H. Reynolds, of Bedford, Mass., assignor to Himself and D. B. Hinckley, of Bangor, Me.—*Improvement in Strap Pillow Block for Shafting, &c.*—Patent dated June 30, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim dividing journal boxes vertically, as this has been done before.

But I *claim* the described journal box, consisting essentially of the pieces of bushings B B^1 and strap D, constructed and operated in the manner and for the purpose set forth.

No. 17,596.—James Tompkins, of Liberty, Pa.—*Improvement in Smut Machines.*—Patent dated June 16, 1857.—The grain is introduced through hopper P into cylinder F, where it is subjected to the action of the beaters I, and passes then into cylinder B, where it is subjected to a second beating by the increased speed of the beaters G, and from which cylinder it is discharged through passage Z.

Claim.—Constructing machines for cleansing grain of two cylinders, one placed within the other, and of two sets of beaters secured to one shaft passing through these cylinders; the whole so arranged that grain being cleansed may be subjected to two separate and distinct agitations in the one machine, substantially in the manner described.

No. 16,897.—William Zimmerman.—*Improvement in Smut Machines.*—Patent dated March 24, 1857.—The nature of this invention consists in a series of stationary and revolving cylinders arranged on disks from their centre outwards, and roughened on both sides so as to scour and clean the grain as it passes through them successively. The engraving and claim further show the nature of this invention.

The inventor says: I do not claim such devices as are represented and described in the patent granted to Howlett & Walker, May 9, 1846.

But I *claim* a series of stationary and revolving cylinders arranged on disks, or their equivalents, from their centre outwards, substantially as described, for the purposes set forth.

I wish it distinctly understood that I disclaim the devices covered by the patent granted to R. M. Dempsey, December 18, 1849.

No. 16,980.—Israel Kepler, of Milton, Pa.—*Improvement in Smut Machines.*—Patent dated April 7, 1857.—The grain passes into the machine through the aperture E, and drops on the disk H; motion being imparted to shaft F, the pins *a* tend to break the smut balls, and prevent the grain from being thrown too violently against the ribs D of the cylinder. The current created by fans I drives the smut and dust through between the ribs D, while the grain drops through funnels J and K, and passes out at M.

The inventor says: I do not claim vertical ribs or openings of any kind.

Nor do I claim horizontal ribs or wires, nor the openings between the wires; as neither of these effects the object I have in view.

But I *claim* the construction of the stave, the horizontal ribs, and openings, when said ribs are cut away on their inner faces, so as to facilitate and concentrate the blast of air that is to pass through them, to carry off the smut and other impurities, in the manner as set forth.

No. 17,869.—Everard M. Clark, of Lancaster, Pa.—*Improvement in Smut Machines.*—Patent dated July 28, 1857.—By the operation of this machine, the fan K and the fluted propeller F in the cylinder E are made to drive off all the chaff, smut, &c., while the scouring process is going on, and the grain is falling in through the spout B and being discharged in a thoroughly cleaned state below at the spout L; while all the chaff, smut, &c., are blown out of apertures D and J of the spouts D and I, at one side of the machine.

The inventor says: I am aware of wings being attached to a vertical shaft operating in a grooved concave or cylinder for scouring purposes; but this I do not claim.

I *claim* the shape or construction of the fluted propeller F, as described, for the purposes of scouring the grain, and at the same time driving a blast upwards so as to blow off the cheat, smut, &c., out of the spout B above, before the grain passes down on to the wings of the propeller F and concave E.

No. 18,484.—John A. Woodward, of Burlington, Iowa.—*Improvement in Smut Machines.*—Patent dated October 20, 1857.—This invention consists in the use of a scouring device peculiarly constructed and placed relatively with blast passages, whereby the grain may be thoroughly scoured and deprived of dust, smut, and other foreign substances.

Also in the employment of a series of adjustable screens, so arranged in the principal blast spout, and placed relatively with the fan, that the escape of the offal, imperfect grain, &c., may be regulated as desired, and when of value discharged from the machine separately and free from dust, or when worthless allowed to pass into the fan-box and be discharged therefrom with the dust and other impurities.

The inventor says: I do not claim the curved spout H, nor do I claim broadly and separately subjecting the grain to two or more separate blasts while passing through the machine; for this has been previously done, and curved blast-spouts have been previously used. Neither do I claim separately any of the parts described and forming a part of the scouring device.

But I *claim* the scouring device formed of the beater *a* attached to the cylindrical screen *c*, in combination with the scouring plate D and cylinder E, formed of a series of rings *a x* placed one over the other, with spaces between them; when the device thus constructed is placed relatively with the blast-passage J I substantially as described, whereby the grain is thoroughly scoured and subjected to three blasts, and thoroughly separated from the inferior grain and lighter foreign substances, such as chess and the like.

I further claim the adjustable screens *j*, placed in the chamber K, and arranged relatively with the fan-box B as shown, whereby the chess and lighter and inferior grain may, when of sufficient value, be discharged from the machine separately and in a clean state, or, when worthless, allowed to pass into the fan-box, to be ejected therefrom with the finer and lighter foreign substances.

No. 18,727.—James M. Benckert, of Philadelphia, Pa.—*Improvement in Speed Indicator.*—Patent dated December 1, 1857.—To one of the arms D of each pair a toothed segment E is attached; and these segments gear into teeth *b*, formed on cylindrical cam F, which is placed loosely on the shaft A. The construction of the cam is shown in the engraving. It is simply a short tube, having the teeth *b* on one end, provided with two oblique terminations *c c*, the edges or face sides of which may be described as being curved, so as to form part of the threads of a screw, one being in a reverse position to the other. The two pairs of arms D are connected by spring D^1.

To the plate C two pins *d d* are attached. These pins are placed on opposite sides of the tube shaft A, and in a line with its centre; G is a swivel arm which has holes through it near each end, through which holes the pins *d d* pass.

The inventor says: I distinctly disclaim the employment of weighted arms assisted by springs in governors or speed indicators, for I am well aware that they are old.

But I *claim* the arrangement of the double-threaded cam F, segments E, and swivel arm G, as and for the purposes set forth.

XIV.—LUMBER.

No. 18,003.—Asa Weeks, of South Boston, Mass., assignor to Himself and Orin W. Fiske, of the same place.—*Improved Expanding Auger-Bit.*—Patent dated August 11, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I do not claim the invention of movable cutters; nor do I claim the employment of a double-threaded screw for adjusting the distance of a lip and cutter, as shown in the patent granted to J. P. Rollins, December 25, 1855.

But I *claim* combining with the double-threaded screw C, and arranging on the split tapering shank, as described, a rotary sleeve B and its screw, arranged as described.

No. 17,868.—William N. Clark, of Chester, Conn.—*Improved Auger-Handle Fastening.*—Patent dated July 28, 1857.—The nut C can be turned freely on the screw of the shank B, but is retained to the handle A by means of collar D for the purpose of preventing the parts from being lost.

Claim.—The attachment of the nut to the handle of the auger in the manner above described, for the purpose of preventing the parts from being lost, and to form a secure and convenient fastening, as set forth.

No. 16,399.—J. A. Reynolds, of Elmira, N. Y.—*Improved Tubular Auger.*—Patent dated January 13, 1857.—The article to be bored is clamped upon the sliding carriage D, actuated by a feed screw, the cutters *g* of the auger penetrating the wood, while the tube E, supported by slide *h*, serves to retain the auger in its position, and thus to insure a true bore.

The inventor says: I am aware that the employment of a tubular auger is not new, as one has been employed with the cutters attached to said tube. I am also aware that a tubular auger and screw therein, for the delivery of the chips cut by the tube, has been employed.

I *claim* the employment of an auger whose shank or stem shall form a screw, and whose head shall be constructed in the manner described, when combined with a guiding tube E surrounding the screw shank of the auger, but not covering the head thereof, substantially in the manner and for the purpose set forth.

The use of the guide tube E when combined with the sliding carriage D D, said carriage constructed with the slide *h*, as set forth.

No. 18,549.—James H. Mattison, of Scriba, N. Y.—*Improved Mode of Chamfering and Crozing Barrels.*—Patent dated November 3, 1857. The engravings and claim show the nature of this invention.

The inventor says: I *claim* the cams *n n*, in combination with the spring *p*, and the chamfering and crozing tools, so constructed as to traverse them out gradually to cut the score and chamfer a barrel, and draw them in suddenly to remove the barrel, and save the time of the operator attending the machine.

I claim making the edges of the rims D and D¹ which hold the end of the barrel by making a rebate, or otherwise, so as to hold the barrel properly in the machine without removing the truss hoops, substantially as described.

No. 16,642.—James E. A. Gibbs, of Mill Point, Va.—*Improved Carpenter's Bench Clamp.*—Patent dated February 17, 1857.

The inventor says: I do not confine myself to the particular devices I have described, as I *claim* combining the pivoted and bent clamp rod D with the sliding arm or lever *c*, when the latter is so arranged as to jam the rod at any required height by means of screw E or cam H, or any equivalent mechanical contrivance.

No. 18,345.—J. W. Mahan, of Lexington, Ill.—*Improved Joiners' Bench.*—Patent dated October 6, 1857.—In describing this invention the patentee says: However, inasmuch as my improvement relates to or is upon a previously patented machine, and cannot be used but in connexion with said improvement, therefore I deem it necessary only to describe my present improvement. The other improvement was patented September 16, 1856. In the present improvement the jointing and facing bench are combined, so as to make but one bench, both for facing, thicknessing, and jointing timber, the operator working only on one side of the machine or bench. The second point of difference between this and the first improvement is, that a peculiarly constructed sash is used for the facing and jointing plane to work in. The facing and jointing this sash also gives the gauge in thicknessing. The third point of difference is a peculiarly constructed jaw, used for clamping and holding the lumber both in facing and jointing.

The inventor says: I would state that I do not claim as my invention, that is, as new, the entire carpenters' and cabinet-makers' assistant work-bench that is illustrated and described by my drawings and specifications; for part of it was patented by me March 25 and September 16, 1856.

But I *claim* the cabinet-makers' and carpenters' assistant work-bench, constructed in any manner substantially the same as shown by my specification and drawings.

No. 17,292.—Charles T. Pearson, of Chelsea, Mass.—*Improved Joiners' Bench Strip.*—Patent dated May 12, 1857.—By pressing the upper ends of the pawls D inward, their lower ends will be thrown out from the rack teeth C, and the strip G may be raised or lowered, and secured at the desired point.

Claim.—Attaching the strip G to the slides C C, which are fitted in dove-tail grooves *a* in the bars B B, the slides C being provided with pawls D, against which springs F act, the whole being arranged substantially as shown for the purpose set forth.

No. 17,769.—Henry W. Porter, of Rothsville, Pa., assignor to Samuel G. Porter, of West Earl, Pa.—*Improved Bit Brace.*—Patent dated July 7, 1857.—When it is desired to use the auxiliary handle *g*, the detent *e* should be thrown on to the teeth of the ratchet wheel *c*, which will enable the bit to be rotated in a forward direction by applying power to shaft *g* and for reversing the motion of the bit; the detent must be moved on to the teeth of wheel *d*. When the bit is to be operated by means of main handle A, the detent should be placed in a central position upon the teeth of the ratchet wheels *c d*.

Claim.—Combining the knob *h* with the bit holder *j*, by means of the auxiliary handle *g*, whenever it may be necessary to bore holes in situations where it is impossible to rotate the bit brace, substantially as set forth.

And in connexion therewith the double ratchet wheels on the spindle *a*, when arranged in such manner in relation to the detent *e* as to enable the necessary connexions and disconnexions to be effected between the bit holder and the permanent and auxiliary handles of the brace, substantially as set forth.

No. 17,891.—Charles C. Plaisted, of Chicopee, Mass.—*Improved Bit Brace for Boring obliquely to the Stock.*—Patent dated July 28, 1857.—The socket part M of this bit stock can be set into an oblique position with the bit stock of the adjustable connecting link C, which connects the collar A with collar B. In boring, the handle F is held by the operator, thus preventing the collars from turning, and the operator is enabled to bore holes in places where there is not sufficient space to allow the common bit stock to be used.

Claim.—A bit stock, in which the socket or part that holds the bit revolves about its axis in an oblique position with reference to the stock by means of the universal joint R R¹, or its equivalent, and the adjustable connecting link, extending from the socket to the stock.

In combination with the above, I claim the cylinder H or coupling by which the axle of the bit and the stock are placed and retained in line with each other.

No. 17,038.—Alexander Hall, of New York, N. Y.—*Improved Expansive Bit.*—Patent dated April 14, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—In combination with a boring tool, an expanding bit or bits *e*, whose turned cutting edge *i* and shank passes through a mortise in the shank of said boring tool, and is secured therein by a pin *m*, as herein set forth, so that said expanding bit or bits may have a cutting edge from the centre of the boring tool to its extreme outer edge, as set forth.

No. 17,395.—Cyrus W. Saladee, of Columbus, Ohio.—*Improved Bit for Cutting out Cylindrical Plugs of Wood.*—Patent dated May 26, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The projecting lips or cutters A A, as shown in figs. 1, 2, and 3, for the purpose of cutting out round plugs of wood in the manner substantially as set forth.

No 18,282.—Benjamin B. Hill, of Chicopee, Mass.—*Improved Bit Holder.*—Patent dated September 29, 1857 —This invention consists of a curved arm so constructed that it can be attached to the common bit stock, and at the same time give support and bearings to two bevel gears placed at an angle of about forty-five degrees with each other, and having near the lower gear a flat rest or bearer, by means of which the bit is held in a fixed position with reference to the action of rotation of the stock when in use. The whole arrangement being such that holes can be bored in the corner of a room (as in bell hanging) while the hand revolving with the bow of the stock is at some distance from the walls of the apartment.

The inventor says: I *claim* the diagonal bit-holder, having a projection or rest T which forms a guard to the bevel gears and gives support to the bit, as described.

No. 17,479.—George Benjamin, of Avoca, N. Y.—*Improved Device for Holding Bit in the Brace.*—Patent dated June 9, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The invention of the hook and lever 3 and standard 4, as shown in the drawings, as applied to the brace socket; and the application of the spring 6, burr 7, and notch 8, on the outside of the brace socket as represented and described.

No. 17,770.—Amos J. Smith, of Lynn, Mass., assignor to Himself and George W. Otis, of the same place.—*Improved Bit or Drill-Holder.*—Patent dated July 7, 1857.—By drawing backward thimble D until the inner end of key C comes up against the projections 2, the bit G can be inserted into the socket 3; and by then releasing thimble D, the spring E will drive key C forward over the shank end of the bit.

Claim.—The described combination of the sliding key or bar C and thimble D, with the spring E and stationary catch or protection F, constructed and operated substantially as described.

No. 16,938.—Abel W. Streeter, of Shelburne Falls, Mass.—*Improved Method of Constructing Bit Stocks.*—Patent dated March 31, 1857.—The tube G is fitted on the journal J, and plays freely on it, and is secured thereto by means of a screw nut H; the stock cap B is fastened to tube G by means of a pin or screw D, which does not touch journal J, and thus the stock cap B can turn freely on the stock.

Claim.—The construction of a bit stock in sections, said sections being connected by joints in the manner and for the purposes substantially as set forth.

Also the mode of attaching the stock cap to the stock by means of the box or tube G and cross pin D, or its equivalent, substantially as described.

No. 16,931.—A. C. Moore, of Wilmington, Vt.—*Improved Mode of Securing Bits in their Stocks.*—Patent dated March 31, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The application to bit stocks of a plain socket with a screw cap to hold the bit in place by a pressure upon the shoulder of the bit head; thereby doing away with the necessity of fitting a bit before use, and gaining the advantage of a sure and firm fastening.

No. 17,341.—Luther T. Smart, of Manchester, N. H.—*Improved Machine for Compressing the ends of Blind Slats.*—Patent dated May 19, 1857.—The blind slats are piled between the racks *k*, and by turning crank *e* shaft *c* is rotated, and cam *m* strikes arm *x* of slide *l*, carrying with it slide l^1 forward and across the bed piece *a*, pushing the lower slat of the pile under studs *n* and opposite the dies in the dieblocks *f*. When the slat *r*, fig. 3, is firmly pressed down by *n*, the cams *j*, by their inner sides playing against the friction rolls *o*, force the dies *f* towards each other, which thus pinch the ends of the slat.

Claim.—The machine substantially as set forth, or its equivalent, for crimping shades to blinds, consisting essentially of the sliding dies *f f* in combination with the cams *j j* and *m*, the rods *p p*, the slide l^1, and the pressure studs *n n*, with the rack *k k*, connected together and operating in the manner substantially as set forth.

No. 16,777.—Tristram D. Knight, of Charleston, Tenn.—*Improved Machine for Reducing and Smoothing Boards to a Uniform Thickness.*—Patent dated March 3, 1857.—C D and M N are feed rollers, G the saw that reduces the board J to a uniform thickness, and P the grinding cylinder which serves to produce an even and polished surface.

The inventor says: I do not restrict myself to the cylindrical form of the grinder, as the disk or some other form might, under certain circumstances, be substituted with advantage. Neither do I confine myself to the use of an emery grinding surface, as many other things are well known for abrading and polishing wood, which might be employed in the place of emery, and, as an example, I will mention rasps and files; but the variety of such things is too well known to require special enumeration, and too numerous to be particularized in a specification.

I *claim* the combination of the reducing saw with the finishing grinder, for the purpose described.

No. 17,017.—Jonas Bosenbury, of Cherryville, N. J.—*Improved Boring Machine.*—Patent dated April 14, 1857.—The object to be bored is clamped between the dogs H and F. The dog H are adjustable by means of the set screws S; and the dog F, which is attached to rack C, can be adjusted by turning spiral cam D by means of crank E. The auger shaft *a*, which turns in a frame *d b*, can be adjusted in a lateral direction by means of slide *g*, which can be moved on frame *d* by means of a tongue and groove-joint, while it can be adjusted in a vertical direction by frame *b d*, sliding on frame *c*. The uprights I can be adjusted laterally by turning crank L.

Claim.—The arrangement of devices as described, for the purposes set forth.

No. 18,057.—**Emmett Quinn**, of Trenton, N. J.—*Improved Boring Machine.*—Patent dated August 25, 1857.—The log to be bored is secured to the carriage C and fed to the hollow boring tube B by its own weight. When the carriage C arrives in line with the levers F, it presses on said levers and turns them to the position represented in fig. 2, whereby the slides *a* are withdrawn to permit the passage of the carriage C.

Claim.—The combination of the sliding guide *a a* with the levers *f f* and timber carriage C, operating as and for the purpose set forth.

No. 18,872.—**Lafayette Stevens**, of Elmira, N. Y., assignor to W. L. **Gibson**, of same place.—*Improved Boring Machine.*—Patent dated December 15, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I do not claim an inclosing tube attached to the frame of a boring machine, and extending the entire length of the auger.

But I *claim* the loose independent collar *f*, provided with knife edges *g g*, to keep it from turning, for the purpose of furnishing a bearing for the head of the auger while in operation.

I also claim the sharp annular spur *c* for the purpose of centreing and guiding the auger, and at the same time leaving a core of the material bored in the centre of the auger, in the manner specified.

I also claim the oblique traversing rests *o o*, in combination with the screws *t t* and dogs Q; for the purpose of adjusting the timber to the auger, as described, and holding it firmly while under the operation of the auger.

No. 17,630.—**Levi B. Lloyd**, of Warwick township, Pa.—*Improved Device for Feeding and Limiting the Depth of Hole in Boring Machines.*—Patent dated June 23, 1857.—The block X to be bored is placed upon the table T; the nut *n* is then turned on the thread of the draw rod *c*, forcing the spring *d* towards the edges of the table a distance equal to the required depth of perforation; the bit B is then turned, and the rising of the spring *d* keeps the block X constantly within the action of the bit until the spring ceases to exert any power.

Claim.—The combination of spring, draw rod, and table, arranged and operating to limit the depth of hole as described.

No. 17,799.—**Hiram E. Paine**, of Troy, N. Y.—*Improved Device for Feeding the Cutter Intermittently in Mortise Boring Machines.*—Patent dated July 14, 1857.—Rotary motion being given to the shaft *c*, the shaft J of the mortising tool is rotated by means of pulleys c^1 c^2 c^3 K and belt D. Rotary motion is also given to the cone pulleys *c* and *d* by means of belt E, and to the crank shaft C by means of pinion and wheel C^1 and C^2, the crank *a* causing the frame H and shaft J to vibrate within the ways *e* and a^1; the length of the stroke *e*, being made adjustable, is equal to the length of the mortise to be made. At the end of each stroke one of the arms j j^1 operates the lever *e* to turn it from the dotted position to that shown in full, thereby causing the rod 2 and pawl O^1, fig. 4, to operate ratchet n^2, pinion n^1, and rack *n*, and to feed the mortising tool to the stuff by operating frame N within its ways M; thus the feeding of the mortising tool is only performed at the ends of the mortise. The shaft J is made to slide within the tube K by means of tongue and groove connexion, and consequently turns with said tube, preventing any vibrations of the tool as it is fed to the stuff.

Claim.—Constructing the machine as described, so that the revolving sidewise reciprocating mortising bit thereof is moved by the machine alone endwise into the timber at, and only at, the ends of the mortise, whatever length of mortise is being cut, as set forth.

I also claim the described means used to prevent increased trembling of the mortising or boring bit, as the depth of the cutting increases.

No. 18,370.—**Lafayette Stevens**, of Elmira, N. Y., assignor to **William L. Gibson**, of same place.—*Improvement in Wood-Boring Machines.*—Patent dated October 6, 1857.—This invention consists of an improved method of clearing chips from the auger in boring pump tubing, and is applicable to all cases where long boring in timber is required.

In using this invention, the centre of the wood is not removed, but passes through the annular spur *b* as the boring proceeds, and thence through the centre of the tube E, as shown at *c*, fig. 2, which is a longitudinal section of the auger and timber in the operation of boring. G, in fig. 1, is a fan blower, *d d* being the fans, which are attached to the shaft of pulley *e*, which is driven at a high rate of speed by a band from the large wheel H. The blast of the fans passes through the throat *f* into the pipe *g*, which connects with the hollow shaft C; from whence it is driven through the hollow of the boring tube E, emerging through the small aperture *h h* immediately back of the cutter F. The arrows in the drawing show the course of the blast.

The inventor says: I *claim* employing the elastic force of air when introduced as a blast through one or more tubes or jets, immediately at or closely following the bit or cutters as described, or by any analogous means of application having substantially the same effect, for the purpose of removing the chips and dust.

No. 17,001.—**Horace S. Smith, Elijah Hanson**, and **M. S. Richardson**, of Rutland, Vt.—*Improved Machine for Manufacturing Cylindrical Boxes.*—Patent dated April 7, 1857.—The bolt or plank L is placed between the rollers I and J, and its inner end is placed against the cutters *h* and *j*. Motion being given to the driving shaft E, the spindle D rotates, and the head C is pressed towards the bolt I. The cutters *h* cut the exterior surfaces, and the cutters *j* the interior of the boxes, while the cutters *k* form the rim at the end of the box to receive the lever. When the cords of the boxes *f* come in contact with the end of bolt L, the boxes are finished, the head C is moved out from bolt L, and the bar Q is drawn by hand towards the attendant, causing the saw R to cut off the finished boxes from the bolt.

The inventors say: We are aware that boxes have been formed by cutters arranged in various ways; but we are not aware that cutters have been so arranged as to cut the external and internal surfaces of boxes and also the rim to receive the cover at the same time. We therefore do not claim the employment or use of rotating cutters for cutting boxes irrespective of the arrangement shown.

We *claim* the cutters *h* attached to or formed on the semi-cylindrical shell *g*, the cutters *j* attached to the ends of the solid semi-cylindrical projection *i*, and the cutter K attached to the inner end of the semi-cylindrical projection I, the whole being arranged as described for the purpose set forth.

We further claim in combination with the cutters *h i* K, arranged as shown, the saw R attached to the swinging bar *g*, as described.

No. 18,287.—Josiah Kirby, of Cincinnati, Ohio.—*Improved Machine for Cutting Bungs.*—Patent dated September 29, 1857.—A is the follower, which presses the block against the bits; B is the face-plate; C the mandrel; D the pulley on the mandrel; E the lever; F the lever shaft; H the lever that gives motion to the follower; I the lever that gives motion to T; J is the lever used to increase the weight at certain lines on E; K is a shoe on rod S, to increase its weight and receive the friction of pin; L is the shaft which gives the feed motion; M is the cam which gives motion to the lever; O is a weight on the lever; P is a cam; Q is a driving pulley on the shaft; N is a weight on lever E; B is a spring lock on lever H, to assist in bringing back the follower. The centre rod *b* serves as a slide to give motion to the bit holders. The bit holders *v v* are provided with adjusting rods *a a* at or near their front ends, and tail screws Y Y running through their rear ends. The rods *a a* and the tail screws Y Y extend through the sides of the mandrel and rest upon the bevels of the centre rod *b*, for the purpose of adjusting the bits to the required sized bung, and giving the holders *v v* an oscillating motion, so as to taper or bevel the bung as it is forced up against the bits, and to free the bits from the bung as it comes back again after it is cut.

The inventor *claims* the oscillating bit holders *v v*, when operated by means of opposite bevels on the centre rod *b* acting against and adjusting rods *a a* and the tail screws Y Y, in the manner and for the purpose described. The inventor also claims the mode of grasping the block and freeing the finished bung, when arranged and operating in the manner set forth.

No. 16,800.—Edwin Kilburn, Artemas Kilburn, and Cheney Kilburn, of Burlington, Vt.—*Improved Machine for forming the Curved Surface of Solid Wooden Chair Seats.*—Patent dated March 10, 1857.

The inventors say: We do not claim a wheel having its periphery or face coated with sand or emery, for such wheels have been previously used for polishing.

But we *claim* shaping or hollowing out the faces or upper sides of chair seats by means of a grinding or cutting wheel D, when said wheel has a convex face or periphery coated with sand, emery, or other suitable substance; and using in conjunction with said wheel the screw *f*, or its equivalent, with the circular plate or disk *h* attached, substantially as described.

No. 18,161.—John A. Scroggs, of Burlington, Vt.—*Improved Mortising Chisel.*—Patent dated September 8, 1857.—The chips rise within the oblique clearing grooves between edges *a b*, they being centrally divided by the sharp edged tongue *c*.

Claim.—My improved self-clearing mortising chisel, whose peculiarity consists mainly in its oblique grooves, which operate substantially as set forth.

No. 18,838.—Juan S. L. Babbs, of Boston, Mass., and Amos H. Ray, of Providence, R. I.—*Improved Adjustable Gauge for Dovetails.*—Patent dated December 15, 1857.—A A is the bar, being a straight piece of wood having a series of cutter heads marked *c c*, with knives or markers attached to the top and bottom sides of the same. The cutter heads are made to slide easily upon the bar, and are held in their respective places by set screws *d d*, thereby admitting of adjustment for marking various sizes of dovetails as may be required.

B B are movable or sliding guages, and are also made to slide upon the bar in the same manner as the cutter heads, as before described. These gauges are provided with elongated slots, which allow them to traverse backward and forward upon the bar A A at right angles with the same, by which means this instrument may be used for marking the dovetails upon one piece of stock, and also the pins upon the other piece to match the dovetails, by employing one set of the knives or markers.

The inventors say: We *claim*, first, the use of the bar A A provided with two or more stationary or movable cutter heads, with knives or markers attached, as described for the purpose set forth.

We claim, second, the arrangement of the movable gauges B B, operating as described for the purpose specified.

No. 16,627.—Elbridge G. Matthews, of Clear Water, Minnesota Territory, assignor to Harvey Church, of Troy, N. Y.—*Improved Machine for Cutting Dovetails and their Grooves.*—Patent dated February 10, 1857.—The stuff R is placed against bar G, which may be set at various angles, so as to mitre and dovetail at the desired angles, and then fastened to the carriage B by means of slotted arc J and a set screw, not represented in the engravings. The stuff, when thus set at the proper angle, is secured by clamps I and H, and then the carriage is moved along by means of gear C D, and thus the stuff subjected to the action of the cutters *f e e*, which cut simultaneously the mitre and dovetail. Figures 2 and 3 represent the bits for cutting the tongue and mitre into piece S; and figures 5 and 6 represent the bits used for cutting the groove into piece R.

Claim.—In combination with the fixed stock Q, and mitring knife *f*, and scouring and cleaning knives *e e*, as set forth, for forming at one operation the mitre and dovetail tongue or groove.

Also in combination with the fixed stock and miteing and dovetailing cutters described, the traversing of the block or board in a clamped condition past the same, for the purpose of having the mitre and dovetail formed, as set forth.

No. 18,877.—**Richard N. Watrous**, of Charlestown, O.—*Improved Drawing Knife.*—Patent dated December 15, 1857.—A represents the knife, provided at each end with a tong B, on each of which a shoulder *a* is formed, said shoulders being formed by having the outer ends or parts *b* of the tongs made of smaller diameter. The outer ends of the parts *b* of the tongs have each a screw cut on them to receive a thumb nut *c*. D D are the handles of the draw knife. The eyes or loops E are secured to the handles D D by tongs *c*, which pass entirely through the handles, and are riveted or headed at their outer ends.

The inner edge of each eye or loop E is serrated or notched about half the distance of its circumference, the lower or inner half as shown at *d;* and on each tong a point or stop *e* is formed. These points or stops are formed on the inner edges of the tongs, and are produced by filing, so as to form a projection. In consequence of these stops *e* catching into the notches in the eyes or loops E, the handles are prevented from turning on the parts *b* of the tongs; and by unscrewing the nuts *c*, the handles and blade may be adjusted relatively to each other as desired.

Claim.—Attaching the handles to the knife substantially as shown and described, or in any equivalent way, whereby the relative position of the blade and handles may be varied as occasion may require, or the nature of the work may demand.

No. 18,305.—**William D. Sloan**, of New York, N. Y.—*Improved Drilling and Milling Machine.*—Patent dated September 29, 1857.—The object of this invention is to mill or drill the two ends of blocks of various materials, such as umbrella tips, chair rounds, &c., with the view to expedite such operations and produce accurate work.

This invention will be understood by reference to the drawings and claim.

The inventor says: I *claim* the mode of operation, substantially as described, for securing and holding the blocks to the periphery of the wheel, by which they are shifted from place to place which mode of operation results from the combination of the radially sliding stirrups, or their equivalents, with the wheel and the mechanism operating the said stirrups to liberate and gripe the blocks, or any equivalent therefor, substantially as described.

I also claim connecting the stirrups, or any equivalent therefor, with the radially sliding rods by a yielding joint, in combination with the oblique edges of the recesses in which they slide, or any equivalent therefor, as set forth; so that the said stirrups when forced out shall be brought in a radial position, and be free to yield laterally to any irregularity of form of the blocks to be griped when drawn in, as set forth.

I also claim, in combination with the carrying wheel, or equivalents therefor, for holding and shifting the blocks, the two sets of hollow mandrels, with appropriate cutters, and having a reciprocating motion in opposite directions for acting on the opposite ends of the blocks, substantially as and for the purpose specified.

No. 16,936.—**William D. Sloan**, of New York, N. Y.—*Improved Automatic Lathe for Turning Irregular Forms.*—Patent dated March 31, 1857.—The blocks to be turned are fixed upon the mandrels *e*, which are shifted in succession from one to another of a series of revolving cutters d^4 e^4 f^4, which are guided in their longitudinal movements by patterns which act upon the revolving cutters by means of rollers s^1. Each of the three cutters is at a greater distance from the shaft *a* than the other, so that each subsequent cutter takes a deeper cut from the block, until the latter has acquired the desired shape. The finishing cutter referred to in the second claim is of a circular shape and represented in the drawings at n^2.

Claim.—The series of rotating and shifting mandrels for rotating the blocks to be turned, and shifting them from one operation to another, substantially as described, in combination with the series of traversing cutters, guided by patterns or moulds, to determine the form to be produced, substantially as described: whereby a series of blocks are simultaneously subjected to the series of operations, and each in succession subjected to all the operations, as set forth.

Also the mode of operation, substantially as described, of the cutter, termed the finishing cutter, which said mode of operation consists in rolling the cutting edge along the surface of the block that is being turned as described; by reason of which a small portion only of the cutting edge is cutting at any one time, and immediately relieved and followed by another portion of the said cutting edge, as set forth.

Also the sliding segment ring with its slots, substantially as described, in combination with the cutters and their appendages, substantially as described, for carrying the rangling cutters nearer to the axis of the blocks at each successive cutting action as set forth.

No. 17,403.—**Albert Williams**, of Philadelphia, Pa.—*Improved Compound Gauge.*—Patent dated May 26, 1857.—The points A are the mortise points for marking wood for mortising, which can be adjusted by turning screw head I, the screw of which works in a screw nut J. The point E serves for marking metal; F is the common gauge point for marking wood; and G represents a cutter for cutting wood, leather, or any soft material.

Claim.—The combination of the four several gauges in one tool, and all operating on the same end of the stem; the mortise working with an anti-friction screw, the head of which is at the bottom or end of the stem.

No. 16,816.—**Carver Washburn**, of Bridgewater, Mass.—*Improved Method of Operating the Splitting-Knife in Hoop-Pole Machines.*—Patent dated March 10, 1857.—The knife A is attached to a carriage sliding between the ways C C. The spring D serves to press the knife forward in the bite of the rollers and to allow the knife to recede from the rollers under the pressure exerted against the knife by the action of the rollers against a hoop-pole, while being forced forwards between them.

Claim.—The improvement of applying a knife to the feed rollers, or the latter to the former, by means substantially as described, so that one may be made to approach towards and recede from the other, essentially in manner and for the purpose as specified.

No. 17,014.—Joseph Sawyer and Sylvester Sawyer, of Fitchburg, Mass., assignors to the American Hoop Machine Company.—*Improved Machine for Splitting Hoop-Poles.*—Patent dated April 7, 1857.—This invention consists in so connecting the splitting knife I with the last pair of feed rollers E F, that in proportion as the latter are forced apart by the increasing size of the pole the knife shall be drawn back to afford a greater space for the passage of the two halves of the pole. By means of arm M attached to the knife carriage K and pivoted to the centre of the shaft of the movable feed roll E, the knife I is moved laterally an amount equal to half the distance moved by the feed roll, and the knife at the same time is drawn back as the pin *h* of the block L is moved in the oblique slot *n*.

Claim.—First. Moving the knife back from the rolls, in proportion as the latter are separated from each other, in the manner and for the purpose substantially as set forth.

Second. Connecting the knife with the centre of the shaft of the movable feed roll, by means of the arm M, as set forth, for the purpose specified.

Third. The friction rolls *q* in the knife stock, operating in the manner described for the purpose specified.

No. 17,500.—Lovitt Eames, of Kalamazoo, Mich.—*Improved Machine for Preparing Hub-Blocks for the Lathe.*—Patent dated June 9, 1857.—The blocks *m* represented in dotted lines are clamped between the top of the auger H and the disk *d*, by screwing down screw E. Rotary motion is then given to the arbor F, and as the block *m* rotates the cutter *h h* bore the mandrel hole, and the chips pass down through the hollow auger H; the block *m* being fed to the auger by the gravity of frame D, or by power applied to shaft D. As the tube is being bored, the cutters *j* rough off the block; the upper end of the plate I serving as support for the block to rest upon.

Claim.—The vertical and stationary hollow auger H, guide and rest plate I, with cutters J attached, in combination with the rotating arbor F, and screw clamp E attached to the sliding frame D, the whole being arranged substantially as shown, for the purpose set forth.

No. 16,402.—John Shaerer, of Reading, Pa.—*Improved Hub-Borer.*—Patent dated January 13, 1857.—The collar *f* is secured to the cutter shaft D, at such a point as will bring it upon its seat *m* at the termination of the desired depth of the cut. Crank *k* is then turned, moving the clamps F, so as to embrace the hub. The turning of shaft D by lever L produces a progressive cut, until collar *f* reaches its seat *m*, when the rotation of shaft D causes the nut *a* to rise until it is released from its stop *c*; the cutter making a square shoulder after the progressive motion of shaft D has ceased.

Claim.—The vertically movable nut *a*, in combination with the cutter shaft D, constructed, arranged, and operating substantially as and for the purposes set forth.

No. 18,808.—Zina Doolittle, of Perry, Geo.—*Improved Machines for Boring Hubs.*—Patent dated December 8, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I do not claim the use of a shaft or a knife set in the shaft; neither do I claim the yokes F F, or feed spring H.

But I *claim* the employment of a hollow shaft, the rod C, and the projection *a*, with the nut E, for the purpose of expanding the cutter B, when the whole is arranged as shown, substantially for the purpose specified.

No. 18,612.—John Thrasher, of Avon, N. Y.—*Improved Clamp for Centring Hubs for Boring.*—Patent dated November 10, 1857.—The nature of this invention consists in three or more vibrating arms connected by links to a screw, which operates them, so as to centre and hold the hub while it is being bored; and in an apparatus to clamp the wheel after it is centred, and hold it while the hub is being bored.

Claim.—The combination of the vibrating arms I I, links J J, and screw L, constructed and arranged substantially as described, for the purpose of centring and holding the hub while it is being reamed or bored and reamed.

No. 16,932.—Albert Moore, of Honeyoye Falls, N. Y.—*Improved Method of Centring and Holding Hubs while being Bored.*—Patent dated March 31, 1857.—The centring of the hub is performed by means of a chuck R, fig. 1. This chuck is composed of a ring R, which can be turned on the four guiding rolls *a*. The arms *d* are pivoted at *p* to the ring R, and the stationary pins *c* which are attached to the frame of the machine pass through corresponding slots in said pieces. By turning handle H on pivot *p*, the arms *c* are moved all simultaneously from the centre; and by now inserting the hub of the wheel, the arms *c* can be forced against it, holding it firmly in a central position. Fig. 2 represents the hub W of a wheel, centred in the chuck on a frame E, which latter is then turned in a vertical position by means of hinges *h*, and the hub is then ready for boring.

Claim.—First. The construction of the chuck, consisting of the combination of the ring R and arms *d d d*, said arms moving as described upon the fixed and movable points P P P and *c c c*.

Second. The arrangement of the frames E and F, in the manner and for the purpose substantially as described.

No. 17,735.—Stephen Going, of New York, N. Y.—*Improved Device for Securing the Stock to the Guide-Rods of Joiners' Ploughs.*—Patent dated July 7, 1857.—By means of this improvement the iron F in the stock C may be adjusted with great facility, and also at parallel lines at any point of the guide-rods B.

Claim.—Securing the stock C on the guide rods B B by means of the bar D, fitted within the stock and actuated by the screw E, substantially as and for the purpose set forth.

No. 16,557.—James Stimpson, of Baldwinsville, Mass.—*Improved Method of Joining Boxes, &c.*—Patent dated February 3, 1857.

Claim.—The joining of boxes, drawers, furniture, &c., by means of rounds, tenons, and mortises, and a half-lap or secret joint, as set forth and explained.

No. 16,493.—Joseph B. Okey, of Indianapolis, Ind.—*Improved Lath Machine.*—Patent dated January 27, 1857.—The shaft J being rotated, the cams K thereon rotate within the stirrup G; whereby the knives H, being rigidly attached to said stirrup, are made to oscillate upon the axis B, thereby cutting the laths from the under side of the blanks in the series of cells D, alternately by the backward and forward motion of the knives. The laths, on being severed, fall beneath as the knife recedes from under the blanks; the latter dropping down upon the gauge at the same time, in readiness to be again cut upon the return of the knives.

Claim.—The arrangement of one or more series of cells D and their gauge stops E in the arcs of concentric circles, for the reception of the blanks; in combination with an oscillating knife or knives, mounted and operating in the manner substantially as and for the purpose specified.

No. 17,782.—Alexander Edmonds, of Mount Pulaski, Illinois.—*Improved Automatic Lathe.*—Patent dated July 14, 1857.—By withdrawing the slide S and nippers N, the piece to be turned can be inserted within the conical mouth of the rotating cutter A *a;* and the piece being pressed through, the round end is inserted between the jaws of the nippers E, which jaws are then closed by pulling the cords *b* by means of a treadle; and at the same time the frame F is drawn back, carrying with it the nippers and raising counter-weight Y. By releasing the cords *b*, the weight Y brings the sliding frame back to its former position.

Claim.—The combination of the rotating cutter A *a*, provided with a gauge V regulating the diameter of the rounds or cylinders, with the nippers N and E, for forming chair stuff.

Also the arrangement in the tenoning machine of the regulating screw V and cap I with the chamfer chisel C^1, for the purpose set forth.

No. 17,866.—Samuel N. Baker, of New Haven, Conn.—*Improved Automatic Lathe for Turning Irregular Forms.*—Patent dated July 28, 1857.—The bevel wheels G H are kept out of gear with each other, while the cutters E E^1 E^2 E^3 are turning the part of the article which requires to be plain and of uniform size; but when the part is reached upon which the ornament or moulding is to be turned, they are placed in gear and the cutter plate C is rotated, and the cutters upon it are moved towards and from the centre, in accordance with the shape of the pattern dies, against which their heels come in contact.

The inventor says: I do not claim the use of cutters moved and adjusted by a pattern die or guide to give shape, form, and figure to mouldings or other configurations upon articles to be turned in a lathe.

But I *claim*, 1st. The use of a series of cutters secured to a cutting head standing at right angles to the article being turned, the said cutters being operated by being revolved within the circular case B, as and for the purposes set forth.

2d. The use of a pattern-guide or die, or of a series of them, placed at right angles to the articles being turned within a circle, being struck from the centre of the lathe, and having a movement in the direction of the length of the lathe coincident with that of the cutter described, and against which the cutters in their revolution come in contact, as and for the purposes set forth.

3d. The use of a sliding cutting head, containing both the cutters, to perform the operation of turning, and the pattern dies or guides to control the movements of the cutters, as described and for the purposes set forth.

No. 17,762.—George W. Walton and Henry Edgarton, of Wilmington, Del.—*Improved Mode of Operating Radial Cutters in Lathes for Beaded Work.*—Patent dated July 7, 1857.—Motion being given to the driving shaft U, the bolt I is fed by rollers C D E F into the hollow shaft V. A reciprocating movement is given to the collar Z and the rods *i*, in consequence of the bent lever E^1 and pattern K. The sliding movement of the collar Z and rods *i*, as they move back and forth, actuates the cutter stocks X, in consequence of the pins *n*, which are attached to the rods *i*, working in the oblique slots g^1; the stocks X swinging on the rods *g*, and causing the cutters Y to cut the stick in a beaded form, which is determined by pattern K.

The inventors say: We are aware that cutters for cutting beaded work have been arranged so as to be operated automatically, and a patent was granted to A. H. Brown for a machine having an automatic cutter head. We therefore distinctly disclaim all parts in our machine which may be considered equivalent to those of the aforesaid and other machines, intending thereby to limit ourselves to the combination and arrangement of parts shown.

We *claim* the rotary pattern K, bent lever E^1, arms C^1 C^1, connected to the sliding collar A^1, in combination with the swinging or oscillating cutter stocks X X, arranged substantially as described for the purpose specified.

No. 18,268.—John Humphrey, of Keene, N. H., assignor to Amos E. Perry, Harrisville, N. H., and John Humphrey, aforesaid.—*Improvement in Lathes for the Manufacture of Clothes Pins, &c.*—Patent dated September 22, 1857.—These improvements are designed for lathes used in making articles of a small size. They consist principally of a device for feeding the billets or pieces to be turned to the spindles of a lathe.

The nature of this consists in having a notched or forked piece or pieces, of a suitable shape or size to hold the billets to be turned, the same being arranged so that it will be in a position sufficiently distant from and lateral to their axes to receive a billet while they are occupied by a preceding piece, and then to have a position to hold the billet, so that it may be centrally pierced and taken by the spindles; these positions may be alternately changed, either by a lateral motion of the feeder D to and from the spindles B B^2, or of the spindles to and from the feeder. The billets may be received from the mouth of a conductor or the hand of an attendant.

I *claim* the method of feeding the pieces to be turned to the spindles when their relative positions are changed, as shown; and in combination with the above, removing the finished pieces from the spindles; the whole being arranged and operated in the manner and for the purposes set forth.

No. 18,120.—Eleazar S. Gardner, of Philadelphia, Pa., assignor to Smith, Gould, & Co., of the same place.—*Improved Sliding Rest for Lathes.*—Patent dated September 1, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The revolving collar C, with its square eye G, when the same is employed in conjunction with the steady rest of a turning lathe, for which a patent was granted to Albin Warth on the 10th day of October, 1854, in the manner and for the purpose set forth.

No. 18,112.—George N. Trowbridge, of Lowell, Mass.—*Improved Socket Coupling for Lathes.*—Patent dated September 1, 1857.—The pin F is put into shank D in such a position, that when the shank is making its last turn before coming to a bearing in the socket, it will press upon spring E more and more until it passes the end of the spring, when the latter will fly up and the end of it bear against the pin, so as to prevent the tool from turning in the socket in a reverse direction until the spring is pressed down by hand out of the way of the pin.

The inventor says: I do not claim a simple conical pin for fastening the shank of a tool in a conical socket; but I *claim* the combination of the spring E and pin F, with the conical shank and socket, with straight screw attached, for the purpose and substantially as described.

No. 17,313.—Harvey Brown, of New York, N. Y.—*Improved Arrangement of Devices for Dressing Pieces of Lumber.*—Patent dated May 19, 1857.—The block to be dressed is placed upon the sliding table *f*, and is held against the face of the frame E; the saw A cuts off a piece of the desired thickness, at the same time that said piece is planed by the cutters *b* of the planer B, while it is jointed by the cutters C^1, the shaft of which can be adjusted in the circular slot O to any desired position.

The inventor says: I do not claim the saws, planer, or jointers separately considered; as they are not new and may be substituted in my invention by other forms of saws, planers, and jointers.

I *claim* the movable frame E, or its equivalent, as supporting the planer B and the jointer C^1, which, by means of the set screws F F, connect it with frame D; by which arrangement pieces for barrel heading or other purposes can be sawed, planed, and jointed simultaneously of any desired thickness or width within the compass of the machine, substantially in the manner and for the purposes set forth.

No. 17,494.—George L. Chapin, of Perrysburgh, N. Y.—*Improved Mitre-Box.*—Patent dated June 9, 1857.—The position of part G can be adjusted by turning it on the fulcrum H, when it can be retained stationary by means of set screw J. The position of parts C and sides F can be adjusted by set screw E; when the parts C and G are adjusted to the desired angle, the piece of wood to be sawed is inserted between the side-boards F; and by leaning the saw against the inclination K, the end of the piece is cut to the required mitre.

Claim.—The arrangement and combination of the obtuse angled part G with the tilting-box C F, both parts being adjustable relatively to each other and to the fixed supporting frame A, all substantially as described and for the purposes set forth.

No. 17,880.—J. M. Jay, of Canton, O.—*Improved Mortising and Boring Machine.*—Patent dated July 28, 1857.—The boring or mortising bit is inserted within the end of shaft D, and the stuff to be operated upon is placed against the adjustable rack E, which can be placed to any desired angle by turning shaft I^1, worm-wheel I, segment H, and rack E on pivot F^1; the rack E can also be turned on its hinges F, and adjusted by means of the brace-rod J^1 and adjustable slide-piece J. The table N and frame U can be raised or lowered by operating bevel wheels *c d* and screw-shafts *b*, the latter playing in the swivel nuts *a*.

Claim.—The arrangement of the rack E, adjustable brace J, segment H, slide-rack G, and slide-table N, and in combination with the parallel linked table N, screws *b*, swivel nuts *a*, and arms *f*, in the manner and for the purpose described.

No. 17,285.—George P. Ketcham, of Bedford, Ind.—*Improved Mortising Chisel.*—Patent dated May 12, 1857.—This rectangular hollow chisel being driven into the wood, the chip thus formed is split by the divider D, into two pieces, which are forced up between the divider and the parallel sides. The chips, being retained in the chisel by the shoulders P, are torn loose from the wood when the chisel is withdrawn, and are discharged at the top of the chisel.

Claim.—The employment of the divider D and the shoulders P P in combination, substantially as set forth.

No. 17,878.—Christian J. Heistand, of Papho, Pa.—*Improved Mortising Chisel.*—Patent dated July 28, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The new article of manufacture described, consisting of a chisel with the handle placed at right angles with the cutting part, for the purposes set forth.

No. 16,332.—Charles Green, of Bethel, Ohio.—*Improved Mortising Machine.*—Patent dated January 6, 1857.—The stuff to be mortised is secured upon bed M by a clamp P, and the stuff and bed are moved towards and from the revolving cutters J by operating lever O; power being applied to pulley C, a vibratory motion is communicated to beds F, and the cutters J will cut the mortises in the stuff on bed M. The length of the vibrations of the cutters is regulated by adjusting the arms H at the desired points in the slots in the beds F and in the arm E, and also by adjusting the slide *a* in the pulley C, whereby the mortises may be cut the requisite length.

The inventor says: I do not claim as new in mortising machines chisels or bits vibrating through the mortise and simultaneously revolving about their axes, the stroke being varied as desired; nor yet the manner in which the stuff is fed to the action of the bits, &c., as such are common to other machines. But I *claim* the combination, substantially as shown and described, of the frame or bar A with its slot *e*; the T-shaped bars or pieces E^1 with their slots *e*; slotted frames or beds F, pivoted in the rear to the bars E^1, and carrying the revolving chisel, arbors, or axles G; slotted and double arms and connecting rods H; and slotted driving arm E,—all arranged for operation together for the easy adjustment and simultaneous production, when desired, of different sized mortises in the one stick and at varying distances apart, as set forth.

No. 17,701.—Hezekiah B. Smith, of Lowell, Mass.—*Improved Mortising Machine.*—Patent dated June 30, 1857.—By adjusting the clamp *e* higher or lower on the lever *a*, the motion of the table B can be adjusted, when said table is fed to the mortising tool, by pressing on treadle H, the lever *a* being then turned on its fulcrum *h*, and the rod I operating the table. The pawl K serves to hold the table in its position, and can be released therefrom by pressing upon the short end of said pawl.

Claim.—1st. The adjustable compound treadle H, when used in combination with a mortising machine for the purpose and substantially as described.

2d. The pawl K, or its equivalent, in combination with the table B, to prevent the action of the chisel from jarring the foot; not intending by this to confine myself to the exact form represented, but adopting any other substantially the same.

No. 18,521.—Caleb B. Rogers, of Norwich, Conn.—*Improved Device for Reversing the Chisel in Mortising Machines.*—Patent dated October 27, 1857.—A sliding check-pin F passes through the spindle C, so as to project on one side a quarter of an inch; B is a vertical way or plane-guide, along which the check-pin passes freely while the spindle is forced up and down; J is a check-guide, whose face is set perpendicular to the plane of the former guide B, and acts against the end of the check-pin whenever that pin passes so low in its traverse as to reach it.

Claim.—The application of the sliding check-pin F, and the check-guide J, and the spiral reversing guide B, to the objects and for the purposes set forth.

No. 18,535.—D. M. Cummings and P. C. Cambridge, Jr., of North Enfield, N. H.—*Improved Method of Reversing the Chisel in Mortising Machines.*—Patent dated November 3, 1857.—By this invention a varying and progressive stroke is given to the chisel mandrel or arbor, so that the length of the stroke may be gradually increased as the depth of the mortise increases, and the chisel is thus regularly fed to its work. There are also means employed for rotating the chisel mandrel automatically from the auger arbor.

The inventors say: We *claim* rotating the chisel mandrel D from the augur mandrel K, when desired, by means of the lever L, with pressure roller *m* attached, and spur *n*, in connexion with lever T, operated by the upright *f*, as described.

No. 18,977.—Levi Kittinger, of East Greeneville, Ohio.—*Improved Device for throwing into and out of Gear the Tool of Mortising Machines.*—Patent dated December 29, 1857.—The two parts *e f* of the nut R are operated by two oblique bars *h h*, which pass horizontally through recesses in the outer ends of the parts *e f*, and are secured thereon by vertical pins *i i*. The outer ends of the bars *h h* and *j* may be formed or cut from a solid plate. To the back side of the cross-tie plate C a catch S is attached. This catch is a simple bar K, pivoted at its centre to the cross-tie C, and provided with a thumb-piece *b*, a spring *m* bearing against the bar K, which spring has a tendency to keep the ends of the bar in the notches *n* in the bars *h h*, when said bars are shoved inwards, so as to press the two parts *e f* of the nut into the screw-rod P.

The inventor says: I am aware that a hollow chisel containing an auger has been previously used, and also connected to a sliding gate; and I am also aware that said parts have been placed in the adjustable frames; I therefore do not claim the above parts.

But I *claim* operating or adjusting the two parts *e f* by the nut R, by means of the oblique bars *h h*, connected with the parts *e f*, and used in connexion with the catch S, for the purpose specified.

No. 17,183.—Moses Marshall, of Lowell, Mass., assignor to Richard Ball and Charles H. Ballard, of Worcester, Mass.—*Improved Method of Reversing the Chisels of Mortising Machines.*—Patent dated April 28, 1857.—When this machine is in operation, the chisel F can be reversed by simply pressing down lever U, which, being attached to chain O, turns when pressed down pulley K, causing the projection *c* on pawl J to act against pin *e*, and to withdraw the bolt from collar *b*; pawl J then operates against the teeth of collar *b*, and turns it until the end of the bolt H drops into notch *a*, when the chisel T is reversed.

Claim.—The projection *c* on the pawl J, so constructed and arranged as to press back the bolt H, when moved in one direction, and release the collar G, so that it may be turned by the pawl J to reverse the chisel; and, also, that it (the projection *c*) will pass outside of the pin *e* when moved in the other direction, substantially as described for the purpose set forth.

Also the slotted lever Q, chain O, and lever U, or their equivalent, so constructed and arranged as to turn the collar K and reverse the chisel, as described.

No. 17,141.—D. T. Drake, of Leominster, Mass.—*Improved Machine for Mortising the Stiles for Blind Slats.*—Patent dated April 28, 1857.—The side rails of the blinds to be mortised are laid in the grooves *c* of the carriage E, and the cutter N being adjusted to the desired inclination, motion is imparted to the cutting tools—the cutter N cutting an oblique groove in the side rail; while, after two subsequent cuts of the cutter N being effected, the augers *n* enter the two ends of the first cut and finish it for the insertion of slats. The side rails are fed at regular intervals to the mortising tools, by stop F on spring blade *h* passing over a rack F on carraige C.

Claim.—The described machine for cutting mortises for window-blind slats, constructed in the manner substantially as set forth, and consisting essentially in the carriages E and C, in combination with the cutters N and bits *n*, operating in the manner specified.

No. 17,657.—Thomas. D. Worrall, of Lowell, Mass., assignor to Thomas F. Caldicott, of Charlestown, Mass.—*Improved Bench Plane.*—Patent dated June 23, 1857.—By driving up the wedges F G, the plane iron E is drawn firmly down on its seat *d* formed in the holder C, and does not depend on the wood of the plane iron to enable it to be held in place.

Claim.—The improved manufacture of carpenters' bench plane or jointer, as made with its handle, its wooden stock to which said handle is affixed, and a separate metallic cutter, holder, and cutter clamping devices, arranged together, substantially as specified.

No. 17,553.—Joel Bryant, of Brooklyn, N. Y.—*Improved Stock for Bench Planes.*—Patent dated June 16, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The construction of bench planes having an opening O, with a backward inclination made by the dispensing with or the removal of the lower edge or lip of the plane stock, (as existing in bench planes of ordinary construction;) the said opening being made for the purpose of avoiding the annoyance produced by splinters or small pieces of wood fastening in the recess, as formed by the said lower edge or lip of the plane stock, and the bevel of the iron in common bench planes, substantially as described for the purpose set forth.

No. 17,965.—Jesse M. Gilstrap, of Washington county, Ark.—*Improved Machine for Whetting Plane Bits.*—Patent dated August 11, 1857.—The bit to be whetted is inserted within the bit holder H; and a reciprocating motion being given to pitman I, the bit holder is operated within the ways H, and the edge of bit T is whetted on the stone M, while the spring rod I exerts an even pressure upon the friction roller K and bit holder H.

Claim.—The use of the bit holder H, constructed as described, when operated by the devices arranged in the manner and for the purpose specified.

No. 16,805.—Oldin Nichols, of Lowell, Mass.—*Improved Carpenter's Plane.*—Patent dated March 10, 1857.

Claim.—Connecting the cap D to the plane iron C by the hook-headed bolt E, with two nuts F and G thereon to hold them together, and then securing the iron to the plane stock A by a cam shaft H operating upon this same hook-headed bolt, which is so adjustable as to be lengthened or shortened that any desired pressure may always be had to firmly hold the iron to the stock by turning the cam shaft, and still allow the plane iron to be moved in or out of the plane, to cut a thick or thin shaving without further tightening or loosening it; these parts being arranged and operated in the manner and for the purposes fully set forth.

Also the plate *g* secured to the plane stock, and intervening between the surface *a* of the hook E and the surface *e* of the cam shaft H, to prevent wear of the hook and cam, and also to prevent the hook E and plane iron C from sliding back when the cam shaft H is turned to tighten the iron to the plane stock, essentially in the manner and for the purposes fully set forth.

Also the application of one single handle B to answer for and be secured to a whole set or any number of plane stocks, either in the lower or elevated position, and changeable from one position to another, or from one plane to another, instantly, and be secured firmly thereto, by means of the hook K and cam L, or their mechanical equivalents, arranged and operated essentially in the manner and for the purposes fully set forth.

No. 16,889.—M. B. Tidey, of Ithica, New York.—*Improved Carpenter's Plane.*—Patent dated March 24, 1857.—In the cavity constructed in the plane a metallic bit case, as seen at A, is applied, which is secured thereto, by screws *d d*, through slots *e e*, entering nut *f*, said nut being a rod of iron passing through the plane stock for that purpose. The bit case passes through the stock, its lower extremity constituting a section of the plane's face, being provided with a mouth *g*, and other formations necessary for the reception of the bit, and its means of fastening thereto.

The object of this invention is to render planes more durable, retain a uniform mouth, obviate their clogging, and retain the essential part of the plane when the stock is worn out.

Claim.—The application to the cavity of the plane stock of a metallic bit case, and so applying it that its lower extremity shall constitute a part of the plane's face, constructed and operated substantially for the purpose and in the way set forth.

No. 17,541.—Porter A. Gladwin, of Boston, Mass., assignor to Himself and Thomas Ford Caldicott, of the same place.—*Improved Tonguing and grooving Hand-plane.*—Patent dated June 9, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim the combination of tonguing and grooving cutters, upright and horizontal guides in one stock, wherein the tonguing and grooving cutters are arranged to slant in opposite directions. But what I do *claim* as an improvement in the match plane is the tonguing and grooving cutter or cutters *k* and *i* in a single throat, and to slant in one direction, in combination with arranging the vertical guides c^1 and d^1 so that one shall stand below the other, and the horizontal tongue guide f^1 g^1 be arranged between them, as specified.

No. 17,618.—Willard W. Chipman, of Lowell, Mass.—*Improved Method of Holding and Adjusting Plane-Irons in their Stocks.*—Patent dated June 23, 1857.—When the thumb-screws I and I^1 are unscrewed, the frogs H H^1 release the sliding piece E, through the slot of which the head of screw F passes; and in this position the slide E is at liberty to move up and down freely in the groove *f* of the frame G, and the plane-iron *c* can be adjusted to its proper place, which, being done, the thumb-screws I and I^1 are turned up against the frogs H and H^1, wedging the slide E into the grooves of frame G, and thus securing the plane-iron firmly in its place.

Claim.—The use and application of the apparatus for holding and adjusting the plane-iron, substantially as and for the purpose described.

No. 17,645.—William Stoddard, of Lowell, Mass.—*Improved Mode of Securing and Adjusting Plane-Irons in their Stocks.*—Patent dated June 23, 1857.—By moving lever A to the right or left on its cam stand C, the upper ends of the irons B and G are lowered or raised at the same time that the lower ends thereof are moved in an opposite direction by their connexion with stand I, and the irons B G are thus firmly secured and pressed to the plane-stock F.

Claim.—The grooved stand I, double-headed bolt H, in combination with the cam A and its stand C, for the purposes set forth and described.

No. 16,569.—J. F. Palmer, Auburn, N. Y., assignor to S. W. Palmer, Detroit, Michigan.—*Improved Joiner's Plane.*—Patent dated February 3, 1857.—The plane iron E^1 may be set by turning the screw rod E; plate D and plane iron E^1 are held up by means of spring *b*, when the plane is being drawn back and they are forced downward, when the plane is shoved forward by pressing the palm of the hand against the plate I, the rod H being shoved forward thereby, and the fork *l* pressing down the nut F, and consequently the plate D and plane iron.

Claim.—The two plates C D and plane iron E^1 arranged relatively with each other as shown, and used in connexion with the screw rod E and rod H, as described for the purpose set forth.

No. 17,286.—Benjamin J. Lane, of Newburyport, Mass.—*Improved Joiners' Plane.*—Patent dated May 12, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I do not claim separately the screw rod D for raising and lowering the iron C, for that has been previously used for effecting the same purpose.

But I *claim* the sliding plate E, with bar *l* attached, through which the screw rod D passes, the plates E being operated by the wedge *n* and screw rod *o*, substantially as described for the purpose set forth.

Also in combination with the plate E and bar *l*, arranged and operated as shown, the screw rod D applied to the iron C, and connected with the plate E and bar *l*, as described; whereby the iron C may be adjusted or set with facility, and also secured firmly in its proper position within the plane.

No. 17,332.—James Lashbrooks, of Owensboro', Ky.—*Improved Joiner's Plane.*—Patent dated May 19, 1857.—This invention consists in the use of a curved bit C, whereby a handle B can be used on all planes, however short, without any inconvenience.

Claim.—The curved plane iron C and cap F, in combination with the curved back rest and slotted plate D, operating as described, and for the purpose set forth.

No. 17,951.—Thomas D. Worrall, of Lowell, Mass.—*Improved Joiner's Plane.*—Patent dated August 4, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—First. The employment of the clamp lever C for securing and bedding the bit, in the manner fully set forth and described.

Second. The clamp lever C, as arranged, in combination with T-strap B, and nut F, for the purpose of regulating and adjusting the bit for cutting, when firmly bedded and secured, as set forth and described.

No. 16,954.—Henry S. Dewey, of Bethel, Vt., assignor to Himself and Levi W. Newton, of Dorchester, Mass.—*Improved Machine for Cutting the Throats of Carpenters' Plane Stocks.*—Patent dated March 31, 1857.—In operating with this machine, a cutter or burr is first employed to form by successive cuts the main part of the shaving throat. The cutters H and I are then brought into use; the object of the cutter H being to cut for shaft K a path in those parts of the wood that are left between the cavity first cut and the channels made by cutter I. The cutters by successive and proper adjustments are operated so as to remove the greater part of the wood necessary to the formation of the mouth.

Claim.—The combination of the shaft path cutter H, the plane iron and wedge throat cutter I, the movable carriage A, and the adjustable bearing L, by which the inclinations of the ends of the throats may be obtained, as described, the whole being in the manner and for the purpose as specified.

No. 18,312.—Thomas D. Worrall, of Lowell, Mass.—*Improved Method of Attaching Adjustable Handles to Joiners' Planes.*—Patent dated September 29, 1857.—In attaching this handle to planes, a groove is cut in the top of the plane, and a mortise in the side; the groove and mortise meeting form a T-shaped slot; the nut E fits in the body of this slot, and the flanges formed by the projecting of the button beyond the side of the nut fit in the arms of the slot. Plate

D fits on the top of the plane, between the arms or jaws of nut F, and over the slot; screw E passes through the slot, in cap plate D, and enters the nut F, and secures the handle firmly to the plane. By means of the slot in the cap plate, the handle may be made to assume the position seen in fig. 1, or strap C may be made to fit up snug against the plane, as is the general manner of using it.

The inventor says: I *claim*, first, the combination and arrangement of cap plate D, screw E, nut F, and T-slot *o* in the plane, for the purpose of providing and securing a movable handle to planes.

Second. I claim the arrangement of cap plate D, slotted strap C, and screw *a*, for the purpose of adjusting the handle vertically, when desired by the operator, as set forth and described.

No. 16,412.—THOMAS J. TOLMAN, of South Scituate, Mass.—*Improved Method of Adjusting the Size of the Mouth in Planes.*—Patent dated January 13, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The application to the common plane of the screw attachment A and key B, through the same, thereby regulating the mouth and greatly increasing its value.

No. 17,921.—JOHN F. W. ERDMANN, of Philadelphia, Pa.—*Improved Stock for Smoothing-Planes.*—Patent dated August 4, 1857.—The cutting angle of the bit C may be varied by simply shifting wedge C from one side of the bit to the other, while the elastic strip D prevents any shavings from entering the throat of the plane back of the iron.

The inventor says: I am aware that an iron similar to mine is known as a scraper, and that irons have been adjusted in stocks with mechanism for changing the cutting (or scraping) angle, and I do not wish therefore to be understood as claiming such features as my invention.

But I *claim* placing in the throat of the plane, back of the iron, the elastic strip D, substantially as and for the purpose described.

No. 17,300.—EDWARD Q. SMITH, of Cincinnati, O.—*Improved Machine for Planing Chair Seats.*—Patent dated May 12, 1857.—The stuff I to be operated upon is cut to the proper size and placed upon bed P, motion being imparted to the cutter head J; the cutters *j* plane the stuff, while the feed rollers D bear upon it and feed it over the cutter shaft. The wheel N also bears upon the stuff I and is rotated by it on shaft L, causing cam *h* to rotate and by means of yoke K to raise and lower the bearing *d* of the cutter shaft J, so that the face side of the stuff will be cut in the required shape for chair seats.

The inventor says: I do not claim broadly the shifting or lifting of cutter shaft or bearings thereof by means of cams, for this is an old and well known method. Nor do I claim adjusting the table or carriage by means of wedges.

But I *claim* in chair seat machines the combination, by means of the universally jointed shaft L, of the feed wheel N with the eccentric *h*, when the said wheel N derives its motion from the chair seat, substantially as and for the purpose described.

No. 17,343.—HENRY D. STOVER, of Boston, Mass.—*Improved Rotary Planing Cutter.*—Patent dated May 19, 1857.—The cutting irons O G are secured to the cutter head by means of the curved steel plates N, the bevelled edges J of which enter corresponding grooves in the heads B and C, when the screw-nut D is tightened.

Claim.—The described method, or its mechanical equivalent, for securing double or single cutting irons to cutter heads, to hold them secure when in use, essentially in the manner and for the purposes set forth.

No. 18,007.—H. H. BAKER, of New Market, N. J.—*Improved Rotary Planing Cutters.*—Patent dated August 18, 1857.—The face of the cutter head A prevents the cutters from entering the wood beyond a given depth, as the edges of said cutters are within the recess *b*, and the lumber can be fed to the cutters by hand without the use of rollers.

The inventor says: I would not wish to be understood as claiming the use of rotary cutters as used by Daniel Woodworth, Fay, and others.

Neither do I claim a rotating disk, as I am aware of its having been previously used.

But I *claim* the recess *b* in the face of the cutter wheel, substantially for the uses and purposes set forth.

No. 16,513.—SYLVESTER SAWYER, assignor to the AMERICAN HOOP MACHINE COMPANY, of Fitchburg, Mass.—*Improved Machine for Planing Hoops.*—Patent dated January 27, 1857.—This invention consists in certain improvements upon a machine for which letters patent, dated May 6, 1856, were granted to myself, in connexion with Joseph Sawyer, for improved hoop machine. The nature of this machine will be understood from the claims and the engravings.

Claim.—Giving the frame N, which carries the roll L, a play between the adjusting screws *m* and *n*, and bringing the roll up to its work by the spring P, in the manner and for the purpose set forth.

Second. I claim the eccentric R, lever S^1, graduated arc T, and spring Q, operating in the manner described, for the purpose of regulating the thickness of the hoop, and of forming the lap, as set forth.

Third. I claim the combination of the cutters *b* and *c*, and arranged in the manner set forth, upon the reciprocating gate E, in combination with the rest H, operating in the manner substantially as set forth.

No. 17,171.—THADDEUS S. SCOVILLE, of Elmyra, N. Y.—*Improved Machine for Planing Hoops.*—Patent dated April 28, 1857.—The hoop P is fed in between the India rubber rollers B, the springs K holding the hoop against the curved ways *c*. The hoop feeding past the first spring K strikes the roller E, which, being held firmly by stronger springs, forces the hoop against the weaker springs *e*, which gives way, letting the hoop on to cutter C, and, passing the second spring K, is fed out of the machine by India rubber rollers G.

The inventor says: Machines with rotary cutters have been used for dressing hoops.

India rubber feed rollers and elastic guides have been used; these I do not claim.

But I *claim* the employment of a concave guide *c c*, arranged with a hinged portion immediately before the cutters, which is held in place by a spring having less pressing force than the counter gauge roller E, in combination with said gauge roller, or its equivalent, substantially in the manner and for the purposes set forth.

No. 18,806.—John D. Dale, of Philadelphia, Pa.—*Improved Planing Machine.*—Patent dated December 8, 1857.—The object of the improvements in this machine is to make a planing implement that will "true" boards, planks, and other carpenter stuff, and take the same out of wind; plane, tongue and groove; make several mouldings at once, either of the same or of various patterns, and separate each moulding; make sash stuff and tenon the same; do other tenoning; work circular moulding, and do circular work of every description.

The engravings and claim further describe the nature of this invention.

The inventor says: I disclaim all part separately of the before described machine that are not hereinafter specifically claimed by me.

But I *claim*, first, the arrangement, as described, by which the support rollers No. 17 and the feed roller C are raised, and the carriage E simultaneously secured; whereby I make a permanent bed and continuous feed, and by lowering the same I make a reciprocating moving bed plate or carriage, and am enabled to change from one side to the other, at the will of the operator.

Second. I claim the arrangement whereby an adjustable cutting bed No. 37 is formed on the end of the movable carriage E, for the uses and purposes as described.

Third. I also claim the combination and arrangement of the method set forth for attaching side cutters, by which they are both rendered adjustable, in the manner specified and described by letters G G, representing cranes supporting the side cutters hanging on arms K K, supported and adjusted by guide braces L L and screw nuts J J, all for the purpose and in the manner set forth and described.

Fourth. I also claim the particular arrangements, in combination, by which the pressure bar N and the transverse bar Q are made to raise, and by which they are made to correspond with the circumference of the rotary cutter by raising the superior feed roller D, for the purpose as set forth.

No. 17,963.—Benaiah Fitts, of Worcester, Massachusetts.—*Improved Arrangement of Feed Rollers for Planing Machines.*—Patent dated August 11, 1857.

The pinion H is held firmly in gear by the connecting arms J and I when the roll B is raised or lowered.

Claim.—In driving gears on feed rollers for wood planing machines, the internal gear F and the external gear G, in combination with the pinion H and connecting arms I and J, when constructed and operated as set forth and described.

No. 17,315.—David N. B. Coffin, jr., of Newton, Massachusetts, and Henry D. Stover, of Boston, Massachusetts.—*Improved Devices for Dogging Lumber in Planing Machines.*—Patent dated May 19, 1857.

When the dog *b* is to be set, the operator has only to bear upon the toothed side, so as to raise pawls *e* from the rack *c*, when he can move the dog over the platen to the desired place, the pawl *e* of which holds the dog whenever the lumber is pressed against its teeth. On forcing up the dogging bars *h* against the lumber, by turning screw *i*, parts J begin to draw upon the pins *g*, and, so drawing cross-bar F down towards the platen, firmly clamp thereto the screw *i*, at the same time forcing their points into the lumber.

Claim.—We claim the bar *b*, constructed and arranged substantially as set forth, in combination with the rack *c*, or its equivalent.

Also the device for the rear end of the platen, so constructed and arranged that the dogging bars are clamped firmly to the platen, at the same time that they adjust themselves to the form and position of the end of the lumber by the operation of a single screw, substantially as described.

No. 17,873.—George Darby and James E. Young, of Augusta, Maine.—*Improved Shell Roller Bed for Planing Machines.*—Patent dated July 28, 1857.

The hollow rollers X are of such a diameter that they can be slid over the bevelled rollers R; and, by turning the screw rods T T, they can be set so as to plane any bevel that may be desired

The inventors say: We are aware that cylinder or revolving cutters, and also that pressure or yielding feed rollers, have been used in planing machines, likewise that motion has been applied to the feed rollers in various ways. Therefore we do not claim either of these arrangements in connexion with our invention; nor do we claim the rocker boxes and sliding bars upon which the feed rollers rest.

We *claim* the combination of the hollow or shell rollers X X X with the bevelled grooved rollers R R R, whereby a bevel grooved or straight bed is formed, in the manner and for the purpose as described.

No. 17,833.—Jonathan Hall, of Worcester, Massachusetts.—*Improvement in Feed Rollers of Planing Machines, &c.*—Patent dated July 21, 1857.

Between the shaft of feed roller B^1 and shaft P is a connecting bridle L, one end of which is attached to the shaft of B^1, and which rises and falls as this roller is moved, and the other end of which is connected to shaft P and moves it in its slot S; thus, when the roller B^1 is raised or lowered, the pinion K will be constantly kept in gear with wheel T, which rises and falls with roller B^1.

The inventor says: I do not claim, generally, the adjustability of feed and other rollers, or accomplishing this without any change of gearing, as these ends are gained by other methods now known.

But I *claim* the application and use of internal gearing H H, substantially as described.

I also claim, in combination therewith, the arrangement of the movable box B and connecting bridle L, or their equivalents, for the purposes set forth.

No. 16,403.—Reuben W. Sharp, of Montgomery, Alabama.—*Improved Machine for Planing Shingles or Tapering Pieces.*—Patent dated January 13, 1857.

The shingles *e* are placed within the box F, and as disk *c* on the driving shaft rotates, a reciprocating motion is given to the slide E and carriage O. As the slide E moves forward it shoves forward the lower shingle, the under surface of which is planed level by cutters *b* on head *a*; and as the shingle passes underneath the cutters *d* on head *c*, the upper surface is planed and bevelled, the cutter head *c* being supported by frame K, which rises and descends by means of the inclined edge of board M, resting on carriage O.

Claim.—The combination of the reciprocating slide E and vibrating and rotating cutter head *c*, with or without the stationary cutter heads *a*, arranged and operated as shown, for the purpose set forth.

No. 16,427.—Daniel Berlew, of Delaware, Ohio.—*Improved Method of Planing Sashes.*—Patent dated January 13, 1857.—The required pieces of wood being sawed out, they are clamped to carriage B, the circular saws *h* cutting the pieces to the desired length; the tenon is made by rotary knives *j* on shaft *i*, the knives c^1 on shafts *k* moulding the shoulder on the tenon; after which the piece is discharged from carriage B, and moved forward by feed rollers *o*, guided by hooked springs *p*, adjustable rest *q*, spring *r*, spring guard S; and the piece is planed by knives on rotary head *t*. The forward end of the piece is guided into hooked spring *v* after the rear end of the piece passes the spring guard S, spring *r*, slotted spring *u*; and piece *w* changes it on to guard *x*, and the recoil of hooked spring *v* in slotted spring *u* brings the rear end to the opposite side of rotary head *t*, where it is moved forward by feed-roller *y* and planed on that side by the knives on cutter head *t*.

The inventor says: I am aware that tenoning and coping heads have been used before; those I do not claim.

I *claim* the combination with the reciprocating carriage B and frame H, the hooked and slotted springs V U, or their equivalents, all arranged and operated as set forth.

No. 18,089.—Leonard O. Fairbanks, of Bridgeton, Maine.—*Improved Saw-Clamp.*—Patent dated September 1, 1857.—A saw plate when placed between the jaws C D may be clamped to them by screwing down clamp G, which, acting on part *b c* of the movable jaw D, forces the face of jaw D towards that of jaw C, the adjusting screws F serving to adjust the jaws for the reception of a saw plate of any thickness.

The inventor says: I do not claim a saw clamp made with jaws, and with a clamp screw extending through such jaws perpendicularly to their holding faces.

But I *claim* my improved saw clamp, as made with its jaws, clamping device, adjusting screws, and bed plate, arranged and applied in manner and so as to operate together, substantially as described.

I also claim making the stationary jaw with a groove *e* arranged in it, in manner and so as to operate with the movable jaw, when constructed and made to act with respect to the stationary jaw and bed plate as explained.

No. 18,378.—A. M. Beardsley, of White Pigeon, Michigan.—*Improved Saw-Filer.*—Patent dated October 13, 1857.—The claim and drawings explained the nature of this improvement.

The inventor says: I *claim* the arrangement of the centrally pivoted plate for carrying and supporting the file carriage in combination with the adjusting index and set screw, whereby the adjustment of the files for filing the right and left bevels of the teeth is effected without shifting or changing the implement from one side of the saw to the other, as described.

Second. The employment of a pair of removable extension legs in combination with the implement, whereby it is adapted to file circular saws of varying diameters in the manner set forth.

Third. Arranging and sustaining the implements or main plate upon which the file carriage is mounted, at an angle to the radial extension legs, as shown in figure 1, for the purpose of regulating or governing the pitch or hook of the teeth being filed in the manner set forth.

Fourth. Securing the files in their holders in such manner that they can be adjusted to vary the relative angles thereof, and adapt them to the teeth of different sized saws as described.

Fifth. Mounting the two files in removable holders, so that they can be taken out of the brackets which support them, and be reversed longitudinally without disturbing the relative angles or set of the files, as described.

No. 18,415.—Jonathan Smith, of Agawam, Massachusetts.—*Improved Saw-Filer.*—Patent dated October 13, 1857.—This invention is for the purpose of guiding and directing the operation of filing circular saws, so as to perform the same accurately and preserve the circular figure of the saw while giving to each tooth the proper form and bevel, and sharpening the same by hand filing.

In the drawings, *a* is a U-shaped piece of metal, the legs of which fit over the saw as seen in the drawing; near the bend of this piece of metal two pieces of case-hardened steel *b* are affixed to it, one on each side; and these pieces are made to the exact form the tooth is to be filed to, as clearly represented and seen in figure 1, which represents one common form of tooth and the hardened steel gigs *b* adapted thereto. The bow *a* has two set screws *c d* on one side, and one *e* on the other, as seen in the drawings, by which it can be set on the saw at any cross angle or straight across as desired; by which the face of each tooth *f* can be filed so as to draw either way in cutting, or be made straight across without any draw.

The inventor says: I *claim* the combination and arrangement of the parts herein described, consisting of the gigs, regulating set, and centre guide, in the manner and for the purposes specified.

No. 18,324.—Harley Stone and Jeremiah S. Cole, of Blackstone, Massachusetts.—*Improved Saw-Filing Machine.*—Patent dated October 6, 1857.—The operation of this machine is as follows: A straight saw is placed in the clamps *i i* and secured by its screws, and the clamps adjusted to bring the saw into position under the file in R, and the frame P adjusted to give the file the proper angle and inclination according to the tooth to be filed; the file being screwed into the sockets of R, to fit the side of the tooth it is to shape; the gauge *x* being set, by its supporting-arms *v w*, to stand near the saw, and so as to be touched by the file (when the tooth is sufficiently filed) to cast off the catch *c*, the carriage being at the extreme left; the lever O is placed down to give proper motion to the screw-shaft D, the catch of whose driving-gear is placed to correspond. Motion being given to the clutch and crank, the clutch, being thrown into play with *z*, drives the shaft E, which operates the file until it cuts the tooth sufficiently to touch the gauge *x*; when, casting off the catch C from the lever B, the spring H shifts the clutch from Z to R, and the shaft E stops; the screw-shaft F, receiving its motion, is turned until the stud on the wheel S, passing behind the lever M, throws the clutch back into the former position.

The clutch, being shifted, replaces the lever B to its catch, and gives motion to the file as at first; and the wheel S and its companions are returned to place by its spring, ready to act again.

The inventors say: We do not claim broadly the use of a gauge to prevent the file cutting too low, or the use of a movable carriage; as machines have been made with these features, but were constructed upon different principles from ours, and cannot accomplish the same results.

But we *claim* the file holder, constructed as described in combination with the stop-gauge and feeding mechanism, arranged and operating substantially in the manner and for the purposes set forth.

No. 17,153.—Oliver B. Judd, of Little Falls, New York.—*Improved Saw Gummer.*—Patent dated April 28, 1857.—The saw being inserted within the slot B, it is fastened therein by means of the set screws J; and the teeth of the saw are cut by the circular cutter *i*, which is operated by means of crank K. The cutter *i*, when in the position represented in the engraving, serves for cutting the teeth of circular saws. For cutting the teeth of straight saws, the shaft of the cutter *i* is inserted in suitable bearings in the side of cap D, which can be operated by means of screw E and spring F.

The inventor says: I do not claim dressing saw teeth on a circle, as this has been done imperfectly by means of complicated machines.

I *claim* the method of constructing and arranging the posts G G so as to cause the cutter to move in regular curves, as described.

No. 18,394.—Wooster A. Flanders, of Troy, N. Y., James B. Drake, of Williamsport, Pa., and A. W. Fox, of Elmira, N. Y.—*Improved Saw Mill.*—Patent dated October 13, 1857.—In the drawings A A is the saw, B and C the pulleys on which it runs, D is the adjustable frame for the pulley B, E is the log, and F the carriage. The saw is made of flexible steel, and runs as a belt over the pulleys, the lower pulley being driven by power. The frame D is movable upon the bolt G, which forms its bearing in the post H, and has attached to its extremity a rod I, by which it is connected with the weighted lever J. By regulating the weight K on this lever the requisite tension is obtained.

To prevent the saw from bearing so hard against the flange *a* as to produce unnecessary friction or wear, the upper pulley (on which this effect would be chiefly produced) is inclined or canted slightly towards the log, or in the direction from which it is fed, so as to give it a slight tendency to run off, which is prevented by the pressure of the log against the teeth, and just serves to prevent friction upon the flange.

The inventors say: We are aware that an endless or belt saw is not new, and such simply we do not claim.

But we *claim*, first, canting or inclining the saw pulley B forward and back, for the purpose described, by means of the slide-post T and wedge *c*, operated as described, or by any analogous means by which the same results are procured.

Second. We also *claim* the arrangement and combination of the track clearer Y, the adjustable frame D, the weighted lever J, and saw A, in the manner and for the purpose described.

No. 17,537.—Hiram Wells, of Florence, Mass.—*Improved Automatic Saw-Mill Blocks.*—Patent dated June 9, 1857.—The log resting on the carriage F can be traversed towards the saw by lifting lever K out of its recess V, when it can be turned on its fulcrum I, and will operate rack H and the head block N; or the feeding can be performed automatically by slide U on bar S coming in contact and operating lever K.

Claim.—The devices such as are described, or their equivalents, so constructed as to traverse the log towards the saw simultaneously on each head block, and set it automatically, or permit the workmen to set the log on either head block, or on all at the same time, by the lever *g*, when put into gear with the rack *k*, as described.

No. 16,795.—George W. Hearn, of Princess Ann, Md.—*Improved Method of Operating Saw-Mill Dogs.*—Patent dated March 10, 1857.—The shaft S¹ can be moved longitudinally so as to clutch it with shaft S. By this means the head blocks H H may be moved either together or separate, each of the shafts being provided with feed ratchet and connected mechanism. This arrangement gives a facility for difference of set to the opposite ends of the log.

The inventor says: I make no claim to operating the head blocks from the movement of a single ratchet wheel; nor do I claim the separate movement of the head blocks.

But I *claim* the longitudinally moving shaft S^1 in combination with the shaft S, and the clutches $f\,f^1$, arranged and operating as specified.

No. 16,888.—JOHN A. TAPLIN, of Fishkill, N. Y.—*Improved Saw-Mill Dogs.*—Patent dated March 24, 1857.—In the engraving D is the dog made up of the rock shaft a and arms b and c, the shaft a being attached to the blocks by straps d so as to turn therein. In sawing long timber the arms b are driven into the end of the log and held by wedges f. The log L passes through arms c on the outer block, and is held by wedges between these arms and the sides of the log. When the portion of the log exposed to the action of the saw is cut, it is secured between arms c on the head block, and a new portion of the log placed in position for the cut. R R are the traversing rollers, placed directly under the head and tail blocks H H^1, serving to permit the carriage to conform to inequalities of the traversing ways.

Claim.—The double arm rocking dogs, constructed, arranged, and operating in connexion with wedges as and for the purpose set forth, in combination with the traversing carriage as and for the purpose described.

No. 18,860.—T. T. PROSSER, of Oconomowock, Wis.—*Improved Portable Saw Mill.*—Patent dated December 15, 1857 —The nature of this invention consists in attaching circular saws a to a movable frame b, passing along a slide A, operated by a band F F and pulleys h h, for the purpose of obtaining a continuous succession of cuts to prevent stopping and reversing machinery, and avoid cutting both ways, making a slight durable machine and portable, when desired.

Claim.—The peculiar method of operating circular saws by means of a sliding frame attached to a movable chain or belt, in combination with the several parts fully described.

No. 18,474.—SAMUEL TARVER, of Jackson, Ark.—*Improved Reciprocating Mill Saw.*—Patent dated October 20, 1857.—The nature of this invention consists in providing a hollow blade with artificial teeth, so attached that the chips or dust cut by the teeth will not lodge or impact behind them, but pass out through the machine somewhat after the manner that a shaving escapes an ordinary hand plane.

Claim.—The inventor says: I claim a hollow saw, so constructed as that the dust will pass from it as fast as formed, and therefore contained in that association of parts described by B, D, E, E, T, H, H, K, K, K, in the drawings and by the two steel plates described in the specification, for the uses and purposes set forth.

No. 17,677.—HENRY HARPOLD, of Racine, O.—*Improved Adjustable Fender Posts for Saw Mills.*—Patent dated June 30, 1857.—In giving the top of the saw any required pitch or set, the bolts d must be loosened and the part A^1 of the fender post must be shoved in or out as the case may be; and when the required pitch is attained, the bolts must be again tightened.

Claim.—First, the fender posts A A^1 arranged in two parts and adjustable, secured together by hook bolts and working on a pivot on the fender beams A^2, all operating in the manner and for the purpose set forth.

Second, I claim the jaws i and blocks x attached to the saw sash B, and working on a swivel arranged with the adjustable fender posts, for the purpose of giving the saw pitch and making it follow a desired curve as set forth.

No. 16,876.—FRANKLIN B. KENDALL, of Bath, Me.—*Improved Method of Operating Double Carriages in Saw Mills.*—Patent dated March 24, 1857.—This improvement consists in the application of double carriage sets to saw mills, with an improvement in the use and construction of the carriage shafts, the one hollow and the other solid, the solid one on the same line and extending through the hollow one so that each shaft in its connection with the carriage set will move independent of the other, each shaft having a cog or band wheel permanently fixed to the end, both occupying a very compact space; also, the application of double feed posts, the same being in one frame, so as to occupy but little more space than common feeding gear.

The inventor says: I do not claim operating double sets of carriages broadly.

But I *claim* combining the devices in the manner shown and set forth for the purposes stated.

No. 17,170.—IRA ROBBINS, of Unityville, Pa.—*Improved Method of Setting Brace Blocks of Saw-Mills* —Patent dated April 28, 1857.—As the carriage C is near the termination of its gigging back, the long arm of lever o encounters a pin v, causing the long arm of lever m to be lifted and pawl i to engage the ratchet wheel h. Pawl l prevents the ratchet from turning during this operation; lever pawl k prevents the weight of lever m from turning the ratchet m in the opposite direction. The pawl i has by this operation obtained such a position that when lever pawl k is removed, weight n will bring lever m down upon its seat a^2, and shaft d will be turned the requisite distance for effecting the desired set. As the carriage arrives at the end of its backward movement, stud t, by pressing against A of lever L, moves said lever, causing weight r to be lifted so as to slacken cord p^1; cord q is tightened and draws upon lever catch S so as to release spring s^1 at the instant long arm of lever k is over said spring, causing the spring to lift long arm of said lever and to effect the release of ratchet h, and the set is thus given to the end of the log at the proper time.

Claim —The combination of the lever catch S, spring S^1, cords p p^1 and g, weight r^1, stud t, and lever L, in connexion with the lever K, operating as and for the purposes described.

No. 16,697.—JOSEPH D. SPILLER, of Concord, N. H.—*Improved Saw-Set.*—Patent dated February 24, 1857.

Claim.—Combining the gauge and bearing screw in one movable frame applied to lower jaw, and furnished with a set screw, substantially as described.

No. 17,099.—**Oliver B. Judd**, of Little Falls, N. Y.—*Improved Saw-Set.*—Patent dated April 21, 1857.—In using this saw-set the tooth of the saw is entered into notch *a;* and by turning the handle A until one of the jaws F touches the blade of the saw, the tooth is set. This operation is repeated for each tooth by moving handle A forward and backward.

Claim.—The gauge E, having the jaws F F constructed as described, and when used in connexion with the revolving plate G, operated in the manner specified.

No. 17,620.—**Jacob Erdle**, of West Bloomfield, N. Y.—*Improved Saw Set.*—Patent dated June 23, 1857.—The saw S to be set is placed on flap B, the edge of the teeth being against the roller Q; and if the saw is to be moved in the direction of the arrow, the hand P is moved back from the saw teeth, and retained in that position by pin a^*. The hand M is kept between the teeth of the saw by spring b^*, and by operating lever J the hand M is actuated so as to feed the teeth of the saw to the punch G—said teeth resting on anvil D; and they are set to the required inclination by tapping the punch G with a hammer.

The inventor says: I do not claim feeding the saw teeth to the punch by means of a pawl or hand, irrespective of the arrangement of the same, for that is a well known mechanical device and has been previously used for such purposes.

But I *claim* the two plates or hands P M, when connected to the bar H, as shown, the bar H being actuated by the lever J, and the whole arranged substantially as described, for the purpose of feeding the saw teeth to the punch in either direction, as described.

No. 18,921.—**Edward Marshall**, of Brooklyn, N. Y.—*Improved Saw Set.*—Patent dated December 22, 1857.—This invention is used in the following manner: The saw to be set is placed in an ordinary saw vice, and the stock A is placed on the saw, the stops *n n* resting on the saw teeth, the stops being so adjusted that the punch D will act properly against the teeth. The stock A is moved along on the saw, and the punch D is forced against the saw teeth by depressing the handle F, the punch bending the teeth against the bed E and giving the set to the teeth. The degree or set may be varied by adjusting the set screws *k l m*, whereby the saw may have a position more or less out of line with the face of the bed E.

Claim.—The saw set, as a new article of manufacture.

No. 18,114.—**John N. Wilkins**, of Waukegan, Ill.—*Improved Machine for Planing Saw Teeth.*—Patent dated September 1, 1857.—The lowest recess of the saw being filed by hand, so that the crossbar *d* may fit snugly therein, and the case A being adjusted to the saw by adjusting roller E by set screw *l*, the lever D is vibrated on its fulcrum F, and the cutters *j* and K are vibrated, the cutter *j* cutting the lower edge and the cutter K the inclined edge of each tooth.

Claim.—The two planers or cutters *j* K, fitted within the case A and operated as shown, in combination with the guide or cross piece *d* within the case, the whole being arranged and applied to the saw as shown, for the purpose set forth.

No. 18,039.—**Pearson Crosby**, of Fredonia, N. Y.—*Improved Swage for Setting Saw Teeth.*—Patent dated August 25, 1857.—The saw is placed upon the plate *b*, and the teeth *g* are swaged by striking the head of the swage F with a hammer, which will have the effect of forcing the metal of the tooth into the acute angle of the swage, thus forming a sharp cutting edge.

The inventor says: I do not wish to be understood as limiting my invention to the special mode of constructing the stock, or of holding the two parts of the swage together, or the entire swage in the stock, as other and equivalent modes may be substituted.

I claim forming the acute angle of the acting face of the swage to bring the cutting edge of the saw teeth to a sharp angle by making the said swage in two parts, substantially as specified.

No. 17,719.—**Henry F. Wilson**, of Elyria, Ohio, assignor to Himself and **Henry B. West**, of the same place.—*Improved Cross-cut Sawing Apparatus.*—Patent dated June 30, 1857.—By turning shaft *a a* reciprocating motion is given to the saw L by means of connecting rod D, and the bars C and C^1 are caused to vibrate on their fulcra *b* and *c*.

Claim.—First. The radius bars A A^1 in combination with the vibrating bars C C^1, for the purpose of straining the saw, so as to enable me to give the saw a reciprocating motion without guides.

Second. Placing pins *b c* at a greater or less distance apart than pins *d d*, for the purpose of giving a rocking motion to the saw while reciprocating, said motion to be graduated according to the kind of wood to be sawed; the whole to be arranged, constructed, and operated in the manner and for the purpose specified.

No. 18,745.—**John C. Hintz**, of Cincinnati, Ohio.—*Improved Machine for Sawing Bevelled Curves.*—Patent dated December 1, 1857.—A is a bench mounted with a feed roller B, and traversed by a large "scroll" or "jig" saw C, actuated by "power," in the usual manner. The feed roller has longitudinally the represented spheroidal form, to adapt it to forward the log in whatever canted position it may be placed. The work is placed completely under the control of the operator while standing at his post near the saw.

D D^1 are two cranes, supporting each of them a carriage E E, each carriage being surmounted with a turning rest F F, armed at the top with points or burrs. J is a vibrating frame or rest, connected with the bench A by a horizontal hinge *j*, in a line, or nearly so, with the plane of the saw. The free edge of this rest is subject to elevation and depression by means of a winch *l*, attached to a nut L, which communicates through a screw-threaded rod K with an arm depending from the rest J.

Claim.—First. The cranes D D^1, with the traversing and turning rests E F E^1 F^1, communicating by means substantially as described with a winch *g*, or its equivalent, convenient to the hand of the sawyer, in the described combination with a scroll saw and feed roller for the purpose set forth.

Second. In this connexion, the rest J *j*, constructed and operated substantially as and for the purposes set forth.

No. 16,814.—C. P. S. Wardwell, of Lake Village, N. H.—*Improved Circular Sawing Machine.*—Patent dated March 10, 1857.—C C^1 C is a swing frame resembling a letter H, viz: consisting of two parallel bars C C, connected in the middle by a tube C^1; the ends of these bars C C contain the bearings for the saw cutter arbors E E; the arbor J carries a cutter; the tube C^1 has bearings in the standards D D, and is the fulcrum about which the frame C C can be swung by means of handle N, wormwheel L, and sector K attached to tube C^1; an arbor J, carrying a cutter for cutting double tenons, passes through tube C^1. The machine as represented in figures 1 and 2 is ready to be used for sawing, and when adjusted, as represented in figure 3, it is to be used for tenoning; in this figure 3 tenoning cutters Y Y are placed instead of the saws G G, and one of these cutters Y will be brought into action while the other one is below the table.

Claim.—The arrangement of two or more saws or cutters in a swinging frame, so that either saw or cutter may be brought into a suitable position for action, while at the same time the other or others shall be removed from the way, in the manner specified, or in any equivalent manner; and this I claim whether or not a central or axial saw, or cutter, is combined therewith, or with a single swinging saw or cutter.

No. 18,402.—Thomas Miles, of Greenbush, N. Y.—*Improved Device for Guiding the Logs in Sawing given Curvatures.*—Patent dated October 13, 1857.—The operation of this improvement is as follows: the stick to be sawed being placed upon the carriage and made fast to the head block D and the top piece F, the guide I is adjusted to the bend of the timber by means of the screws J J; then upon the mill being put in motion, the stick will be carried up to the saw, so that the cut will be made in the direction of the grain of the wood, or nearly so, through the means of the guide I; the guide I may also be adjusted in a line with the ribbons A A, so that there will be no lateral motion to the top piece F; consequently a perfectly straight cut may be made when it is so desired.

The inventor *claims* giving to the top piece F of the tail block a lateral motion, by means of the adjustable guide I, substantially as and for the purposes set forth.

No. 18,960.—John Davis, of Cincinnati, Ohio.—*Improved Machine for Sawing Hand Rails or Stair Wreaths.*—Patent dated December 29, 1857.—Near the centre of each clamp stock *k* *k*^{1} a pair of jaws or clamps M M^1 *m* *m*^{1} are so hinged as to be capable of adjustment in a longitudinal vertical plane. Each jaw is provided with an arched crochet *n*, which works in a socket *o* containing a set screw *p* for holding the jaw to any desired angle. The two jaws of each pair may, if preferred, vibrate in unison, the front jaw M *m* of each pair being provided with a set screw *r* to hold the timber in contact with the face of the back of the jaw M^1 *m*^{1}.

The inventor says: I am aware that it has been proposed to produce stair rail wreaths by presenting the plank from which they are to be sawn at an oblique angle with the axis of rotation of the saw equivalent to that afforded by the longitudinal adjustment of my clamp stocks K K^1, or their equivalent.

But I *claim* first. Providing what is technically known as "spring" in the rail by presenting the sides of the plank (that is to say, the cutting planes of the warped surface) acutely or obtusely to the plan of adjustment of the clamp stocks K K^1, or their equivalent.

Second. The described construction and arrangement of the hinged jaws M M^1 *m* *m*^{1} and their accessories *n* *o* *p*, operating as explained in combination with the adjustable clamp stock K K^1.

No. 16,407.—Emerson C. Strange, of Taunton, Mass.—*Improved Machine for Sawing Hoops.*—Patent dated January 13, 1857.—The hoop poles are passed between the rollers I J and K, and the hoop is cut by the saw B. By pressing upon lever F, the movable journal box E is moved outward, carrying with it shaft A, saw B, and pulley *c*, and lever M, with its attachments; and when at such a distance as to give the desired thickness to the hoop, the lever F is kept from returning to its original position by turning cam H until it presses against it.

The inventor says: I do not claim the use of pressure rolls upon hoop-sawing machines, for these have been used before; neither do I claim the levers F and N, or the side lever O, or the cam H, by themselves alone.

But I *claim*, first, making the saw B of the peculiar form, as shown, a plain circular saw with a bevelling or angular edge or rim; not confining myself to any particular angle which this rim makes with the saw plate, but using that which is best adapted to the work.

Second. The cam H, the sliding journal box E, the lever F and its connexion, the shield S and the lever M and its attachment, as specified, so as to operate together, for the purpose and in the arrangement substantially as set forth.

No. 16,435.—George Gregg, of Lowe's Mill, Va.—*Improved Sawing Machine.*—Patent dated January 20, 1857.—The nature of this invention consists in having two saws *g* attached to the ends of beams *b*, which are pivoted on a central fender post *a*, so that they balance each other and require no more gearing than a single saw.

Claim.—I do not claim any of the parts separately; but claim the whole, when constructed and operated as set forth.

No. 17,112.—H. F. Purmort, of Saginaw city, Mich.—*Improved Sawing Machine.*—Patent dated April 21, 1857.—By operating lever N, pawl *e* will act on ratchet H; and the shaft G will be turned, the pinions *d* acting on rack *e*; and the two heads F, to which the log P is attached, will be moved simultaneously, so that the proper set is given to the log for the saw R to operate upon. The feed motion of the carriage B can be reversed or restored by bringing one of the wheels X or V in contact with the wheel Y, the shaft *c* of wheel Y causing pinions *b* to operate racks *a* on carriage B.

The inventor says: I am aware that the blocks of saw mills have been operated simultaneously both by hand and automatically; and also reciprocal motion has been reversed in the same, or in a way equivalent to that described.

I do not claim, therefore, separately, the parts for effecting the purposes stated.

But I *claim* the sliding heads F F placed on the blocks E E, and operated by the pinions *d*, racks *c*, pawl *e*, and ratchet H, and the carriage B operated by the wheels V X placed on the shafts U W, when the above parts are arranged as shown and described for the purpose set forth.

No. 18,443.—J. T. Foster, of Jersey City, N. J.—*Improved Sawing Machine.*—Patent dated October 20, 1857.—The claim and engravings show the nature of this invention.

The inventor says: I do not claim the arrangement of teeth on both edges of a reciprocating saw, so as to cut in both directions of its motion.

But I *claim* imparting to the saw provided with teeth on its opposite edges, which cut alternately in opposite directions, a reciprocating lateral motion, in the plane of its longitudinal motion, equal to and corresponding with the feeding of the articles to it from opposite sides, as specified.

I also claim giving to the way guides in which the saw gate runs an alternate motion at right angles to the motion of the saw, and equal to the feed motion on each side, substantially as described.

I also claim the combined arrangement of parts, by which the cutting throw of the saw and the feed motion are produced by the same vibrating lever H, which drives the saw, and are consequently always precisely equal, invariably correspond with the motion of the saw, and are varied simultaneously to any extent, without disarranging this harmonious agreement of all the motions, substantially as set forth.

No. 18,570.—Harvey Brown, of New York.—*Improved Sawing Machine.*—Patent dated November 10, 1857.—In the engravings A is the frame of the machine or mill, B the saw mounted upon the pulleys C C^1, D D the driving pulleys, E the counter shaft, F the principal driving band, G G the transverse shafts, H the ways, I the carriages, K the bands that move the carriages, L a second counter shaft, M the cog-wheels connecting the shafts E L, N the plummer blocks, and P the slides or friction rollers.

The inventor says: I do not claim a saw or band running over pulleys without reference to its construction and operation.

First. I *claim* the ways H, constructed substantially in the manner and for the purposes as set forth.

Second. I claim the arrangement of gearing for the purpose of moving the carriages I I I I I I on the ways H, substantially as set forth.

Third. I claim the pulley *g*, with its appendages of the pawl *h* and ratchet wheel *r*, in connexion with the projection *i* and the dogs *f*, by means of the cords or chains *k*, substantially and in the manner and for the purpose described.

I do not claim the projection *i*, the dogs *f*, or the chains *k*, separately, as they are not new, and may be altered in their form in my mill, and so used in connexion with the pulley *g* and its appendages, which is my claim as above.

Fourth. I claim the entire arrangement of my mill, by which a series of carriages are brought forward on endless ways to an endless saw, each log upon its carriage being accurately set as it passes the projection *i*, and thereby securing accuracy, rapidity and efficiency, substantially in the manner and for the purposes set forth.

No. 16,894.—George F. Woolston, of Washington, D. C.—*Improved Circular Sawing Machine.*—Patent dated March 24, 1857.—Letters A A represent knives or cutters formed in the saw, and bent outwards in opposite directions sufficient to cut off a thin shaving at each revolution of the saw, thereby planing in the operation of sawing.

For the purpose of preventing the formation of ridges and producing a smoother surface, thin metallic guard plates, as represented by letters B, are placed near the saw, of such thickness that the outer surfaces of said plates are in exact line or plumb with the cutting edges of the planing cutters, the plates being between the saw and the material. These plates have an outward set at P P, to allow the cutters at the back of the saw to clear the wood.

Claim.—First. The application and use of guard plates, substantially in the manner and for the purposes described, in combination with knives or cutters formed in saws or inserted therein, and operating substantially in the manner specified.

Second. Substantially as described, the manner of applying the said plates, holding them firmly and so adjusting them as to prevent vibration of the saw.

No. 19,005.—E. H. De Witt, of Xenia, Ohio, assignor to Himself and Butler N. Strong, of Xenia, Ohio.—*Improved Circular Sawing Machine.*—Patent dated December 29, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I am aware that vertical and horizontal saws have been previously used, and also a combination of reciprocating and vertical saws have been used for the purpose described; I therefore do not claim the employment of a horizontal and vertical circular saw separately, or irrespective of their arrangement as shown.

I *claim* the construction of sawing machines in the manner described, viz: having one of the circular saws J arranged vertically, and the other circular saw H arranged horizontally, both saws cutting simultaneously, and being carried in adjustable frames C D; all as set forth for the purposes specified.

No. 16,326.—William Cady, of Eaton, Ohio.—*Improved Cross-cut Sawing Machine.*—Patent dated January 6, 1857.—Power being applied to driving pulley G, on shaft B, a reciprocating motion is given to the saw H, and the log I is sawed the desired length. By depressing lever P the lever M, attached to it by cord N, is raised, and with it shaft P and saw H; thus the saw H can be raised or lowered without stopping the machine. The catch Q serves the purpose of olding the lever P in the required position.

The inventor says: I do not claim any one of the devices, separately considered.

But I *claim* the connecting rod D, vibrating lever E, bar F, lever M, provided and connected with the saw H, cord N, lever P, catch Q, and brake U, when arranged as described, for the purpose set forth.

No. 18,943.—George R. Moore, of Westford, Massachusetts, assignor to Himself and Charles G. Sargent, of Westford, Massachusetts.—*Improved Cross-cut Sawing Machine.*—Patent dated December 22, 1857.—The nature of this invention is described by the claim and engravings.

The inventor says: I *claim*, 1st. The peculiar method of hanging the inverted saw within its gate by means of the guide wheels S and block *r*, as set forth.

2d. I claim depressing the middle section of the horse in the manner and for the purpose described.

3d. I claim driving the saw by means of the segment O and straps N, in the manner and for the purpose specified.

4th. I claim uniting the ratchet-wheel *y* to its shaft, by means of a friction clutch, in the manner and for the purpose set forth.

No. 16,883.—Stephen Scotton, of Richmond, Indiana.—*Improved Portable Cross-cut Sawing Machine.*—Patent dated March 24, 1857.—The nature of this invention consists in placing a reciprocating saw upon a locomotive framework, the engine being placed at right angles to the line of motion of the carriage. The saw slides being borne in adjustable guides, which allow it to be used in a horizontal movement in felling trees, and in a perpendicular for logging off, together with two circular saws in swinging frames—the one swinging horizontally and the other perpendicularly.

Claim.—1st. The combination of the saw *o*, in swinging frame O, in combination with the locomotive carriage A A^1 B C D E F F G, &c., or equivalents, for the purposes set forth.

2d. The combination of saw *o* and frame O with the swinging saw table U and sliding bar V, or equivalents, for purposes set forth.

3d. Saw O^1 in horizontal swinging frame P, in combination with the locomotive carriage A A^1 B C D E F F G, &c., for purposes as set forth.

No. 17,686.—Matthew Ludwig, of Boston, Mass.—*Improved Sawing Machine for Felling Trees.*—Patent dated June 30, 1857.—The weight *m*, attached to cord *m*, keeps the saw *o* fed to its work; and by turning the shaft of the wheel E, a reciprocating circular motion is given to the vibrating radius J; and consequently the same motion is

communicated to the stock M and saw O, which will act horizontally against the tree P.

Claim.—The combination of the vibrating radius with the pitman I and saw stack M, for the purpose of guiding and rocking the saw circularly in its own plane, substantially as and for the purpose set forth.

No. 17,454.—Stephen Scotton, of Wayne county, Indiana.—*Improved Portable Cross-cut Sawing Machine.*—Patent dated June 2, 1857.—The saw frame I is attached to the end of a piston rod of a steam cylinder, and is operated by the action of said piston. In operation for cutting standing trees, the frame I is in a horizontal position, the dog Q is driven into the tree, and the saw K is made to rest on block R; and as the saw is operated the feeding of it is performed by catch bar *l* and propelling ratchet *j*, which operates cord *k*, one end of which is fastened to the saw block. The saw K is fastened to the block by means of a screw *n* passing through slot *o*, and can also be adjusted by this arrangement. For cutting logs, the frame I is turned to a vertical position, and operated in a similar manner, as described.

The inventor says: I do not claim attaching a saw or saw frame to the piston of a steam engine, or the use of a simple dog to attach the machine to a tree or log, for they are both embodied in a patent granted to S. R. Wilmot, August, 1855.

But I *claim*, 1st. The peculiar arrangement for feeding the saw to its work, and for changing the saw from a perpendicular to a horizontal position, substantially in the manner and for the purposes set forth.

2d. I claim a slotted saw K and screw bolt *h*, for the purposes indicated.

3d. I claim block R, in combination with dog Q, for the purposes set forth.

No. 17,601.—Samuel R. Wilmot, of Watertown, Conn., and Reuben G. Fairbanks, of Brooklyn, N. Y.—*Improved Portable Steam Sawing Apparatus.*—Patent dated June 16, 1857.—In attaching this sawing apparatus to a log or tree, the hook M is lengthened or shortened by shifting pin *e* of lever M, and the apparatus is clamped fast, as represented in the engraving. The saw A is actuated by piston and piston rod of the steam cylinder C, and the feed of the saw is effected by turning pinion *j*, by means of crank J, causing the saw and cylinder to turn on the pivot Z of the heel block E.

Claim.—Attaching a portable steam sawing apparatus to the object to be sawed, by attaching apparatus at one side of the saw only, as set forth.

Also, the combination of an adjustable live clamping apparatus with the stock of a portable sawing apparatus, the several parts of the combination being constructed and combined substantially as set forth.

Also, combining the stock of a steam sawing apparatus with the mechanism for actuating the saws by means of feeding mechanism constructed and operating substantially as herein set forth, so as to feed the saw into the object to be sawed, while the latter remains stationary.

Also, locking the saw, and the mechanism swinging therewith, to the stock, in the manner set forth; so that the parts of the machine may be rigidly connected with each other, so as to facilitate their removal from place to place.

Also, connecting the swinging members of a portable steam sawing apparatus with the stock at a point intermediate between the pivots and the extremity of the stock, as set forth.

No. 17,425.—John J. Curtis, of East Boston, Mass.—*Improved Scroll Sawing Machine.*—Patent dated June 2, 1857.—The stuff to be sawed is placed upon the table C, between the rollers *p* and Q, the roller *p* being made to bear upon the stuff with the requisite degree of pressure by turning wheel O. Motion being given to shaft I, a reciprocating motion is communicated to the saw E by crank wheel H and pitman G. The stuff is fed to the saw by wheel Q, which is operated by gearing *r*, rod *s*, endless screw s^1, and wheel *t;* and the operator, by turning table C, can cut the work to any required shape.

Claim.—First, the rotating bed or table C, arranged substantially as shown, and in such a relation to the saw that the bed or table may rotate around the cutting edge of the saw as a centre, for the purpose set forth.

I claim the feeding wheel Q, arranged and operated substantially as shown, when used in connexion with a rotating bed or table C, for the purpose specified.

No. 18,942.—A. C. Martin and Mahlan M. Wombaugh, of Cincinnati, Ohio, assignors to A. C. Martin and R. Ashcraft, of Cincinnati, Ohio.—*Improved Method of Governing the Cut of Circular Sawing Machinery.*—Patent dated December 22, 1857.—This invention consists in attaching the saw-guides *d* to a forked or V-shaped bar E, which is fastened to a collar F, in the saw arbor C, and having the pillar-blocks B which receive the bearings of the arbor pivoted to the frame A, the bearings being fitted in the pillar-blocks in a peculiar way, and the outermost pillar-block and bearing being rendered adjustable longitudinally, whereby a longitudinal play or movement is allowed to the saw arbor, and consequently a lateral play is allowed to the saw D, so that it may conform or give to the spring of the log; and the "dip" is regulated, or more or less clearance can be given it, as may be required.

The inventors say: We *claim* the maudrel C, when working in governable circular joint swivel boxes B B, in combination with angular guide F^1 and lever E, when arranged substantially in the manner set forth for the purposes specified.

We also claim the side end or lateral swinging movement of plummer blocks B B, when arranged substantially as set forth.

No. 16,606 —Ezekiel Page, of Platea, Pa.—*Improved Arrangement of Devices for Suspending and Adjusting Sticks in Sawing Machines.*—

Patent dated February 10, 1857.—The inventor says: I am aware that it has been attempted to saw clapboards by revolving a log on the centre over a circular saw, but this made straight parallel radial cuts, and would not answer for oars; and I am not aware that oars were ever sawed out radially from a log, which is the only way to prevent warping, and is a very important feature in their manufacture discovered by me.

I *claim* constructing the head and tail blocks of a saw mill, in which the log is so suspended as to rotate with the vertical and lateral adjustments, arranged and combined as set forth; so that the log may be sawed radially and tapering, for the purpose of getting out oars therefrom, as specified.

No. 18,269.—James H. Bachelder, of Rome, Michigan.—*Improved Method of Holding and Setting the Log in Circular Sawing Machines.*—Patent dated September 29, 1857.—The drawings and claim set forth fully the improvement.

The inventor says: I am aware that machines have been previously devised for accomplishing the same object as the one herein described. The arrangement of the two circular saws is not new—they have been previously used as shown, and for the same purpose. In view of these facts, therefore, I confine myself to the particular means employed for effecting the purpose set forth.

First. I *claim* setting the log D to the saws, or giving it its lateral movement at the termination of each stroke or movement of the carriage B by means of the screws C C, on which the nuts *g* on the uprights *i* work; the screw C being turned at the proper time by means of the belt *o*, which is made to act upon the wheel t^1 by means of the loop y^1 attached to lever a^2; the lever being actuated by the forked lever d^2 coming in contact with the projections *f* on the plates Q R, attached to beam A^1; the length of movement of the log being determined or regulated by the rack rod P, pawl *e*, arranged as shown, or any equivalent device.

Second. I claim securing the log D in the carriage B, or to the cross-piece *l*, supported therein by the uprights *i*, by means of the rods *n n o*, attached to the cross-piece *l*, by means of the plates *m* and rods *p*, having eccentrics *q* on them,—the eccentrics being in one end of the plates, and the rods *n n o* passing through the opposite ends, as shown and described.

No. 16,854.—Osborn E. Stephens, of McCall's Ferry, Pa.—*Improved Portable Reciprocating Circular Sawing Machines.*—Patent dated March 17, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I *claim* a saw arranged to traverse horizontally so as to cut a score in one side of the log to be sawed, and then moved perpendicularly so as to traverse horizontally in the opposite direction, to cut a score in the opposite side of the log, to correspond with and cut into the first score, and cut off a portion of the log, substantially as described.

I claim the devices, substantially such as are described, for changing automatically or by hand the motion of the carriage which traverses the saw horizontally in each direction, for the purposes set forth.

I claim the devices, substantially such as are described, for changing automatically or by hand the motion of the carriage that traverses the saw perpendicularly, for the purposes set forth.

I also claim the latches arranged to fill the scores in the guide *e*, so as to let it slip by the locking lever *h*, as described.

No. 16,812.—M. B. TIDEY, of Ithaca, New York.—*Improved Table-Gauge for Circular Sawing Machines.*—Patent dated March 10, 1857.—The object of this invention is to operate and render portable a guide in a desired connexion with circular saws for the purpose of gauging and sawing stuff to a desired width. The operation of the apparatus will be understood from the engravings.

Claim.—The construction of a portable saw gauge for the purpose and in the way substantially set forth.

No. 18,066.—STEPHEN WOODARD, of New London, N. H.—*Improved Method of Clamping Logs in Cross-cut Sawing Machines.*—Patent dated August 25, 1857.—The wood B^3 to be sawed being placed upon the holders X, the wood is sawed by saw F, by turning crank A^2. The weight J is then pulled down and hooked into stud *n*, and the stick B^3 is moved endwise for another sawing; the weight J is then unkooked, letting down the saw F for another sawing, which lets also the toggle joints Z down, to hold the stick B^3 by their connexion with holders X.

Claim.—Holding the wood to be sawed by means of the described arrangement of holders X, acted upon by the toggle joints Z weighted at their centres, or an equivalent arrangement, essentially in the manner and for the purposes fully set forth.

No. 17,860.—THOMAS J. ALEXANDER, of Westerville, Ohio.—*Improved Feeding Arrangement for Sawing Machines.*—Patent dated July 28, 1857.—Rotary motion being imparted to pulley C by means of belts *d e*, the saw on shaft C is revolved, and rotary motion is given to the conical pulleys I and J. The wheels *m* and *w* of these pulleys can be brought in gear with the pulleys *o* or *r* by shifting the slide *l* to one or the other side by means of lever K. Thus the truck wheels S and *a* are caused to turn in one or the other direction, and will impart a corresponding sliding motion to the frame G and carriage A, thus effecting the feed of the saw.

Claim.—The combination and arrangement with a reciprocating feed-carriage A, as a means of operating the same to effect the reciprocating travel or feed, by propelling gear therein or connected therewith, operated by or from a main feed shaft C of the freely-sliding or self-adjusting pulley frame G, with its right and left hand belts *d e*, driven and communicating motion to the main feed-shaft C, essentially as set forth, for the purposes specified.

No. 16,454.—SAMUEL R. SMITH, of Florence, Mass.—*Improved Method of Feeding Lumber laterally in Sawing Machines.*—Patent dated January 20, 1857.—During the reciprocating, rectilinear movement of carriage R, the saw E will be caused to pass through the log. During the backward movement of carriage R, lever *l* will be forced against roller *m*. This will move the toggles *h i*, so as to cause them to move the slide bar *f*. This bar, in sliding backward, will so move cams *o p* on their axes as to be clutched to rack *n*, and produce a backward movement of said rack. Rack *n* will turn pinion *t*, which operates rack *u*, moving carriage V forward, and the log laterally. During the next forward movement of carriage R, the spring *g* will draw the slide bar *f* forward and release it from the catch mechanism T.

Claim.—The combination of mechanism by which the lateral adjustment of the log is effected, as described; such consisting of the spring *g*, the stationary bearing roller *m*, or its equivalent, the lever *l*, the toggles *n i*, the slide bar *f*, the catch mechanism T, the pinion *t*, and the rack or racks applied to the carriage V, substantially as described, the whole being arranged and operating together essentially as specified.

And I also claim making the carriage or head block V movable, independently of the ways or frame on which it is supported; and combining with said carriage and its movable rack a lever and pawl, or an equivalent device, whereby said carriage may be moved towards the saw by the hand of an attendant applied to the said lever.

No. 18,948.—D. B. BARTHOLOMEW, of Lancaster, Pa.—*Improved Gearing for Feed-rollers in Re-sawing Machines.*—Patent dated December 29, 1857.—In the engraving J represents cog gears, which combine the rollers G G, so that they operate unitedly. These gears are on the lower part of the shafts of the rollers. K represents the screw shaft; it is placed transversely in the frame, below the feed-rollers and gears J. L is the screw pinion, which gears into the worm or screw thread of said shaft. This pinion is on the lowest extremity of the shaft of the rear feed-roller G, as shown. M is a band leading from the screw shaft K to the pitman or crank shaft of the saw mill.

Claim.—The arrangement of a screw shaft K transversely and at right angles to the vertical adjustable rollers G G, when combined with the gearing J J J, substantially as and for the purposes set forth.

No. 17,626.—JOHN HAW, of Old Church, Virginia.—*Improvement in Picker Sawing Machines.*—Patent dated June 23, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—As an improvement in picker saw mills, the overhanging of the saw between braced guides *d* and *e*, the space between which is adjustable by wedges *i i* and slotted braces *l* and *m*, operating as specified.

No. 17,629.—JAMES G. KENNEDY, of Cincinnati, Ohio.—*Improved Sawing Mill.*—Patent dated June 23, 1857.—Rotary motion being given to the driving shaft F of the machine, it is transmitted to the working parts of the same in the usual manner. Motion is given to the ratchet wheel 29 and shaft 8 by means of the friction of the end of shaft 4 against the periphery of wheel 29, for the purpose of moving the log carriage *d* by means of cord 19, the latter passing around shaft 8; and for changing the motion of the carriage *d*, the head and foot blocks are provided with pins 20, which strike against the end of rod 15, and which will shift the clutch 11 in and out of gear with the pulleys 9 and 10 to suit the motion required, by means of bell crank lever 16 and shifter 12.

The inventor says: I do not claim any parts of the machinery composing the improvement when taken separately for the purposes set forth.

But I *claim* the arrangement of the several parts of machinery and saw employed in one frame, by which I am enabled to change and run the saw carriage in either direction for sawing both ways, or, if desired, saw in one direction, and run the carriage back, as usual, in the other direction without sawing; all as represented and for purposes specified.

No. 17,840.—FRANKLIN B. KENDALL, of Bath, Me.—*Improved Sawing Mill.*—Patent dated July 21, 1857.—The logs to be sawed are placed upon the carriages 2, and power being applied to shaft 5, motion is given to the saw sash 3 by means of cranks 6 and pitmans 8, while the feed motion of the carriage is effected by belt 10 driving pulley 11. The feed motion of pulleys 11 is regulated by means of the conical pulleys 23 and 15, shafts 14, and the eccentric gear 16 and 17, by which the greatest amount of feed is given to the carriages while the saws are rising.

The inventor says: I do not claim any of the several separate devices or their secondary combinations.

But I *claim* the general arrangement thereof, for the purposes shown and described.

No. 17,829.—WILLIAM M. FERRY, jr., of Ferrysburg, Mich.—*Improved Sawing Mill.*—Patent dated July 21, 1857.—The collar K can be adjusted on frame H by means of set screws F and slots *g*, so that it, with the arbor J, may be adjusted as represented in dotted lines, and the saw thereby caused to have an inclination to cut towards the log while cutting cross-grain stuff.

Claim.—First. Arranging the saw arbor and all the parts bearing a close relation to the saw on a metal yoke K, and making said yoke capable of being adjusted so as to stand slightly out of parallel with the edge of the carriage, substantially as and for the purpose set forth.

Second. Constructing the saw spindle J with circular flanch *j*, and the common saw collar *h*, which surrounds the eye of the saw, with a T-shaped socket *i* of greater length than the flanch; so that the saw may have slight end play, independent of bearings, spindle, or gearing, substantially as set forth.

Third. The application, in the manner described, of the adjustable self-fastening trip 2 to a saw mill, which operates with a continuous rapid motion back and forth, for operation in combination with the vibrating reversing stop W^2, substantially as and for the purpose set forth.

No. 16,725.—PHILANDER EGGLESTON, of Mobile, Ala.—*Improved Circular Sawing Mill.*—Patent dated March 3, 1857.—In this machine the saws may be set to the log, instead of the log to the saws. Figure 2 represents part of a top view. By having the carriage placed at the upper part of the framing, and the log suspended therefrom, a free space is left on the flooring for the attendants.

The inventor says: I do not claim separately the means employed for feeding the log to the saws and gigging back, for that is a well known device and in common use.

But I claim, first, suspending the log P to the carriages F F by means of the bars *n* and x^1, arranged substantially as shown, with the screw rods *z q* and shafts *u*, whereby the log may be firmly dogged or secured in proper position, and also adjusted or elevated or depressed to the desired position or height.

Second. I claim suspending the log P from the carriages F F, as shown, in any proper manner, in combination with the two saws E E, arranged as shown, and the feed movement composed of the shafts I J L, with their respective pulleys and belts, and the clutch *i*, operating as described.

No. 18,098.—GEORGE D. LUND, of Yonkers, N. Y.—*Improved Feed and Rigging Movement for Sawing Mills.*—Patent dated September 1, 1857.—When the boss T is thrown out from the cone G^1, the shaft P will be rotated from the cone G^1 through the medium of pinion *a*, wheel K, pinion N, wheel O, the pinion N being then in gear with wheel O. When it is desired to gig back the saw, the pinion N is thrown out of gear with the wheel O; by removing rod *e* off from the rod or bar *g*, the operator, by pulling the rod *j*, causes the larger end of the cone G^1 to bind sufficiently tight on boss T to rotate the wheel O and shaft P by means of pinion S.

The inventor says: I do not claim separately the cones F G^1, for they have been previously used; nor do I claim separately any of the parts shown.

But I *claim* the combination of the two cones F G^1, the conical hub or boss T, and pinion S, on the sleeve or collar R, placed on the sliding shaft G of the cone G^1, and the gearing *a*, K, N, O, arranged, as shown and described, for the purpose set forth.

No. 17,226.—DANIEL METHVEN and ANGUS A. METHVEN, of Wooster, Ohio.—*Improved Self-Reversing Feed Motion for Sawing Mills.*—Patent dated May 5, 1857.—The saw A is formed with teeth at both its edges, to enable it to operate in two different directions. The saw, being attached to cross-head F, is worked in the usual manner, and a pin on the head K slides in the groove *a*, which operates rods L, M, *e*, and pawls N; these pawls are set in opposite directions and act upon the ratchets S, whose teeth are also set in opposite directions; thus, when the saw has passed through the entire length of the log on the carriage P, the cord T^1 is pulled, and cord T lowered, bringing the other pawl in action with the corresponding ratchet-wheel; and as the feed motion of the carriage P is effected by a pinion on shaft O, meshing in a rack of the carriage P, said motion is reversed, and the saw cuts through the length of the log in a reversed direction.

The inventors say: We do not claim any of the mentioned devices, separately considered.

But we *claim* the arrangement of the inclined planes *a a*, the connecting rods L, and rock shafts M, the pawls N, and the double ratched wheels S S, as specified, in combination with the double toothed saw, operating substantially in the manner and for the purpose set forth.

No. 16,624.—Simon P. Winne, of Albany, N. Y.—*Improved Machine for Re-sawing Lumber.*—Patent dated February 10, 1857.—The frames F F are attached, each frame to two of the horizontal slides G G, H H, which are allowed to slide freely between cleats J, I, J. By means of connexions K K the frames are made to move simultaneously in opposite directions. Thus the frames will always adjust the stuff A^1 placed between the guide rollers L L, so that the saw B will always cut through the centre of the stuff. Another piece of stuff B^1 may be simultaneously sawed into boards of more or less thickness by adjusting frame P the proper distance from the saw, and feeding said stuff B^1 through the guide rollers S O. The connecting rods *f* have shoulders *g g* fitting into slots in the lower ends of L L and the upper ends of O S, for the purpose of transmitting rotary motion to said rollers O S. The rollers L L are revolved by means of gearing N M.

Claim.—First, connecting the slides G H of the two roller frames F F by arms K K, as shown and described, for the purpose specified.

Second, connecting the two upper and outer rollers L in the frames F F to the two lower rollers O S in the frames P R, by means of the rods $f f^1$, arranged as shown: so that a rotary motion is communicated to the lower rollers from the upper ones, and the upper rollers allowed to have an independent lateral movement, as described.

No. 17,026.—Jonathan Creager, of Cincinnati, O.—*Improved Machine for Sawing Shingles.*—Patent dated April 14, 1857.—The block from which the shingles are to be cut is secured to the tilting rest *f*, which after each cut is depressed alternately down to one of the adjustable stops *g* and g^1, whereby the taper of the shingle is effected. The circular saw *a* is mounted on a sliding frame $c\ c^1$, and is fed to the block by depressing treadle *d*.

Claim.—The combination of the bench *i*, rocking rest *f*, and adjustable stops $g\ g^1$, with circular saw fed transversely of the shingle by treadle, and cutting longitudinally, when arranged and operating in the manner substantially as and for the purposes described.

No. 18,354.—Jesse Gilman, of Nashua, N. H.—*Improved Machine for Sawing Shingles.*—Patent dated October 6, 1857.—The object of this invention is to make a suitable provision to prevent the stuff, when it is sawed from the bolt, from binding or wedging against the saw. This object is attained by, and the invention therefore consists in, having the guide attached to a roving arm which is connected with the carriage on which the "bolt" is placed; said arm being so arranged as to move the guide out free from the bolt when the stuff is sawed from it.

The inventor says: I *claim* attaching the adjustable guide F to the movable arm E, attached by a joint to the carriage C, and operated by the movement of the carriage through the medium of the arm G, lever J, and groove or guide H, substantially as and for the purpose set forth.

No. 18,967.—George Hall, of Morgantown, Va.—*Improved Machine for Sawing Shingles.*—Patent dated December 29, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I am aware that a rocking bed has been used for this purpose, but my horizontally moving carriage does not rock in any manner.

I *claim*, in combination with the horizontally reciprocating carriage C for carrying the bolt to the saw, the transverse carriage I, also moving on horizontal ways, but provided with ribs *n n n* so arranged as that the block or bolt dropping upon them shall be held in the proper position for alternately changing the point and butt of the shingle, and for giving the shingle the proper thickness and taper, as set forth.

No. 17,346.—Harvey R. Wolfe, of Louisville, Ky.—*Improved Device for allowing play to the Arbors of Circular Saws.*—Patent dated May 19, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I am aware that springs have been applied to saw mandrels or arbors in various ways, for the purpose of allowing the saw to have a lateral movement or play; and I therefore do not claim such movement in the abstract, or irrespective of the peculiar arrangement of the parts shown and described.

But I *claim* the bar or lever F, having an elastic and a stiff or rigid portion, and pivoted to the bar G, as shown; the elastic end *e* of the bar or lever F being connected with the saw arbor or shaft C, and the stiff or rigid part with the sliding guide *h* through the medium of the rod H and lever I; the above parts being arranged substantially as shown, whereby the bar or lever F performs the double function of spring and lever, the saw and guide being both moved laterally when necessary by actuating the bar or lever, and when the outer end of the bar or lever is secured or made permanent, the inner end or part serving as a spring to allow the saw an independent lateral play or movement.

No. 16,643.—A. P. Gross, of St. Louis, Missouri.—*Improved Device for allowing Circular Saws to play laterally, independently of their Shafts.*—Patent dated February 17, 1857.—Circular saws require some lateral play to cut well; this improvement consists in attaching the saw to a collar on one end of the same shaft, and so combining it with spiral springs as to allow it the said lateral play.

Claim.—The shaft A, in combination with the sleeve D and springs

$m\ n$, the saw F being attached to the sleeve D, and the shaft A secured in its bearing B, as shown, so as to prevent a longitudinal movement of the same; the whole being arranged as described for the purpose set forth.

No. 16,665.—William S. Reeder, of St. Louis, Mo.—*Improved Device to allow Circular Saws end play, independently of the Driving Shaft.*—Patent dated February 17, 1857.—E is the pulley, C the saw; a collar F is attached to the end of shaft D, and a collar G to that of shaft B. From collar F project driving pins i, which pass through slots in collar G, and bear against friction rolls j, which latter have their bearings in said slots. Thus the saw shaft B is allowed to play endwise.

Claim.—The arrangement and combination of an additional driving shaft D with the shaft B that carries the saw, for the purpose described.

No. 17,521.—Gardner R. Scriven, of Philadelphia, Pennsylvania.—*Improved Method of Adjusting Circular Saws obliquely to their Shaft.*—Patent dated June 9, 1857.—By screwing the washers $e\ f\ g$ and saws $l\ n$ up to the fixed collar b, by operating screw nut i in such a manner that pin h passes through hole t of the collar b, the saws $l\ n$ will be secured perpendicularly on saw shaft k; but when the pin h is slid further into the washers $f\ g$, and when said washers are turned to the right or left, and are pressed against the collar b by means of screw nut i, then the saws l and n will be secured on the shaft k in an oblique position, and each of the saws will cut out a groove which is wider than the thickness of its metal, leaving a tongue standing between the saws l and n.

The inventor says: I do not claim the use of oblique circular saws for cutting grooves, as such are well known.

Neither do I claim the employment of two bevelled washers between a fixed collar on the spindle and the circular saw; as that mode of adjustment presents disadvantages, as set forth.

But I *claim*, first, the combination of the stationary bevelled collar on the spindle with the single loose collar, having one bevelled face, and the sliding pin connecting said loose collar with the saw, the arrangement and operation being as set forth.

Second. The plane-faced collar f, fitting the spindle in such a manner as to be easily inclined at an angle with the spindle between two circular saws b and n, for cutting tongues and wide grooves in lumber, as described.

Third. The sliding pin h in the collar g, and sliding through the same into the fixed collar b, or through the saws n and into the collar f, (figure 2,) as the case may be, for the purposes herein stated.

No. 16,339.—Josiah B. Pomroy, of Chicago, Illinois.—*Improved Method of Adjusting Circular Saws to any required dish.*—Patent dated January 6, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I am aware that triangular-shaped notches have been formed around the inner periphery of a circular saw, and then the portions of the plate remaining between said notches have been expanded for the purpose of permanently dishing the saw, without dividing its outer periphery.

I *claim* combining the concave cheeks B B and set screws $d\ d$ with a circular saw, which has a slit or slits extending outwards a short distance from its inner periphery, at the same time that the said saw has an undivided outer periphery; all substantially as represented and described, and for accomplishing the purpose set forth.

No. 17,861.—Thomas J. Alexander, of Westerville, Ohio.—*Improved Method of Driving Circular Saws.*—Patent dated July 28, 1857.—Motion being given to the pulley C, the belts $e\ f$ are operated without the crossing of either belt, and both the saw-pulley B and counter-pulley C are encircled and pulled on by the belts on opposite sides, thus relieving both shafts a and g of one side pressure or friction.

Claim.—The combination and arrangement with the revolving saw or cutter, having either a fixed or reciprocating relationship or action in the path of its cut, of the freely sliding or self-adjusting loose pulley carrying frame F, made whole or divided, and rigid or self-stretching, with its loose pulleys D D^1, E E^1, right and left hand belts $e\ f$, and pulleys B C, of the saw and counter shafts, essentially as specified for operation together in the manner set forth.

No. 16,424.—G. F. S. Wright, of Black Oak, South Carolina.—*Improved Method of Mounting and Guiding Circular Saws.*—Patent dated January 13, 1857.—The saw D is allowed a lateral movement towards the frame A, and is thereby enabled to conform to any lateral movement of the log; the pressure of the spring E keeps the shoulder c constantly against the bearing a^1. The plate I serves as a connexion between saw D and wedge G, and tends to keep both in line with each other.

Claim, 1st. The employment or use of the spring E, applied to the machine, as shown, in connexion with the shoulder C on the saw arbor B, for the purpose set forth.

2d. The guide I, arranged or connected with the saw D and rotating wedge G, as described, when used in connexion with the spring E, for the purpose specified.

No. 17,518.—George W. Rodeboy, of Milwaukie, Wisconsin.—*Improved Shield and Guide for Circular Saws.*—Patent dated June 9, 1857.—As the saw O cuts into the wood, the muley-head K, the lower end of which holds the guide pins a, can be raised or lowered by turning crank-shaft L, the muley-head sliding in circular grooves of the shield J. Thus the guide pins a can be retained close to the cutting point of the saw.

Claim.—1st. Suspending the upper half of a saw, which is arranged to hang over the log to be sawed, a stationary metallic shield J, for the purpose of supporting the muley-head, and serving as a guard to prevent injury to the operator, substantially as set forth.

2d. The peculiar manner of arranging the circular muley-head on the stationary elevated shield, whereby the guides are capable of being adjusted to any position desired without taking up any portion of the depth of the saw from the collar to the point of the teeth, and are always made to guide the saw just at and above the point of cutting, substantially as and for the purposes set forth.

3d. The springs *n n*, when arranged on the rising and falling muley-head and relatively to the saw, substantially as and for the purposes set forth.

No. 18,957.—Cyrus E. Cook, of Cambridge, Ohio.—*Improved Clamp for Setting Saws.*—Patent dated December 29, 1857.—This invention consists in having two V-shaped frames A A, connected by a joint spring *a*, each frame having a bar C and D attached to it, the outer ends of the frames being provided with screws *e*, and a metallic bed fitted to one of the bars, the edge of the bar being bevelled at different angles, and the bar so arranged that either edge may be adjusted to form the bed of the saw according to the required set to be given to its teeth.

Claim.—The two V-shaped frames A A, connected at one end by a hinge *a*, or its equivalent, and provided with the bars C D, the adjustable steel or metallic bar *b*, provided with bevelled edges and the bars or stops *h h*, the frames being brought together by the screws *e* and nuts *f*, the whole being arranged substantially as and for the purpose set forth.

No. 18,017.—Philo Maltby, of Dayton, Ohio.—*Improved Machine for Dressing Saws.*—Patent dated August 18, 1857.—The back edge of the saw plate is inserted within the groove B and is clamped to plate A; and by vibrating the lever L on its fulcrum M the tool carriage G is vibrated horizontally on the bar E by means of link O, and the tool H is caused to plane the teeth of the saw, the tool being fed in a vertical direction by means of pawl *k* acting on ratchet wheel I, and the latter operating screw X vertically, which thus raises or lowers carriage G. The drill R^2 can be operated either by turning crank T or by means of rack M and ratchet S.

Claim.—The described devices, or their equivalents, for clamping and holding the plate of the saw, in combination with the devices, or their equivalents, for holding, operating, and feeding the tool to plane the teeth of the saw, substantially as described.

And, in combination therewith, the described apparatus, or its equivalents, for operating and feeding the drill by power or motion derived or communicated from the planing apparatus, so as to drill the holes in the plate at the same time the teeth are planed.

No. 18,250.—Ansley C. Smith and Joseph K. Creighton, of East Birmingham, Pa.—*Improved Machine for Filing and Setting Saws.*—Patent dated September 22, 1857.—In operating this machine, the saw D is placed between the strips or boards P P, and the saw adjusted at the proper height, so that its teeth will be between the face sides f^1 of the beds or anvils K K, and the files *n* allowed to act properly upon or against them. The guides C are adjusted simultaneously by sliding the plate G and securing it at the proper point, so that each file may act upon its teeth at the proper angle; the lever B is then actuated back and forth by hand or other means. As the lever is operated, the files *n* are moved back and forth, and the teeth of the saw filed.

The inventors say: We are aware that several saw-filing and setting machines have been devised, and that files have been placed in reciprocating frames. We therefore do not claim broadly the employment or use of reciprocating files, irrespective of the arrangement shown.

Neither do we claim the setting device, irrespective of its construction, and also of its arrangement with the filing device.

We *claim* the combination of the filing, setting, and feeding device, when the whole is arranged to operate conjointly and automatically as shown, for the purpose set forth.

No. 17,774.—Emanuel Andrews, of Elmira, N. Y.—*Improved Machines for Gauging and Filing Saws.*—Patent dated July 14, 1857.—To file and gauge the circular saw A, it is secured within the stirrup G, the set screw *d* screwing as the gauge, and the saw A can be secured and released by operating the cam lever H; in filing the teeth, the file is made to rest on the guide-roller K.

The inventor says: I am aware that adjustable clamps and rollers for supporting and pressing upon the file while acting upon the teeth of the saw have been used. Such I do not claim.

But I *claim* the adjustable gauge M, and guide-rollers K, arranged and operating substantially as set forth, by means of which the cutting angle or rake of the teeth shall be accurately gauged before filing, the rollers acting as stops to prevent the further cutting of the file when the proper point is attained.

I also claim the adjustable setting gauge, consisting of the movable jaws N and O, combined with the files *g g* or other cutting surfaces, which shall be equivalent in their operations, for the purpose of gauging the width of set which the saw is to receive, and also for dressing and finishing the points of the teeth smoothly and uniformly after being set, substantially in the manner set forth.

No. 17,110.—Albert S. Nippes, of Lower Merion, Pa.—*Improvement in Grinding Saws.*—Patent dated April 21, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—First, placing the roller R within a frame S, which is pivoted to a bar T, which has its journals f^1 fitted in oblong slots or bearings j^1, substantially as shown; so that said roller may be elevated or raised up free from the saw, and also be adjusted more or less angularly with the face of the grindstone H, for the purpose set forth.

Second. Operating or moving the stone H and roller R towards and from the saw, by connecting the bearings *d* of the shaft of the stone and the journals f^1 of the bar T to the disk D and ratchet C, by means of the arms h^1 and the rods E, substantially as described.

No. 17,432.—Michael Kennedy, of Troy, N. Y.—*Improved Gauge Attachment for Hand Saws.*—Patent dated June 2, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—Making the gauge for regulating the depth of the saw cut with adjustable clamps C^1 C^1, which are formed to fit and gripe the saw back, and are attached to the arms of the gauge, independently of the set screws, by which the clamps are fastened to the saw back, as described, so that the gauge cannot only be fastened at any desired place upon the blade without requiring the blade or saw back to be perforated, but so that the gauge can also be removed from and replaced upon the saw without altering the set of the gauge, and so that the gauge can be adjusted upon the blade without loosening the clamps which hold the gauge to the saw.

No. 18,651.—Jacob Vaughan, of Exchangeville, Pa.—*Improved Method of Adjusting Band Saws to Circular Stocks.*—Patent dated November 17, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I am aware that sliding carriages have been used for feeding bolts to saws, and bolts have also been dogged substantially in the same way as that shown; band saws, or their equivalents, have also been previously used; but I am not aware that band saws have been secured to a rotating wheel in the manner shown and described.

I do not claim, therefore, the means employed for feeding the bolt to the saws. Nor do I claim band saws, irrespective of the means employed, for securing them to the wheel.

But I *claim* securing the saws E^1 G to the wheel C, by means of the expanding and contracting bands E H, whereby every part of the saws is firmly secured to said wheel, without perforating the saw or making use of intermediate bolts and screws, all as set forth.

No. 16,782.—Emanuel Andrews, of Elmira, N. Y.—*Improved Machine for Grinding Saws.*—Patent dated March 10, 1857.—As the stones B B move independently of each other, a piece of sheet iron *g* can be secured to the mandrel of the saw, next to the thickest part, or where the saw is hard, and only one stone is made to operate on the saw, the other being moved away so as not to grind away the sheet iron plate; this plate, by passing between the roller and the saw, increases the pressure on the thickest or hardest part of the saw, without causing the thin or soft part to be ground.

Claim.—Connecting the saw C to the mandrel, by the ball joint *e*; for the purpose of adjusting it to the position of the rollers D D while being operated on by the stones B B, whether these act conjointly or independently, and to prevent straining the saw, as specified.

Second. The plate *g*, for the purpose of allowing to guide and grind a saw even in thickness, regardless of its hard or soft parts, thus perfectly balancing the saw, as set forth and described.

No. 16,421.—A. Winter, of Pickens, S. C.—*Improved method of Hanging, Guiding, and Adjusting "Muley Saws."*—Patent dated January 13, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—First, the arrangement of the clamp guide posts B, in combination with the sliding head *c*, for securing it in any desired position, substantially as set forth.

Second, the method of constructing the sliding guide head C, with face guards D keyed on to starts S, framed into the sliding head, for the purpose of adjusting or renewing them in case of wear.

Third, the arrangement of the boxes K, in connexion with the crosshead J, for the purpose of adjusting the saw to give it the desired advance motion during its downward stroke.

Fourth, the arrangement of the guide posts B and upright G, in combination with the beam A and sill F, whereby the usual fender posts, &c., are dispensed with, all substantially as described.

No. 16,416.—Carlyle Whipple, of Lewiston, Maine.—*Improved method of Hanging and Operating Reciprocating Saws.*—Patent dated January 13, 1857.—As the shaft *h* is rotated, a reciprocating motion is imparted to saw D. The saw is strained in a perfect manner by elevating the bearings *a* of shaft B^1, by turning the set screws *c*.

The inventor says: I do not claim the two levers C C^1, to which the saw D is attached, separately, for they have been previously used.

I *claim* the lever C C^1, two or more, when the upper lever or levers are attached to an adjustable shaft B^1, and the levers driven by a crank pin *f*, having the roller *i j* fitted upon it and working within a slot *e* in the lower lever C, the saw D being attached to the end of the levers, the whole arranged as shown and described, for the purpose specified.

No. 18,547.—John L. Lawton, of Baltimore, Md.—*Improved method of Operating Scroll Saws.*—Patent dated November 3, 1857.—The nature of this invention consists in straining the saw B by means of two belts D D^1, one of which connects the upper end of the saw and the other the lower end to the opposite extremities of a distant double lever E, by the alternate movements of which the saw is operated; by which mode ample space is provided around the saw for the shaping and handling of all descriptions of work.

The inventor says: I *claim* the method of operating the saw by means of the belts and back levers, substantially as described.

No. 17,823.—William H. Harrison, of Philadelphia, Pa.—*Improved Mode of Cutting Tenons by two Circular Saws Oblique to Shaft.*—Patent dated July 14, 1857.—The narrowest space between the two saws F, which gives the thickness of the tongue to be cut, can be varied by changing the relative position of the two washers *g*.

The inventor says: Being well aware that one oblique circular saw, and the employment of two bevelled washers between a fixed collar and the saw, are claimed in the patent of Amos D. Highfield, (assigned to him and myself,) I wish it to be understood that I do not claim any such device in this application.

But I do *claim* the use of two circular saws upon the same shaft when their planes form an acute angle with each other, and made adjustable on their shaft by means substantially such as set forth.

No. 18,828.—Stephen R. Tenney and Asa Bennett, of Hubbardstown, Mass.—*Improved Shingle.*—Patent dated December 8, 1857.—A, in figures 1 and 2, represents a furnace which may be constructed in any proper manner; B is a hollow roller which is fitted in the upper part of the furnace, the periphery of said roller projecting a trifle through the top of the furnace. The top of the furnace is formed of two parts, *a a*, the outer ends of which are jointed to the upper part of the furnace, so that the inner ends may bear or rest upon the roller. C is a roller, the journals of which work in sliding bearings D, said bearings being fitted in grooved upright plates E at each side of the upper part of the furnace. Each bearing D is connected to a weighted lever F, and these levers have a tendency to press the roller C upon the roller B.

The roller B is heated to a proper degree by the fire in the furnace, and motion is given to it in any proper manner. The shingles G are passed between the rollers one at a time, and one surface, the under one, charred by the heated roller; the shingles are then inverted and again passed between the rollers and the opposite sides charred.

The inventor says: We do not broadly claim the preservation of wood by carbonization.

But we *claim* a carbonized shingle, made substantially as set forth.

No. 17,254.—William Bevard, of St. Louis, Mo.—*Improved Rotary Shingle-Cutter.*—Patent dated May 12, 1857.—The block R to be operated upon being placed upon table P, the operator, by pressing down lever N with his foot, brings the bar I to a vertical position, the weight on lever N forcing the griper T against the block, which thus holds it against the face of the rotating wheel B, while the knives F cut it in shingles, thus leaving the operator free into prepare another block while the preceeding one is running through the machine. By pressing down lever K, the bar I, by the action of weight O, is thrown in the position represented in the engraving, leaving the table P free for the reception of the next block. As the shingles are cut from the point to the butt, the splitting of the shingles is prevented by giving the knives F the curved shape as represented in the engraving.

Claim.—The combination of the described automatic feeding apparatus with the rotating shingle machine described, and also the current knife as shown at F, for the purpose specified, when combined as described.

No. 16,546.—William Huey, of Columbia, Pa.—*Improved Shingle Machine.*—Patent dated February 3, 1857.—Figure 3 illustrates the operation of the knives, which, by means of the rollers R, are made to follow the bevel of the shingle S. The knives with their cylindrical cases, and the rollers, are all attached to one box, which latter is pressed downward by means of springs S.

Claim.—The particular method of adjusting the knives within a cylindrical or other shaped case V, that they may be made to rise and fall according to the thickness of the shingle or board.

And secondly, attaching the sawing and planing machines in such a juxtaposition as to operate automatically as described, in the manner and for the purpose set forth.

No. 16,562.—William A. Whiting.—*Improved Shingle Machine.*—Patent dated February 3, 1857.

The inventor says: By placing layers *e* of India rubber under the bearings *d* of the knife wheel *a*, or under the rest *c*, which supports the blocks whilst they are being converted into shingles, the shingles cut therefrom are perfectly sound, the yielding of the block as the knives strike it having the effect of preventing the yielding of the fibres before the edge of the knife and their consequent partial separation from each other.

Claim.—Giving an elastic bearing to its rest *c*, or to the bearing boxes of the knife wheel, or to the equivalents thereof, for the purposes described.

No. 16,742.—H. D. McGeorge, of Morgantown, Va.—*Improved Shingle Machine.*—Patent dated March 3, 1857.—The bolt is placed upon bed F; this bed is pivoted in two pillar blocks G G, made adjustable in the frame of the table by means of set screws *a a*; so that the bed may be raised or lowered to give the desired thickness to the shingle, whilst it can be rocked on its pivots by means of arm H, link I, and handle J, to form the butts and points alternately from opposite ends of the bolt.

Claim.—In combination with the saw and carriage, the rocking bed F for determining and adjusting the bolt to the thickness and taper of the shingle to be sawed, substantially as set forth.

No. 16,964.—John L. Brown, of Indianapolis, Ind.—*Improved Shingle Machine.*—Patent dated April 7, 1857.—The block to be cut is placed between the rods I I; power being applied to the pulley A, the shaft B is revolved, giving a reciprocating motion to the knife sash E, and one-half of a revolution to the wheel M; the eccentric N alternately raises and lowers the end of the lever O, sliding the bolt Q through the knife sash E, changing the oscillating table R at the time that the knife F is being drawn back after cutting the shingle.

Claim.—The construction of a self-feeding shingle machine by the arrangement and combination of the wheel L upon the shaft B, the wheel M, the eccentric N, the lever O, the bolt Q, and the oscillating table R, when arranged and operated as set forth.

No. 17,104.—G. H. Mallary, of New York, N.Y.—*Improved Shingle Machine.*—Patent dated April 21, 1857.—As the saw *b* cuts the shingle from the bolt on carriage *l*, the rotating planer *c* planes the sides of the shingle; the planer *c* is pressed to the shingle by having the arm *f* of its vibrating frame *d* guided by means of a projection on the vibrating carriage bed *i*. The saw *b* having performed the cut of the shingle, the frame *h* is run back on its ways *a*, bringing the pawls k^1 in contact with cams k, which latter are turned, and each of which in its turn operates the vibrating plate i so as to vibrate it to one or the other side, thus producing the taper of the shingle.

The inventor says: I do not claim any of the separate parts composing this machine when employed by themselves.

But I *claim* the arrangement of the several devices described, by which the bolt is sawed into shingles and planed, as set forth, the whole being combined and constructed substantially as described.

No. 17,347.—C. M. YOUNG, of Sinclearville, N. Y.—*Improved Shingle Machine.*—Patent dated May 19, 1857.—A reciprocating motion being given to the saw frame B, rotary motion is communicated to shaft E, in consequence of the pin d of the wheel D being fitted in the slot c, in the lower part of the gate. As the gate B is moved up and down, the sash M, which contains the saws N, has a lateral reciprocating motion given it in consequence of the bars b^* fitting in the grooves in the stiles a^*; and these saws being placed adjoining the back side of the knife C will, as the gate descends, cut a kerf longitudinally in the butt end of each shingle.

The inventor says: I do not claim the movement of the bolt, or the manner in which it (the bolt) is presented to the knife, irrespective of the means employed for effecting the purpose.

But I *claim* operating or giving the necessary feed motion to the block H and bolt L, by means of the laterally reciprocating bar G, actuated by the eccentric grooves n^1 in the wheels f, the bar G vibrating the block H, through the medium of the bar I, the block H being provided with pawls p^1, which catch into the racks p in the frame A, and the whole arranged as described.

Also, the saws N N placed in the frame of sash M, which is secured at the back of the gate B, and operated from the bar G as described for the purpose specified.

Further, the bar G when arranged as shown, so as to be driven or operated from the gate B, whereby the several parts of the machine are all made to work automatically as described.

No. 17,378.—WILLIAM A. JARRATT, of Patonsville, Tenn.—*Improved Shingle Machine.*—Patent dated May 26, 1857.—As the recess R of the carriage H passes under the feeder B, a bolt is discharged into said recess; and when the carriage recedes, the bars c taking hold of the cams b on studs a pull down the knife I to cut the bolt to the proper thickness. As the shingle leaves the knife, having one side shaved, the knife is released, and the dog d, running upon arm e, depresses lever g, which pulls cord h and raises apron C, throwing off the shavings; while at the same time the bar m comes in contact with stop F, and, pulling down cord y, causes shaft o to turn and the arms x to turn the shingle over into recess R^1; at the next operation a new bolt is discharged into recess R and shaved on one side, while the shingle in recess R^1 is shaved the second time, thus finishing it.

The inventor says: I do not claim the mechanism for reversing and throwing out the shingles, as I am aware that mechanisms equivalent thereto have been before employed.

I *claim*, 1st. Elevating and depressing the knife L, and retaining the same in the required position by means of the bars C on the bottom of the carriage operating upon the cams b or studs a a, substantially as described.

2d. The automatic apron c operating substantially as described, whereby the shavings are all taken from the shingles and knife and thrown from the machine, the apron returning successively to a horizontal position to receive the shavings, as and for the purposes set forth.

No. 17,906.—ELBRIDGE WEBBER, of Gardiner, Me.—*Improved Shingle Machine.*—Patent dated July 28, 1857.—The bolt is held between the dogs 6, attached to the pinions 7, at the extremities of levers 7^1; one of these levers is slotted and the other has a pin entering in the slot, so that both are moved by power applied to lever-handle H. The pinions mesh in racks in the floor of the head-block 5^1 and thus move the dogs 6 as desired and firmly hold the bolt when inserted between the teeth of the dogs. The saw X is driven by power applied to pulley X^1 while motion is communicated to shaft n. As the carriage s is drawn back by weight w^1 levers k and 14 press against their respective benches b^1 b^2, and moving the ratchets k^2 and 14^1 feed the head-block 5^1 forward, and give the necessary vibration to frame 2^1 and through it to head-block 5^1. The striking of the carriage against lever m closes the clutch F^1, and produces the forward movement of the carriage a sufficient distance for the length of the bolt.

Claim.—1st. The combination of the vibrating frame 2 with the obliquely slotted slide piece 11 and the cam wheel 12, arranged and operating substantially as and for the purpose set forth.

2d. The relative adjustment of ratchet O and sheave g^1 substantially as and for the purpose specified.

3d. The arrangement of the pinions 7 7 with levers 7^1 7^1 and dogs 6 6, as set forth.

No. 18,512.—SIMEON MARSHALL, of Philadelphia, Pa.—*Improved Shingle Machine.*—Patent dated October 27, 1857.—This invention relates to the construction of shingle machines adapted to the purpose of splitting and dressing shingles, whereby the respective parts are readily adjusted to more different thicknesses, shapes, or forms than other machines now in use.

In slots y y are placed the riving knife arms f f connecting the knife to the driver. The ends of those arms are placed in the slots, and are so formed, as seen by the section, fig. 3, that by placing them in those slots and securing the knife in its place to the opposite ends, a positive connexion is formed with the driving plate, at the same time giving the knife that required freedom to rise or fall to suit the irregularities of the timber in passing through it.

The inventor says: 1st. I *claim* the slots y y y y in the driving plate, with the peculiar formed arms f f, combined and connected substantially as and for the purpose specified.

2d. I *claim* the general arrangement of parts operating in the manner described and for the purposes set forth.

No. 18,681.—James Crary, of Kittaning, Pa.—*Improved Shingle Machine.*—Patent dated November 24, 1857.—This invention relates to an improved machine for froeing and shaving shingles in taper form, and consists in the employment or use of reciprocating froes arranged in sets, in the use of a pair of tapering or shaping knives, and in the use of a vibrating feed board, arranged and operated so that shingles are rived and froed from the block and shaved or cut in taper form.

The inventor says: I *claim*, 1st. The use of the sliding side pieces L L with converging slots C C, in combination with the upright grooves *d* in the frame in which the wrists of the shaving knives are inserted, for the purpose of effecting the gradual approximation of the shaving knives in giving the proper taper to the shingles.

Second. The combination of lever P with its pin R, the projecting cam S, and cam on the frame L, for the purpose of communicating the requisite relative motion to the vibrating feed board O, the driver N, and frame L, whereby one bolt only at a time of the three riven by the froes is driven outwards and forced through the shaving knives, no matter how short or thin the bolt may have been froed.

No. 16,911.—Edwin Edwards, of Oneida Lake, N. Y.—*Improved Rotary Shingle Machine.*—Patent dated March 31, 1857.—The inner end of the bolt F bears against the bands G H, and is placed angularly to the cutters D and D¹, the bands G and H serving as gauges; and as the inner end of the bolt is kept firmly pressed against said bands, the bolt will be shifted as the wheel B rotates, the two cutters D and D¹ acting upon bolt F alternately and cutting the shingles from the bolt in taper form, the butts and thin ends of the shingles being cut alternately from each side of the bolt.

The inventor says: I am aware that devices have been employed for shifting the position of the bolt at each cut of the knives, so that the shingles can be cut in taper form and the butts cut alternately from each side of the bolt. But the devices hitherto employed have been complicated, expensive to apply to the machine, and liable to get out of repair.

I *claim* the employment or use of the adjustable annular gauges G H, formed each of two parts *b c d e*, and applied to the wheel B as shown and described, for the purpose set forth.

No. 17,907.—William Wood, of Westport, Connecticut.—*Improved Method of Feeding the Bolt in Shingle Machines.*—Patent dated July 28, 1857.—By the operation of the parts described in the claim, the toothed portion of disk I will gear alternately into the pinions F, and the screws H will be actuated alternately, and the bar G and bolt attached to it will be fed obliquely towards the knife frame D, which by its up and downward motion operates lever E.

The inventor says: I am aware that in shingle machines of this description the bolt has been previously fed obliquely forward, the ends of the bolt being actuated or moved alternately; and I therefore do not claim in the abstract, or irrespective of the means employed for effecting the purpose, such movement of the bolt.

I *claim*, first. The employment or use of two screws, H H, actuated alternately from the knife frame D through the medium of the lever E, rod K, arm *n* of the sleeve or collar J, disk *l*, provided with ratchet-shaped projection *m* and teeth or cogs *i*, and the plate M, the whole being arranged substantially as and for the purpose set forth.

I further claim the plate M, when arranged and applied to the bar G substantially as shown, so that it may be readily disengaged from the screws when desired for the purpose specified.

No. 18,679.—Elisha K. Collins, of Cambridge, Massachusetts.—*Improved Machine for Cutting Shingles from the Bolt.*—Patent dated November 24, 1857.—By turning the wheel *c*, the two bars E E with the knives G G will be moved; and if the direction of the movement of said wheel be reversed each time the knives reach the end of the bolt, a reciprocating movement will be given to the knives, and a slab, stave, or stick will be cut from two opposite sides of the bolt or log at each stroke by turning the screw rods F F.

Claim.—The combination of the two screw shafts D D, E E, and knives G G, arranged relatively with each other, and with the bolt C, substantially as and for the purpose set forth.

No. 18,222.—James E. Young, of Augusta, Maine.—*Improved Method of Manufacturing Shingles.*—Patent dated September 15, 1857.—The bolt having been secured by clamps M, motion is communicated to saw shaft C and saw D which cuts the shingles from the bolt. When the carriage I arrives near the end of frame A, the bar K strikes against stop *i*¹, and drives the wedges O under the part *k* of the carriage and tilts it, vibrating the shingle bolt on its centre, whereby the shingles are cut from the bolt in alternate tapers.

Claim.—Vibrating the shingle bolt about an axis lying in or near the plane of the cut, and equally distant from each end of the bolt.

Second, the sliding rod K and wedges O, constructed and operating in the manner substantially as set forth.

No. 18,207.—Samuel Lord, of Perry, Georgia.—*Improved Spoke Machine.*—Patent dated September 15, 1857.—The stuff M being centred in the frame H, and the carriage B being so adjusted that the saw C will be at the butt end of the spoke, a rotating motion is given, the saw C, a travelling motion to carriage B, and a rotating motion to the stuff M; the rack *x* as the carriage moves operates wheel W. As the stuff rotates, the frame H is vibrated in consequence of the square portion *o* resting upon the plate *m* on lever V¹, and the butt of the spoke will be cut square by saw C. The lever V¹ now rests, when the most depressed part of cam *s* and cam *r* commences to raise lever V, so that its plate *u*¹ will bear against the elliptical portion *p* of the boss *u*, and thus the elliptical portion will vibrate frame H; and as said portion *p* is gradually raised by cam *r*, the form of the spoke transversely gradually increases to the point W.

The inventor says: I do not claim separately and apart from the arrangement shown any of the parts described.

But I *claim* the vibrating frame H operated as shown, and arranged with the carriage B and saw C specifically as described, so as to operate conjointly as and for the purpose set forth.

No. 18,680.—George W. Cooke, of Springfield, N. J.—*Improved Spoke Machine.*—Patent dated November 24, 1857.—In this invention rotary cutters are employed, and the work or article to be planed has a horizontal and longitudinal action; the work only passes through the machine once to complete the same, the cutters acting with a lateral and a circular movement, cutting into it to the full depth necessary to reduce it, and every revolution of the cutters finishing a portion of the surface of the work.

Claim.—The inventor says: I would state that I do not claim the tenoning part of the machine.

But I claim the planing of spokes with rotary cutters, whose surface or circumference is divided by grooves, the edges thereby being in sections or teeth, the same acting alternately on the work, in combination with lever F, springs K, and cog screws I I, for the purpose of producing the lateral and oblique movements of the cutters, substantially as described.

No. 17,111.—Manley Packard, of North Bridgewater, Mass.—*Improved Method of Adjusting and Holding the Knives of Spoke Shaves.*—Patent dated April 21, 1857.—By screwing the screw D into the wood of the stock A, the bow spring C will have its ends forced against the starts F of the knife B, so as to hold them firmly in place; an abutment of metal c^1 being placed against each start, and fastened in the stock.

Claim.—I do not claim applying either a wedge or a clamp screw to each start, in order to keep it in place in the stock.

But I claim the described new arrangement of the clamp screw and bow spring with respect to handle and starts of the knife or cutter, and so as to operate therewith substantially as described.

No. 16,532.—John J. Croy, of Caledonia, Mo.—*Improved Tool for Tenoning Spokes.*—Patent dated February 3, 1857.—The inventor says: I do not claim the use of a screw to hold the spoke against the interior of a tube or other surface.

Neither do I claim broadly the use of a revolving cutter head to cut tenons upon spokes, the spoke being held stationary.

Neither do I claim any portion of my device, as described, which is seen in John McCune's patent of June 16, 1847, or any part which exists in any other machine or instrument for cutting spokes.

But I *claim*, first, the employment of a tube A for holding the spoke while the tenon is being cut.

Second, the combination of an adjustable end piece or bed C with the tube A.

Third, the employment of an adjustable clamp cutter head F F^1, all the parts being constructed, arranged, and operating as set forth.

No. 17,106.—Alexander McKenzie, of Boston, Mass.—*Improvement in Combined Square, Mitre Square, and Bevel.*—Patent dated April 21, 1857.—When this instrument is to be used as a mitre square, the arm C is turned on its pivot *a* until it comes in line with the face E; the position of arm C can be adjusted by means of pin *b* on said arm sliding in a graduated circular groove *c*.

Claim.—The described arrangement of the try square, the mitre, and the bevel blade, the latter being hung so as to project up on the opposite side of the stock from the blade, and so as to form, when set at an angle of forty-five degrees, a continuation of the mitre head, as set forth.

No. 16,857.—Herman Whipple, of Shaftsbury, Vt.—*Improvement in Machines for Graduating Carpenter's Squares.*—Patent dated March 17, 1857.—The nature of this invention is shown by the claim and engravings.

Claim.—The inventor says: I claim, first, the scale index *m*, mounted upon the carriage B, and regulating the extent of motion given to said carriage from the truck *v*, and pusher point, whereby the length of the division mark is determined, and the cut made from the edge of the square, substantially as specified.

Second. I claim the arrangement of the rack *r*, lever *k*, and its actuating cam or pin, pawl *y*, rod *n*, and weight *x*, or its equivalent, for moving and adjust the index *m*, to be acted on by the pusher *v*, substantially as specified.

Third. I claim arranging the graver stocks *g* within the carriage B, substantially in the manner and for the purposes specified, when said graver stocks are governed by the levers L, adjusting rail *h*, and springs and rods S, or equivalents, for pressing down the gravers in cutting, and thus lifting the same up off the square while returning, as specified.

Fourth. I claim the arrangement of the scroll cam D, anvil or bed *c*, rod *a*, lever *b*, latch *i*, inclined wedge *f*, and clutch or friction lever *p*, for moving said bed *c* and its square endwise the required integral part between each stroke of the gravers, and then stopping the machine when the divisions are completed, substantially as specified.

Fifth. I claim the manner of securing the gravers *e* in place, and bringing them to the exact position in the stocks *g* by means of the mortise bolt 5, constructed and operating substantially as and for the purposes specified.

I do not claim regulating the extent of motion given to the graver stocks in drawing back by means of cams, as these have been used; it being understood that I do not claim a mortise bolt to secure a bar or tool, as this has before been used.

But I am not aware of any mortise bolt having before been constructed with the mortise for the tool eccentric, or one side of the mortise partially removed, so that the flat side of the graver is pressed to the side of the mortise in the graver stock, by the turning of said mortise bolt, and brings the same correctly to its position, irrespective of the thickness of the graver itself.

No. 16,817.—Herman Whipple, of Shaftsbury, Vt.—*Improvement in Machines for Stamping Figures in Carpenter's Squares.*—Patent dated March 10, 1857.—The square is confined to the face of anvil A, by an eccentric clasp or otherwise; the hand wheel *h*, is turned to bring the end of the blank line on the square directly opposite the chase containing the figures to be impressed. The chase which stands on the side of the frame, is now turned down on to the face of the square in the right place, being directed by the slot at the top of the chase; which is slipped on to the proper guide pin *d*. The treadle *t* is then pressed down, which raises the long end of the lever S, bringing down the short end and pressing it on to the lower edge of the groove *g*, by which that end of the anvil A is raised and pressed against the chase, and the long lever *m*, being attached to the lever *a* by the shackle bar *n*, the pin *e*, moving in the spiral groove *v*, turns the bolt y^1, and also the clamp *z*, which takes hold of the top of the bolt *y*, when the end of lever *m* presses down the cross-bar *x*, carrying with it the bolts *y* and y^1, pressing the clamp on to the top of the chase and confining it there for stamping, when each of the figures are struck with a hammer, to make the desired impression. The pressure is now taken from the treadle, the pin *e*, in its way up, turns back the bolt y^1 and clamp *z*, and the chase is turned back against the rail R.

Claim.—First. The arrangement of a series of chase bars, jointed at one side of the machine, when combined with the anvil sustaining the square, and with the hand wheel *h*, rack or racks *j*, and pawl *i*, for regulating the relative positions of the anvil and chase bars, substantially as and for the purposes specified.

Second. I claim the arrangement of the levers *s a*, and *m*, bolt *y* and y^1, bars *z* and *x*, and slot *v*, and pin *e*, for the purposes and substantially as specified, whereby the one motion of the lever *a* (by the treadle *t*) first turns the bar *z* around to confine the chase bar C, and then gives the requisite compression of the chase bar at both ends on to the square or plate on the anvil, to retain the same firmly, while the chases are being separately struck into said square, as specified.

No. 17,130.—Henry L. McNish, of Lowell, Mass., assignor to Himself and David C. Butler, of the same place.—*Improved Stave Machine.*—Patent dated April 21, 1857.—The stave is fed to the machine by means of the pressure rollers I, and passes between the horizontal cutters D and D^1, which serve to plane the staves on the two flat sides. The edges of the staves are planed by means of the cutters R and R^1, which cut the bevel and bulge of the stave at the same operation. The lever N, having its fulcrum at O, is operated by means of cam M; and the upper end of lever N is enlarged, and is formed with two oblique grooves *e*, which serve to adjust the position of the connexions P, which hold and operate the slide bearings 2, which form the bearings for the upper part of the vertical shafts R. Thus, by adjusting the connexions P nearer to the fulcrum O, a straighter bulge will be obtained. The bevel of the staves can be adjusted by raising or lowering the bracket V by means of the set screws *z*.

Claim.—The angular guides *e* upon the lever N, in combination with the connexions P P and concomitant parts for adjusting the side cutters R^1 R^1, to dress staves of different widths, and at the same time preserving the proportion between the bilge and the width of the stave, as set forth.

I also claim the V guide e^1 on the bed plate for the purpose of guiding the staves in a direct line through the machine, as set forth.

No. 16,746.—Erastus M. Pitman, of Warren county, Va.—*Improved Machine for Bevelling and Jointing Staves.*—Patent dated March 3, 1857.—The plane A is set in motion between ways B B^1 by means of a pitman. A bunch of staves is placed between the carriage D and clamp C, and is fastened by means of cam F. The carriage is then moved down the ways E E^1 until the staves are sufficiently jointed; the carriage is then again moved up the inclined ways and is let drop to the position represented by dotted lines in figure 2, when the staves are turned and operated in the same manner as before, which completes them.

The inventor says: I do not claim the reciprocating plane having reversed bits, or the manner of its motion.

But I *claim* the combination of the reciprocating plane A, having reversed bits *c* c^1, and the motion referred to, and the carriage D with the inclined ways E E^1, constructed, arranged, and operated in the manner and for the purposes shown and described.

No. 18,123.—Henry L. McNish, of Lowell, Mass., assignor to David C. Butler and Henry L. McNish, aforesaid.—*Improved Machine for Crozing and Chamfering Staves.*—Patent dated September 1, 1857.—The stave to be operated upon is placed upon bed I, between the clamps J, which hold it tightly and as the machine is set in motion, the clamps J are started to carry the stave over the cutters on head D, and the catches *j* and *k* first strike the stave and bring it square upon the bed J; the pins *d* then slide down the groove *l*, and bring the spring jaws *m* down upon the stave and hold it firmly while it is being crozed. After the stave has passed the cutters, the pins *d* pass through the groove *n*, and, pushing the spring *p* aside, pass the outside of the guides and beyond the ends of the springs, thus releasing the stave and allowing it to fall, the arms P guiding it clear of the machine.

Claim.—The self-opening and closing clamp described, or its equivalent, so geared to other parts of the machine as to operate periodically corresponding with the motion of the feed-rollers, as set forth.

Also, making the clamps adjustable to croze staves of barrels of different diameters, as set forth.

No. 17,871.—Elisha K. Collins, of Cambridge, Mass.—*Improved Method of Sawing Staves from the Bolt and Dressing their Edges simultaneously.*—Patent dated July 28, 1857.—The bolt K is sawed out to the required size and clamped to the bar a^1, the outer edge of the bolt projecting through the frame a^1; motion is given to the band saw F by means of pitman *g* actuated by eccentric *i*. The bed I is also moved by the endless chain C, which is actuated by the gearing $j\ k\ m\ n$; as the bolt passes the band saw F, the staves are sawed therefrom, the bolt running past the saw in a curved form corresponding to the form of the bars a, and the staves will consequently be sawed from the bolt in proper curved form; and just before the bolt reaches the saw its side passes between the arms r, and the bolt will be bevelled by the rotating cutter v; the staves therefore are jointed just previous to being cut, and the upper and lower edges of the frame b^1 are made of a rounded form, so that the staves will be cut of taper form so as to allow for the bilge of the casks.

The inventor says: I do not claim the employment or use of a band saw separately considered, or irrespective of the arrangement shown.

But I *claim* the band saw or saws F, the endless chain C, which gives a continuous feed motion to one or more beds or plates I, attached curved bars $a\ a^1$, the rotating cutters $v\ v$, the racks $f\ f$, and the gearing $d\ d\ e^1$, and screws c^1 connected with the bar a^1, when they are arranged and combined to operate conjointly, as shown, for the purpose of sawing, jointing, and dressing staves at one operation, as set forth.

No. 18,088.—PETER DEAL, of Amsterdam, N. Y., and JAMES GREENMAN, of Northampton. N. Y.—*Improved Machine for Sawing Staves.*—Patent dated September 1, 1857.—The stave to be sawed is placed upon the table h between the guide i and the inner periphery of cylinder B; and rotary motion being given to said cylinder, the teeth on its front edge cut out the stave, the blank being guided during the feeding operation by carriage D, which slides on the curved track C, and the finished stave is discharged at the rear end of cylinder B.

Claim.—First. The combined method of supporting and driving cylindrical saws from their periphery, in the manner and for the purpose described.

Second. The arrangement on the interior of a cylindrical saw of a supporting table, and an adjustable gauge or guide, as described, by which the thickness of the stave is guaged, and it is guided during its passage through the saws, and one stave is prevented from passing the other, and jamming against and stopping the saws, or throwing the front stave off the side of the table on the bottom of the saws.

Third. The arrangement of a guard plate on the interior of a cylindrical saw, as described, for the purpose of preventing the sawdust and chips being thrown into the kerf of the stave.

Fourth. The method of diminishing the pressure of the curved surface of the stock against the periphery of a cylindrical saw, by pivoting the track on which the carriage holding the stock traverses, so that the pressure of the forward end of the stock will throw the track outward, and thus prevent the saw from binding in the kerf.

No. 16,849.—VALENTINE MUNCK, of Carrolton, La.—*Improved Machine for Planing Tapering Staves.*—Patent dated March 17, 1857.—By this invention the lumber is carried under the face of the cutters by the traversing bed, the groove and tongue connexion shown at m^3 causing the cutter-head bearings to rise with the inclination of the table

n^2, and thereby preserve the same relative position of said table and the edges of the cutters; the inclination of the table n^2 regulates the taper of the lumber operated upon.

Claim.—The adjustable table n and n^2, and making said table guide the cutting head t, substantially as and for the purposes set forth.

I also claim, in combination with the table n and n^2 and cutting head t, the angular side cutting-heads w^2 to secure from the variation of the table n^2 tapered planing on the edges of the lumber, substantially as specified.

No. 17,946.—JOHN TRAHIN and CHARLES VOEBEL, of New Orleans, La.—*Improved Machine for Bevelling Staves, &c.*—Patent dated August 4, 1857.—The stave to be jointed is placed upon the bed D and secured to it by means of the clamp D. Motion being given to the cutter-heads P by means of pulleys S, the cutters are made to operate upon the edges of the staves; the cutter-heads P can be adjusted horizontally by operating set-screws Q; they can also be adjusted circularly by means of the circular slots in the plates C. The stave is fed to the cutters by turning crank N, when the pinion or shaft M will operate rack G and bed O.

The inventors say: We do not claim separately any essential features in the machine described, but merely their specific arrangement, as shown and described for the purposes set forth.

No. 17,816.—MELYN WEATHERINGTON, of Springfield, O.—*Improved Method of Adjusting Round Tenon Cutter to certain Fixed Sizes.*—Patent dated July 14, 1857.—The rings, F having the aperture a of different sizes to suit the different diameters of the tenons to be cut, are placed within the disk A, and the cutter blade c is then placed on the ring and is secured with the same to the disk A by means of screw-bolt e. The cutter c can be adjusted to take a deeper or shallower cut by operating set screw i, fig. 3.

The inventor says: I do not claim boring round tenons, as this is a very common device.

But I *claim* the combined use of the uncut counter-sunk disk and removable rings, and the bit adjustable thereto; for the purpose of making an adjustable hollow auger, capable of boring tenons of various sizes, without splitting or dividing the stock, substantially as described.

No. 17,219.—DAVID HODGES, of Suffolk, Va.—*Improved Adjustable Bed and Gauge to Regulate Tenoning.*—Patent dated May 5, 1857.—The tenon being gauged on a piece of stuff E, it is secured on bed a by means of set screws g, and the shoulder on the upper side is cut with the ordinary plane used for this purpose; the plane being guided by guide c^1. The bed a is then turned on the hinges h so as to bring guide c uppermost and the other side of the tenon is cut like the former.

Claim.—The reversible bed with adjustable end guide c, stationary guide c^1, and devices for securing the lumber, operating as and for the purposes specified.

No. 17,175.—**Lafayette Stevens**, of Elmira, N. Y.—*Improved Machine for Tenoning Blind Slats.*—Patent dated April 28, 1857.—The slat being cut to the required length, it is placed on the sliding table C, with the rear end resting against the projecting end of gauge D, and the table is slid up to the knives K, which are attached to head I through the slot in guide F. As the tenon is cut by cutters K, it passes into the hole in the end of the mandrel of said cutters, when it will be cut off by spur b^1.

Claim.—The movable and reversible gage D, as described, in combination with the sliding table C, arranged and operating in connexion the mandrel head I, as made, and cutters *k*, and spur b^1, as described and for the purpose set forth.

No. 18,212.—**Perry Putnam** and **John E. Crane**, of Lowell, Mass.—*Improved Tenoning Machine.*—Patent dated September 15, 1857.—The pieces to be operated upon are piled upon the table as represented at J; each piece is then fed from the bottom of the pile up to and between the cutter head E by the drivers V, which are attached to feeding rod T which is operated upon by rod R, cam Q on shaft P, gearing O N, and pulleys M K. The drivers catch and drive the lowest piece towards the cutters, and the pile, as soon as the lowest piece is removed, falls upon the drivers, and each succeeding piece is thus fed to the cutters.

The inventors say: We do not claim the parts of our machine separately.

But we *claim* their arrangement and operation specifically as shown for the purposes set forth.

No. 16,534.—**Seth C. Ellis**, of Albany, N. Y.—*Improved Machine for Cutting Tenons on Blind Slats.*—Patent dated February 3, 1857.—The slats are placed in the guide-frame G G. As the box N is moved back by means of the lever P, the lowest slat S, which was supported by the upper surface of box N, drops into the position represented in the figure, and rests on the edges of frames B B, in range with the slots in the disks H, M, H. As the box is again moved forward, it pushes the slat forward and into the slots in the disks. By this time the cogs on wheel R take into the cog-wheeel L, giving the disk M and the slat a complete revolution. The return motion of the box then carries the finished slat back and up the inclines *e*, ready to be removed by hand.

Claim.—The arrangement of the rotating disks H H, with their slats *a a*, disposed in reference to and in combination with the saws, for the purpose of regulating the revolution of the slat so as to direct the saws in cutting perfectly cylindrical axes or tenons to it, substantially as set forth.

Further, the feeding apparatus, to wit: the sliding box N, disks M, with the wheels L and R, lying within the jaws J J, and the lever P, with the eccentric on W, acting together and in combination with the disks H H and saws, substantially as set forth.

No. 16,453.—**James D. Sarven**, of Maury county, Tenn.—*Improved Machine for Bending Timber.*—Patent dated January 20, 1857.—The timber to be bent in regular curves, such as fellies, is inserted at one end, in a groove of the cylinder T; and the shaft M, of the bending frame A, being inserted in a hole in the axis of said cylinder, the bending frame A is turned on said shaft M, the roller J pressing the timber against said cylinder, and bending the same. To bend timber in irregular forms, the wheel K is operated during the process of bending, which, by means of screw 9, presses the timber constantly against the irregular surface of any bending cylinder.

Claim.—The bending frame A, or its equivalent, arranged and operating substantially as described, and for the purposes set forth.

I also claim, in combination therewith, the mechanism and arrangement described, or other equivalent devices for the purpose of operating the bending roller I, or its equivalent, as specified—the whole being constructed and made to operate together, substantially as specified and for the purposes set forth.

I also claim, in combination with the bending frame A, or its equivalent, the mechanism and arrangement described, or other equivalent devices for the purposes of bending timber in regular or irregular forms or curves, if the same is used in combination with a revolving mold, or mold operating or arranged in any other manner.

No. 18,974.—**Jacob Hoke**, of Grand Detour, Ill.—*Improved Guide Gauge for Sawing Timber.*—Patent dated December 29, 1857.—This invention consists in the use of two squares A A^1 properly graduated, each arm *a* and *b* being provided with a slide *c*, and the parts so arranged that the log or stick of timber may be marked at once at four sides, if necessary or desired, and without adjusting the square after being properly fitted to the log or stick.

Claim.—The graduated squares A, constructed as shown, and provided with slides *c*, also graduated and arranged as and for the purpose set forth.

No. 18,588.—**John C. Hintz**, of Cincinnati, Ohio.—*Improved Machine for Turning Spiral Forms.*—Patent dated November 10, 1857.—This invention has for its object a means of producing spiral or other oblique carving on wood without "roughing" or "turning the grain," and is principally designed for the forming of spiral flutings and mouldings upon posts and other parts of household furniture.

Claim.—The inventor says: I do not claim the oppositely rotating cutters as new in themselves.

But I claim, first, in combination with the adjustable screw-cutting lathe, the described construction and arrangement of the gravitating frame L, and concentrically and oppositely rotating cutters K K^1, whereby the latter are made to cut in unison, and always over a point in the axis of the piece, in the manner and for the purposes set forth.

Second. In this connexion I claim the pair of finishing bits $z\ z^1$, operated automatically by means of the screw stem 1, ratchet wheel 2, tappets 3, and spring pawls 4, as described.

Third. In combination with the adjustable screw-cutting lathe, rotary cutters and gravitating frame, as aforesaid, I claim the described construction and arrangement of the roller *q* and bracket *p*, whereby (the brace O being disconnected) the said cutters may be vibrated in a (substantially) horizontal plane, at any desired angle to the stuff, for the production of spiral or oblique flutings on a prismatic post, as explained.

No. 18,001.—Augustine D. Waymoth, of Fitchburgh, Mass., assignor to Himself and Hale W. Page, of the same place.—*Improved Machine for Turning Spools.*—Patent dated August 11, 1857.—The wood being inserted and secured within the conical chuck F, shaft D is rotated and the tool *f* turns the spool to the required shape. The attendant by pressing his knee against the longer arm of lever L actuates the parts *n* and *g* in such a manner as will feed the tool *f* to the spool, reduce it to the required size, and next move it backward out of the way, when the severing cutter *o* will separate the turned spool from the wood.

Claim.—The combination of a stamping or milling wheel N with mechanism substantially as above described, for turning a spool from a piece of wood as explained; the said wheel being arranged so as to mill, engrave, or indent the end of a spool while said spool is being made or before it is separated from the stick as explained.

I also claim the combination of the two pitmen and the lever plate or wheel, or equivalent devices, with a lever for elevating the severing cutter, and that for carrying the body cutter; whereby the said body and severing cutters are made to operate in manner as specified, that is, during one single forward movement of the lever L, connected with the severing cutter.

I also claim the tapering screw-chuck F constructed as specified.

No. 16,705.—Peter H. Niles, assignor to Himself, Nehemiah Hunt, Ralph C. Webster, and Alfred Douglas, Jr., of Boston, Mass.—*Improved Device to Operate the Mandrel Cutters in Turning Tapering Sticks.*—Patent dated February 24, 1857.—The cutters *i i i* rest upon inclined planes $c\ c^1\ c^2$, which are attached to a sleeve D. This sleeve can be moved horizontally upon the arbor A by means of arm J working in a groove upon the sleeve. The arm J can be moved by means of arm H firmly attached to the same shaft *a*, from which arm J extends. The rear end of H works in the grooved cam F. The disk upon which F is fastened is cogged and gears into worm K, which latter can be revolved as may be required by means of handle *h*. The springs $d\ d^1\ d^2$ serve to move the cutters back towards the arbor when the inclined planes are withdrawn.

The inventor says: I do not claim a chuck with movable jaws.

But I *claim* the method described of operating the cutters of a revolving cutter head, viz: by means of the springs $d\ d^1$, inclined planes $c\ c^1$, and the sleeve D, operated by a cam F, in the manner as set forth.

No. 17,958.—Gilbert Bishop, of New York, N. Y.—*Improved Rotary Veneer Machine.*—Patent dated August 11, 1857.—The log being

squared, the cell *b* is screwed to the under side of the log, and both are placed in the log box; motion being given to shaft D^1, the edge of the curved knife E, which is secured to the lower side of disk D, is at once brought into contact with the log by a drawing cut; at the same time cam N presses upon toe L^3, which, being connected by arm K^1 and bar M with the end of the log box at *g*, forces the log box back and brings the log against the knife at a varying angle, and so that the knife in passing covers the whole upper surface of that end of the log which is towards *g*. When the cam N has passed the toe L^3, the other end g^1 of the log box, by means of the connecting bar M^1 and arm Q, has brought the toe L^2 forward so that it meets cam P; and being pressed upon by cam P, it vibrates the log box back by the same connexions, so that the surface of the log towards g^1 is covered by the knife at a varying angle of the cut; this again brings N and L^3 into position to again vibrate the log box, and the log to receive the stroke of the knife, as before.

Claim.—1st. The revolving disk and knife placed eccentrically to the disk upon the under surface or upon the edge of the disk, and having a curved edge for cutting the log in the line or direction of the edge of the knife.

2d. The vibrating of the log, by means of the log box, arms, cams, and toes, connected with the rotation of the shaft of the disk, as described, so as to present the whole top surface of the log to the edge of the knife as it passes, and by a continuously varying line of cut or stroke.

3d. The manner of constructing the log box with the movable bottom, composed of the cell and clamp pieces for holding, shifting, and adjusting the boxes described.

4th. The combination of the log box and feed apparatus operating together, as described.

No. 17,072.—Gilbert Bishop, of New York, N. Y.—*Improved Knife for Cutting Veneers.*—Patent dated April 21, 1857.—The knives A and A^1 are pivoted at *g* to rod D, and at *h* to plate B; and as a lateral motion back and forth is given to rod D, a similar vibratory movement is given to each of the knives A and A^1.

Claim.—Constructing the knife in sections, each having alternate smooth and toothed cutting edges attached together, and arranged and supported as described.

No. 16,529.—Peter Cook, of Tonawanda, N. Y.—*Improved Machine for Cutting Veneers.*—Patent dated Febuary 3, 1857.—E is a rod connecting the box *i i* to a revolving crank.

Claim.—The swinging box or head formed of the plates *i i*, said box or head working over concave beds B B and cutters C C, when the above parts are arranged substantially as shown, to allow the bolt F to feed itself to the cutters by its own gravity.

No. 17,190.—Gilbert Bishop, of New York, N. Y.—*Improved Machine for Cutting Veneers.*—Patent dated May 5, 1857.—When the log upon the carriage C begins to move towards knife P, the pin *x*, figure 3, on carriage C, strikes against finger 18, carrying it round a short distance, which also moves crank 17, drawing down pitman 15, operating lever 13, pawl 14, and ratchet wheel 12 on shaft T, thus turning shaft T; and through it all the screws *m* m^1 and m^2, by which the plate O is suspended upon which the knife P travels, and thus dropping the plate and knife the exact distance of the thickness of the veneer to be cut.

Claim.—First. The arrangement of the knife P, suspended between the upright frame pieces A A and N N, at right angles to the log, and giving it a long continuous drawing cut across the log, whatever may be the width of the log, by means of screw Q^2, operated in the manner and by the means described.

Second. The horizontal grooved and slotted plate or knife bed *o*, attached to the sliding plates M M^1 M^2 M^3, held and guided between the uprights, and carrying, supporting, and strengthening the knife in its whole length, and at the same time allowing it a vertical movement for feeding it to the log as required.

Third. The arrangement of shaft T, the ratchet wheel 12, the slotted burr and connecting rod, the vibratory bent lever and star wheel, operating and connected together as described, for the purpose of giving motion to the feed screws *m m* m^1 m^2, as described.

No. 17,736.—Joseph H. Goodell, of Bridgeport, Conn.—*Improved Machine for Straightening Veneers.*—Patent dated July 7, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The reduction or removal of the curve or scroll shape given the veneer in its cut from the log or stick, by the introduction and feed of it endwise; that is, transversely to the general direction of the curve, assumed by it in the cut between a roller or rollers, and carrying and pressing apron, arranged for operation together, and on the veneer, substantially as specified.

Further, in combination with the several rollers A B C D, and endless carrying and pressing apron H, when the same are relatively arranged as described, the adjustable frame M to the one roller D, to give increased or diminished pressure to the apron H, against the back of the pressing roller C, or interposed veneer, as and for the purpose set forth.

No. 17,329.—Edward Holmes and Britain Holmes, of Buffalo, N. Y.—*Improved Machine for Making Washboards.*—Patent dated May 19, 1857.—The back board of the washboard is placed upon the bed-plate S, fig 1, and between it and the wedge plate *t*; the zinc, being previously corrugated and fitted, is placed on the back board, the zinc projecting beyond the edges of the washboard. Motion being imparted to cranks F, the jaws *j* and j^2 are vibrated by the connexions *h b a*; the stiles of the washboard being placed within the spaces *x l*, the jaws *j* and j^2 press said stiles against the cutters *p*, the corrugations of which correspond with the corrugations of the zinc, said cutters making the incisions in the stiles, upon which the stiles are driven upon the zinc, the latter entering the incisions in the stiles.

Claim.—First. Increasing both stiles of the washboard at the same time, and also entering the zinc into the incision in both stiles at the same time, when the same is done by means substantially as set forth.

Second. Raising and lowering the end of the sliding arm *a* at its connexion with the vibrating lever *b*, for the purpose of controlling the number of blows to be given by the drivers and the force thereof, when the same is accomplished by means and used for the purpose substantially as described.

Third. The combination of the expanding iron frames with the wedge and cutters, for the purpose as set forth.

Fourth. The combination and arrangement of the series of levers *g h g h h j k h y* and *r n*, with the pin *g m*, and spiral spring *r n s*, and hook *l m*, or their equivalents, for the purposes substantially as set forth.

Fifth. The combination of the spiral spring K, or its equivalent, with the lever *l* and rod *m*, for the purpose of continuing the movement of the lever *l*, after the incision is made in the stiles, and the cutters withdrawn, so that the stiles will be carried to the zinc, and the zinc entered in the incision made by the cutters, substantially as described.

Sixth. The application of the eccentric *s*, in connexion with the lever *l* and its arrangements, or equivalents, for the purpose of applying power to make the incision in both stiles of the washboard at the same time, and also to facilitate the entrance of the zinc into both stiles at the same time, substantially as set forth.

No. 18,944.—O. L. Reynolds, of Dover, N. H., assignor to Hiram F. Snow, of Dover, N. H.—*Improved Machine for Cutting the zigzag Grooves in the Stiles of Washboards.*—Patent dated December 22, 1857.—This improvement consists in having a wheel E, provided with a zigzag cutting edge, placed on a shaft C, over a bed A, having a longitudinal groove F made in it to receive the stiles or side pieces G. The wheel, as it is turned, cuts the zigzag curves or slots in the stiles.

The inventor says: I do not claim zigzag cutting wheels as my invention, for I am well aware that they are old.

But I *claim* the method described of cutting or forming the grooves in the stiles or side pieces of washboards, in which corrugated metallic rubbing surfaces are employed.

No. 18,171.—L. B. Batcheller, of Arlington, Vt., assignor to West, Canfield, & Co., of the same place.—*Improved Method of Manufacturing Wooden Washboards.*—Patent dated September 8, 1857.—The cylinder C being set in motion, the board to be fluted is secured to the slide S. The front of the bed-piece B is now raised by tilting the edge of rocker *r*, to adjust the face of the board to the desired distance from the periphery of cylinder C, where it is held by detent *d*; and the front end of lever L is raised on to the periphery of the hub *s*, by which the rear end *s* is lowered down with pinion P, which takes hold of the teeth of rack R and moves the slide back the length of the blank, bringing the face of the blank into contact with the cutters *v*, which are so arranged as to flute and finish the whole surface of the board by passing one under the cylinder.

Claim.—The machine constructed, arranged, and operated as substantially set forth.

No. 18,379.—Charles F. Beverly, of Lancaster, Ohio.—*Improved Machine for Bending Wood.*—Patent dated October 13, 1857.—This invention consists in the employment or use of a stationary mould in connexion with radial bending arms so arranged and operated that the "stuff" is bent from the centre outwards, the arms moving simultaneously in opposite directions from the centre of the "stuff," so that it will conform to and fit snugly the periphery of the mould. This invention has a peculiar arrangement of means whereby the "stuff" may be readily adjusted to the machine.

The inventor says: I claim the stationary mould F and arms G G, arranged and operated as shown, or in an equivalent way, for the purpose of bending the stuff R from its centre outwards or towards its ends, as described.

I further claim attaching the arms G G to an adjustable block H, operating in connexion with the lever L, as shown, for the purpose of allowing the stuff to be readily inserted or adjusted between the mould F and strap M, as described; and also for properly holding the stuff to the mould while the stuff is being acted upon by the rollers of the arms G G.

No. 18,917.—Isaac Lindsley, of Providence, R. I.—*Improved Machine for Carving Wood.*—Patent dated December 22, 1857.—To one end of the lever R is attached the cord or chain S, which, passing over the pulleys V V, is, in turn, attached to the sliding cross-bar D; the lever R is adjusted by the cord or chain S in such a manner that, whatever may be the changes, up or down, as the work progresses in the position of D, the bar M will always be held in an appropriate position to afford a rest for the cam H to act upon; so that the lift and fall of the tracer by the cam will be, as to distance, uniformly the same in every stage of the work, no matter how great may be the ascent or descent of B in tracing the pattern.

The inventor says: I do not claim the use of a revolving cutter and accompanying tracer, as these have long been known and used.

But I *claim*, first, the use in carving machines of the lift and fall motion of the tracer, for the purpose of enabling the same to trace out any design, however sharp or difficult the same may be, as set forth.

Second. I claim the bar *m*, lever R, and cord S, in combination with the cross-bar D, in the manner and for the purposes set forth.

No. 17,169.—Waterman L. Ormsby, of Jersey City, N. J.—*Improved Machine for Splitting Wood.*—Patent dated April 28, 1857.—The sticks of wood to be cut are placed in the open box *g*, and as said box is drawn towards saw *d* by means of cord *h*, which is attached to it, and passes around the driving shaft *a*, the rod *x* of the clamp slackens, the stick is held down and pressed against the saw, which cuts clear through it. By the revolution of disk *k*, the motion of the box *g* is reversed, the clamp slackens its hold, and by the time the stick has dropped down again to *f*, preparatory for another cut, it is again moving to the saws. While one of the feed boxes *g* is conveying its charge to the saw, the other is receding from it to receive a fresh stick. The pieces of wood, as they are cut, are pushed along by the feed boxes *g* towards the centre of the gutter *f*, where they pass down to the splitting chisels *m*, which are reciprocated by means of crank shaft *p* and pitman *r*, and which split the wood.

Claim.—First. The arrangement of the chisels in broken or serrated and in diagonal lines, according to the nature of the wood to be split.

Second. The arrangement by which the apices of one row do not coincide, but alternate with those of an opposite row.

Third. The feeding apparatus and clamp, inclined as represented, by which sticks put into the feeding boxes require no further attention or handling till they drop as kindling wood from the splitting chisels.

Fourth. The combination of the feeding, sawing, and splitting apparatus, substantially as described, by which greater economy of time and power in preparing kindling wood is achieved than has been hitherto attained.

Fifth. The combination of the guide grooves in the flanch of the hopper, thereby avoiding the introduction of separate guide plates for the chisels.

No. 17,061.—William L. Williams, of New York, N. Y.—*Improved Machine for Splitting Wood.*—Patent dated April 14, 1857.—The pieces of wood cut to equal lengths are placed in an upright position on the feeding floor A; motion being given to driving shaft H, the prongs *d* of the feeding chains *c* push the wood up towards the knives *p*; the several pieces of wood, in being fed up to the knives, are jammed towards each other by reason of the tapering form of the sides *b* of the feeding floor; as the knives *p* split the wood, the levers *l*, turning on pivots *m* and operated by cams *n*, cause the sides *i* to move outward at each upward movement, and inward on each stroke of knives *p*.

Claim.—First. The combination of the feeding chains, arranged as set forth, with the stationary conveying floor for effecting the feeding up of the sticks in a fire-wood splitting machine, substantially as described.

Second. The movable side clamps operated by a positive motion, governed by the motion of the knives, and proportioned to the displacement of the wood by said knives, for the purpose of supporting the sticks laterally, and also of relieving the pressure upon the same, substantially as set forth.

Third. The arrangement of the two separate knives, each extending entirely across the feeding floor, and being set at such angle to each other, and such distance apart, as will effect the cross or second cutting upon a block, which is not at that feed receiving the first cut, substantially as described.

No. 17,249.—**Henry Mellish**, of Walpole, New Hampshire, assignor to **Charles Pope**, of Brookline, Massachusetts.—*Improved Cutters for Turning Cylindrical Wooden Boxes.*—Patent dated May 5, 1857.—The outer cylindrical surface of the box is formed by means of the cutters *a*, in the cutter ring H, while the cutting edge *x* on the tubular cylinder G cuts the ledge on the top of the box for the cover to rest upon. The cutting tool *m*, by means of its blades *o* and *p*, reduces the wood to form the interior surface of the box, the chips being discharged through the throats a^2.

Claim.—The cutting tools H, *x*, *m*, *t*, made with cutters or cutting edges, to operate substantially as specified, to cut and plane the box or box cover.

No. 18,646.—**Alexander S. Newton**, of Brandon, Vermont.—*Improved Machine for Turning Wooden Boxes.*—Patent dated November 17, 1857.

The inventor says: I *claim*, 1st. The use of the combination of the grooved rod and bevel wheel on the end thereof with the wheel Q and cam T, substantially as set forth.

2d. I also claim the use and combination of the grooved rod, and bevel wheel on the end thereof with the wheel R and cams X and Y, substantially as set forth.

3d. I also claim the use and combination of the cam X with the lever Z, cutter lever b^2, and discharging bar f^2, or their equivalents, separately or collectively, for the purposes set forth.

4th. I also claim the cam Y, in combination with the lever K^2 and rack r^2, or equivalents for the said parts, substantially as set forth.

No. 16,953.—**Joel A. H. Ellis**, of Springfield, Vermont, assignor to **Joel Woodbury**, of the same place (trustee).—*Improved Form or Mould on which Wooden Slats, &c., are made into Baskets.*—Patent dated March 31, 1857.—The hoop R^1 which forms the inner hoop of the basket top is placed in the groove B, where it is held by means of the clamps F; the bottom, which consists of the pieces B and B^1, is placed on the top of the mould into the recess *m* and fastened down by means of a lever nut; the splints are then inserted between the plates B and B^1, and the hoop R is forced down over the splints; the bottom pieces B and B^1 are then nailed together, and the basket is completed.

Claim.—The basket mould, constructed substantially as described, viz: of a block or former A, made with annular and top recesses, and provided with a shoulder ring C, hoop catches F F, and the bottom clamping plate and screws, or equivalents therefor, the whole being used in the manner and for the purpose as specified.

No. 17,992.—**Baxter D. Whitney**, of Winchendon, Mass.—*Improved Machine for Smoothing Planed Wooden Surfaces.*—Patent dated August 11, 1857.—By depressing lever S the clamp M is raised, and the piece of stuff to be smoothed is laid on the carriage B, and is held there by clamp M on releasing lever S. By raising lever G to the position represented in the engraving, the pinion C is engaged with rack *b*; and as shaft D is rotated, the carriage B is drawn along under the scraper *n*, and the stuff is planed. The carriage B is moved forward until the dog K comes in contact with lever H, when said lever is tripped from under lever G, which is allowed to drop, and the pinion C falls out of gear with the rack *b*, and the carriage is free to be drawn back for the next operation.

Claim.—The scraper *n*, pivoted and operating in the manner substantially as described, in combination with a mechanism for the purpose of carrying the wood forward in contact with the scraper.

XV.—STONE AND CLAY.

No. 18,629.—**John B. Collen**, of Philadelphia, Pa.—*Improved Brick Machine.*—Patent dated November 17, 1857.—This improvement consists in employing perforated plates, so arranged and operating as to serve the double purpose of forming the bottom of the moulds and forcing the brick free from the same, in combination with another set of plates so arranged in respect to the first that the superfluous clay which passes through the perforations, as each brick is being formed, may be discharged at the rear of the machine.

Claim.—The perforated plates F^1, operating as described, in combination with the inclined plate or apron *j*, the whole operating in the manner and for the purposes set forth.

No. 16,385.—**Jacob Hockman**, of Mexico, Ind.—*Improvement in Brick Machines.*—Patent dated January 13, 1857.—The hopper B being filled with clay, the operator lifts up the handles H, thus bringing the rollers P in contact with the ground, by means of which the cylinder W and driving wheels A A^1 are raised from the ground. The machine is now moved to the place designated for the reception of the moulded bricks, when the handle H is lowered, so as to let the wheels A A^1 rest on the ground; and as the machine is drawn along by pushing on handle F, the wheels A and mould cylinder W are rolled over the ground, and the bricks are discharged from their moulds by roller J operating the clearers *m*, and are deposited on the ground.

Claim.—The under frame or carriage H G^1 G^1, and trucks or rollers P P^1, in combination with the main supporting wheels A A^1 and rotating cylinder of moulds W, when arranged to operate in the manner and for the purposes specified.

No. 16,449.—**B. F. Nave**, of Roanoke, Indiana.—*Improvement in Brick Machines.*—Patent dated January 20, 1857.—As the machine is drawn along, the cross bars V, which slide in grooves of the mould wheel and operate the moulds L, act upon the lever U, each cross-bar moving lever U from its position, shown in full lines, to the one shown in dotted lines. In the latter position the cup 2 of the said gauge is filled with sand, which, as lever U descends, is discharged on mould L, which, when thus sanded, passes into hopper H, to be filled with clay.

Claim.—The peculiar manner of operating the said gauge T by means of bent levers U U, in combination with cross-bars V and shields W, when the described parts are constructed and arranged for joint operation in the manner and for the purposes set forth.

No. 16,561.—William Wood, of Hartford Connecticut.—*Improvement in Brick Machines.*—Patent dated February 3, 1857.—By this arrangement, all obstructions in the press-box or grate can be quickly removed and the machine adjusted for use again. The bottom of the slides *s* being bevelled, a stone will frequently force itself under, and lift up the slide and come out. D are the moulds.

Claim.—Constructing the front of the press-box *c* with the front of the grate L attached thereto, so that, by means of slides S and swing front J, a portion or all of the front of both press-box and grate can be raised in the manner and for the purpose set forth.

No. 16,839.—Almon V. Hough and Richard W. Jones, of Green Castle, Indiana.—*Improvement in Brick Machines.*—Patent dated March 17, 1857.—The nature of this invention consists in the use and application of two horizontal shafts within a perforated moulding chamber, having oval or flanged wings at one side, and arms or beaters on the other side, acting both as mixers and pressers, revolving together inversely, cutting off from above a sufficiency of mud to fill the moulds.

The inventors say: We *claim* the use and application of two horizontal shafts, provided with oval or flanged wings V on one side, and arms or beaters V on the opposite side, in the lower perforated chamber O, and in combination therewith, for the purpose of moulding and pressing the brick in the manner and for the purpose set forth.

No. 16,907.—James A. Dorr, Ira Hersey, and Edward G. Oldfield, of New York, N. Y.—*Improvement in Brick Machines.*—The operation of this machine is as follows: Motion being imparted to shaft H, the stud A^1 on cam L operates the forked lever Y, which, turning on its fulcrum Z, operates lever X, which pushes the charger W filled with clay from under the hopper C^1 over a table and above the moulds; the mould frame M and shaft I are raised by the compound action of the cams L upon the gliding rollers K and by the action of the eccentric R. These cams and eccentrics regulate the motion of the mould boxes J D^1 and V in which the bricks are formed, and when formed they are discharged and pushed on to the table H^1 by the charger W as it brings another charge to fill the moulds

Claim.—The combination of the cams L L, eccentric R, and slotted projection P attached to strap Q, with the rollers K K, beam I, and lower pistons J J, when said parts are constructed and arranged in the manner and for the purpose set forth.

No. 17,131.—G. I. Washburn and E. H. Bellows, of Worcester, Massachusetts, assignors to Themselves and C. Washburn, of the same place.—*Improvement in Brick Machines.*—Patent dated April 21, 1857.—The prepared clay is placed in mould No. 1; and as the mould cylinder is revolved, the cam *i*, striking on toe *h*, lifts the plunger bar P out of the preceding mould 1, and holds it up clear of the edge of the heads G. At the time the bar P is lifted out of the notch M, one of the pins *m* strikes against the short arm of the bell crank W, which throws the bar P, with the arm R and lever X, into the position seen in dotted lines in fig. 1, when the cam *i*, leaving toe *h*, allows the bar P to rest on the edge of the heads G; and as the cylinder moves on, the bar P strikes against the higher side of the notch M and drops into it; and as it is carried along with the cylinder, the continued motion of said cylinder causes a pressure to be applied to the bar P and its plunger which has entered the mould. As the cylinder has been progressing, the pins *a* have followed the cam grooves I, and cause the plungers H to slide in the mould, and at the proper point to compress the brick against bar P. When the brick has been thus pressed, the further motion of the cylinder causes the plunger H at No. 3 to force the brick out of mould I, which is then deposited on an endless carrier cloth.

Claim.—1st. The method described of applying pressure to the plunger by means of the radial arms R and levers X, operating in the manner substantially as set forth for the purpose specified.

2d. The combination of the radial arms H H with the sliding moulds I I and moving block or plunger P, when said parts are constructed and arranged to operate in relation to each other substantially in the manner and for the purpose set forth.

No. 17,220.—Joseph W. Jayne, of Sandusky Ohio.—*Improvement in Brick Machines.*—Patent dated May 5, 1857.—Motion being imparted to the main disk wheel E F which carries the brick moulds, each of the charges H successively passes under the hopper *h*, and becomes filled with clay. The charges in succession move gradually out and fill the moulds, and slide in again to be in turn filled. After the mould is thus filled by the charger, the upper and lower followers P and P^1 which had been previously kept apart by the track *a b c*, and a corresponding lower track, are released from the track and rest upon the surface of the clay above and below. The revolution of E F now brings each pair of followers P and P^1 successively between the converging surfaces m^2 m and m^1 m^3 of the yoke M M^1; and as the rollers *f* and f^1 roll along these planes, the pressers P P^1 are forced together, and a powerful pressure is exerted on both sides of the clay in the mould; and this continues until the pressers pass from the extremity of the yoke, when the track *a b c* and the projections *e* cause the upper pressers to rise entirely above the mould and high enough to escape above, and the inclined track *d i* causes the lower presser to rise through the mould and to push up the formed brick to the level of the upper surface of wheel E F, whence it can be removed.

The inventor says: I *claim*, first, the radial, sliding, and revolving charges H H H, in combination with the eccentric slot or groove L L^1

L^2 L^3, and horizontal mould wheel E F, said parts being arranged and operating substantially as described.

I do not claim generally the use of double conveying surfaces for pressing bricks.

Second. The combination of the peculiarly shaped yoke M M^1 with the mould wheel E F and the sliding and revolving charges H H H, the whole being constructed and operating conjointly, and arranged substantially as described.

No. 17,248.—James Hotchkiss and William H. Scofield, of Yellow Springs, Ohio, assignors to Themselves and William R. King, of the same place.—*Improvement in Brick Machines.*—Patent dated May 5, 1857.—The operation of this machine is as follows: First, the upper plunger carrier G of plunger H is drawn inward, and the carrier of the lower plunger I outward, for receiving the clay from hopper A, which drops into mould *d;* then as the mould wheel E passes around, plunger I remains out, and the carrier of plunger H is forced outward. The pressure is then communicated to the brick by the action of cams M and N on the plungers H I. The plunger I then descends from the mould, and its carrier is drawn in away therefrom till the mould *d* arrives over the aperture T, when plunger H is forced down by cam L, thereby removing the brick from the mould; the plunger H is then raised out of the mould *d* by cam P, ready to repeat the operation just described.

Claim. The combination of the plungers H H and I I with the sliding carriers G G and mould wheel E, when the same are so constructed and arranged as to operate in relation to each other in the manner and for the purposes set forth.

No. 17,390.—Stephen Parks, of San Francisco, California.—*Improvement in Brick Machines.*—Patent dated May 26, 1857.—The tempered clay in hopper C is forced by blades S of the rotary scraper D through the space *e* into the mould box C, and underneath the piston *u;* and motion being given to the several parts of the machine, the piston *u* is forced downward, compressing the clay in the mould box. When the piston *u* rises, another mould is brought underneath the box *c*, the scraper *i* taking off the superfluous clay, and the smoother *h* smoothing the upper surface of the clay in the mould.

The inventor says: I do not claim the rotating shafts *q* provided with teeth or arms *g* for tempering the clay, for they have been previously used.

Neither do I claim feeding the moulds to the press-box by means of a reciprocating or swing cross-head, for I am aware that such a device has been used before.

But I *claim* feeding the moulds to or underneath the moulding or press-box C, and also discharging them therefrom by means of the reciprocating and swinging cross-head f^1 operated by the rods a^1 a^2 connected with the slides b^2, and the shafts A^1 B^2 when used in combination with the pivoted inclined planes *d d* and projecting arms g^1 g^2 substantially as described for the purpose specified.

No. 17,759.—Stephen Ustick, of Philadelphia, Pennsylvania.—*Improvement in Brick Machines.*—Patent dated July 7, 1857.—A detailed description of this invention would take up too much space to be given here; the principal features thereof will be understood by reference to the claim and engravings.

Claim.—The piston E and filling box E^2, when connected together as described, in combination with the movable and weighted mould box G and lower piston K, when said parts are constructed and arranged to operate in relation to each other in the manner and for the purposes set forth.

No. 18,040.—P. S. Devlan, of Reading, Pa.—*Improvement in Brick Machines.*—Patent dated August 25, 1857.—As shaft B is rotated, the feed wheel *a* in hopper C is turned one quarter of a revolution at each revolution of shaft B, by the arrangement of rod *e*, lever *d*, pawl 3, and ratchet 2; at the same time the plunger G forces the clay into the mould *n*, said plunger being operated by eccentric E. When the mould *n* arrives opposite the plunger *t*, the pin *r* operates slide *s*, rod *u*, and plunger *t*, and the latter pushes the pressed brick from the mould, and the brick is deposited upon the slide *v*.

Claim.—In combination with a clay receptacle, supplied by a positive feed, and a rocking or partially rotating mould wheel H, the plungers G and *t*—the first for pressing and the second for delivering the pressed brick; the parts being so arranged as that said wheel will rock or roll from one plunger to the other and be held in the manner and for the purpose set forth.

No. 18,166.—Stephen Ustick, of Philadelphia, Pa.—*Improvement in Brick Machines.*—Patent dated September 8, 1857.—The clay passes from hopper D into the oscillating filling box E^2 each time that said filling box comes under hopper *d;* and as yoke H is depressed by a suitable cam motion, the clay is conveyed from the filling box E^2 into the compressing mould G by means of the projections *c* and depressions c^1 in such a manner as to get a greater portion of clay in the corners and edges of the mould than in the middle, and thus to secure great compactness and solidity of the brick.

Claim.—The oscillating filling box E^2, with projections *c c* at its ends, in combination with the condensing mould G, having depressions c^1 c^2 at its ends, when said parts are constructed and arranged to operate in relation to each other, and in connexion with the pistons E^1 and K^1, as described.

No. 18,226.—George I. Washburn, of Worcester, Mass., assignor to Himself and Anson L. Hobart, of the same place.—*Improvement in Brick Machines.*—Patent dated September 15, 1857.—As the machine is drawn along, the clay passes from hopper D, through passages *b* and spout F, to the mould E, the friction of the moulds upon the ground being sufficient to cause the endless belt of blocks to revolve over the drum G; and as each mould is filled, the pins *i* i^1 enter and ascend the inclined groove *p*, by which the mould is raised from the ground and the brick is left upon the surface in the required place for it to dry without being handled; as the moulds ascend the groove *p*, the pins *i* i^1 strike alternately against the switch *r* and enter their respective grooves *o n*, by which they are again guided around over the drums G.

Claim.—The combination of the moulds E, of the frame A, and hopper D, constructed, arranged, and operated together, substantially in the manner and for the purpose described.

No. 16,468.—George Crangle, of Philadelphia, Pa.—*Improvement in Rotary Brick Machines.*—Patent dated January 27, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I do not claim the use of a roller for pressing the clay into the moulds of a rotary mould cylinder; nor do I claim any particular form or construction of the pressing surfaces of the roller B; nor do I claim a pressing cylinder with recesses and moving platens for receiving the clay from the surface of the respective partitions of the opposite mould cylinder and forming it into bricks by the pressure of the said surfaces, as in Zach. M. Paul's machine, patented October 3, 1854.

I *claim* the pressing roller or small cylinder B, having the recesses *h h* fitted with the coupled moving pistons or slides *k k*, so that as the surplus clay on the face of the partition which is next above the mould, then forming a brick, is pressed into the recess of the roller B by the said partition, the opposite piston shall thereby be caused to discharge the previously taken up clay which is in the recess at the opposite side of the pressing roller B; being constructed and operating in combination with the mould cylinder A, in the manner and for the purpose set forth.

No. 16,649.—Samuel Lillie, Jr., of Fort Wayne, Ind.—*Improved Brick Press.*—Patented February 17, 1857.—A hollow box with a grate in its bottom is employed for a plunger, to force the clay into the moulds; and there is an adjusting platform for allowing the plunger and moulds to operate correctly when gravel or stones may be in the clay. The plunger box for stuffing the moulds is operated in pressing by a treadle, but it descends by its own gravity. The engraving does not exhibit the pug-mill which is arranged above the hole *f*.

The inventor says: I do not claim the mud-mill, for that is well known; but I *claim* forcing the clay into the moulds and compressing it therein by means of a hollow plunger E, fitted and working within the box C, and connected with the platforms I J, on which the moulds are placed, so that the plunger and mould to be fitted rise and fall together, substantially as shown and described.

No. 18,318.—Ephraim H. Bellows, of Worcester, Mass.—*Improved Brick Press.*—Patent dated October 6, 1857.—This invention consists in the employment or use of an endless chain or carrier, in connexion with two reciprocating plungers and a press-box.

The bricks, designated by K in the drawing, being partially dried and placed between the links *e*, in the angle of the guide J, and motion being given to the shaft A, an intermittent movement is given to the endless chain G by means of the notch *j* in the frame N catching against or over the rivets of the joints *f*, said frame being operated by means of the arms *i i*, rock shaft M, bar K, and eccentric L; at the same time a reciprocating movement is given to the plungers C C by the revolution of the cams E E.

The bricks are carried by the chain successively before the box or case F, and may be taken from the chain by hand, or other proper means, as they are moved along after being ejected from box F.

In showing his *claim*, the inventor says: I am aware that plungers have been so arranged as to operate simultaneously at opposite sides of a brick for the purpose of compressing the same. This device is common to many brick presses, and I therefore do not claim broadly such device.

But I claim the combination of the plungers C C, intermittently moving apron G and frame N, with the case or box F, the whole being constructed and arranged so as to operate conjointly as and for the purpose set forth.

No. 17,546.—R. R. Harbour, of Oskaloosa, Iowa.—*Improvement in Brick Presses.*—Patent dated June 9, 1857.—Rotary motion being given to the circle-plate A^1, the moulds E come successively under a hopper, and are filled with clay from said hopper. As soon as a mould E is charged, one of the levers K comes in contact with the friction-wheel L, forcing in slide J of said mould, and at the same time forcing out the slide J^1 of the opposite mould E^1. As soon as this occurs, one of the pressing levers H comes in contact with the friction-wheel, and is gradually forced with its follower G towards the axis of the circle-plate, thereby pressing the brick; the opposite follower G^1 being by the same movement forced towards the periphery of the wheel, thus releasing its pressed brick. The discharging of the bricks is effected by means of levers M passing over rollers N, by which the bottoms of the moulds are raised and the bricks are forced out upon the top of the circle-plate.

Claim.—The employment, in combination with the wheel L, of the two sets of levers, H H^1 and K K^1, arranged eccentrically within a circle, and on a revolving circle-plate, and connected with the tops of the moulds of said plate, and with the followers of the same, substantially as and for the purpose set forth.

No. 17,203.—George Crangle, of Philadelphia, Pa.—*Improvement in Rotary Brick Machines.*—Patent dated May 5, 1857.—Clay being placed in the hopper, and an alternate stopping and moving rotation being given to the cylinder A in the usual manner, the bed-piece B forms a bottom to the moulds *f* during the time they are under the hopper, and subsequently under the plungers, and then allows the pressed brick to pass to the place of discharge without contact with the bed-piece B.

The inventor says: I do not claim the manner of supporting nor of operating the cylinder and plungers specified or described, as these have been described and used before in other cases.

But I *claim* a cylinder A, without movable bottoms to the moulds, in combination with a bed-piece B, fixed to the frame of the machine, so as to serve the purpose of said bottom, the said cylinder A and bed-piece B being constructed, arranged, combined, and operated together, as and for the purpose set forth.

No. 17,939 —I. Z. A. Wagner, of Philadelphia, Pa., assignor to Edward S. Renwick, of New York, N. Y.—*Improvement in Machines for Moulding Bricks.*—Patent dated August 11, 1857.—As the cylinder A is rotated, the moulds *a* pass into hopper D, where they become filled with clay, the excess of which is stripped off by wheel C, and the brick is pressed by wheel E, and is discharged by rods *e*, which are operated by their rollers *c* coming in contact with guide-board *d*.

Claim.—In my machine for making tubular bricks, the combination of the mould-box *a* with a core G and an annular bottom *b*, or piston, the whole constructed and operating substantially as set forth.

No 16,457.—R. H. Smith, of Cincinnati, Ohio.—*Roofing Cement.*—Patent dated January 20, 1857.—Twenty-one parts of coal tar and one part of India rubber solution, twenty-eight parts of coal tar and one part of gum shellac dissolved in alcohol, twenty one parts of coal tar and one part of boiled linseed oil, twenty-eight parts of coal tar and one part of common molasses, are thoroughly incorporated, after having each solution well stirred and mixed; and four gallons of this mixture, with one quart of the drying compound, composed of the following parts, will form a roofing cement:

Six parts of quick-lime and one part of pulverized gypsum, thirty parts of quick-lime, one part of yellow ochre, twenty-four parts of quick-lime, one part of litharge.

The inventor says: I do not claim any or either of the above mentioned ingredients when used of themselves, or when combined with each other, broadly.

But I *claim* a cement, formed by materials prepared in the manner and in the proportions set forth, whereby a cement may be made and applied to roofing and other purposes, without the aid of fire to render it fluid, and by which the offensive smell arising from the use of coal, tar, &c., is neutralized, as described.

No. 17,505.—Ira Hersey and James H. Van Riper, of Mew York, N. Y.—*Improvement in Clay Pulverizers.*—Patent dated June 9, 1857.—The clay enters the grated cylinder O from hopper S; and motion being given to the driving shaft E, it is transmitted, by pulleys J and L, to shaft C; and as the beaters M revolve with shaft C, they pulverize the clay in cylinder O, and the pulverized clay drops through the openings in the cylinder, while the spirally arranged beaters M push the stones and other matter to the other end of the cylinder, discharging them over chute Z. The efficiency of this machine is augmented by imparting to cylinder O a rotary motion in a direction contrary to the revolutions of the beaters M, which is effected by pulley R working in a grooved pulley Q of the cylinder O.

Claim.—The combination of the grated cylinder or separator O O, open at its ends, and supported on its outside by the driving-wheels Q Q, with the movable and adjustable beaters M M on the shaft C C, when the same are constructed and arranged for joint operation, substantially as described.

No. 18,059.—Samuel Richards, of Philadelphia, Pa.—*Improvement in Glass Furnaces.*—Patent dated August 25, 1857.—The fire being made in the drying furnace C, the wood is fed in single sticks or small bundles on to the links I of the endless carrier which conveys the wood slowly through the flue F F^1, and then delivers it in a dry state at the box L, whence the sticks slide down into the glass furnaces B and B^1 by means of the chutes M^1 M M^2.

Claim.—The arrangement of the drying ovens C, the flue F F^1, and the endless carrier I I I, and the chutes M M^1 M^2 M^3, in combination with the glass furnaces, in the manner and for the purpose substantially as described.

No. 17,960.—Hiram Dillaway, of Sandwich, Massachusetts.—*Improvement in Glassware Holders.*—Patent dated August 11, 1857.—To insert an article into this holder, the part C of the yoke is pulled against a stand H I, and the article can be inserted laterally between the plates B D; or if the article is of a parallel sided form, it is inserted between the dies *g*, which hold it tightly as the plate B is driven towards plate D.

Claim.—An instrument composed of a handle, a supporting plate, a yoke, and a spring, combined to operate substantially as described, for the purpose set forth, whether the yoke be provided or not with an internal holding die *g g*, as specified.

No. 18,392.—Timothy Deming, of East Hartford, Connecticut.—*Improvement in the Manufacture of Artificial Hones.*—Patent dated October 13, 1857.—The object of this invention is to produce, from emery and glue, a more compact and solid hone, one more efficient in its operation and more durable than the kind hitherto constructed, and one resembling, in every essential respect, a natural stone or hone.

In the drawings, A represents a flat wooden stock on which the mixture of glue and emery is placed. One or both sides of the stock, as desired, may be covered with a number of thin layers *a a a* of the mixture, and each layer compressed after it is applied to the stock, the pressure being sufficiently powerful to render the mixture solid and very compact. Any number of layers may be applied, according to the thickness required.

The inventor says: I do not claim a compound of glue and emery for constructing and forming artificial hones; for this is a well known composition, and is commonly used for such purpose.

But I *claim* the particular mode of applying such composition as described—that is to say, forming or constructing the hone by placing the composition in thin layers on the stock or bed, and subjecting each layer to a requisite degree of pressure.

No. 17,098.—**Aaron Jeffries**, of Alleghany county, Pa.—*Improved Lime Kiln.*—Patent dated April 21, 1857.—This lime kiln is constructed in the form of a hexagon on the exterior, on the alternate sides of which are placed the three arched furnaces A B C. The draught from each of these furnaces strikes the alternate blank wall directly opposite the interior part of the furnace, thus heating every part of the circular chamber D in a perfect manner.

The inventor says: I do not claim the form of the stack above the arches in the interior.

But I *claim* the combination and arrangement of the three furnaces A B C with the cooling or draught flues *b b b*, when the same are constructed and arranged in relation to each other within a hexagonal stack, in the manner and for the purpose set forth.

No. 17,056.—**William Robinson**, of Baltimore, Md.—*Improvement in Lime Kilns.*—Patent dated April 14, 1857.—The lime is fed in at the top of the stack and settles down in process of burning, it being divided in two parts by the bridge *a*, and eventually drops to the bottom of the chambers *c*. The limestone is burned by the flame and heated gases passing through flues *e* leading from the central fire-chamber E, and through flues *i* leading from the side fire-chambers G and H.

Claim.—In connexion with the central fire and partition B, the arrangement of the side or auxiliary fires G H, for the purpose of more equally introducing the heat into the stack, and promoting more uniform burning, as set forth.

No. 17,807.—**Leonard Phleger**, of Philadelphia, Pennsylvania.—*Improvement in Lime Kilns.*—Patent dated July 14, 1857.

The limestone is thrown on to the frame of the cells H H; and as the heat rises from the fire below, it passes through the spaces J between the cells *l*, and communicates its heat to the limestone above; a constant circulation of water is kept up from a reservoir and prevents the cells *l* from being burned.

Claim.—The employment in a lime kiln of a series of water cells for supporting the limestone, arranged and operating as described.

No. 17,885.—**John McGregor**, of Selma, Alabama.—*Improvement in Lime Kilns.*—Patent dated July 28, 1857.

Figure 1 represents a longitudinal vertical section, and fig. 2 a horizontal cross section of this kiln. In the line *x x* the invention relates to the particular construction of the kiln, and will be understood by reference to the claim and engravings.

Claim.—The particular arrangement of the furnaces or fire chambers K K K K in relation to each other and to the square chamber C, when the same are constructed and used in combination with the draught holes *d d* and fire flues M, in the manner and for the purpose herein set forth and described.

No. 17,889.—**Clark D. Page**, of Rochester, New York.—*Improvement in Lime Kilns.*—Patent dated July 28, 1857.

The sticks of wood, being introduced into the arches A, are exposed upon the grate G to the draught entering through the holes *h*. The small fragments of charcoal fall down upon plate B; and when they have accumulated to a sufficient extent, the plate B is withdrawn and the fragments will fall on to the second grate *r*, and may there be completely burned up; and the heated gases arising from their combustion are carried into the kiln through the tubular flue T, where they serve to aid the general calcination.

Claim.—The combination of the primary grates G and the secondary grates *r* with the plate B and tubular flue T, when the same are arranged to operate in relation to each other in the manner and for the purpose set forth.

No. 17,986.—**Daniel Stephens**, of Elmira, New York.—*Improvement in Lime Kilns.*—Patent dated August 11, 1857.

The oblique flues C are formed in the dividing wall of the taper branches *b*, and afford all the advantages of wide horizontal and vertical flues without having the disadvantages of either.

Claim.—The diagonal or oblique flues with sloping bottoms, arranged substantially as described, in combination with the shaft B and its branches *b b*, for the purpose specified.

No. 18,531.—**A. G. Anderson**, of Quincy, Illinois.—*Improvement in Lime Kilns.*—Patent dated November 3, 1857.

A is the furnace, situated under the cupola B, and arched over with a fire-brick arch C, in which are numerous orifices *a* for the escape of the flame and products of combustion from the furnace up through the cupola. This furnace extends right across the bottom of the cupola, as shown in fig. 1, but not the whole width of it, as a throat *b* is made on each side of it for the withdrawal of the lime. D D are chambers at the bottom of the throats for the reception of the lime, and *d d* are doors through which the lime is withdrawn from the chambers; *e e* are the furnace doors; E is the pit; F F are sliding dampers, to close the throats to prevent a draught of cold air through them into the cupola while the lime is being withdrawn; *f f* are passages in the walls of the cupola for the upward escape of gasses from the lime in the chambers.

Claim.—The combination of the perforated arch C and escape passages *f f* with the throats *b b*, chambers D D, dampers F F, holes *g g*, and supporting and removable bars *h h*; the same being constructed and arranged for joint operation substantially as and for the purpose set forth.

No. 18,635.—**Powell Griscom** and **Charles S. Denn**, of Baltimore, Maryland.—*Improvement in Lime Kilns.*—Patent dated November 17, 1857.

The nature of this invention consists in an arrangement embracing, for united operation, the following features: 1st. The inverted oblong pyramidical lime basin B in the base A of the kiln, having discharge and clearing passages N N. 2d. The fire grates D D and ash pits E E extending from the front to the back of the basin on each of the

No. 17,098.—Aaron Jeffries, of Alleghany county, Pa.—*Improved Lime Kiln.*—Patent dated April 21, 1857.—This lime kiln is constructed in the form of a hexagon on the exterior, on the alternate sides of which are placed the three arched furnaces A B C. The draught from each of these furnaces strikes the alternate blank wall directly opposite the interior part of the furnace, thus heating every part of the circular chamber D in a perfect manner.

The inventor says: I do not claim the form of the stack above the arches in the interior.

But I *claim* the combination and arrangement of the three furnaces A B C with the cooling or draught flues *b b b*, when the same are constructed and arranged in relation to each other within a hexagonal stack, in the manner and for the purpose set forth.

No. 17,056.—William Robinson, of Baltimore, Md.—*Improvement in Lime Kilns.*—Patent dated April 14, 1857.—The lime is fed in at the top of the stack and settles down in process of burning, it being divided in two parts by the bridge *a*, and eventually drops to the bottom of the chambers *c*. The limestone is burned by the flame and heated gases passing through flues *e* leading from the central fire-chamber E, and through flues *i* leading from the side fire-chambers G and H.

Claim.—In connexion with the central fire and partition B, the arrangement of the side or auxiliary fires G H, for the purpose of more equally introducing the heat into the stack, and promoting more uniform burning, as set forth.

No. 17,807.—Leonard Phleger, of Philadelphia, Pennsylvania.—*Improvement in Lime Kilns.*—Patent dated July 14, 1857.

The limestone is thrown on to the frame of the cells H H; and as the heat rises from the fire below, it passes through the spaces J between the cells *l*, and communicates its heat to the limestone above; a constant circulation of water is kept up from a reservoir and prevents the cells *l* from being burned.

Claim.—The employment in a lime kiln of a series of water cells for supporting the limestone, arranged and operating as described.

No. 17,885.—John McGregor, of Selma, Alabama.—*Improvement in Lime Kilns.*—Patent dated July 28, 1857.

Figure 1 represents a longitudinal vertical section, and fig. 2 a horizontal cross section of this kiln. In the line *x x* the invention relates to the particular construction of the kiln, and will be understood by reference to the claim and engravings.

Claim.—The particular arrangement of the furnaces or fire chambers K K K K in relation to each other and to the square chamber C, when the same are constructed and used in combination with the draught holes *d d* and fire flues M, in the manner and for the purpose herein set forth and described.

No. 17,889.—Clark D. Page, of Rochester, New York.—*Improvement in Lime Kilns.*—Patent dated July 28, 1857.

The sticks of wood, being introduced into the arches A, are exposed upon the grate G to the draught entering through the holes *h*. The small fragments of charcoal fall down upon plate B; and when they have accumulated to a sufficient extent, the plate B is withdrawn and the fragments will fall on to the second grate *r*, and may there be completely burned up; and the heated gases arising from their combustion are carried into the kiln through the tubular flue T, where they serve to aid the general calcination.

Claim.—The combination of the primary grates G and the secondary grates *r* with the plate B and tubular flue T, when the same are arranged to operate in relation to each other in the manner and for the purpose set forth.

No. 17,986.—Daniel Stephens, of Elmira, New York.—*Improvement in Lime Kilns.*—Patent dated August 11, 1857.

The oblique flues C are formed in the dividing wall of the taper branches *b*, and afford all the advantages of wide horizontal and vertical flues without having the disadvantages of either.

Claim.—The diagonal or oblique flues with sloping bottoms, arranged substantially as described, in combination with the shaft B and its branches *b b*, for the purpose specified.

No. 18,531.—A. G. Anderson, of Quincy, Illinois.—*Improvement in Lime Kilns.*—Patent dated November 3, 1857.

A is the furnace, situated under the cupola B, and arched over with a fire-brick arch C, in which are numerous orifices *a* for the escape of the flame and products of combustion from the furnace up through the cupola. This furnace extends right across the bottom of the cupola, as shown in fig. 1, but not the whole width of it, as a throat *b* is made on each side of it for the withdrawal of the lime. D D are chambers at the bottom of the throats for the reception of the lime, and *d d* are doors through which the lime is withdrawn from the chambers; *e e* are the furnace doors; E is the pit; F F are sliding dampers, to close the throats to prevent a draught of cold air through them into the cupola while the lime is being withdrawn; *f f* are passages in the walls of the cupola for the upward escape of gasses from the lime in the chambers.

Claim.—The combination of the perforated arch C and escape passages *f f* with the throats *b b*, chambers D D, dampers F F, holes *g g*, and supporting and removable bars *h h*; the same being constructed and arranged for joint operation substantially as and for the purpose set forth.

No. 18,635.—Powell Griscom and Charles S. Denn, of Baltimore, Maryland.—*Improvement in Lime Kilns.*—Patent dated November 17, 1857.

The nature of this invention consists in an arrangement embracing, for united operation, the following features: 1st. The inverted oblong pyramidical lime basin B in the base A of the kiln, having discharge and clearing passages N N. 2d. The fire grates D D and ash pits E E extending from the front to the back of the basin on each of the oblong sides of the same, but divided by central partitions. 3d. The pyramidic burning stack G, with a chamber *a b* of oblong quadrilateral form at its base, and gradually running into an oval form as it terminates, and having fire chambers H I, which extend from front to back, but are divided at the centre by partitions F^1 F^1, and having also lateral flame and hot-air passages leading directly into the chamber of the pyramidic stack along the whole width of the quadrilateral portion of the burning-chamber.

The inventors say: We do not wish to be understood as claiming any of the parts separately.

But we *claim* the peculiar combination and arrangement of the parts as described, and for the purposes set forth.

No. 18,764.—Jacob Newkirk, of Factoryville, New York.—*Improvement in Lime Kilns.*—Patent dated December 1, 1857.

The claim and engravings explain the nature of this invention.

The inventor says: I *claim*, instead of taking the upper fire flues directly from the fire chamber into the interior of the kiln, the carrying a portion of the flame and heat up into the arch, and thence by the upper flues into the stack or interior of the kiln; by which means I economize and make a better distribution of the heat and better draught than when it is taken alone and immediately from the fire chamber, as set forth.

No. 17,125.—Charles P. S. Wardwell, of Lake Village, New Hampshire.—*Improvement in Machines for Forming Clay Pipes.*—Patent dated April 21, 1857.

A detailed description of this invention would take up too much space to be given here. The principal features thereof will be understood by reference to the claim and engravings.

Claim.—The arrangement and combination of the respective devices described, by which the necessary and successive stoppings and startings of the piston G are effected, by which the dies I I are opened and again closed at the proper moments, and by which the knives U U are brought into action when required; all by simply moving the lever *n* up and back again in connexion with the pressure of the clay against the piston M, substantially as set forth.

No. 18,298.—Philip Pointon, of Baraboo, Wis.—*Improvement in Machines for Manufacturing Pottery Ware.*—Patent dated September 29, 1857.—The plan of operating this improved machine is as follows: A suitable mould O having been secured to the wheel N, and a corresponding bottom being attached to the top of the rod *m*, the operator raises the lever I into the position seen in figure 1, where it is retained by a counterpoise on a cord led over the pulleys O on the top of the frame (this cord and weight are not shown in the drawings); he then places a piece of tempered clay on the bottom *n*, which remains stationary in the position shown in figure 1, whilst the mould O is revolved by a band on the pulley *f*; he then brings down the lever I into the position of figure 2, forcing the plunger L into the mould forming the article to be moulded, when the surplus clay will be forced out over the edge of the mould; the projecting shoulder *r* of the plunger, coming down on the edge of the mould, will cut off and smooth the top edge of the article; so soon as the bottom *n* is brought into contact with the wheel N, it revolves with the latter, the rod *m* turning with it; when the operator has thus moulded the article, he raises the lever I into the position shown in figure 1, which lifts the bottom with the finished article on it out of the mould, when it may be removed and the work continued as before.

The inventor says: I do not wish to be understood as claiming a plunger descending into a revolving mould, nor a movable bottom acted upon through a hollow shaft; both of which, I am aware, are in use.

But I *claim* operating the movable bottom *n* and plunger L simultaneously, by means of the sliding rods *h* and cross-head P, in combination with lever I and rack K, the whole arranged substantially as set forth.

No. 16,687.—John W. Hoard, of Providence, R. I.—*Improvement in Marking Slates.*—Patent dated February 24, 1857.—The quartz solution is combined with any anti-deliquescent drying or coloring substance suitable for the purpose, and in a pasty state it is spread smoothly on leaves of wood, sheets of pasteboard, or metal, to which it firmly adheres, soon dries, and is fit for use, thus making strong and cheap slates.

The inventor says: I do not *claim* liquid quartz itself for producing indurative surfaces for marking upon.

But I *claim* it as the vehicle for manufacturing artificial marking or writing slate, when combined with oxyde of zinc, as a drying anti-deliquescent and coloring substance, in the manner and for the purpose set forth.

No. 17,993.—George H. Wood, of Green Bay, Wis.—*Improvement in Machines for Polishing Stone and Glass.*—Patent dated August 11, 1857.—Rotary motion being given to shaft E, the shaft *j* of the polisher F will be rotated around a point which is at the centre of the lower end of shaft E; and said polisher will also, in consequence of the gearing *h k l*, have a rotating motion on its axis in a direction reverse to that given to the polisher by shaft E, and will operate on the material, which is placed on carriage K. As the polisher is operated, a reciprocating motion is given to the carriage K by means of the shafts M L, gearing e^1 d^1, pinion c^1, rack b^1, the slide N being operated by the slots k^1 k^1 in the plate l^1, and said slide causing the pinion e^1 to gear alternately into pinions d^1, and thereby give a reciprocating motion to the carriage.

Claim.—The polisher F, supported and operated as above described, in combination with the adjustable guide and gauge frame G and the reciprocating carriage K, when the whole is arranged to operate conjointly as shown, for the purpose specified.

No. 16,545.—David Hinman, of Berea, Ohio.—*Improvement in Machines for Dressing and Polishing Stone.*—Patent dated February

3, 1857.—The sand and water pass through the hollow shafts B B^1, and through the centres of the disks A A^1, between these disks and the surface of the stone E to be dressed. During the revolutions of the disks, the stone is moved forward and backward, in consequence of its being hung to the rod Q and to the revolving crank P.

Claim.—The combination of the disks A and A^1 attached to hollow revolving shafts B and B^1 with the supporting and vibrating rods P Q, when the same are constructed and arranged as described, and for the purpose set forth.

No. 16,799.—THOMAS HODGSON, of Brooklyn, N. Y.—*Fire proof Stone.*—Patent dated March 10, 1857.—The composition consists of six parts, by measure, of the dry sulphate of lime, two parts of granulated granite, and one part of granulated quartz; to every bushel of the above mixture is to be added one-sixteenth of an ounce of sulphate of zinc powder and one ounce of starch powder; all this is to be mixed with a solution of tannin and a solution of sulphate of iron, in about equal quantities. The two solutions of tannin and sulphate of iron consist of half a pound of each to a gallon of water.

Claim.—The useful manufacture of a fire-proof artificial stone, composed of feldspar, mica, and quartz, and the other substances or materials described, in the manner and for the purpose set forth.

No. 16,460.—GEORGE W. BISHUP, of Brooklyn, N. Y.—*Improvement in Stone-grooving Machines.*—Patent dated January 27, 1857.—The hammer R, revolving on shaft O, strikes first chisel S; and after having passed said chisel, it comes in contact with the chisels S^1 and S^2, striking them both, one after the other. A system of hammers R may thus be arranged on shaft O, to operate a number of chisels set in different rows.

The inventor says: I am aware that revolving hammers or cams have been made use of in stone-dressing machines for operating the chisels, and I therefore do not claim such revolving hammers.

But I *claim* a series of vertical inclined chisels, of different length, placed one behind the other, in combination with a revolving hammer or cam, as described; whereby I am enabled to give a positive motion to all the chisels from a single hammer for each series of chisels, substantially as set forth.

No. 16,878.—IRA MERRILL, of Shelburne Falls, Mass.—*Improvement in Machines for Breaking Slabs or Blocks of Stone into Regular Forms.*—Patent dated March 24, 1857.—In using this invention the chisel rack C is adjusted over the stone, the chisels being so placed as to be directly opposite the edges of the sectional spine, vertically. They are then driven against the upper surface of the stone by percussion, the effect of the operation being to produce a lateral strain on the upper surface of the stone, in a direction of right angles to the length of the fulcrum, while the stone is being subjected to the vertical pressure produced by the screws G, and while balanced across the sectional spine; the weight of the stone assisting the force applied, and at the same time to weaken the stone at the time of the greatest strain by

the slight channelling produced by the action of the edges of the chisels so as to break the stone accurately.

The inventor says: I do not wish to be understood as claiming breaking stone by pressure or percussion, or by both combined, independently of the mechanism employed.

But I *claim* breaking stone into regular forms by pressure and percussion, when both are applied at the same time to the slab or block of stone to be broken, by means of the mechanism constructed and arranged as set forth.

No. 16,672.—JUNIUS FOSTER, assignor to JOHN HERBOLD, GEORGE KUHN, and JUNIUS FOSTER, of Brooklyn, N. Y.—*Improved Tile Machine.*—Patent dated February 17, 1857.—The clay is supplied to and pressed into and through the rolling dies K *l* by means of plunger *h*; the rollers K *l* remain stationary, at the time the plunger recedes to take a fresh supply of clay from the hopper *i*, and simultaneously the tile is cut off while stationary, ready to be removed for drying.

The inventor says: I do not claim the plunger *h* in itself. Neither do I claim cutting off the clay or tile with a knife or wire.

But I *claim* the combination of the reciprocating plunger *h* with the rollers K and *l*, slide or trough *o*, and knife or wire 8, when the said parts are arranged for joint operation, substantially in the manner and for the purposes specified.

XVI.—LEATHER, ETC.

No. 17,051.—STEPHEN OLIVER, Jr., of Lynn, Mass.—*Improvement in Boot and Shoe Heels.*—Patent dated April 14, 1857.—In applying this heel to the sole of a shoe, the tenon *b* of the gutta percha part A is inserted through a hole made in the sole to receive it; and by means of a hot iron applied to the tenon, its upper end may be melted or spread down like the head of a rivet, so as to secure the heel to the sole.

Claim.—The manufacture of heels as made by a mould, and in other respects substantially as specified; that is, with a gutta percha body and tenon, a concave upper surface, and a bottoming of leather, or its equivalent.

No. 18,227.—PARKER WELLS, of Middleton, Mass., assignor to SAMUEL MOWER, of Boston, Mass.—*Improved Boot and Shoe Sole-Cutter.*—Patent dated September 15, 1857.—The leather being secured to pattern *m*, the wheel *g* is rotated, causing the pattern to move on the guide rollers *j*, and the knife *r*, which is secured to slide *o*, to cut the leather to the desired shape.

Claim.—The combination of a cutter or cutters with a yielding slide, substantially as set forth for the purpose specified.

No. 18,237.—Isaac A. Dunham, of North Bridgewater, Mass.—*Improved Edge Plane for Trimming Boot and Shoe Soles.*—Patent dated September 22, 1857.—In the drawings, *a a* represent a circular plate, of which the cutting blade a^1 forms a part. This cutter turns upon a screw pivot *b*, by which it is secured in any desired position to the stationary stock *c c*; *d d* is a guard attached to or forming a part of the stock. On this guard, and close to the point of the cutting blade, is a small projection or nipple *e* which, as the tool is moved forward, brings the shaving of leather directly across the edge of the cutter, and thereby cuts it free of the sole or welt. The cutting-blade is brought close to the guard, which slightly overlaps it, as shown, so that it is impossible for the cutter to come in contact with the vamp or upper. It will be seen by hanging the cutter upon a screw pivot *b*, the blade *a* as fast as it becomes worn can be set up to the guard.

The inventor *claims* the new sole or welt trimmer, constructed substantially as described; that is, with a cutting blade and guard, that together form a circle or very nearly, and with the cutter so arranged as to be set up to its guard, as fast as it becomes worn, by simply turning the said cutter on its centre, as specified.

No. 17,408.—Stephen Thurston, of Newark, N. J., assignor to Himself, Marcus L. Ward, and Huntington & Co., of the same place.—*Improvement in Machines for Cutting India Rubber, Gutta Percha, and other Boot and Shoe Soles.*—Patent dated May 26, 1857.—A sheet of prepared India rubber is placed upon the feeding cylinder *g*; and as the cylinders *b* and *g* are rotated, pawl *i* is raised from ratchet *h* by cam *n*, when cutter *c* comes in contact with the cylinder *g*, cutting out the sole and causing the cylinder *g* to revolve till the sole is completely cut out. The follower *d*, when the cutter *c* has reached the lowest point of its revolution, is thrust out by cam *e* and drops the shoe sole; and, as the cylinder *b* continues to turn, the eccentric *e* causes the cylinder *g* to back sufficiently to bring the India rubber on cylinder *g* into the proper position for the next cut.

Claim.—In forming the soles of shoes of India rubber, gutta percha, &c., the combination and arrangement of the cutter cylinder and carrying cylinder *g*, substantially as specified, the cylinder *g* being moved forward by the action of the cutters upon it, and moved backward by the eccentric on the cutting cylinder, in the manner and for the purposes set forth.

No. 17,905.—Charles Warren, of Putnam, Conn.—*Improved Edge Plane for Trimming the Edges of Boot and Shoe Soles.*—Patent dated July 28, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim broadly the employment of a screw for adjusting the cutters in boot edge planes; nor do I claim broadly the placing of both of the cutters in grooves. Both of these features may be seen in the patent of Hill & Arnold, 1848.

I *claim* as a new article of manufacture a boot edge plane, which has its cutters E E^1 secured between caps C D and a central plate D, substantially as described.

No. 17,603.—William Butterfield, of Boston, Mass., and Bradford Stetson, of Uxbridge, Mass., assignors to Elmer Townsend, of Boston, Mass.—*Improved Machine for Skiving Boot Counters.*—Patent dated June 16, 1857.—In operating with this machine, the piece of leather to be skived is introduced between the guides G T, and underneath the pressure springs P M, and so as to enter between the two sets of feed rollers K K^1 and N. The driving shaft B being set in motion, and pressure being applied to bar F, so as to press the levers D downward, and force the upper feed rollers K^1 N down upon the leather, such leather will be borne against the knives O and L, so as to have the two opposite parallel edges chamfered down, as shown at x^1, figure 4.

Claim.—The combination and arrangement of the secondary or adjustable feed roller and skiving cutter with the driving and feeding shafts, and the primary or stationary feed rollers and skiving cutter, the whole being made to operate as specified.

No. 16,670.—J. G. Baker, Jr., assignor to Himself and Charles Bradfield, of Philadelphia, Pa.—*Improvement in Boot Crimping Machines.*—Patent dated February 17, 1857.—The nature of this improvement will be understood on reference to the claim and engravings.

Claim.—The combination of the swivelled stay rods U with their cross-heads T and thumb-screws S, when arranged with the former Q, as stated, for the purpose of facilitating the removal of the finished boot front, and the introduction of another piece, as represented.

No. 18,074.—William W. Willmott, of Boston, Mass., assignor to Himself and Amos H. Brainard and Charles H. Brainard, of the same place.—*Improvement in Boot Crimps.*—Patent dated August 25, 1857. The piece of leather cut out to the proper shape is placed upon the jaws C, and the brake B is then brought down and the leather is forced in between the jaws C. The hand wheel P is now turned until the pincers G have descended sufficiently low to allow the points *t* to enter the jaws; until this is effected, the pincers are held down by pawl *p*. This pawl is now tripped, and spring N immediately draws up the block K, tightening the pincers, and raises the latter with a force just sufficient to take up the slack of the leather as the crimping proceeds. The brake B is now worked up and down by hand, until the creases and wrinkles are worked out, and the crimping is completed.

Claim.—First. The device herein described for operating the pincers, consisting essentially of the block K, the screw L, the spring N, ratchet O, and pawl *p*, operating in the manner and for the purpose set forth.

Second. The device herein employed for the purpose of securing the jaws to the stand, consisting essentially of the slit *g* with its shoulders *i*, and the tenon *h* with the shoulders *k*, operating in the manner set forth.

No. 17,067.—William W. Wilmott, of Boston, Mass., assignor to Himself and Henry F. Gardner, of the same place.—*Improvement in Boot Trees.*—By turning crank wheel *r*, shaft R is rotated, and the screws M and L will cause nuts *o* to slide on these screws; and as the rollers *n* press against the inner sides of the parts *e* and *f* of the boot tree, said parts will be expanded when the nuts *o* are moved towards the ends of the boot tree. When the nuts *o* are moved towards the centre of the boot tree, the springs I will draw the parts *e f* together.

The inventor says: I am aware that a rod has been used in connexion with jointed levers and nuts for forcing the parts of a boot tree asunder; and I am also aware that a right and left handed screw rod has been applied to a boot tree, to work in combination with rollers, inclined planes, and wedges to force the parts asunder. I do not, therefore, claim such as my invention.

But I *claim* applying the rollers *n n* to curved transverse springs, so that such springs may cause the parts *e f* to give or spring transversely, to correspond with the dimensions of the boot leg, substantially as set forth.

No. 17,947.—William Uppield, of Lancaster, Ohio.—*Improvement in Boot Trees.*—Patent dated August 4, 1857.—By turning the screw nut H, the distance between the wedges A can be adjusted by reason of the right and left hand screw threads on shafts D E; the wedges A, sliding in grooves C of the pieces 1 and 2 of the boot tree, force said pieces apart by turning nut H, while they also force apart the side pieces F by reason of the inclined planes L resting in the grooves G of the wedges A.

Claim.—1st. The grooves G G cut in wedges A A, the side pieces F F, with inclined planes L L, substantially in the manner and for the purposes specified.

2d. Wedge K, in combination with post I and wedges A A, or their equivalents, in the manner and for the purposes set forth.

3d. Nut H, the right and left screw shaft D and E, wedges A A, or their equivalents, when arranged, combined, and operating substantially in the manner and for the purpose described.

4th. In this connexion, sleeve *m*, in combination with block B, in the manner and for the purpose specified.

No. 17,455.—John Shaw, of Natick, Mass.—*Improved Heel Cutter for Cutting out Heels of Boots and Shoes.*—Patent dated June 2, 1857. The strip of leather from which the heels are to be cut is placed on the knife D E, against the rest H; and as the platen G is depressed, the heel is cut out at the same time that the knives *a* separate the waste portions from the strip of leather.

Claim.—In the described cutter the cutting wings *a a* extended from it, substantially in the manner so as to remove the waste portion from the strip of leather, while the heel piece is being formed therefrom in manner as specified.

No. 18,152.—John Kimball, of Boston, Mass.—*Improvement in Machines for Lasting Boots and Shoes.*—Patent dated September 8, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Combining the toe rest *d* and its clamps F to the attachment plate K, by means of an inclined rod, as described; so that both may be moved together in order, at one and the same time, to clamp the upper to the toe of the last A, and move the toe rest towards the heel post *c* for the purpose described.

No. 17,998.—Benjamin F. Sturtevant, of Boston, Mass., assignor to Himself and Elmer Townsend, of the same place.—*Improved Machine for Pegging Boots.*—Patent dated August 11, 1857.—This machine is an improvement on a similar machine, for which a patent was granted to Sturtevant and Townsend, numbered 17,544. By turning wheel H the lever *g* is caused to vibrate, operating lever *c* on its fulcrum *d*, which by means of pawls *b* operates the conical feed wheel A, and while the awl D is vibrated it passes through the holes of the feed wheel.

Claim.—The bell-shaped feed wheel A, and its arrangement with reference to the awl and peg-wood carrier, and provided with one or more ranges of holes, substantially as described; the awl being made to work at an inclination to the axis of the feed wheel, or from the axis towards and through the rim of the wheel, as described. Also, the above described mode of feeding the shoe along, that is, by the awl or its equivalent, and the feeder wheel, the latter not only assisting in feeding the shoe along by the pressure and action of the ranges of tapering holes, but in holding the shoe in position while the awl is raised out of the sole.

No. 18,594.—W. W. Merriam, of Oswego, N. Y.—*Improvement in Patterns for Measuring and Shaping Boots and Shoes.*—Patent dated November 10, 1857.—The nature of this invention will be understood by an examination of the claim and engravings.

Claim.—The method described of operating the sliding parts of an extension pattern, so as to adjust the same not only to different sizes, but also to change the proportions of the several sizes at pleasure without regard to the whole.

No. 17,544.—B. F. Sturtevant, of Boston, Mass., assignor to Himself, and Elmer Townsend, of the same place.—*Improvement in Machines for Pegging Boots and Shoes.*—Patent dated June 9, 1857.—A detailed description of this invention would take up too much space to be given here; the principal features thereof will be understood by reference to the claims and engravings.

The inventor says: In combination with the feeder wheel R and its rotary mechanism, a mechanism for imparting to said feeder wheel and the last reciprocating intermittent endwise movement, whereby the pegging of two ranges of pegs may be effected as described.

I do not claim a toothed or corrugated feeding wheel, nor one made with a series of holes for the pegs to pass through or into.

But I *claim* constructing the feed wheel R with two series of radial holes *s t*, arranged in it as specified.

I also claim the stop lever f^2 and its locking slide *h*, in combination with the peg-wood feeding mechanism, and made to operate therewith, substantially as explained.

I do not claim a tubular peg-carrier provided with a cutter, as shown in the patent granted to A. C. Gallaher, August 16, 1855.

I also claim the tubular peg-carrier N, when provided with a cutter for separating the peg from the peg wood, and when arranged and made to operate with the peg-wood feeder and the feeder R, substantially as specified.

I also claim the combination of mechanism for producing a reciprocating intermittent endwise movement of the feeder wheel R, the same consisting of the slider *u*, the stud *v*, the groove *w*, the spring *s*, the pin *c*, the inclined cam d^1, the pin e^1, the tripping clutch f^1, the lever g^1, and the slide rest o^1, the whole being applied together, substantially as specified.

I also claim combining with the mechanism for producing the reciprocating endwise movement of the feeder R, a weighted arm R or its equivalent, applied to the pegging jack, substantially as above specified; whereby the shoe and last are maintained in close contact with the feeder, and permitted to move in correspondence therewith, substantially as set forth.

I also claim the method of effecting the feeding of the peg wood; that is, by the slider M of the peg-carrier, the lever b^2, the serrated feeder Z^1, and the spring d^2, operating together as specified.

No. 18,170.—Seth D. Tripp, of Winchester, Mass., assignor to Himself and Luther Hill, of Stoneham, Mass.—*Improvements in Machines for Pegging Boots and Shoes.*—Patent dated September 8, 1857.—A detailed description of this invention would take up too much space to be given here; the principal features thereof will be understood by reference to the claims and engravings.

Claim.—In machines for pegging boots and shoes, (when the gate which carries the awl and driver is allowed to swing freely in a plane perpendicular to the surface of the sole, or nearly so,) the arrangement and combination of the spring U, the disks P, and a lever *b*, with its toggle joint and connecting rod *c*, and the lever T, for the purpose of bringing down, clamping, and releasing the gate, in the manner set forth.

Second. The feeding pawl b^2, with the spring C^1 and slot d^2, in combination with the holding pawl or bolt f^2, operating in the manner and for the purpose substantially as described; whereby the amount of feed of the carriage H^1 is regulated, and the latter is held stationary, as set forth.

Third. Regulating the motion of the carriage H^1 by means of the combination of the following devices, or their substantial equivalents, viz: The groove *t*, pin u^2, dogs x^2 and y^2, stops y^2 and p^2, blocks w^2 and v^2, and guide s^2, operating in the manner set forth.

Fourth. The combination of the devices employed for the purpose of cutting off a portion of the pegs, and for adjusting the throw of the awl and driver to correspond therewith, or their substantial equivalents, whereby the awl and pegs are prevented from penetrating the last, as set forth.

Fifth. The offsets 1 and 2, upon the slides *w* and *x*, operating in the manner set forth; for the purpose of causing the driver to descend over the hole made by the awl, as described.

No. 18,879.—William Wells, of Boston, Mass., assignor to Edgar M. Stevens, of Boston, Mass.—*Improvement in Machines for Pegging Boots and Shoes.*—Patent dated December 15, 1857.—This invention relates to the means employed in pegging machines to present properly the pegging mechanism to the various curvatures of the work. It consists in a head O arranged to support the action of the peg driver; and the awl will be square, or nearly so, to the surface curvatures of the sole, and to slide and spring for the purpose of conforming to the inequalities and curvatures of the surface and edges of the work to be pegged.

Claim.—The combination of the pegging mechanism, viz: The awl, peg-driver, knife, and peg-carrier, with a head hung or supported substantially as described for the purpose set forth.

No. 18,583.—B. D. Godfrey, of Milford, Mass.—*Improvement in Water-proof Soles and Heels for Boots and Shoes.*—Patent dated November 10, 1857.—Instead of making a half sole, or sole and heel in one, an entire sole piece A is cemented the length of the foot, and to this, at the heel, is cemented a separate heel piece B, as seen in the engravings.

The inventor says: I do not claim making a heel separate from a sole, as this is common to leather shoes.

But I claim the employment of a cast heel of India rubber with an entire sole of rolled or sheet rubber, substantially as set forth, as an improvement in the manufacture of rubber shoes.

No. 18,291.—Samuel Middleton, of England.—*Improvement in the Manufacture of the "Uppers" of Boots and Shoes without Seams.*—Patent dated September 29, 1857.—This invention relates to the manufacturing of the uppers of boots and shoes of leather, heretofore either made with seams, by sewing, (technically termed "closing,") or otherwise connecting together the separate or divided parts of the material, and consists in exerting pressure upon lasts or forms acting upon pieces of leather, and made to pass therewith through plates or dies of metal, whereby a flat piece of leather, when acted upon and made to pass as aforesaid, is caused to assume and retain the external shape of such said lasts or forms.

The operation of this machine is thus described by the inventor: The operator first places the leather upon the plate G; he then imparts motion to the wheel *e*, by which the rack *a*, plate K, and last or form *o* will be lowered; and when the plate K has been fairly deposited upon the leather, and previous to the last or form *o* operating thereon, the necessary pressure is exerted upon the leather, as before stated, by the bevelled shoulder 1 of the groove * (shown at fig. 7) forcing the upper part of the piece *f* out of the said groove, the upper part of said piece being firmly held by the under side of the cross piece, fig. 7, which is suitably formed to receive and retain it in the position exhibited; and by these means I cause the pressure upon the leather. The piece A continuing to descend, by turning round the lever wheel *e*, forces the last upon the leather, both of which pass through the hole in the plate or die G, and thus the necessary shape is imparted to the leather without seam or joint of any kind. The upper, thus far shaped, requires to be lasted and cut before being manufactured into boots and shoes.

The inventor says: I am aware that drinking cups and blinds for horses' bridles have been stamped out of leather; therefore I limit my claim to making the uppers of boots and shoes.

I *claim* stretching and forming the upper leather for boots and shoes from a single piece of leather, without seams, substantially as described.

No. 17,524.—JAMES SERIMGEOUR, of Brooklyn, N. Y.—*Improvement in the Manufacture of Boots.*—Patent dated June 9, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I disclaim any form substantially like that described in the patent of Chilcott & Snell, before referred to.

But I *claim* the cutting out or otherwise forming a piece of leather or other material to the shape substantially as herein described and represented in fig. 1, and the folding of the same as described and illustrated in figs. 2 and 3, to produce the "upper" of a boot, as herein fully set forth.

No. 17,268.—KASSON FRAZER, of Syracuse, N. Y.—*Improved Method of Connecting the Cheek-Piece to the Mouth-Piece of Bridle Bits.*—Patent dated May 12, 1857.—The shanks C of the cheek-piece B being inserted within the openings of the chamber E, cast within the bulb at each end of the mouth-piece, the cavity is filled up with melted metal, thus securing the cheek-piece to the mouth-piece A.

Claim.—Constructing cheek-pieces of bridle bits by making a neck at each extremity within the ball of the mouth-piece, and securing the same therein by means of filling the chamber around the necks with metal or other composition, substantially in the manner and for the purpose set forth.

No. 16,374.—GEORGE P. WOODRUFF, of Watertown, Conn.—*Improvement in Buckles.*—Patent dated January 6, 1857.—The pipe-formed stock B of the tongue *a* encloses both the strap D and the bow of the buckle.

Claim.—Constructing and combining together the bow and the tongue of a buckle in such manner that the strap is secured between the two at the hinge of the buckle, substantially as set forth.

No. 17,545.—JOSEPH ZEPFEL, of New York, N. Y., assignor to JOHN B. RADLEY and JOSEPH ZEPFEL aforesaid.—*Improvement in Carpet Bags.*—Patent dated June 9, 1857.—The side frames *b* and *c*, which receive the cover *d* of the carpet bag, are hinged to the bottom *a*, thereby affording the facility of opening the carpet bag all the way down, and the articles to be packed can be placed neatly in this carpet bag, without becoming rumpled or creased.

Claim.—Attaching the half pieces of the divided bottom to the lower corners of the respective frames, at right angles or nearly so to said frames; thereby said divided bottom and frames support the flexible material of which the bag is composed, whether the same is open or shut, as specified.

No. 16,834.—WADE H. HAWORTH, of Philadelphia, Pa.—*Improvement in Machines for Stuffing Horse Collars.*—Patent dated March 17, 1857.—In this invention there are two stuffing rods *m* and *n*: that for stuffing the long straw, designated by *n*, has a forked extremity and *m*, that for the fine straw, has the shape generally shown in the engravings. These stuffers are each secured to sliding head blocks P by set screws *r*, and are moved alternately back and forth. The stuffer *n* has its stuffing end brought within box *e*, and by means of its forked end pushes the long straw through tube m^2 into the roll of the collar. The stuffer *m*, in its back movement, has its stuffing end brought within the feed box *d*, so as to push before it, at each stroke through the tube m^1, the fine cut straw.

Claim.—First. The employment of two stuffers, stuffing against each other from both ends of the collars, when such stuffers are made to recede automatically, as set forth.

Second. The employment of two alternating sets of such stuffers for stuffing both rolls of the collars, as set forth.

No. 17,902.—J. C. TOBIAS, of Lincoln, Ill.—*Improvement in Machines for Stuffing Horse Collars.*—Patent dated July 28, 1857.—By depressing treadle *h*, which turns on fulcrum *i*, the rack G is brought in gear with pinion J, and is held thereto by means of catch *k* on bar *j*. By withdrawing catch *k*, bar G drops down to the position represented in the engraving, and bar H drops in gear with pinion J.

The inventor says: I do not claim, separately or in itself considered, the device formed of the two racks G H, gearing alternately into the pinion J, for the purpose of communicating a rectilinearly reciprocating motion to the rods or plungers from the continuously rotating driving shaft; for such device or its equivalent has been previously used for similar or analogous purposes.

But I *claim* attaching the rods D E to a vertical bar F, which is attached to the slide B and to the racks G H, into which the pinion J, by the means shown, or its equivalent, is made to gear alternately, whereby the stroke of the rods or plungers D E may be cut off at any desirable point, and their reciprocations accommodated to the gradual filling up or stuffing of the bulge or rim of the collar, as set forth.

No. 18,290.—William J. Lockwood, of Sturgis, Mich.—*Improvement in Hame-tug Fastening.*—Patent dated September 29, 1857.—Fig. 1 is a perspective of a metal casting, forming the short or hame tug. It is covered with leather on the bottom (or side next to the horse) and edges thereof. The eye which connects it with the hame is not shown in the drawing, it being represented as broken off near the end, or before the eye is formed. Sockets are formed in the casting to receive the button fastening of the draught tug, and a loop through which the draught tug passes. This, together with the other drawings and claim of the inventor, gives a correct idea of the improvement.

The inventor *claims* the stud or button-holder D and the button or lock C, in combination with the socket *b*, when operating together substantially in the manner and for the purpose described.

No. 16,475.—Henry A. Fowler, of East Guilford, N. Y.—*Improvement in Fastenings for Hames.*—Patent dated January 27, 1857.—The peculiar form of the slit punched in the end of the slide *b* is such that, by inserting slide within the case *a*, it will only press against one end of the cam *f*, and thus cause the cam to turn; and as soon as the slide *b* is pressed within the case far enough to admit the cam into the larger opening, the coil spring turns the cam back again into a perpendicular position, (at *k*,) which causes the fastening to be firmly locked.

The inventor says: I disclaim the metal case and slide, also the manner of attaching the fastener to the loops in the hames; but I *claim* the cam *f*, so arranged and operated with the shaft *e* and cap C, (by means of a coil spring,) that the cap C will always adjust itself essentially in the manner and for the purpose set forth.

No. 18,601.—John Prendergast, of Boston, Mass.—*Improvement in Harness Buckles.*—Patent dated November 10, 1857.—The claim and engravings show the nature of this invention.

The inventor says: I do not claim a buckle formed with a bridge for support of its tongue, when the front end of the tongue is arranged with respect to the body of the buckle as above specified.

But what I *claim* in constructing a buckle with a supporting bridge for its tongue, and with the end of its tongue bent upward as specified, is forming such tongue with a recess or shoulder *b*, in order that the strain on the tongue may be so borne by the body of the buckle as to relieve the joint of the tongue from the strain and wear thereof that would result therefrom.

No. 16,660.—Joseph Smith, of Delaware, Ohio.—*Improvement in Harness for Horses.*—Patent dated February 17, 1857.—The pads I I are pivoted to rods J J, so as to rest against and adjust themselves to the movements of the shoulders of the animal. The draught being in the centre of connecting bar D, the pressure is equalized on either shoulder. The draught is divided between the breast band A and the pads. When descending an inclined plane, the forward pressure of the load carries the breast band forward, which draws triangular coupling M through loops *n n*, causing the rear of said coupling to assume the position occupied by the forward end in the drawing, and thus tightening said girth and back strap sufficiently to enable the animal to sustain any amount of pressure that he could, were the harness provided with breeching.

Claim.—The side bars *c c* connected by cross bar D, or their equivalents, constructed and arranged in the manner and for the purpose set forth.

2d. Pads I I, or their equivalents, constructed and arranged in the manner and for the purpose set forth.

3d. Triangular coupling M, or its equivalent, constructed and arranged in the manner and for the purpose set forth.

No. 16,530.—Homer Compton, of Well's Corner, Pa.—*Improvement in Fastenings for Harness Hames.*—Patent dated February 3, 1857.

The inventor says: I am aware that spring plates, catch plates, and bolts of various forms have been and are used on railroad cars for coupling the cars together; and I therefore distinctly disclaim such parts in themselves considered, or in combination with each other.

Examples of such devices may be seen in the rejected applications for patents of B. Joslin, V. Mitchell, and J. McCallum.

Neither do I claim the indiscriminate fastening together or coupling of objects by means of spring bolts, spring plates, and catch plates.

Neither do I claim the substitution of such devices for straps and buckles in harness.

But the combination with the hame of a spring bolt, a catch plate, and a spring plate, as described, is, to the best of my knowledge and belief, a new combination; and, therefore, I limit myself to the special combination with a harness hame A of a spring bolt *k*, a catch plate *e*, and a spring plate *m*, substantially as set forth.

No. 17,117.—Palmer Shaw, of Syracuse, N. Y.—*Improvement in Harness Saddles.*—Patent dated April 21, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—Making the tree of harness saddles to consist essentially of the leather cantle piece C, figure 3, shaped as described, connected to the raised portion of the leather figure 1, from which the skirts D are formed, and the whole attached to the bearing plate E, substantially in the manner and for the purpose set forth.

No. 18,996.—Richard Swift, of New Haven Conn.—*Improvement in Harness Saddles.*—Patent dated December 29, 1857.—This invention is described by the engravings and claim.

Claim.—The method of adjusting the pad of the harness by means of the male screws on the turrets working in the female screws of the arms of the yoke, so as to spread the pad by elevating the arms in the boxes, or contract it by depressing them, when the whole is constructed, arranged, and made to operate as described.

No. 18,790.—Joseph W. Briggs, of Cleveland, Ohio, assignor to Judson A. Lazell, of Plainesville, Ohio.—*Improved Device for Fastening Harness Traces.*—Patent dated December 1, 1857.—The operation of this invention is as follows: The cam lever G is thrown back to enlarge the opening between it and the bar F; the trace is then inserted, and when adjusted to the desired location is then turned down, thus decreasing the size of the opening and preventing the passing of the trace when the cam comes in contact with its raised parts, and, as is evident, holding the trace securely in the position in which it may be placed.

The inventor says: I do not claim as my invention the eccentric which presses the trace against curvatures in the bed-plate; neither do I lay any claim to a cam lever in any way.

But I *claim* the raised or elevated parts of the trace C C C C, when used in combination with a cam lever, as set forth.

No. 18,300.—N. Pullman, of New Oregon, Iowa.—*Improvement in Awning Frames for Horses, attachable to Harnesses.*—Patent dated September 29, 1857.—In the drawings, figure 1 represents a perspective view of a horse in harness with this improved awning frame attached. Figure 2 represents a plan of the frame and harness united. This frame consists of a series of metallic ribs connected with each other and attached to the harness so as to afford support for any of the various descriptions of covers that are used to protect horses from insects, &c.

The central rib *l* is jointed at *e*, just in front of the back rib, so as to allow the shoulder rib, when released from the collar, to be turned back, in order that the frame may be removed with the remainder of the harness without disengaging its other parts; a series of holes *m* are made through the central rib in order to adjust the length of the frame to harnesses of different size.

The covering rests upon the frame, and is brought up over the head and neck of the horse if desired.

The ends of the loin rib *h* are pivoted to the ends of the crupper rib *k*, which arches over the rump of the horse, extending back to the croup, and is held in this position by a central rib *l*, which extends from the shoulder to the crupper, and to which all the intermediate ribs are attached.

The inventor says: I do not confine myself to the precise arrangement of the parts forming the frame, or the manner in which they are connected with the harness; my invention being, in these particulars, susceptible of various modifications, according to the circumstances in which it is used.

I *claim*, first, arranging the frame for the support of an awning over draught horses with a flexible joint, so that it can be folded back from the head and neck of the horse, and removed with the harness, as described.

Second. Connecting the front bow with the bridle by means of flexible bands, for the purpose set forth.

No. 18,614.—A. J. Tewksbury, of Haverhill, Mass.—*Improvement in Last-Holders.*—Patent dated November 10, 1857.—The nature of this invention consists, 1st. In furnishing the wedge P, which confines the lever M of the heel-pin L, with a notched spring by means of which the wedge is conveniently adjusted by hand, and effectually prevented from jarring or starting out of place by the action of hammering or "rubbing down" the sole.

2d. In the use of a spring-bolt G for confining the ball E E in the socket A A, so that the bottom of the shoe shall be held fast in a horizontal position when hammered or rubbed, while at the same time it is free to turn in a horizontal plane on said spring-bolt as an axis; and,

3d. In uniting two parts of the socket A A by means of bolt B and an elastic washer or spring C, for the purpose of adjusting and giving the requisite friction between the ball and the socket.

Claim.—The ball and socket joints A and E in combination with the spring bolts B and G, substantially as set forth and for the purpose specified.

No. 17,160.—Benjamin Marshall, of Philadelphia, Pa.—*Improvement in Revolving Last-Holders.*—Patent dated April 28, 1857.—By turning the screw-nut W, so as to screw it downward, the arm L will be adjusted to a long or short last by reason of nut W resting constantly on some point of the inclined plane U, thus moving the toe-rest L towards the last by turning it on pivots *h*. The elastic band S serves to counterbalance the arm G as it is revolved.

The inventor says: I claim nothing in the idea of a revolving arm and shaft, or a holder combined with it and the last attached.

But I *claim*, 1st. The screw V and nut W, in combination with the inclined plane U, for the purpose of raising and lowering the toe-rest L and moving it back and forth, all arranged in the manner substantially as set forth.

2d. I claim the combined arrangement of the crank or eccentric R with the revolving shaft F, and the attachment of the elastic band S, or its equivalent, at the wrist *l* and *t*, the set screw *f*, substantially as described.

No. 18,427.—B. F. Sturtevant, of Skowhegan, Me., assignor to Elmer Townsend, of Boston, Mass.—*Improved Lasting Pincers.*—Patent dated October 13, 1857.—In the drawings, A shows one branch or lever of the pincers detached. The upper end is finished in a claw 1^1; another claw 2^1 is pivoted at *a* and plays in recess *b* formed in the broad part of the branch A. The branch B is furnished with similar claws 1 and 2, pivoted together at *c*; a recess similar to that at *b* is also found in this branch. The short arms or claws 2^1 of the two branches are pivoted together at *f*. This manner of placing the short arms in the recesses *b* allows the inner surfaces of the branches A and B to play in contact with each other.

The inventor *claims* the described compound pincers for lasting boots, constructed and operating in the manner substantially as set forth.

No. 18,310.—Sylvanus H. Whorf, of Malden, Mass.—*Improvement in Hollow Metallic Lasts.*—Patent dated September 29, 1857.—The process to which this improvement or improvements have particular reference is that relating to the application of soles to boots or shoes by means of pressure and gutta percha or other cement. In the performance of such process, a last constructed of metal and provided with a chamber and pipe, or other equivalent means of introducing steam or heat into the last, has to be employed; a last such as is employed in this process is represented at A in the drawings, the steam chamber being shown at *a*. This invention relates to rendering the last adaptable to lasting and finishing shoes varying in size both in upper and sole. For this purpose a spring is applied to the last at instep C, fixed at or near the toe of the last; the other end of the spring being separate from the last in order that the movable spring instep, or instep spring, may spring towards the last and fit itself to a shoe when the latter is drawn on the last, the spring instep serving to draw the shoe closely down to the sole of the last, whatever may be the size of the upper.

The inventor says: I *claim* making a last with the yielding or spring instep applied to operate substantially as described.

No. 17,471.—Isaie Lippmann, of Paris, France, assignor to Michel Jean Adrian Guiet, of New York, N. Y.—*Improved Process of Splitting Leather and Hides.*—Patent dated June 2, 1857.—The hides are first subjected to a pounding and rubbing operation by the machine represented in fig. 1. The hides are placed in the trough *a*, and are operated upon by the vibrating beaters or fullers *b*, which are affixed to the levers *c*, until they are properly softened. The hides are then attached to cylinder A, fig. 2, to which a slow rotary motion is imparted by means of endless screw *i* on the driving shaft *j* and worm wheel K; and the hides are split by means of a long vibrating knife B, actuated by an eccentric on shaft G and pitman H.

Claim.—The method described for splitting skins, and by first submitting them to a fulling or beating action as described, and then, when so prepared, passing them through an apparatus or machine, the cutting apparatus of which has a rapid vibrating motion against which the skin is projected slowly, substantially as specified; by which method of fulling and cutting combined I am enabled more perfectly to split skins than has heretofore been done.

No. 17,576.—Peter E. Hummel, of Pulaski, New York.—*Improvement in Machines for Scouring and Setting Leather.*—Patent dated June 16, 1857.—The leather to be operated upon being stretched out upon the revolving bed H, a reciprocating motion is given to the plate B and tools *l* by turning driving shaft E, and the leather is presented to the action of the tools, so that all parts will be properly acted upon by turning the bed H.

Claim.—The revolving table or bed H, in connexion with the reciprocating head formed of the frames *c* attached, in which the shafts *d d* are fitted, the shafts being provided with sockets *k* and adjustable counterpoises *n*, substantially as shown and described for the purposes set forth.

No. 17,445.—Eugene L. Norton, of Charlestown, Massachusetts.—*Improved Process of Manufacturing Leather Shoe-binding.*—Patent dated June 2, 1857.—The prepared leather is cut into narrow strips by means of circular revolving shears; the ends of these strips are united as represented at *c d*; and the strip is then guided between two revolving rollers, one of which is supplied with the coloring matter with which the binding is stained in its passage.

Claim.—The improved process described of manufacturing shoe-binding by dividing the skin or sheet of leather into strips of equal width, joining them at their ends, so as to connect them into one long strip, and coloring the same when so formed; the whole being formed of or reduced to an uniform thickness, and the fleshy or surplus portions of the leather removed by splitting or otherwise.

No. 16,573.—Joseph Armstrong, of Woodburn Center, Mass.—*Improvement in Stuffing Leather.*—Patent dated February 10, 1857.—The inventor says: I do not claim the usual process of stuffing a wet hide or skin, in which process the moisture or water in the hide has to be removed by evaporation after the tallow or grease has been rubbed into the hide; nor do I claim stuffing wet hides by a fulling mill, wherein by the percussive force of the beaters thereof the water or tan liquor is more or less forced out of the hides, and the grease simultaneously driven into them, as in this case desiccation of the hides by subsequent exposure to the atmosphere is necessary. Nor do I claim, irrespective of my specific application of it, the use of a press to expel a liquid from an article or substance; nor do I claim the mere use of a peg-lined cylinder for the purpose of impregnating hides with grease: but as I have made an improvement in the process of currying, by which I not only dispense with desiccation of the hides by evaporation induced by exposure of them to the atmosphere during the application of oil or grease to them, but also the handling and working, or labor incident thereto, and perform the operation of expelling the water or tan liquor from them in much less time, comparatively speaking,

I *claim* my improvement in the currying process, the same consisting in employing a press as stated previous to and in connexion with the application of the oil or grease by a peg-lined cylinder, or other equivalent means as set forth, the press removing the liquor and compacting the hide, and the peg-lined cylinder subsequently restoring or plumping it, and impregnating it with grease as explained.

No. 17,554.—Dexter H. Chamberlain, of West Roxbury, Mass.—*Improved Rigid Hoop-Knife for Splitting Leather.*—Patent dated June 16, 1857.—In operating this implement the knife-hoop D is rapidly and steadily revolved in a plane at right angles to its edge, it being guided by the bevelled rollers E, the edge of the hoop being drawn over a table C, at the proper distance above it, said table resting on the ways B.

Claim.—The described rigid and bevelled hoop-knife for splitting leather, operating in the manner substantially as set forth.

No. 18,441.—Adolph R. E. Falck and Paul Stoerger, of Newark, N. J.—*Improved Machine for Striping Leather, &c.*—Patent dated October 20, 1857.—In operating this machine the leather is placed under the guide frame or tracks (which is raised from the table far enough to allow it to pass freely) and beneath the pencil brushes G, which are in immediate contact with the upper surface of the leather when the machine rests on all four wheels, the forward or small brush wheels B^1 C^1 being much smaller than the driving or main wheels B C. The person operating the machine takes hold of the handle D, and sufficiently raises the forward trucks or wheels B and C to run the machine to the far end of the track, being careful not to let the brushes touch the leather; then let the machine rest firmly on all four wheels, and place the thumb firmly upon the lever E, at the same time draw back the machine by the handle, and the operation is completed.

The inventors say: We do not confine ourselves to form of pencil brush or to tubes; either one may be changed to suit the occasion and application.

Neither do we confine ourselves to any limited number of brushes or tubes.

We do not claim to be the inventors of the individual or separate parts of the described machine for drawing parallel right lines.

We *claim* the double tubes or pencil holders G, G, G, and G^1, dampers *w*, *w*, *w*, and mixers *t*, *t*, *t*, arranged and operated by the levers E *i* and connecting rod H, which is attached to the wheel B, in the manner and for the specific purpose, substantially as described and shown.

No. 16,345.—Seth Ward, Princeton, Ind.—*Improvement in Riding Saddles.*—Patent dated January 6, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I am aware that riding saddles with suspension seats are not new; also, that metal springs have been employed in such saddles in various ways, for the purpose of giving elasticity to the seat; therefore I do not claim broadly the suspension of the seat, nor the making of the same elastic.

Nor do I claim the motion of the seat, nor the motion of the cantle, nor the hinges; for these devices are all shown in John C. Fr. Salomon's tree, patented November 18, 1851. Neither do I claim any device embodied in Mr. Salomon's patent.

But I *claim* the application of an India rubber spring to the back part of the cantle, secured above and also below the semi-circular opening of the cantle by screw plates *a* let in, operating in manner described, and for the purpose of obviating the necessity for any springs either under the seat or cantle, it in itself giving sufficient elasticity to the seat, as shown.

No. 18,771.—Joseph Rudisill, of Natchez, Miss.—*Improvement in Riding Saddles.*—Patent dated December 1, 1857.

The inventor says: I do not claim a spring-seat saddle broadly; neither do I claim having the foundation of the cantle hinged to the tree and rendered capable of yielding by a rubber spring, as in the patent of Seth Ward, 1857. Neither do I claim broadly a spring arranged at the head of the tree for assisting in rendering the seat elastic.

But I *claim* the peculiar arrangement of a series of light flat springs *a a*, in a circular line around the upper side of the cantle foundation B of the tree A A, for use in combination with the coiled spring G, as peculiarly arranged under the head C of the tree; said springs being actuated simultaneously by means of the seat E and webbing or foundation D, as and for the purposes set forth.

No. 16,566.—Robert Spencer, of New York, N. Y.—*Improvement in Ladies' Riding Saddles.*—Patent dated February 3, 1857.

The inventor says: I do not limit my claim of invention to such special modes of application, as other equivalent modes may be substituted.

I *claim* placing the pommel or head back of the front edge of the bars, and in a diagonal position, substantially as described; whereby I am enabled to depress it to give ease of position to the rider without interfering with the horse's withers, as described.

I also claim connecting the near or short horn with the tree by a screw on the end fitted to a series of holes; so that its position, relatively to the seat and pommel, may be shifted at pleasure to suit the rider, as described.

And, finally, I claim the arrangement of the stirrup leather, substantially as described, in combination with what are known as the Mexican bars *a b*, substantially as above described; whereby I am enabled to make a secure ladies' saddle without the use of the points heretofore employed for embracing the sides of the horse, as set forth.

No. 18,246.—James Neil, of Yorkville, N. Y.—*Improvement in Stirrups for Riding Saddles.*—Patent dated September 22, 1857.—In the drawings A is a cross-piece which is held by the strap. B is a rivet or screw which allows the piece A to work easily in the joint. C is the pin which holds the end of the cross-piece firmly until the piece D is drawn back by the foot being caught in the stirrup. When the piece D is drawn back by the foot, the pin C must draw out and liberate one end of the piece A, thus causing the stirrup to fall along with the foot from the strap. The piece D is kept constantly *out*, and the pin C constantly *in*, by spiral spring *s*. It is necessary that the piece D F should work freely at the joints E; and for that purpose the stirrup may be provided with any suitable projections, such as those marked G, either outside or inside the pieces F, through which a pin may go.

The inventor says: I *claim* the extension piece, or lever D D F F, arranged and applied to the stirrup; so that when the rider falls, his foot (if it remain in the stirrup) shall operate the said extension piece or lever D F, so as to free one end of the bar A, and thus release the stirrup from the stirrup-strap, substantially in the manner as set forth.

No. 16,917.—Alanson Haskell and William P. Haskell, of North Brookfield, Mass.—*Improved Machine for Manufacturing Shoe Lasts.*—Patent dated March 31, 1857.—The operation of this machine is as follows: The operator takes the last, as turned, and holding it with the sole upward places the heel between the guides H, steadying it on the rest G, presses it against the cutter E, at the same time turning it to the right and left. The guides H having been set so as to allow only the stub-shot to project to the cutter, they give the true curve horizontally, and the concave of the head C gives the other. Then placing the last on the slide P, he moves it by the saw *a*, cutting it the proper length; and then placing it, with the sole up, under the piece N, so as to just touch the head D, the bent lever J being square to the plate I, and a pattern on the slide K, which is adjusted according to the number of the last; the placing it higher giving, by the peculiar construction of the lever J, a broad toe, and placing it down giving a narrow one.

Claim.—The use of the concave head in connexion with the adjustable guides and rest, when constructed and operating substantially as described.

Second. So constructing and hanging the bent lever, or its equivalent, as to allow the same pattern to be used for the different sizes, the position of the pattern governing the size, substantially as described.

Third. The combination of the lever J, plate I, and cutter-head, when constructed and operating substantially as set forth and described.

No. 16,659.—Nathaniel H. Shaw, of Farnworth, N. H.—*Improved Machine for Splitting Shoe Pegs.*—Patent dated February 17, 1857.

The inventor says: I do not claim the combination of a splitting knife with a fluted feeding roller, or its equivalent, being aware that such has before been claimed.

But I *claim* the feeding blade G, when arranged substantially as described, whereby its movement is produced and adjusted to suit all the requirements of the machine under all circumstances in the most simple and perfect manner.

I also claim the arrangement of the holding bar E in such a manner as to enable its motions to be produced without interference with the alternate action of the splitting knife and feeding blade, and to be adjusted for the different sizes of pegs so as not to disarrange the relative positions and movements of said holding bar, splitting knife and feeding blade, substantially as specified.

No. 17,399.—Otis B. Wattles, of Waddington, N. Y.—*Improved Tanning Apparatus.*—Patent dated May 26, 1857.—This invention consists in fastening the hide *e* in a vertical position in the frame C by means of thongs F. The frame and hide are lowered down into a

tanning vat in a vertical position by means of a windlass A, and can be elevated in the same manner after having been exposed a sufficient length of time to the tanning liquid.

Claim.—The hides laced in the frame entirely around its border, and sustained vertically in the vat, in the manner set forth.

No. 16,355.—Edwin Daniels, of Lafayette, Wis.—*Improvement in Tanning Hides.*—Patent dated January 6, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—I am aware that saltpetre and alum have before been used in different proportions in other processes for tanning leather; and I am also aware that sulphuric acid has been used in various ways, in other processes for tanning.

I claim the use of saltpetre, alum, and sulphuric acid, respectively, in solutions of catechu or other substance, containing an equivalent amount of tannin, substantially in the proportions, order, and manner specified.

No. 17,043.—David H. Kennedy, of New Alexandria, Pa.—*Composition for Tanning Hides.*—Patent dated April 14, 1857.—This composition consists of twenty-four pounds of valonia, eight pounds of sulphate of soda, four pounds of sulphate of magnesia or sulphate of potash, one pound of sulphate of alumina, two pounds of sal soda, one pound of borax, which are dissolved separately in hot water or in a hot decoction of tan bark to form the tanning liquor.

Claim.—The combination of valonia, the sulphate of soda, sulphate of magnesia or sulphate of potash, and sulphate of alumina, sal soda, borax, or boracic acid dissolved in water or tan bark liquor, for the purpose of tanning hides and skins, substantially as set forth.

No. 18,599.—Kingsley R Olmstead, of Chicago, Illinois —*Improved Lateral Feed Motion for Sawing Mills.*—Patent dated November 10, 1857.—The object of this improvement is to produce the se or movement of the log towards the saw by self-acting apparatus or machinery, so that the mill shall be a self-setting mill, and the set o the log to any desired thickness be accomplished by mechanica means.

In the engravings A is a frame containing the saw, arbor, shafts, and bevelled gear; B the frame of the carriage; C C the rails or tracks upon which the carriage wheels move by means of the rack D on the bottom of the carriage, meshing into the pinion E on the carriage shaft F protruding from the saw frame. The saw S is secured upon the shaft G in the usual manner, and is driven by a band passing around the pulley H, and put in motion by any motive power.

Upon the rod J is a lever U, movable around the rod except when the cam or eccentric V fixed in the lever next to the set rod clutches the rod as the lever is raised upward. The inclined plane W is the plane with an adjustable incline, so placed that the lever U, as the carriage passes the plane, shall come in contact with the plane, and shall pass up the incline as the carriage passes one way, but shall, as the carriage passes the other way, fold up by means of a hinge or lever. The incline of the plane is raised or depressed by a screw and lever.

Claim.—The combination of a lever and cam or eccentric with an inclined plane, set rod, wheels, and racks, constructed, arranged, and operated, substantially in the manner and for the purposes set forth.

No. 18,046.—Charles H. Hinckley, of Stonington, Connecticut.—*Improved Method of rendering the Mouths of Trunks, Mail-bags, &c., water tight.*—Patent dated August 25, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I am aware that the expanding jointed clasp was patented by Sellers & Pennock, June 12, 1840; and that India rubber packing has been used in various forms, other than that of the inflated ribs for securing water-proof joints; and that separate tongued and grooved jaws or clasps for crimping in the material of the bag, and thus forming a water-tight connexion, were patented by Robbins & Allen, September 7, 1852, but without the inflated ribs But neither of these do I claim.

But I *claim* the application of the inflated casements or ribs *i h* as described, composed of India rubber or other suitable material, to the sides of contact of clasps for bags or cases, so that by their yielding contact the clasp may be closed so as to be impervious to water.

No. 16,336.—Henry Loewenberg, New York, N. Y.—*Improvement in Travelling Trunks.*—Patent dated January 6, 1857.—To extend this trunk the cover is taken off, the front and rear portions L and M are then lifted from their positions represented in fig 2, and the end pieces N and O are raised to perpendicular positions, when they strike against the clasps P, and are held in place by catch springs C. The rods H on the bottom are then drawn out from the staples, releasing the plates E, which rise by force of their springs and raise the pins R from holes I. The trunk can then be extended to about double its length by drawing apart.

Claim.—The combination of the folding portions L M N O with the grooves and tongues A B, and fastenings to make an extensible trunk, in the manner substantially as described.

No. 17,617.—Eugene Blattner, of Philadelphia, Pa.—*Improvement in Machines for Polishing Rawhide Whips.*—Patent dated June 23, 1857.—The dry twisted thongs are attached at one end to the hooks of the spindles *d*, and at the other end to the hooks of the spindles *m*, the spiral springs *q* pressing the thongs against cylinder I. Rotary motion is now imparted to shaft H and roller I, and to the spindles *d* and *m* by means of pulleys L and J, causing the twisted strips to revolve as they are being operated upon by the grinding surface of the roller *l*.

Claim.—I do not confine myself to the precise means described of driving the hooked spindles, as that may be accomplished in a variety of ways.

But I *claim* the grinding pulley I, and spindles *d* and *m*, when a simultaneous rotary motion is imparted to the same, and when they

are arranged for joint operation, substantially in the manner set forth and for the purpose specified.

No. 17,133.—Charles Baeder, of Brooklyn, N.Y.—*Improved Method of Manufacturing Rawhide Whips.*—Patent dated April 28, 1857 —The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Constructing rawhide whips without a core of filler, and giving the wrappers a slight twist, as shown and described.

XVII.—HOUSEHOLD FURNITURE, ETC.

No. 18,476.—Nathaniel Thomas, of East Dixfield, Me.—*Apple Slicer.*—Patent dated October 20, 1857.—This invention is operated as follows: The apple on the fork *c*, shown by the dotted circle, being pared, the frame B is shoved on the ways *a a*, and the arbor C is moved longitudinally; the apple being forced between the two sets of knives *f*, and having its opposite sides completely sliced, each knife cutting a slice the thickness of the pieces, being equal to the spaces between the knives. The upper and lower parts of the apple are sliced in a similar manner by the knives *i*, as the apple is shoved between them, and a square core is left on the fork, which core enters the tube *h*, and the curved end of the spring plate *j* passes behind the core, and as the arbor is drawn back retains the core, or prevents it from following the fork. When the second or succeeding apple is sliced, its core forces its predecessor out of the tube *h*.

The inventor says: I am aware that apple slicers and corers have been made, which consisted of a tube having straight knives placed radially within; an example is seen in R. Mitchell's patent, April 18, 1838, and I therefore disclaim them.

I *claim* the construction of apple slicers, in the manner described and represented.

No. 17,484.—Charles F. Bosworth, of Petersham, Mass.—*Improvement in Machines for Paring, Coring, and Quartering Apples.*—Patent dated June 9, 1857.—The apple to be pared being placed upon fork F, fork shaft D is turned; and as the screw *a* is in gear with rack *b*, the shaft D and the apple thereon are moved forward, causing the paring knife *d* to operate upon said apple. As the operation continues, the fork enters the hollow corer A, fixing the apple upon said corer; the fork F is then moved backward, and a new apple is placed thereon, and the operation repeated until the corer A has the apples placed over its entire length, when these apples are pressed against the quartering knives B and E by the apple on the fork F.

The inventor says: I do not claim broadly paring, coring, and quartering an apple by machinery.

But I *claim*, in combination with the stationary quartering and coring knives, the fork shaft, when so arranged in relation to each other and to the mechanism operating the machine, that it shall steadily propel the apple in the direction of, and while revolving upon the axis of the corer, whereby one or more apples may be graduated and cored, while another is pared.

No. 16,417.—D. H. WHITTEMORE, of Chicopee Falls, Mass.—*Improvement in Machines for Paring and Slicing Apples.*—Patent dated January 13, 1857.—By turning the shaft A, the screw C draws the slide J along, bringing the paring knife K against the surface of the apple on fork B; the spring I holds it there sufficiently to pare, but yields and allows the knife K to pass around the apple so as to present the edge constantly to the apple; the knife O following the knife K, and slicing the apple into one spiral slice.

The inventor says: I do not claim the peculiar form or arrangement of the parts.

I *claim*, first, so arranging the slicing knife that it shall cut the apple into a continuous spiral slice, as set forth.

Second. So combining the parer and slicer with each other, that the operation of the two shall be simultaneous, as set forth.

No. 16,517.—CLARISSA A. HUBBARD, executrix of GUY H. HUBBARD, deceased, late of Shelburne Falls, Mass.—*Improvement in Machines for Paring and Slicing Apples.*—Patent dated January 27, 1857.—The action and construction of the slicer are as follows:

To the standard B is hinged at N^1 an arm N sustaining the cross gauge head P, to which is affixed the curved knife O, in such position that the edge thereof alligns near the axis of the fork K, and swings upon the hinge at N^1. A tripping post M is attached to the clamp A, which, on careening the machine to the left, comes in contact with the pin L passing through the shaft of the loop gear H, and causes the partial rotation of the loop gear H, and thereby withdraws the end of the rack bar G from the scroll F, thus permitting the backward rotation of the crank and driving-wheel, together with the fork and apple. The machine being now careened to the left, as described, and the pared apple remaining upon the fork, the arm N with the slicing knife O attached is swung by the left hand, and the knife pressed lightly against the apple, which is thereby cut during its backward rotation into one continuous slice, leaving only the core in cylindrical form upon the fork.

The inventor says: I do not claim the cutting of apples into continuous slices or ribbons, nor any formation of slices to prevent their close packing while drying. Neither do I claim nor confine myself to any particular curvature of the knife O, nor the application of the arm N and knife O to the particular machine represented.

I *claim* the arrangement of the machine with its paring and slicing knives, in such a manner as to careen upon the point B^1, in the manner and for the purpose substantially as set forth.

No. 17,901.—R. W. THICKINS, of Brasher Iron Works, N. Y.—*Improvement in Machines for Paring and Slicing Apples.*—Patent dated July 28, 1857.—An apple V being placed on each end of the forks R, the crank G is turned, and the arbors Q, together with the apples, are rotated, and one apple is pared by means of knife *l*, which is passed around said apple by the arrangement of screw shaft F, rod I, rack J, and toothed sector K. When the apple is pared, the head P is turned and a fresh apple is exposed to the knife *b*, while the pared apple is being sliced by the cutter *e*, which is actuated by screw shaft F. In turning the head P the flanch r^1 of the tube *s* is forced against the flanch *v*, thereby stripping the core from the fork R.

The inventor says: I do not claim broadly paring and slicing apples at one and the same time, for implements for effecting the same purpose have been previously invented.

But I *claim* the two arbors Q Q attached to the rotating head P, when used in connexion with the screw shaft F, collar *c* with arms *h d* attached, the rack J, and geared segment K to which the knife arm L is attached, the above parts being arranged substantially as shown for the purpose specified.

I do not claim separately, or in themselves considered, the employment or use of sliding tubes placed over or on the forks for the purpose of automatically discharging the cores therefrom for such tubes have been previously used, and the same may be seen in the paring machine patented by J. D. Seagrave, April 18, 1854. I therefore distinctly disclaim all parts or arrangement of parts covered or claimed by said Seagrave, and I confine myself to the precise arrangement and combination of parts specifically as shown and described.

What I do claim, therefore, is the sliding tube S and lever U, with curved arms *v* attached, when combined with the arbors Q Q, arranged as shown, so that by the same movement of the head P the several parts are made to work automatically as set forth.

No. 16,443.—JARED O. M. INGERSOLL, of Ithaca, N. Y.—*Improvement in Machines for Paring Apples.*—Patent dated January 20, 1857.—Rotary motion being given to shaft D, the wheel G is rotated and the pins *a* impel shaft M forward, carrying with it the swing frame H, by which means the knife in knife-holder I is made to traverse from the stem of the apple to the blossom, the apple being stuck upon fork E. When the pin *a* slips from rod M, the knife is instantly brought back to its place of starting by the spring N.

Claim.—I do not claim the automatic movement of the knife or the various devices connected therewith, which are in common use, but confine myself to the specific claim, viz:

The peculiar form of the rod M, operated by pins on the face of the wheel G, in connexion with the transverse bar P, arranged and operated substantially as described.

No. 16,666.—DAVID H. WHITTEMORE, of Worcester, Mass.—*Improvement in Machines for Paring Apples.*—Patent dated February 17, 1857.—The slide I moves upon rod F and receives motion from screw thread D upon shaft A, the end of arm K projecting from the slide being held in the screw thread by means of guard G. Both ends of the guard are properly cut out so as to allow the arm K at either end of its motion to follow the impulse of spring P, and to tilt, thereby moving the slicing knife O away from the core of the apple.

Claim.—First, giving the slide I, with its slicing knife attached, a curved or lateral motion, for the purpose of enabling the slicing knife to leave the core in a shape for the easy removal of the apple by means substantially as set forth.

Second, the arrangement consisting of the travelling knife carriage I, with its tilting lever K, playing over the guard G, which keeps the lever engaged with the screw while the apple is being pared, and releases it for the free return of the carriage, as set forth.

No. 16,843.—B. F. Joslyn, of Worcester, Mass.—*Improvement in Machines for paring Apples.*—Patent dated March 17, 1857.—The apples are placed, one at a time, on the fork D, and the cutter I is pressed against the apple by the spring H. The knife is first placed against the outer end or part of the apple, and the nearer wheel *j* is made to penetrate the apple a short distance by means of the spring L on its rod *f*. A rotating movement is then given to the mandrel C, and as the apple rotates it is pared by the cutter I, the apple being fed along the cutter by the wheels *j*, which being placed in an oblique position with the axis of the apple give the feed motion to the apple, the mandrel sliding in its bearings.

Claim.—The spurs *j* either rotating or stationary, attached or connected to the cutter rod and placed obliquely or angularly with the apple or its axis of rotation, when said spurs are used in connexion with a sliding mandrel C, substantially as shown and described, for the purpose of feeding the apple to the cutter, as set forth.

No. 16,993.—J. J. Parker, of Marietta, O.—*Improvement in Machines for Paring Apples.*—Patent dated April 7, 1857.—The operation of this machine is as follows: The apple to be pared, shown in dotted lines, is placed upon fork *i*, and the wheel B is turned so that knife G will be at the outer end of the apple, the arm B by its elasticity causing the knife G to press against the apple so that it will be properly pared. The knife will yield so as to conform to the inequalities of the apple, and is allowed, owing to the peculiar connexion of of the stock F with the arm D, to turn a requisite distance on the arm so that it will always adjust itself in a proper relative position with the apple.

The inventor says: I disclaim any special peculiarity in the knife arm. I do not claim broadly the employment of a spring for allowing a yielding motion to the knife stock, an example of such use of a spring is seen in the patent of E. L. Pratt, April 29, 1856.

But the combination of the spring holder H with the arm D is, to the best of my knowledge and belief a new combination, possessing peculiar virtues, and productive of new and useful results.

Therefore, I *claim* the combination of a spring holder H with the knife arm D, in the manner and for the purposes described.

No. 17,282.—J. F. Keeler, of Cleveland, O.—*Improvement in Bed Bottoms.*—Patent dated May 12, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The eyelets E and H, and the cords D, with or without the springs F F, connected with the rails and arranged in relation to the slats B substantially in the manner and for the purpose set forth.

No. 17,605.—George W. Dow, of Lynn, Mass., assignor to Himself and Walter F. French, of the same place.—*Improvement in Spring Bed Bottoms.*—Patent dated June 16, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim supporting a set of slats on springs arranged longitudinally in a bedstead or frame.

But I *claim* my improved spring bedstead or bed bottom as made with two series of rests or bearers B B, two elastic bands or belts C C^1, and a series of transverse bars or slats D D, arranged together and in the bed frame substantially as described.

No. 18,357.—Henry T. Smith, of Washington, D. C.—*Improvement in Spring Bed Bottoms.*—Patent dated October 6, 1857.—In this improvement the upper ends of the longitudinal slats *a* are kept in place and connected with each other by a trasnverse slat *k*, which prevents one side of the elastic bottom from sinking lower than the other when the weight on the sides of the bed is unequal. Straps *l*, attached to each side of the spring bottom and also to the side rails of the bedstead, prevent the bottom from springing up and becoming displaced when relieved from the weight of the bed.

The inventor *claims:* Sustaining the slats forming the spring bottom at and near one end, leaving the remainder of the length of the slats unsupported, by which means they form a series of elastic springs for the support of the bed.

No. 17,558.—D. Stringham Dunning, of New York, N. Y.—*Improvement in Invalid-Bed Elevators.*—Patent dated June 16, 1857.—This implement is used by attaching a sacking L, which is placed underneath the bed of the invalid, to the bars C, and the bed and invalid may be raised by turning shaft J. The bed may be inclined by shifting pulleys *k*, and adjusted to suit the convenience of the occupant.

Claim.—The jointed bars C C connected by the cross-pieces D D, the cranes B B attached to the upright A, the winches formed of the sliding pulleys K K and gear G I, the ropes or chains *i* attached to the pulleys *k* and cross pieces D of the bars C, the whole being combined and arranged substantially as shown and described for the purpose set forth.

No. 18,189.—George H. Clark, of Pontiac, Mich.—*Improvement in Invalid Beds.*—Patent dated September 15, 1857.—When the patient requires the use of the chamber vessel, the head end of the mattress J is lowered, and slide M, which is hung in brackets N, is slid towards the foot of the bed to support the vessel, which is placed in the hole of the slide M.

Claim.—The construction and arrangement of parts described, by which the head end of the foot portion of the bed is made capable of being lowered away from the patient, substantially as and for the purpose set forth.

Also, combining with said arrangement the slide M attached to the frame to support the vessel, as set forth.

No. 18,902.—SAMUEL HICKOCK, of Buffalo, N. Y.—*Improvement in Bedstead Slats.*—Patent dated December 22, 1857.—In the engravings a bed is represented with one of these improved slats. It sits in recesses G G in the rails H H; six or eight of these are required to make a set for one bedstead. These spring laths can be used either side up, and may be reversed when it is necessary to straighten them.

Claim.—Two laths, A and B, placed parallel with each other, and one above the other, and connected or fastened together at or near the centre, constructed and used with or without the spiral springs, substantially as described.

No. 17,695.—CHARLES ROBINSON, of Cambridgeport, Mass.—*Elastic Loop for Suspending Bedstead Slats.*—Patent dated June 30, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—An elastic self-attaching loop for bedstead slats, substantially as specified, as a separate article of manufacture not heretofore known.

No. 19,008.—CHARLES T. YOUNG, of North Chelmsford, Mass., assignor to Himself and HENRY CROWTHER, of Lowell, Mass.—*Steam Spring Bedstead.*—Patent dated December 29, 1857.—In constructing this improved bedstead there are made four couplings, as seen at C, with a perpendicular hole through each sufficient to be passed up on to, and be secured in, any desired position to the posts B, by means of the set screws O; these couplings are connected together crosswise of the bed by the tube N, which is screwed into them steam tight, and which constitutes the head and foot or cross rails of the bedstead. The long rails are seen at A, and are likewise hollow metal tubes, and are fitted tight to holes formed in the coupling C.

The inventor says: I do not claim constructing bedsteads of metallic tubing, as such is old and well known.

I *claim* the rods I connected to the end rails N, when these rails and the side rails A are connected by a common coupling to the bed post, arranged as and for the purposes set forth.

No. 17,569.—PETER HINDS, of Kendall's Mills, Me.—*Improvement in Bedsteads.*—Patent dated June 16, 1857.—In figure 1 this bedstead is represented in its horizontal position. The bedstead can be turned up into a vertical position by turning it on pivot Z of the foot B, said foot being kept in a vertical position, as represented in figure 2.

Claim.—A turn-up bedstead, constructed substantially as described, with two sets of sockets in its bed posts, and with movable or secondary posts, provided with connecting levers or bands, by which, when the bed is turned up into a vertical position, the bedding may be maintained in place, as specified.

No. 16,946.—JOHN T. GARLICK, of New York, N. Y.—*Improvement in Life Preserving Bedsteads and Sofas.*—Patent dated March 31, 1857.—This bedstead is fully illustrated in the engravings, and is intended to be used on vessels instead of the berths used heretofore, so that each passenger may have one at his disposal in case of accident.

Claim.—Air and water tight bedstead, settee, or sofa, constructed and arranged in the manner described and for the purposes set forth.

No. 17,818.—ETHAN WHITNEY, of Boston, Mass.—*Improvement in Bureau Bedsteads.*—Patent dated July 14, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim so applying a bedstead to a wardrobe or case as to enable the said bedstead to be turned on hinges or their equivalents, from a vertical position in the case to a horizontal position, so as to project from and out of the case.

Nor do I claim, when separately considered, making a bedstead in two parts hinged together, or making a bedstead or part of the same to slide into a sofa frame by means of guide grooves and projections applied to the same, as represented in the patent of A. Walker, dated July 29, 1842.

But I *claim* a bedstead as constructed substantially as described, viz: with the bedstead portion made in two parts, hinged together as described, and applied to the case by projections K K, and grooves *d d*, arranged as specified; in order that the said bedstead may be either folded together and slid back into the case, or be drawn forward and out of the case and unfolded or let down into a horizontal position, as circumstances may require.

No. 16,647.—BENJAMIN HINKLEY, of Troy, N. Y.—*Improvement in Folding Bedsteads.*—Patent dated February 17, 1857.

Claim.—In portable folding bedsteads, connecting and bracing the folding portions and intermediate legs by the double cog hinges attached to the side rails, and having their bearings in the intermediate posts, substantially as set forth.

No. 17,281.—JAMES A. JOHNSTON, of Antrim, O.—*Improvement in Folding Bedsteads.*—Patent dated May 12, 1857.—This bedstead is represented in its various positions in the engravings, when placed in the position it usually occupies when used as an invalid bedstead, and when folded up so as to render it easily removable.

The inventor says: A bedstead has been in use with joints in the end rails, having the side rails let in by a dovetail mortise, and capable of folding only the ends together; this I do not claim.

But I *claim* the accommodating brace C in combination with the stay-block D, and hinged jointed rails B, and posts A; for the purpose of forming an invalid or other bedstead as required, and easily removed without being taken apart, either in whole or in part.

No. 17,460.—JOHN B. WICKERSHAM, of New York, N. Y.—*Improvement in Folding Bedsteads.*—Patent dated June 2, 1857.—When this bedstead is unfolded, the weight and strain on bar B are taken on the shoulder *a*, thus relieving the pins 2 and 5, which merely hold the bar B to the head or foot-board A.

The inventor says: I do not claim a fold-up bedstead, neither do I claim securing the side rails by the insertion of a pin through two holes.

But I *claim* securing the side rails in place, when the bedstead is in an unfolded position, by the combined operation of the shoulder *a* and pin 5 inserted above the rail, substantially as and for the purposes specified.

No. 18,565.—Henry F. Vandenhove, of New York, N. Y.—*Improvement in Folding Iron Bedsteads.*—Patent dated November 3, 1857.—By this invention, the side rails are applied to the bedstead so as not to prevent its being folded less compactly than usual, and the posts D by means of the buttons *f* and the curved grooves and pins *f*, are secured firmly in a vertical position; the buttons may be easily adjusted.

The inventor says: I do not claim broadly a bedstead connected by joints, so that when not in use the parts may be folded together; as such bedsteads are well known and in quite common use.

Neither do I claim separately or in themselves considered the guards or fenders, independent of the manner in which they are arranged or applied to the bedstead.

But I *claim* applying or attaching the guides or fenders to the bedstead, as and for the purpose set forth.

I further claim attaching the buttons *f* to the side pieces *b*, and also attaching the pins or stops f^3 to the side pieces *b*, in connexion with the grooves f^2 in the inner sides of the posts D, for the purpose specified.

No. 18,968.—Royal Hatch, of Strafford, Vt.—*Improved Spring Bottom Bedsteads.*—Patent dated December 29, 1857.—This invention consists in attaching the ends and sides of a canvass or sacking bottom to the end and side rails A A and B B of a bedstead, by means of spiral springs F, arranged so that an elastic or flexible body is obtained.

Claim.—Stretching the sacking bottom G upon springs F, all in the manner substantially as described.

No. 17,047.—James S. McCurdy, of New York, N. Y.—*Improvement in Wardrobe or Bureau Bedsteads.*—Patent dated April 14, 1857.—The leaf B, sliding-frames *c*, and folding-legs *a*, which compose the bedstead, may be drawn and folded up within the bureau A when not used.

The inventor says: I do not claim constructing a bedstead that may be folded up into the form of a bureau, irrespective of the particular means by which that is effected, as several forms of bureau bedsteads have before been made.

But I *claim* the combination of the leaf B, and slatted sliding-frame *c c*, and folding-legs *a a*, constructed, arranged, and operated in the manner and for the purposes set forth.

No. 18,597.—James Naughten, of Cincinnati, Ohio.—*Machine for Cutting Bread.*—Patent dated November 10, 1857.—The dotted lines in figure 2, represent the swinging and gauge plates when in a position for discharging the bread cut from the machine, and the other position represented of the swinging and gauge plates *h* and *g* is that assumed when the machine is in the act of cutting a slice of bread.

Claim.—The arrangement of the swinging plate *h h*, gauge plate *g*, and set screw C, when arranged with the spring 5, and curved lever J K, for gauging the thickness of the slice of bread cut, and discharging it from the machine by the action of the lever *f f*, on the curved lever J K, all as and for the purpose specified.

No. 16,877.—Samuel Mason, of Indian Springs, Md.—*Improvement in Clamps for Brooms.*—Patent dated March 24, 1857.—A represents the box part of a metallic clasp, to which is hinged piece B, which, when shut down, encloses the box clasp, except on one side. Both the box and hinged portions of the clasp are provided with teeth *a a*, which, when brought together, pass through the material of which the broom is made and hold it firmly to or in the clasp. The hinged portion of the clasp is provided with hasps *b b*, which take over projecting staples in the side of the clasp, to hold it in place. To the end of the handle F, within the clasp, is secured one end of a cord, thong, or wire *c*, the other end thereof being secured to a pin or bolt *d*, on the outside of the hinged portion B of the clasp.

The inventor says: I claim so uniting the hinged portion of the case to the handle by means of a thong, cord, or wire, as that the leverage of the handle may be used for closing said hinged portion, thus firmly closing the case on the material to hold it rigidly in the case, as set forth, and to strengthen the middle portions of the clasp, as described.

No. 18,770.—Spencer Rowe, of Baltimore, Md.—*Improvement in Machines for Making Brooms.*—Patent dated December 1, 1857.—This improvement consists in giving motion to a hollow shaft B, in which the broom handle is secured, directly by the foot of the operator, and in such a way that the same amount or degree of movement is obtained by the pull or retraction of the foot as that obtained by the push thereof, thus giving double the motion of any other broom machine.

Claim.—The employment of the double pawl, operating on the ratchet wheels *c c*, and hollow shaft B, the rock shaft D, and rods *f f*, all arranged as described, when in combination with the guide E and friction spools G and bobbin F, for the purpose of manufacturing corn brooms in a superior manner.

No. 17,631.—Thomas Mitchell, of Lansingburgh, N. Y.—*Improved Machine for Finishing Brush Handles.*—Patent dated June 23, 1857.—The brush is first placed upon the platform *d*, and secured to it by pressing down lever L, and the revolving knives E^1 and E^2 form the moulding or edges of the sides of the brush. The crown saw O then serves to finish the end of the stock. The cutter wheel K is used for trimming the edges of curved brushes, which are applied in the manner illustrated in the engraving, and the cutter wheel M is used to finish the side of rectangularly shaped brushes.

Claim.—The arrangement and combination of mechanical devices set forth and described in the above specification, constituting a machine to be used for the purposes and in the manner set forth, viz: platform D, with revolving cutters shaped and operating as described, crown saw O, with the arms *d d*, and the adjustable platform and cutter wheels K and M, with their cutters, substantially as set forth in the specifications and drawings.

No. 18,528.—LEEMON A. TRIPP, of New York, N. Y., assignor to LEWIS C. PLATT, of Westchester county, N. Y.—*Machine for making Brushes.*—Patent dated October 27, 1857.—The nature of this invention consists in constructing a machine for wiring and sticking the tufts of hair or bristles into clothes, scrubbing, and other brushes, having wood or metal tuft holder stocks or backs, by means of a wire carrying needle K, operated by a crank or cam F, and having an intermit of motion at each end of the stroke of the needle for allowing time for inserting the tuft of hair in the loop of the wire and the feed motion of the brush. Second, a wire holder, griper, or pincers T and griping bar, having a reciprocating motion at right angles to the vertical motion of the needle for the purpose of carrying the wire to the needle, and for taking up the slack of the wire to draw the tuft of hair in the brush stock. Third, a loop former W, operated by a cam on the needle bar crank shaft E, for opening the wire at the point of the needle to allow the tuft of hair to be inserted thereon. And lastly, by the combination of a carriage Z, for carrying the brush stock with the needle, so that the needle will enter each hole in the stock, in succession, at the required time.

Claim.—The inventor says: I claim, first, the use of the slot H, or equivalent therefor, in the connecting rod G, in combination with the needle for causing it to remain stationary at each end of the stroke of the crank a definite space of time, for the purpose before set forth.

Second. I also claim the use of the sliding bar R, having a bracket S attached thereto, in combination with gripers T, operated by the devices before described, or equivalents therefor, for the purposes substantially as set forth.

Third. I also claim the loop former W, operated by means substantially as described, in combination with the needle, for the purposes before set forth.

No. 16,950.—JAMES T. STEER, of New York, N. Y.—*Improvement in the Manufacture of Paint Brushes.*—Patent dated March 31, 1857.—The process of manufacturing these brushes is as follows: The bristles are passed within the binding ferrule C, the edge of the ferrule C is then placed against the edge of the ferrule E, and the bristles are driven into the ferrule E until they come in contact with the cap. The conical handle F is then entered at the brush end of the bristles with the small end, and driven up until it fits tightly in the shank D.

Claim.—The use of the binding ferrule C, for the purpose of effecting, as described, the introduction of the bristles into the cap ferrule E, the said cap ferrule being made in one piece, with its cap and shank, as described, for the purpose of making an improved paint brush, as set forth.

No. 18,647.—GEORGE R. PECKHAM, of Worcester, Mass.—*Improved Cake Cutter.*—Patent dated November 17, 1857.—Fig. 1 represents a perspective view, A the handle affixed to the outside cutter B, C the cross piece attached to the upper rim of the outside cutter, F the centre or smaller cutter placed within the socket E, D the head within or at the end of the cylinder F.

Fig. 2 represents the cutter F taken from its socket, as shown in fig. 1.

Fig. 3 is a transverse sectional view, with cutter F and head D reversed in its position, as shown in fig. 1, the cutter being down and the head upwards; H is a rim turned in on the cross piece C, for the purpose of keeping down the cutters F with the outside cutter B.

Claim.—The movable cutter F, with its head D, being placed in the socket E, as represented, and its capability of being reversed in its position, as represented, for the purposes and uses specified.

No. 16,684.—RHODA DAVIS, of Brookhaven, N. Y.—*Improved Elastic Cap for Sealing Cans and Bottles.*—Patent dated February 24, 1857.

Claim.—The inventor says: I do not claim to be the inventor of flexible caps for covering the mouths of jars, neither do I claim their exclusive use. Closing the mouths of vessels by means of caps has been practiced from time immemorial; but, in general, the caps employed are inconvenient, because they require to be tied on or sealed with wax in order to render them tight.

But a self-acting cap made of India rubber, in the forms described, and possessing the virtue of yielding when drawn over the mouth of the jar, and then contracting so as to fasten itself securely around the lips of the vessel, rendering the mouth thereof perfectly air-tight, is, to the best of my knowledge and belief, a new article of manufacture.

Therefore I claim, as a new article of manufacture, a cap or cover A *b* for sealing vessels, composed of India rubber, when made in the form and possessing the virtues substantially as described.

No. 18,035.—WILLIAM BORRMAN, of Cincinnati, Ohio.—*Improved method of Hermetically Sealing Cans.*—Patent dated August 25, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The mode, substantially as set forth, of hermetically sealing cans by means of the central screw stem *c* and sheath *e*, in the described combination, with the pliable lid *f g h j*, nut *d*, and gaskets *i* and *k*.

No. 18,078.—EDWIN BENNETT, of Baltimore, Md.—*Improvement in Sealing Cans.*—Patent dated September 1, 1857.—The jar being filled, the combined cap and stopper is placed over the mouth of the same, after which the jar is turned neck downward and melted beeswax is poured into the space formed by lip *b*, and the entire spaces *b* and *c*, figure 2, must be filled with the melted substance.

The inventor says: I am fully aware that caps and stoppers and other sealing devices have been employed in application to jars and vessels containing fruit or other substances, and consequently I do not claim any of said devices as known or used.

I am also aware that plastic and adhesive substances have been used and combined with caps and stoppers for various purposes, but I disclaim such materials and combinations.

I *claim* the construction of a cap formed with a flaring lip-like rim *b b b b*, and groove or gutter C C, and combined with a stopper part *d d e e*, arranged and applied to an inverted jar, or other receptacle, in the manner and for the purposes substantially as set forth.

No. 17,783.—Mills B. Espy, of Philadelphia, Pa.—*Improved Device for Sealing Bottles, Cans, &c.*—Patent dated July 14, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The combination of the upper plate B, having the slot *g* and the two hooked projections *f f*, the lower plate *c* having the screw hole *h* and the two hooked projections *f f*, with the thumb screw D and the jam nut E, the same being adapted and arranged together so as to be applicable to the mouth of a bottle or jar, substantially in the manner and for the purpose set forth and described.

No. 18,631.—Stephen Culver, of Newark, N. Y.—*Improved Carpet Fastener.*—Patent dated November 17, 1857.—The claim and engraving explain the nature of this invention.

Claim.—The method of securing carpets to floors by means and use of a metallic plate attached to the under side of the carpet, perforated to receive the head of a screw, and by such perforation hitched to a screw, or its equivalent, driven into the floor, in the manner and for the purposes set forth, so that the carpets may be put down and taken up at pleasure, without the use of tools.

No. 17,488.—David N. B. Coffin, Jr., of Newton, Massachusetts.—*Improvement in Carpet Fastenings.*—Patent dated June 9, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—A screw having a head arranged at one side of its axis, so that it may be applied and operated as set forth, or so that the screws may require a turn of only a part of a revolution to secure or to release the carpet after being screwed into their places, and whereby it is made practicable to take up a carpet and replace it in a very short space of time, and with great ease. In other words, I claim the eccentric headed screws for securing carpets to floors and for similar purposes.

No. 17,890.—Washington H. Penrose, of Philadelphia, Pennsylvania.—*Improvement in Fastenings for Carpets.*—Patent dated July 28, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The use of bars, strips, or rods A with teeth or points G, either straight, inclined or hooking, fastened to the floor on which to place the carpet, in combination with strips, bars or rods D fastened to the washboard E to press the carpet down upon the teeth or points, for the purpose of retaining carpets upon a floor, in the manner substantially as described.

No. 17,897.—Richard E. Schroeder, of Rochester, New York.—*Improvement in Fastenings for Carpets.*—Patent dated July 28, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The plate C secured to a stock B, or directly to the flooring by a joint, the plate having a spring D bearing against it, substantially as described for the purpose set forth.

No. 18,466.—Ellis Nordyke and Addison H. Nordyke, of Richmond, Indiana.—*Automatic Caster and Fan.* Patent dated October 20, 1857.—This invention operates as follows: The machine being wound up is placed upon the table. The centre D and arms F are adjusted as shown in the drawing. The works are now permitted to revolve, the fan arms revolving with considerable velocity, so as to keep off the flies. The caster frame B, also revolves, alternately displaying its various contents.

The inventors say: We are aware that revolving fans operated by clock-work are now in use; such device therefore of itself we do not claim.

But we *claim* the combination of a revolving fan C D F F F F, with the caster A B, in the manner shown and described.

We also claim operating the caster frame B in the manner set forth.

No. 18,740.—Edward Gleason, of Dorchester, Massachusetts.—*Improvement in Revolving Bottle Casters.*—Patent dated December 1, 1857.—This invention is an improvement on a former invention by the same inventor, patented October 21, 1856. The claim and engravings show the nature of the improvement.

Claim.—The inventor says: I do not claim separately and broadly the revolving doors E, nor the revolving body B.

But I claim the combination of the pinions *h h h*, each moving a caster door and cruet, and the wheel F with the pinion e^1 of the rod or arbor *f*, the said pinion e^1 gearing into a segment rack d^1 in the wheel F, as set forth, so that when this combination is actuated through the knob *i*, the caster, cruets, and doors to which they are attached may be rotated independently of the rotation of the body B of the caster.

No. 18,839.—Timothy P. Burger, of Oyster Bay, N. Y.—*Improvement in Casters for Furniture.*—Patent dated December 15, 1857.—The claim and engravings explain the nature of this invention.

Claim.—The new manufacture of caster described, to wit: a ball caster, in which the large ball rolls against a small ball arranged above it, and against friction rollers arranged below the horizontal centre of the large ball, so as to retain it (the large ball) in its place when the caster is lifted from the floor.

No. 18,377.—MOSES S. BEACH, of Brooklyn, N. Y.—*Folding Chair for Pews.*—Patent dated October 13, 1857.—In each of the drawings A represents the pew seat, B the end piece of the pew, C the seat of the movable chair, D the chair back, E the chair legs, F the back and leg brace, fastened to the chair back, G a hanging stay-piece, fastened to the end piece of the pew, and serving as legs to the chair when open and a support when closed.

The inventor says: I do not claim broadly to be the first inventor of folding chairs, the backs and legs of which are hinged, for they are well known.

But I *claim* the employment of the brace F, when arranged as described, so as to serve the treble purpose of a brace or stop for the lock D and the leg E, and also as a stop to prevent the back D from opening laterally when the chair is folded against the pew.

No. 18,873.—JOHN SAWIN, D. J. GOODSPEED, and JOHN H. MINNOTT, of Gardiner, Mass.—*Improved Infantine Exercising Chair.*—Patent dated December 15, 1857.—The claim and engravings describe the nature of this invention.

The inventors say: We do not confine our invention to arranging the spring so that it shall envelop the shaft, as it may be applied on one side of the shaft, in which case two or more springs might be necessary.

Neither do we claim the application of a spring to a seat, as such is not new.

Nor do we claim a rotary chair or stool, provided with a foot rest, to be so attached as to rotate with the seat, such seat being provided with any spring on which it may rest and play, as stated.

We *claim* our improved child's exercising chair, as constructed, with the continuous or endless foot rest, and with its seat supported by a spring or springs, and so as to be capable of being freely rotated and to operate in other respects as specified.

No. 17,008.—RANSOM WITHERELL, of Huntington, Mass.—*Improved Invalid Chair.*—Patent dated April 7, 1857.—When the bars D are in the position represented in dotted lines, the occupant will sit in a natural and easy position on seat C, the bars E and cross-piece F forming the back of the chair, and the bars G the foot rests. The occupant by releasing the round b^1 from catch H, by means of his foot, will liberate the bars D and allow them to turn in to the position represented in full lines.

The inventor says: I do not claim a chair provided with a swinging back and foot rest irrespective of the mode of construction and arrangement shown.

I *claim* attaching the bars E E to one end of the bars D D by a joint, and attaching the bars G G in a similar manner to the opposite ends of the bars D D, the bars E E, with their cross piece, forming the back of the chair, and the bars G G, with their rounds, the foot rest; the bars D D being pivoted to the opposite sides of the stationary chair seat C and perfectly balanced on their pivots; the whole being arranged as shown for the purpose specified.

No. 18,696.—DAVID KAHNWEILER, of Wilmington, N. C.—*Improvement in Ventilating Rocking-Chair.*—Patent dated November 24, 1857.—The operation of this invention is as follows: Suppose the upper chamber of fig. 2 to be filled with pieces of ice, the atmosphere entering at K, by means of rocking, becomes cooled by continued contact with the water, particularly as it passes over in its serpentine course to its escape at *f*, and thence comes immediately in contact with the ice, absorbing its latent cold, forced out at *g*, through the tube *n*, fig. 1, agreeably impregnated with perfume in passing at *o*. Tube *g g*, fig. 1, can be connected directly with *o*, without passing through the ice, or directly with tube *p*.

The inventor says: I do not claim purifying or cooling air by passing it in contact with ice, or any mode of impregnating air with perfumes.

Nor do I claim producing a current of air by the rocking of a chair for the purpose of fanning the person.

But I *claim* combining a refrigerating apparatus with a rocking-chair in the manner set forth.

No. 16,635.—SAMUEL J. ANDERSON and NELSON RICHARDSON, of Erieville, N. Y.—*Improvement in Extension Chairs.*—Patent dated February 17, 1857.—The levers *d* upon legs *e* may be drawn out from underneath the box, (as represented in broken lines in the engravings,) and the boards or seats B be placed on top. If a still greater length of seat is required, the part *b* of the box is turned around in line with part *a*, (as represented in broken lines in fig. 2.)

The inventors say: We do not claim the levers *d*, for they have been previously used for similar or analogous purposes.

But we *claim* the levers *d* and folding seats B attached to the box A, as shown, the box being formed of two parts *a b*, connected by a hinge *c*, and the whole arranged as described for the purposes set forth.

No. 17,567.—JAMES G. HOLMES, of Charleston, S. C.—*Improvement in Chairs for Invalids.*—Patent dated June 16, 1857.—The back B is secured to the end of the swinging frames *a*, the seat C is secured to their lower bar, and the supports G to the front bar of said frames. The frames *a* can be made to swing on their pivot *b*, and when the back B is inclined to the rear the seat frame C is moved forward and the supports G are thrown into a position nearly parallel to the back B.

Claim.—The arranging of the joint by which the seat and back are attached and move, so that it shall correspond with the hip joint of the human frame, that is, placing it above the seat and in advance of the back, substantially in the manner and for the purpose set forth.

Also, arranging the knee joint in the chair or seat to correspond with that of the human knee joint of the person occupying it, substantially as described.

Also, the frame work of metal or other material by which all the joints and pivots, excepting that of the separate apron which moves with and supports the leg from the knee down, are combined either with or without the arm rest, as may be desired, as set forth.

No. 18,722.—Jordan L. Mott, of Mott Haven, New York, and William Tabele, of New York, N. Y., assignor to The J. L. Mott Iron Works, of Mott Haven, New York.—*Improvement in Rotary Chairs.*—Patent dated November 24, 1857.—In the engravings *a* represents the chair pedestal, made of cast-iron, with the upper part *b* hollow and flanched to receive the socket *c*, also made of cast-iron. This socket is formed with a surrounding rim *d*, to the inner periphery of which is fitted a securing ring *e*. The central portion of the bottom of the socket is cup-formed, as at *f*, to receive and hold oil, and the central part thereof is formed into a step to receive the pivot *g* of central nut *h*. The upper surface of the nut forms a base for the under surface of the bottom plate *i* of the seat, which is secured thereto by a nut *j*, tapped on to a stem projecting upwards from the upper part of the nut. The bottom plate *i* is cast in one piece with the back *k*, and after this plate is secured to the nut a wooden slat *l* is secured thereto by screws; but before the nut is secured to the plate *i* the securing ring *e* is put over the nut.

Claim.—The inventors say: We do not claim the special form of the parts, as these can be variously modified and still retain the mode of operation which we have invented.

Nor do we wish to be understood as limiting ourselves to the use of our said invention in a rotating chair of the construction specified, as it will be obvious that it is equally applicable to all rotary chairs.

We do not claim as our invention any of the separate parts above described, such as the pivot attached to the chair seat, and fitted to turn in the socket in the upper part of the pedestal.

But we *claim* the combination of the securing ring, substantially as described, with the flanch projecting from the spindle of the pivot, which is fitted to turn in the socket on the upper end of the pedestal, as and for the purpose specified.

No. 16,972.—John T. Foster and Jacob J. Banta, of Jersey City, New Jersey, and James H. Banta, of Piermont, New York.—*Improvement in Forming Spiral Springs for Chairs, Sofas, and other articles.*—Patent dated April 7, 1857.—This spiral spring is formed by cutting a plate *a*, by a suitable tool, in a scroll or spiral form, commencing at or near the centre of said plate until the cut approaches to the desired proximity to the edge of said plate. Two springs *b* formed in this manner are riveted together at their apex, thus forming an efficient double spiral spring.

Claim.—The spirally cut metallic plate spring applied to sofas, chairs, and similar articles, substantially as and for the purposes specified.

No. 18,632.—Lewis H. Cushman, of Monmouth, Maine.—*Imvroved Clothes Clamp.*—Patent dated November 17, 1857.—In the engravings *a a* are the cheeks or body of the clamp; *b* is the spring, consisting of a metallic wire or rod bent, as shown in the engraving; *c* is the lever, held in its place by the staple *d*. This lever has a cam-shaped end next to the clamp, and the staple passes through the first cheek and is firmly fixed in the second.

Claim.—The combination of the spring and cam lever, as set forth.

No. 16,923.—John Humphrey, of Keene, N. H.—*Improved Machine for Cutting Slots in Clothes Pins.*—Patent dated March 31, 1857.—The pins are fed to this machine by means of the slide A, and drop into the groove G of the holder B. The machine being set in motion, the holder is vibrated longitudinally on its ways F, by the arrangement of crank D and pitman E. The pin drops from the slide A on to the stationary rod I, and bearing against projection *b*, said pin is moved from position *r* to position *s*, figure 2, as the holder is driven towards the saw. It is there griped by dog H, and has its slot cut in by saw C, and, as the next movement of the holder B brings on another pin, the cut pin is discharged, the rod I pushing the pins forward as they lie in the groove G.

The inventor says: I do not claim the saw, the inclined spout, or the means of securing the pins for the action of the saw, separate from the holder; neither do I claim a sliding holder, irrespective of its construction.

But I *claim*, first, a holder so constructed that the pins may be received into a groove or chamber behind the part in which they are secured, for the action of the saw, and then driven forward by a driving rod, or its equivalent, to the proper position for the cutting of the slots, the same being stationary, or having a reciprocating motion, as described.

Second. I claim, in combination with the holder, the saw, the inclined spout, and the dog H, or their equivalents, for the purposes set forth.

No. 17,240.—Sardis Thomson, of West Otis, Mass.—*Improved Clothes Pounder.*—Patent dated May 5, 1857.—A downward pressure, acting upon the handle E, against the spring D, causes the piston B to descend in the cylinder A, the same being returned by the recoil of the spring on the removal of the force from the handle, the descent forcing the water through the clothes by the pressure of air, and its return raising the clothes, by suction, from the bottom of the tub, both of which operations are calculated to agitate the liquid and effect the cleansing of the clothes.

Claim.—The bell shaped cylinder, in combination with the piston, piston rod, spring, and handle, or other equivalents, to produce the same effect, viz: the cleansing or washing clothes by agitating the liquid by the pressure of air, substantially the same as described, and to be applied to the purposes set forth.

No. 18,930.—S. I. Russell, of Chicago, Ill.—*Improvement in Clothes Racks.*—Patent dated December 22, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I am aware that adjustable rotating arms forming a clothes' dryer are not new, and I do not broadly claim them. An example is seen in S. Woodward's patent, 1854, and in J. Higgin's rejected application, 1855; nor do I claim the hollow post or any portion of either of the above mentioned devices; nor do I claim indiscriminately the counterpoising of all descriptions of objects.

But I *claim* the arrangement within the hollow base B of a counterpoising weight d, connected by a cord with the rising and falling rod D, for the purpose of balancing or nearly balancing the hub E and arms k, and thus preventing the sudden fall and breakage of the parts, as well as rendering them easy of operation.

I also claim as new in clothes' dryers the employment of a spring h attached to the base B, and acting against the shaft A, all in the manner and for the purposes set forth, and not otherwise.

No. 18,777.—Riley Smith, of Towanda, Pa.—*Improved Clothes Wringer.*—Patent dated December 1, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I am fully aware clothes have been wrung in a cloth, bag, or net, by applying the power that twists said cloth, bag, or net, at one or both of their ends. This I do not claim.

But I *claim*, in combination with the cloth, bag, or net that contains the clothes that are to be wrung, a twisting or wringing device, composed of a cord i and the lever Z, when said cord is united to or winds around the clothes receiver, and the lever can slide thereon, so as to apply the greatest pressure nearer the centre of the clothes receptacle, and moved where most desired or required, and as set forth.

No. 18,710.—Elias Schneider and A. Kolman, of New Tripoli, Pa.—*Improvement in Coffee Roasters.*—Patent dated November 24, 1857.—A is a vessel containing the coffee having the form of a right cylinder; B is a perpendicular shaft stepped at a in the bottom of the vessel. Fastened to the shaft are the horizontal cross pieces b b^1, connected together by a series of ribs c. Attached to piece b are the scrapers d d, situated on opposite sides of said piece; e e^1 are horizontal arms attached to the piece b^1 which are bent, forming the pendants f f. There are two sets of arms e e^1, and are fastened on opposite sides of piece b^1.

Claim.—The combination of the agitator, as described, with the vertical cylinder containing it, as and for the purposes specified.

No. 18,263.—W. F. Messenger and Henry Rehahn, of New York, N. Y.—*Improved Cooler.*—Patent dated September 22, 1857.—Through the center of the bottom of chamber A an opening a is made, to allow the plug a^1 of the cask to project through; and at the bottom ends of the chamber A, at each side, a grating b is placed, and a plug c is fitted in each bottom end of the chamber.

In using this invention, which is adapted for casks, the chamber A is filled with ice e, and chamber C is filled with plaster of Paris f, or other non-conducting material. The waste water is allowed to escape from the chamber by drawing the plugs c.

The inventors say: We claim the refrigerating saddle A, substantially as set forth.

No. 17,697.—David Rowe, of Baltimore county, Md.—*Improvement in Modes of Preserving Green Corn.*—Patent dated June 30, 1857.—The heart of the cob is extracted by means of a suitable knife, and the inside of the cob is sprinkled with salt or sugar; the cob is then exposed to a warm, dry temperature, when it will dry uniformly, outside and inside.

Claim.—The art and process of preserving green corn in the ear, by extracting the pith or heart from the cob, and seasoning and drying the inside of the cob as rapidly as the outside, for preserving the virtues and juice of the grain, and preventing the collection of mould or corruption, as described, and for the purposes set forth.

No. 17,048.—Daniel W. Messer, of Boston, Mass.—*Improvement in Molasses Cups.*—Patent dated April 14, 1857.—By inclining the vessel A the molasses will run out through spout B and over pulley C; having poured, the vessel is returned to a horizontal position, and by turning head F pulley C will be turned, scraping off the adhering molasses which runs back into the cup A.

The inventor says: I do not claim any vessel to contain viscid fluids.

Neither do I claim a cover or diaphragm as described; nor do I claim any method of fastening the spout or channel way to the vessel as by a screw or solder, as all mentioned above was known before.

But I *claim* the adaptation of a movable surface or lip (to vessels intended to contain molasses or fluids of the same viscidity,) said surface so situated in relation or position with the spout or channel way and forming part of the same, that by moving the said surface in the manner set forth and described in my specifications and drawings, the viscid fluid or molasses which remains on the movable surface or lip, after pouring from the said vessel, is by the practice of my invention returned to a position where, by the force of gravity, it returns to the vessel, but in the ordinary vessels drip from the mouth or lip.

No. 16,673.—Lewis B. Gusman, assignor to Himself and Henry W. and Henry Stafford, of Philadelphia, Pa.—*Improvement in Curtain Fixtures.*—The nature of this improvement will be understood from the engraving.

The inventor says: I do not claim the general application of a lever nip as a substitute for teeth, to prevent slipping.

But I *claim* the use of a lever A, constructed substantially as described, when the said lever is caused to operate upon the bracket B, in supporting a window curtain, by means of the upward strain of the cord D, the whole being arranged and operating together in the manner and for the purpose set forth.

No. 17,059.—C. H. Wheeler, of Boston, Mass.—*Improvement in Curtain Fixtures.*—Patent dated April 14, 1857.—The upper edge of the curtain *g* is lapped over the rod *f*, which is entered from the end of the roller *a* into the dovetailed groove *c*, the curtain passing through the narrow slit *i*, while the rod *f* is jammed between the inclined sides of groove *c*.

The inventor says: I do not claim broadly fastening the curtain to the rod by securing it to a wire that is introduced into a groove into the roll, having a narrow slit for the passage of the curtain; but this I only claim when the sides of the groove are straight and dovetailed, as described, whereby the curtain is securely held to its roll, without other fastenings, as set forth.

No. 17,967.—Nathaniel S. Graves, of Boston, Mass.—*Improvement in Curtain Fixtures.*—Patent dated August 11, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim broadly fastening the curtain to the roller, by securing it to a wire or rod that is introduced into a groove in the roller, having a narrow slit for the passage of the curtain, but this I only claim when the sides of the grooves are dovetailed, as described, whereby the curtain is securely held to its roller without other fastenings, as set forth.

No. 18,536.—John W. Currier and James M. Thompson, of Holyoke, Mass.—*Improvement in Curtain Fixtures.*—Patent dated November 3, 1857.—In the helical groove *c* a slider, F, extends; it also being extended into a straight and horizontal groove G, formed longitudinally in the inner surface of the bore of the curtain roller. Two cords H, I, are attached to the slider, and run in opposite directions therefrom, and through the helical grooved rod D, which is made tubular, the cords passing out of the opposite ends of said rod, and depending therefrom, as shown in the engravings.

The inventors say: We *claim* the combination of mechanism for rotating the curtain roller, for the purpose of either winding up or unwinding the curtain, the same consisting of the slider, F, the cords, H I, and the straight and helical grooves for the slider to work in, one of said grooves being stationary, and the whole being arranged and made to operate as described.

No. 18,878.—Lewis Whitehead, of Buffalo, N. Y.—*Improvement in Curtain Fixtures.*—Patent dated December 15, 1857.—By this invention the curtain is lowered from the top and raised from the bottom. In the engravings A represents the rail; B, the sliding block; C, the sliding wedge-bolt; D, the brace; E, the movable bearing; F, the spiral spring; G, the mortise for the ends of the movable bearing; H, the thumb-screw, or set; I, the extension bar for brace with bearing attached; K K, the blocks for rail; L, the thumb knob; M, the projecting shoulder; N, the curtain roller, and O, the handle.

The inventor says: I *claim* first, the rail A, in combination with the sliding block B, and the brace D, for the purposes set forth.

Second, I claim the friction roller N, in combination with its movable bearing E, the rail A, and the projecting shoulder M, for operating the curtain as set forth.

Third, I claim the sliding wedge-bolt C, in combination with the moveable bearing E, or the eccentric as an equivalent for the purposes set forth.

Fourth, I claim the extension bar I, with the roller bearing and set, for the purposes set forth.

No. 16,960.—Ransom Ballou, jr., and Benjamin F. Hooper, of Albany, New York.—*Improvement in Window Curtain Fixtures.*—Patent dated April 7, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—A tightening button or pulley B affixed at or near the circumference of a rotating disk or barrel T, the said disk being combined either with the pawl F and fixed ratchet, as described, or with other means within it for maintaining the necessary stress upon the cord A, substantially as set forth.

No. 16,989.—Purches Miles, of Hartford, Connecticut.—*Improvement in Window Curtain Fixtures.*—Patent dated April 7, 1857.—The curtain is attached to roller C, one end of which is supported by a bracket *a* to which two springs D are secured which bear upon circular projections within the flanges B for the purposes as specified in the claim. The curtain is operated by means of an endless band A which has a series of eyelets secured in it which take hold of pins *e*.

Claim.—The arrangement of the springs D for the three-fold purpose of keeping the band in place, supporting the shade at any required height, and preventing the roller from having end play, in the manner substantially as set forth.

No. 16,741.—Purches Miles, of Hartford, Connecticut.—*Improvement in Curtain Rollers.*—Patent dated March 3, 1857.—E represents the curtain.

The inventor says: I do not claim as new the toothed flanged pulley, nor the endless eyelet band, nor the friction spring, nor the roller curtain by themselves, nor any two or three of these in combination.

But I *claim* the combination of the toothed flanged pulley A, the endless eyelet band B, and the friction spring C, with the roller curtain, in the manner and for the purpose substantially as set forth and described.

No. 17,368.—Chandler Fisher, of Milton, Massachusetts.—*Improvement in Curtain Rollers.*—Patent dated May 26, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The employment of a spring in connexion with the pivot of a curtain roll, operating in the manner substantially as set forth, for the purpose of producing friction between the roll and the window frame, and thereby holding the curtain in any position in which it may be placed.

No. 18,323.—DAVID N. B. COFFIN, jr., of Newton, (Centre,) Massachusetts.—*Improvement in Curtain Rollers.*—Patent dated October 6, 1857.—This improvement relates to the construction of the roller so as to secure a degree of elasticity by which the sides of the groove are made to act as a spring clamp or spring rise, to hold the curtain with its strips, thus obviating the inconvenience arising from the strips, frequently varying in thickness so much as to make it difficult to force some of them into the groove as ordinarily constructed, while others go in easily; and so that the caps may also be made to compress the sides of the grooves upon the curtain and its strip, thereby clamping the curtain doubly secure, and whereby is avoided the necessity of fitting caps over the ends of the strip, as heretofore found necessary to hold the strip in the groove. The drawings showing different shaped grooves, and the claim describe this improvement.

The inventor says: I *claim* the grooved roll made elastic substantially as described, and so clamping the curtain and its strip with or without the caps.

No. 17,006.—C. H. WHEELER, of Boston, Mass.—*Improvement in Fixtures for Curtain Rollers.*—Patent dated April 7, 1857.—To secure the curtain to its rod, the rings *f* and *g* are removed from off its ends, the two parts of the rod are then separated, the curtain is placed between them, and the rings are returned; the block L on pivot *m*, is then caused to enter between the ears *h* of bracket E, where it is held firmly in place.

Claim.—Perforating the block in which the curtain rod revolves so that it may be slipped back upon the pivot, and securing it to the bracket by the dovetailed ears, in the manner and for the purpose substantially set forth.

No. 17,911.—LEWIS WHITE, of Hartford, Conn., assignor to Himself and ELIHU P. WHITE, of same place.—*Improvement in Fixtures for Curtain Rollers.*—Patent dated July 28, 1857.—When the curtain is stationary the friction roller B slides down the incline plane C, and presses on the periphery of the roller pulley A, and thus locks said roller. To draw up the curtain the line is pulled downward vertically, which causes the friction roller B to slightly move up the incline C and offer no resistance to the revolving of the curtain roller.

The inventor says: I do not claim the lever or pulley or any other of the arrangements as new. But I *claim* the application of the friction roller B, for the purpose as set forth, substantially as described.

No. 18,180.—HIRAM BERDAN, of New York, N. Y.—*Improvement in Machines for Kneading Dough.*—Patent dated September 15, 1857.—The stationary trough A being partly filled with flour and water to requisite quantity to convert it into dough, shaft H and wheel I are rotated, and the rotary motion of the carrier D, and the revolution of bar F, and scraper G, mix the water and flour well together, the flopper E descends into the mass, as represented at Z, and as soon as it touches the bottom of the trough it comes to lean against pin *d*, and as it is moved on it carries the dough upwards until the wiper *e* comes in contact with pin F, whereby the flopper E is turned to the position *y*, discharging the dough to the bottom of the trough to be further operated upon.

Claim.—The employment in a kneading machine of a flopper E, applied and operated in any manner, substantially as set forth.

No. 18,723.—JOHN HECKER and WILLIAM HOTINE, of New York, N. Y., assignors to JOHN HECKER, of New York.—*Machine for Feeding the Flour, Mixing the Materials, and Kneading Dough.*—Patent dated November 24, 1857.—The object of this invention is to effect the thorough admixture of the flour and water, or other fluid, and the sponge, if applied, to the making of dough for fermented bread by acting on small quantities at a time, but by a continuous operation, so that all parts of the operation shall be going on at the same time.

The inventors say: We *claim* the employment of the rotating disk with its slot and cutter or scraper, one or more, as described, in combination with, and forming the movable bottom of, a vessel containing a supply of flour, to deliver the flour in regular given quantities, as set forth.

We also claim, in combination with the rotating disk or bottom, substantially as described, the making of the feeder or vessel, containing the supply of flour, conical, and with the lower end, largest, as described, to prevent the packing of the flour, as described.

We also claim, in combination with the feeder, or its equivalent, and the mixing trough, the inclined revolving plate for scattering and distributing the flour at or near the periphery of the mixing trough, as and for the purpose specified.

We also claim, in combination with the mixing trongh and the flour distributor, the revolving channel-way along the under side of the distributor for distributing the water or other fluid, and the water at or near the periphery of the mixing trough, as described, to insure the proper admixture of the ingredients, as set forth.

We also claim, in combination with the flour and water feeders, or their equivalents, the apparatus, or any equivalent therefor, for feeding and supplying the sponge, or other leaven, at or near the periphery of the mixing trough, as specified.

And finally, we claim the revolving blades and stationary pins or blades, substantially as described, in combination with a mixing trough, having a discharge aperture at or near the centre, and the means described, or their equivalents, for feeding the flour and mixing fluid at or near the periphery of the trough, as described, for mixing the ingredients as they are received, and gradually working and kneading them, and forcing them towards the centre where the dough is delivered, as described.

No. 18,758.—JOHN MCCOLLUM, of New York, N. Y.—*Improvement in Machines for Rolling Dough.*—Patent dated December 1, 1857.—This invention consists in surrounding the feed board I with an endless band F, which travels on a pulley G at each end of the same. The carrying surface of the band is supported by the smooth surface of the feed board over which it slides; the pulleys on which the band travels must run with as little friction as possible, so that the feeding apparatus thus constructed being placed at a proper inclination towards the opening between the rolls, the weight of the mass of dough placed on the carrying surface of the band, causes it to move and feed down the dough to the rolls as it is required without rupturing or straining the thinnest film formed between them.

Claim.—The combination with rollers suitable for rolling dough, or similar substances, of an endless feeding band or platform, moving on pulleys or friction rollers as required, the band not being geared to the rollers in any way, and being free to take its motion from the dough.

No. 18,759.—Harvey Miller, of Cincinnati, O.—*Improvement in Egg Beaters.*—Patent dated December 1, 1857.—This invention consists of a cast-iron frame, having a ratchet bar *g* and a revolving beater *c d*, in combination with a jar or can, which, together, form an egg beater.

The inventor says: I do not claim the ratchet bar or revolving shaft and beaters.

But I *claim* the frame A B having a ratchet bar *g*, and revolving beater *c d*, in combination with the jar or can, as described, for the purposes set forth.

No. 18,849.—John B. Heich, of Cincinnati, O.—*Improvement in Egg Beaters.*—Patent dated December 15, 1857.—A is the vessel; B is the beater formed of net work, as shown; C is the rod on which the beater is fastened, working in a socket at top and bottom, marked G and H, respectively; D is a disk of India rubber, or other elastic material, attached to the top of the rod; E is a bow provided with a slot K, in which the bar I works, and having lips F F sliding over corresponding lips J J on the top of the vessel A.

The beater is operated by the pressure produced upon the elastic disk by the motion backwards and forwards of the grooved bar I.

Claim.—The bar I, elastic disk D, and beater B, in combination with the bow E, having lips F F and vessel A as provided with lips J J, when said parts are constructed and arranged in relation to each other in the manner and for the purpose set forth.

No. 17,517.—Lawrence Rebstock and Nicholas Reimel, of Philadelphia, Pennsylvania.—*Improvement in Automatic Fans.*—Patent dated June 9, 1857.

When the cords *j* are wound upon the drums *i* the fan G will be rotated by the gearing of the clock movement attached to this apparatus and a blast of air will be produced by the fan. By turning the platform C on the base A the fan G may be placed in any relative position with the person receiving the blast.

The inventor says: I do not claim, broadly, the driving of revolving fans by clockwork, as such contrivances have long been known and used.

Neither do I claim the revolving of mechanism around a given axis, by placing the mechanism upon movable frames. The rotating domes of observatories, telescope stands, and other species of mechanism, are examples of this kind.

But, to the best of my knowledge and belief, there never has been made a fan driven by clockwork, and arranged as shown, so as to be capable of being readily turned upon an axis without moving the whole apparatus. The current of air is thus readily directed towards any given point in an apartment. My invention, therefore, constitutes a new and useful article of manufacture. No apparatus like it has ever before been known or used. Therefore, I *claim* as a new article of manufacture a ventilating fan, constructed as set forth.

No. 18,493.—Amon Bailey, of East Poultney, Vermont.—*Improved Feather Dressing Machine.*—Patent dated October 27, 1857.

The operation of this machine is as follows: The feathers to be renovated are poured into the box B through the door D, which is then securely closed. Steam, which is supplied from any suitable boiler, is admitted through the journal C into the steam chamber H, thence it passes through radial tubes F into longitudinal tubes G. The valves, at this stage of the operation, are arranged to open inwards, so that the steam passing into the tube J through the opening *b* flows into the dressing box, and is thoroughly mingled with the feathers by the rotary motion of the box B, which is kept up during the process. When the feathers are sufficiently steamed, the valves are closed internally and opened externally. The flow of steam heats tubes F and G, and the box being kept in revolution, the steamed feathers are rapidly and effectually dried, when they may be removed for use.

The inventor says: I do not claim dressing feathers by steam.

I am aware that various methods have before been adopted, with more or less success; but none, so far as I can learn, in which the steam has been distributed and controlled in the manner I employ.

I claim the combination of the steam chamber H with the radial tubes F, horizontal tubes G, and valves E, all constructed and operating substantially as described.

No. 18,422.—Nathan Ames, of Saugus, Massachusetts, assignor to Edmund Brown, of Lynn, Massachusetts, and Nathan Ames, of said Saugus.—*Improvement in Graters.*—Patent dated October 13, 1857.

The nature of this invention consists in using the periphery of a sector of a cylinder A for a grater, in combination with the radial guides D D of the holder E, whereby a curvilinear reciprocal motion is given to the substance to be grated.

The inventor says: I *claim* using, as described, the periphery of the sector of a cylinder for a grater, in combination with the radial guides D D of the holder E, whereby a curvilinear reciprocal motion is given to the substance to be grated, substantially as set forth, and for the objects specified.

No. 17,361.—Wm. Bennett, of New York, N. Y.—*Improvement in Griddles.*—Patent dated May 26, 1857.

The smoke arising from the burning grease rises into the upper part of the chamber formed by the cover, where it is caught by the draught of air which is constantly passing into the opening *e*, and carried over the partition *f* into flue *g*, and downward through openings *b* into the fire or up the chimney.

The inventor says: I am aware that culinary vessels of different kinds have been used with various devices for carrying off the steam and smoke and preventing their escape into the room, and that ventilating and other covers have been used for the same purposes and for other purposes upon gridirons, stew and sauce pans, and other culinary vessels. I do not claim any of these covers or devices, as they are not new.

Nor do I claim any one of the features of my apparatus separately constructed.

But I *claim* the new article of manufacture described, comprising the griddle and its ventilating cover, the former being constructed with a flaring flange *a*, openings *b*, sliding register *c*, and openings *d*, and the latter with an enlarged opening *e* and flue *g*, all arranged and operating substantially as and for the purpose specified.

No. 17,461.—John B. Wickersham, of New York, N. Y.—*Improvement in Hat Stands.*—Patent dated June 2, 1857.

The nature of this invention consists in attaching hooks *l* to a series of horizontal terraces *i*, connected by wrought iron rods F, in such a manner that the hooks *l* can be turned horizontally on the vertical rods, so as to allow the different ranges of coats to hang clear of each other.

The inventor says: I do not claim wrought iron tie rods, connecting plates, and castings of iron; neither do I claim furniture formed in the shape of horizontal terraces connected by vertical columns or supports.

But I *claim* the manner specified of attaching the hooks of hat stands on vertical studs or rods, so that said hooks can be turned around horizontally, substantially as and for the purposes specified.

No. 18,543.—James Goodin, Jr., of Cincinnati, Ohio.—*Smoothing Iron.*—Patent dated November 3, 1857.

A is the iron, and B B is a gas-pipe bent and formed to suit the shape of the bottom of the iron around its edges and back part, and perforated with openings for the escape of the gas against the sides and end of the iron. The gas is let into the pipe B with a flexible tube, connected to the iron at the joint piece *d p f*. C C is a wire gauze placed around the pipe B in the iron, for distributing the gas evenly over the surface of the iron. *g g* is a perforated plate set at the top of the iron, about one-third of the depth of the iron from its top, for helping in retaining and distributing the heat over the surface of it by retarding the escape of the heat into chimney *i*. *h* is the top of the iron, furnished with a handle *k* and chimney pipe *i*, and is held in its place by a rod passing through the lugs J attached to the

iron and its top. 5 5 and 7 7 7 are air openings for supplying the gas with air for combustion and assisting in distributing it equally over the surface of the iron.

The inventor says: I am aware of gas having been used for heating purposes before, and that wire gauze has been employed for distributing the heat; all of which I disclaim, when taken separately or together.

But I *claim* the arrangement of the perforated diaphragm *g g*, with the air openings 5 5 and 7 7 7, when said diaphragm and air openings are arranged with the gas pipe B and gauze C in the bottom of the iron, as specified, for the purpose of detaining and equally distributing the heat over the surface of the bottom of the iron, as and for the purposes mentioned in the specification.

No. 17,470.—Leon Londinsky, of New York, N. Y., assignor to Himself and Adolphus E. Becker, of the same place.—*Improved detachable Handle for Smoothing Irons.*—Patent dated June 2, 1857.

The handle, when opened, as represented in fig. 2, is placed upon the handle of the iron, and the sections A A are brought together by clasping them within the hand, and are fastened by snap spring D falling into catch *a*. By releasing spring D from the catch *a* the sections are separated and the handle can be removed.

Claim.—A detachable handle or holder, made in sections, of wood, to be placed upon the handle of a smoothing iron for tailors', hatters', and laundry use, constructed and arranged substantially as and for the purposes set forth.

No. 17,105.—Galen B. McClain, of Bath, Maine.—*Improvement in Smoothing Irons.*—Patent dated April 21, 1857.

This iron is heated by opening the two doors *d* and *e*, and placing the iron over the flame of a gas jet. The body A soon becomes heated, in consequence of a large area of surface of the ribs *b* being presented to the flame.

Claim.—The described sad iron, constructed in the manner substantially as specified, with its doors or flaps *d e* arranged and operating as described.

No. 18,108.—William F. Shaw, of Boston, Massachusetts.—*Improvement in Smoothing Irons.*—Patent dated September 1, 1857.

The smoothing iron D being placed upon the stand B, in the position represented in the engraving, the heated gases from wire gauze burner *e* pass through passage *k* into flue *h*, and down flues *i*, and escape through discharge openings *l*.

The inventor says: I do not claim heating a flat-iron by means of a lamp having its wick tube, or the flame of its wick, within the body of the iron.

Nor do I claim heating a flat-iron by charcoal or other fuel burned in a chamber within the body of the iron.

Nor do I claim the application of a wire gauze or perforated chimney to an air and gas burner, so as to surround the flame, as such has heretofore been patented by me.

But I *claim* making the flat-iron with ascending and descending flues, inlet and discharge openings, arranged in the body of the iron, and so as to be used with a burner and stand, in manner substantially as specified.

No. 18,498.—John K. Chase, of New York, N. Y.—*Improved Metallic Screw Cap for Jars, &c.*—Patent dated October 27, 1857.

This improvement consists in forming a thin elastic screw cap out of a solid piece of sheet metal by spinning up the same out of a single plate, without casting, chasing, or swaging, by which a cap is obtained without joint, seam, or flaw, for covering glass, metal, or earthen cans or jars, the elasticity of the screw serving to fit the unequal threads thereon, and the seamless cap insuring tight joints.

The inventor says: I claim a screw cap for bottles, jars, or cans, &c., formed out of a single solid plate of metal, by spinning the same over a threaded chuck, or former, as specified, and for the purpose set forth.

No. 16,887.—Richard A. Stratton, of Philadelphia, Pa.—*Improvement in Mangles.*—Patent dated March 24, 1857.—A A are the frames of the machine, in which axles *b b* of the rollers B B^1 have their bearings. To these axles and on the outside of the frame are secured the toothed wheels C C^1, into both of which gears the pinion G. The latter is allowed to turn loose on a pin *h* secured to the frame, and is furnished with a handle L, on turning which the rollers are caused to turn in the same direction. The axles *d* of the upper roller D are allowed to move freely in the slot at the upper portion of the frames A, and connected to the axles on each side of the roller D, and inside of the frames, are the rods E, the lower ends of which are jointed to the pins *i* on the bent levers F. The latter have their fulcrums on pins H, secured to the inside of each frame, the other ends being connected together by the cross-bar *f*. The frames are connected together by the stays *j j* and *e*. K is the middle roller, around which the goods to be mangled are wound.

The inventor says: I am aware that rollers have been used for mangling clothes; but heretofore the goods have generally been wound from one roller to another, and pressed between their surfaces after the manner of ordinary calenders. Therefore, I do not claim exclusively the use of rollers for mangling clothes.

But I *claim* the roller B and B^1, in combination with the movable roller D, arranged and driven substantially in the manner set forth, for the purpose of acting upon the roller K in such a manner that the cloth on the same may be efficiently mangled without winding it from one roller to another, and for the purpose of removing and replacing the said roller K with facility.

No. 17,785.—William Prince Ford, of Cheneyville, La.—*Improvement in Mattresses.*—Patent dated July 14, 1857.—The cleaned moss is spun into a loose rope of uniform thickness, and is then woven as a filling in a warp of twine, as represented in the engraving, where *a* represents the rope, and *b* the warp twine.

The inventor says: I do not claim broadly the use of moss as a material for stuffing bed sacks. I am also aware that floor mats composed of moss twisted into hard ropes and woven have long been known and used; therefore, I do not claim such use or manufacture of moss.

But, to the best of my knowledge and belief, no mattress composed of moss made up as described, and presenting the peculiar qualities set forth, was ever before known or used. My improved mattress is, therefore, a new article of manufacture.

I *claim*, as a new article of manufacture, a mattress when made in the manner described of moss.

No. 18,585.—William Hersee, of Buffalo, N. Y.—*Improvement in Springs for Matresses, Chairs, &c.*—Patent dated November 10, 1857.—The claim and engravings explain the nature of this improvement.

Claim.—Supporting or maintaining the spring A in a proper vertical position upon the slat C, by means of the guide pin B, secured within the spring by means of the head *a* and block *b*, the lower end of the pin being fitted and working in or through the socket D in the slat C, as and for the purpose specified.

No. 18,886.—Thomas Tolman, of West Townsend, Mass., assignor to John P. Saben, of Fitchburg, Mass.—*Improvement in Ventilating Mattresses.*—Patent dated December 15, 1857.—The inventor says: I form a valve-seat, seen at P, and fasten it firmly between two of the seats B; through this seat are formed three holes, at S, to admit air into the interior of the bed; on the top of the seat P is fitted the valve M, so as to swing up and down by means of the leather N on its under side, and which constitutes the hinge for it to swing on; and to make the valve air-tight, it is screwed to the seat P by the screws O. The upper or raised position of this valve is shone by lines, as when admitting air.

Claim.—The valve M and bed, so constructed and relatively arranged in connexion with each other that the induction and expulsion of air through the bed to ventilate it, results from the movement of the bed caused by its use, essentially in the manner fully set forth.

No. 17,527.—Edward P. Thompson, of Worcester, Mass.—*Improvement in Mop Head.*—Patent dated June 9, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim a mop-holder or clamp, having a movable jaw, operated by or secured in place by a screw or a ring and hook.

But I *claim* the improved self-acting mop-holder, made substantially as described, viz: with a spring *a* and two bent legs or bars b b^1, c c^1, applied together, and operating in manner and in combination with a socket *d* in the handle A substantially as specified.

No. 17,877.—James S. Harris, of East Poultney, N. Y.—*Improvement in Mop Heads.*—Patent dated July 28, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Constructing the wire jaws B B so as to nearly or quite enclose oblong spaces, substantially as represented and described, for the purpose of more effectually embracing and holding the cloth. Also, the pin D, when used in combination with the jaws B B, substantially in the manner and for the purpose set forth.

No. 1 ,645.—Edward Mingay, of Boston, Mass.—*Improvement in Pitchers for Molasses, &c.*—Patent dated November 17, 1857.—By inspection of the engravings, which respectively represent the cover as open and shut, the manner in which the spout *c* is raised and lowered through the lever-arms *i k* by the movement of the cover will be readily understood; so that, while the liquid is being poured out of the nose *b b*, and the cover is opened, the spout is turned down out of the way, as shown in figure 2; while, as soon as the cover is shut, the spout will be raised, as shown in figure 1, so as to catch the drippings and convey them to the main body of the pitcher through the nose *b b*.

Claim.—The means employed to prevent the dripping of liquids in pitchers for containing liquids, the same consisting of the movable spout or jaw actuated by the opening or closing of the cover, so as to raise and lower the said spout or jaw, substantially as set forth.

No. 18,546.—Alonzo Hebbard, of New York, N. Y.—*Improved Water-Cooling Pitcher.*—Patent dated November 3, 1857.—A is the shell of the pitcher. This shell is made in two parts, as shown by the dotted line *b*. Surrounding the earthen or porcelain pitcher C is a covering of felt D. To protect the upper edges of the felt and pitcher from the action of the liquids, when being poured in or out of it, a flange E is soldered to the inside of the neck or shell, which is luted or cemented down upon and over the edges of the pitcher; F is the cover attached to the shell.

The inventor says: I *claim* the use of the combination of the woolen cloth or felt covering as an elastic, non-conducting packing for a porcelain or glazed ware pitcher, with the said porcelain or glazed ware interior pitcher, and external metallic shell or pitcher, for the purpose of making a water-cooling pitcher, as set forth.

No. 18,621.—Herman N. Dewey, of Berlin Heights, Ohio, assignor to B. L. Hill & Co., of Berlin Heights, Ohio.—*Improvement in Quilting Frames.*—Patent dated November 10, 1857.—A A represent two standards, which support the arms and bars to which the quilt is to be attached; B B two arms, which are mortised through the centre, so that the standards A A can pass through them; C C two bars, which slip into the spring jaws *b* in each end of the arms B. To the arms B and the bars C listing or other suitable substance is tacked, as seen at C, to sew the quilt to.

The inventor says: I do not claim an adjustable quilting frame as such.

But I *claim* the vertically adjustable arms B B, having spring jaws for adjusting the bars C C, as set forth.

No. 17,588.—John C. Schooley, of Cincinnati, Ohio.—*Improvement in Refrigerators.*—Patent dated June 16, 1857.—The atmospheric air passes through opening *c* into the ice chamber A, and passes in the direction of arrows into the preserving chamber B, whence it escapes through passage *d*.

The inventor says: I do not claim the use of an opening to admit external air into ice, nor do I claim the use of an opening to allow air to escape after having passed into the preserving chamber.

Neither do I claim the use of a partition between the ice and preserving chamber, with its openings above and below. I do not claim any of them separately.

But I *claim* the employment of the double register *r* and openings *c d*, in combination with the partition *g* and the openings *f m*, the whole arranged and operated substantially in the manner and for the purposes set forth.

No. 17,980.—Jacob Peters, of Hummelstown, Pa.—*Improvement in Sausage Cutters.*—Patent dated August 11, 1857.—The meat being placed in box A, it is fed to the cutters in sashes *a b* by means of follower *z*; and as the crank *q* is operated, a vibrating motion is given to said sashes by means of rod F, lever *k* turning on fulcrum *x* and rods *l m*. The sash *a*, having vertical knife blades, is vibrated in a vertical direction; and the sash *b*, having horizontal blades, is vibrated in a horizontal direction; and these cutters, in conjunction with the blade *d*, cut the meat to the required fineness.

Claim.—The employment of the vertical sashes *a* and *b*, the one arranged within the other, their knives interlapping and operating in different directions, for the purpose of sawing and more effectually preparing the meat, as set forth and described; it being understood that I do not claim the main features of the machine, as it is not, in that respect, new; nor yet the device merely of giving a sawing motion to the fixed knives of meat cutters, this also being not new; but only the arrangement here specified of two sets of knives working into each other, with motions in opposite directions.

No. 18,778.—W. Sniff, of Fultonham, Ohio.—*Improvement in Sausage Machines.*—Patent dated December 1, 1857.—This invention is designed to make sausage direct from the meat and other substances or materials used at one operation. It consists in combining a cutting and stuffing device, whereby said devices may, from one and the same shaft, be operated simultaneously and conjointly, so that the meat and other substances which are generally used may, as they are cut of the proper degree of fineness, be forced into the cases.

The inventor says: I am aware that teeth or knives have been attached to a rotating drum or cylinder, and stationary knives or cutters have been used in connexion therewith, and placed within a suitable box; I therefore do not claim broadly and separately the cutting device shown.

Nor do I claim broadly the employment of a plunger working within a cylinder or trunk for stuffing cases with sausage meat; for such devices are in common use, although arranged differently from that shown and described.

But I *claim* the stuffing device formed of the cylindrical trunk H, provided with slots $k\ k^1$ and the plunger J, attached to the rod K, as shown, when the above parts are arranged relatively with the box B, for the cutting device, so that the within described parts may operate conjointly, as and for the purpose set forth.

No. 18,748.—John Irwin, of Philadelphia, Pa.—*Improved Standard for Seats.*—Patent dated December 1, 1857.—A represents part of the seat; the rest is supported by the rod B, upon which is cut a male screw which works up and down in the female screw E, the latter being embraced by a coiled spring D; the upper end of this spring bears against a shoulder H, while the lower end of said spring rests upon the lower collar G, in the socket C. Thus it will be seen that the standard B and screw E are supported by spring D, while they are free to play up and down in socket C, being held steady by the two collars G. The screws adjust the seat to the desired height.

Claim.—The combination of the screw and spring, forming an improvement in adjustable and elastic standards for seats, as set forth.

No. 18,713.—O. W. Stow and Augustus Barnes, of Southington, Conn.—*Improvement in Candle Snuffers.*—Patent dated November 24, 1857.—When the two parts A B are put together, a hollow cavity *h h*¹ is left in the middle, which receives the usual coil spring; a rivet passes through the centre of the cavity, and unites the two wings; the snuffers are then complete and ready for use. The engravings and claim further explain the nature of this invention.

Claim.—The snuffers A B, struck out of sheet metal, the legs formed with and constituting a portion of the wing blanks, and the cutter wing B, bent as set forth, so as to form a good cutting edge, as described.

No. 18,513.—G. I. Mix, of Wallingford, Conn.—*Improvement in Making Iron Spoons.*—Patent dated October 27, 1857.—This invention will be understood by an examination of the claim and engraving.

Claim.—The inventor *claims* having the rivet or pin which secures the handle and bowl of the spoon together formed on the handle at the same time, and of the same piece of metal, by the same die which gives form to the handle, whereby an improved article of manufacture is provided, to wit: an iron spoon, with the rivet forming part and parcel of the handle, substantially as and for the purposes set forth.

No. 18,517.—Russel B. Perkins, of Meriden, Conn.—*Improvement in Making Iron Spoons.*—Patent dated October 27, 1857.—The principle of this improvement consists in forming upon that part or edge of the bowl to which the handle is to be attached a tongue or projection; and, when forming the handles, in making in like manner, at the end where the bowl is joined, a recess fitted to receive this tongue, which, when applied, is secured by closing the edges upon said tongue by a drop or die.

The inventor says: I *claim*, as my improvement in the manufacture of spoons, forming the bowl with the tongue *a*¹, and the end of the handle with a cavity fitted to receive said tongue, and then attaching the same together, substantially in the manner set forth.

No. 16,350.—Benjamin Clark, assignor to E. L. Ferguson and C. B. Clark, of Oriskany Falls, N. Y.—*Improvement in Extension Tables.* —Patent dated January 6, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim the stiffening of hinged joints by rigid bars or lips; neither do I claim the use of folding rails for extension tables.

But I *claim* the combination of the fixed side pieces H I with the table leaves F and table legs D, in the manner specified; the side pieces H serving the double purpose of holding the table firmly together when compacted and closed, and also serving, in conjunction with pieces I, to give stability to the frame, when the same is opened or extended.

No. 18,636.—Henry Gross, of Tiffin, Ohio.—*Improvement in Extension Tables.*—Patent dated November 17, 1857.—In the illustration, L L are the legs connected by the cross-piece A, and having the frame B C. The pieces C forming the end of the table when closed. E E and D D are the two systems of stretchers hinged to the cross-pieces B and D¹—one system at the extremities of said pieces, and the other in the middle thereof.

Claim.—The combination of the two systems of stretchers E and D with the stay rods *a a*, constructing and operating as and for the purposes set forth.

No. 18,733.—Charles B. Clark, of Mount Pleasant, Iowa.—*Improvement in Extension Tables.*—Patent dated December 1, 1857.—A A¹ represent two strips which form the ends of the extension frame, and B B¹ are the hinged or folding rails which form the sides of the extension frame, there being two rails at each side. The inner ends of the rails B B are connected by hinges *a a*, and the outer ends are connected to the ends of the strips A A¹ by hinges *b*.

The inventor says: I do not claim broadly the employment or use of folding rails applied to extension tables, irrespective of the arrangement shown.

Neither do I claim the employment or use of fixed side pieces, irrespective of the peculiar arrangement; as shown and described, for said parts have been previously used.

But I *claim* having the jointed or folding side rails B B¹, made of unequal lengths, and applied to the end pieces A A¹, as shown in the drawings, for the purpose set forth.

No. 18,891.—Edwin A. Curley, of Westfort, Conn.—*Improvement in Extension Tables.*—Patent dated December 22, 1857.—This invention consists in constructing the slides C C of the table of sheet metal plate, corrugated and bent so as to form tubes D D, each of which will be provided externally with a dovetail tongue *a* on one side, and an inversely corresponding groove *b* in the other side, so that the tongue of one tube will fit in the groove of either of the other tubes, and the groove of one tube receive the tongue of either of the other tubes;

whereby perfectly working slides are obtained, and the table rendered stiff and firm.

Claim.—Constructing the slides C D of sheet metal, corrugated and bent by any proper means, so as to form tubes provided with longitudinal dovetail tongues and grooves, by which the tubes are connected and allowed to slide longitudinally, as and for the purpose set forth.

No. 18,042.—William B. Farrar and Jonathan H. Farrar, of Evans's Mills, N. C.—*Improvement in Self-waiting Tables.*—Patent dated August 25, 1857.—In using this table, two separate cloths *d e* are used, the cloth *e* to cover the disk C, which can be turned by taking hold of flange G and giving it a revolving motion around centre shaft D, and the cloth *d* to cover the stationary table B on which the plates rest.

The inventor says: We make no claims to a table made with a central revolving part C, as this is common.

But we *claim* the central revolving disk C, when fitted down into the circular hole *a*, constructed with a thin lip F projecting horizontally from the upper portion of its circumference, and with a rib of ring form projecting from its under side and near its circumference, substantially as and for the purpose set forth.

No. 17,087.—James Greenhalgh, Sr., of Waterford, Mass.—*Improvement in Tea Kettles, &c.*—Patent dated April, 21, 1857.—The cover C, when fitted within the flange *a*, will keep the handle B in a vertical position, and will thus prevent it from becoming heated at any time; and if the handle B be moved to either side, the cover C will be raised, as represented in dotted lines.

The inventor says: I do not claim having a wire pass from the top of the cover through the handle of the culinary vessel, so that, by pulling the wire, the cover may be raised without burning the hand.

Neither do I claim a sliding stop arranged on the bail, and acting in combination with a peculiar construction of eye for keeping the bail of a culinary vessel elevated, as in the patent of Thomas H. Dodge, 1853.

I *claim* connecting the cover C with the bail or handle B by means of the bar D passing through a slot *b* in the bail or handle, substantially as shown, for the purposes specified.

No. 16,752.—E. F. Parker and J. Smead, of Proctorsville, Vt.—*Improvement in the Manufacture of Tin Pans.*—Patent dated March 3, 1857.—Figs. 1 and 2 illustrate the manner of forming the lock on the pan bottom, which is "struck up," and of uniting the lock between the side and said bottom. Fig. 3 represents the side and bottom of the pan as it appears before going through the seaming rolls, shown in fig. 2.

Claim.—A milk pan with a struck up bottom, and united to the side in the manner and for the purpose described.

No. 18,653.—H. Nichols Wadsworth, of Washington, D. C.—*Improvement in Tooth Brushes.*—Patent dated November 17, 1857.—This invention embraces the following features:

1st. The concave form of the surface of the bristles, as represented from A to B in fig. 1.

2d. The circular form of the surface of the bristles, as represented from C to D in fig. 2.

3d. The projection of the bristles beyond the end of the brush, as represented in fig. 2, at letter D, and which projection improves the brush by being at a still greater acute angle with the back.

The wedged-shaped back, as represented in the engravings, for the purpose of allowing the brush to penetrate thoroughly under the muscles of the cheek and around the back or molar teeth.

The inventor says: I *claim* a tooth brush having all the described features, combined and arranged as and for the purpose set forth.

No. 18,630.—Francis Colton, of New York, N. Y.—*Improvement in India Rubber Springs for Upholstering Purposes.*—Patent dated November 17, 1857.—In applying this invention to a sofa or chair, the form as shown in fig. 4 is employed, which is simply a joining together of several of the single springs, as shown in the illustrations, by joining pieces *e e e*. It is secured to the webbing or cross-pieces which support it by cords *z z z*.

The number of springs to be employed in a bed may be four or more. A single spring, like that shown at fig. 4, is sufficient for a chair bottom and in the upholstery of a sofa.

The elastic portion of the spring is represented by the letter O, and consists of a ring or cylinder of vulcanized India rubber, which is made to vary in its weight and dimensions; to accord with the space it is to occupy, and to the amount of springing power desired.

The inventor says: I do not claim the discovery of the elastic property of a ring or cylinder of India rubber, when placed upon its circumference.

But I *claim* the form and combination of a vulcanized India rubber ring with the steadying post, together with the application of the same, in the manner and for the purposes specified.

No. 18,929.—William Robinson, of Highgate, Vermont.—*Improvement in Vegetable Cutters.*—Patent dated December 22, 1857.—The inventor thus describes the construction of his invention: On a suitable frame *a a* two cylinders *b* are situated. I projects from its periphery hook-formed teeth, which come to a flat sharp edge at their outer points; the hooks on the two cylinders turn towards each other, in the direction of the revolution, on one cylinder axis; there is a spur wheel *c* that gears into a pinion on the axis of the other cylinder outside of the frame, so that one cylinder turns three, more or less, times to the other's once. The result of this is, that any proper article thrown into the hopper *d* that surrounds the cylinders will be seized and drawn gradually in by the action of one cylinder, while the other is tearing pieces off from it, till the whole is reduced to its proper state for feeding to cattle or other animals.

Claim.—The employment of hooked cutters running at different velocities on parallel cylinders, the whole being arranged and combined in the manner and for the purposes set forth.

No. 16,667.—H. A. Willard, of Westminster, Vermont.—*Improvement in Machines for Cutting Vegetables.*—Patent dated February 17, 1857.

Claim.—The cutter B, in combination with the metallic cutter-plate A, together with the particular arrangement of the cutters upon the cutter-plate, in such a manner that several are acting upon the vegetable at the same time, and that as soon as one has commenced another immediately follows; so that while a portion are leaving the vegetable and holding it firmly to the plate, others are commencing, preventing, by this arrangement the vegetable from rolling or dodging, and keeping it continually in contact with the knives, thereby cutting with greater rapidity, with less power, and leaving the cut vegetable in a more desirable shape for mastication, than any machine now in use.

No. 18,965.—William M. Galusha and Benjamin W. Safford, of Arlington, Vt.—*Improved Washboard.*—Patent dated December 29, 1857.—A represents the frame of a washboard, which may be constructed in the usual way, viz: two side pieces or strips *a a*, connected by cross-bars *b b*. B is the corrugated portion of the board; this is formed of sheet metal corrugated. The form of the corrugations is oblong, the ends *e* and sides *f* being inclined, and the edges *g* somewhat rounded. The part B has its edges fitted in grooves *h*, formed in the inner of the strips *a a* and cross-bars *b b*, and is thereby secured to frame A.

The inventors say: We do not claim broadly the employment or use of a corrugated sheet metal plate for the rubbing surface of a washboard for they have been previously used.

But we *claim* corrugating the sheet metal plate in the form specifically as shown and described for the purpose set forth.

No. 18,483.—Joel Wisner, of Aurora, N. Y.—*Improved Washing Machine.*—Patent dated October 20, 1857.—The inventor thus describes the construction of this machine: I construct my knuckle rubber collar washing machine in the tub form, with fluted sections in the bottom; short rock shaft and fluted rim around the side of the tub, as shown in fig. 2, letter B; the upper dish or knuckle, with fluted sections and quarter moon fluted piece, as shown in fig. 3, letter C; fluted knuckle edge, letter D, shown in engravings; clamp in the form of a quarter moon, with spiral springs E.

The inventor says: I *claim* the use of the fluted rim B on the inside of the tub, the quarter moon knuckle edge rubber C and D, the serrated clamp E with springs, arranged and operating in the manner and for the purposes set forth, made of metal or wood.

No. 18,489.—Smith Skinner, of Lowell, Mass., assignor to William Howard Skinner, of Lawrence, Mass., and Jacob Nichols, Jr., of Lowell, aforesaid.—*Improved Washing Machine.*—Patent dated October 20, 1857.—The nature of this invention consists in a washboard so constructed that the tipping elliptical slats in the board have a movement, or tip back and forth on pivots in the centre of their ends, so that by the movement and pressure of the clothes upon them they

will tip; the clothes being first pressed against their flat surfaces, and then by a continuous movement being broken or crimped down over the sharp edges of the slats, so as to effectually wash them; and the same effect is imparted to the clothes, whether they are moved in either direction on the board.

This invention consists, further, in a rubber so constructed with serrated sections passing down and independently of each other, and to swing or move above the washboard, as to bring the serrated surfaces in contact with any portion of the clothes.

Claim.—The inventor claims the washboard constructed of a number of elliptical slats, or their equivalents, arranged in such a manner that they may tip back and forth, as the clothes H are pressed and moved on them, sufficiently to present their flat instead of their sharp surfaces to the clothes, and be prevented from tipping too far by wire rods G, which pass through holes *c* (of a larger size than the rods) formed through each of the slats, essentially in the manner and for the purposes set forth.

Aalso the serrated sections T, or their equivalents, in the rubber, so constructed and arranged, in combination with the washboard C, that they can be swung back and forth to rub and wash the clothes, essentially in the manner and for the purposes set forth.

No. 18,518.—Thomas J. Price, of Industry, Ill.—*Improved Washing Machine.*—Patent dated October 27, 1857.—This invention consists in having two frames—one stationary and the other adjustable—placed or fitted within a suitable tub or box, and provided with horizontal vibrating slats, arranged and operated so that the clothes are subjected to the necessary rubbing, in order to thoroughly cleanse them.

Claim.—The stationary frame B and adjustable frame D, placed within the box A, and provided with vibrating slats *a i*, operated substantially as shown for the purpose specified.

No. 18,642.—Abraham Huffer, of Hagerstown, Md.—*Improved Washing Machine.*—Patent dated November 17, 1857.—The engraving and claim show the nature of this invention.

Claim.—The combination of the shallow concave, formed of rollers D D and feeding boards E E, with the ribbed cylinder A B, for the purpose of making the washing machine self-feeding and self-clearing, so as to pass the clothes alternately into the water and the air, thus bleaching as well as cleansing them, and keeping the clothes in the upper strata of water away from the dirt, which is precipitated to the bottom of the tub.

No. 18,633.—Alexander Dickson, of Hillsboro', N. H.—*Improved Washing Machine.*—Patent dated November 17, 1857.—In this improvement two rubbers, Q and M, act simultaneously, and between them the clothes to be washed are placed; they act in connexion with two pumps D D, one at each end, which force the water through the texture of the clothes, and wash the dirt away as fast as it is loosened.

The inventor says: I do not claim any of the parts, when viewed in the abstract; for they are well known devices, and have been used separately for similar and analogous purposes.

But I *claim* the combination of the oscillating rubber, stationary bed, and the pumps, arranged to operate conjointly, as and for the purpose set forth.

No. 18,695.—John D. Jenkins, of Jacksonville, Ill.—*Improved Washing Machine.*—Patent dated November 24, 1857.—The nature of this invention consists in a horizontal frame, hinged at one end to the rear of the tub, and resting pendulously on a bed of revolving rollers, and overhung by an adjusting spring bracket, and carrying a series of vertical rubbers or beaters and squeezers, which are pivoted at the centre of their height to said frame, and at their upper end to vibrating connecting rods of a crank-shaft, in such a manner that they each have a circular oscillating motion.

Claim.—The arranging in the manner described, and relatively to each other for united use, of the rubber frame J, rubbers L L, roller B^2, connecting rods M, crank shaft K, overhanging spring bracket *e*, roller bed B B, and variable discharge roller B^1, substantially as and for the purposes set forth.

No. 18,720.—Thomas A. Dugdale, of Richmond, Ind., assignor to Himself and George Taylor, of Richmond, Ind.—*Improved Washing Machine.*—Patent dated November 24, 1857.—In the engraving, F is a false bottom or lower rubbing disk, which floats in the water in the tub by means of four cords *f f f f*, two only of which are shown in the engraving.

There are four holes in the disk F, situated as shown in fig. 3; there are also four holes in the tub bottom exactly corresponding with those in disk F. They are marked 1 2 3 4 in both the disk and tub bottom. Thus a cord passes from 1 in the disk to 2 in the tub, and from 2 in the disk to 1 in the tub. The cords are also similarly passed from 3 to 4, and from 4 to 3.

This arrangement allows the disk F to adjust itself readily to the clothes between it and disk E^1, thereby securing a uniform pressure, whether the bulk of clothes be large or small.

The inventor says: I am aware that vibrating tubs, with stationary lids or disks, are now in use; such parts, therefore, of themselves, I do not claim.

But I *claim* the combination of the floating disk F, cords *f f f f*, and vibrating tub C, with the stationary disk E, substantially in the manner and for the purpose set forth.

No. 18,721.—David Elliot, of Pembroke, N. H., assignor to Himself and Isaac White, of Merrimack county, N. H.—*Improved Washing Machine.*—Patent dated November 24, 1857.—The claim and engravings explain the nature of this invention.

Claim.—A tub or vat, with corrugated parallel sides and a semi-circular or curved bottom, in combination with semi-circular rubbers, corrugated on their sides, and arranged to traverse on the axle or on a traversing axle, provided with a spring to draw the rubbers one towards the other, and both towards one side of the vat, in the manner described, for the purpose of washing and squeezing clothes.

No. 18,889.—Henry L. Bridwell, of New Albany, Ind.—*Improved Washing Machine.*—Patent dated December 22, 1857.—A is a corrugated cylinder made and attached to the machine. B is a single knuckle secured to the pieces marked D; *e e* are rollers, also attached to pieces D. C C are rods, four in number, two on each side of the machine; said rods stand in a vertical position, and are secured to the pieces D, while the other ends operate against nut *c*; *c c* are nuts passing over a screw on the upper ends of rods C C, and serve to elevate or lower the pieces D, and consequently the knuckle B and rollers *e e*. E is the frame of the machine, and *h* is the handle attached to the corrugated roller.

Claim.—The combination of the corrugated cylinder A with the single oscillating, self-adjusting knuckle B, when arranged in the manner set forth and for the purpose described.

No. 18,898.—George Hall and John Fordyce, of Morgantown, Va.—*Improved Washing Machine.*—Patent dated December 22, 1857.—The object of this invention is to cause the clothes to turn over and change positions at each operation of rubber K.

The claim and engravings explain the nature of the improvement.

The inventors say: We are aware that aprons have been used for carrying up the clothes to the washing apparatus, and that clothes have been washed between aprons. These we do not claim.

But we *claim*, in combination with the rubber K, the apron *h* attached to the spring N at one of its ends, and to said rubber by its other end, and passing underneath the roller *m* for the purpose of turning the clothes over and over at each operation of the rubber, as set forth.

No. 18,956.—Thomas C. Churchman, of Sacramento, Cal.—*Improved Washing Machine.*—Patent dated December 29, 1857.—The nature of my invention consists in the application of the friction and pressure necessary in washing clothes by means of a washboard, combining a horizontal and perpendicular motion produced by the turning of a crank A with a fly-wheel and the running wheels G of a curved track F, whereby the labor is easily performed.

Claim.—The construction of a washing machine combining a horizontal and perpendicular motion produced on the washboards D and E, by the turning of the crank and shaft A, and the running of the wheels G G in curved tracks F, as represented and described.

No. 16,567.—Amos Jacobs, deceased, Lydia Jacobs, administratrix, of Ithaca, N. Y.—*Improvement in Washing Machines.*—Patent dated February 3, 1857.—M Q are standards fastened to cover Z, and support an oscillating engine. The action of the dasher V on the piston rod H against the clothes will cause the tub Y to revolve upon its axis T.

Claim.—The combination of an oblique beater or dasher V with a tub Y, constructed substantially as described, in such a manner that the stroke of the dasher or beater causes the tub or vessel to revolve for the purposes of washing, cleaning, stamping, and rinsing clothes.

No. 16,715.—Richard Collins, of Chicopee, Mass.—*Improvement in Washing Machines.*—Patent dated March 3, 1857.—The soap is contained in the cavities M, each provided with a cover O and a passage P leading downwards to the clothes. Each of the passages P is provided with a stop-cock R, which may be opened or closed more or less.

Claim —Combining with and arranging in the vibratory dasher B, as described, one or more soap receptacles or chambers M, each provided with an aperture of discharge and a stop-cock or faucet, or the equivalent therefor, disposed substantially in manner and so as to operate as specified.

No. 16,751.—Louis C. Rodier, of Detroit, Mich.—*Improvement in Washing-Machines.*—Patent dated March 3, 1857.

The inventor says: I do not claim a washing machine having a flexible apron or jacket suspended upon springs and partly enclosing a revolving cylinder armed with ordinary flutes.

But I *claim* the revolving cylinder K, composed alternately of flanges J and spaces opposite said flanges, in combination with the jacket G, arranged and operating substantially in the manner and for the purpose set forth.

No. 17,030.—Thomas A. Dugdale, of Richmond, Ind.—*Improvement in Washing Machines.*—Patent dated April 14, 1857.—The clothes to be washed are placed between the rubber C and washboards D; and as the rubber is worked by means of handle I, the washboards B are moved apart on the rollers D, the lower rollers gliding on ways a, while the upper rollers bear against the cords E, the washboards eventually coming in contact with the rollers F on the vibrating frames F. The cords E, which are attached at one end to the frame of the machine, and at the other to knobs H, pass through the stationary plates G; and by turning knobs H, the cords E can be tightened, and the knobs H can be secured in any desired position by inserting pin m in corresponding holes in plate G.

Claim.—Combining the vibrating frames and rollers F F F F, the plate G, the knob H, and pin m, with the washboards B and rollers D, substantially as described.

No. 17,113.—Joseph F. Pond, of Cleveland, Ohio, and Charles L. Pond, of Buffalo, N. Y.—*Improvement in Washing Machines.*—Patent dated April 21, 1857.—The clothes to be washed are placed upon the apron h, and, passing between the fluted rollers a b c, they are subjected to the action of said rollers. When it is desired to stop the motion of the rollers a b, the rod p is raised until its projection s rests on the plate q; by this motion the arms n of rod m are brought within the concavities of rollers a b, and thus arrest their motion.

The inventors say: We make no claim to the rollers and apron.

But we *claim* the combination of the vibrating stop piece and its rod p with the screwing plate q, and the spring bearings of the rollers,

when said parts are used in connexion with fluted rollers, arranged and operating as described.

No. 17,166.—Josiah Mayes, of Cohoes, N. Y.—*Improvement in Washing Machines.*—Patent dated April 28, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I do not claim the beaded strips d g, irrespective of their peculiar position and arrangement, as shown, for they have been previously used. Neither do I claim a rotating reciprocating rubber placed within a tub, for they are well known and in common use.

But I *claim* attaching the beaded strips d g to the bottom E of the tub B and the face of the rubber C, substantially as shown and described, for the purpose set forth.

No. 17,180.—Henry D. Youry, of Junius, N. Y.—*Improvement in Washing Machines.*—Patent dated April 28, 1857.—The clothes to be washed are first put into box 1 to soak, and, when ready for washing, they are laid on the apron 6, in front of the rubber 5; and the apron having but a slow motion, while the rubber 5 has a quick motion, the pieces of clothes in passing on under the rubber are sufficiently washed; thence they pass on to the box 14, formed by the movable lid 15, which, while the washing process is performed, is turned back against the end of box 1, leaving a space between it and the roller sufficient for the clothes to drop into the water and be wet, and then again passed on to the apron 6 and under the rubber, until sufficiently clean; the lid is then dropped forward, thus forming a box for the reception of the clothes after being washed.

Claim.—The mode of operating the apron 6 to give its surface a slower motion than the surface of the rubber 5, in combination with the shaft 8 and apron 6, the side plate, and hook 13, constructed and operated in the manner and for the purposes set forth.

No. 17,377.—Abraham Huffer, of Hagerstown, Md.—*Improvement in Washing Machines.*—Patent dated May 26, 1857.—By turning crank J, pulleys I and H are rotated, the latter operating rods G and levers E F; which arrangement serves the purpose of adjusting the distance between the cylinder A and the roller concave B.

Claim.—The arrangement of slotted levers E and F, upright G, springs C and D, connected and operated upon by the pulley taps H H, pulley I, cord L, shaft K, and crank J, in the manner described, for the purpose of facilitating the parallel adjustment of concave B, as set forth.

No. 17,784.—Adam Fisher, of Leavenworth city, K. T.—*Improvement in Washing Machines.*—Patent dated July 14, 1857.—The article to be washed, when properly soaped, is inserted between the rollers A B, the operator taking hold of the other end of the garment; and during the process of washing, the buckets C pour the water down over the garment. The cylinder B, being hung upon springs *b*, freely yields to the different thicknesses of articles.

Claim.—The combination of the bucketed wheel A, constructed as described, with the plain surfaced rubbing wheel B, the whole constructed and arranged substantially as described.

No. 18,041.—Hiram F. Everitt, of Benton, Pa.—*Improvement in Washing Machines.*—Patent dated August 25, 1857.—At the commencement of the downward stroke, the rubber F has the position shown in full lines; and as it descends it carries the reel B around its axis a short distance, causing the lower rollers of the reel to drag the clothes in the direction of the arrow, while the rubber assumes the position shown in dotted lines.

The inventor says: I make no claim to any of the parts composing my machine, when separately considered.

But I *claim* the combination, as described, of the adjustable reel, fluted concave, and swinging rubber, constructed, arranged, and operating substantially as and for the purposes specified.

No. 18,045.—William M. Hammond, of Jonesville, Michigan.—*Improvement in Washing Machines.*—Patent dated August 25, 1857.—The clothes are pressed down upon the balls A, and are subjected to a constant rolling pressure by operating follower F by means of handle H.

The inventor says: I do not claim either the tub or reciprocating follower to be any part of my invention, since they have been used, as in Wisner's, and other improvements, (patents); neither do I claim anything of the nature of floating balls, as the balls in my improvement practically do not float, and should be made of some heavy material; nor do I claim anything like rollers, conical or otherwise, requiring pivots upon which to turn, for the reason that the balls are a marked improvement, having no pivots either to rust, or wear out, or to injure the clothes.

But I *claim* the bed formed of loose weighted balls covering the tub bottom, in combination with the cellular disk rubber, arranged and operating substantially as and for the purposes set forth.

No. 18,050.—Justin Loomis, of De Ruyter, N. Y.—*Improvement in Washing Machines.*—Patent dated August 25, 1857.—The rubber R can be withdrawn from the tub by swinging it, together with tube P and braces *b*, on its hinged joint *a*. When in operation, the tube P is held in place by means of braces B.

Claim.—The tubular guide piece P, forked brace *b b*, joint *a*, swivel pin *d*, and socket *e*, in combination with braces B B and the rubber shaft S, constructed, arranged, and operating substantially as and for the purposes specified.

No. 18,062.—Isaac A. Sergeant, of Springfield, Ohio.—*Improvement in Washing Machines.*—Patent dated August 25, 1857.—The tub B is supplied with the requisite quantity of suds, and the clothes are placed on the bottom of the secondary tub E, the frames I I^1 being previously thrown back, as represented in dotted lines in figure 1. The frames I I^1 are then thrown forward, and the end of frame H is depressed by the foot of the operator, and the secondary tub E is thereby raised, and the clothes are subjected to the pressure of the rollers in the frames I I^1. The shaft K is then rotated by turning crank L, and the tub E will be rotated in consequence of the pressure of roller M upon the clothes.

Claim.—1st. The employment within a water-tight tub B of an adjustable, rotating, perforated platform or secondary tub E, in the manner substantially as described.

2d. Providing the outer end of roller M with a shoulder n^1, of larger diameter than the body of the roller, substantially as and for the purposes set forth.

No. 18,067.—Abram Wood, of Camden, N. Y.—*Improvement in Washing Machines.*—Patent dated August 25, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The hinging of the board F at G G, so that the disk C and its shaft may be conveniently raised out of the tub and thrown back while the clothes are handled, and again conveniently let down by the operation; and by which arrangement the whole machine, including the bench A, may be lifted and moved from place to place, as described, the whole being arranged and combined substantially in the manner set forth.

No. 18,168.—Philip N. Woliston, of Springfield, Ohio.—*Improvement in Washing Machines.*—Patent dated September 8, 1857.—In this washing machine the coarser clothes may be placed under the rubber B, and the finer clothes between the rubbers E B; the coarser clothes are thus subjected to a greater pressure than the finer ones, and both may be washed at the same operation.

The inventor says: I do not claim the tub A, provided with a rotating, reciprocating rubber disk; for this is a well known device, and has been previously used.

Neither do I claim any particular form of cleats or rubbers *l* on the rubber disks.

But I *claim* the auxiliary rubber disk E, in combination with disk B, provided with cleats or rubbers *l* on both sides, and the cleats *l* on the bottom of the tub A, the whole being arranged for the purposes set forth.

No. 18,407.—Benjamin H. Pearson and Daniel B. Neal, of Mount Gilead, Ohio.—*Improvement in Washing Machines.*—Patent dated October 13, 1857.—The inventors, in describing the operation of their improved machine, say: In the operation of this machine, the cross piece *c* being detached from the lever D, we raise cross piece E, to which are attached the levers C C^1 and B B^1, shaft G, and the upper head A; this being done, we proceed to place the clothes to be washed between the two heads, A A^1; we then replace the cross piece E, attach the lever D, and proceed to operate it backward and forward.

The inventors say: We do not claim any of the members of this machine to be new, for they may all be found in every-day use; but we are not aware that the peculiar arrangement and operation of the devices which we have employed in our invention have ever before been used in this connexion and for this purpose.

We *claim* the heads or disks A A^1, in combination with the adjustable cross piece F, constructed and operating in the manner and for the purpose set forth.

No. 18,773.—CHARLES C. SCHMITT, of New York, N. Y.—*Improvement in Work-Boxes.*—Patent dated December 1, 1857.—The claim and engravings explain the nature of this invention.

Claim.—I do not claim, separately or apart from the general construction of the box or escritoir, any of the parts described.

But I *claim* a work-box and escritoir constructed as described, viz: the hinged or folding front side *n*, provided with the flap *p*, the recesses in the top to receive the writing and sewing implements, the secret drawers *z z* and *a*, concealed by the sliding plate or bottom *t*; the whole being arranged or disposed as shown and described, for the purpose of forming a combined work-box and escritoir.

XVIII.—ARTS POLITE, FINE, ETC.

No. 17,473.—CHRISTOPHER D. SEROPYAN, of New York, N. Y., assignor to WILLIAM COUSLAND, of New York, N. Y., and JOHN D. BALD, of Philadelphia, Pa.—*Improvement to Prevent Counterfeiting Bank Notes, &c.*—Patent dated June 2, 1857.—This invention consists in printing bank notes on colored paper, with an ink which is equally or more fugitive than the tint of the paper, so that in destroying the tint of the paper, the letters thereon shall be equally destroyed; and, as the color of the bank note cannot be produced by the photographic process, it follows that bank notes which are printed with such fugitive ink cannot be counterfeited.

Claim.—The application of at least two colors to the manufacture of bank notes, drafts, and all other papers representing value, both of which will equally or nearly so absorb the chemical rays of light, or neither of which will transmit or reflect such rays, and leave the color or the tint of the paper less fugitive than the color of the other parts.

No. 16,829.—E. F. FRENCH, of Franklin, Vt.—*Bill-Holder.*—Patent dated March 17, 1857.—This invention consists in having a series of pockets placed between two stiff lids or covers, the pockets and lids being placed upon a rod or axis which passes through their lower ends. The pockets and lids are connected at their lower ends and at one side by a cord, which determines the length of the movement of the several pockets upon their axes; the whole being so arranged that when the device is closed, the bills will be retained in a portable case; and when the device is opened, the pockets will be spread out side by side, and the endorsements on the upper or outer ends of the bills fully exposed, so that any particular one may be instantly seen.

Claim.—The pockets B, placed between the two lids or covers A A, the pockets and lids being connected by a cord *b*, and having a rod or axis C passing through them at one end, substantially as shown and for the purpose set forth.

No. 17,477.—REUBEN G. ALLERTON, of New York, N. Y.—*Blotter.*—Patent dated June 9, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—A blotter, constructed substantially as described, having a convex surface containing the blotting material, with a handle in the opposite side, so as not to revolve, but to be used by a single rocking motion.

No. 17,299.—ARCHIBALD H. ROWAND, of Alleghany, Pa.—*Improvement in Binding Books.*—Patent dated May 12, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The combination of the rollers *a* in the groove or book carriage *b*, as applied to books to aid in moving them in their racks in a vertical position.

I further claim the application of the spring, as above described, and used in compressing the extremities of the arch of the head band D, and thereby causing said head band to maintain a circular or arch-like form, by means of which the leaves of a folio or book are kept from drooping or sagging when the book is in a vertical position; this spring I use according to convenience or choice, either applied on the outside of the outer back or next to the head band, or enclosed between the outer and inner backs.

No. 17,149.—GEORGE HODGKINSON and THEODORE F. RANDOLPH, of Cincinnati, O.—*Machine for Cutting Indexes to Blank Books.*—Patent dated April 28, 1857.—O represents one end of the book with one cover under the platform H, the other cover is raised with all the leaves intended to be used for the letter *z*. The edge of the book being placed against the gauge L, the right hand end of the book corresponding with the mark on scale T, the knife D is brought down by pressure upon a treadle; the spring J then raises the cutter D, and the operator raises the number of leaves for the next letter above *z*; and upon the book being adjusted against scale T, the operation of cutting is repeated.

The inventors say: We do not claim any of the devices separately.

But we *claim* the arrangement of the machine described, for the purpose set forth.

No. 18,935.—FREDERICK SUTER, of Brooklyn, N. Y.—*Machine for Turning the Leaves of Books.*—Patent dated December 22, 1857.—This invention consists of a box A containing the mechanism, to which a standard B is attached to support the music book. On the top of this standard a sliding piece C is fixed, capable of being regulated to suit the height of the music, and provided with a spring catch *s* to hold the upper end of the music book. The lower end is held fast by the pin O to the slide *m*, and acted upon by a spring. This slide *m* is pulled back, while the book is placed against the stand by means of the projection W passing through the top plate D. The engravings and claim further explain the nature of this invention.

The inventor says: I *claim*, first, the arrangement of the lever H with the described mechanism operating in the manner specified, for the purpose of taking hold of the music leaf, turning the same over, and afterwards letting said leaf loose again and dropping down so as to pass under the same, in the manner substantially as described.

Second. I claim the fingers 3 and 4, operating in the manner and for the purpose specified.

No. 17,480.—Theodore Bergner, of Philadelphia, Pa.—*Machine for Rounding and Backing Books.*—Patent dated June 9, 1857.—The book to be backed is placed between the clamps F, with its face downward and resting on block *l*, as represented in figure 3, and subjected to a moderate pressure by means of hand wheel L. By turning hand wheels P, pinions *q* and segments M are operated, the latter drawing downward clamps F. By an additional turn of hand wheel I, the book is compressed tighter between the clamps F; whereupon the sliding table D is pushed in the position represented in figure 2, and the centre of the book held vertically with the centre of motion of the swing frame Z by throwing in catch i^1. A vibration of the swing frame Z and the consequent pressure of roller B^1 over the whole surface of the back will perform the backing. This being done, the swing frame is allowed to rest against the stops h^2, while at the same time the catch i^1 is disengaged by the pressure of the foot on the plate m^1 of lever H^1, when the spiral springs G^1 will pull the sliding table D, fig. 2, to the left, thus allowing a ready removal of the finished book.

The inventor says: I am aware that a roller and swing frame are employed in the backing machine of John A. Elder, patented July 26, 1853. I therefore do not claim these parts.

But I *claim*, first, giving a sliding motion to the clamps F F by means of segments M M and pinions *q q*, or any equivalents to the same, substantially in the manner and for the purpose specified.

Second. The sliding table D, plate E E^1, and clamps F F^1, in combination with the swing frame Z and roller B^1, the whole being constructed and operating substantially in the manner and for the purpose set forth.

Third. The employment, in combination with the sliding clamps, of adjustable blocks I, substantially in the manner and for the purpose described.

No. 18,245.—Isaac Herrmann, of New York, N. Y.—*Safety Clasp for Bracelets, &c.*—Patent dated September 22, 1857.—In using this invention, when the clasp is closed and it is required to be opened, the ornamental cap piece K is pressed upon; this brings down the inclined plane surface F against the inclined plane surface G, and throws the rod L on one side, as shown in the figure, and releases the catches E E; on releasing the pressure, the catches are thrown back by the spiral springs.

The inventor says: I *claim* the application of the two inclined plane surfaces F and G, and the plate B attached to the rod L, for the purpose set forth, to secure more safely clasps on bracelets, and for other purposes.

And I also claim the combination of the steadying plate B with the parts above mentioned, which plate prevents the catches E E from turning aside; the whole is in combination—that is, plate B and inclined planes F G on rod L, as set forth.

No. 16,808.—James M. Ross, of Springfield, Mass.—*Guard for Breast Pins.*—Patent dated March 10, 1857.

Claim.—The additional guard *g h h*, as applied in the manner and for the purposes substantially as set forth.

No. 17,881.—Charles Ferdinand Kolb, of Philadelphia, Pa.—*Mode of Fastening Breast Pins*—Patent dated July 28, 1857.—In closing this pin, the pin A is withdrawn within the tube B, the pin C sliding in the longitudinal groove of the tube B; when the pin A has been withdrawn to its fullest extent, the point of pin A can be inserted into catch D through slot *a*, and the pin A is then drawn forward, and pin C is turned into the transverse groove of the tube B, thereby securing the point of pin A permanently in catch D.

Claim.—The improvement as specified.

No. 17,800.—John F. Mascher, of Philadelphia, Pa.—*Spiral Catch for Breast Pins.*—Patent dated July 14, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Constructing breast pins, brooches, the other ornamental fastenings for dress, &c., with a spiral catch, substantially as and for the purpose described.

No. 17,647.—Charles Thurber, of Worcester, Mass.—*Improvement in Caligraphs.*—Patent dated June 23, 1857.—A line of letters at O^1 E^1 is transferred in a reduced scale to a paper on tablet F by means of the pantograph N^1 S D; when one line has been written, the rod N^1, in retracing, moves lever J on its pivot A^1, turning the ratchet wheel G one notch, which causes the tablet F to be shifted the space of a line, when the next line can be written, as described.

The inventor says: I do not wish to be understood as making claim broadly to the combination of two pens or markers by levers of equal length and jointed rods, and these features, combined with a table or desk by universal joints; as such combination has long been known and used in an instrument termed polygraph, for writing two exact copies simultaneously, and has been entirely superseded by the copying press for taking impression copies, and the mode of operation resulting from the said combination is substantially different from my invention, and could not produce the result for which my said invention was designed. Nor do I wish to be understood as making claim to the combination of a stylus or tracer with a pen or marker by levers of different lengths connected by jointed rods, as such a combination has long been known and employed as a pantograph for copying drawings, so as to reproduce them on an enlarged or reduced scale, and could not alone achieve the purpose for which my invention is designed.

But I *claim* combining a stylus or tracer with a pen or marker, by means of levers of different lengths connected by jointed rods, substantially as described, so that the pen or marker may follow accurately, but on a reduced scale, all the movements imparted to the stylus or tracer; in combination with the connexion of this mechanism with a desk or table, by means of an universal joint, substantially as described, to give freedom of motion in all directions to the stylus or tracer and to the pen or marker, whereby a person can write the usual sized characters by tracing characters of a large size, as set forth.

I also claim the stylus or tracer and the pen or marker, combined, substantially as described, with the apparatus, or its equivalent, for shifting the paper; whereby the paper is shifted to the distance equal to the space between two lines, by carrying back the stylus or tracer preparatory to tracing another line, substantially as set forth.

No. 16,700.—David A. Woodward, of Baltimore, Md.—*Solar Camera.*—Patent dated February 24, 1857.—Fig. 1 represents a section of the instrument; fig. 2 represents it when used as a camera obscura; and fig. 3 when used as a camera lucida.

The inventor says: I do not claim the photographing camera obscura, or the solar reflector and lens, or any part thereof, of themselves.

But I *claim* adapting to the camera obscura a lens and reflector in rear of the object glass, in such manner that it is made to answer the two-fold purpose of a camera obscura and camera lucida, substantially as and for the purposes specified.

No. 16,600.—John F. Mascher, of Philadelphia, Pa.—*Process for Ornamenting Daguerreotype Cases, &c.*—Patent dated February 10, 1857.—The compound referred to in the claim consists of one fluid ounce of water, six grains of bichromate of potash, and fifty grains of gelatine.

Claim.—The process of ornamenting daguerreotype cases or other articles in imitation of tortoise shell, wood, or marble, or other substances, by first covering the surfaces thereof with stained or colored paper of suitable character, or staining or coloring the surfaces themselves in a suitable manner, and afterwards coating them with gelatine and bichromate of potash, in any manner substantially as specified.

No. 18,288.—Isaac Lindsley, of Providence, R. I.—*Improvement in Setting Diamonds, &c.*—Patent dated September 29, 1857.—In this improvement no difference is made in the construction of the blank or piece A, which is to constitute the setting, except to raise points or studs i i at suitable parts of the veins a a, as shown in figures 5 and 6, the former of which figures is a plan, and the latter a section. The

production of those pins or studs involves no change in the construction of the die by which the plate A is formed, but the drilling of small holes therein at the places where the points or studs i i are required. The blank A thus formed with points is drilled or cut out between the veins, and then bent or pressed into the proper form to receive the stones, in the same manner as the blank first described; but the stones on being put into their places are not put so deeply into or between the veins, which are merely required to support them at the back; they are then secured in their places by spreading the points with suitable punches to make them lap over the stones in suitable places; thus, with this improvement in setting, the stones are only covered here and there.

The inventor says: I do not claim, generally, the setting of stones in or between points.

But I *claim* the raising of points or studs i i on the veins of the blank by the same punching operation which forms the blank, thereby producing a superior setting, which gives a greater brilliancy to the stones, at a cost of labor not greater than that of the setting commonly used in cheap jewelry.

No. 18,198.—George Gillett, of Little York, N. Y.—*Improvement in Painters' Easels.*—Patent dated September 15, 1857.—This easel can be turned vertically on standard A; it can further be turned on point a in the plane of circle C, and set to any desired angle by passing catch F into one of the notches of circle C. It can further be turned on the hinges H, and can be secured to any desired position by inserting catch G into one of the notches of arc D.

Claim.—The combination of the three motions obtained by the two semi-circles and the rotary motion of the standard, together with the latches and notches in the semi-circles to retain the position, and also as an application to the easel or painting-stand.

No. 17,741.—Albert H. Jocelyn, of New York, N. Y.—*Method of Backing Electrotype Plates.*—Patent dated July 7, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Backing shells for printing, embossing, and like purposes, by pressing type or other suitable metal down upon the shell while in a fluid or plastic state, substantially in the manner and for the purpose described and shown.

No. 17,290.—Robert Muckelt and William Rigby, of Salford, England.—*Improvement in Machines for Engraving Cylinders.*—Patent dated May 12, 1857.—The original design which is to be transferred to the cylinder e is placed on the platform b of the machine, and the pointer z which is attached to the carriage A can be moved over said design, the carriage A following on the rails B. The arm X of said carriage operates lever m of the fulcrum n, which actuates arm t by means of pin r, causing the block j and arm h, together with instrument for engraving attached thereto, to move in the direction parallel with the axis of the cylinder e. The carriages C sliding on rails D actuate the lever J, which is attached to one of said carriages, which, by means of stud L, operates lever O, which imparts motion to the sliding rails *g*, thereby partially turning pulleys *f* and the cylinder *e*. By means of these two motions of the engraving tool *h* and cylinder *e*, any design can be transferred from the platform *b* to the cylinder *e*, and the proportions of said copy can be regulated by adjusting the studs L and *r* to their respective positions on levers *m* and J. The arm a^*, which is pivoted to a slide, can be used for shading the design with straight lines, the pointer *z* being guided by it as by a rule.

Claim.—First. The levers *m* and J, and the parts in combination therewith, for varying the relative proportion between the original design and that produced when applied to machinery for engraving designs on cylindrical or other surfaces.

Second. The ruler or guide plate *a*, when used in the manner and for the purposes described.

No. 17,146.—Charles H. Field, of Providence, R. I.—*Machine for Engraving Designs on Watch and Locket Cases, &c.*—Patent dated April 28, 1857.—The block F, with the locket thereon, being placed in the socket in the centre of the pattern disk C, and power being communicated to pulley Q upon shaft H, the plate B descending, the disk thereon slides beneath the stud J, and in so doing withholds the tool *h* from block F until the edge of the pattern at j^2 passes the end of the stud, when, by the action of spring 7, the tool *h* strikes into work, the continued motion of which produces a line until the tool is tripped and withdrawn from contact with the work by the edge at j^1 meeting the stud J. The motion of the plate B, from this point of the stroke to its completion, is employed to remove stud J from contact with the disk by the lower edge of the plate coming in contact with screw *k* on lever K, which raises the reverse end of the same, and brings the wheel *y* thereon in contact with the lower end of arm E; at the same time tappet f^2 comes in contact with stud *v*, which, by means of tappet f^1, draws pawl *u* back one tooth, when the descending stroke is completed, and the plate B ascends, and in so doing liberates the tappet *b*, causing the wheel D to move one tooth by the reaction of the spring *g*. The tappet at the top of the plate also casts off one tooth, and holds the disk C in this position until the succeeding cut is completed; as the plate B approaches the end of its ascending stroke, and after the edge of the pattern at j^2 has passed beneath the stud J, the chain *m* gradually lightens and raises the short arm of lever K, and in so doing releases the arm E upon the tool post, and allows the tool to resume its former position.

The inventor says: I do not claim two rosettes or irregular disks acting upon two studs for the purpose of determining the length of the line, nor do I claim an eccentric adjusted by the foot of the operator for this purpose.

But I do *claim* the variable pattern disk and combination of the same with the stud J for governing the cutting of the tool.

Also, the combination and arrangement of the tappets f^1 f^2 and the stud *v*, also the tappet *b*, in connexion with the same, for imparting and regulating the motion of the pattern disk.

Also, the arm E and the lever K, and the mechanisms attached thereto, the whole being so combined and arranged as to render the machine self-operating.

Lastly, the adjustable pitman, as set forth, for imparting the required motion to the vertical sliding plate B.

No. 16,576.—Theodore Bergner, of Philadelphia, Pa.—*Machine for Making Envelopes.*—Patent dated February 10, 1857.

The inventor says: I am aware that jets of compressed air have been used to assist in folding envelopes, as is the case in the machine of M. Remond, which is unlike my invention.

I do not claim the folding hinges exclusively, a similar device having been used heretofore.

I am also aware that atmospheric pressure is claimed for holding the blank during the operation of folding in Wm. H. Lowe's patent, April 8, 1856; but I *claim:*

First. Giving the sliding rod D a downward movement by means of link E, lever F, rod G, and cam H, in the manner and for the purposes set forth.

Second. Giving a sliding movement to the frame V by means of link *x*, lever W, rod *z*, and cam A^1; thereby operating, by means of lifters $g^1 g^1 g^2 g^3$, the folding hinges $i^1 i^1 i^1 i^2$, in the manner described.

Third. The compartments *r r*, in combination with pipes S and cylinder R, the latter being provided with piston t^2, which is operated by cam S on the shaft I, the whole being constructed substantially in the manner set forth.

Fourth. The stamp P^1, working in the swivel-bearing O^1, and operated by cam Q^1, pin r^1, rod S^1, and cam T^1, in the manner and for the purpose specified.

Fifth. The employment of cam 4, lever 1, rod Z^1, arm y^1, and spiral spring 5, to turn swivel-bearing O^1 on its axis, substantially in the manner and for the purpose set forth.

Sixth. Operating the pasting vessels $l^2 l^2$ by the lever M^1, rod n^1, and cam N^1, substantially as described.

Seventh. Applying the curved arm H^1, working in a slot k^1, through the folder P; for removing the finished envelopes to the inclined table K^1, and operating it by arm G^1 and cam arm F^1, as shown.

No. 18,857.—Horace A. Nathans, of Philadelphia, Pa.—*Flexomanus.*—Patent dated December 15, 1857.—A represents the frame of the machine; B, five successive cranks; E E^1, pulleys on either end of the shaft *b b*, which is revolved by means of cords F^1 F around the grooved pulleys D D^1 and *e* e^1; $C^1 C^2 C^3 C^4 C^5$, rings attached to the cranks B by means of a wire; G G, thumb screws for attaching the machine to the piano; J, frame of the piano; H I, the keys of the piano; K K, handles for turning pulleys D D^1; L, a bar for supporting the wrist, also for keeping the machine at a proper distance apart, and serving as a shaft for pulleys D D^1 to revolve on; M, a bar for the purpose of keeping the frame at a proper distance apart; N N, two projecting pieces for attaching the machine to the piano.

Claim.—Combination of a series of cranks B B B B B and rings C^1

$C^2 C^3 C^4 C^5$, arranged and operating as described, together with the bar for supporting the wrist.

No. 17,054.—John Pfaff, of Philadelphia, Pa.—*Improvement in Flutes.*—Patent dated April 14, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not desire to confine myself to the exact form of bent tube shown, as the same may be modified and ornamented in various ways without altering the desired result.

But I *claim* the main gear wheel *b*, so that it shall operate as a barrel head or cover to the barrel, and have the retaining power applied to it, substantially as set forth.

No. 16,489.—Anthony Kuhn, of Baltimore, Md.—*Improvement in Keyed Harps.*—Patent dated January 27, 1857.—The nature of this invention will be understood from the claims and the engravings.

Claim.—A sounding board B^1 and suspended bridge *f*, in combination with a solid bridge *g*, arranged at a distance from or beyond the sounding board, so that the strings extend across an open space between the sounding board and solid bridge, substantially as described.

Second. I claim extending the strings one-half their length or more, through an open space beyond the sounding board, substantially as described; so as to make the instrument produce sounds like a harp, instead of sounds similar to a piano.

Third. I claim arranging the hammers *b* above the key board L, and making them strike the strings towards and opposite to the sounding board, near the suspended bridge, instead of near the solid bridge, substantially as described.

Fourth. I claim increasing the number of strings in an instrument having the properties of a harp, substantially as described; so as to make the flats and sharps without the pedals used in the old harp, so as to dispense with the pedals for that purpose.

No. 18,060.—Thomas Robjohn, of New York, N. Y.—*Inkstand.*—Patent dated August 25, 1857.—By opening the cover *d*, the thumb *e* depresses pin *i* and the diaphragm *a*, and the fluid within the inkstand is raised in cup *b*.

Claim.—The arrangement for flexing the elastic diaphragm by so attaching a mechanism in connexion with a cover for the ink cup that the opening and closing thereof shall effect the raising or discharge of the ink or other fluid into or from said cup, as described.

No. 17,147.—Kingston Goddard, of Philadelphia, Pa.—*Improvement in Inkstands.*—Patent dated April 28, 1857.—By means of this invention, a common ink-bottle A can be readily converted into a fountain inkstand, by simply inserting the bent tube B C in the cork I of said bottle, and by fastening the bottle to a frame D E.

Claim.—The application of the bent tube C to a common ink-bottle, the whole arranged as described, whereby said common ink-bottle is converted into an effective and economical fountain inkstand.

No. 17,373.—Bennett John Heywood, of Leicester Square, Middlesex county, England.—*Improvement in Inkstands.*—Patent dated May 26, 1857.—By pressing down the India rubber valve *e*, the finger which imparts the pressure closes the air passage *h*, and the air between the disk *e* and e^* will be compressed and forced through the opening of valve e^*, as represented in fig. 2, and the compressed air in the inkstand *a* forces the ink through tube *b* into dipping cup *d*. By depressing valve e^*, without closing aperture *h*, the atmospheric pressure within and without the vessel *a* will become equalized, and the ink in cup *b* will return to vessel *a*.

Claim.—The means set forth of forcing ink into the fountain of inkstands, by the combined action of the lower valve and the aperture in the top plate or disk, which acts alternately as a closed and open valve, by the application and removal of the finger.

No. 18,277.—John T. Folwell, of Philadelphia, Pa.—*Improvements in Fastenings for Jewelry.*—Patent dated September 29, 1857.—Fig. 1 is a view of the sleeve button when closed as it is when on the sleeve; A is the ornamental front of the button; B is a round or oval post with a slit filed in it to receive the thick end of a tongue for a joint which works as a hinge, with a rivet passing through the centre of both; C is the round post or catch with a notch filed in it to secure D, which is the tongue that reaches from B at one end to C at the other; E is a sheath fitting tightly around C, and is shifted by lever F, which reaches the edge and is turned over on the front edge, so that it can be moved by the thumb nail; F is the lever attached to E to shift it.

The inventor says: I claim the round post with a notch filed in it to receive the pin or tongue in, and a sheath fitting tight around the post and shifted by a lever; so that when in one position the tongue can be put into the notch, and when put into the opposite position it secures the tongue in its place, so that it cannot come out without shifting the lever, as described.

No. 17,167.—Thomas Motley, of Brooklyn, N. Y.—*Mode of Constructing Letters for Signs, &c.*—Patent dated April 28, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The new manufacture of frame or skeleton letters described; that is, the outline of each letter or numeral is formed of a skeleton frame, open both front and back, or entirely through, as shown.

No. 17,137.—Charles G. Bloomer, of Wickford, R. I.—*Mode of Constructing Lockets, &c.*—Patent dated April 28, 1857.—This invention consists in forming the rim of lockets of one single piece of plate, by passing it through a series of stamps or dies; and the engraving represents the cross sections of a rim as it is formed in succession by such dies, figure 1 showing the plate before it has been operated upon by the dies, and figure 4 showing the finished rim.

Claim.—First. The making of locket rims out of single pieces of metal, instead of two or more, which are everywhere used.

Second. The making of them out of sheet metal instead of wire.

Third. The making of them substantially in the manner described.

No. 17,755.—D. L. SPRAGUE, of Townsend, Vermont, and RILEY BURDITT, of Brattleboro', Vermont.—*Melodeon Attachment.*—Patent dated July 7, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—First. The hammers *h* of the harp attachment, arranged between the keys and reeds of the melodeon, and combined, substantially as described, with the inverted jacks *e* attached to the bottom of the keys; whereby the ordinary keys of the melodeon are made to serve, without any extension, to play the harp attachment.

Second. The attachment of the string-dampers *j* of the harp attachment to the melodeon keys in a manner to operate substantially as described.

Third. The employment of a bar G, extending below the whole of the hammers, and operating, substantially as described, to move all the hammers simultaneously to such a position that the jacks are inoperative upon them.

No. 16,574.—J. C. BRIGGS, of Woodbury, Conn.—*Improvement in Melodeons.*—Patent dated February 10, 1857.—The object of the expression chamber C is to facilitate the production of a swell without separating or changing the tone of such swell.

The effect of the exhaustion of chamber C is a tendency to collapse, so as to cause the valve *f* to contract the opening of port *d*, and thereby to reduce the admission of wind, thus giving a soft expression to the instrument. The above tendency may be made greater or less by increasing or diminishing the force of the spring *a*, which tends to raise the board H. This may be done by means of pedal rod *g*, or otherwise.

The inventor says: I disclaim everything in my device which is similar to Swan's invention, or to Hamlin's, mentioned.

I do not confine myself to the particular means described of graduating the force of the spring *a*, nor to the particular position of the expression chamber, relatively to the exterior of the wind-reservoir and pump.

But I *claim* the expression chamber C, with its valve *f*, arranged and operating in the manner and for the purposes substantially as described.

No. 16,760.—THOMAS F. THORNTON, of Buffalo, N. Y.—*Improvement in Melodeons.*—Patent dated March 3, 1857.—By means of knob *j* the arms *h*, with the eccentrics G, can be brought into position fig. 1 or fig. 2. If in position fig. 1, the bar F (which extends across the instrument, and is connected to the levers E by pins *e*) is allowed to descend and bring the levers E within range of the keys C, thus coupling the two sets of valves to be actuated by one set of keys C. The ends of the levers E are adjustable upon the push-down pins b^1, so that both valves may be opened simultaneously by the keys C.

Claim.—The combination of an extra adjustable lever E with each of the push-down pins b^1, in the manner substantially as described.

No. 16,786.—RILEY BURDITT and HATSEL P. GREEN, of Brattleboro', Vt.—*Improvement in Melodeons.*—Patent dated March 10, 1857.—If the parts are in the position represented in fig. 2, each of the keys A will operate the push-down pins *a*, and also the pins *d* for sounding the octave notes; if in the position of fig. 1, the pins *d* will be below the hollow portion *f* of the keys, and consequently will not operate.

The inventors say: We do not claim to be the first inventors of musical instruments in which two or more notes in different octaves are sounded by pressing a single key, for we are aware that organs, melodeons, pianos, &c., having such features, have long been known. The patent of Whipple & Bowe, 1855, is an example in point. In their instrument, each set of connecting levers has its own fulcrum board; one of said boards is hinged and rendered movable, so that its set of levers may be thrown into or out of connexion with their corresponding keys by raising or lowering the fulcrum board.

The employment of double fulcrum boards involves increased expense in construction and want of compactness. Besides, the end connexion between the levers and the keys requires to be flexible to a certain extent; which is expensive, lacks accuracy, is liable to become loose, cannot be adjusted readily, nor conveniently removed or applied to the instrument.

But, by our arrangement, the levers are all fulcrumed on one and the same fulcrum board, which slides, and thus brings the levers into or out of connexion with the keys. Our plan is simpler, more compact, cheaper, and more easily applied than the invention above described. The ends of our levers are united by means of rigid adjusting screws, by which the levers may be adjusted with the utmost accuracy and convenience. But we do not claim such adjusting screws, as they are seen in J. F. Thornton's device, 1857.

Our fulcrum board and levers may also be removed or replaced readily, without the necessity of putting the end of each individual lever, one by one, into its loop by hand, as in Whipple & Bowe's device.

We do not claim the combination of levers with push-down pins that have shoulders or collars upon them. This is seen in H. N. Goodman's melodeon, patented 1853.

Neither do we claim any part or feature of the described invention which is seen in any other analogous instrument; but, to the best of our knowledge and belief, it is new to have all the levers fulcrumed upon a single movable board, as set forth.

We *claim* having the fulcra of the connecting levers B B located upon a single movable board C, substantially as described.

No. 17,501.—WILLIAM EVANS, of Lockport, Ill.—*Improvement in Melodeons.*—Patent dated June 9, 1857.—As the swell C closes upwards, the chamber formed between it and the reeds A is enlarged instead of being diminished, as it is when it closed downwards upon board G, in the old way; and it opens with the current of air, instead of in opposition to it. By this arrangement a greater harmony is obtained between the lower and higher reeds.

Claim.—The arrangement of the swell to close by a movement upwards or away from the reed tubes *a*, substantially as specified, instead of downwards or towards the reed tubes in the heretofore usual manner, for the purposes specified.

And I also claim the stop D, against which the swell closes, attached to the reflecting board B, so as to be removed therewith to leave the reeds exposed, as described.

No. 18,399.—Stanley A. Jewett, of Cleveland, Ohio.—*Improvement in Melodeons.*—Patent dated October 13, 1857.—The nature of this invention consists in graduating the quantity of space contained in the air chambers above and below each particular reed upon a geometrical scale, by which a uniformity of volume of sound is produced compared with the particular key or reed; in producing a perfect *mute*, whereby any one of two or more sets of reeds may be used by one valve; and in the arrangement of devices whereby the swell valve is operated by the bellows without the intervention of a pedal, producing a gradual swell and diminuendo, the same being under the control of the performer.

The inventor says: I *claim*, 1st. The production of a perfect mute, by combining the action of the air passages *m* N O, or their equivalents, with the mute valve L, as set forth.

2d. In the formation of a gradually increasing diminuendo, by means of operating the swell valve T, by the rising and falling of the bottom board of the bellows, or its equivalent, as specified.

No. 18,676.—E. B. Carpenter, of Brattleboro', Vermont, and E. N. Merriam, of East Poultney, Vermont.—*Improvement in Couplings for Melodeons, &c.*—Patent dated November 24, 1857.—This invention relates to certain mechanism which is employed to combine the valves with the keys in such a manner that any given tone and its octave, with the fifth or tenth, or both of these combined, or any other intervals that may be desired on the same key-board, may be played at one and the same time by pressing a single key.

The inventors say: We *claim*, 1st. The employment of a single series of diagonal levers *o o*, arranged relatively to and combined with the keys by blocks L and jacks N N, substantially as described; whereby a single lever serves not only to couple a key with another to which it stands in the relation of octave, but with other keys with which it stands in different relations, as fifths, tenths, &c.

2d. Supporting the diagonal levers upon a fulcrum board that is arranged between the keys and valves, and applied so as to be capable of rising towards and falling from the keys, with the whole series of levers, substantially as set forth.

3d. Combining the jack N N with the uncoupling bars R^1 P^1, by means of the elastic connexions *r p*, operating substantially in the manner and for the purpose set forth.

No. 18,751.—George W. Lane and William N. Manning, of Rockport, Mass.—*Pedal Base for Melodeons, &c.*—Patent dated December 1, 1857.—The engravings and claim explain the nature of this invention.

Claim.—1st. The arrangement of the valves, the reeds, and the air chamber of the pedal base upon the pedal board, or otherwise in an equivalent manner, arranging the same behind the pedals, so that the whole of the pedal base is rendered portable, and can be attached to any instrument by simply connecting its air chamber by a pipe with the bellows of the instrument, substantially as described.

2d. The arrangement of the valves, with their lever-like stems, inclined planes, and springs, substantially as described, for the purpose of combining the valves with the pedals to be operated thereby.

No. 17,196.—Jeremiah Carhart, of New York, N. Y.—*Improvement in Swells for Melodeons, &c.*—Patent dated May 5, 1857.—By pushing lever *i* towards or from the front of the instrument, the valve F is moved to open or close the holes *a* in the swell E.

Claim.—1st. Providing the swell E with a number of holes, and fitting the same with a valve or valves F, for the purpose of graduating the tone of a portion or the whole of the instrument when the swell is closed, substantially as set forth.

2d. The mechanism for operating the swell valve F, either while the swell is open or closed, consisting of the upright shaft I, with its lever *i* and arm *f*, and the flexible rod *g*, arranged in the manner substantially as set forth.

No. 18,581.—Andre Adolphe Gaget, of Paris, France.—*Apparatus for Holding Music, &c.*—Patent dated November 10, 1857.—This improvement consists of binding hooks, to be placed at the top and bottom of the sheets, and hold-fast or brace applied to the binding hooks for fixing them in their proper position.

Claim.—The construction and employment of the hooks D and hold-fasts or braces F, in connexion with the back A; for the purpose of binding together music, manuscripts, and other loose papers, substantially as described.

No. 18,284.—Amos P. Hughes, of Philadelphia, Pa.—*Improvement in Reed Stops for Musical Instruments.*—Patent dated September 29, 1857.—The nature of this invention consists in forming an air-tight chamber, or one nearly so, with the swell, or by other means, over or outside of the reeds when it is desirable to stop them; and from the chamber so formed a hole or opening is made (independent of those in which the reeds are placed) from the inside of this chamber to the interior of the wind chest or bellows, thereby varying or condensing the air on both sides of the reeds according to the kind of bellows used. This improvement is adaptable to either of the forms of general construction of instruments of that class known as melodeons, seraphines, harmoniums, æolians, and all instruments in which reeds are used.

Claim.—The inventor claims the stopping of reeds by forming an air-tight chamber or chambers outside of the reeds with the swell, or by other means, in combination with the open communication between the inside of the chamber or chambers and the interior of the wind chest or bellows, or any other arrangement substantially the same, and for the purpose set forth.

No. 16,995.—William Randle, of Florida, N. Y.—*Improvement in Strings for Musical Instruments.*—Patent dated April 7, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The application of one or more springs applied to each string as described, or its equivalent, and for the purpose set forth.

No. 18,699.—James J. McCormick, of New York, N. Y., and George Crossingham, of Croton Falls, N. Y.—*Improved Painters' Striping Instrument.*—Patent dated November 24, 1857.—The object of this invention is to render the painting of stripes, as performed by painters, a more expeditious and less laborious process than usual. It consists in the use of a feeding device in connexion with a pen of peculiar construction, and a pump or cylinder and piston. I represents a series of feeders, which may be formed of flat steel plates E, soldered together at their inner ends, as shown at *f*, and suitable spaces *g* allowed between them, said plates being slotted transversely with the spaces *g*, as shown at *h*; or the feeders may be formed from a solid mass of metal sawed in one direction to form kerfs *g*, at suitable distances apart, and then sawed to form a kerf *h*, which will bisect at right angles the kerfs *g*, the kerfs *h* being sawed from the inner towards the outer end, and to within a short distance of it.

The inventors say: We do not claim broadly the employment or use of a cylinder and plunger attached to a pen, for such a device has been applied to fountain pens and analogous devices.

Neither do we claim separately the pen F, for an equivalent device is in common use for mechanical drawing.

But we *claim* the feeders I, in combination with the pen F, cylinder A, and plunger B, arranged as and for the purpose set forth.

No. 17,184.—Benjamin F. Rice, of Clinton, Mass., assignor to Benjamin R. Smith and Charles H. Morgan, of same place.—*Improvement in Machines for Making Paper Bags.*—Patent dated April 28, 1857.—When the machine is in operation, the roll of paper is wound around the roller g^2, and passes therefrom between the creasing rollers n^2 o^2, thence under transverse bar p^2 upon the long former *e*. When arrived at the guides l^2 m^2, it is bent around former *e* so that one edge of it may overlap the other, the lapping part being extended into a curved slot j^2 made through the lower guide l^2, as represented in fig. 2. The paster l^3, working in a vat a^3, lays a narrow layer of paste upon the edge of the paper, which is passed between the pressure roller *p* and the paster l^3. The sheet of paper continuing forward has its lapping edges carried between the feeding rollers *o* k^3, by which the lapped parts of the paper are pressed together. The blade *r* attached to arm *g* now cuts off such a portion of the paper as will correspond to the length of the bags to be made and, during this operation of cutting, the front end of the paper tube is clasped between the paster s^2 and presser r^3, applying paste to said front end. The rollers *m n* now close the bottom lap down upon the pasted surface, the scraping bars i^2 j^2 preventing the bag from winding on either of the rollers *m n*, which thus discharge the bag from the machine.

Claim.—A combination or machine, composed of machinery for bending a strip of paper around a former *e*, and into a tubular form, so that one edge may be lapped over the other, as described; machinery for pasting such edges, or one of them, and closing or pressing them together, and machinery for cutting the tube crosswise, as described.

Also, the combination of machinery for bending a strip of paper around a former *e*, and into a tubular shape, so that one edge may be lapped over the other, as described; machinery for pasting such edges, or one of them, and pressing them together; machinery for cutting the tube slantwise, as specified, while it is on the former or holder; and machinery for pasting or cementing the said tube near its front end, and bending or lapping the end of the tube on the cemented part, so as to form the bottom of the bag, and discharge said bag from the machine, as specified.

Also, arranging the pitch line of the feeding gear w^2 in or about in the prolongation of the axis of the shaft of its crank, whereby we obtain intermittent and variable motions of the paper, as described.

Also, arranging and operating the cutting knife with respect to the former *e*, so as to cause said knife to cut obliquely across the end of the former, and through the tube of paper, as set forth.

Also, the combination of the paster, the presser, and bending and discharging rollers, or their equivalents; the whole being made to operate together, substantially as described.

Also, combining with the rollers *m n* the mouth bars or scrapers i^2 j^2 applied thereto, in manner and for the purpose as stated.

Also, the improved construction of the cutting knife, viz: with a serrated edge bevelled, substantially as set forth.

No. 17,526.—D. A. Stiles, of West Meriden, Conn.—*Paper File.*—Patent dated June 9, 1857.—To operate this bill file so as to insert bills or letters, the loose top C is raised the proper distance and held until the bills are inserted, and it is then let free. To examine the letters, the loose top must be raised to the position represented in dotted lines in fig. 2, so as to bring the spring catches of said top C in line with the holes *h*, and thus allow the spring E to force them into said holes. By pressing against the barrel ends D, spring E is compressed and top C is moved down on the bills lying on bottom A.

The inventor says: I distinctly disclaim the use of springs for holding down the follower.

I also disclaim all and every portion of my device which is seen in Collard's patent aforesaid, or in any other bill-holder.

I likewise disclaim the broad use of spring catches for sustaining objects; but the combination of a double self-acting spring catch D D with the top or follower C of a bill-holder in the manner described, is, to the best of my knowledge and belief, a new combination, and is of importance and value so far as relates to that kind of instruments mentioned.

I *claim* the combination of the double self-acting spring catch D D with the top or follower C, as set forth.

No. 18,075.—C. Pyle Wiggins, A. H. Nordyke, and Benjamin Strawbridge, of Richmond, Ind.—*Machine for Folding Paper.*—Patent dated August 25, 1857.—The sheet to be folded being laid upon table B, the pulley L is rotated, causing the levers H and H^1 to vibrate on their fulcra i and j, thereby operating pinions f^1 and g^1, shafts f and g, pulleys F and G, and, by means of cords c^1 and d^1, the blades C and D. The blade C, as it is operated, makes the first fold, forcing the folded paper through slot b, between the guides b^1, while the blade D makes the second fold, forcing the folded paper between the guides b^2. As the blade D enters the throat between the guides b^2, it comes in contact with lever P, pressing it outward, thereby causing the jaw N to clamp the paper against jaw O, and thus to prevent its retraction.

Claim.—First. The combination of the cam wheel L with lever H^1, pinion g^1, shaft g, drum G, cords $c\ c^1$, and blade C, for purposes shown.

Second. The combination of the cam wheel L with levers H H^1, pinions f^1 g^1, shafts f g, and drums F G, for the purpose of producing an alternate movement of blades C D, as set forth.

Third. The combination of jaws or clamps N O and lever P with blade D, to prevent retraction of the paper.

No. 17,535.—James F. Weeks, of Columbus, O.—*Improvement in Machines for Folding Paper.*—Patent dated June 9, 1857.—A description and engravings of this machine would take up too much space to be given here.

The inventor says: I do not claim the folding of paper by passing the sheets between revolving rollers.

Neither do I claim the arrangement of the rollers in the above described form, as they can easily be arranged to produce any other form of fold desired.

But I *claim* the manner of operating the feed roller and folders by means of friction rollers, or their equivalents, revolving upon the plane of a wheel or wheels (N, figure 6) striking against fingers or tripping arms, or their equivalents, keyed upon the rock shafts to which the feed roller and folders are attached, substantially in the manner described, in combination with spiral springs upon said rock shafts, to return the feed roller and folders to their places, substantially in the manner specified, the whole tending to facilitate the rapid, easy, and certain operation of the machine.

I also claim making slots in said wheel or wheels in which to fasten said friction rollers or their equivalents at any desired point by means of the thimble, bolt, and nut constituting the movable stud, substantially in the manner specified, so that said friction rollers may be moved forwards or backwards to cause the motion of said rock shafts to be, sooner or later, as may be desired, in combination with the rock shaft, spiral springs, rollers, and tapes; the whole operating substantially in the manner described for the purpose of forming any desired folds in paper, using any number of said slotted wheels, friction rollers, rock shafts, spiral springs, rollers, and tapes, or their equivalents, in combination, necessary for the purpose of producing any number or form of fold required.

No. 18,533.—Cyrus Chambers, Jr., of Philadelphia, Pa.—*Improvement in Machines for Folding Paper.*—Patent dated November 3, 1857.—This invention relates to improvements in the paper-folding machine for which a patent was granted the inventor to October 7, 1856. The claim will show what the nature of these improvements is.

The inventor says: I do not desire to confine myself to the precise form or method of operating the various moving parts of the machine, as they may be considerably modified without altering the result.

I *claim*, first. Forcing the edges of the sheet between the folding rollers, in advance of the middle of the said sheet, for the purpose specified.

Second. Temporarily arresting the motion of the first pair of folding rollers, in the manner described, or any equivalent to the same.

Third. The register pins q, in combination with the tubes p, when the same are arranged for joint operation, substantially in the manner and for the purpose set forth.

Fourth. The combination of the first pair of folding rollers N and N^1 with the register pins q, when the latter operate between the former in the manner described, or any equivalent to the same.

Fifth. Preventing the rebounding of the folded sheet during its passage through the machine, previous to the descent of any of the folding blades, by means of the arresting rollers described, the same operating, in combination with the tapes, in the manner set forth.

Sixth. Dividing the printed sheet into two halves by means of shears arranged, actuated, and constructed as set forth.

Seventh. Discharging free from the machine the strip cut from the folded edge of the sheet by means of a revolving disk arranged and operating in the manner set forth.

Eighth. So constructing and arranging machines for folding sheets of paper, that the two halves of one sheet (said sheets having been printed on both sides from the same form) may be separated from each other and folded in succession.

Ninth. Packing the folded sheets by means of a reciprocating plunger against a frictional plate in a trough, so that the backs and heads of the folded sheet coincide with each other.

Tenth. The employment of the devices described, or any equivalent to the same, whereby the operator can separate the imperfect from the perfect sheets.

Eleventh. Preventing the return of the packed sheets of paper, by means of the catches situated above, and in the corner of the trough.

Twefth. The combination and arrangement by which the operations described are performed simultaneouly or in succession to each other in the same machine.

No. 17,776.—Edward Baptis, of Hudson, N. Y.—*Pen and Pencil Case.*—Patent dated July 14, 1857.—By turning the tube B, the pen slide D and pencil tube C will be moved in opposite directions, one being drawn within the case as the other is being shoved out by the action of the grooves *d* and *e*. By making the pitch of these grooves varying, the pen slide and pencil tube will be operated in such a manner that both may be brought within the case A, or one may be shoved out.

The inventor says: I do not claim the employment or use of two spiral grooves placed in reverse positions, or one having a right and the other a left thread, and so arranged as to operate simultaneously the pen and pencil slides; for spiral grooves have been previously used for this purpose.

I *claim* the employment of such grooves when made with a varying pitch, substantially as described for the purpose set forth.

No. 16,711.—George Hunt Byron, of Governor's Island, N. Y.—*Pen and Pencil Holder.*—Patent dated March 3, 1857.—The inventor says: I do not claim the diagonal frames nor the holders.

I *claim* the attachment of the handles of the holders to a diagonal expanding frame and the general arrangement.

I also claim the handle A, and the arms *d*, working by pins in slots in the attached holders, and secured by thumb-screws to the handle A.

Neither do I limit myself to any number of holders, which may consist of any required number.

I also claim its application by attaching pens, known as "music pens," instead of the ordinary writing pens, for ruling several staves of music at one operation.

No. 18,365.—A. F. Warren, of Brooklyn, N. Y.—*Fountain Pen.*—Patent dated October 6, 1857.—The improvement in this invention consists in having the valves placed in the tube of the pen, or its fountain, both of which are attached to one and the same rod, and so arranged that while one valve serves to regulate the size of the discharge orifice, through which the ink flows to the pen, the other serves as a cut-off, and isolates a small quantity in the lower part of the tube or fountain above it. By this arrangement the ink is not forced or fed to the pen under a variable pressure, and the lower part of the tube may be readily supplied with ink, as the occasion may require.

One object in this invention is to arrange the plates which are attached to the pen in such a manner that the pen when foul may be readily cleansed. This is accomplished by pivoting said plates to the pen, so that they may, when the pen is detached from the tube or fountain, be turned round, leaving the pen fully exposed.

The inventor, in stating what he claims as his improvements, says: I do not claim the employment or use of a valve *b*, placed at the discharge end or orifice of a tube or fountain A, to regulate the flow or supply of ink to the pen, for that has been previously used.

But I *claim*, first, the supplementary valve or cut-off *d*, used in connexion with the valve *b;* both valves being within the tube or fountain A, and placed on the same rod *c*, substantially as and for the purpose set forth.

I do not claim broadly the plates *f g*, for they have been previously used.

But I claim attaching said plates *f g* to the holder D, by means of the pivot *h*, for the purpose specified.

No. 16,496.—John F. Reeve, of Richmond, Va.—*Writing Pen.*—Patented January 27, 1857.—On pressing the point of the pen on the paper, the two halves $c\,c^1$ will simultaneously turn on the pin, which passes through the lug *a*, and at the same time the ends of the arms acting upon the inclined sides of the wedge-shaped piece *h*, the arms *c* and c^1, as well as the points of the pen, will open. When the pressure ceases, the spring D raises the arms *c* and c^1 until their points bear against the narrowest portion of the wedge-shaped piece *h*, while the spring E draws the two arms as well as the points of the pen together.

The inventor says: Although I have shown a peculiar arrangement of joints, springs, and wedge, I do not confine myself to the precise form or disposal of the several parts, as the same may be considerably modified without altering the result.

I *claim*, first, the so jointing together of the two pieces C and C' of rigid or non-elastic metal or other material, that the same may form a pen, the required opening and closing of the point of which may be effected by the greater or less pressure of the said point on the paper, assisted by the within described springs and wedge, or equivalent device.

Second. The regulating spring E, as applied to the arms *c* and *c'*, in the manner and for the purpose set forth.

No. 18,265.—Joseph W. Strange and Samuel Darling, of Bangor, Me.—*Improvement in Pencil Sharpeners.*—Patent dated September 22, 1857.—In the engravings, *a* is the hollow frustrum of a cone, armed with a knife *b*, attached to the slot *c*, in its side, for reducing the wood. This hollow frustrum terminates in the space *d* within the ring *e*, into which space the lead protrudes, while the wood is being reduced. A second smaller hollow cone *i*, whose axis is at right angles with that of cone *a*, and this smaller cone has a narrow slot in its side armed with a knife for reducing the lead to a point.

The inventors say: We do not claim the mere multiplication of cutters of various sizes in the same stock or holder, but the combination of two cutters, constructed and arranged to reduce the wood and the lead separately, substantially as set forth.

No. 16,514.—Joseph C. Silvey, assignor to Thomas J. Dobyns, of New Orleans, La.—*Improvement in Fountain Pens.*—Patent dated January 27, 1857.—The guide rod C extends upwards, and is armed with a spiral spring, which not only serves to press down the rod promptly, so as to shut off the flow from the point when withdrawing the instrument from use, but to regulate the flow according to the pressure thrown upon the projecting point of the guide rod in its bearing on the paper.

Claim.—I claim, as my improvement upon the ink pencil, described in the patent of E. Jordan, of 20th November, 1849, the employment of a separate or independent spring to the guide or stopper rod, for operation with it, and the pointed fountain case or handle, as shown and described, and for the purposes specified.

No. 17,298.—Charles Adolphus Rosefield, of Columbus, Ga.—*Improvement in Fountain Pens.*—Patent dated May 12, 1857.—The pen is supplied with ink from the reservoir by means of a quill-conductor E, the ink escaping through hole *a* of the reservoir, and passing down the swivel-piece *b* to the quill-conductor E.

Claim.—The detachable quill-conductor E, fitting laterally in or to a rigid upper conductor or conductor holder, arranged to freely swivel on a centre pin or bearing at the bottom of or below the reservoir for action with the pen and pen-holder, as shown and described.

No. 17,761.—F. A. Wait, of Philadelphia, Pa.—*Improvement in Metallic Pens.*—Patent dated July 7, 1857.—By forming the pen with slots *b*, a great degree of elasticity is gained, while the spring *c* serves to hold the points of the pen in place.

Claim.—The arrangement of the spring-guard *c* and slots *b* in a pen *a*, operating as described and for the purposes set forth.

No. 17,162.—George Mathiot, of Washington, D. C.—*Mode of Constructing Photographic Baths and Pans.*—Patent dated April 28, 1857.—The mixture of one part of shellac to two parts of fine sand is heated in water and stirred until the substances are thoroughly incorporated; and when the mixture has acquired the proper consistency it is formed into the desired shape, and when the vessel is cooled to ordinary temperature, it is ready for use.

Claim.—To construct the baths and vessels for photographic uses of an impervious substance formed by the combination of a cement with an earthy matter, or its equivalent; and also to form the bath or other vessel by first forming the vessel of unglazed pottery, or its equivalent, and making the pottery impervious by saturating it with wax, gum, balsam, resin, pitch, stearine, or siccative oil, or other equivalent for any one of these.

No. 16,637.—Luzerne M. Bolles and Washington G. Smith, of Cooperstown, N. Y.—*Photographic Camera Box.*—Patent dated February 17, 1857.—1 is the nitrate of silver, 2 the water, and 3 the developing bath. By the use of this swing-frame, the ground glass is not removed in operating. It can be swung back so as to bring the plate over the bath to be used, when the plate may be slid down into the same. An indicator E, at the outside of frame A, denotes the precise points where the plate is in line with the baths.

Claim.—1st. A swinging frame A, with ground glass permanently attached, as described and set forth for the purpose specified.

2d. The arrangement of the baths in the camera box to correspond with the operations of the plate-holder through the mortise and grooves, as set forth and described.

No. 18,218.—J. Robert Werner, of New York, N. Y.—*Improvement in Diaphragms for Photographic Cameras.*—Patent dated September 15, 1857.—By turning worm-wheel W, the ring H will be turned around, acting upon pin P in such a manner as to produce a longitudinal motion upon tube G. The diaphragm S will be either stretched over the end of tube E, thereby increasing concentrically opening O; or said diaphragm will be allowed to relax, when the opening O will be reduced to its original size; thus the quantity of light can be regulated to be in exact proportion to the intensity of the light.

Claim.—The application of an elastic diaphragm in photographic cameras for the purpose and in the manner specified.

No. 16,689.—Joseph Longking, of the township of New Windsor, N. Y.—*Photographic Glass Holder.*—Patent dated February 24, 1857.—The holders hitherto employed to contain the glass in the camera have been made of wood, with glass corner pieces cemented to them. The chemicals soon act upon the cement, and the corner pieces fall out and become useless. This improved holder is made of a metallic composition for resisting the action of the chemicals employed. The proportions are 75 parts by weight of lead, 10 parts of tin, and 15 parts of antimony.

The inventor says: I do not claim any special arrangement of cutters; neither do I claim anything relating to photographic holders heretofore known. Neither do I claim broadly the making of metallic alloys out of lead, tin, and antimony.

Neither do I claim broadly the substitution of one material for another.

But, to the best of my knowledge, the photograph holder invented by me is a new article of manufacture, and exhibits properties and virtues which no other holder heretofore known presents.

Therefore, I *claim* a photograph holder, composed of antimony, tin, and lead, alloyed in the proportions substantially as set forth.

No. 17,231.—Robert Price, of Worcester, Mass.—*Varnish to Prepare Photographic Grounds for Wood Engravers.*—Patent dated May 5, 1857.—The surface of an ordinary engraver's block is smoothed in the customary manner to prepare it for the engraver's use. A mixture is then made of one quart asphaltum varnish, one gill ether, and one-fourth of a pound of lampblack; this mixture is rubbed into the surface of the block with a piece of buckskin or cloth, two or three thin coatings being applied, that the pores may be thoroughly filled but no varnish of any appreciable thickness is left upon the surface. A polished surface is thus obtained upon which to take the photographic picture.

The inventor says: I do not claim the use of asphaltum varnish and lampblack, or any other varnish compound. when used to produce a pellicle or covering upon surfaces designed for the reception of photographic pictures, as such varnish or pellicle unfits the block for the engraver's use

But I *claim* the described varnish, composed of asphaltum varnish, lampblack, and ether, when the same is applied to the block by rubbing into its pores in the manner set forth.

No. 17,152.—S. Dwight Humphrey, of New York, N. Y.—*Preparation of Photographic Pictures, Engravings, &c.*—Patent dated April 28, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I do not claim two photographic pictures and a reflecting background, the rear photographic picture being colored, as the same was patented by J. Bishop Hall, January 20, 1857.

But I *claim*, as an improvement on the said patent of J. B. Hall, the use of a semi-transparent medium interposed between two transparent photographic pictures, or engravings, for the purpose of blending the rays of light reflected from the rear colored photograph and beautifying the picture, substantially as specified.

No. 16,438.—John Bishop Hall, of New York, N. Y.—*Improvements in Treating Photographic Pictures.*—Patent dated January 20, 1857.—This invention consists in so placing two photographic pictures which have been fixed on glass above each other, that the general lines of both pictures will exactly coincide; a variety of effects may then be produced by coloring, shading, or cutting out parts of the back picture.

Claim.—Producing in pictures to be seen by direct light a high artistic and stereoscopic effect, by combining with a white light or reflecting background, or its equivalent, two or more identical pictures of the same subject, rendered more or less transparent, and executed on or attached to plates of glass, in the manner substantially as set forth.

No. 16,738.—William Lewis and William H. Lewis, of New York, N. Y.—*Photographic Plate Holder.*—Patent dated March 3, 1857.

The inventors say: We do not claim a sliding jaw in itself; neither do we claim adapting said sliding jaw to different sizes of glasses or holders by stops or notches taking said moving jaw.

Neither do we claim retaining articles between the jaws by power derived from a spring.

Neither do we claim turning the vise or holder upon its base into any desired position, as this has before been accomplished by a screw connecting the base and vise.

But we *claim*, first. Constructing the hollow base *a* and hub *c* of the cap plate *b* in such a manner as to receive the friction spring *d*, screw *f*, and cap *e*, for regulating the power with which said plates are clamped together, substantially as and for the purpose specified.

Second. We claim regulating the force with which the spring *p* tends to clamp any glass or holder between the jaws *l* and *n*, by means of the set screw *o*, acting substantially as and for the purpose specified.

Third. We claim the bevelled adjustable bars *m*, on the jaws *l* and *n*, to support the glasses, plates, or holders, with their upper surface at the desired height above the upper edges of the said jaws, substantially as and for the purposes specified.

No. 18,780.—John Stock, of New York, N. Y.—*Photographic Plate-holder.*—Patent dated December 1, 1857.—The nature of this invention consists in the construction of a plate-holder, to which sliding pieces F F are fitted, capable of being moved in or out to accommodate any sized glass or plate; said pieces being provided with

suitable recesses $h\ h^1\ h^2\ h^3$ and flanches to receive and support the glass or plate.

The inventor says: I *claim*, first, a plate-holder for photographic or other purposes, with movable pieces F to support the glass or plate, constructed in the manner specified, and for the purpose of accomodating different sizes of plates.

Second. I claim the plates H and L, acted upon by springs for the purpose of keeping the pieces F F in any desired position.

No. 16,841.—John W. Jarboe, of New York, N. Y.—*Photographic Plate Vise.*—Patent dated March 17, 1857.—This invention consists of a new mode of applying and securing a movable jaw, which can be adjusted to any size of plate, and tightened to the plate in an expeditious manner.

The inventor says: I do not claim the employment of a cam to bring the movable jaw up and to tighten it upon the work.

But I *claim* the combination of the screw F and its attached cam G with the movable jaw E and the sliding piece D, the said jaw and sliding piece working in separate grooves, or their equivalents, and the whole operating substantially as described.

No. 17,066.—John H. Morrow, of Baltimore, Md., assignor to Himself and Edwin Bennet, of the same place.—*Improvement in Baths for Photographic Purposes.*—Patent dated April 14, 1857.—The nature of this invention will be understood by reference to the claims and engravings.

The inventor says: Being well aware that baths for photographic purposes have been made of glass and earthenware, and disclaiming the invention of chemical immersing baths,

I *claim* the improved form of constructing a compound or double-chambered immersing bath, having an immersing chamber *a a a* and a dripping receptacle *b b b*, formed with slopes or inclined upper surfaces $b^2\ b^2\ b^2$, as described.

I also claim the suspension forked dipper device or tablet-holder *g*, formed with the spur or ridge *i*, as shown and described.

I also claim the bracket or rests *e e e e*, in combination with the immersing bath *a a a b b b*, as set forth.

No. 16,979.—Daniel J. Kellogg, of Rochester, N. Y.—*Improvement in Photographic Trays.*—Patent dated April 7, 1857.—The box A is provided with a well E, which contains the chemical solution to be used for coating the plate or paper on which the photographic picture is to be made. This plate or paper is inserted into the box A, as shown at F; and the bottom D is closed behind it, and fastened to the box by means of the catches K. The box is then placed in a horizontal position, and the fluid in the well will coat the surface of the plate in an equal manner.

Claim.—The employment of the movable bottom D, said bottom being constructed and applied in the manner and for the purpose substantially as described.

No. 18,901.—**Ezekiel C. Hawkins**, of Cincinnati, Ohio.—*Mode of Treating Photographic and other Pictures.*—Patent dated December 22, 1857.—The claim shows the nature of this invention.

Claim.—Giving the front surface of the glass tablet, which has an image or picture finished on its back surface, a semi-opaque and granular appearance, and consequently producing an atmospheric relief and additional painting surface, by the application of varnish, wax, or other similar substance, to the front surface of the glass tablet, as described.

No. 17,330.—**Edward Howell**, of Ashtabula, Ohio.—*Process for Removing Photographs from Glass to Paper.*—Patent dated May 19, 1857.—The cleaned glass plate is first covered with a thin coating of beeswax, and the picture is then taken on this waxed glass plate in the usual manner of taking ambrotype pictures. The picture, when dry, is covered with patent Japan, blackened with ivory black, and when this is sufficiently dry, a piece of blackened paper is caused to adhere to every part of the coated picture, which can then be removed, together with the picture from the glass plate.

Claim.—The mode of transferring a positive impression from glass plate to paper, or other desired substance, by means of a coating of beeswax upon the glass plate, as described.

No. 17,651.—**J. W. Wykes**, of Wheeling, Va.—*Background for Photographs on Glass.*—Patent dated June 23, 1857.—The picture is first made on glass, by the use of collodion or albumen, in the usual manner; the image is then blacked to the edge, or very near thereto. The blacked face of the glass is then enamelled as follows: Five parts of powdered rosin and one part of dry color are mixed together, and the face of the glass is lightly covered with the mixture; that is then applied to the other face of the glass, and the enamelling is completed. The picture is then sealed up in the usual manner, and, when encased, is placed before a reflecting background.

The inventor says: I do not claim the blacking of the glass behind the image. Neither do I claim the reflecting background, such being well known.

But I *claim* the application of the described enamel to collodion and albumen pictures on glass, substantially in the manner and for the purposes specified.

No. 17,858.—**Henry A. Marchant**, of Philadelphia, Pa., assignor to **Edward D. Marchant**, of the same place.—*Improvement in Photography.*—Patent dated July 21, 1857.—A glass plate, which is placed in a horizontal position, is covered with a mixture of half a pound of clarified wax to half a pound of rectified spirits of turpentine, and about a pound of pure gum dammar., which is heated to a fluid state; the photograph or engraving is then placed on said fluid mixture, and a second glass plate is placed on the top of it. The two glass plates are then compressed to expel the air and the excess of the mixture. By this process the paper containing the design is rendered transparent, forming a beautiful medium for transmission of color, which is applied to the back of the first glass plate.

Claim.—Rendering the picture transparent, and attaching the same to glass in a permanent and secure manner by means of a mixture, substantially such as described above, applied, under heat and pressure, in the manner and for the purpose above mentioned.

No. 16,832.—**James A. Gray**, of Albany, N. Y.—*Improvement in Piano-forte Action.*—Patent dated March 17, 1857.—The engraving and claim show the nature of this invention.

The inventor says: I do not claim the general arrangement of the action composed of the various parts, as shown, which is known as the French action, and in common use.

I *claim* the application of a spring to the hammer butt and jack-fly, causing the hammer to be so raised and kept in position that it will allow the jack-fly free play under the shoulder of the hammer butt when the key is pressed down and the action in motion, as specified.

I also claim the application of the hook to the hammer butt and jack-fly, as herein described, so as to cause them to work together with more precision, and also to bring the hammer to its place after the key has been struck and released.

No. 17,238.—**Henry Steinway**, of New York, N. Y.—*Piano-forte Action.*—Patent dated May 5, 1857.—When the front end of the key A is struck in playing, the jack B acts upon the hammer butt *a* in the same manner as in the ordinary French action; and as the jack B escapes, the head of post *d* moves under the corner of block *c*. When the hammer C falls, it is caught by the back cheek D in the usual manner; and, by the momentum of its fall, acting upon post *d*, and through it on cushion *h*, it slightly bends down the spring *g*, and depresses cushion *h* thereof below the heel of the jack, in which condition the spring *g* is held by the action of the back cheek D on the hammer so long as the back cheek is allowed to remain in operation; but as soon as the playing end of the key A is permitted to rise in the slightest perceptible degree, or only just sufficient to liberate the hammer from the back cheek, the spring *g* gives out its elasticity and lifts the cushion *h* up again to the heel of the jack, and in so doing lifts the hammer nearer to the string X by pushing up the post *d*, thus effecting the result produced in Erard's action.

The inventor says: I disclaim everything described in the letters patent of John H. Morton.

I claim the sliding post *d* and spring *g* or *j*, or its equivalent, applied substantially as described, in relation to the jack and key to operate as set forth, in combination with a block *c* on the hammer shank, for the purpose specified.

No. 18,453.—**George Howe**, of Roxbury, Massachusetts.—*Improved Piano-forte Action.*—Patent dated October 20, 1857.—The engravings and claim explain the nature of this improvement.

The inventor says: I do not claim the Erard action, made either with or without a second lever, as described, and with a double or V spring turning on a centre pin, the fly being either hinged to the second lever or to the key.

But I *claim* the improved Erard action, having a hammer, holder, and fly arranged, applied to, and operating with the key, lever, and hammer, as described, and having the spring K applied to the holder and fly in such a manner that it shall be fixed in the former and project towards and rest on the fly projections, and without any joint or pin for the spring to turn on, whereby the spring operates free from noise, and is not liable to get out of place or order.

No. 17,320.—SPENCER B. DRIGGS, of New York, N. Y.—*Improvement in Piano-forte Action.*—Patent dated May 19, 1857.—By placing the centre of motion *a* of the key A at or near its top, the centre of motion *n* of the jack F will move nearly in a vertical line, by which means jack F is made to act more readily on the hammer H; the hammer is also by this means enabled to escape more rapidly, thereby admitting a quicker repeat.

The inventor says: I do not confine myself to either of the modes of balancing or supporting the centres of motion of the keys represented, or to any other mode of doing it.

But I *claim* balancing or placing the centres of motion of the keys at, above, or near the top thereof, instead of at the bottom or centre, for the purpose specified.

No. 17,296.—THOMAS E. POWER, of Columbia, Missouri.—*Piano-forte Bridge.*—Patent dated May 12, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim the bridge in the piano-forte; but I *claim* the cutting away the end of the bridge upon which the treble strings rest, and the supporting of the same by bars *b*, as described, in such manner as to permit a greater vibration in the surface of that part of the sound board which is under the treble strings in the piano-forte, to the end that the notes sounded by those strings may be more full and perfect, in the manner described.

No. 17,789.—G. HENRY HULSKAMP, of Troy, New York.—*Improvement in Piano-fortes.*—Patent dated July 14, 1857.—The improvement referred to in the fifth claim consists in interposing between the hammer and the strings a soft material, so narrow that it shall touch only one of the strings of a note, and the making of such substance to vary in hardness with the different notes of the instrument by interposing different substances, *p f b*.

Claim.—1st. The arrangement and construction of the action of piano-fortes, substantially as set forth, having the jack J under hammer *v*, and springs $n\ n^1$ attached to the key K, and moving in the same general direction with hammer butt H, B.

2d. The use and application of the spring w^1, extending through the head of the under hammer, to bear against the hammer butt, for the purposes described.

3d. The regulating screw in the head of the jack, or its equivalent

in the head of the under hammer, to regulate the height of that part of the action.

4th. The shape of the hammer butt, with its spiral spring *s*, substantially as set forth.

5th. The dolce harmonic attachment, constructed as specified, or its equivalent; and I claim its parts, to wit: the interposing of a substance to touch one string only of a note, and the making of such substance to vary in hardness with the different notes of the instrument. And,

6th. The corrugated spring R, for the purposes specified.

No. 18,673.—STEPHEN P. BROOKS, of Boston, Massachusetts.—*Improvement in Piano-fortes.*—Patent dated November 24, 1857.—The nature of this invention consists: First, in combining and arranging the damper and hammer of each key of the action in one bent lever operated by a fly or lifter.

Second. In a peculiar arrangement of the fly lifter and escapement or mechanism extending between the jack and hammer.

In the engravings, A denotes the iron or metallic frame; B the sounding board; C the case or wooden frame; D D the strings; E the hammer, and F the damper; these latter two being shown as operating on two strings, or two branches of one string in the usual manner.

The inventor says: I *claim* combining or arranging the hammer and damper of each string in or on one bent lever, substantially as specified.

I also claim jointing or hinging the fly or fly lifter to the hammer lever, and arranging the escapement on the jack, substantially as described, the same dispensing with hinging the fly to the jack, and enabling the fly and lifter to be made or united in one rigid bar or piece.

I also claim the above described arrangement of the back catch, namely, on the jack and in rear of the escapement.

No. 18,810.—H. GOLDSMITH, of Philadelphia, Pennsylvania.—*Improvement in Piano-fortes.*—Patent dated December 8, 1857.—The engravings and claim explain the nature of this invention.

The inventor says: I *claim* the additional or supplemental sounding board H, the same being constructed, applied, and operating substantially in the manner and for the purpose set forth and described.

I also claim, in combination with the said additional or supplemental sounding board, the contracting of the bridge *b*, so as to allow of the treble and tenor strings being all brought more nearly together upon the same, as and for the purpose set forth and described, whilst they are at the same time permitted to retain the usual distances apart on the pin block, as described.

No. 17,838.—G. HENRY HULSKAMP, of Troy, New York.—*Metallic Bridge for Piano-fortes.*—Patent dated July 21, 1857.—The rod *k*, which is inserted within a groove of the bridge *i*, is made of zinc, ivory, wood, or brass, and serves to reduce the friction of the strings upon the lower side of the cast iron bridge, when said strings are extended in process of tuning the instrument.

Claim.—1st. The sounding board bridge *p*, cast of metal, with two bearings *t* above the string, one on each side of the bottom support, substantially as and for the purposes specified.

2d. The rod or wire *k*, or its equivalent, inserted in the bridge *i*, to form its bearing surface, for the uses and purposes set forth.

3d. The construction and arrangement of the cast metal bridge *i i*, in such form that it may be detached and yet firmly held in its place in the mode set forth, or other form substantially the same.

No. 16,990.—Joseph Newman, of Baltimore, Maryland.—*Improvement in Sound Boards of Piano-fortes.*—Patent dated April 7, 1857.—The bridge H of the lower sounding board G is raised sufficiently high to overreach the bridge D of the upper sounding board E, so that the strings I of bridge H may pass over and clear the strings J of bridge D.

Claim.—In piano-fortes and other musical instruments having two or more sounding boards, making the bridges upon the lower sounding board or boards to protrude through or rise beyond the sounding board or boards above them, substantially as described for the purposes set forth.

No. 17,148.—Daniel F. Haasz, of Philadelphia, Pennsylvania.—*Improved Action for Grand Pianos.*—Patent dated April 28, 1857.—This invention relates to improvements in the action of grand pianos, for which a patent was granted to the inventor on the 4th March, 1856, and consists in so constructing and arranging the action that the hammer strip described in the specification of said patent may be entirely dispensed with, thereby affording an opportunity of removing each key K separately from its position on the key frame E when the latter is removed from the piano.

The inventor says: I do not claim that portion of the described parts which bears directly on the immediate action of the check J on the hammer, as that portion is similar to the French action, known as Erard's.

But I *claim*, first, attaching the supporter L to the key, and the lever M and spring S to the supporter, in the manner and for the purpose set forth.

Second. The arrester P with the lever Q, as connected to the key in combination with the adjustable wire R, as attached to the key frame, the whole being arranged and constructed substantially as set forth and for the purpose specified.

No. 17,812.—Dr. Gustav Schilling, of Hoboken, New York.—*Improvement in Wrest-pins for Pianos.*—Patent dated July 14, 1857.—By turning the screw nut *h*, the tension of the strings is increased or diminished, and thus in tuning the instrument it is only necessary to operate said screw nut.

Claim.—Combining the heads of wrest-pins with an adjustable screw, to which the string is attached, in such manner that the direction of the straining force is mathematically true in the direction of the axis of the adjustable screw, by means substantially as described and set forth.

No. 18,239.—Augustus Eliaers, of Boston, Mass.—*Improvement in Portfolio or Music Stands.*—Patent dated September 22, 1857.—The nature of this improvement is fully described in the claim and drawings.

The inventor says: I *claim* arranging the braces or sliding frames which are hinged to and support the adjustable leaves of a portfolio stand in such a way that they shall, in sliding, always keep in nearly a vertical position for the better supporting the leaves and the weight upon them, by having the traversing and bolting rods move in curved grooves directly beneath them in the sides of the stand, instead of having the bolting rods of each brace or frame slide in grooves on the other or opposite side of the centre of said stand; in combination with the locking devices above described, for the purpose of rigidly locking and supporting the leaves, and whereby the whole stand can be lifted by the leaves in removing it from place to place.

No. 17,311.—Robert Arthur, of Philadelphia, Pa.—*Improvement in Portfolios.*—Patent dated May 19, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I am aware that a letter file is made of a broad band of India rubber, which is used to keep together, by means of its elasticity, a bundle of folded letters.

I am also aware that a file has been made by confining together two stiff boards, by means of an elastic cord or band passing entirely around them, or fastened to one board, the papers being put in at one end by drawing the boards apart.

I am also aware that an elastic clasp for pocket books, and probably other articles, has been made; these I disclaim.

I *claim*, first, a portfolio made with an elastic back or hinge, combined with an elastic fastening.

Second. Making the hinge and fastening adjustable, for the purpose specified.

No. 18,994.—Henry T. Sisson, of Providence, R. I.—*Improvement in Portfolios.*—Patent dated December 29, 1857.—The claim and engravings explain the nature of this invention.

Claim.—The cords *d* passing through the strips or plates *a a*, and attached at one end to the slides B, fitted or placed within the guides C, or any equivalent device for tightening the same; and the opposite ends attached to needles *e*, which pass through perforations in one of the strips *a*, as shown and described for the purpose set forth.

No. 17,057.—Daniel C. Smith, of Tecumseh, Mich.—*Lock and Clasp for Portmonnaies.*—Patent dated April 14, 1857.—In locking this portmonnaie, the clasp B is turned into the position in figure 1, the pin *g* of said clasp falling into a corresponding recess of spring C, while the finger A has locked a ribbon, to which the portmonnaie is then secured.

Claim.—The combination of the several parts of the lock and clasp of a portmonnaie, as described, for the purposes specified.

No. 17,753.—Samuel J. Smith and Charles Lockle, of New York, N. Y.—*Embossing and Printing Press.*—Patent dated July 7, 1857.—The inking roller g receives the ink from bed i; and the die e^1 is inked by raising lever h to the position represented in dotted lines, and by then passing it over the surface of die e.

The inventors say: We do not claim a raised metallic counter die for embossing; neither do we claim gutta percha or other elastic substances for the counter die, because this is well known in various kinds of printing presses. But we are not aware that the metallic counter die, which is necesary for embossing with a hand lever press, has ever before been covered with a thin coating of gutta percha, to cause a perfect impression of the ink from the die simultaneously with the embossing from the metallic counter die.

We *claim* the arrangement of the inking table i, die e, spring k, roller g, and its lever h, substantially as and for the purposes specified. We claim the raised metallic counter die for embossing, when covered with a thin coating of gutta percha, to enable said metallic counter die to give a perfect impression of ink from the embossing die on those parts of the paper that are not raised by the embossing die simultaneously with said embossing, substantially as specified.

No. 16,718.—Nathaniel L. Chamberlin, of West Roxbury, Mass.—*Hand Printing Press.*—Patent dated March 3, 1857.—The upright I is pivoted to the projection K of frame at d. The pin e passes through I and K. The pin is cut away on one side, (see figure 3,) forming an eccentric, by turning which the upright I may be slightly adjusted.

Claim.—First. The method described of hanging and balancing the impression roll, for the purpose set forth.

Second. The method, substantially as set forth, of adjusting the impression roll to increase or diminish the pressure given, and adapt it to the size of the form and the height of the type or block.

No. 17,307.—Wm. Morris Smith, of Washington, D. C., assignor to Himself and Peter Hannay, of same place.—*Improvement in Copying Presses.*—Patent dated May 12, 1857.—The book containing the writing to be copied being placed on bed plate A, lever G is raised; which movement brings down platen D, which thus exerts the necessary pressure on the book. The platen D and bed plate A can be adjusted so as to take a book of greater or less thickness, by operating screw nut L, which, by means of the tapering clamp K, causes the wrists n to increase or decrease the distance from each other.

Claim.—First. The levers G, in combination with the links C and F, arranged and operating in the manner substantially as set forth.

Secondly. The method of adjusting the platen and bed plate so as take a book of greater or less thickness, substantially as described.

Thirdly. The slotted upright M on the bed plate, in combination with the arms S of the platen, for the purpose of preventing lateral motion, as set forth.

No. 16.500.—William T. Tillinghast, of Dayton, Ohio.—*Composing Stick for Printers.*—Patent dated July 27, 1857.—By a pressure upon the thumb piece C, the pin D is thrown out from one of the holes in the back plate of the stick A, thus allowing the slide B to be adjusted by means of the scale R K.

Claim.—The combination of the aforesaid several devices and their application in forming the composing stick.

No. 17,007.—Daniel Winder, of Cincinnati, Ohio.—*Improvement in Printers' Composing Sticks.*—Patent dated April 7, 1857.—The spring plate B can be moved, adjusted, and held by the thumb screw d, so that its end R can be adjusted to any distance from end S of the stock a, to suit any size of form that may be required to set up.

Claim.—The combination and arrangement of the several parts of the composing stick, as constructed, with each other, all as and for purposes specified and represented.

No. 17,457.—James Tidgewell and William Tidgewell, of Middletown, Conn.—*Improvement in Printers' Composing Sticks.*—Patent dated June 2, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventors say: We do not claim making a composing stick adjustable to different widths; nor do we claim making it with a solid foot or bottom stile without apertures for the insertion of the fastening screw.

But we *claim* the application to the slide of a composing stick of the flange C and the screw E, in combination with the washer F, interposed between the point of the screw and the exterior surface of the foot or bottom stile of the stick, as described, and for the purposes set forth.

No. 18,668.—John M. Batchelder, of Cambridge, Mass., and Luther L. Smith, of New York, N. Y.—*Improvement in the Preparation of Engraved Metal Plates for Printing.*—Patent dated November 24, 1857.—The nature of this invention is explained by the claim of the inventors.

The inventors say: We are aware that electrotype plates are formed by the deposit of copper in a matrix, and a back of softer metal afterwards applied to them; also, that movable types in relief have been coated with copper; also, that alto-plates (the reverse of engraved plates) have been coated with silver to prevent oxydation; we therefore make no claim to these processes or their products.

But we *claim* an engraved plate, composed of two metals, one of which is iridium, and forms the face or impression surface of the plate; the other metal forming the back of the plate being copper or any metal that can be engraved with the common tools used by engravers; while the printing surface produced as herein described is very hard, and will give a greater number of impressions than the engraved plates now in use.

No. 17,239.—**Richard Ford Sturges**, of Birmingham, England.—*Mode of Constructing Rollers or Cylinders for Printing Fabrics.*—Patent dated May 5, 1857.—The cylinder *a* of sheet copper being trimmed inside and closed at its bottom, a mandrel *c* is inserted and retained therein in a central position; fuzed zinc is then poured into the space *d*, and the upper end of the cylinder is closed by means of a ring *e*, which is also turned on its lower side. When the fuzed zinc is cooled, the mandrel *c* is withdrawn, and the cylinder is ready for the finishing operation.

The inventor says: I do not limit myself to the precise details herein described and represented, as the same may be varied without departing from the nature of the invention.

I *claim* the new manufacture of rollers or cylinders for printing fabrics described—that is to say, casting a thick tube of a hard and easily fusible metal or alloy in the interior of a tube of copper or alloy of copper.

No. 16,952.—**Linus Stewart** and **John McClelland**, of Washington, D. C., assignors to **David McClelland** and **John McClelland**, of the same place.—*Machine for Printing from Engraved Plates.*—Patent dated March 31, 1857.—The bed-plate F, which carries the copper plate, is hollow, and is provided with a pipe which passes through its entire length. This pipe is closed at one end, and is fitted steam-tight around the stationary steam-pipe K, the steam passing through pipe K, and thence into the hollow bed-plate to heat the same. The next feature of this invention relates to the cleaning apparatus, which consists of two rollers c^1 *c*, which have their bearings in a frame *d*, which latter is secured to the vertical shaft V, which is rotated by any means from the main driving shaft. As shaft V is rotated, the rollers *c* and c^1 rotate in a plane parallel to the copper plate and around the shaft V; a cloth passes around both rollers, which cleans the copper plate, and at each revolution of shaft V the arm *e* strikes against a projection on the frame of the machine, which moves it and the pawl attached to it, the latter turning the ratchet wheel *h* during the length of one tooth, which movement brings at each revolution a fresh part of the cloth in contact with the copper plate.

The third feature of this invention relates to the device for holding the paper to the printing roller *i*. A groove *p* is cut longitudinally through the roller *i*, through which passes a shaft *q*, supported in the head *r*. The nippers *s* on this shaft serve to catch and hold the paper to the roller *i* and the cam *t*, which is controlled to a certain extent by spring *u*, which bears against each of the depressions 7 and 8; and when the nippers are open or closed upon the paper, the cam and spring hold them in their positions.

Claim.—Heating the plate from which the impression is to be taken, by means of a hollow bed-plate, into which steam is admitted, substantially as described.

Also, the cleaning of the plate by means of a horizontally revolving cleaning apparatus, in which a clean surface is constantly brought into contact with the plate at every revolution of the cleaner, substantially as described.

Also, in combination with the fingers or nippers, the cam and spring, which alike hold them, whether open or closed, substantially as described.

No. 17,319.—**William Croome**, of Brooklyn, N. Y.—*Method of Printing in Colors.*—Patent dated May 19, 1857.—The different colors contained in the boxes *a*, *b*, *c*, are spread upon the stationary tablets a^1, b^1, c^1, and transferred to the movable tablets p, p^1, p^2, by means of the distributing roller *e*, which, in their turn, deliver it to a second roller *x*; the tablets p, p^1, p^2, can be moved to and fro over the table, and the rollers are guided in their course by their flanges running in grooves *o*. The several colors are thus kept separated, and may, in a similar manner, be transferred to the article to be printed.

Claim.—The movable tablets for the separate colors, in combination with the guided roller, or equivalent surface, for taking up the inks, operating substantially as described.

Also, in combination with the printing surface and with the inking surface, the corresponding guides for insuring the uniform action of the inking surface upon the printing surface, as set forth.

No. 17,688.—**George Matthews**, of Montreal, Canada East.—*Improvement in Printing Ink.*—Patent dated June 30, 1857.—The calcined green oxyde of chromium is mixed with burned or boiled linseed oil in the manner usual in preparing ink for printing purposes.

Claim.—The use of the calcined green oxyde of chromium for making ink for printing from engraved plates, from types, or for other kinds of printing, as described.

No. 18,504.—**Samuel W. Francis**, of New York, N. Y.—*Printing Machine.*—Patent dated October 27, 1857.—The principal feature in this improvement consists in arranging a row of hammers in a circle, so that when put in motion they will strike the same place, which is the centre of said circle. The paper is moved along by means of a spring and catch, so connected with the keys that it shall move the paper the distance of one letter whenever a key is struck. On the face of each hammer a letter is cut in relief, in such a position that its impression on the paper will be parallel with those of the others. At the end of each line, the "car" which carries the paper is drawn back by the hand. By this operation the spring is wound up for the next line, and the paper is moved a distance of two lines in a direction perpendicular to the line written, by means of a catch. The keys are connected with actions somewhat similar to those used in pianos, by means of wipes and bell-cranks, which actuate the hammers.

The inventor says: I *claim*, in combination with a series of keys, a series of stop-bolts P Q P^1 Q^1, constructed and arranged in the manner specified, whereby the simultaneous action of two or more keys, and consequently of two or more hammers, is effectually obviated.

I also claim connecting with the type-hammer *x* a secondary hammer or counter-weight *h*, by means of a spring and rod *c*, substantially in the manner described, for the purpose of actuating with greater ease, and of maintaining the equilibrium of the type-hammer in its various positions.

I also claim the combination of spring power mechanism with the "paper car," when the former is made to propel said car in a direction contrary to the lines to be printed, and when the car is guided in its course by rails, substantially as described.

I also claim the specific device described for holding the paper flush with the inking band, consisting of the roller *i* connected to the heavy rule J by a system of parallel link-frames, and holding the paper with gentle pressure upon and against the roller h^1, substantially as set forth.

In combination with the roller *i*, I claim the spider-wheel, when arranged in relation and operating in connexion with the lever and spring, so as to feed the paper in a direction perpendicular to that of the printed line.

I also claim the combination of the movable frame with catch, spike wheel, and barrel, when so constructed and arranged as described, whereby the car is made to move by the action of keys during the intervals of printing, substantially as set forth.

No. 18,795.—James S. Moody, of Cincinnati, Ohio, assignor to T. F. and J. F. Randolph, of Cincinnati, Ohio.—*Card Printing Machine.*—Patent dated December 1, 1857.—The engravings and claim explain the nature of this invention.

Claim.—The arrangement of the arm *c*, when provided with the form *d*, distributing plate *f*, rods *y y*, feed plate S, duct *i*, guide plate 12, spring J, and lever *h*, and these arranged with the levers R R and spring K, when said levers are furnished with ink rolls *m m* and distributing rolls *o*, and the whole arranged with the vertical oblong openings in the lower part of the frame B B, in which the shaft 10 works, to admit of the arm *c* being raised vertically to make an impression, by pressing down the end of the lever *h* on the fulcrum 13, and thus elevating the arm *c*, as before stated; the whole thus combined, arranged, constructed, and operated as represented, in the manner and for the purposes of feeding blank cards to the machine, inking the form, making the impression, and discharging the card from the machine after being printed, as specified and represented in the accompanying drawings.

No. 17,322.—John Fallon, of Lawrence, Mass.—*Improved Blanket for Calico Printing Machines.*—Patent dated May 19, 1857.—A represents the impression cylinder, C the engraved cylinders; the India rubber apron D passes around cylinder A, and is sustained by rollers E F; over this apron pass the three thicknesses of grays, which are arranged as follows: From the roll G the unbleached cotton H passes over suitable carrying rolls to the cylinder A, beneath which it passes in contact with the India rubber apron; thence, as indicated by letter I, over rolls *a b c d e f x y*, back to cylinder A, beneath which it runs directly outside the first fold H; thence it passes, as indicated by letter K, over the rolls *a g h i k l m x y*, again beneath the impression cylinder; thence over the rollers *a n o p* to the roll L, upon which it is wound, the material not being again returned through the machine. The bleached cotton Q to be printed enters the machine from roll S, passing round the cylinder A, beneath the several folds of grays and the India rubber blanket, and in contact with the engraved cylinders C; thence the printed fabric passes off over the rolls *a n o t* out of the machine.

Claim.—The combination of the short India rubber blanket with the multiple fold of "grays" passing once through the machine, and operating in the manner substantially as set forth.

No. 17,308.—Elisha Lee, of Baltimore, Md.—*Method of Preparing Canvas for Printing, Painting, &c.*—Patent dated May 12, 1857.—One pound of rice is boiled in sufficient water to prevent its burning, and while boiling there is added to it half a drachm of pulverized borax, also one-fourth of an ounce of gelatine, isinglass, or best white glue. To this rice paste are then added equal quantities in bulk of white lead, best Paris white, and white pipe clay; which are all mixed with linseed oil and ground, forming a thick composition, which, when spread evenly on any required surface and sufficiently dry will form an absorbent ground, insoluble in boiling water, and capable of receiving impressions.

Claim.—The composition of the described ingredients to produce an oil ground possessing the qualities mentioned, without sizing the canvas.

No. 18,056.—Paul Pretsch, of the Empire of Austria.—*Photogalvanographic Process for Printing.*—Patent dated August 25, 1857.—The solutions of nitrate of silver and iodide of potassium are mixed with a solution of clear glue in water. These are poured on to a suitable plate so as to form a coating thereon when dry. The photograhic impression is made on this coating in the usual manner; and when the original is removed from the coating, the photographic picture will be found to appear in relief, and, when sufficiently developed, must be washed with spirits of wine. The surplus moisture is then removed, and the plate is covered with a mixture of copal varnish diluted with oil of turpentine; before becoming dry, the superfluous varnish must be removed with oil of turpentine, and the plate immersed in a weak solution of tannin, from which the plate must be removed as soon as the design is sufficiently raised. The plate is then ready to be copied by means of the well-known process of electrotyping.

Claim.—The peculiar adaptation of the photographic process to the production of metallic and other surfaces suitable for printing, and for various other useful and ornamental purposes, as described, or substantially similar thereto.

No. 18,477.—John H. Utter, of New York, N. Y.—*Printing Press.*—Patent dated October 20, 1857.—The engraving and claim explain the nature of this improved press.

The inventor says: I do not claim broadly actuating the platen by means of the impression levers, as that has been previously done; neither do I claim giving an impression by means of the leverage described.

But I *claim*, first, the combination of the swinging platen E, levers *g h i*, and shaft *f*, when arranged as set forth.

Second. I claim connecting the inking rollers to the swinging platen by means of rods *p*, or their equivalent, in such a manner that the movement of the platen around its centre of motion shall cause the inking rollers to pass across the type, when arranged and operating substantially in the manner described.

Third. I claim giving the frisket a motion in an opposite direction to that of the platen during a portion of its movement, by the means and for the purpose specified.

No. 18,744.—John Henry, of Vevey, Ind.—*Printing Press.*—Patent dated December 1, 1857.—This improvement in printing presses is calculated to expedite the mode of working hand presses. The engravings and claim will give an idea of the invention.

Claim.—The inventor says: 1st. The frisket carriage M attached to the frame D, as shown and used in connexion with the inclined bars or guides *j j*, whereby said frisket carriage and its frisket is elevated at the termination of the outward stroke of the frame, so that a blank sheet may be readily and conveniently adjusted on the frisket, or a printed sheet be discharged therefrom, as described.

2d. The frisket N, when used for the purpose of discharging or delivering a printed sheet, as set forth.

3d. The combination of the pressure cylinder J and frame D, when said cylinder is operated automatically by the wedges L L and spring Q, as shown, so as to be depressed at the proper time, and give the necessary impression to the sheet, and also be thrown up free from the sheet after the impression has been given, as described.

4th. The arrangement of the feed board B and fly board C, when arranged as shown, so that said boards are made adjustable and capable of being removed at one side, so as to render the working parts of the press accessible, as described.

No. 18,812.—Charles W. Hawkes, of Boston, Mass.—*Printing Press.*—Patent dated December 8, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I *claim*, first, the cam lever C^1, operated by a vibrating platen, substantially in the manner and for the purpose set forth.

Second. I claim securing carriage ways to the adjustable bed, so that when the bed is moved by altering the impression, the roller carriage will move with it, and keep the rollers always in a proper position to roll the form evenly, in combination with the roller carriage, substantially as described and set forth.

Third. I claim the nipper lever, operating in the manner and for the purpose set forth.

Fourth. I claim the trip in combination with the nipper lever, substantially in the manner and for the purpose specified.

Fifth. I claim the combination and arrangement of mechanism specified, for receiving the cards to be printed, and delivering them after they are printed, substantially as described.

No. 17,499.—Charles E. Emery, of Canandaigua, N. Y.—*Card Printing Press.*—Patent dated June 9, 1857.—The operator having placed ink on the rollers J and K, and a form F on the bed B, and having adjusted the gripers *k*, grasps lever H with one hand, and pushes it back; this throws the rollers *v* over the form F, and inks it, and throws the plate *r* out, and the griper *k* away from the platen A into the position represented in fig. 3. He now places a card on the platen A behind the gripers *k*, and pulls lever H forward; the gripers catch the card, and hold it against the platen, while the rollers *v* move back to the distributing roller J; by the time that lever H has arrived at its extreme of motion, the card is pressed upon form F, and the plate *r* is pushed up inside the partition. By now pushing back lever H, the rollers will ink the form, and the gripers release the card, which drops down on a table.

The inventor says: I do not claim the principle or manner described of applying the power.

But I *claim*, first, the general construction of the machine, and the arrangement and combination of its parts, said parts being arranged, combined, and operated in a manner equivalent to that described, so as to accomplish the object of the invention; the operation of each part being adapted to the vibratory movement by which the machine is operated, and the pressure, feeding, and discharging contrivances of the machine being combined with the inking arrangement described, or with one equivalent to it.

Second. The manner of adjusting and operating the gripers *k k*, which hold the card, in combination with the manner of operating and stopping the operation of the plate *r* upon which the card is laid, both being operated by the simple vibratory movement of the moving surface, which gives the impression.

No. 17,036.—Max C. Gritzner, of Washington, D. C., assignor to M. J. Gritzner, of Washington, aforesaid.—*Engraved Plate Printing Press.*—Patent dated April 14, 1857.—The engraved plate *a*, as it issues from between the printing cylinders *d* and *e*, is first inked by means of inking apparatus *h f g*, and then wiped by means of two wiping rollers *k l*. These two wiping rollers have a peculiar compound motion, closely imitating the motion of the hand in wiping plates by hand. This compound motion is produced by causing the rollers to revolve around their own axis, and, at the same time, to vibrate laterally across the plate. The rollers are of India rubber, the roller *k* being covered with oil silk, which has been found to answer the purpose of wiping admirably. The surface of the oil cloth, as it takes the ink up from the plate *a*, passing underneath and in contact with the roller, is constantly kept clean by means of a dull edged scraper *o*. The inventor states that one and the same piece of oil cloth will answer for a whole day's printing. The second roller *l* is covered with a piece of muslin *z*, which is kept impregnated with chalk dust. The chalk dust is contained in the box *m*, and drops through the sieve *n* upon the surface of the roller. The elastic India rubber scraper *q* takes off the superfluous chalk. This second roller serves to polish the plate. As soon as the plate has passed through the rollers, the rollers *k l* and the inking apparatus are raised by means of lever *w* operating inclined slides *v*, upon which the axles *s* rest, which support the frames of the rollers and inking apparatus. The plate now travels back towards the printing cylinders for the purpose of having the impression taken. The paper is fed to and carried off the plate by means of the automaton paper-feeding bands C D. In printing very fine work, the inventor removes the second roller *l*, and uses only the roller *k*, that takes all the ink off the plate; the printer, as the plate issues from underneath the roller, polishes the plate by hand in the usual way. By this means from five to six impressions may be taken when one is taken by the usual process of hand-wiping. The press can be worked by steam power.

The engraved plate *a* is fastened to the reciprocating bed plate *r* by means of pivots *b c* soldered to the back of the plate.

The improvements are such that they can be attached to one of the usual copper-plate printing presses.

Claim.—Covering the wiping rollers, or their equivalents, with oil cloth or oil silk, or any other material impervious to ink, for the purpose of having a wiping surface from which ink can be constantly removed by a scraper or otherwise, so as to keep it clean, in contradistinction to cloth, leather, or similar materials, which absorb ink.

Also, in combination with a reciprocating bed plate, carrying an engraved plate or its equivalent to be printed from, one, two, or more wiping rollers, revolving each upon its own axis, when the said axis has a reciprocating, rotating, or any other motion, in a plane parallel with the plane of the bed plate.

Also, passing a wiping band over two or more wiping rollers, when said rollers have the compound motion given to them in the manner described.

Also, producing the proper degree of pressure between the cleaning surface and the plate, by means of a compressed gaseous or liquid fluid.

Also, the manner specified of securing the plate to be printed from to the bed plate.

No. 16,861.—FRANCIS S. COBURN, of Ipswich, Massachusetts, assignor to WILLIAM W. MESSER, of Boston, Massachusetts, and GEORGE F. GRAY, of Albany, New York.—*Hand Printing Press.*—Patent dated March 17, 1857.—The object of this invention is to arrest the inking roller after the type has been inked by it, and during the further vertical movement of the type, by a contrivance or means separate from the type block, so that the roller may not roll against either vertical edge of the type block, and ink the same. As the roller leaves the rear edge of the printing surface, it comes underneath and against a rest or projection M, arranged and extended from the frame, as shown in the engraving, and serving to stop the roller and prevent it from being thrown upward and directly over the printing block by its spring during the further descent of the printing block towards the bed.

The inventor says: I do not claim combining the inking roller arm F and its spring I with a lever K applied to the frame A and the vertical shaft *c*, and operated by the latter, substantially as described.

But I *claim* the application or arrangement of the stops M and *b* and the spring I, with respect to the frame A and the lever K, and so as to arrest the upward movement of the roller, under circumstances as stated.

No. 18,557.—SAMUEL J. SMITH, of New York, N. Y.—*Hand Printing Press.*—Patent dated November 3, 1857.—In this invention the roller *h* is set on a lever arm *l*, attached by the screw 7 to the bed *a*, and said arm and roller is drawn back by the spring *m* from the projecting end of an arm *n*. 8 is a screw in the bed *a*, into which the lever arm *l* is drawn by the spring *m*, when the parts assume the position shown in fig. 2; and, by means of this screw, the position of the roller *h* is so adjusted that the printing surface, as it is moved with the lever, takes at its edge on to the roller so as properly to ink the surface, and not supply too much or too little ink to the edge.

The inventor says: I do not claim any one of the parts separately.

But I *claim* the manner described of adjusting the lever *l* and its inking roller *h* by the screw 8, so that the inking takes correctly on to the edge of the printing surface 2, as said surface moves in a curved line with and on the lever *d*, as and for the purposes specified.

I also *claim* arranging the printing surface 2 and inking table *g* on the lever *d* in such a manner, relatively with the inking roller *h* and its lever *l*, that said roller shall travel over the printing surface as the lever descends, and then pass up on to the inking table *g* for distributing the ink while the impression is being given, at the same time that the paper or other material being printed is kept from contact with the roller by the foot 5, substantially as and for the purposes specified.

No. 18,907.—J. M. JONES, of Palmyra, N. Y.—*Hand Printing Press.*—Patent dated December 22, 1857.—The nature of this invention consists in an arrangement by which the "form" bed J is elevated a sufficient height to admit the ink roller to pass under and against the face of the type, and then readily brought down to the paper and a powerful impression given. Also, in hanging the ink roller by a rod and shaft, the shaft being under the platen in such a manner that, in depressing the form, the ink roller is carried forward and against the face of the type. Also, in an improved method of suspending the form.

Claim.—First. The arrangement of the various parts so that the lever K can be operated at right angles to the curved bar B and inking bar D, suspended on the shaft H, in the manner and for the purposes set forth.

Secondly. Suspending the bed J on the lever bar B, in the manner and for the purposes set forth.

No. 16,826.—**John C. Davis** and **William Miller**, of Elizabeth, New Jersey.—*Rotary Printing Press.*—Patent dated March 17, 1857.

The inventor says: We do not claim the separate parts of the machine as new.

But we *claim* the combination of the rollers *g g* with the shoes 1 2, and the inclination of the ways or planes *d d* and the upright screws *h* for operating the type bed, substantially as described.

No. 16,837.—**Horace Holt**, of Winchester, Mass.—*Improvement in Printing Presses.*—Patent dated March 17, 1857.—These improvements consist in a peculiar arrangement of parts whereby the "form" is properly inked, the "platen" drawn underneath the form, and the form pressed down upon the card on the platen, and the platen, after the card has received its impression, is forced out from underneath the form; these movements being made by the operation of a single cam. The engravings and claim further explain this invention.

The inventor says: I *claim* operating the "platen" G by means of the cam C, slide D, and arm E, connected with the platen by the rod F; and also operating the plate J, to which the form I is attached by means of the rod *e*, connected with said plate, and made to bear against the face of the cam; when said parts are arranged as shown, or in any equivalent way, so that the platen G and form I may be operated conjointly by the cam C, as described, for the purpose set forth.

I also claim, in combination with the means above named for operating the platen G, the rotating and vibrating ink-distributing roller M, when operated as shown and described.

I further claim throwing the printed cards from the platen G by means of the levers N O, attached respectively to the platen G and plate J, arranged as shown and described, or in an equivalent way.

No. 17,405.—**S. D. Learned**, of Boston, Mass., assignor to **A. C. Learned**, of New York, N. Y.—*Improvement in Printing Presses.*—Patent dated May 26, 1857.—The type or form G is secured upon the bed F, and the frame B is moved back and forth by hand. When the frame B is in the position shown in the engraving, the ink roller C is on the form, and inks the same as it is shoved over it. When the frame B is brought back, the tympan H is thrown down, together with the sheet of paper a^1, secured to the tympan by frisket I. The roller D, in passing over the tympan, gives the requisite pressure to the sheet, so that it receives the impression thereof. When the frame is shoved back, the cross-piece c^1 strikes the rods *n*, and throws up the tympan, as shown in full lines on the engraving.

The inventor says: I do not claim separately any of the parts described, for they have all been used in presses under various forms of arrangement with other parts.

But I *claim* the reciprocating frame B, provided with the inking and presser rollers C D, in combination with the ink and form beds E F and tympan H, provided with the rods *h n* and frisket I; the above parts being arranged to operate conjointly, as shown, for the purpose set forth.

No. 17,418.—**Jason L. Burdick**, of New York, N. Y.—*Improvement in Printing Presses.*—Patent dated June 2, 1857.—Motion being imparted to crank-shaft S, the connecting rods C impart a reciprocating motion to the cylinder A, which is made to slide in ways Q at the same time that a reciprocating rotary motion is imparted to said cylinder by pinion P passing over rack H. The inking roller J delivers the ink to cylinder A, and distributing roller R inks the types which are set on the face of cylinder A; when the cylinder A has arrived at the end of its way, the tooth *m* of pinion P comes in contact with the guide-piece G, which guides the roller A in such a manner that the face of platen T will be parallel with the type-bed *p*; in which position the impression is made on the paper on platen T.

Claim.—First. The arrangement of working the roller A upon which the type is attached, in such a manner as to communicate to the same a forward and backward motion, in connexion with a rotating motion, substantially as described.

Second. The arrangement of a guide piece, for the purpose of guiding the type roller in the latter part of its forward motion, so as to bring the types always square against the platen T containing the paper or card to be printed.

No. 17,463.—**Daniel K. Winder**, of Cincinnati, Ohio.—*Improvement in Printing Presses.*—Patent dated June 2, 1857.—By turning crank *l* shaft *a* is rotated, and the piston *g*, and platen *h* have a reciprocating movement imparted to them by means of a crank on shaft *e*; and the cards are placed and the type form *c* printed by the operation of these parts. The inking roller *g* receives the ink from the curved flange *d*; and as it has to pass over said flange in a vertical position, the tripping of said roller is performed in the following manner: At a certain point in each circuit of the roller, the lower end of the stirrup *n* engages with hook *v* pivoted in a slot of the bed *a*; and its advance being opposed thereby, the hook ascends, as represented in fig. 2, turning the stirrup *n* on its fulcrum A, which is at the end of arm *m* and the sliding button *t*. Fig. 4 is drawn around the edge of arm *m*, and is then retracted against the other side of said arm by the action of springs *u*.

Claim.—The construction and arrangement, substantially as set forth, of the roller bearing (*n o r s*) pivoted to the flattened branch or arm *m* from the driving shaft, and provided with the sliding spring button *t*, in combination with the hook *v*, or equivalent devices, for the tripping and inversion of the inking roller between the consecutive inkings, as explained.

No. 17,615.—**Franklin L. Bailey**, of Boston, Mass.—*Improvement in Printing Presses.*—Patent dated June 23, 1857.—The paper to be printed, after having been laid on the tablet E, is seized and drawn off the same by the action of the nipper *v* and carrier D^1, and is borne down in place on the carrier D^1 by the springs *t*, which co-operate with the nipper. The carrier D^1 takes the paper from the tablet and up to the type form C, where, after having been printed, it is freed from the type by the gripe of the springs *t* against the carrier D^1; and it is then guided and supported downward by the movement of said carrier, so as to come back to the tablet, when it will be discharged by its gravity.

The inventor says: I *claim* the combination and arrangement of the nipper and holding springs applied to the sheet carrier and made to operate therewith, substantially as described, and whether said springs be made stationary or adjustable laterally on their shaft.

I do not claim a sliding platen or plate moving out from beneath the type form for the purpose of receiving a sheet to be printed.

But I claim the sliding carrier or plate D^1 when made to move in an inclined or vertical direction, for the purpose set forth.

I also claim the combination of the sheet carrier or plate D^1 with ways placed on the platen or vibrating frame D, on which it slides, so that it may assume the positions for receiving the sheet to be printed, and also for giving the impression to the same.

No. 18,567.—Merwin Davis, of New York, N. Y., assignor to Peter G. Bergen, of Brooklyn, N. Y.—*Improvement in Printing Presses.*—Patent dated November 3, 1857.—The claim and engravings show the nature of this invention.

The inventor says: I do not claim, separately or in itself considered, the reciprocating carriage O, provided with fingers or nippers for feeding the blank sheets to the form; nor do I claim the "fly" separately, or independent of its arrangement and connexion with the parts, as shown.

But I *claim*, first, the reciprocating rolling pressure segment J, provided with a weight box *h*, or any suitable or equivalent device, by which the counterpoise of the segment may be varied or graduated to be commensurate with the speed of the segment. I also claim the reciprocating roller pressure segment, when arranged to operate as shown, irrespective of the variable counterpoise.

Second. I claim the reciprocating carriage O, provided with the fingers or nippers *w*, in combination with the segment J, for feeding the sheets to the form. I also claim, in combination with said segment J, the "fly" or device formed of the rods or shafts S T *e*, arms *d d j j*, and hinged ledge or plate d^4; the above feeding and flying devices being arranged and operating conjointly with the segment J, as described.

Third. I claim the rails *m m* applied to the machine and operated substantially as shown, or in any equivalent way, so as to raise or elevate the face *k* of the segment above the form during one movement, and allow it to descend and rest upon the bed during the other movement in order to give the impression to the sheets. And I also claim the bar Z, when used in connexion with the rails *m*, and having the bar j^2 connected with it, as shown, whereby the segment may be raised at any time, and the sheets also prevented from being fed to the form.

Fourth. I claim operating the lateral vibrating ink rollers W X by means of the T-shaped lever Y, as described.

No. 18,545.—George P. Gordon, of New York, N. Y.—*Improvement in Printing Presses.*—Patent dated November 3, 1857.—This invention consists in the peculiar means employed for feeding a continuous sheet of paper to its proper place of printing, and in the use of adjustable shears or knives to cut off the proper length of paper or cord, after the same has been printed, as fast as the printing is done, and by the same operation. Also, in providing side arms, or a frame, for the purpose of carrying the inking rollers in such a way as to give the same a continuous reversible motion, as the rollers pass over the form; so that the impression may be taken at each alternate motion of the frame up and down, and this, in combination with the means employed for actuating the reciprocating bed-carriage, upon which bed the form of types is placed.

This improvement will be further understood by an examination of the engravings and claim.

The inventor says: I *claim*, first, the arrangement of a bed, with its form of types, between two distributing tables, so that the impression may be taken while one table is inking the rollers and distributing the ink by passing to and fro upon the distributing table on one side, and at the alternate time an impression may be taken while the rollers are passing over the opposite distributing table; thus allowing of the reversal of the rollers at the extreme ends of the two tables, meeting and inking the form in its transit from one extreme to the other, and allowing the impression to be taken at each inking of the form without waiting for the return of the rollers.

Second. I claim the arrangement of the variable eccentric, or its equivalent, with the sheet guides or gauges, and friction feed rollers, for the purpose of drawing in evenly the sheet or strip any required distance.

And I further claim the arrangement of means described for feeding, printing, cutting, and counting the cards or sheets of paper, with the means described for the inking and alternately distributing the ink, as set forth.

No. 18,618.—Stephen Wilcox, Jr., of Westerly, Rhode Island.—*Improvement in Printing Presses.*—Patent dated November 10, 1857.—When this improved machine is in operation, a sheet, fed by the lower edge of I, is seized by the gripers *g* and drawn over the form on bed A, and delivered to the gripers g^1 on the platen B; the same movement draws the ink rollers over the form, and does the inking, bends up the fly, and closes gripers g^1 and *h*.

The return movement rolls the platen over the bed giving the impression, draws table *m* back to receive the printed sheet, opens the gripers to allow the fly to lay the sheet, and carries the ink rollers over cylinder *t* to receive a fresh supply of ink for another impression.

Claim.—First, the adaptation of the eccentric segment B to the stationary bed A, when said segment is held to the bed by radius bars C C, and operated substantially as set forth.

Second. The elastic fly bending round the platen, and operating as described.

No. 17,549.—Franklin L. Bailey, of Boston, Mass.—*Improvement in Card Printing Presses.*—Patent dated June 16, 1857.—Motion being given to the shaft D, cam *a*, in revolving, presses the type form C upon the card and against the bed G. The card sheet or strip is fed into the machine between the rollers R and S, and is held by guides I during the time the impression is made, and the printed cards are separated from the strip by the action of knife O.

The inventor says: I do not claim the combination of feeding guides with the bed against which the card is to be pressed.

But I *claim* applying the guides I I to the bed, substantially as described—that is, so that they may spring or move away from and towards it, and thus not only relieve the card from contact with and friction against the surface of the bed, while such card is descending in the guides, but also to operate the knife and allow it to move backward, substantially as specified.

Also, arranging the guides I I so as to incline back from the vertical plane, the same being for the purpose of supporting the card and enabling the guides to be used without any front lip, as described.

Also, the combination of the spring card-holder M with the card rest or stop K, and the feeding guides or mechanism, and the bed and platen, the said card-holder being applied to the stop K, so as to operate substantially in the manner and for the purposes set forth.

Also, applying the feed and pressure rollers in a rocker frame combined with the vibrating frame F and provided with adjustments, arranged so as to enable the rocker frame to be tipped a little, as occasion may require, to cause the continuous sheet of paper or card-board to operate properly with respect to the position of the form on the platen.

Also, arranging on the shaft R, and so as to operate with the stationary roller, as described, and with the feeding roller, a spring pressure roller U to act against the edge of the sheet of card, so as to maintain its opposite edge in a proper position with respect to the type.

No. 18,589.—Richard M. Hoe, of New York, N. Y.—*Improvement in Feeding Paper to Printing Presses.*—Patent dated November 10, 1857.—This invention relates to an improvement in that class of paper-feeding devices in which sheets of paper are fed to the machine through the agency or medium of what is termed a "drop roller." The claim and engravings explain its nature.

The inventor says: I do not claim feeding sheets of paper to printing presses and analogous machines by means of a feeding cylinder, in connexion with a series of endless belts or tapes, and a drop roller; for such device is well known, and in common use.

But I *claim* giving the drop roller F a constant or regular speed, corresponding at all times to that of the other running or working parts of the device, by bringing said roller F, when in an elevated position and detached from the cylinder D, in contact with the impelling roller O, actuated by the belts or tapes K, as and for the purpose set forth.

No. 18,640.—Richard M. Hoe, of New York, N. Y.—*Improved Mode of Operating Fly-Frames of Printing Presses.*—Patent dated November 17, 1857.—The engravings and claim show the nature of this improvement.

Claim.—Operating the fly frames I by means of cam shafts C, placed one at each end of the machine, and provided with cams D E F, and used in connexion with arms *j m p*, rods *i l o*, arms K, and springs M, or an equivalent device, whereby the cams are made to actuate the fly frames in a more direct manner, and consequently insuring a more perfect operation of the same than heretofore.

No. 18,527.—Jedediah Morse, of Canton, Mass., assignor to the S. P. Ruggles Power Press Manufacturing Company, of Boston, Mass.—*Improvement in Hand Printing Press.*—Patent dated October 27, 1857.—The claim and engravings show the nature of this invention.

The inventor says: I do not claim the combination of one or more cam plates K M, a cam lever L, and one or two sets of rollers, or their equivalents, arranged between the said cam lever and cam plates, as I am aware that such mechanism for operating a platen is not new.

Nor do I claim arranging the platen spring on the top of the arch or frame of the press, and applying it to a bolt and other devices for lifting a platen, as shown, or used in the well known Albion press invented by Cope. I so arrange the rod F depending from the spring G as to cause it to pass through the lever pitman, and other mechanism for depressing the platen, the same serving not only to support the whole in place, but as a fulcrum for the lever to work on.

I am aware that the foot of the lower toggle of a press has been attached to the toggle by a screw, whereby the impression could be adjusted.

I *claim* arranging the lifter rod E with respect to its spring G, the cam lever L, the pitman I, and cam plates N N, substantially in the manner, and so as to operate therewith, as described.

I also claim the arrangement of the regulating wedge on the lifter rod, and between the depressing mechanism and the crown of the arch, substantially as described.

No. 17,824.—E. E. Barrett, of Chicago, Ill.—*Improvement in Inking Rollers for Printing Presses.*—Patent dated July 21, 1857.—The ink roller I is made hollow, and is perforated by a number of small holes, through which the ink which is in the interior of said roller, oozes out and saturates the cloth by which it is enveloped; as the rod E is depressed, the roller I passes from under the type box F, and is brought in contact with the lower face of the diffusing plate N, which spreads the ink evenly over its surface.

Claim.—Saturating or coating the inking roller of a printing press with ink, in the manner substantially as and for the purposes set forth.

No. 17,449.—Charles Potter, Jr., of Westerly, R. I.—*Improvement in Oscillating Printing Presses.*—Patent dated June 2, 1857.—The bed plate B can be adjusted by operating screws *i*, by which the levers *h* and bearings *b* of said plate can be adjusted. The sheet to be printed is placed upon the feed board *l* up to guide *m*; as the segment D comes to the position shown in figure 2, the cam p, operating through its levers p^1 and n n^1 and rod p^2, raises the feed board until it nearly touches the segment D, when it comes in contact with a toe r on the griper shaft, and shuts the gripers on to the sheet, when the sheet is drawn in and impressed.

The inventor says: I do not claim lifting the feed board for the purpose of carrying the sheet to the gripers, independent of its application or adaptation, as described.

Neither do I claim actuating the "fly" by a cam and spring, as that is common.

But I *claim*, first, the manner of adjusting the impression by means of the levers h and screws i, substantially as described.

Second. I claim the use and adaptation of the lifting feed board l for carrying the sheet to the gripers, when combined with the oscillating eccentric segment D.

Third. I also claim operating the fly a by the cam S, when so constructed as to cause said fly to conform to the motions of the bed B and oscillating eccentric segment D, as fully set forth.

No. 17,543.—Jedediah Morse, of Canton, Mass., assignor to the S. P. Ruggles Power Press Manufacturing Company, of Boston, Mass.—*Improvement in Power Printing Presses.*—Patent dated June 9, 1857.—A detailed description of this invention would take up too much space; the principal features thereof will be understood by reference to the claim and engravings.

Claim.—The combination and arrangement of mechanism or devices for supporting the sheet of paper over the carrier or frisket carriage, and guiding and presenting it to the discharging apparatus; such devices consisting of the cords n^2 n^2, the rollers 12 m^2, the drum o^2, cord p^2, and the barrel or pulley q^2, provided with a spring, or its equivalent, as described.

Also, the combination of the cam u and stud v with the rocker toggle and its operating cam, the same being for the purpose as specified.

Also, the combination for regulating the rotary motion of the ink fountain rollers, the same consisting of the adjustable stop lever m^3, the connecting rod h^3, cam c^3, the lever f^3, the weighted plate K^3, and the pawl l^3, and the internal ratchet s^3, constructed and applied together substantially as specified.

Also, combining with the pile platform and fly a mechanism substantially as described, which, by the reciprocating movements of the fly, shall lower the platform in correspondence with the increase of thickness of the pile; such mechanism being the cam on the fly shaft, the pawl thereof, and the train of gears and racks applied and operating as specified.

Also, the mechanism or combination for imparting to the ink cylinder h endwise motions, as described; the same consisting of the grooved pinion or gear o and the inclined gear p, constructed, arranged, and applied together, so as to operate substantially as specified.

No. 17,388.—Gordon McKay, of Boston, Mass.—*Improvement in Registering Apparatus for Printing Presses.*—Patent dated May 26, 1857.—This apparatus may be applied to any printing press now in use. When the mechanism of the press raises the paper board a to the position represented in figure 1, at which position the points x are brought below the face of the paper board and the brushes e are raised, the operator then places the printing paper on board a, and upon the board being brought to position figure 2, the spring g forces down the brushes e, and the pins x penetrate the paper; on the pins x being now withdrawn from the paper, the latter is retained in its position by brushes e, and the nippers of the press can seize and carry off the sheet for the usual purpose.

Claim.—The use of brushes, or equivalents, for the purpose set forth, when automatically operated and combined with register points.

No. 18,032.—Moses S. Beach, of Brooklyn, N. Y.—*Machine for Wetting and Cutting Paper for Printing Presses.*—Patent dated August 25, 1857.—The paper is taken from the reel A, and, after passing it through guide B, it is moistened by the pressure between the covered cylinders C D, which receive moisture from the cylinders E F, which are partially immersed in water tanks G H. At every revolution of the cylinder C, the pins I fixed to the side frames J release the knives a b by tripping the ends of the catches e f, and the knives enter the grooves i, cutting the paper which is pressed between the two cylinders, and the sheet thus cut off is carried out of the machine by tapes K. The knives a b are then returned within the cylinder by the pressure of the ends of the bars on cams R.

The inventor says: I do not, therefore, claim broadly the wetting of paper by means of wet or moistened rollers applied to one side of the paper and not to the other.

Neither do I claim broadly the cutting of paper by means of a saw-edge knife, whether the knife be attached to a stationary frame or to a cylinder, and whether projected against the paper by means of cam and lever or springs.

But I *claim*, 1st. Simultaneously wetting or moistening both sides of the paper, in the manner substantially as described.

2d. Leaving the paper dry at the point or line of cutting, substantially as described.

3d. Catching the knife when retired within the circumference of the cylinder, retaining it while so retired, and releasing it from the operation of cutting by means of the catches e f, the springs j, and the tripping pins I, in the manner substantially as described.

4th. Combining the cutting apparatus with the wetting cylinders or rolls, substantially as described.

No. 16,581.—William H. Elliot, of Plattsburgh, N. Y.—*Printing Stamp.*—Patent dated February 10, 1857.

The inventor says: I do not claim the joint H as a stop for terminating or stopping any motion of the die-carrier B around pin or centre K, and giving to said die-carrier a new and distinct motion; a device for this particular purpose being found in a hand stamp invented by Mr. P. A. Ramsey, of Boston. The principal object of joint H in my invention being to confine one portion of die-carrier B as nearly as is requisite to a direct or longitudinal motion.

I claim, first, the crank F, joint H, or their equivalents, when used in combination with type or die C.

Second. The same in combination with the treadle *m*.

Third. The self-adjusting ink pad E.

Fourth. Tilting the ink pad E so that by the action of the type or die upon it it may be revolved.

Fifth. The combination of the die or type C with the crank F, when arranged as specified in relation to the two pads.

No. 16,641.—William H. Elliot, of Plattsburgh, N. Y.—*Printing Stamp.*—Patent dated February 17, 1857.—The devices referred to in the claims serve to carry the die from the impression pad to the inking pad, and *vice versa*, by revolving the cranks H F in the direction of arrows 1 and 2; power to be applied only in one direction.

Claim.—First. The crank F and crank H, when used in combination, operating in any manner substantially the same.

Second. The same, when working in combination with the treadle M, as specified.

Third. The combination of spring P and crank H, when operating as specified, in combination with crank F.

No. 17,340.—Samuel T. Sanford, of Fall River, Mass.—*Improvement in Stencil-Plate Printing.*—Patent dated May 19, 18 7.—Rotary motion being given to the rollers C D E in the direction of the arrows, the roller C is supplied with ink from the fountain G, and the roller D receives the ink from roller C. The paper or cloth J is placed between the two rollers D E, it being upon the stencil plate H; the roller D thus makes the impression upon the paper.

The inventor says: In the London Mechanics' Magazine, vol. 57, page 393, 1852, may be found a description of a stencil press, which consists in the use of flat or curved stencil plates, in combination with color rollers, composed of flexible materials, for depositing colors on fabrics through the plates; I therefore disclaim the invention of said device.

But, to the best of my knowledge and belief, it is new to have the stencil plate made in the form of an endless belt, as set forth.

I claim having the stencil plate made in the form of an endless belt H, as and for the purposes set forth.

No. 17,194.—Stephen D. Carpenter, of Madison, Wisconsin.—*Improvement in Machines for Printing Subscribers' Names on Newspapers.*—Patent dated May 5, 1857.—The types, when sit on the circumference of wheel B, correspond to the names of persons to be addressed. By pressing down the treadle *l*, the platen *g* is forced down, causing an impression to be made on the newspaper, which is held to the types. On releasing treadle *l*, spring F forces up platen *g*, and treadle *l* and pawl *o* turn cylinder B the length of one tooth, bringing a new name under the platen *g*, ready for the next operation.

Claim.—First. The construction of the cylinder B, made, as described, in sections, with flanges *b*, to which India rubber or any flexible material is secured for receiving the type, which type are set on the face of the cylinder in columns, as described, for the purposes set forth.

Second. The said cylinder, in combination with the platen, operated as described.

Third. The combination of said cylinder with the devices whereby it is rotated, as set forth.

No. 16,856.—Joseph Wappenstein, of Philadelphia, Pa.—*Improvement in Metallic Seals.*—Patent dated March 17, 1857.—A represents an envelope containing a letter, the two being united together, and the envelope sealed by the fastening B. A^1 represents an envelope containing a letter, the two united together by a cord, and the envelope fastened by said cord, the ends of the cord being secured by this invention so that in either case the letter cannot be removed without detection.

Claim.—A metallic seal, wafer, or fastening, for securing letters, packages, &c., composed of two pieces of the shape described, and united together and to the thing to be fastened, substantially in the manner set forth.

No. 18,065.—John Toulmin, of Worcester, Mass.—*Improvement in Vibrating Shears.*—Patent dated August 25, 1857.—The blade K can be adjusted to give it the most effectual shearing position by turning the set screws H and *d*.

Claim.—Hanging the movable blade of a pair of shears by two adjustable centre pivots upon an adjustable pillar block, substantially in the manner described, and for the purpose of so adjusting the movable blade of said shears as to give it the most effectual shearing position in relation to the stationary blade, as set forth.

No. 16,608.—Perley A. Ramsay, of Boston, Mass.—*Hand Stamp.*—Patent dated February 10, 1857.—The ink roll K is pivoted to block L, which latter may be removed, together with the roll, for the purpose of putting on a fresh supply of ink without soiling the hands. The operation will be understood from the dotted position of the movable parts.

The inventor says: I do not claim stop J^1 as a guide for the purpose of guiding arm G, or confining it to a longitudinal motion, several devices for that purpose being found in the hand stamp invented by William H. Elliot. The principal object of stop J^1 in my invention being to terminate or stop the motion of arm G around axle E, thereby causing said arm to take a new and distinct motion.

I *claim* the arm G pivoted to the truck D, in combination with the stop J^1 and ink roll K, operating in the manner substantially as set forth.

Second. I claim the method described of hanging the ink roll, for the purpose set forth.

No. 16,731.—Horace Holt.—*Hand Stamp.*—Patent dated March 3, 1857.—The toe G of the hand lever F serves to depress the platen K. The toe Z operates the lever N to which the ink roller M is attached.

The inventor says: I do not claim operating the platen or stem and the inking roll by simple operation of the hand.

But I *claim* the combination of a detached lever with its toe pieces for inking and taking the impression, when said inking and impressing devices are returned to their places by springs L and *m*, as set forth.

No. 16,712.—Leonard Bailey, of Winchester, Mass.—*Hand Stamp.*—Patent dated March 3, 1857.

Claim.—Arranging an ink fountain and its discharging roller at the foot of the slider and between the same and the type or printing plate, and so as to be movable therewith, substantially as set forth.

I also *claim* arranging the forked lever L of the inking roller with respect to the slider C, substantially as described; so that while the palm of a person's hand is placed on the top of the slider, one or more of the fingers can operate said lever, or the upper arm thereof, in a manner to move the inking roller backward against the type, and into a position to come in contact with the fountain roller F when the slider is next depressed.

No. 18,249.—T. J. W. Robertson, of New York, N. Y.—*Hand Stamp.*—Patent dated September 22, 1857.—D is a shaft which passes horizontally through the shank B. Upon this shaft are placed the type wheels *c d e*, which revolve, independently of each other, on the shaft. The faces of these type wheels may be provided, respectively, with the names of the months of the year, and also the ten numerals. The shaft is arranged at such a distance from the face of the ring C, that the type wheels may be turned so that the types upon them will come in line, or form a horizontal plane with the types on the ring C. By this arrangement an impression can be made at the same time from the types on the ring and the wheels.

The inventor says: I do not claim broadly the employment of revolving type wheels for making impressions; for I am aware that such wheels have long been known and used. They are seen, for example, in nearly all book-paging machines. But, to the best of my knowledge and belief, no hand stamp like mine has ever before been known or used.

I *claim* the construction of hand stamps in the manner described and represented.

No. 17,587.—Coleman Sellers, of Philadelphia, Pa.—*Postage Stamp and Label Sticker.*—Patent dated June 16, 1857.—The operation of applying the label is as follows: The surface of the article to be labelled is moistened; the protruding label of the pile S in the box A is pressed upon the moistened part by handle E, and the adhesive matter on the label will cause it to adhere to the article. Upon withdrawing the instrument, one label will be pulled out from the box A, leaving the next one within the flanges *a* exposed ready for use; the loose edges of the stamp are then pressed down by the second application of the sticker.

Claim.—The combination of the lips or flanges, or their equivalents, in the label-holder, with the follower, or its equivalent, for the purposes above specified, when said lips or said follower, or their equivalents, are made of such form as to cause the stamps or labels to bulge out beyond the face of the stamp-holder, substantially as described.

Also, the attachment of the follower, or its equivalent, with the handle, to convey the pressure directly to the stamps or labels, substantially as described.

No. 18,947.—E. E. Barrett, of Salem, Mass.—*Improvement in Hand Stamps.*—Patent dated December 29, 1857.—This improvement consists in a peculiar arrangement and combination, by means of which the stamp is inked and the impression made by a single blow of the hand, without the necessity of spreading the ink upon the surface of the roller, which not only has a tendency to daub it up, but also requires to be constantly replenished.

The claim and engraving will show the nature of this improvement.

Claim.—So arranging and constructing the ink fountain O, that, when combined with the inking roller of a hand stamp press, it shall serve the double purpose of inking the roller and distributing the ink over its surface in the manner substantially as described.

No. 16,962.—Alexander Beckers, of New York, N. Y.—*Apparatus for Exhibiting Stereoscopic Pictures.*—Patent dated April 7, 1857.—The slides D in which the pictures are inserted are attached at right angles to the endless belt B, which passes around the two shafts B; by turning one of the shafts, by means of a knob on the outside of the box, the slides are passed one by one before the eye-glass E, the light coming in through glass *d*. The pictures are fastened to the slides B by inserting them within the grooves *f*, and then drawing the India rubber band *e* over their upper edge, as represented at the right hand side of fig. 1.

Claim.—1st. Arranging the pictures at right angles to the endless belt, in the manner and for the purposes substantially as described.

2d. The described mode of securing the pictures in the grooved slides, by means of the elastic bands *e e* and notches *f f* in the ends of the grooved portions of the slides.

No. 18,209.—Jesse K. Park, of Marlborough, N. Y.—*Composition for Preparing Tracing Muslin.*—Patent dated September 15, 1857.—This composition consists of eight parts of spirits of turpentine, eight parts of castor oil, two parts of Canada balsam, and one part of balsam copaiba; this, when well mixed, is applied to the tracing muslin by means of a sponge.

Claim.—The employment of the oil of the palma christi, or castor oil, alone, or as an ingredient in the composition for increasing the transparency of tracing muslin, as specified.

No. 16,947.—**William H. Houston**, of Belfast, Maine.—*Machine for Composing and Distributing Type.*—Patent dated March 31, 1857.—The operation of this machine is as follows: The types being arranged within the compartments of the case A, a single key O is depressed, by which means the corresponding lever L is raised, its spring *n* entering the slot in the end of one of the compartments and forcing out a type, as seen in fig. 3. Eccentric E now trips lever R, and plate D springs up, pressing the type against slide A^2. Lever M now strikes against lever P^2, drawing down lever o^2; and pawl d^2, being now free, engages with ratchet wheel M^2, and shaft C is set in motion; the plunger B now advances, and the type is carried to the end of trough A^2, where it is received by plunger T, which carries it into the line of type being composed, fig. 2. The stops B^2 being now forced back by weight Q, the thickness of a type is prevented from returning by spring pawl *v*. When the line of type is full, the operator turns shaft E^2 and raises rule Y, forcing up lead m^1, fig. 6, from the galley X^2. The cross-bar G^2 is now thrown forward by cam K^2 upon shaft E^2, and the line of type is transferred to the galley X. The distributing part of this machine is constructed on the same principles as the composing machine, and similar devices are used for distributing the types; forwarded to the trial case s^2, fig. 8. This trial case is placed directly in front of the forwarding case t^2, and immediately over a case A furnished with compartments to receive the types. The edges of the types are furnished with nicks, the position of which varies upon each letter; and the compartments of the trial case s^2, fig. 9, are furnished with pins, the positions of which correspond with the nicks upon the types, each type having certain combinations of nicks; and the types whose nicks correspond with pins in the case s^2 drop through said case into their compartment in case A, while the others are thrown out and are passed on until each finds its respective compartment.

Claim.—First. The described machine for composing types, operating in the manner substantially as set forth.

Second. The method described of selecting the types from the cases by means of the springs *n*, or their equivalents, operating in connexion with the keys O, in the manner substantially as set forth.

Third. The method of transferring the types to the stick by means of the plungers B and T, or their substantial equivalents, as set forth.

Fourth. Raising the rule Y, and throwing forward the line of type upon the galley by the means described, or by any means substantially the equivalent thereof.

Fifth. The method of feeding forward the types in the cases by means of the slipping bands *f*, rods *j*, and cylinder K, or their equivalents, operating in the manner substantially as set forth.

Sixth. The wheel F^2, with its ratchet wheel M^2, and the connexions N^2 O^2 d^2, or their equivalents, whereby this wheel is caused to give motion to the shaft C whenever any one of the keys is depressed, as set forth.

Seventh. The described method of connecting the crank U with the pitman W, by means of the springs *f*, operating as set forth.

Eighth. The distributing machine, constructed, arranged, and operating in the manner substantially as described; by means of which a column of type, when placed in the machine, is distributed automatically in the manner set forth.

Ninth. The method described of forwarding the types to the trial case by means of the vibrating case t^2, operating in the manner substantially as set forth.

No. 16,743.—**William H. Mitchell**, of Brooklyn, N. Y.—*Improvement in Machines for Composing Types.*—Patent dated March 3, 1857.—This is an improvement on letters patent granted to the inventor August 30, 1853, and consists in the means for dropping the types on to the series of belts *m* therein set forth; also in means for setting up the types into a continuous line as they arrive on the diagonal belt *o* at the composing wheel; and also in means for facilitating composing the types into pages, and justifying the same by the use of a peculiar grab to transfer each short line to the compositor's stick from the continuous line of the machine.

Claim.—The manner of dropping one type at a time from the lines of types in the conductors *g*, by the combined operation of the pushers 52, stop 55, and fingers 56, substantially as and for the purposes specified.

Also, inclining the composing wheel, when used in connexion with the inclined chute or conductor 59 and fence 60, on the lower side only of the inclined composing wheel, for the purposes and substantially as specified.

Also, the compositor's grab 65, formed in the curved shape, and used in the manner and for the purposes specified.

No. 18,264.—**William H. Mitchell**, of Brooklyn, New York.—*Machine for Distributing Type.*—Patent dated September 22, 1857.—The nature of this invention consists in an inclined check block, acting in connexion with notches in the types, proportioned to the width of said types, and a vibrating separator, whereby one type at a time, and no more, is separated from the line of types, irrespective of its thickness.

This invention will be more fully understood by an examination of the claim and engravings.

The inventor says: I *claim*, 1st. The inclined check block I, in combination with notches in the sides of the types, so placed that notch of the first type comes in contact with the said inclined check block when the type is projected its thickness beyond the end of the slide containing the line of types, so that only one type at a time is separated from the line of types, as specified.

2d. I claim the use of studs or pins uniformly placed to take notches variously placed in the types, thereby sustaining the types in various positions to be dropped or distributed, when said types reach receptacles adapted to the peculiar positions of said types.

3d. I claim the method described of distributing types by the revolving wheel I, with its grooves and pins X, when combined with the stationary inclines or offsets, substantially as specified.

4th. I claim distributing types from uniformly placed and moving pins, or their equivalents, by the use of a second notch in the type, combined with suitable offsets or inclines to disengage the first notch of the type, and then allow the type to be suspended by the second notch for distribution, substantially in the manner specified, thereby providing for distributing greater varieties of types without requiring extreme accuracy in the position of the notches, as specified.

5th. I claim the oscillating ring *y* and connecting rods Z, in combination with the pushers 32, for the purpose and as specified.

No. 18,175.—Timothy Alden, of New York, N. Y.—*Type-setting and Distributing Machine.*—Patent dated September 15, 1857.—A description and illustration of this machine would take up too much space to be given here.

Claim.—1st. The method, substantially as described, for conveying the type to and from the type cases and the composing and setting tables, consisting of a type-carrier in combination with a series of conveyors, which are capable of receiving any type indiscriminately, and also of receiving an indication representing the type so received, or that required, whereby that type may be deposited in or taken from the type cases, substantially as set forth.

2d. The described or any equivalent method of attaching the conveyors to the carrier, by which they are permitted to stop while delivering or receiving type, without arresting the motion of said carrier, substantially as set forth.

3d. Giving to the conveyor a vibratory or tilting motion upon its central pin, whereby its gripping end is made to closely approach the place at which the conveyor is to receive or deposit a type, for the purposes and in the manner substantially as described.

4th. In combination with the devices or mechanism for receiving and for delivering the types into and from the type cases, as described, or their equivalents, I *claim* arranging the types edgewise in said cases; whereby, for all the types of a font, an uniform throw or action may be given to said mechanism.

5th. In combination with the type channels, the mechanism for pushing out the type, consisting of the rack, pendulum lever, and propelling rod, and the pusher upon the conveyors, or any equivalents thereof, as described.

6th. In combination with the type channels, the mechanism for preventing the stopping of a setting conveyor at a type channel when it is empty, or a distributing conveyor at a channel when full of type, consisting of the tilting bar s^7, the pendulum lever, and rack, or equivalents, as described.

7th. The method of discharging the type from a distributing conveyor into the type channels, or of causing it to be received from such channel into a setting conveyor, consisting of the cam d^6 and the pusher plate b^6, or equivalents thereof, as described.

8th. The mechanism for setting the gripping bolt upon the conveyors, and for releasing the same, consisting of the stationary cam u^5 and crank lever f^5 for the setting of said bolt, and for the releasing thereof of the latch v^5 and cam or pin y^6, as described.

9th. The method, substantially as described, of effecting or insuring the deposit of each type into or the taking thereof from an

appropriate case, consisting of the excavated ring m^5, or any equivalent thereof which shall have upon it at or near each type case a device indicative of the denomination of the type contained in said case, and which device shall cause at the proper place an action of the conveyor to receive or to deposit a type, as the case may be, in accordance with any given set upon the conveyor, as set forth.

10th. The stationary inclined pieces g^7, in combination with the grooves of the ring m^5, for restoring the indicating points upon the conveyor to a zero or starting point, as described.

11th. The movable indicators e^7, or their equivalents, in combination with the grooves in the ring m^5 and with the shifting bars of the distributing mechanism, as described.

12th. The method of setting the distributing indicators by means of the system of levers z^3, or equivalent mechanism, so constructed and operated as to be acted upon by a system of nicks upon the type; by which certain parts are allowed to be brought into operation to move the indicators, in accordance with the plan or combination of nicks, and whereby the appropriate case or place of deposit of type is indicated upon the conveyors, as described.

13th. The graduated stop c^4, in combination with the indicating levers z^3, for regulating the feed of the line of type, as described; and also in combination therewith the mechanism described under e^4, i^4, and l^4, for restoring said levers into position when about to return for a new setting, and for setting the frame y^3 against its guide plate, as described.

14th. The arrangement of mechanism for transmitting the movements produced upon the levers z^3 by the nicks in the type, and for effecting the proper combinations upon the indicators e^7, consisting of the detaining levers n^4, the bars p^4, bar f^4, bars v^4, bar y^4, and the connecting levers g^4, together with the operating cams upon the shaft j^4, or any equivalent combination, whereby the same results will be produced, as described.

15th. The mechanism for feeding up the column of type, and for elevating the successive lines thereof into the channel, or equivalent devices, as described.

16th. The method of engaging and disengaging the feeding pawls, consisting of hanging lever a^3, in combination with the frame x, with the means for depressing the bolt d^3, and with the ratchet having the engaging and disengaging wedges, as described.

17th. In combination with the keys, the arrangement of mechanism whereby the separate different signals represented by each of a great number of keys may be produced by a less number of indicators, as described.

18th. The radially revolving registering levers in combination with the register wheel and with the keys, as described, or the equivalents thereof.

19th. The independent registering apparatus, constructed as described, or its equivalent apparatus, which will effect the recording of the letters or signs, as indicated by the keys, independently of the type-carrying apparatus, substantially as set forth.

20th. The mechanism for transmitting the indications from the register, consisting of the detaining levers K *o*, or equivalents, in combination with the setting indicators and with the register, as descrbed.

21st. So combining the register and the setting indicators *f*° with the type-carrier, that the latter shall effect the movements of the register to set the indicators in time to act upon the setting conveyors, and immediately thereafter effect the retreat of the said indicators previous to the passage of a distributing conveyor, as described.

No. 17,218.—Andrew Hett, of Augusta, Ga.—*Violin Attachment.*—Patent dated May 5, 1857.—The nature of this invention consists in providing an ordinary violin with four additional strings *r*, which pass through the bridge *a*, under the fingerboard *o*, and under the ordinary strings *c* to the attachment A, the strings *r* being so tuned as to vibrate all the sharp and flat tones.

Claim.—The application of the vibrating strings to violins, violoncellos, and other similar instruments, in the manner described and for the purpose set forth.

No. 18,544.—Jackson Gorham, of Bairdstown, Ga.—*Violin Attachment.*—Patent dated November 3, 1857.—This invention consists in an adjustable device fitted to the violin in such a manner as to be capable of pressing the strings upon any portion of the fingerboard, to enable ordinary performers to execute music in any key, fingering only those keys in which the great mass of performers play.

Claim.—The lever B, having its fulcrum *d* in a support *c c*, which is movable on a board or piece A, attached to the head of the violin, and having a screw C, or its equivalent, applied to it, the whole operating as described.

No. 17,324.—Bradley Fitts, of Charlton, Mass.—*Improvement in Violins.*—Patent dated May 19, 1857.—The bells A which are placed within the interior of the violin will vibrate in harmony with the strings of the instrument when the latter are played upon, and thus increase the power and improve the tone of the instrument.

Claim.—The application of bells within the interior of or behind the sounding-board of a violin or other stringed musical instrument, substantially as and for the purpose set forth.

No. 17,515.—Henry A. Phillips, of Providence, R. I.—*Improvement in Constructing Watch and Locket Rims.*—Patent dated June 9, 1857.—The plate being struck up by means of suitable dies to the shape represented in fig. 1, it is placed within a wooden chuck F of a lathe. The burnisher C, of the shape represented in the engraving, is then screwed on screw shaft E, and the plate H is fitted to shaft 1. The chuck F is now rotated, and burnisher C is held stationary; and, by pressing a hand burnisher against the projecting rim of the case, it is readily turned over the edge of burnisher C, and takes the form designed by the shape in which the periphery of the burnisher is made.

The inventor says: I do not claim the striking up of the halves of a case for watches or lockets by means of a die and former.

Neither do I claim the making of locket rims out of single pieces of metal, instead of two or more.

Neither do I claim making the same out of sheet metal, instead of wire.

But I *claim* the shaping burnisher, fig. 3, or its equivalent, for the purpose of producing a continuous rim from the same metal upon the halves of watch and locket cases, constructed, applied, and operated in the manner and on the principle substantially as described.

No. 18,033.—Elihu Bliss, of Newark, N. J.—*Combination of Watch Keys with Finger Rings.*—Patent dated August 25, 1857.—The barrel A is pivoted at *a*, between the ends of the fillet of the ring B, and can be turned on said pivots. It is held respectively in a horizontal and vertical position by the spring of the ring, the fillet being formed with grooves *b* and *c* corresponding to said positions of the barrel.

Claim.—A watch key and finger ring combined, substantially as set forth.

No. 18,213.—Roswell H. St. John, of Bellefontaine, Ohio.—*Improvement in Watchmakers' Lathe.*—Patent dated September 15, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The construction of the chuck formed of the jamb disk *d d*, the tubular clutch collar or ward brush *e e*, with the centring plate *i i*, and adjustable jaws J K L, together, and combined with a keying mandrel *a* 3 *b c*, substantially as shown and described.

No. 16,811.—William Stephens, of Richmond, Ind.—*Improved Chuck for Watchmakers' Lathe.*—Patent dated March 10, 1857.—The wheel, being such as is used in watch movements, cannot be readily detached from and replaced true on its shaft. By properly placing the shaft between the two jaws D D, so as to place it more or less out of line, the pivots may be turned on the ends of the shaft *e* eccentrically with the shaft, so that the pivots will be in line with the centre of the wheel *f*. The dotted lines in fig. 3 represent the original pivots, and the full lines represent the pivots as afterwards turned on. The rod C slides in cylinder A so as to adjust the back centre to fit shafts of varying lengths.

Claim.—I am aware that a chuck has been invented to be used in connexion with cement for holding the shaft and wheel; but these will only allow concentric pivots to be turned. I would remark that by my improvement the ends of shafts may be drilled either concentrically or eccentrically, to allow pivots to be fitted in the ends of the shaft in case the former pivots of a shaft are broken off. This cannot be done in the usual lathe, nor by any tool used by watchmakers.

I do not claim separately the sliding or adjustable jaws D D, for they have been previously used in chucks; but I *claim* the sliding or adjustable jaws D D in combination with the sliding or adjustable back centre rod C, arranged substantially as described for the purpose set forth.

XIX.—FIRE-ARMS.

No. 17,339.—Albert Potts, of Philadelphia, Pa.—*Centrifugal Battery.*—Patent dated May 19, 1857.—Rotary motion being imparted to the wheels A B C by a belt and pulley K, the balls are inserted into the hollow axle at D, and are thrown by the centrifugal force of the wheel out of the barrel.

The discharge of the ball at the proper time can be regulated by eccentrics E F acting on levers N O, which operates pawls Q and ratchet wheels H; the axles of the ratchet wheels pass through the barrels and are formed with notches, and the balls are discharged whenever, by turning wheels H, a notch on said axle comes in line with the barrel of the revolving disk.

Claim.—The combination substantially as described and for the purpose specified.

No. 18,876.—James N. Ward, of New York, N. Y.—*Improvement in Bayonet Fastening.*—Patent dated December 15, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I do not claim simply the method of securing the bayonet by putting a catch below the stud, as a similar device has been long used in the ring fastening.

But I *claim* the method of securing the bayonet by means of the spring A, constructed essentially as described, hinging or turning about some point on the bayonet or gun, for the purpose specified.

And I claim the right to attach the spring in such manner to the barrel or bayonet as shall prevent its turning further than necessary, and to use any mechanical contrivance, such as studs, &c., to effect the same object.

No. 16,819.—Nathan Scholfield and William W. Wright, assignors to Nathan Scholfield, of Norwich, Conn.—*Improved Bomb for Killing Whales.*—Patent dated March 10, 1857.—The inventors say: We are aware that the fuse has been applied to bombs by being inserted in a pipe, and molten metal afterwards poured in the end of the pipe around the fuse to encompass and hold it tightly, and other modes of fastening the fuse have been adopted; but we do not claim the mode here referred to, or any heretofore used, nor do we claim the application of metallic wings or feathers to govern the direction of a projectile.

We *claim*, first. Inserting the end of the fuse through a short holding pipe or collar G, and securing it firmly therein by compressing the same; and the drawing or forcing this within the end of the fuse pipe, having a conical enlargement at its rear end.

Second. Enlarging the end of the fuse cord, by winding it with twine, or its equivalent, so that it cannot be drawn through the pipe, and inserting it in the fuse pipe, either with or without the fastening pipe *e*, and putting gypsum, brimstone, or wax around it within the nut A, to hold it securely.

Third. We claim the application of the sliding collar *h* on a projectile carrying a cylindric metallic plate covering the projectile, and either slit to form wings *k*, or unslit as a cylindric case, and so constructed that the said collar, with the case or wings, shall slide to the rear after being discharged from the gun, either by the action of a spring *s* or the resistance of the air to guide its direction.

Fourth. We claim so constructing and applying these wings *k* that they may coincide with the cylindric surface of the projectile while in the gun, and that their rear ends may be thrown up therefrom by their elasticity after being discharged, so as to stand in positions diverging from that surface, in the rear, substantially as described.

No. 17,370.—Julius Grudchos and Selmar Eggers, of New Bedford, Mass.—*Improved Bomb Lance.*—Patent dated May 26, 1857.—The chamber D being filled with powder, the piece K, together with spring L, is pressed down on the breech, when the lance can be slid down the barrel of the rifle. When the rifle is discharged, the spring L throws the trigger back to the position represented in the engraving; and on the lance entering the whale, said trigger is pressed still further backward, thus lifting the rear spring H and disengaging hammer F, which now will be forced against the nipple by the action of the spring I, thus causing the lance to explode.

Claim.—The arranging the tube o, for the purpose described.

Also, the arranging the trigger K, the trigger spring L, the sear spring H, the main spring I, the hammer F, the tube E, in the manner and for the purpose described.

Also, applying the grooved ball M, for the purpose of giving the lance a rotary motion to prevent it striking sidewise.

No. 18,324.—Nathan Scholfield, of Norwich, Conn.—*Cushion for Wings of Bomb Lance.*—Patent dated December 8, 1857.—The claim and engraving explain the nature of this invention.

The inventor says: I do not claim the act of connecting guiding wings or other apparatus to a projectile in its discharge.

But I *claim* the application of one or more springs, S or *i*, as a medium for modifying the effects of percussion of a projectile when entering a case of guiding wings placed at the muzzle of a gun, to prevent the violent dynamical effect of a rigid and instantaneous concussion thereon by the projectile in its discharge.

No. 17,173.—Rufus Sibley, of Greenville, Conn.—*Improvement in Bomb Lances.*—Patent dated April 28, 1857.—This invention consists in causing a lance or projectile B to take from the muzzle of the gun A the wings D, that are to rotate and guide it through the air and water, by inserting the hub C, to which the wings D are attached, into the muzzle of the gun A, when, on the discharge of the lance B, the projections C will pass into the grooves *e*, and thus secure the wings D to the lance.

Claim.—Causing a bomb lance or projectile to take the wings that are to guide it through the air or water from the muzzle of the gun from which it is discharged, substantially in the manner set forth.

Also, sloping the muzzle of the gun so that the wings may come back and close down to the barrel, substantially as set forth.

No. 18,424.—Samuel Driver, of Philadelphia, Pa., assignor to Himself, Isaac V. Culeir and Joel B. Sutherland, of the same place.—*Improved Bomb Shell.*—Patent dated October 13, 1857.—The nature of this invention consists in making a bomb with a series of smaller bombs within it, so that on its explosion the fusee of each of the enclosed bombs shall thereby be ignited and subsequently explode. In the drawings, A is the outer shell; B, the opening left for the introduction of smaller bombs; C C C, the small bombs; W is the powder; D is the stopper for closing the opening; and E the screw bolt which holds the stopper.

The inventor says: I *claim* a bomb consisting of an outer shell adapted for admitting and containing within it, beside the explosive and destructive materials, a series of smaller distinct bombs, each charged with explosive and destructive materials, and fitted with a fusee, so that on the explosion of the outer or containing bomb, the fusee of the inner bombs shall be ignited thereby, and the bombs consequently exploded in consequence wherever they may chance to be thrown by the explosion of the larger or containing one, the said bomb being constructed substantially as set forth and described.

No. 18,616.—William H. Ward, of Auburn, New York.—*Improved Bullet Machine.*—Patent dated November 10, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I *claim*, 1st. Arranging the feeding clamp, and mechanism for operating it, in such a manner that the limit of the backward motion remains unchanged, while the forward motion is regulated by the amount of wire required to form the blank, as set forth.

2d. The combination of the adjustable stop *k*, the wire, and the mechanism for carrying the wire forward, for the purpose of regulating the length of the feed, without changing the limit of the backward motion of the feeding mechanism.

3d. The method of regulating the size and density of each blank before it is severed from the wire, by means of a pair of compressing forceps, or their equivalent.

4th. The employment of two pairs of cutting and grasping forceps, or their equivalent, for dividing the wire, so arranged and operated as to grasp the wire, as described, and sever it between their adjacent faces.

5th. The combination of the oil box, arranged as described, with the cutting forceps, for the purpose set forth.

6th. The combination of the discharging collar with the punch, and the mechanism for opening the dies, for the purpose of releasing the bullet from the dies, and discharging it from the machine.

7th. Arranging the joint between the two pairs of forceps, so as not to be in the same plane, for the purpose set forth.

8th. Arranging the groove around the cavity in the die, as described, so as to allow the air to escape from the die and prevent the passage of the lead into the groove.

9th. Making the opening in the die of less diameter than the base of the bullet, and of the exact size of the blank, for the purpose set forth.

10th. The method of gauging the blank and forming the base of the bullet by means of an annular projection in the base of the die.

11th. The method of forming bullets of variable weight and of the same external form with the same set of dies and punches, by constructing the die with a projecting annular base, so that the punch can be entered into the blank a greater or less distance, and thus expand the recess in the base of the blank, so that it will accurately fill the die, and thus form a perfect bullet.

No. 16,910.—Henry L. De Zeng, of Geneva, N. Y.—*Improved Bullet Mould.*—Patent dated March 31, 1857.—In forcing the handles of this bullet mould apart, the cutting-bar C, turning on the rivet *b*, which connects it to the cam-jaw B, until the end of the slot *d* strikes the pin *e*, will cause the point of cam B to be forced downwards, and the jaw B to press against the jaw A. In this position the mould is to be filled, when, by drawing the handles towards each other, the blade of the cutting-bar C will strike against the surplus lead on the surface of the mould; this will cause a strain upon the rivet *b*, which will prevent the jaw B from opening until the blade has passed over the opening in the mould, and removed the lead. The end of the slot *d* will then strike the pin *e*, forcing up the end of cam B until the jaw B is separated from A, so that the bullet can be made to drop out.

Claim.—The movable cam-jaw B, in combination with the cutting-bar C, constructed and operating substantially as specified; whereby the movable jaw is held to the stationary jaw while the bullet is being cast by forcing the handles apart, and on pressing the handles together, the projection from the bullet is first cut off, and then the movable jaw is thrown back to discharge the bullet, substantially as specified.

No. 16,327.—Tristram Campbell and Henry B Poorman, of St. Louis, Mo.—*Improvement in Bullet Moulds.*—Patent dated January 6, 1857.—The lead is poured into the trough J, and passes thence into the moulds of the mould-bars E, which are then right under trough J, the apparatus being in the position represented in figure 2. When the moulds are filled, the lever N of fulcrum O is thrown into the position of figure 1, the edges of the trough J cutting off the necks of the bullets. By then releasing the lever D, the action of spring C separates the mould-bars E from each other, which allows the bullets to drop out.

Claim.—We make no claim to the series of parallel mould-bars, as such is not new.

Neither do we claim the separation of the waste lead by the movement of the plate through which the molten lead is poured.

But we *claim* the mechanical arrangement of the trough-knife J with the lever D, draw-bar G, and springs C and I, operating as set forth.

No. 16,629.—Frederick D. Newbury, assignor to Richard Varick De Witt, Jr., of Albany, N. Y.—*Improved Mode of Patching Bullets.*—Patent dated February 10, 1857.—Figure 2 represents the bullet with the patch, and the ledge pressed over it.

Claim.—The method of securing a patch upon conoidal or similar bullets by compressing the upper portion of the patch under a thin ledge *a* of the metal of the bullet, substantially as described.

No. 17,920.—Josiah Dodge, of Dummerston, Vt.—*Improved Mode of Discharging Cannon.*—Patent dated August 4, 1857.—When the breech-wheel C is in the position represented in figure 1, the hammer *h* rests against the inclined surface *c*, as shown in figure 2; and when the breech-piece B joins the barrel D, the hammer slips from the inclined surface *c*, and, by force of spring *x y*, strikes the cap on the nipple and discharges the piece.

Claim.—The double spring hammer *s h*, as described, in combination with the inclined surfaces *a b c*, arranged and operating substantially as and for the purposes set forth.

No. 18,117.—George W. Baker, of Burlington, Vt., assignor to Himself and Abijah French.—*Improvement in Percusion Cap Primers.*—Patent dated September 1, 1857.—The caps *m* are continuously forced towards the mouth *z* of the primer by means of arm *d*, which is acted upon by spiral spring *h*, the caps being prevented from escaping by the elastic portion *i* of the case, which acts like a spring, and by lifting said spring a cap will be forced through the mouth *z*.

Claim.—As a new article of manufacture, the described percussion cap primer, whose improvement consists in the peculiar construction which enables one side of the case of said primer to serve as an elastic cap retainer at the side of the outlet of said case, substantially as set forth.

No. 16,587.—Charles Hicks, of Haverstraw, N. Y.—*Improved Machine for Ramming Percussion Caps.*—Patent dated February 10, 1857.—The stationary plate W is provided with holes which allow the pistons just to pass through them, and serve to pull from the pistons as they rise any caps that may adhere to them after the ramming operation, and cause the said caps to drop into their proper holes in the carrying plate F.

Claim.—First. The pistons E E, arranged in a row, and receiving reciprocating rectilinear and circular movements, simultaneously operating in combination with the travelling carrying plate F, or other equivalent devices for carrying the caps, substantially as described.

Second. Producing the circular movement of the pistons by means of pinions *c c* on the said pistons gearing with a toothed rack G, that receives a sliding movement laterally to the frame which carries the pistons, and imparts to them the rectilinear movement from a lever

K, operated by a cam J, on the crank shaft, by which the rectilinear movement of the pistons is produced, substantially as described.

Third. The employment of the stationary plate W, in combination with the reciprocating pistons and the travelling carrying plate F, substantially as and for the purpose set forth.

No. 16,646.—Charles Hicks.—*Improved Machine for Varnishing Percussion Caps.*—Patent dated February 17, 1857.—Before the plate A containing the caps has been slid into the machine, the frame $c\ c^1\ c$, with the rods *b b*, is depressed by means of lever D, so that the ends of the rods enter into and become charged with the varnish in the trough F. The frame and rods are then elevated, the plate A with the caps slid into the machine through the guide-groove G, and then the frame and rods are again depressed until the ends of the rods enter into and touch the bottom of the caps, thus charging them with the varnish necessary for the following operation of filling them.

Claim.—First. The combination of a vertically moving frame $c\ c^1\ c$, carrying a number of wires or rods *b b*, or their equivalents, to take up the varnish; a trough F to contain the varnish; and suitable guides above the said trough to receive a plate which carries the caps; the whole being constructed and operating together substantially as herein described.

Second. The plate H, containing holes corresponding in number and arrangement with the wires or rods *b b*, or their equivalents, arranged relatively to the trough F, the vertically moving frame $c\ c^1\ c$, and the guides G, substantially as herein described for the purpose set forth.

No. 17,792.—William B. Johns, of the United States Army.—*Improved Shot Cartridge.*—Patent dated July 14, 1857.—The flange *a* of the base B expands at the moment of discharge, and tightens the cartridge in the bore of the piece. The copper disk D is designed to give stiffness to the seat of the shot, and the disk of felt F secures the mouth of the cartridge.

Claim.—The combination of the counter-sunk base piece B, copper disk D, case C, and felt disk F, as set forth.

No. 17,287.—Edward Lindner, of New York, N. Y.—*Improved Cartridges.*—Patent dated May 12, 1857.—The paper cylinder of this cartridge is secured to the ball by casting the ball in the mould, when the paper *a* with its bent border is previously placed in the form; *r* represents a leather ring, which is equally cast in with the ball, and which serves the purpose of a barrel-cleaner when the ball is fired. The fulminating stuff of this cartridge is placed in the cup *b*, which is secured to the ball *d* by wire *m*, which is cast in said ball.

The inventor says: I do not claim joining two metals together while one of them is in a melted state; neither do I claim a cylindrical flange of malleable material cast as above, and described by J. B. Read in his patent of October 28, 1856.

But I *claim* a cartridge, in which an annular wad, and the casing to contain the powder, are formed of the materials above described, and secured thereto by the act of casting the ball in the manner specified.

No. 17,702.—Gilbert Smith, of Buttermilk Falls, N. Y.—*Improvement in Cartridges.*—Patent dated June 30, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim generally the packing of the joint between the barrel and the breech by the expansion of a cartridge case of soft metal, nor the construction of a cartridge case so as to be retained in the chamber after the discharge.

But I *claim* making the cartridge case, or at least the cylindrical portion thereof, of India rubber cloth or vulcanized India rubber, so that though entering loosely into the chamber by confining it within the chamber, it may be expanded laterally by the force of the explosion of the charge against a joint between the barrel and breech made near the middle of the chamber to close the same hermetically, and (unlike metal) may, after the explosion, contract itself by its own elasticity, so as to admit of its being easily withdrawn from the chamber by the fingers of the operator, substantially as described.

No. 18,217.—Lemuel Wells, of Astoria, N. Y.—*Improvement in Ball Cartridges.*—Patent dated September 15, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The attachment of a hard metal shell *a* of a ball cartridge to the bullet, substantially as described, by making it smaller than the bullet, and driving it into a cavity in the rear of the bullet.

No. 18,143.—J. Durell Greene, of Cambridge, Mass.—*Improvement in Cartridges for Breech-Loading Fire-Arms.*—Patent dated September 8, 1857.—This cartridge may be employed in many of the breech-loading guns now in use, by inserting the nipple into the barrel at a point slightly in advance of the ball; the force of the explosion drives the ball *a* against the wad *c*, which is thus pressed against the joint of the breech, and all escape of gas at this point is avoided, while the elasticity of the wad tends to diminish the recoil of the piece, and effectually prevents the upsetting of the ball. The ball and wad are now forced forward sufficiently far to allow another cartridge to be introduced behind them; and upon the explosion of this cartridge, the first ball is discharged; the one belonging to the cartridge remaining behind, as before, to pack the joint.

Claim.—The described cartridge, having the ball behind the powder, and a wad behind the ball, operating in the manner as set forth.

No. 16,367.—Ethan Allen, of Worcester, Mass.—*Improved Fire-Arm.*—Patent dated January 13, 1857.—The force of the explosion of the cap on the nipple forces the conical valve H towards the aperture *a* leading to the chambers L, and thus the fire passes out of the base of the nipple G, and round the valve H, to ignite the charge in the chamber, which, when exploding, forces back the valve against the nipple, thus closing the vent, and preventing any escape of gas. The ramrod I can be operated by means of guard N, which turns on pivot O, and the cogs on segment M, which mesh into cogs of ram I, and thus force it into the chamber.

Claim.—Placing the valve H in the chamber at the base of the nipple, when constructed and operated substantially as described.

Second. I claim supporting and retaining the chamber A by the parts B D and C, when constructed and operating substantially as set forth.

Third. I claim operating the rammer by means of the lever N, said lever forming a guard for the trigger, as described.

No. 17,644.—Gilbert Smith, of Buttermilk Falls, N. Y.—*Improved Breech-Loading Fire-Arm.*—Patent dated June 23, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim generally the packing of the joint between the barrel and the breech-loading fire-arms, by the expansion or other action of a portion of a cartridge consequent upon the explosion of the charge; as I am aware that the butt or rear portion of the cartridge has been used to pack the joint in that way, when the said joint has been made at the extreme rear of the chamber, and close to the face of the breech.

Neither do I claim generally the retention of the cartridge case in the chamber until after the discharge.

But I *claim* making the chamber D to receive the charge in the form of a cartridge, partly in the barrel C, and partly in the breech A, and so much larger than the general bore of the barrel as to have a shoulder *f* in front to retain the cartridge case thereon till after the discharge; whereby the joint S, between the breech and the barrel, is brought near the middle of the chamber, and not in a corner at the extreme rear, or in front thereof, and is caused to be packed by the lateral expansion of an elastic cartridge case. And though I do not claim the clamping lever F represented, for securing the barrel to the breech, I claim furnishing the said clamping lever with a projection I so arranged as to be acted upon by the hammer H, in the act of cocking the latter, for the purpose of insuring locking the breech and barrel together before the discharge, and effecting the operation of cocking the hammer and locking the breech and barrel by one movement.

I further claim the sight *m*, constructed with a round stem *n*, flattened on one side, and having a spring *p* applied to it, substantially as described, for the purpose of enabling it to be adjusted and secured at various elevations, as set forth.

No. 17,642.—John P. Shenkl, of Boston, Mass.—*Improved Breech-Loading Fire-Arm.*—Patent dated June 23, 1857.—By turning lever I, pin *m* on disk *k* forces back bar K, the bent portion *g* of which presses back the tumbler E, turning it on its centre pin *d*, and thus cocking the gun. As the movement of lever I is continued, the cam *l* strikes against the corner of notch *t*, and forces the barrel A forward, off from thimble C; and as the forward weight of the muzzle overbalances that of the breech, the barrel is thrown into the position represented in dotted lines, ready for loading. By reversing the motion of lever I, the end r of bar k raises the barrel A to a horizontal position, and brings it up close against the breech thimble C. By pulling trigger H, the needle c is thrown forward and the piece is fired. When the hammer D is thrown down in the act of firing, the pin c^1 being in the position represented in fig. 4, enters the long groove b^1; but when the hammer is let down slowly, the restraint of the hand on the upper end of lever x, at d^1, presses the lever against the resistance of of its spring a^1, in the position shown at fig. 5, and the pin c^1 enters groove e^1 and rests against the lower end of it, holding the lock securely in half-cock position.

Claim.—First. The method described of stopping the hammer at half-cock by the pressure of the thumb, as set forth.

Second. The bar K, constructed as described, and operated by the pin n and lever I, for the purpose of cocking the gun and of returning the barrel into line with the thimble C, and locking it therewith, substantially as set forth.

No. 17,386.—William W. Marston, of New York, N. Y.—*Improved Repeating Fire-Arm.*—Patent dated May 26, 1857.—By pressing on the end 5 of the dog F, said dog becomes disengaged from the teeth of cylinder G, and the exploder h can be turned with cylinder g, so as to come below the lowest nipple 7; in this position the caps can be placed on the nipples. By cocking the piece the dog f, being pivoted to the lower part of the hammer, turns the cylinder g such a distance that, on discharging the hammer, the barrel a will be fired by exploder h striking the nipple thereof; in a similar manner the two other barrels can be fired.

Claim.—The combination of the exploder h and cylinder g, actuated by the dog f, or its equivalent, to explode successively the barrels arranged vertically over each other, substantially as specified.

No. 18,836.—Ethan Allen, of Worcester, Mass.—*Improvement in Revolving Fire-Arms.*—Patent dated December 15, 1857.—The inventor, in describing his improvement, says: To construct my improvement, make a plate A at the rear end of the cylinder B, between it and the breech plate N, and on the front side of the plate A form a projection G, which shall fit into a radial slot in the rear end of the cylinder; this plate A may be held in its place by a hollow screw, as in this case, or otherwise, as may be deemed best. On the back of this plate A make a ratchet with radial teeth F for the catch E, to work in to move the plate around its centre; also, between the ratchet and the periphery of the plate, make a row of holes v v v or recesses to receive the end of the lock pin D, which holds the plate and cylinder in proper position with regard to the barrel in front, while the pistol is being discharged. One object of this plate is to keep the moving and locking apparatus in a manner free from the cylinder, so that it may be more easily removed.

Claim.—The plate A made and operating as described.

No. 16,575.—Francis S. Brettell and Joseph B. Frisbie, of Alleghany city, Pa.—*Improvement in Fire-Arms.*—Patent dated February 10, 1857.—The inventors say: We do not confine our improvement to be used in revolving fire-arms only, but the same may be used in any other class of fire-arms.

We *claim* the arrangement of the pawl or catch k, notch l, and claw m on the hammer, and the cam g on the trigger, or any other arrangement substantially the same, for the purpose of keeping the hammer and the trigger in their respective positions when at full cock, as set forth.

No. 16,846.—Samuel K. Lovewell, of Gardner, Mass.—*Improvement in Fire-Arms.*—Patent dated March 17, 1857.—The inventor says: In constructing my improved fire-arm, I insert a spindle of about two-fifths the diameter of the bore of the gun within the barrel, and attach the same firmly by screw or welding, or other process, to the breech-pin or breech, so that said spindle shall occupy the centre of the bore, as shown in the engraving at A A^1; a hollow cylindrical cartridge is used, as represented at b b, in loading, and a ramrod hollow in part, as seen at c c. The slug or ball d d is a hollow cylinder conical at one end. The diameter of the hollow of the cartridge ramrod and slug or ball to correspond with the diameter of the spindle, so that the spindle when the gun is loaded will be in, and fill the hollow of the cartridge and slug, and the piece may then be discharged by any of the ordinary processes.

Claim.—The use of the spindle as above described, and in the manner above described, applied to guns of any size and calibre.

No. 17,136.—Gustav Adolph Blittkowski, of New York, N. Y.—*Improvement in Fire-Arms.*—Patent dated April 28, 1857.—To detach the breech piece, plug a is first revolved by turning handle X from the horizontal to the vertical position, represented in fig. 2. The pins i and i^1 are now clear of their fastenings, and the plug is turned backward. By turning the plug, the guard pin c strikes the front edge of the hammer o, pushing it back to half cock, and the drawing of the plug out of the barrel carries it to full cock. The plug may now have its open end canted upward, turning upon its trunnion pins e^1, and the cartridge may be inserted, when the breech nut is turned back again into its first position, and the piece is ready to be fired.

Claim.—1st. The rotating and oscillating breech piece for receiving the charges, so attached to the stock as to be capable of being withdrawn from the end of the barrel, and elevated to receive the charge, and to be returned thereto with a grinding and wedging action, whereby a secure and tight joint is effected, substantially as described.

2d. The safety guard c upon the end of the breech piece, so placed as to prevent the cock from striking the nipple until the said breech piece is secured in the barrel, as described.

No. 17,143.—Josiah Ells, of Pittsburg, Pa.—*Improvement in Fire-Arms.*—Patent dated April 28, 1857.—As the trigger g is drawn back, the traverse lever m is raised above the cam n in the recess of the lock plate, figure 4; the spring t presses forward the point of lever m, until it enters one of the radial grooves a in the revolving breech. By drawing back the trigger g, the point of the lever m presses against the straight edge of groove a, and causes breech d to rotate on its arbor until the point of the lever m reaches the lap of the groove, which is so situated in relation to the chambers of the breech as to bring one of them in exact range with the barrel of the pistol immediately before the fall of the hammer; and as the groove is close at the circumference of the breech, the point of lever m holds breech d firmly in place and prevents its rotation so long as the trigger is held back. When the trigger is released, the point of lever m falls, not, however, in the path of groove a^1, but, being drawn back, it passes over the chamfered edge of groove a^1, as represented in dotted lines in figure 3, and, leaving it, recedes in the recoil shield. When next the trigger is drawn back, the point of lever m enters groove a^2 of breech d.

The inventor says: I *claim* the arrangement of the traverse lever, to permit of its playing on the same centre as the hammer without danger of lateral derangement.

2d. The use of the cam in the lock plate, in combination with the shoulder on the traverse lever, for the purpose of withdrawing the point of the traverse lever from the radial grooves in the rotating breech in the reaction of the trigger, for the purposes before set forth.

3d. I do not claim the radial grooves in the end of the rotating breech as new in themselves; but I do claim the combination of radial bevelled grooves in the rear end of the rotating breech with the traverse lever, as applied to trigger-cocking fire-arms, for the purpose of rotating and locking the breech preparatory to firing, substantially as described.

No. 17,233.—John B. Read, of Tuscaloosa, Alabama.—*Improvement in Fire-Arms.*—Patent dated May 5, 1857.—The conical-shaped extremity of the ball C, fitting into the trumpet-shaped portion of the chamber D, secures it in the axis of the piece, and the ball once on its seat, a few blows of the ramrod force the projections of the ball into the rear of the projectile, and so expand it as to fill the bore tightly.

Claim.—The providing the upper part of the powder space or chamber of fire-arms with angular or wedge-shaped projections, to be forced into the rear of the projectile in the act of loading, as described. Also, the form of ball represented in my drawings, cylindrical at or near its middle portion, with a slight excavation or recess on the inner and under side of the cylindrical part, both ends of the ball to be conoidal or conical.

No. 17,382.—Edward Lindner, of New York, N. Y.—*Fire-Arm.*—Patent dated May 26, 1857.—Between the gun barrel A and the charge barrel B is a rack E, in connexion with a piston or slide W, which acts upon the cartridge in the charge barrel B, and which rack is again in connexion with the gun lock in such a manner that each time the gun is fired off, one of the cartridges is forced into the revolving breech piece D, by which means the whole amount of cartridges contained in the charge barrel can be fired off in the shortest possible time. The revolving breech piece D is each time when the gun is cocked turned round one-sixth part of a revolution by the mechanism composed of rod o, bell crank c^1, slide g^1, bevel rod G, operated by rack h^1 and toothed sector K. The percussion caps are, by an arrangement of springs x x^1 and x^{11}, figure 4, brought exactly opposite the nipple, and are put on the same by the hammer itself at the moment the gun is fired, while the exploded cap is thrown off the nipple when the gun is cocked.

Claim.—The construction, arrangement, and operation of the rack specified—*i. e.*, the rack, when composed of a series of cones superposed to each other, the bases of said cones bearing upon studs 2, that propel the cartridges in one or more charge-barrels ranged around said rack, in the manner and for the purpose specified. Also, revolving the breech piece D by the mechanism specified, when arranged to act upon the interior surface thereof. Also, the plate 3 described, placed in front of the breech chamber, for the purpose of retaining the cartridges in said chambers, which do not face the barrel. Also, the knee piece H, in combination with the hammer L and stop bolt O; the said parts being so arranged in relation to each other that by the act of cocking the gun the stop bolt shall be withdrawn from the recesses of the breech, thus leaving it free to revolve, substantially as set forth.

No. 17,698.—Jacob Shaw, Jr., of Hinckley township, Ohio.—*Improvement in Fire-Arms.*—Patent dated June 30, 1857.—In forcing trigger C to the rear, the cocking ratch H will impel the hammer Z towards the cock point, the force of the mainspring J retaining it in contact with the tooth I of the hair trigger M. The tooth of the rotator ratch h now enters the mouth of one of the chambers of the cylinder B, causing it to turn on its tubular shaft G; and when the hammer is nearly brought to the cock point, a part of the trigger which projects laterally beyond the side of arm c^1 comes in contact with arm T^1 of the locking lever, and by its motion drives the bolt on the other arm of the locking lever into the mouth of one of the locking holes V. By now pressing down the hair trigger M into the recess formed in the rear part of the guard, the hammer will be released and explode the cap on the nipple o. By releasing the trigger, the spring L will force upward said trigger, and the rotator arm S will come in contact with the upper side of the end of arm T^1, and withdraw the bolt from the hole V, when the operation may be repeated.

Claim—1st. The combination and arrangement of the trigger with the cocking ratch and hammer, whereby the force of the mainspring will cause the trigger to continue its motion in a backward direction after it has been forced back to a certain point and the introduction of the hair trigger, as described, whereby the trigger may be arrested when it has reached that point, and the hammer by this means be held at the cock point, or by a simultaneous action of a force on the hair trigger in a backward direction, the backward motion of the trigger may be allowed, and a consequent disengagement of the hammer be produced to effect a discharge.

2d. The combination and arrangement of the trigger with the rotator ratch and locking lever, and the revolving chambered cylinder or block, whereby this block is revolved and locked from the front, substantially as set forth and described, instead of the usual mode of the ratchet wheel and pawl in the rear; intending and designing hereby to claim each part and all the parts named in the above claims in connexion with each other, without intending to limit myself to construct them in the precise form set forth and described in the specification or of any particular dimensions, but intending to reserve the right to vary them as I may deem expedient, while I attain the same ends by means substantially the same.

No. 17,904.—James Warner, of Springfield, Mass.—*Improvement in Revolving Fire-Arms.*—Patent dated July 28, 1857.—As the piece is being fired, the pin *i* of the hammer carries that point of the lever *b* downward which is in contact with the cylinder A, and in so doing will also have a tendency to depress the reverse end; and therefore the pin *i* will then have a bearing against the upper side of the curved slot *a*, and the lever *b* can readily take the backward movement necessary to allow it to pass into the next catch in the cylinder A. On cocking again, the pin *i* acts to lift both ends of the lever *b*; and the coiled spring *h* having again drawn the lever forward, the pin *c* will now rest in the depression.

Claim.—The specific device in the end of the slot for preventing the retreat of the lever *b* in the act of cocking, substantially as set forth.

No. 16,568.—Azel S. Lyman, assignor to the "Accelerating Fire Arms Company," of New York, N. Y.—*Improvement in Accelerating Fire-Arms.*—Patent dated February 3, 1857.—As soon as the gun has been fired and the ball has passed the chambers *d*, the fire in the bore *b* ignites the charges in the chambers *d*, thereby giving the ball additional force.

Before the gun is to be fired, the muzzle is to be covered with some elastic material *i*, and the air to be exhausted by applying an air pump to the opening *e*.

Claim.—The employment of the accelerators or additional charge chambers in the manner and for the purpose substantially as described.

I also claim covering the muzzle and exhausting the air through an appropriate aperture, whereby the atmospheric resistance is removed from the front of the projectile while passing along the bore, as set forth.

No. 18,472.—Chauncey D. Skinner, of Haddam, and Dennis Tryon, of Middletown, Conn.—*Improvement in Breech-Loading Fire-Arms.*—Patent dated October 20, 1857.—This invention relates to that description of breech-loading fire-arms in which the whole chamber is made movable, both in a direction parallel with the bore of the barrel, and also upwardly on an axis arranged transversely to the bore, for the purpose of disconnecting it from the barrel, and of bringing its mouth to a convenient position to receive the charge. This invention consists in a novel combination of means for bringing up and securing the chamber in close connexion with and liberating it from the barrel, and guiding the same. It also consists in certain means of preventing a possibility of the fall of the hammer and consequent discharge of the weapon while the chamber is raised up and out of the line of the barrel.

The inventors say: We do not claim the use of a chambered breech piece, fitted with a slot to slide and swing upon a stationary pin, nor the employment of springs *b* and I to pull back and raise up such breech piece.

But we *claim*, first, the employment, in combination with the chambered breech piece operating and controlled by springs and by a screw, as described, of the lipped projections *f* and *g*, formed, applied, and operating substantially as set forth, to prevent abrasion of the joint between the barrel and chamber by the act of opening and closing the chamber.

Second. Constructing and applying the hammer and sere in the manner described, whereby, when the chambered breech piece is in connexion with the barrel, the tooth or acting point *p*, of the trigger is brought under the heel of the sere; but when the chambered breech piece is raised, the said tooth or point *b* is brought behind the said heel, so that in the former case the trigger is operative, and in the latter can have no other effect than to lock the sere, as set forth.

No. 18,634.—J. Durell Greene, of Cambridge, Mass.—*Improvement in Breech-Loading Fire-Arms.*—Patent dated November 17, 1857.—In this improvement, the barrel A is extended back to form a loading chamber T, into which there is an opening G for the insertion of the cartridge. Through the rear of the chamber passes a revolving sliding plunger C, and through the centre of this plunger a rod D, which carries at its forward end a breech plug E, and at its rear end a button F. The plunger is also furnished with a ball or button I by which it is manipulated, and carries two projecting ears *d*, which, when the plunger is in the position seen in the engravings, enter recesses *e* in the walls of the chamber and rest against the shoulders *r*, by which the plunger and parts connected therewith are held immovable. When the plunger is revolved 90°, the ears *d* clear the shoulders *r*, and the plunger may be drawn back.

The inventor says: I *claim* the groove *i*, or its equivalent, operating in connexion with the wad at the rear of the cartridge, in the manner substantially as set forth.

I do not claim a sliding breech plug, secured to the barrel by ears and shoulders, as such device does not constitute my present invention.

But I claim, second, the sliding breech plug E, in combination with the revolving plunger *i*, operating in the manner set forth.

Third. I claim the bolt C and stop *y*, operating in the manner set forth, to interrupt the movement of the trigger, as described.

No. 16,797.—William Cleveland Hicks, of New Haven, Conn.—*Improved Nipples for Discharging or Withdrawing Cartridges from Breech-Loading Fire-Arms.*—Patent dated March 10, 1857.—K is the breech-pin to which the nipples are attached by driving the rod *v* into the end of the breech-pin. The nipples are represented as having been driven in sufficiently to break through the rim of brass *t*. The cartridge or ball can be withdrawn as the nipple-hooks have taken hold at the inside of the brass ring *t*. Or, if desired, the charge can be exploded by driving the breech-pin further in, so as to explode the cake of percussion powder *m*.

Claim.—The improved nipples (two or more prongs, with or without hooks *a a*, for withdrawing loaded balls or cartridges from breech-loading fire-arms, as described) for the purpose of igniting percussion and discharging loaded balls or cartridges.

And, secondly, the method of using one, two, or more nipples, or prongs with hooks, as described, to withdraw cartridges or loaded balls from breech-loading fire-arms, by causing said hooks to indent or spring the rim of a cap or primer, as described, and by catching hold of said rim to withdraw the loaded ball or cartridge by the act of drawing back the nipples, all substantially as described and specified.

No. 16,503.—JAMES NOBLE WARD, of the United States army.—*Improved Mode of Altering Flint-Lock Fire-Arms to Percussion.*—Patent dated January 27, 1857.—In converting the fire-arm from a flint lock to a percussion, the cone seat S is secured upon the curved bottom *a* of the notch cut in the lock plate P. The notch in the cone seat, made up of the two surfaces whose edges are shown by lines *m* and *n*, is made to fit under the inclined projection *f* of the lock. Around the vent passage *i*, in the side of the barrel B, is formed a recess *r*, whose bottom is elevated towards the centre, so as to give it the appearance of a spherical surface. When the lock plate is in position, the recess receives a projection *l* on the flange *d* of the cone seat, whose face fits the ball bottom of the recess *n*, as shown in fig. 3.

Claim.—Securing the cone seat upon the lock plate, and making the contact of said seat and the barrel, substantially as set forth.

No. 18,387.—P. F. CHARPIE, of Mt. Vernon, Ohio.—*Improvement in Hair Triggers for Fire-Arms.*—Patent dated October 13, 1857.—This invention consists in a certain mode of applying a spring to a single trigger, whereby it is enabled to act as a hair trigger without the employment of so many parts as are in the ordinary trigger, or French set. The claim, as set forth by the inventor, fully explains this improvement.

The inventor says: I *claim* the application of the curved spring D, to work in a notch below the heel of the trigger, in such a manner that, by pushing the trigger forward to set it, the said spring will be bent so as to develop its elasticity longitudinally, or nearly so, and at the same time will be caused to exert a forward pressure on the trigger below its centre pin *a*, and thus keep it set; but that when the trigger is slightly drawn back, the spring will exert a pressure above the centre pin *a*, and thus throw up the heel suddenly, substantially as described.

No. 18,418.—MICHAEL TROMLY, of Mount Vernon, Ill.—*Improved Lock for Fire-Arms.*—Patent dated October 13, 1857.—This invention consists in a certain construction of the locks of fire-arms, which enables the same trigger to be used either as an ordinary or hair trigger, and

which affords greater security against accidental discharge in the use of the hair trigger than the hair trigger heretofore in use.

The claim and drawing will show the minutiæ of this improvement.

The inventor says: I do not claim the employment of a toggle joint connexion applied to a hair trigger.

But I *claim* the combination of the tumbler *j*, toggle *e f g*, trigger D, link *p*, lever *u*, spring *r*, screw *t*, and claw *f*, or its equivalent, whether used as a hair trigger arrangement, without the use of a notch *m* in the trigger, or with the notch *m* as an ordinary trigger, substantially as described.

No. 16,411.—ALFRED TONKS, of Boston, Mass.—*Improvement in Locks of Fire-Arms.*—Patent dated January 13, 1857.—When the trigger E is retracted, the tooth *a* will be borne against the tooth *d*, so as to crowd the tooth *c* against the shoulder F of hammer B. By continuing to retract the trigger, the hammer B will be raised off the nipple until the tooth *a* passes the tooth *d*, when the hammer will be set free, and, by mainspring F, it will be thrown smartly towards the nipple.

The inventor says: I do not claim raising the striker by a spring latch hinged to the trigger, such latch being disengaged from the striker by means of a cam on one or the other.

I *claim* the described arrangement or application of the spring rocker catch, the tooth *a* of the trigger, and the shoulder *f*, with respect to the striker, its arbor, and the trigger, and so as to enable the striker to be operated substantially as specified.

No. 16,716.—SAMUEL COLT, of Hartford, Conn.—*Improvement in the Mode of Lubricating Fire-Arms.*—Patent dated March 3, 1857.—The tube A filled with oil is attached to the under side of the barrel. The central stem *b* is held up by a spiral spring within the tube, so as to keep the opening at the lower end of the tube closed. By depressing the stem, oil will be allowed to run out and hang on the end of the stem, which is then further depressed into the one of the chambers of the breech that is in line with the tube. By lubricating the ball, its abrasion and the consequent fouling will be prevented.

Figure 2 represents a section of the tube on an enlarged scale.

Claim.—The method of applying oil or other lubricating matter to the outer surface of the ball, or, as the equivalent, to the bore in close proximity with the ball, after the ball has been inserted, by means of an instrument having a reservoir of liquid lubricating matter, in combination with a valve or other equivalent means for discharging the required quantity of lubricating matter, substantially as described and for the purpose set forth.

No. 17,044.—JAMES KERR, of London, England.—*Improved Rammer for Many-Chambered Rotating Breech Fire-Arms.*—Patent dated April 14, 1857.—Cam lever *g* passes through a mortise of the rammer *e*; by turning lever *g* on its fulcrum pin *h*, the rammer *e* can be moved up and down freely in a line with the chambers *c* of a rotating breech fire-arm.

The inventor says: I do not limit my claim of invention to the peculiar form of the cam part of the lever, nor to the manner of catching and holding it against the barrel, as these may be modified within the range of my invention.

I *claim* fitting the rammer for ramming the charges in the chambers of the rotating breech of fire-arms in a longitudinal groove in the side of the body or frame, substantially as described, in combination with the cam lever fitted to a mortise in the rammer for operating it in the manner substantially as described.

No. 16,683.—Samuel Colt, of Hartford, Conn.—*Improvement in Many-Chambered Rotating Breech Fire-Arms.*—Patent dated February 24, 1857; England, March 3, 1857.—The outer end of the curved grooves is deeper and the inner end not so deep as the radial grooves *i*. In the act of cocking, the pin *j*, running in one of the curved grooves, will turn the breech until the pin falls into the next radial groove, there stopping the rotation of the breech. In the act of discharging, the pin runs along the radial groove, retaining the breech in the same position by reason of the radial direction of the groove. The difference in the depth of the grooves, in connexion with the spring of pin *j*, will insure the running of the pin in the curved groove during the discharge. When the hammer has been brought to half cock, and the breech thereby turned about half the space between two chambers, the pin can then run in the short radial groove *k*, to permit the hammer to be let down and rest on the metal surface of the breech.

From the radial and curved grooves, short inclined planes or concentric grooves *m* are formed extending from the bottom of the main grooves to the surface of the concavity; so that when the hammer is elevated to half cock, and there held, the pin will yield to the inclined surfaces of the lateral grooves, and thus permit the breech to be brought around by hand.

The inventor says: I am aware that the many-chambered breech in repeating fire-arms has been rotated to shift the chambers, and the several chambers in succession held in line with the barrel during the discharge by means of a driving-pin, receiving motion from the cock, and working in longitudinal and diagonal grooves, made sometimes on the outer surface of the said breech, and sometimes on the inner surface of the central bore; and I am also aware that the breech has been thus operated by the driving-pin working in radial and diagonal grooves made on the rear flat face thereof; but when so made, the grooves being formed in a flat surface, and the lock, which imparts motion to the driving-pin, working on a fulcrum or central pin, it was necessary either to connect the driver with the cock by a joint pin, or to give the driver a considerable end play, to compensate for the difference between the curvilinear motion which the driver would receive from the cock, if directly attached to it, and the flat surface in which the grooves are formed. The defects I have avoided by making the radial and diagonal grooves in the rear end or face of the rotating breech, which is so concaved that the surface thereof will correspond with the curvilinear motion of the driver vibrating on the axis of the cock; I do not, therefore, wish to be understood as making claim broadly to the method of rotating the breech by a driving-pin working in grooves, but to limit my claim to the spiral improvement which I have made thereon.

I *claim* making the series of grooves to be acted upon by the driving-pin, to rotate and hold the breech in a concavity in the rear end of the rotating breech, substantially as and for the purpose specified.

No. 18,678.—Samuel Colt, of Hartford, Conn.—*Improvement in Many-Chambered Rotating Breech Fire-Arms.*—Patent dated November 24, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I am aware that in letters patent granted to Elijah Jacquith, on the 12th day of July, 1838, the many-chambered rotating breech is described and represented as turning on, and connected in place by what may be termed a central pin passing through a central bore; but in that case the parts cannot be solid, because the greater part of the rotating breech is placed above the upper surface of the barrel, and the pin can only be a segment of a hollow cylinder to admit of taking sight; and for these and other reasons such a construction is not practically useful. But I do not, however, wish to be understood as claiming broadly the connexion of a many-chambered rotating breech with the barrel and shield, by means of an axle passing through the central bore thereof, and inserted from the rear end.

I *claim* securing the many-chambered rotating breech in place by a solid pin passing through the central bore thereof, and fitted to a hole in the breech plate, behind and in a line below the bore of the barrel, so as to be inserted from the rear end and there secured, that the said breech may be properly and conveniently inserted within a cavity in the surrounding metallic frame, which connects the barrel with the shield plate, to give the required strength and support to resist the recoil, the main part of the said breech being thus placed below the barrel, by an arrangement substantially such as is described.

And I also claim the adjusting of the rotating breech to the rear end of the barrel by combining therewith, and with the central pin on which it turns, a hollow screw tapped into the shield plate, and bearing against the rear end of the rotating breech, substantially as described.

No. 16,761.—John Tilton and William Floyd, of Rockhouse, O.—*Improvement in Portable Fire-Arms.*—Patent dated March 3, 1857.—The trigger can be turned upwards (see arrow 1) and confined in a horizontal position by sliding back the catch *i* in the direction of arrow 2. When in this position, the spring catch *c* will hold the muzzle cover A, as represented in fig. 2. When sliding the catch *i* forward, the trigger will be thrown into position for use, and at the same time release spring *f* so as to act upon levers *d* and *b* to draw spring catch *c* downward and permit the muzzle cover to fall into position, fig. 1.

Claim.—The combination of the levers *b* and *d*, spring *f*, and bridle *a*, arranged and operating substantially as described, for effecting the simultaneous release of the trigger and removal of the muzzle cover.

No. 16,477.—**Heinrich Genhart**, of Liege, Belgium.—*Improvement in Repeating Fire-Arms.*—Patent dated January 27, 1857.—When the hand lever d^1 is forced down, the pins r r on the sides of the eccentric s force out the mainspring n, until the spring catch v takes and holds it; and at the same time the eccentric slides the barrel a outward to draw the rear end out of the mouth of one of the chambers i, that the rotating breech g may be turned to bring the next chamber in line; and then, by drawing up the hand lever, the eccentric is turned in the opposite direction to draw back the barrel and force its rear end into the enlarged mouth of the next chamber and against the front edge of the ball, to enclose it firmly within its chamber and hold it therein for the discharge of the load.

The inventor says: I do not wish to be understood as limiting my claim of invention to the special construction and form specified, as these may be varied within the principle of my invention.

I *claim* the combination of the rotating breech with radial chambers for containing a series of charges, substantially as described, in combination with the sliding barrel, the rear end of which is fitted to enter the forward end of each chamber when brought in line, substantially as and for the purposes specified.

No. 18,486.—**George R. Crooker**, of New York, N. Y., assignor to **George G. Martin**, of Brooklyn, N. Y.—*Improved Mode of Priming Repeating Fire-Arms.*—Patent dated October 20, 1857.—This improvement is mainly designed for "Colt's," but will also serve for any other revolving breech fire-arm.

In this invention, when the end of the piece of percussion priming is thrust into the recess, if the piece is revolved, the edges of the recess, coming in close contact with the end of the chamber, act as a shear to cut off that portion of the priming within the recess in which it is conveyed around under the hammer to be exploded in the ordinary way. As each chamber revolves around, each of the recesses, in succession, receive its charges of priming without any other mechanism.

The inventor says: I *claim* the method described of depositing the percussion priming and cutting it off in the recess in the breech, as set forth, constituting a self-priming apparatus, constructed and operating as specified.

No. 17,032.—**Josiah Ells**, of Pittsburg, Pa.—*Improvement in Revolving Fire-Arms.*—Patent dated April 14, 1857.—When the trigger o is drawn back, the shoulder n^1 of the spring u enters the groove v and the small curved recess t in the circumference of the rotating breech d, figs. 2 and 3, thus locking said breech at the moment of firing. When the hammer m is drawn back, the claw b^1, resting on the under side of cam o^1 of the trigger o immediately under the vibrating stud p, elevates cam o^1 and draws back the trigger o; while the point of pawl n slides down the face of the hammer until it reaches the notch y, into which it is pressed by its spring t^1. If the hammer m could be drawn still further back, so as to cause the vibrating stud p to pass the toe of the hammer, the pawl n would be forced out again, and the hammer m fall; but this is prevented by the claw b^1 on the hammer, which passes into the recess of the trigger formed by the projecting cam o^1, and, pressing against trigger o, secures the hammer and trigger in their position as full cocked, as shown in fig. 2; when in this position, a slight touch on the trigger will cause the vibrating stud p to force the pawl n out of notch y, and the hammer m instantly to fall and fire the pistol.

Claim.—First. The use of a self-acting spring stop, operating directly by the trigger, in combination with suitable recesses t t in the revolving chambered breech, or their equivalents, for the purpose of locking the breech at the moment of firing, and leaving it free to rotate at other times, substantially as described.

Second. Making a cam o for the bearing of the trigger spring on the trigger back of the centre on which it springs, in order to admit of easy play and short motion of the spring, where a long sweep of the trigger is necessary.

Third. Constructing and arranging the trigger spring in such a manner as to serve the double purpose of a trigger spring and spring stop for locking the bolt, as described.

Fourth. The combination and arrangement of the claw b and notch y on the hammer, the pawl or catch w, and cam o on the trigger, or other equivalent devices for the purpose of retaining the hammer in sit respective positions when at full cock, and for effecting the rotation of the breech and cocking of the hammer preparatory to firing, either by lifting the hammer or pulling the trigger, substantially as described.

No. 17,359.—**Fordyce Beals**, of New Haven, Conn.—*Improvement in Revolving Fire-Arms.*—Patent dated May 26, 1857.—The spring catch b c, which is secured to the upper part of the recoil shield B by means of a screw d, serves to lock the cylinder c in position for the discharge, by catch c entering the notches e of the cylinder. By inserting the cylinder c carelessly into frame A, and by pushing forward arbor a, the arbor will readily enter the cylinder, as the latter is held in its true position by the circular spring catch b c.

Claim.—Making the spring catch by which the cylinder is locked in position for the discharge to conform to the periphery of the cylinder, and project in front of the recoil shield on one side of the cylinder, for the purpose of serving as a resting place or seat to hold the cylinder in place for the insertion of the central arbor, substantially as described.

No. 17,261.—**Ambrose E. Burnside**, of Bristol, R. I.—*Improved Mode of Overcoming the Windage in Fire-Arms.*—Patent dated May 12, 1857.—In loading this cannon, the charge H is inserted in the bore, then the ball F and cap G are all rammed home; when they reach the enlarged chamber B C, the cap will pass over the ball, and the cannon is charged, as represented at E D.

The inventor says: First. I *claim* the cap or patch which covers the ball or shell, said cap not being permanently attached to the ball, substantially as set forth.

Second. I do not make the broad claim of enlarging the ball by expansive materials.

But I claim the enlarging the cannon ball or shell after it reaches the enlarged chamber of a cannon, by means of a cap or patch of soft expansive material, such as leather, malleable metal, or the two combined, in order that the ball and cap together may be some larger than the bore, and therefore prevent windage in passing out of the bore, substantially as set forth, for the purposes described.

No. 17,863.—Albert F. Andrews, of Avon, Conn.—*Improved Fuse-Making Machine.*—Patent dated July 28, 1857.—The hopper A being filled with powder up to the orifice C, rotary motion is given to the air tube G and its wings *e* by a belt driving pulley *h*, and the feeding tube B is rotated by a belt driving pulley C^1, while the hopper A and powder-conducting tube A^1 and the laying piece E remain stationary; and the powder in the hopper A is subjected above its surface to a pressure of air through pipe L, which also penetrates tube G through orifice C, and acts upon the powder which has descended the conducting tube at the orifice C, to expel it from the feeding tube.

Claim.—First. The admission of a blast or compressed air upon, into, among, or through the powder on its way through the passage or channel by which it is conveyed to the fuse, substantially as and for the purpose set forth.

Second. Giving the feeding tube a rotary motion outside of a conducting tube and inside a laying piece, both of which are stationary, substantially as and for the purpose specified.

No. 16,634.—Jonathan Altman, of Armstrong county, Pa.—*Self-Setting Hair Triggered Gun-Lock.*—Patent dated February 17, 1857.—The lever B is pivoted to the part A of the tumbler; lever B acts upon one arm of lever C, which latter is pivoted to standard D on the trigger plate; the other arm of lever C acts on the arm of trigger E; thus, when the hammer is drawn backwards, the trigger E will simultaneously be set, and the end of the arm of trigger E will be forced under the catch in the head of the hair trigger F, and thus both triggers will be set.

Claim.—The mode described of setting the double trigger by the act of cocking the gun, as set forth.

No 17,733.—Mahlon J. Gallager, of Savannah, Ga.—*Improvement in Self-Priming Gun-Locks.*—Patent dated July 7, 1857.—By pulling back the hammer A, the sliding rod C is drawn down by the action of pivot I in the groove D. The sliding rod C being drawn below the pellets in the cylinder C, they are moved forward by spiral spring E. As the hammer approaches the nipple B, the sliding rod C forces through the slot L one of the pellets from the cylinder C into the cavity K of the hammer, which is exploded on the nipple B. The slide H on the lock plate, by being moved outward, allows the pivot I to work on the axis of the hammer in the second groove M cut on the lock plate, which releases the sliding rod C from acting on the pellets contained in cylinder C.

The inventor says: I do not claim the cylinder G, the spiral spring E, or the mode of inserting caps or primers in the hammer for self-priming purposes, which was invented by N. B. Safford and others.

But I *claim* the shipper H, which relieves the sliding rod C, and allows the fire-arm to which the improvement is attached to be used with the ordinary percussion cap without exhausting the primers from the cylinder G, or for the convenience of sportsmen, as before described, and without which a self-capping hammer is valueless to sportsmen.

No. 16,860.—John T. Foster and Jacob J. Banta, of Jersey City, N. J., assignors to Themselves and James H. Banta, of Pierpont, N. Y.—*Improved Piston for Muzzle-Loading Gun.*—Patent dated March 17, 1857.—The nature of this invention consists in the use of conical packing rings around a piston that is actuated by a rod running through the breech of the gun, so that, after the explosion of the cartridge, the said piston and its conical packing rings are forced from the breech to the muzzle, where said rings project beyond the end of the muzzle, to be brushed off or otherwise cleaned from the dirt and soilage which they have scraped off the inside of the gun in being forced from the breech to the muzzle; and on again drawing back the piston to the breech, the aforesaid conical packing rings enter freely, in consequence of their shape, into the muzzle of the gun. Piston fingers are also provided, having barbed or lanced points on their inner surfaces to seize and draw into the gun the ordinary cartridge of flannel or other material.

The inventors say: We do not claim a piston actuated by a rod passing through the breech of the gun, as the same has before been used. But we are not aware that conical packing rings have ever before been applied to said piston for the purpose of cleaning and scraping off all scale and soilage from the interior of the gun, and delivering the same at the muzzle, and also providing for the instantaneous insertion into the barrel of the said packing rings.

And we are not aware that the barbed fingers have ever before been applied to said piston to seize and draw in the ordinary flannel cartridge, as specified.

We *claim* the conical packing rings 1 1 on the piston *d*, for the purposes and substantially as specified.

We also claim the barbed fingers *e*, in combination with the piston *d*, to seize and draw in the ordinary cartridge, substantially as specified.

No. 17,321.—Lammot Du Pont, of Wilmington, Del.—*Improvement in Gunpowder.*—Patent dated May 19, 1857.—72 pounds of powdered nitrate of soda, 12 pounds of sulphur, and 16 pounds of charcoal, all powdered, are mixed together and granulated in the ordinary way. The powder is then glazed by being put into a barrel with a small proportion of black lead, and rolled about for the space of nearly 12 hours.

The inventor says: I do not desire to claim generally the glazing of gunpowder, or the employment of nitrate of soda in the manufacture of gunpowder, except in combination with the glazing of the powder so made, as aforesaid.

But I *claim* the manufacture of gunpowder by the use of nitrate of soda, and the glazing of the powder so made, in the manner and for the purpose described.

No. 16,944.—James Wilson, Charles Green, and William Wilson, Jr., of Brandywine, Del.—*Improved Gunpowder Keg.*—Patent dated March 31, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventors say: We do not claim the mere giving strength to metal by corrugating it, as that effect is well known.

But we *claim* the making the side or cylinder of corrugations *a a a*, and bulge or swell B, when employed with the extra ring or boss D and head C for the purpose of greater strength and more convenient handling, as set forth.

No. 17,915.—Ira Buckman, Jr., of New York, N. Y.—*Walking-Stick Gun.*—Patent dated August 4, 1857.—To load the gun, the body M and barrel N are removed, and the loaded bullet is inserted in the rear end of the barrel; the lock is then cocked, and the body and barrel are replaced, and the gun is ready to be fired. The barrel being loaded, the thimble V is moved back and the section T is rotated, moving back the lock piston so that the catch E falls into the slot in the piston ready for firing. The trigger G is then moved back, releasing catch E from its slot, and allowing the piston H to be thrust forward by the recoil of spring R, and the needle Q to enter and fire the percussion powder in the bullet W.

The inventor says: I do not claim combining a gun and cane together so that they can be used for either purpose.

But I *claim*, 1st. Moving the lock-piston H backward, to effect the cocking of the lock by revolving the section T and its attached spiral cam T^1, as described.

2d. Cocking the lock, for retaining the lock-piston H in position when moved backward to its full extent, by the locking-plate E dropping into a transverse groove in the top of the piston, as described.

3d. The construction and operation of the trigger G, as described, which enables the trigger to be closed up against the body of the gun while the lock is cocked.

4th. The combination of the locking-plate E with the trigger G, as described, by which the strain of the spring of the piston H is brought entirely upon the locking-plate, leaving the trigger free from strain or pressure, and enabling the trigger to discharge the lock with slight effort.

5th. The thimble V, as described, for the purpose of being moved over the lock-catch E and trigger G, to confine and secure them so that the lock cannot be operated without first moving back the thimble.

No. 16,377.—Horace E. Dimick, of St. Louis, Mo.—*Improved Mode of Rifling Ordnance.*—Patent dated January 13, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I make no claim to what is termed a freed bore, separately considered, or to the obtuse angular grooves.

I *claim* a system of straight grooves, extending from the base of the bore to about the position of the trunnions, and twisting from thence to the muzzle, in combination with a freed bore, substantially as described, as an improved mode of applying the rifle principle to ordnance.

No. 16,571.—William S. Butler, assignor to Butler, Sudeng & Co., of Rocky Hill, Conn.—*Improvement in Pistols.*—Patent dated February 3, 1857.—The nature of this improvement will be understood from the claim and engravings.

Claim.—Constructing the pistol by casting the barrel, the frame or main part of the stock, and guard, all in one piece, when the whole is constructed, arranged, and made to operate substantially as described.

No. 18,016.—Magnus Kling, of Reading, Pa.—*Improvement in Percussion Powder.*—Patent dated August 18, 1857.—One ounce of oxalic acid is dissolved in boiling water and mixed with one ounce of antimony and one ounce of chlorate of potassa; this is mixed with half a pound of glue dissolved in boiling water to the consistency of a paste, when it is ready to be used for the manufacture of caps or pellets for needle guns.

Claim.—The combination of antimony with chlorate of potassa, oxalic acid, and glue, mixed in the named proportions, for a composition for the manufacture of percussion caps for fire-arms.

No. 18,707.—John B. Read, of Tuscaloosa, Alabama.—*Improved Projectile for Fire-Arms.*—Patent dated November 24, 1857.—The engraving and claim explain the nature of this invention.

Claim.—The surrounding of the cylindrical portion of elongated projectiles with a band of lead, or other fusible metal or alloy, filling a recess, with projections or lugs in the same to prevent its displacement, and provided with one or more vents, extending from the rear of the projectiles to the inner side of said band, for the purpose of expanding it by the gases of fired gunpowder, so as to save windage, and secure rotation by taking into rifle grooves, as more fully set forth in the specification.

No. 17,407.—Rufus Sibley, of Norwich, Connecticut, assignor to Christopher C. Brand, of the same place.—*Improved Projectile for Killing Whales.*—Patent dated May 26, 1857.—Previous to inserting this projectile into the gun, the wings B should be folded down upon the body. As soon as the projectile is ejected from the gun, the wings B turn up, and they being slightly inclined impart to the projectile a rotary motion on its axis.

Claim.—An improved projectile, (to be fired from a gun,) constructed with sheet-metal wings, having journals, or turning on wires or journals arranged so that the said wings may be turned down transversely or laterally on the body of the projectile, or in a recess or space made to receive them, each being arranged either parallel or inclined to the axis of the projectile, as described.

No. 18,049.—**Theodore T. S. Laidley**, of the United States army.—*Improved Projectile for Rifled Cannon.*—Patent dated August 25, 1857.—The nature of this invention will be understood by reference to the claims and engraving.

The inventor says: I do not claim, of course, as my invention, the attachment, to elongated shot or shells, of a cylinder of wrought iron, fastened to the body of the shot by imbedding its bottom or sides in the cast metal of the shot, the cylinder attached to the butt of the shot or shell, and its sides to project beyond.

Neither do I claim the arrangement of a belt or packing of soft metal, which is to be forced out by the gas passing into certain vacant spaces between it and the main body of the shot.

But I *claim* the formation of a cast iron shot or shell, with a wrought iron covering of a portion or whole, which is fastened to the main body of the shot at or near both ends, by imbedding one or both turned-in ends in the cast metal of the shot, or by means of dowels, pins, or rivets, imbedded in the cast metal, and joining the two metals, the body with the covering, firmly and securely, or by a combination of these methods, leaving an intermediate portion of the covering free to be expanded by the action of the gases of the discharge passing through certain channels or passages between the covering and the body of the shot made or left for that purpose.

I also claim making the wrought iron covering thicker at its rear end, which admits of annular spaces being cut into it to hold grease, or for the action of the atmosphere to keep the ball true in its flight, as in the improved ball for muskets, and also throws the bearing parts of the projectile nearer the centre of gravity, insuring greater accuracy.

No. 16,753.—**Malcom Shaw**, of Sandwich, Mass.—*Improvement in Projectiles.*—Patent dated March 3, 1857.

The inventor says: I am aware that double shells with separate chambers for explosive and incendiary materials have been used. I therefore do not claim such, independent of the devices combined therewith.

I *claim* the improvement upon this kind of shell whereby I am enabled to use melted metal as the incendiary material, and which consists in lining the chamber of the incendiary material with some non-conducting and refractory substance *b*, such as pipe clay, black lead, &c., and perforating the iron to allow the escape of the gas therefrom, thereby providing against premature explosion and retaining the heat in the melted metal.

No. 17,312.—**Christopher C. Brand**, of Norwich, Conn.—*Improvement in Projectiles.*—Patent dated May 19, 1857.—The fuse tube or plug C is so constructed that one end of the fuse rope G comes up to the vent hole *g*, the fuse rope passing through the chamber *l*, thence around the plug C in the groove *o*, thence through the chamber *k* into the load chamber *x* of the bomb. The spaces in the chambers *l* and *k* are filled up with lead to retain the fuse rope in its proper place.

The inventor says: I do not claim the employment of metal or metallic plugs, or the equivalents thereof, made to closely encompass the fuse rope after it has been inserted in the fuse tube or plug.

I do not claim the application of wings to a projectile, whether said wings be stationary or movable.

But I *claim* the improved fuse tube or plug C, as constructed with two plug chambers *k l*, separated by a breech or partition N, the same being for the purpose as specified.

I also claim the improvement of making said tube C with an encircling chamber or recess *o o*, arranged substantially in the manner and for the purpose set forth.

No. 18,568.—**Henry Bates**, of New London, Conn.—*Improvement in Projectiles.*—Patent dated November 10, 1857.—This invention consists in the attachment to the butt end of a bomb, or other projectile of similar character, of a spiral spring or coil of wire, which, when the projectile is placed in the gun from which it is to be discharged, is compressed together and lies close to the projectile; but which, when the projectile is discharged, is caused, either by reason of its own elasticity or by the resistance of the atmosphere, to extend itself in the form of a tail some distance in the rear of the projectile, where, by the resistance it meets with from the atmosphere, it serves to direct and steady the flight of the projectile. The invention further consists in preventing the fuse from being blown through the fuse tubes of the bomb by the discharge of the gun, and thereby igniting the charge of the bomb before the latter leaves the gun, by bending the said tubes after the insertion of the fuse therein.

The inventor says: I do not claim the attachment to a projectile of a tail, to be inserted with it into a gun, and to be extended after leaving the gun, as I am aware that tails of such character have been applied to gun harpoons for whaling purposes.

I *claim*, first, the employment of a tail, consisting of a spiral spring or coil of wire applied to the bomb or other projectile, as and for the purposes set forth.

Second. Securing the fuse in the fuse tubes of the bomb by bending the said tubes after the insertion of the fuse therein, as described.

No. 16,755.—**John M. Sigourney**, of Watertown, N. Y.—*Improvement in Projectiles for Rifled Cannon.*—Patent dated March 3, 1857.

Claim.—Recessing the cylindrical part of cylindro-conical shot and shells in such a manner that the contact of the said shot and shells with the bore and grooves of the gun be confined to the projecting ribs B and belts A, which belts and ribs are finished to fit the bore and grooves with precision, substantially as set forth.

No. 17,935.—**Theodore T. S. Laidley**, of the United States Army.—*Improved Projectile for Rifled Cannon.*—Patent dated August 4, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim, of course, the attachment of a malleable iron tube to a cast iron head, which tube, forming the body of the projectile, is expanded by the force of the discharge so as to take the grooves of the rifled gun.

Neither do I claim the attachment to elongated shot or shells of a cylinder of wrought iron fastened to the body of the shot or shell by having its bottom or sides more or less imbedded in the cast metal of which the shot may be composed, the cylinder to be attached to the butt of the shot or shell and its sides projecting beyond.

But I *claim* the attachment to the main body of an elongated projectile, either solid or hollow, of a covering of some malleable material, composed of one or more pieces, embracing the whole or a portion of the exterior surface, by imbedding in the cast metal of the shot the turned-in end, and two or more longitudinal seams or edges, so as to form on the cylindrical surface of the projectile two or more pockets, having a free space between the cast metal of the shot and the malleable covering, into which the gases at the moment of discharge entering will force out the covering and cause it to fill the grooves of the rifled gun, and diminish or entirely cut off the windage of the projectile, whether fired from a rifled or smooth bored cannon, substantially as described.

No. 18,401.—James H. Merrill, of Baltimore, Md.—*Improvement in Projectiles for Rifled Ordnance.*—Patent dated October 13, 1857.—In the drawing, A represents a conical-shaped projectile, having its base rounded out, as shown at *a*, and hollow, so that powder may enter and explode therein. The rim *b*, between the outer edge of the shot and the chamber or bore *a*, is quite thin at the extreme rear end, but it gradually thickens until at a line drawn through its solidity would prevent its being expanded by the gas.

The inventor says: I *claim* making the base of a projectile that is cast in one piece, cup or bowl shaped, and slotting the metal between the hollow and the outside of the projectile, so as to allow said base to expand by the force of the gas to fill the grooves or bore of the gun, substantially as described.

No. 17,886.—John L. McConnel, of Jacksonville, Illinois.—*Improvement in Projectiles for Smooth-Bored Guns.*—Patent dated July 28, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The improvement of the projectiles known as "egg-shaped," which consists in so grooving the surface, as described, that, when discharged from any smooth-bored gun, with the larger end foremost, the combined effects of the centre of gravity being in front, and the grooves (acted upon by atmospheric pressure) shall give to the projectile an accuracy of flight when so fired, similar to that produced by the rifle, and approximating thereto.

No. 18,866.—Nathan Scholfield, of Norwich, Connecticut.—*Improvement in the Fuses of Shells and other Projectiles.*—Patent dated December 15, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I wish it understood that I do not claim the construction or application of guiding wings in any of their varieties to a projectile.

I *claim*, first, the application of a perforated conical protecting plug *e*, penetrating the end of the fuse cord, and the connecting it thereto by some plastic and adhesive substance, and also inserting this with the fuse cord in place, in the conical cavity opening from the fuse to the vent chamber, for the purpose of securing more perfectly the ignition of the fuse, while the flame from the discharge of the gun is prevented from passing in outside the fuse, or of forcing the fuse inward, as described.

Second. I *claim* opening or expanding the end of the fuse cord, and applying it under the seat of a protecting plug *e*, and causing the plug to be pressed firmly thereon so as to secure it from being forced through the aperture by the discharge.

XX.—SURGICAL INSTRUMENTS.

No. 16,602.—Julia M. Milligan, of New Albany, Indiana.—*Improved Abdominal Supporter.*—Patent dated February 10, 1857.

Claim.—The application of the whalebone, or any other article substantially the same, and the cords or strings, as used in the manner described, by which the requisite mechanical support may be obtained.

No. 16,485.—Edward G. Hyde, of Irvington, N. J.—*Acoustic Auricle.*—Patent dated January 27, 1857.—A vibrating diaphragm C, or artificial ear, is fitted to the tube A of an ear trumpet, at a suitable distance from the mouth, thereby enabling deaf persons to hear distant sounds with far greater distinctness.

Claim.—The vibrating diaphragm, or artificial ear C, applied to an acoustic instrument or ear trumpet, substantially in the manner and for the purpose set forth.

No. 17,948.—Noah Warlick, of Lafayette, Ala.—*Improvement in Shower Bath Apparatus.*—Patent dated August 4, 1857.—By turning the bolt C the valve V is carried with it, and thus the passage *o* can be opened or closed. The discharge of the water is stopped by turning bolt C and carrying the valve against stop S'.

The inventor says: I do not claim the distributor or rose drip D; neither do I lay claim to the portability of the apparatus.

But I *claim* the combination of the double armed bolt C with the valve V, as described, whereby it is made to perform the double function of securing the valve to its seat, and also of operating said valve, the arrangement being as set forth.

No. 18,101.—**William Meyer**, of Progress, N. J.—*Improvement in Shower Bath Apparatus.*—Patent dated September 1, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The lower rose, by means of which water can be thrown upwards, and a more perfect and thorough shower bath is obtained.

No. 17,102.—**Louis Lefebvre**, of New Orleans, La.—*Improvement in Bathing Apparatus.*—Patent dated April 21, 1857.—The boiler A is divided into two compartments, the division A serving for generating steam or medicated substances, while the compartment B is to produce the gases of any corrosive materials desired. The products of the two divisions of the boiler are permitted to pass through pipe F into pipe B, and thence through the branch pipes C into pipes D, whence the gases escape through the perforations a^1, while the condensed matter passes through funnels E into pipe X, and can be drawn off by cock H. The medicated vapor, as it escapes through the perforations a^1 in pipe D, operates upon the invalid, who lies within the frame of pipes represented in figure 2, and which frame is covered with tight cover L.

Claim.—First. Providing a portable frame and casing, used to be placed over persons to administer baths without removing them from their positions, and attaching to said portable frame a graduating stop cock, provided with a reservoir *a* to receive the condensed vapors, with the handle *g* of said cock extending into the frame and beneath the casing, to enable the person taking the bath to operate the graduating cock.

Second. Perforating the pipe or reservoir from which the vapors issue into the bath on its upper side, and placing beneath it a pipe or reservoir to receive the condensation, uniting said pipes or reservoirs by funnel-shaped connexions, through which the condensed vapors may escape, as set forth.

Third. Distributing pipe B, provided with double funnels and stop cocks, for the introduction of medicated or other substances into the bath through the connecting pipe S F, substantially as set forth.

No. 17,979.—**John K. O'Neil**, of Kingston, N. Y.—*Improvement in Bathing Apparatus.*—Patent dated August 11, 1857.—By operating the bellows pump B, the water is forced into air vessel C, and through pipe D into ring E, and is forced out through the holes in said ring.

The inventor says: I do not claim an annular showering pipe, separately, such, or its equivalent, having been used before in other connexions.

But I *claim* the combination of the annular pipe E, or its equivalent, with the flexible connecting pipe D, or its equivalent, operating substantially in the manner and for the purpose specified.

No. 18,349.—**William Miller**, of Waltham, Mass.—*Improvement in Appendages to Shower Baths.*—Patent dated October 6, 1857.—The nature of this improvement consists in combining with the bath a brush and machine for operating the same, in order that a person while within the standing chamber of the bath, and the said brush is in motion, may bring his or her back or other part of the body in contact with the brush so as to have the part cleansed or brushed. To accomplish the object of this invention, there is arranged within the standing chamber *a*, of shower bath A, a brush B, affixed to a vertical slide rod *c* by means of a set screw, the brush being movable on the slide rod so as to be capable of being adjusted in any position. By laying hold of and revolving the crank E, a reciprocating motion will be given to the brush (attached to the slide, as shown in the drawing) so that any part of the body in contact with it may be brushed or cleansed.

The inventor *claims* combining with a shower bath a brush, and mechanism to impart to the said brush movements, whereby a person while in the bath may have his back or other part of his body brushed or cleaned, substantially as specified.

No. 17,356.—**Alanson Abbe**, of Boston, Mass.—*Improvement in Spinal Corsets.*—Patent dated May 26, 1857.—This corset is made similar to a lady's corset, but the back portion of it, represented in the engraving, is provided with springs *a l d* bent in a serpentine form, extending laterally and longitudinally through said back portion of the corset. When this corset is applied to the body of a person, the springs will be strained up so as to produce a constant strain on the muscles of the back in such a manner as to tend to straighten the curved parts of the spine.

Claim.—The improved manufacture of corset for the cure of spinal deflections, the same being made with counteracting springs, constructed and arranged laterally and longitudinally in the back portion thereof, substantially as specified.

No. 16,822.—**Benjamin T. Babbitt**, of New York, N. Y.—*Improvement in Enema-giving Apparatus.*—Patent dated March 17, 1857.—The inventor says: I do not claim, in the abstract, the employment of hydrostatic pressure to give injections.

But I *claim* the combination of the portable reservoir A, the flexible tube *c*, and the nozzle *d*, substantially as described, to form a portable apparatus for the purpose of giving enemas or injections by hydrostatic pressure.

No. 18,015.—**Francis H. Jones**, of Federalsburg, Md.—*Improvement in Eye-Shading Apparatus.*—Patent dated August 18, 1857.—This apparatus is applied before the eyes of the wearer, the pad *b* being in contact with the face. The tube *e* serves to discharge the heated air from the tube, the light being admitted through the glass *c*; and the light can be graduated by means of the sliding cover *d*.

The inventor says: I am aware of the use of tubes in picture galleries, and also of the employment of shades above the eyes; such, therefore, I disclaim.

I *claim* the arrangement in the top of the tube of the ventilator *e* and light-graduating contrivance *c d*, when the tube is designed for use as stated.

No. 17,107.—J. A. McClelland, of Louisville, Ky.—*Improvement in Dental Forceps.*—Patent dated April 21, 1857.—The position of the handle *c* of this instrument can be changed, as represented in figures 2 and 3, by lifting pawl *d*, when handle *c* can be turned on its fulcrum pin, the projection of pawl *d* falling into one of the two recesses of the head piece *b* when said pawl is released. The beaks *g* and *h* are screwed into the head pieces, and can be lengthened or shortened by turning them in one or the other direction.

Claim.—I *claim* connecting the handles *b* to the head pieces *c c* of the instrument, by means of suitable joints and appendages, arranged in such a manner that the shape of the instrument can be so changed as to adapt it to the drawing of upper or lower teeth, substantially as set forth.

I am aware that beaks of different sizes have been fitted to a dental forcep in such a manner that one beak can readily take the place of another; and therefore I do not claim this.

But I claim combining the beaks with a dental forcep in such a manner that their length can be increased to any desirable extent, substantially in the manner set forth.

No. 18,021.—William Selpho, of New York, N. Y.—*Improvement in the Construction of Artificial Hands.*—Patent dated August 18, 1857.—The spiral spring *i* draws the fingers *f* constantly towards the thumb *d*, and retains any article placed within the hand and between the thumb and the fingers. The artificial hand may be opened by a motion of the opposite shoulder drawing on the shoulder strap *m* and cord K, or by extending the artificial hand and arm.

The inventor says: I am aware that the fingers of artificial hands have been opened by a motion derived from pressure of the arm or stump against the person, and also that the hand has been closed by a spring; therefore I do not claim the same.

But I *claim* constructing the skeleton fingers on the metallic cross pipe *g*, set in eyes in the line of the knuckle of the hand and provided with the contractible spring acting on one side of said pipe, to close the hand, substantially as specified.

2d. I claim opening the artificial hand on one arm by a motion derived from the shoulder of the other arm of the wearer, said motion acting through the shoulder loop *l*, strap *m*, and cord K, or their equivalents, substantially as specified.

No. 18,020.—John C. Schooley, of Cincinnati, O.—*Improvement in Inhaling Apparatus.*—Patent dated August 18, 1857.—The atmospheric air enters the inhaler through passage *b*, and depositing its moisture on the ice in box A, escapes through passage *e*, and can be inhaled by the patient through mouth-piece *g*.

The inventor says: I am aware that inhalators have heretofore been made and used with ingress and openings, also a tube through which to inhale.

I also am aware that inhalators have been heretofore used from which to inhale gas, vapor, &c., but in no case have I ever known them to contain ice, or its equivalent, over which air was passed and then inhaled.

I disclaim the use of the ingress and egress openings separately from the ice receptacle. I also disclaim the use of an inhalator for the purpose of inhaling from it any kind of gas or vapor.

But I *claim* so combining the ice receptacle A with the openings *b* and *c*, and so arranged that the outside atmosphere, after being cooled and dried by passing over ice, or its equivalent, within said receptacle, can be inhaled into the lungs in the manner and for the purposes substantially as set forth.

No. 16,479.—James W. W. Gordon, of Catonsville, Md.—*Spring Lancet.*—Patent dated January 27, 1857.—The nature of this invention consists in so providing a spring lancet with a shield *a a* that a certainty of depth in the incision shall be secured.

Claim.—Providing the ordinary spring lancet with a sliding shield *a a*, having a movement from side to side, in the manner and for the purposes set forth.

No. 17,994.—Jefferson T. Martin, administrator of the estate of William Parkinson, deceased, late of Marshall county, Va.—*Improvement in Spring Lancets.*—Patent dated August 11, 1857.—The blade E is thrown out through sheath G by the action of the main spring A, and is instantly drawn back by the reaction spring B.

Claim.—The application and adjustment of the spring B, being the reaction spring by which the blade is instantly drawn back, by which safety and accuracy are attained in bleeding.

No. 16,360.—Benjamin W. Jewett, of Gilford, N. H.—*Improvement in Artificial Legs.*—Patent dated January 6, 1857.—This invention is an improvement on Palmer's leg. In Palmer's artificial leg, the leg overlaps the foot behind, and the foot the leg before; and in that leg there is an opening in the top of the foot which allows the dirt and perspiration access to the spring in the foot. By constructing it as illustrated by the claims and engravings, there is no inconvenience from this source.

Claim.—I do not claim the tendo Achilles J. But I *claim*, first, the spiral D in combination with the rod K, hook L, and cross brace *o*.

Second. The method of attaching the tendo Achillis and the cord N to the thigh by the use of the pins *v* and W.

Third. The bolts G and T, in combination with the straps and their metallic boxes, all for the purposes specified and operating substantially in the manner as before set forth.

No. 16,420.—O. D. Wilcox.—*Improvement in Artificial Legs.*—Patent dated January 13, 1857.—The elastic straps H and I operate similar to the muscles of the natural limb, and they also terminate in tendons. When the knee is thrown forward, as in walking, the forward muscle H over the knee is extended, which, through its tendon and half circle *b*, raises the foot by turning it on pivot *d*, so that it will clear the ground, and at the same time throws the leg and foot forward. But before it comes forward to its place, the back muscle I is stretched, and being stronger than muscle H, it stops the motion of the foot, raising the heel, and bringing it right down to fit an ordinary surface.

Claim.—The artificial elastic muscles with their conjoined tendons running from the thigh to the foot, as described, to effect and control the motions of the leg and foot in cases of amputation at the knee and below it.

No. 17,888.—R. H. NICHOLAS and DOUGLAS BLY, of Rochester, N. Y.—*Improvement in Artificial Legs.*—Patent dated July 28, 1857.—The object of this improvement is to give to the foot lateral play when stepping upon an inequality of the ground.

Claim.—The use of the ball B in the manner described, the two sections of the limb being held together in the manner set forth.

No. 17,262.—OLIVER R. CHASE, of Boston, Mass., and SILAS E. CHASE, of Charlestown, Mass.—*Improvement in Machines for Making Lozenges.*—Patent dated May 12, 1857.—The mass of lozenge paste is placed upon the apron C, and passes between the two series of rollers D E and F G, and is carried, by the endless aprons K and L, upon the conveyor O, where it passes to the stamping cylinder P. Striker S, on rock shaft h^2, first strikes the paste into the cylindrical cutters x, and, passing to the elastic roller T, the latter finishes the surfaces of the lozenges, while the waste paste is scraped off the cylinder P by means of clearers d^1, which are thrown outward from the cylinder as soon as the studs h^1 have passed beyond the ends n^1 of the curved bars i^1, and the scrapings are discharged to the apron Q. The further motion of cylinder P sets bars a^1 free, and the springs C^2 cause the pistons y to discharge the lozenges from the cutters x, and to drop to the apron R.

Claim.—The combination of the reducing rollers F G, the directing and gauging rollers D E, the endless aprons K L, and the sugar receptacles formed by the endless aprons, the two rollers D E, and the side plates or timbers of the frame A, the whole being for the purpose of reducing the dough or mass of paste to an equal thickness, and applying strata of powdered sugar or material to its flat surfaces, as described.

Also, the striker and its operative mechanism, as combined with the cylinder P, and made to operate in connexion therewith, essentially in manner as specified, not meaning to claim a roller as combined with the cylinder for simply forcing the dough into the cutters by pressure, but a contrivance like the striker, which forces the dough into the cutters, and the latter through the dough by a blow or percussion, as described.

And, in combination with the cylinder of cutters and the striker, a flexible or elastic roller T, as applied and used as specified, and for the purpose of finishing the surfaces and edges of the lozenges after the action of the striker has taken place.

And, in combination with the rotary series of cutters, pistons, and scrap clearers, and their operative mechanism, the two endless aprons Q and R, for respectively receiving the waste or scraps and the lozenges, and conveying them out of the machine, substantially in the manner as specified.

No. 17,095.—A. GRANDISON HULL, of New York, N. Y.—*Means for Inhaling Medicinal Agents.*—Patent dated April 21, 1857.—The bottles b and c are filled with any suitable medicated liquid to about the height indicated in the engraving, and a galvanic current is created between said fluids, imparting to them a certain electrical property. If the nature of the disease be such as to require a supply of positive electricity, the pipe k in the bottle containing the positive pole should be breathed through, which draws off from said bottle vapors or gases surcharged with positive electricity; and if negative electricity be required, the opposite bottle is made use of.

Claim.—The means of inhaling gases, vapors, and medicines, treated in the manner substantially as set forth, or in any other equivalent manner.

No. 16,361.—ORWELL H. NEEDHAM, of New York, N. Y.—*Improvement in Milking Shields.*—Patent dated January 6, 1857.—When this shield is applied to the breast, the nipple, shown by dotted lines, fills the interior of the ring A; and as the infant sucks the mouth-piece B, and extracts the air therefrom, the lining a will be forced inward, by the external pressure of the air, through the passages b, and the nipple will be compressed laterally every time the air is extracted from the mouth-piece.

Claim.—Combining the perforated band or ring A, or its equivalent, with the yielding lining a, in the manner substantially as described, whereby an inward pressure against the teat or nipple is produced, the point of said pressure being changeable at pleasure, as set forth.

No. 16,396.—JAMES PARKER, of Boston, Mass.—*Improvement in Nipple Shields.*—Patent dated January 13, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I do not claim a nipple shield so constructed that when worn on the breast of a person it will entirely cover the nipple thereof.

Nor do I claim one made with a small air hole in its front end, or that part covering the end of the nipple.

But I *claim* my improved nipple shield, constructed with a tubular cap, as described, viz: one which shall only encompass the nipple on its sides, and not cover the front or end thereof, the whole front of the nipple guard being open, as specified.

No. 17,195.—J. H. HOBART BURGE and WILLIAM J. BURGE, of Brooklyn, New York.—*Improvement in Surgical Splint Apparatus.*—Patent dated May 5, 1857.—The fractured limb of the invalid, stretched upon mattress B, can be extended by turning handle O, to which hook Q is attached by means of a swivel. The rod V serves to support the limb by means of straps or belts suspended to it, which pass around and support the limb. By turning the screws K L, the corresponding pads can be made to bear against the thighs of the patient in case of a fractured thigh.

Claim.—First. The combination of the pad straps R R with the platform D and rod S, which combination is intended to confine the counter extending pressure as much as possible to the tuberosities of the ischia.

Second. The rod U, as a means of supporting the fractured limb, only in connexion with the employment of extension and counter extension.

No. 16,680.—Erastus T. Bussell, of Shelbyville, Indiana.—*Improved Cauterizing Syringe.*—Patent dated February 24, 1857.—This instrument, self-adjusting in its operation when introduced into the vagina, is to enable females to effectually apply remedies in impalpable powder for the removal of certain diseases.

Claim.—The combination of hollow plunger B with cauterizing rod C encased, and divergent spring fingers *a* with absorbent bulbous extremities *b*, all connected with cylindrical tube A, substantially as set forth and for the purposes specified.

No. 16,956.—Charles H. Davidson, of Charlestown, Massachusetts, and Herman E. Davidson, of Gloucester, Massachusetts, assignors to Charles H. Davidson, of the same place.—*Improved Enema Syringe.*—Patent dated March 31, 1857.—The operation of this instrument is as follows: The end of the eduction pipe I is immersed in the enema, and the bulb is then compressed by hand, which operation will expel the air from within; by then releasing the grasp of the hand, the bulb A will recover its form, and the partial vacuum thus formed will be filled by the enema. By now inserting the injection pipe H, and repeating the operation of compressing bulb A, the required quantity can be administered.

Claim.—The combination of the prolate spheroidal-shaped elastic sack with flexible tubes terminating in valve boxes E F, containing valves *b c*, arranged for the purpose of eduction and ejection, when the sack tubes and valve boxes are in or nearly in the same axial line, the whole operating together substantially in the manner and for the purpose set forth.

No. 17,000.—William Somerville, of Buffalo, N. Y.—*Improvement in Veterinary Syringes.*—Patent dated April 7, 1857.—The dose of medicine having been introduced into the syringe, the plunger C is fastened back by hooking catch H upon the end of the body of the syringe; the syringe is then introduced into the mouth of the animal, and, when placed in proper position, the surgeon presses his thumb against catch H and releases it, when spring G will force the medicine into the throat of the animal.

Claim.—Providing the syringe with the spring and catch described, or their equivalents, in the manner and for the purpose set forth.

No. 16,433.—Alfred A. Blandy, of Baltimore, Md.—*Improvement in Artificial Teeth.*—Patent dated January 20, 1857.—A channel *a* runs vertically through the tooth, and a wire is inserted in said channel, projecting through it at either end, and which, upon the metal being poured over the casting, secures the connexion of the tooth with the plate. The outer end of the pin may be afterwards fused to make it a headed bolt.

Claim.—Constructing artificial teeth with a hole *a* passing vertically through them, for the reception of the molten metal, and with a neck *b* and projecting sides, in the manner and for the purposes set forth.

No. 16,482.—George E. Hayes, of Buffalo, N. Y.—*Mounting of Artificial Teeth.*—Patent dated January 27, 1857.—This invention relates to a certain method of applying the platina connexions, by which the artificial teeth are applied to the plate and retained in place. All the parts of the teeth and gums are represented of the natural shape and proportions, and the work has greater power of resistance for mastication, &c.

The inventor says: I do not claim the continuous gum body, nor do I claim the mounting of teeth on a wire frame, when that is used otherwise than described; neither do I claim the soldering of a wire from one pivot to another, when such pivots are arranged along the alveolar ridge, as that was done by Delabarre.

I *claim* providing the teeth severally with a groove *b* in the base, for the purpose of receiving a wire frame C, or its equivalent, with a wire or wires A A projecting from the base on each side of the said groove, for the purpose of serving as connexions with the plate and with the wire frame, substantially as specified, thereby enabling the natural crown to be represented on both sides of the tooth, and dispensing with the ordinary backing.

And I also claim the attachment of the teeth to a wire frame *c*, when the said frame is employed, in addition to a direct connexion with the plate, and stayed to the plate by stays *f f*, substantially as described, to give additional stability and security to the teeth.

No. 16,708.—Alfred A. Blandy, of Baltimore, Md.—*Improvement in Casting Plates for Artificial Teeth.*—Patent dated March 3, 1857.—An impression of the mouth being obtained as usual, a cast is taken therefrom, which subsequently forms one-half A of the moulding flask. Upon this cast a pattern plate *a b* of rolled wax is pressed to the required shape, and a rim *c* of wax placed upon the alveolar ridge of the same; the same operation is repeated for the lower jaw. The two plates, with the wax rims, are then introduced into the mouth, and the wax trimmed until the two rims touch at all points. The two plates, while thus in the mouth, are so marked upon their wax rims, that, when withdrawn, they may be replaced in precisely the same relation; the double cast or articulator is then formed upon them, preparatory to the arrangement of the teeth upon the rim of wax *c*, which will require the partial or complete removal of the rim *c*, the plates being held meanwhile in proper position by the articulator.

Fig. 2 represents the moulding flask, with pattern plate removed, and prepared for pouring the metal.

Claim.—Moulding the plates of artificial teeth in such manner as to obtain a perfect fit to the gums, and a correct articulation of the teeth upon casting, as set forth.

No. 17,775.—Theodore H. Bradish and James P. Bradish, of Utica, N. Y.—*Improvement in Fastening Artificial Teeth to the Metallic Plate.*—Patent dated July 14, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventors say: We do not claim to be the first inventors of attaching linings or partial linings to artificial teeth at the time of manufacturing, although we are not aware that any plan for doing this has ever been brought into general use in any locality.

We are aware that a plate forming a tooth lining, with its edges turned inward to form a hold within the substance of the tooth, has been constructed, and the tooth moulded upon this plate, thus imbedding the edges, and forming a partial lined tooth. We ourselves are the assignees and owners of the right of doing this, patented to George E. Murray, December 4, 1849; but the lining in this case does not cover the whole tooth, and cannot; and by the continuous body of metal thus imbedded, the substance of the tooth is divided and weakened, and is more liable to be fractured by expansion of the metal. We do not claim this method as our invention.

But we *claim* the construction and attachment of the linings in the manufacture of artificial teeth by raising upon the back of the linings one or more series of separate anchors or projections, being so formed that these anchors or projections, when imbedded into the plastic material of the tooth at the time of its moulding, shall constitute the solid tooth and lining combined, as described.

No. 16,784.—Alfred A. Blandy, of Baltimore, Md.—*Improvement in Casting Plates for Artificial Teeth of Alloys.*—Patent dated March 10, 1857.

Claim.—Casting the plates of artificial teeth of an alloy, substantially as described, suitable for such a purpose from its chemical and physical properties, and that practically will not shrink or expand in solidifying.

No. 18,005.—Martin Luther Wright, of Cleveland, Ohio.—*Improvement in Setting Porcelain Teeth.*—Patent dated August 11, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I do not claim the carving of full sets of teeth out of one piece of porcelain material, or half sets of teeth out of the same, nor of block work to be united to a metallic base; nor the moulding or modelling of porcelain material around porcelain teeth on a porcelain base for full sets or full half sets of teeth.

But I *claim* the making of parts of full sets or parts of half sets of teeth for either the upper or under jaw, where one or more teeth are good and permanent, and where one, two, or more may be skipped,

as seen at *e e e*, figs. 1, 2, and 3, making the whole plate and teeth of one piece of porcelain, in the manner described.

No. 18,708.—J. W. Riggs, of Plainfield, N. J.—*Improvement in Trusses.*—Patent dated November 24, 1857.—This invention consists in constructing the pad of a truss of a series of balls or knobs, or in any way making it with a series of knobs or protuberances on its face, the number of such balls, knobs, or protuberances, and their arrangement, being such as to cause the force of the truss spring to be exerted at several distinct points or intervals around and along both sides or margins of the inguinal canal and abdominal ring.

Claim.—The construction of a pad, with a knobbed or noduled face, substantially as described, so that it shall press upon several distinct points or intervals around and upon the tissues concerned in hernia, and not have a continuous bearing, and operate as set forth.

No 16,497.—Samuel S. Ritter, of Philadelphia, Pa.—*Improvement in Hernial Trusses.*—Patent dated January 27, 1857.—The nature of this invention consists in constructing the truss of a straight spring A, to be bent around the front of the wearer by a belt B enclosing it, to which spring the pad P is so attached as to have an elastic bearing against the body by means of the springs *f f*.

Fig. 1 represents a view of inside of truss, with pad lifted.

Fig. 2 is a section of truss, showing pad in position for use.

Claim.—The combination of the springs A and *f* with the pad attachment, substantially as and for the purposes set forth.

No. 16,835.—Ancil I. Hardin, of Shelby, N. C.—*Improvement in Hernial Trusses.*—Patent dated March 17, 1857.—Attached to plate F is a lever H, by which the springs G and G may be freed from ratch D, so as to diminish at will the pressure or support made by plate F. When it may be desired to diminish the pressure or take off the supporter by lever H, springs G and G may be raised from ratch D, plate F revolved upward, the buttoning or tying of C with C loosened, and the supporter taken off.

Claim.—The position and application of the lever H, in the manner and for the purpose specified.

No. 17,670.—W. E. Cooke, of Philadelphia, Pa.—*Improvement in Uterine Supporters.*—Patent dated June 30, 1857.—The pessary F can be adjusted on its stem *s* by means of screw 2 and nut 3; and the helical spring 5 allows the ball to yield in bending the body or stooping.

The inventor says: I do not claim the pivoting of the bars B B and E E together at the points *c r*.

But I *claim*, 1st. The manner of uniting the bars B B and E E to each other and to their pads respectively, through the intervention of the side or hip bars C C, so that the truss and supporter may not only be adjustable, but also self-adjusting to the person or body of the wearer, as set forth.

I also claim, in combination with the front pad A, an adjustable pessary, made and operating substantially in manner set forth.

No. 16,478.—**James W. W. Gordon**, of Catonsville, Md.—*Vaccinating Instrument.*—Patent dated January 27, 1857.—Having charged the cup *a* on the perforator rod with the liquid matter, the arm and rod D are drawn back from the tensor E; the tensor is then pressed with its face in contact with the flesh of the subject, and the spring is liberated by pressing on the trigger F; the arm C being forced forward, the perforator rod D is driven into the flesh, and the virus deposited.

Claim.—The application of the cup-shaped perforator rod D to the ordinary spring lancet, in the manner and for the purposes set forth.

XXI.—WEARING APPAREL.

No. 17,725.—**William Chicken**, of Boston, Mass.—*Improvement in Instruments for Cutting Button Holes.*—Patent dated July 7, 1857.—In operating with this button hole cutter, the point of the piercer A is placed against that part of the cloth where one terminus of the button hole is to be formed; the piercer is next forced through the cloth until one end of the gauge B is brought up against the cloth.

Claim.—My improved button hole cutter, constructed substantially as described.

No. 18,014.—**Jared O. M. Ingersoll**, of Ithaca, N. Y.—*Improvement in Manufacturing Metal Buttons.*—Patent dated August 18, 1857.—The buttons may be fastened to garments by pressing the points *a* through the cloth, and bending them firmly down upon the garment.

Claim.—The manner of securing the points to and through the button, by passing said points, when bent, through openings in the collet of such buttons, and fastening said points and collet securely in place by pressure, substantially in the manner and for the purpose set forth.

No. 16,909.—**John P. Derby**, of Boston, Mass.—*Improvement in Sleeve Buttons.*—Patent dated March 31, 1857.—By depressing the arm P, the cross plate L can be inserted in the button hole of the wristband; and by then drawing it up until the other button hole is brought under the end of arm P, the said arm can be entered into the hole by depressing lever V, which movement will cause the arm P to turn on its hinge R, and to come against the plate L, thereby securing the wristband.

Claim.—I do not claim the movable arm P, or the joint by which it is attached to the fastener, as I am aware that the eye of a button or clasp has been constructed with a movable part which opened inward; such forms no part of my invention.

But I *claim* the lever V, which is used by increasing the distance between the joint R and the face plate K, by the means of a post S, so shaped that the arm P can be raised and depressed, substantially as described; said arrangement allowing the fastener to be entirely operated from the face side in securing it to and detaching it from the wristbands.

No. 17,082.—**Alexander Douglas**, of New York, N. Y.—*Improvement in Bustles.*—Patent dated April 21, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The combination of the elastic strips A, the steadying cloth B, or its equivalent, provided with straps or fastenings D, and the adjusting cord C, substantially as described and for the purpose specified.

No. 18,958.—**Simeon Corley**, of Lexington, South Carolina.—*Improvement in Instruments for Draughting Coats.*—Patent dated December 29, 1857.—This invention consists of two principal parts, the first of which is a hoop or band A of thin steel or other metal plate, the object of which is to obtain the exact measurement of what is known to tailors as "the scye," and to apply the same to cloth. This hoop is so constructed that its circumference can be contracted or enlarged at pleasure, and it is provided with a slide B, fitted with a set screw *b*, which serves to secure it at any circumference.

The other principal part of the instrument consists of a triangle D E F of thin steel plate or other material, in which sufficient strength and flexibility are combined with an extending arm D^1, forming a continuation of the longest side D. The side D and arm D^1 combined is made of a length sufficient to extend from the waist upwards in front of the shoulder, and over the shoulder as far as the middle of the back, of any one being measured.

The inventor says: I do not claim the invention of any of the measurements obtained by my instruments.

Nor do I claim, separately considered, the employment of a hoop or ring for obtaining measurements, and applying the same to the cloth.

But I *claim* the triangle D E F, having an arm D^1, combined with the hoop or ring A, substantially as described for the purposes set forth.

No. 16,859.—**Thomas L. Calkins**, assignor to Himself and **Jeremy W. Bliss**, both of Hartford, Connecticut.—*Improvement in Combs.*—Patent dated March 17, 1857.—In the illustrations, A, in fig. 1, shows a comb of the ordinary construction, with the improvement attached. B is the sheath made by bending the metal in such a manner as to be adapted to the shape and thickness of the comb; also having apertures made or cut in the edge in the same manner and with similar tools by which the teeth of combs are cut; and also having crozings formed on the edges of the metal, so that when the teeth of the comb are admitted through the apertures the crozings will come together and allow the clasp C to be slid on one end over the crozings, and then applying or turning down the end of the clasp so as to prevent it from slipping off; thus allowing the sheath to move back and forth nearly or quite up to the edge or end of the tooth on the other side.

The inventor says: I *claim* the use of the sheath, substantially as and for the purpose set forth and described.

No. 17,416.—Jeremy W. Bliss, of Hartford, Conn.—*Improvement in Fastenings for Garments.*—Patent dated June 2, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—I am aware that narrow, flat hooks have been soldered on the plates used for belts and other purposes, hooking into holes or eyes prepared for them.

Also, that wire pins have been secured on ornaments having blunt ends, so that, by pricking holes through any article to which it is desirable they shall be attached, the said pins may pass through and be fastened thereto by bending the pins down; all such arrangements I do not claim.

I *claim* the new manufacture of fastening for garments described, to wit: a plain or ornamental plate or bar A, having sharp hooks B permanently fastened to it, pointing towards each other or towards the centre, so arranged as to be conveniently hooked into the garments to be fastened, or unhooked therefrom.

No. 17,103.—Mark M. Lewis, of Albany, New York.—*Improvement in Instruments for Curling Hair.*—Patent dated April 21, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The construction of a hair-curling instrument by the combination of a taper-formed tube with a comb, which can, by a spring or equivalent apparatus, be made to project from the surface of the tube, or withdrawn into the interior, substantially as set forth and described.

No. 16,640.—John P. Derby of South Reading, Mass.—*Improvement in Bosom Pins.*—Patent dated February 17, 1857.

The inventor says: Being aware that brooches or ornaments having the retaining pin hang so as to turn on a line parallel with the back of brooch have been used and patented by one Taylor, in England, and also being aware that the guard B has before been used for certain purposes, I do not claim that mode of attaching the pin, neither do I claim the guard B; but, as an improvement thereon,

I *claim* extending the arm *d* around the end and along the side of back of brooch, so that the point of the pin being retained in the fingers can be entered under its extreme end, thus allowing said point to be protected by a guard when revolved to place.

I also claim the combination of collar *f* with the cap *a* and the post *k*, which admits of the easy attachment of the pin *c*.

No. 17,857.—J. Heilmann, of New York, N. Y., assignor to Ignatius Sturnn, of the same place.—*Improvement in Diaper Pins.*—Patent

dated July 21, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The tube A, having the slide B fitted within it, the slide being attached to one end of the tube A by a spring *b* formed of India rubber or other suitable material, and the hook C attached to the slide *b*, the tube A being slotted longitudinally, and the parts arranged substantially for the purpose set forth.

No. 17,225.—George R. McIlroy, of Covington, Kentucky.—*Improvement in Pocket Safes or Fastenings.*—Patent dated May 5, 1857.—To lock the pocket by means of this fastening, the button C attached to the coat is inserted in the hole B and pressed down over cam *c*, pushing aside said cam by reason of its yielding arm *b*, when the shank of pin C is locked between cam C and the springs A. The fastening is unlocked by pulling cord *e*, and the projections on rod *d* will bend aside springs *b* and cams *c* so as to clear the shank of the button, which then can be withdrawn from hole B.

Claim.—Holding the shank of the button between the horizontal spring *a* and the cam *c*, on the vertical spring, so that by drawing and letting go the rod *d* the said shank will be raised up by the horizontal spring, and the cam passing under it throw it out of the hasp part, as set forth; and this I claim, whether one, two, or more buttons be used, so long as the series is thrown out by one operation of the rod, as described.

No. 17,573.—Horace Harris, of Newark, N. J.—*Improvement in Safety Pockets.*—Patent dated June 16, 1857.—The chains *h* are secured within the lining of the garment and are for the purpose of preventing the pocket from being cut out. The pocket can be opened by pulling chain F, which will withdraw clasp D from wire C; and the pocket is shut by the simple pressure on it which will bring wire C within clasp D; the spring E serving to press said clasp on the two wires which constitute the mouth frame of the pocket.

The inventor says: I am aware that Joseph Cotton has a patent for spring bolt and catch for fastening plates connected with pockets I do not use or claim any of his devices.

I *claim* the wire frame, with the spring C, for throwing it open, constructed in the manner described.

No. 16,583.—Edward K. Godfrey, of New York, N. Y.—*Improvement in Rasor Strops.*—Patent dated February 10, 1857.—The backs F and G of the strop B serve not only as a means for supporting the strop and convenience of handling it when being used, but also as a protection or case which fits the curved faces of the strop.

Claim.—The use of an independent strop stock, without handles, in combination with adjustable and independent backs, substantially for the purposes set forth.

No. 16,533.—John P. Derby, of Cavendish, Vt.—*Improvement in Shirt Bosom Studs.*—Patent dated February 3, 1857.—For inserting the stud, the side *e* is depressed, as represented by dotted lines in fig. 2; for removing the stud, the other side *b* is pressed into the position represented by broken lines.

The inventor says: I do not claim the use of a single coil of wire with a single lock for the purpose of securing the stud to the bosom, as that is well known.

I *claim* the side pieces *b* and *c*, passing the one above and the other beneath the cross piece *d*, forming a double coil and double lock, operating in the manner and for the purpose substantially as set forth.

No. 17,241.—Helen C. Traphagen, of New York, N. Y.—*Improvement in "Ladies' Skirts."*—Patent dated May 5, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The attachment of a series of air-tight tubes to the body of a skirt or petticoat, to expand and set out the skirt when the said tubes are filled with air, as and for the purposes set forth.

No. 17,602.—Edward F. Woodward, of Brooklyn, N. Y.—*Improvement in Ladies' Skirts.*—Patent dated June 16, 1857.—This invention consists in the employment of a pad, which is stiffened by having a spiral stiffener of rattan wound around it; the pad may consist of rattan shavings or hemp. The spiral stiffener is saturated with gum shellac, to increase its stiffness and durability.

Claim.—The employment of the spiral stiffener or cord for stiffening ladies' skirts, &c., together with the saturation thereof in the manner set forth, and for the purposes specified.

No. 18,013.—Charles S. Goodman, of Washington, D. C.—*Improvement in Hoops for Ladies' Skirts.*—Patent dated August 18, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—Constructing the hoop of spools or tubes strung upon an elastic cord, or its equivalent, to give elasticity to the hoop, with the ends of the spools cut on a line radiating to the centre of the hoop, whether the same be made of wood or any other substance to produce the same effect; the whole being arranged substantially in the manner and for the purposes specified.

No. 18,247.—David C. Peacock, of Brooklyn, N. Y.—*Sleeve-Fastener.*—Patent dated September 22, 1857.—The claim and drawings explain the nature of this invention.

The inventor says: I *claim* the construction of a sleeve button secured by a bar affixed thereto at one end by a joint or hinge, passing through holes in the sleeve, and being secured or fastened at the end opposite to the affixed end, in the manner set forth and described.

No. 17,413.—William A. Bates, of Boston, Massachusetts.—*Improvement in Sleeve Fasteners.*—Patent dated June 2, 1857.—In using this sleeve fastener, the tongue *e* is to be passed through the sleeve, when, by a slight contraction of the body A, the catch *c* can be passed into the opening of the slotted tongue *e*.

The inventor says: I do not claim forming a sleeve fastener by means of hinged spring arms, a slot, and ears, as patented by Farr & Thompson, assignees of John Mansure; my invention differing materially therefrom, and having important advantages over the same.

Nor do I claim in buttons or fastenings for clothes having one end of the eye or tongue, hinged or rigidly fastened to the button, and making the tongue or eye elastic, and forming a cavity or countersink in the body, to facilitate the entrance of the tongue or eye into its hole in the body, such being the subject of a patent granted to Richard Oliver, October 10, 1854. My invention differs from this—the body in my clasp being made so as to spring longitudinally.

I *claim* my improved bracelet clasp, made with a slotted tongue and catch hook, and with its body to spring lengthwise, as described.

No. 17,345.—William Vogt & John J. Klink, of Louisville, Kentucky.—*Shirt Stud or Button.*—Patent dated May 19, 1857.—In using this stud, the button A is held with its bar B running in the same direction as the button hole, and one end of the bar B is inserted and slid down as far as the shank of the bar will permit; the other half of the bar B is then inserted, and the stud is turned a quarter round, and the hook C secured in the button hole.

Claim.—Shirt studs or buttons, sleeve buttons, breastpins, or any other article of jewelry or ornament, made with the bar B and the hook C, for the purpose and in the manner substantially as described.

No. 16,328.—J. Perley Derby, of Boston, Massachusetts.—*Improvement in Bosom Studs.*—Patent dated January 6, 1857.

The slide H, together with stem B of stud A, is inserted in the button hole of the garment, the slide and stud being in the position of fig. 1; the stem and stud are then moved towards the centre of the slide H, the springs S bearing against the stem B, until the edges of said stem drop into the recesses P of springs S, as represented in fig. 2, the article being then secured in its place.

Claim.—A stem, to which is attached a slide, constructed with a slot and spring in the arms, substantially in the manner described, which, on being inserted through the holes of the garment which it is intended to secure—be it shirt bosom or other parts of the apparel—can be moved or pushed as far as required, and there secured by the force of the spring named.

No. 16,872.—John P. Derby, of Cavendish, Vermont.—*Improvement in Shirt Studs.*—Patent dated March 24, 1857.

a is the stud; *c* a flat coil, which is slightly widened at the point *d* where it is secured to the stud. This portion of the coil rests in the long slit or button hole made to receive it, and thus the stud is prevented from turning when in place. At *i* the coil rises, as seen in the engraving, and immediately descends again, as at *f*; the portion *f* forming a shoulder or offset, which rests against the back of the bosom, and prevents the coil from being disengaged from its hole.

The inventor says: I do not claim securing studs to the bosoms of shirts by means of a coil of wire; as this is not new, and forms no part of my present invention.

But I do *claim* widening the wire at its base, for the purpose of preventing the stud from turning in the shirt, as set forth.

Secondly. I claim the offset *f* in the coil, for the purpose of preventing the disengagement and loss of the stud.

No. 17,060.—Dutee Wilcox, of Providence, Rhode Island.—*Improvement in Shirt Studs.*—Patent dated April 14, 1857.

To insert this stud in the eyelet hole of a shirt bosom, the levers C and D must be in the position represented in fig. 1. In this position the levers are inserted until plate A is forced up against the material; by then pressing disk B and slide E inward, the arms C and D are turned on their fulcra *a* into positions of fig. 2. In removing this stud, the disk B is withdrawn, and slide E forces levers C and D back in position, fig. 1, when the stud can readily be withdrawn from the eyelet hole.

Claim.—My improved stud, as constructed with the arrangement and application of a slide bolt E, with respect to the disk B; and the two arms turning on separate fulcra, and so as to operate therewith, and be operated as described.

Also, so constructing and arranging the disk B of the slider E that its periphery shall extend or lap beyond that of the disk A, in manner, and so as not only to cover the said disk when closed down upon it, but also to enable a person to grasp the said disk B between his thumb and finger without at the same time grasping the disk A.

Also, forming the two levers with recesses in their heels, so that they may readily lap over and pass by one another, without interference, while being turned on their respective fulcra, and the heels be brought close up to the locking slide to enable it to lock them, as set forth.

No. 16,472.—Lyman Derby, of New York, N. Y.—*Improvement in Tailors' Measures.*—Patent dated January 27, 1857.

The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The arrangement of the graduated rules for giving the outlines of the back and front of a coat, when said back and front rules are suspended upon the jointed rule A A^1, substantially in the manner and for the purposes specified.

No. 17,600.—James Willis, of London, England.—*Improvement in Umbrellas and Parasols.*—Patent dated June 16, 1857.

The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I *claim* my manufacture of the runner and slider and top joint collar, as made with its notched flange of drawn or rolled metal, bent into a ring, and constructed in manner and applied thereto substantially as described.

I do not claim confining either the rib or the spreader of an umbrella frame to its grooved notched ring or flange of the slider or top ring by means of a circular wire.

Nor do I claim confining said wire in place by twisting its ends together in the usual way.

But I claim my method of confining the wire in the flange *x*, viz: by means of a flange made tubular or with a groove and space formed to admit and receive the circular split ring of wire, as described, and bent down laterally on the ring and between the spreaders or ribs *c*, as specified; the same not only causing the wire to be grasped between each two joints of the spreaders or ribs, but providing a smooth flange without any projections likely to tear or injure the cloth cover of the umbrella.

No. 18,036.—Sheldon Canfield, of Derby, Connecticut.—*Improvement in Umbrellas and Parasols.*—Patent dated August 25, 1857.

The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The form and construction of the clasp E, described; it being made of a single piece of thin sheet metal, so folded in the middle, either by a machine or otherwise, as to form, on the under side of the clasp, two flanges *e* and *f*, each consisting of a double thickness of the sheet metal.

The clasp, as applied to umbrellas and parasols. I claim nothing else described as my invention.

No. 18,500.—Heman Crosby, Jr., of Waterbury, Connecticut.—*Improvement in Cane Umbrellas.*—Patent dated October 27, 1857.

The engravings and claim will explain the nature of this improvement.

The inventor says: I *claim* an improved cane umbrella, constructed in manner and so as to operate substantially as described; that is to say, as made so that the joint ring or collar of the ribs may slide on the rod, and the stretchers applied to the rod, and the whole made so as to be capable of being drawn out of a tubular staff or cane, unfolded, or spread out, reversed and folded, returned within the staff, as occasion may require.

No. 16,340.—L. K. Selden, of Haddam, Connecticut.—*Improvement in Folding Umbrellas.*—Patent dated January 6, 1857.

By the arrangement of parts as described in the claim the umbrella may be folded within a short space, and the use of the fastening for keeping the ribs distended dispensed with.

Claim.—The braces F G, connected by pivots *b*, and attached by pivots to the ribs D, stretchers E, and handle A, as shown and described, for the purpose set forth.

No. 18,445.—Benjamin F. Grinnell, of New York, N. Y.—*Wristband-Fastener.*—Patent dated October 20, 1857.—A A^1 are the two ends of a wristband, furnished with the usual button hole *a* and a^1; B is the external plate or shield of the fastener; this plate is connected by means of metal strips *d* d^1 to the lower buttons *e* e^1. To the button e^1 is soldered, or otherwise secured, a metallic spring *f*, the end of which bears against the face of the button *e*.

The inventor says: I *claim* the external plate B, with its connexions *d* and d^1 and buttons *e* and e^1, in combination with the spring *f*, the whole being constructed substantially in the manner and for the purpose specified.

XXII.—MISCELLANEOUS.

No. 18,826.—William Stoddard, of Lowell, Mass.—*Pocket-Book Alarm.*—Patent dated December 8, 1857.—The nature of this invention consists of the hook or hooks C, for both securely confining the pocket-book within the pocket, and at the same time causing an alarm if an attempt should be made to extract it by a pickpocket; also, in the stand E, relatively arranged with the spring H, for allowing an elastic but limited movement to the hook C; also, in the thumb-piece K and finger L, for setting or cocking the alarm and connecting the pocket-book to the pocket.

The inventor says: I *claim* one or more hooks C, or their equivalents, constructed, arranged, and operated essentially in the manner and for the purposes set forth.

I also claim the stand E, or its equivalent, carrying the hook C, relatively arranged with the spring H, to allow an elastic but limited movement of this stand for disengaging the alarm if an extraction of the pocket-book should be attempted by a pickpocket, essentially in the manner and for the purposes set forth.

I claim the thumb-piece K and finger L, or their equivalents, for setting or cocking the alarm, arranged and operated essentially in the manner set forth.

No. 16,942.—Marion J. Wellman, of New York, N. Y.—*Improvement in Baby-Jumpers.*—Patent dated March 31, 1857.—The springs *c* attached to the corners of the frame *a* support the cross pieces *d*, to which the straps *e* are suspended, which support the seat e^1 for the reception of the infant.

Claim.—The combination of the cross and corner springs attached to separate points of suspension at a distance from the centre, and beyond the centre of gravity, with an infant's seat, constructed, arranged, and combined in the manner and for the purposes set forth.

No. 16,862.—Joseph Thomas, of Brooklyn, assignor to Himself and Charles A. Durgin, of New York, N. Y.—*Improvement in Baby-Walkers.*—Patent dated March 17, 1857.—In using this invention the child is placed in a standing position, which may be done by raising the "walker" over its head, and dropping it down over it until its head and arms protrude above the cushion. The "walker" is then set the right height by the adjustable legs, the strap B is secured around the child's waist, when it is free to run in any position inside the cushion, while the castors allow the "walker" to work in any direction.

The inventor says: I am aware that a circular cushion or annular table constructed in halves and hinged together, to lock the child therein, and placed upon vertical vibrating springs, has been used in the patent of Euclid Rice, of October 28, 1851; and I therefore disclaim the use of his invention.

But I *claim* the combination and arrangement of a circular cushion, having attached thereto straps, as described, for confining the child in a vertical position, and also allowing it to turn at will within the cushion, which is placed upon vertical adjustable legs, for the purpose of suiting the height of the child; whereby I am enabled to make a cheap and useful article of furniture, protecting the child from injury and assisting it in walking, substantially as specified, and for the purpose set forth.

No. 16,970.—Joel A. H. Ellis, of Springfield, Vt., assignor to Joel Woodbury, of same place.—*Improvement in the Construction of Baskets.*—Patent dated April 7, 1857.—The splints A are fastened to the bottom of the basket by inserting them between the pieces B and B^1, and by then nailing said pieces together by means of nails *a*; they are then fastened between the top hoops R and R^1, and connected to each other by means of the staples *c*.

Claim.—The described new or improved manufacture of baskets, as made of vertical splints, two bottom boards, top hoops, and staple connexions, or their equivalents, the whole being arranged and secured together substantially as specified.

I also claim the arrangement of the staple connexions, viz., so that each one shall lap on the two next adjacent to it, the same causing the fibres of the wood of the splint to be drawn together by the strain of the load of the basket.

No. 17,621.—Anthony Faas, of Philadelphia, Pa.—*Improvement in Fastening Handles to Baskets.*—Patent dated June 23, 1857.—This handle is formed by inserting a hoop down each side of a basket, passing it through the bottom of said basket, and joining both ends by a lock B.

Claim.—Basket handles as above described.

No. 18,623.—James R. Baird, of Vincennes, Ind.—*Apparatus for Ringing Bells.*—Patent dated November 17, 1857.—The engraving and claim show the nature of this invention.

The inventor says: I do not claim ringing an elevated bell from a position below it by means of a flexible or jointed frame, when said frame is attached directly to the axis on which the upper end of the tongue swings, as in the bell-ring device patented in 1852 by Thomas V. Stran.

But I *claim* the direct attachment of the circular lever C to the ball or lower end D of the tongue or clapper, and the combination of said lever thus attached with the vibrating cross-head E and handle I, by means of the pendulous rods F F, substantially as and for the purposes set forth.

No. 17,836.—George H. Hoagland, of Port Jervis, N. Y.—*Improvement in Signal or Alarm Bells.*—Patent dated July 21, 1857.—The strap F; which is connected with the signal rope, is wound around the reel L, and by pulling the strap F the cams H are rotated, striking the spring I, and causing the hammer C to strike the bell A, By this same operation the spiral spring M within the reel D is wound up; and as the strap F is released, it will be rolled again around reel L for the next operation.

Claim.—The use of the cam reel D E, constructed and operated as described, or in any equivalent way, for the purpose of striking the bell for a signal or ringing continuously for alarm, substantially as described.

The combination of the said reel with the hammer and belt, for the purposes set forth.

No. 18,799.—John M. Brunswick, of Cincinnati, Ohio.—*Improvement in Billiard Table Cushions.*—Patent dated December 8, 1857.—*a* represents the rail attached to the table B, as usual, by means of screw bolts; and a portion of the rail that rests on the table is angled out, as usual, in which angle the cork wood *c* and rubber *d* are placed and *f f* is a piece of paper pasteboard attached to the face of the rubber cushion *d*; and *g g* is a piece of leather drawn tight around the rubber, furnished with pasteboard and cork wood, and tacked to the rail, for compressing and holding the rubber and cork firmly to its place in the rail; *h h* is a cover of cloth over the leather for protecting it, as is commonly used on all cushions.

The inventor says: I would state that I am aware that rubber, cork, and leather have been used in forming a cushion; this I do not claim.

But I *claim* the combined use of cork, rubber, pasteboard, and leather, when used in the order enumerated, by which means I produce a better cushion, as set forth.

No. 18,805.—Hugh W. Collender, of New York, N. Y.—*Improvement in Billiard Table Cushions.*—Patent dated December 8, 1857.—A represents a billiard table; B is the cushion, shelf, or bed; C is the elastic block of rubber, and D the thin strip of rubber belting; the elastic block C is more than double the thickness of the rubber strip, and should be perfectly elastic. The rubber strip D, which is completely non-elastic laterally, but capable of expanding longitudinally, is placed on the front side of the rubber block, as shown, and cemented to it with rubber cement, or otherwise fastened; or the facing may be placed in a mould, and the fluid rubber poured into the same mould behind it, and the two rubbers caused to unite together by reason of the adhesive properties contained within themselves. The cushion thus made is covered with a thin woollen cloth.

The inventor says: I do not claim a cushion with a comparatively solid face and perfectly elastic back, when formed of rubber, cork, and leather, as this was patented by M. Phelan in 1856.

But I *claim*, as a new, better, and cheaper mode of carrying out the principle involved in said cushion, the use of the two rubbers possessing the different qualities or degrees of elasticity specified; for the purpose of producing a rubber spring cushion, with a comparatively solid rubber face, and an elastic rubber back, substantially as set forth.

No. 18,841.—Levi Decker, of Bergen, N. J.—*Improvement in Billiard Table Cushions.*—Patent dated December 15, 1857.—The inventor, in describing his improvement, says: I make an India rubber pad A in the usual form; and against the most projecting part of the surface of that pad, designed for the action of the balls, I place a steel spring, (shown by lines,) consisting of a strip of steel—say about as thick as the mainspring of a clock, and about a half or three-quarters of an inch wide, along each cushion. I then complete the cushion by covering the whole with cloth in the usual manner.

Claim.—The combination of India rubber and a steel spring for billiard table cushions, substantially as described.

No. 16,374.—William Cairns and Jasper Cairns, of Jersey City, N. J.—*Implement for Holding Blacking Boxes.*—Patent dated January 13, 1857.—This invention consists in securing the blacking box upon a metallic bar or handle of suitable length by means of an adjustable or sliding jaw C and two stationary projections a^1, for the purpose of preventing the fingers from becoming soiled in using said box.

The inventors say: It is very common in lathes and other machines to hold articles, both round and of other shapes, by means of adjustable clamps; and, therefore, we expressly disclaim the use of adjustable clamps for the holding of objects.

But we *claim*, in blacking box holders, the combination with a slotted handle of the stops a^1 and the adjustable jaw C, in the manner and for the purposes specified.

No. 17,431.—Francis G. Harding, of Boston, Mass.—*Improved Block for Blacking Boots and Shoes.*—Patent dated June 2, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

The inventor says: I do not claim two shells in connexion with a spring and screw, irrespective of peculiarity of construction, and merely viewed as a stretching block or tree; for such devices are now used for such purposes.

I *claim* the described new article of manufacture, consisting of the thin metallic shells A and B hinged at *a*, the former having an extension *b*, to serve as a handle to the implement, and fitting the front inside of the shoe; and the latter fitting the inside of the heel, the said shells being distended, and the shoe thereby firmly held by means of the screw C passing through the shells B and abutting against the projection *c* of the shell A, in the manner and for the purpose specified.

No. 16,719.—Elizur E. Clarke, of New Haven, Conn.—*Machine for Cutting Pasteboard for Boxes.*—Patent dated March 3, 1857.—The pasteboard is laid upon table K, with one edge abutting against guide L, and the other edge being held by clamp M, which latter is pressed down by spings *f*. It is then moved along through feed rollers G H, the clamp M sliding in a grooved way. The board, when passing over cylinder B, is operated upon by the cutters *a*, which may be set by means of nuts *b*, so as to cut more or less deep or altogether through the board. The cutter stocks *p* can be moved to the proper distance upon rail *c* and fixed by clamp screws.

Claim.—The method of attaching and adjusting the cutters in combination with the main cylinder, when the whole is constructed, arranged, and made to operate substantially as described.

Second. The combination of the spring clamp M with the main cylinder and cutters, when constructed and made to operate substantially as described.

No. 18,086.—Henry N. Degraw, of Watervliet, N. Y.—*Improvement in Machines for Washing Bottles.*—Patent dated September 1, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I am aware that expanding brushes, constituted similarly to the one described, have been previously used for the same purpose; but they have been arranged in quite a complicated way, so as to preclude them from general use on account of the cost attending their construction and keeping them in repair.

I do not claim separately, or in itself considered, the expanding brush; for that, or its equivalent, has been previously used.

But I *claim* the expanding brush formed of the brush bars I J L, connected to the rod F and bar G, as shown, and expanded and contracted by the lever O and spring P, when said brush, thus arranged and operated, is used in connexion with the sliding holder B, for the purpose set forth.

No. 17,406.—David Coon, of Ithaca, N. Y., assignor to Himself and B. F. Chesebrough, of same place.—*Improvement in Burglars' Alarms.*—Patent dated May 26, 1857.—The screw *g* is firmly secured into the wood on the inside of the casing of the door, so as to have the barrel of the pistol towards the door; and as the door is opened, the breech of the pistol is pressed towards the stock *i*, by which motion the spring *j* is brought in operation, forcing the nipple *d* upon the plate *i* with sufficient force to cause the cap to explode.

Claim.—First. So attaching the barrel of the pistol to its stock or plate at or near the muzzle as to make a hinge joint at or near that point.

Second. The combination of a spring plate, tumbler, and barrel, by which the barrel becomes the hammer, constructed and operated substantially as described, so that when the pistol is properly fastened to the casing of the door, the barrel, being cocked, shall be at such an angle or in such a position that the door, on opening, must necessarily press upon it, and thereby discharge the pistol, the contents passing outward.

No. 18,236.—Simeon Coon, of Ithaca, N. Y.—*Improvement in Burglars' Alarms.*—Patent dated September 22, 1857.—In using this invention, the gimlet screw B being set into the door casing at proper inclination, the muzzle of barrel A will point through the opening made between the door and casing as the door opens, and at the same time the opening door will strike the hammer end of the spring E and bring it down on the nipple O, thereby discharging the piece and giving the alarm.

D is a stirrup attached to the barrel at points *m* and *n*, opposite each other, and at a distance from nipple *o* sufficient to give the spring length of stroke.

The inventor says: I *claim* combining the spring E and hammer E in one piece, and acting on a stirrup, as above described and constructed.

No. 18,292.—E. M. Mix and J. E. Mix, of Ithaca, N. Y.—*Improvement in Burglars' Alarms.*—Patent dated September 29, 1857.—This improved alarm, or pistol, may be used as an ordinary pistol, and conveniently carried in the pocket. A represents the stock of the pistol; B is the barrel; C is the cone fitted to the barrel near its breech; D is the hammer or cock, the outer end of which is divaricated and pivoted at each side of the barrel, near its muzzle, as shown at A, in figure 2. The inner end of the hammer or cock has a recess or cavity formed in it, said recess passing over the cone, when the cock falls or strikes and explodes the cap on the cone. E is the spring of the hammer or cock. This spring is formed of a flat metal bar, having its inner end attached to the under side of the barrel, near its breech, as shown at B, and its outer end bearing against the outer end or barrel of the hammer, as shown at C; the lower parts of the branched or divaricated end below and a trifle beyond the pivots are connected by a bar, against which the spring E bears or acts.

When a person deems it expedient to apply the implement to the door of his bed-room, in order to guard against burglars, the rod G is moved out from the barrel, and the outer end screwed into the door jamb, as seen in figure 3; the proper angle or position is given the barrel so that it will range clear of the jamb. As the door is opened it will come in contact with the plate F, and move the hammer, so that the spring E will move it down and explode the cap.

The inventors say: We are aware that fire-arms have been applied to doors to serve as alarms and as means of defence in cases of attempted burglary, and we do not claim broadly such application.

But we *claim* the construction of the device, as shown and described, for the purpose specified, to wit: the hammer or cock D, spring E, trigger F, and rod G, constructed, arranged, and applied to the barrel B and stock A, substantially as set forth.

No. 17,504.—Benjamin Hinkley, of Troy, N. Y.—*Frame for Camp Tents.*—Patent dated June 9, 1857.—In the engraving, figure 1 represents the tent frame when expanded and ready for use, and figure 2 when folded up.

Claim.—Making the raftered frame of the tent in sections hinged together, so that the frame can be folded for convenient carrying, as described, the folding frame being provided with the jointed tie-braces F and E, or equivalent devices, for keeping the sections in place when expanded, as set forth.

No. 16,674.—Alonzo Marshall, assignor to Benjamin Marsh, of Newark, N. J.—*Varnish Can.*—Patent dated February 17, 1857.—By tilting the can forward, the small vessel B (from which the varnish for present use is to be taken) can be filled. Whatever is left in the vessel B, after the varnishing operation has been finished, can be brought back, by tilting the can backward into the air-tight vessel A that contains a larger quantity of varnish.

Claim.—Connecting the two vessels by a pipe C, in the manner and for the purpose described.

No. 18,541.—John Gardner, of Philadelphia, Pa.—*Candy Twisting Machine.*—Patent dated November 3, 1857.—In this invention, by the use of two conical rollers and a taper screw, the candy is rolled and twisted at one operation.

In the engravings, K L are two conical rollers. The journals of roller K are fitted in the plates B C. The lower journal of roller L is fitted in the plate B; but the upper journal is fitted in a plate M, which is attached to plate C by two set screws *f f*, which pass through slots in plate M into plate C. The candy, while being twisted and fed down between the rollers and screw by the rotation of the lathe, is gradually compressed, as the lower ends of the rollers and screw are nearer together than their upper ends. The roller K L and screw J all rotate in the same direction.

Claim.—The working and twisting of candy by means of a machine constructed substantially as set forth.

No. 17,163.—John W. Masury, of Brooklyn, N. Y.—*Improvement in Metallic Canisters for Putting up Paints, &c.*—Patent dated April 28, 1857.—The wire bail C passes through the ears E; and when the can A is not in use, the bail C can be shoved down, as represented in the engraving. The ears E are riveted into the can A in such a manner that they can be turned on their pins D. The cover B can be secured to the body of the can by fastening the ends H of bail C to the hooks F, by means of wires or cords G.

Claim.—The use of metallic cans for putting up paints or other substances of any known form, with ears attached thereto, through which a wire bail may be passed in such a manner as not to interfere with the packing of the cans, and to render it at once a package for transporting the paint, and a convenient and useful pot or pail out of which to use the same, with a removable cover secured to the can, in the manner and for the purposes described and represented.

No. 18,706.—Henrich Reimann, of Hartford, Conn.—*Machine for Making Cigar Lighters.*—Patent dated November 24, 1857.—The operation of this invention is as follows: The composition to form the body of the cinder being placed in the receptacle C, and the igniting composition into box E, the crank M^1 is turned in the arrow shaft *k*, which is turned in the same direction, and the pulley T is rotated at regular intervals, while the pulley P has a continuous rotary motion imparted to it, it being keyed on the shaft k^1. The pulley P^1, being connected with pulley P by a chain, has an intermittent rotary motion imparted to it by the same means as pulley T. When the crank *i* is turned to its highest position, and also the press box B to its highest position, then the pulley P is just detached from shaft *f*, and consequently the press box remains in this elevated position during the next revolution of the pulley P^1. At the same moment as pulley P^1 is disconnected from shaft *f*, the pulley T is connected with shaft K, and, operating upon pulley H, the rack D is run in and out from under the press box. As rack D, together with perforated plate G, is pushed into the receptacle containing the material for the cinders, which by its own weight will settle into the holes of the plate G, at the same time the roller Q, which has been rotated by the action of pinion *r* and rack S, distributes the igniting paste to each of the ends of rods *d*, which in this elevated position of the press box protrude beneath the plungers *a*. As the rack D returns the plate G with the cinder material in each cell, and at the moment when the cells or holes in plate G come directly under the plungers *a*, the pulley T is disconnected from the shaft *k*, and pulley P^1 is connected with shaft *f*, the press box commences its downward motion, and the igniting paste is first transferred to the cinders, which are then pressed out of the holes of plate G by the plungers *a*, which are moved down with plate *c* within box B; and finally the cinders are detached from the plate G by the cut-off plate F, the holes of which correspond with the holes of plate G, and which is operated by the action of the ratchet M upon pin *q*, and the cinders operate upon the receiving box O.

Claim.—The arrangement of the mechanism described, and for the purpose set forth.

No. 18,552.—William Newell, of Philadelphia, Pa.—*Method of Cleaning and Polishing Coffee.*—Patent dated November 3, 1857.—The operation of this machine is as followns: The cylinder being charged with coffee, and steam introduced, motion is then given to the cylinders, and also to the coffee within the inner one; the heat from the circulating steam is imparted to the coffee, partially drying it, whilst at the same time it is being rubbed and polished by the friction between the rotating grains. The vapor from the coffee may escape through a suitable opening in the cylinders; and, instead of steam, hot air may be used, and effect the same purpose. When the drying and polishing is finished, the coffee is thrown out on the inclined screen F.

The inventor says: I am aware that a cylinder with a surrounding steam jacket has been used for many purposes. I make no claim to the apparatus described, but merely represent it to better illustrate my process of treating green coffee, and which process constitutes the essence of my invention. Grains, flour, and many other articles, have been subjected to heat, and motion, and friction, in a cylinder such as

I represent. To this I lay no claim, nor to the treatment of anything but coffee; and I am not aware that coffee has ever been cleaned and polished in the way which I have discovered.

But I *claim* the cleaning and polishing of green coffee by subjecting it to the combined action of heat, friction, and motion, as set forth.

No. 17,557.—Edward Conroy, of South Boston, Mass.—*Improved Cork Machine.*—Patent dated June 16, 1857.—The stuff from which the corks are to be cut is placed on bed L, and motion being given to shafts M and J, the bed L is moved upwards by resting on cam K, and is fed to the rotating cutters f^1; and as the work advances, the rod N being pressed on said cork causes the rods P to expand by the action of plate R, and thus the cutters f^1 will cut the corks in conical forms.

The inventor says: I do not claim the employment or use of expanding cutters for cutting corks, bungs, &c., irrespective of the arrangement shown; for expanding cutters have been previously used, although differently arranged from the plan shown.

But I *claim* the expanding cutters attached to the rods or bars P, and operated by the plate R attached to the rod N, the rods P having pins *g* passing through their upper ends, which pins are allowed to slide laterally in their recesses *h* as the rods are actuated by the plate R; the above parts being arranged substantially as described, for the purpose set forth.

I further claim, in combination with the cutters f^1, arranged and operated as shown, the cams K and bed L for feeding the stuff to the cutters.

No. 16,466.—Samuel Cobb, of Cincinnati, Ohio.—*Improvement in Corpse Preservers.*—Patent dated January 27, 1857.—The nature of this invention consists in forming a chamber D in the lid of the coffin, which is filled with ice, said chamber communicating by means of short pipes 12 with the pipes 13 in each corner of the coffin, for the purpose of conducting the water of the ice in box C to basin *n*.

Claim.—Providing the lid of the coffin with sides or edges D D, when arranged with the pipes 13 at each corner of the lid, and made to extend down into the pipes 12 in each corner of the coffin; all for the purpose of confining the ice to the top of the lid and drawing the water therefrom collected by the melting of the ice, for the purposes mentioned.

No. 18,295.—Thomas Odion, of Portsmouth, N. H.—*Apparatus to Protect Buildings from Fire.*—Patent dated September 29, 1857.—The object of this invention is to protect buildings from fire, which consists in constructing a portable metallic screen that may be easily and speedily raised to any required height between two buildings, or in the streets, to arrest the progress of the flames, or prevent their communicating with the surrounding property. The sheet iron used for screens is carried on a truck A, as shown in the drawing, constructed for the purpose, surrounding a roller supported at each end on journals in bearings I, erected on said truck. A number of these screens, which can be raised to any height, can be arranged in a line or entirely around a burning building, for the purpose of preventing the effect of the wind upon the flames. To the upper part of the sheet W are attached a number of hooks *r r*, by which it is connected with the bar O. Guy chains R, attached to the caps T on the top of the rod N, with hooks at each end, are used to steady the top by anchoring in some permanent position.

The inventor *claims* the method herein described of protecting property against fire by means of a portable screen, in the manner substantially as set forth, or in any other equivalent manner.

No. 18,262.—Henry Loewenberg, New York, N. Y.—*Fire-Escape Ladder.*—Patent dated September 22, 1857.—In the engravings, fig. 1 represents a bird's-eye view of the apparatus, showing the top front and oblique end of the extension ladders, when packed for transportation, excepting the baskets D D, which are taken off to show more clearly the manner of packing the ladders in a small space, when compared to the hook and ladders now in use. One of the baskets is thrown off the carriage, having its ropes attached, as shown at D.

Fig. 2 represents the ladders *a b c e* extended, and in the position to be used. This invention can be understood from the claim and engravings.

The inventor says: I am aware that ladders with long sacks to convey the occupants of a building to the ladder have been long in common use; but the application of baskets, or their equivalent, operated as above set forth, and the manner of elevating and packing the ladders, I believe to be new and useful.

I do not claim the extension ladders; neither do I claim the use of ropes passing around or over windlasses for the purpose of drawing or extending the ladders after they have been elevated to the desired angle ready for extending.

But I *claim* the manner of regulating or adjusting the trucks $f\,f^1$, fig. 2, by means of the hinged guide pole *k*, fig. 2, or guide bars, arranged and operating in the manner and for the purpose of supporting the ladders when secured by the rope $I\,I^1$ at any desired angle, substantially as described.

No. 16,863.—Isaac P. Nelson, of Cambridge, Mass., assignor to Himself, and George N. Davis, of same place.—*Fireman's Mask and Respirator.*—Patent dated March 17, 1857.—The inventor says: I have adapted a tight-fitting mask to the face of the person, from which depend the air tubes through which he breathes; the extremities of the tubes reaching to within an inch or two of the floor.

The tubes C are united to the mask immediately beneath the nose; and at this point there is an opening *a* between the tubes and the interior of the mask, through which air is admitted for respiration. Immediately in front of the mouth there is an opening *f*, which is covered on the outside by the flexible valve *d*.

Claim.—The described mask, with its tubes C and valves *d*, operating in the manner substantially as set forth.

No. 16,626.—Edward Deacon, of Brooklyn, N. Y., assignor to John Warrin, of New York, N. Y.—*Improvement in Fishing-rod Reels.*—Patent dated February 10, 1857.

Claim.—Connecting the crank shaft F with the reel shaft E, and also disconnecting it therefrom by means of the slotted sleeve G placed or fitted upon the shaft F, and within the socket C, substantially as shown and described.

No. 17,469.—Oscar F. Mayhew, of Indianapolis, Ind., assignor to W. H. Weeks and O. F. Mayhew, of same place.—*Improvement in Hominy Machines.*—Patent dated June 2, 1857.—The grain, as it is fed into the machine through hopper G, is driven by beaters *b* of the revolving cylinder B against the sides of the concave A; and, passing through the partitions C by the openings D, it is constantly acted upon in the different compartments until, hulled and cleaned, it is discharged through spout H.

Claim.—The combination and arrangement of the concave A, wings or divisions *c c c c*, and the adjustable openings D D D D, when constructed and operated substantially as set forth.

No. 18,413.—Peter Siemers, of St. Louis, Mo.—*Improvement in Hominy Machines.*—Patent dated October 13, 1857.—This improvement consists in fixing in the periphery of a cylindrical stone B a series of double corrugated knives or breakers *a*, and of combining the said stone (having the knives arranged as aforesaid) with a cylinder D having burrs on the internal surface, the said burrs to move in a direction opposite to that of the said knives, whereby the corn will be broken by the action of the knives and thrown against the burred cylinder, which, moving in an opposite direction, will hull it and throw it back in contact with the stone, which will polish it, thus completing the operation of making hominy.

The inventor says: Now, a cylinder having corrugated knives or breakers has been used before, in combination with the burred cylinder, as such an arrangement is shown in the application of Wm. Davis; but this arrangement only breaks the kernel and hulls it, but does not polish it, which is the function performed by the stone in my machine.

I am aware that mere substitution is not patentable, unless the thing substituted performs a separate function and is a real improvement, which the stone, in the relation I have placed it, really is.

I therefore *claim* the stone in combination with the corrugated knives and burred cylinder, when used for the purpose specified and operated as described.

No. 17,264.—Zenus Corbin and Gideon Marlett, of Syracuse, N. Y.—*Artificial Honey.*—Patent dated May 12, 1857.—Four pounds of sugar are dissolved in one pint and a half of water, and raised to a boiling temperature; five grains of rosin and two drachms of butter are melted together and incorporated with the above syrup. This mixture is then boiled, and two drachms of gum Arabic, one drachm of isinglass, and one and a half drachm of cream of tartar are added thereto, and this increased mixture is boiled again. One and a quarter pound of honey is then added, and, after boiling the mixture for a space of ten minutes, eight drops of essence of peppermint are added, when the mixture is ready for use.

Claim.—As a new product or composition, artificial honey, composed of the enumerated ingredients, or their equivalents, combined with each other, substantially in the manner set forth.

No. 17,934.—Ernst L. Kurtz, of New York, N. Y.—*Device for Protecting the Necks of Horses from Flies.*—Patent dated August 4, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The stretchers *a* and *e*, in combination with the connecting cords, operating substantially as set forth, as a fly protection.

Also, the weighted cords *m* and *n* connected therewith, for keeping the protector stretched, and at the same time permitting the free movement of the animal's head.

No. 18,691.—Samuel P. Heintzelman, of Newport Barracks, Ky.—*Improvement in Method of Floating Horses, &c., across Rivers.*—Patent dated November 24, 1857.—The two bags are united together by means of two girths *d* d^1, one, *d*, being intended to pass under the horse's belly, a little behind the fore legs, and the other a little in front of the hind legs. There are, also, straps *e f g h* which pass respectively in front of the breast, over the withers, and over the rump and behind the hams, and are secured either by buckles, as represented, or in some other convenient manner.

Claim.—The specific form of cavalry float described, consisting mainly of a pair of bags connected by girths and provided with the described fastening straps, the bags having each the form of two lobes connected by a duct, and being provided with suitable inflation tubes, as represented, or equivalent devices, for the purposes explained.

No. 17,263.—Thos. Cook, of New York, N. Y.—*Improved Machine for Cutting Match Splints.*—Patent dated May 12, 1857.—The blocks a^1 to be cut being placed within the box *a* and retained in position by feed follower *e*, motion is imparted to shaft A, and the blocks are carried over the cutters *o*, and as many splints are planed off as there are cutters. This cutting has left a series of grooves in the bottom, formed by the tops and sides of the cutters. The box *a* now retreats by the revolution of the crank shaft A, and so soon as the blocks are completely clear of the cutters, the cam *j* or j^1 strikes the roller *l*, moving the lever *m*, and with it the cross plate *d*, thus carrying the splint blocks and box *a* to one side sufficiently to bring all the projecting ridges left in the previous cut directly opposite to the centre of the cutters, when the operation of cutting is repeated.

Claim.—1st. The arrangement of the block carriers so as to have the two motions described, whereby the splints may be cut by stationary cutters, as set forth.

2d. I claim the method of supporting the block in the box by the longitudinal pressing springs b^1, in connexion with a feed follower acting in conjunction therewith, as described.

No. 17,316.—THOMAS COOK, of New York, N. Y.—*Improved Machine for Gathering and Depositing Dipped Matches.*—Patent dated May 19, 1857.—The dipping board *a* containing the matches is placed in a vertical position within the frame *b*. Motion being imparted to driving wheel A, cam *p*, coming in contact with roller *x*, operates lever *o* of fulcrum o^1, and the pawls $i\ i^1$ impart to the dipping board *a* a downward motion, feeding it downward each time one row of matches. The cam *q* now operates roller k^2 and plate *k*, which is provided with pins k^1, which drive the matches through their holes in the dipping board, and thrust them on to table *r*. The cams *t* now operate levers *u* and sliding blocks *s*, which push the matches into the opening r^1, whence they drop into the match box held there by the attendant.

Claim.—In packing matches into boxes automatically, the method of feeding the "dipping board" in connexion with the operation of the discharging pins, specifically as described. Also, the receiving table, with its gathering and delivering blocks, in combination with the aforesaid means for conveying and discharging the matches from the "dipping board," the whole being constructed and operating specifically as set forth.

No. 18,273.—WALDREN BEACH, of Baltimore, Md.—*Apparatus for Opening Oysters.*—Patent dated September 29, 1857.—In the drawing, A is the frame; B is the head piece or box, which has an opening through which the lipped bar slides and the broken off shell passes; the upper portion of one side of the opening forms a knife edge; the box B has the shape shown in the drawings. C represents the sliding bar, having on its upper edge a lip, and having its other end fastened to the treadle K, which is hinged to the frame. *h* is a spiral spring surrounding the sliding bar and confined to the cups above and below. The upper cup is fastened to the bar, and the lower cup to frame A, and, by reason of an opening through which the bar passes, acts as a guide for the same. The frame has a plate attached to it to act as a guide for bar C.

Claim.—The inventor claims the combination of lipped bar C, treadle K, and spring *h*, with the cutting head piece B, constructed, arranged, and operating substantially as and for the purpose set forth.

No. 17,176.—AUGUSTUS STONER, of Mount Joy, Pa.—*Improvement in Self-Adjusting Sack-Holder.*—Patent dated April 28, 1857.—The mouth of the bag is fastened around the hopper D by attaching it to hooks *i*; the bag rests on the floor between the front feet and curved base A, and spring G keeps the bag stretched and causes it to adjust itself as it shortens by being filled up. The spring base F, with nut H, serves to raise or lower the hopper D, so as to adapt the same to longer or shorter bags.

Claim.—The spring G and the adjustable base F, by means of the screw and burr H and piece *c*, and the hopper D, when combined, substantially as set forth.

No. 18,709.—WILLIAM E. ROBERTS, of Orange, Conn.—*Improvement in Scissors Sharpener.*—Patent dated November 24, 1857.—In describing his improvement, the inventor says: I make the block in a cubic or any other convenient form for two sharpeners, as shown in fig. 1, or for one sharpener, as shown in fig. 2.

I cut the space or spaces *b* in the block to admit the blade of the scissors of any convenient size, and with the proper bevel, on one side, to the steel to give the edge to the scissor-blades, as seen in the engravings. I temper the steel in the usual way, and insert it into the block in the position shown at *a*. Having made the sharpener, as before described, to sharpen the scissors, I pass one of the blades at a time through the space or opening *b*, holding the flat side of the blade against the side *c* of the space *b*, press its edge upon the steel, and work it through longitudinally till a perfect edge is formed, which will generally be effected by pressing it through two or three times; thus making a very convenient sharpener for scissors.

Claim.—The article of new manufacture of scissors sharpener, when constructed and fitted for use, as described.

No. 17,179.—JOHN A. WINSLOW, of Roxbury, Mass.—*Improvement in Skates.*—Patent dated April 28, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The application of a second metal runner to the skate, which being placed on the bottom outside of the central line of axis, and the runner in the ordinary skate which lies along that line removed to a correspondent position on the other side, completes the improvement.

No. 17,414.—R. W. BELSON, of Philadelphia, Pa.—*Improvement in Skates.*—Patent dated June 2, 1857.—This invention consists in constructing the skate entirely of cast iron, the skate being cast in separate and distinct parts, which are longitudinal halves, each part being composed of one-half of the stock and one-half of the runner, which parts are then secured together by means of screws or rivets *d*.

The inventor says: I do not claim separately forming the runner of two parts, for this has been previously done.

I am also aware that the stock, formed of a certain number of parts, and the runner of a skate, have been cast solid or in one piece, and a patent was granted to B. F. Shelabarger for such mode of construction. In Shelabarger's skate the object appears to be economy only, no reference being had to the formation of the gutter.

Neither do I claim casting the stock and runner in one piece, for this has also been previously done.

But I *claim* constructing the skate entirely of cast metal, and of two parts connected together, substantially as shown and described.

No. 18,685.—STOCTON H. EVANS and LUDWIG GENTSCH, of Philadelphia, Pa.—*Improvement in Skates.*—Patent dated November 24, 1857.—The nature of this invention in skates consists in arranging spurs upon the skate to enter the rear or outside of the heel of the boot or shoe, in combination with an inclined rotating spur or cam, made to press against the front of the heel, which is to be pushed against the spurs and locked down to the skate. Also, in placing an adjustable plate over the fore part of the skate, which is provided with set screws, so as to raise and lower said plate to tighten or adjust the straps which cross the top of the foot to secure the skate upon it.

The inventors say: We *claim* the spurs F F, or their equivalents, in combination with the inclined rotating spur or cam G, which presses the heel against the spurs F F and locks it down to the skate, as described.

We also claim the adjustable plate Q over the fore part of the skate, constructed and arranged substantially as described, for the purpose of adjusting and tightening the straps over the top of the foot.

No. 16,653.—HENRY PICKFORD, of Boston, Mass.—*Mode of Fastening Skates.*—Patent dated February 17, 1857.—These skates are fastened to the soles of the boots or shoes; a plate B is attached to the front part of the sole. The tongue *c* fits into a recess in, and is hinged to, plate B. When the skate is to be attached, the tongue is to be raised out of the recess, as represented in figure 1; the notch *e* of the skate plate D is placed against stem *b* of the tongue, and the runner (being in a transverse position to the length of the foot) turned around until the front edge of the plate C, attached to the heel of the boot, fits into the grooved portion of the skate plate F. As soon as the spring pin *i* falls into a corresponding hole in the plate C, the skate is firmly secured to the boot.

Claim.—Uniting the skate blade to the sole of the boot or shoe, substantially in the manner and for the purpose above described.

No. 17,019.—SAMUEL R. BURRELL, of New York, N. Y.—*Improvement in School Slates.*—Patent dated April 14, 1857.—The permanent file C and movable file D D¹, as described in the claim, serve for sharpening the slate pencil. The file D D¹ is pivoted to the frame, and covers a recess which serves for the reception of the pencil.

Claim.—The application of a permanent or fixed file, and also a movable file, to the ordinary slate frame of commerce, in form and manner as set forth and described.

No. 16,549.—JAMES R. NICHOLS, of Haverhill, Mass.—*Improved Apparatus for Containing and Dispensing Syrups for Soda Fountains.*—Patent dated February 3, 1857.—A A A are the cans for different varieties of syrups. The cocks E being open, air is forced into the cans through pipe G. Either one or two of the cans may be separated from the other or others by shutting up its stop-cock E.

Claim.—The described arrangement of a series of cans, with their pipes and cocks, whereby they may be simultaneously charged with compressed air by a single pump, and any one of them may be isolated from the others, for the purpose of replenishing, as set forth.

No. 17,158.—CURTIS O. LUCE, of Brandon, Vt.—*Improved Street Sprinkler.*—Patent dated April 28, 1857.—As the carriage is drawn along, the wheels H are rotated by means of gearing E G, pulleys G¹ *b*, and belts *a*. The water passes from tank C through pipes I into wheels H, and is discharged therefrom by centrifugal force, and at a considerable distance.

Claim.—The combination of the water reservoir C, horizontal rotating discharging wheels H H, operated from the wheels B B of the carriage, substantially as shown, and the conveying pipes I I provided with the cocks J J; the whole being arranged, as shown, for the purpose set forth.

No. 18,416.—M. W. ST. JOHN and ISAAC BROWN, of Leonardsville, N. Y.—*Improvement in Street Sweepers.*—Patent dated October 13, 1857.—This invention operates thus: When the sockets or boxes H are secured by the bar I in line with each other, and the shafts F adjusted obliquely to the bar A, as shown in the drawings, the brushes or scrapers L will, as the implement is drawn along, scrape the dirt from the point 1 to 2, and leave it in a winrow at 2; and the sockets or boxes are allowed, in consequence of their connexion with bar A by the universal joint *g*, to adjust themselves to the inequalities of the street.

When the sockets or boxes H H are adjusted obliquely, as shown in fig. 2, the shafts F are placed at right angles with bar A, and the dirt scraped in a winrow between the inner ends of the two sockets; and if the gate K be lowered by turning the frame J over backwards, and the frame and gate raised intermittently by the operator, the dirt will be swept up into piles.

The inventor says: We *claim* the sockets or boxes H H provided with brooms or scrapers L, and attached to the bar A by the universal joint *g*, in combination with the adjustable shafts F attached to the bar A, substantially as shown, for the purpose set forth.

We further claim, in combination with the broom, socket or boxes H, and adjustable shafts F, the gate K applied to the implement, as described, for the purpose specified.

No. 18,195.—JOHN CRITCHERSON, of Boston, Mass.—*Improvement in Street Sweeping Machines.*—Patent dated September 15, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—The improvement in street sweeping machines, which consists in the combination of the adjustable sliding bars *n*, travelling in the arc of a circle *o*, with the universal joints *k*, for driving the diverging shafts upon which the brushes are arranged, whereby the sweeping apparatus is adapted to streets of various widths.

No. 18,664.—DAVID SHATTUCK, of Boston, Massachusetts, assignor to Himself, JOHN S. SHATTUCK, JACOB MORRILL, and WILLIAM P. MARSHALL, of Boston, Massachusetts.—*Improvement in Street Sweeping Machines.*—Patent dated November 17, 1857.—The operation of this invention is as follows: When the cam R is in the position shown in the engravings, or with its diameter at right angles to the lower axis of the machine, the dirt is swept up in a row on either side of the machine according to the direction in which the brush head M may be revolving. As the machine is drawn along over the ground, the head M is revolved in a horizontal plane, and the brushes O sweep the dirt before them until each arm N, as it travels around, rises on the edge *l* of the cam R, and its brush is lifted out of contact with the ground until the head M has made a half revolution, when the arm again drops off the cam and its brush commences to sweep. The brushes thus sweep while they are revolving through a semi-circle, and deposit the dirt in a winrow as they begin to rise on the cam R; thus, by altering the position of this cam, the winrow may be left either at one side or under the machine, as may be desired.

Claim.—The above described arrangement of the cam R beneath the horizontal arms or brush carriers N, whereby the dirt may be thrown to either side or to the centre of the street, as set forth.

No. 17,811.—William T. Shannon, of Greensboro', Georgia.—*Fly Trap.*—Patent dated July 14, 1857.—The apparatus, as represented in the engraving, is placed in the window of the room; the room is then darkened, and the flies, attracted by the light which passes through glass 4, enter box A, through the passage between the glass plates 2 and 3, from which they ascend through passage 5 into the bag 7. When desired, the tin plate 6 and bag 7 can be removed, and the bag immersed in water to destroy the flies.

Claim.—The invention of the box above described, and the bag and its attachment to the box, for the purposes named.

No. 18,261.—Samuel R. Wilmot, of Watertown, Conn.—*Fly Trap.*—Patent dated September 22, 1857.—The body of this trap is formed of tin plate, marked A in the engraving, the parts of which are cut and bent into shape, and soldered together, so as to form a sort of broad and narrow pocket. The mouth *a b* of the pocket is fitted with a self-acting flap valve C, which is hinged just within the upper lip *a a*, and falls in an inclined position to the lower lip *b b*, upon which its lower edge rests. The hinge of this valve is made very flexible, so that a sudden movement of the fly trap in the direction of the arrow *d* will cause the valve to flap back, and leave the mouth of the trap unobstructed. The hinder part of the trap is perforated with small holes. The upper side of the instrument is fitted with a handle E, by which it can be operated.

The inventor says: I *claim* a fly trap constructed substantially as set forth, and consisting of a receptacle which is constructed and operated in such manner that when it is swept over a table or other object, the mouth is open to receive flies, and when the sweeping movement is finished, the mouth is closed to prevent their escape.

No. 17,803.—Donald McLean, of Boston, Mass.—*Self-Setting Trap Hook.*—Patent dated July 14, 1857.—When a fish pulls on the bait hook B, the elastic cord E will stretch, as seen in figure 2, and the

point of hook S will be driven into the fish, preventing it from breaking away.

Claim.—The combination of the hooks B and S, constructed substantially as set forth, with the elastic cord or spiral spring E and line L, operating as described and for the objects specified.

No. 17,570.—Henry Hackman, Jr., of Pequea, Pa.—*Improvement in Animal Traps.*—Patent dated June 16, 1857.—This trap being set over a trough or hole, the animal passes along the platform B to the bait on hook K, and stepping upon spring board G, the end of the spring board is depressed, drawing down the upper end of lever M, the lower end of which forces spring L inward; the catch P being thus released, the platform B is tilted downward, swinging on shaft D, whilst spring I forces one end of spring board G upward, and throws the animal down into a trough underneath. The moment the animal has fallen underneath, the weight-box C brings the platform B to its level again, and the trap is thus adjusted to receive another animal.

The inventor says: I am aware that tilting platforms are used for catching animals, and various kinds of levers, springs, and weights are attached to operate such platforms. These I do not claim.

I *claim* the combination of the self-acting spring board G with the platform B, horizontal spring I, and lever M, constructed, arranged, and operating substantially as described, for the purpose of assisting in throwing off the animal as the platform tilts.

No. 18,092.—George Hart, of Granger, Ohio.—*Improvement in Animal Traps.*—Patent dated September 1, 1857.—The trap being set as represented in dotted lines on figure 2, when the animal steps upon the tall B, the catches F are thrown off the pins H, and the recoil of the springs E brings the jaws C together. When the animal pulls to get away, he, by these efforts, pulls upon chain I, one end of which is firmly secured to a stake; the pulling upon chain I draws ring J backward to the position represented in figure 1, thereby tightening the grasp of the jaws C.

Claim.—The arms C^2 C^2, springs E E, and ring J, when arranged substantially as set forth, for the purposes described.

No. 16,335.—C. Jillson, Worcester, Mass.—*Manufacture of Animal Traps.*—Patent dated January 6, 1857.—This trap is represented in fig. 2 as being set. The animal, in passing through ring C, touches the point *g* of lever F, which, by the slightest pressure upon it, is caused to turn on its fulcrum 2, while lever *e* turns on its fulcrum 1, by the action spring *c*, the trap being thrown into the position of fig. 1, and the points *d* piercing the animal.

Claim.—A new manufacture of animal traps, composed of the several parts set forth, and operating as described.

No. 17,297.—Frederick Reuthe, of Hartford, Conn.—*Trap for Animals.*—Patent dated May 12, 1857.—The bait is fastened to the middle spear H, and the main spring *c*, together with hammers L, is raised by means of trigger F. The apparatus is suspended to the branch of a tree by a chain passing through ring K. The victim seizes the bait, and, pulling it to devour it, the springs G in the centre barrel B slide forward, and the pin attached to the same raises the lever E, which throws back head D, releasing the main spring c; and the hammers L fall forcibly on the percussion caps, causing the explosion of the barrels A, at the same time that the springs G expand in the animal's mouth, and the barbs and fangs hold him fast.

Claim.—The sliding and expanding spring barbed fangs G G and H, in combination with one, two, or more exploding barrels, operating in the manner and for the purpose substantially as set forth.

No. 16,516.—WELCOME WHITAKER, assignor to HENRY L. PALMER and JULIUS A. SKILTON, of Troy, N. Y.—*Vermin Destroyer.*—Patent dated January 27, 1857.—Air is drawn from the atmosphere by means of the bellows A, and is forced into the combustion chamber B. H is the generator in which the deleterious material P is burned by first igniting it at its top surface, when the condensed air in B passes down through P and keeps it ignited, and thereby becomes charged with the deleterious gaseous products, and then passes through the pipe M into C, which retains the solid and liquid products, and gives more steadiness to the stream of air as it passes out of C through the pipe O to be applied to the insects.

Claim.—Combining with a fumigating furnace or combustion chamber bellows and a flexible pipe, in the manner set forth.

I limit my claim to the use of bellows and flexible pipe, and to their use in the manner set forth.

APPENDIX TO DESCRIPTIONS AND CLAIMS.

[The cases contained in this Appendix were omitted in their proper places.]

I.—AGRICULTURE.

No. 18,497.—EBENEZER BUILER, of Pompey, N. Y., and GEORGE M. PECK, of Abington, Pa.—*Improvement in Butter-Workers.*—Patent dated October 27, 1857.—The nature of this invention consists in providing a box, in which is placed a plunger, crank, and partition, so combined as that when the crank is operated the partition and plunger shall have a vibrating motion, and act upon the butter placed between them with a rolling motion, thereby causing the butter to be constantly in motion, and to be worked thoroughly and compactly. A scraper is also arranged to work up and down in grooves in the side of the box, in connexion with the plunger, so as to clear it of any butter adhering to it.

Claim.—The arrangement of the crank B, plunger C, the partition D, and scraper E, to work in combination, as described, in the process of working butter.

No. 18,797.—BENJAMIN BEERS, of New Fairfield, Conn.—*Improvement in Churns.*—Patent dated December 8, 1857.—The nature of this improvement in barrel churns consists in a revolving dasher with spring floats V so arranged that they are rigid when the dasher is turned in one direction to churn the cream, and yield or give way when the dasher is turned in the opposite direction to gather and amass the butter; so that the butter-milk can be drawn from it, when the butter may be worked, salted, and the salt worked in by the dasher.

L is an axle or shaft fitted to turn in perforations in the heads A A, and has a crank-handle M by which it is turned; this shaft may be removed by drawing the staple-key N, which passes through the hub O in the head A and into the score P in the shaft to hold it in the barrel. The disks Q Q are fitted into the shaft L, and connected together by the rods R R, and prevented from turning on the shaft by the metal plate S, which is fitted to the square part T of the shaft L, and fastened to the disks Q.

Claim.—A rotating dasher with spring floats, constructed and arranged substantially as described, so as to churn the cream and work the butter substantially in the manner set forth.

No. 18,325.—A. M. COOK, of Milford, Mass.—*Improved Corn-Sheller.*—Patent dated October 6, 1857.—In operating this machine, the ears of corn are thrown in suitable quantities into the hopper H, whence they pass down through the opening *b* and are received on the disk K, between the guard *g* and the opening *b*, whence they pass in succession between the arm I and guard *g* and beneath the block M, which keeps them down in contact with the teeth *i* of the disk K, by which the ear is rolled over against the arm I, and the grains are stripped from the cob, the grains falling through the holes *c* in the disk K on to the inclined table *o*, by which they are conducted out of the machine. The cob, being still kept with its axis parallel to the arm I, is caused by the motion of the disk K to work towards the periphery of the disk; but before it reaches this part of the circle it is entirely stripped of its grains, and the shelled cob is ejected from the machine through suitable openings, as at *p*, in the casings N.

Claim.—The inventor claims the perforated revolving disk, in combination with the radial arms I *g* and blocks M, constructed and operating in the manner and for the purpose substantially as set forth.

No. 18,174.—Edmund L. Freeman, of Brownville, N. Y., assignor to Himself and J. & G. Lord & Co., of Watertown, N. Y.—*Improvement in Cultivator Teeth.*—Patent dated September 8, 1857.—The nature of this invention will be understood by reference to the claims and engravings.

The inventor says: I do not claim a metal casting to form a head or stay-pin of the tooth.

Neither do I claim a bolt for connecting to the frame, as they have been long known and used.

I *claim*, 1st. A lapped-headed cultivator tooth A, made in the manner substantially as described.

2d. A brace-washer and stay-pin B in one piece underneath the head, substantially as described, for the purposes set forth.

No. 18,979.—Horace A. Lothrop, of Sharon, Mass.—*Improvement in Hoes.*—Patent dated December 29, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I do not claim a hoe made with a single triangular blade.

Nor do I claim one as made of a single blade, having two opposite parallel edges and a triangular notch, whose opposite side and the parallel edges of the hoe plate form boundaries of two teeth extending from the plate.

But I *claim* an improved manufacture of hoe, or one having its blade composed of two or more separate isosceles triangular plates or teeth, each being lapped on or connected to that next to it at their two corners, and each being supported by a separate prong of a furcated shank, as described.

No. 16,737.—William Lewis, of Seneca Falls, N. Y.—*Improvement in Machines for Husking Corn.*—Patent dated March 3, 1857.—A stationary knife with a concave edge is employed to cut off the nubbin or butt of the ear; a bar presses down on the same, and the ear is then discharged from the husks by the action of the hammer. The clearing rod rids the knife of the nubbin, should it incline to adhere.

The inventor says: The connexion of the hammer G to the rod F, to the plate or spring *b*, is not strictly essential. In practice, or in an operating machine, the hammer may be rigidly attached to the rod F, but probably the elastic or spring connexion is preferable. I do not confine myself, however, to either mode of attachment.

I *claim* the bar D, knife B, bar or hammer G, and stop E, in combination with the clearing rod Q, when the whole are arranged to operate conjointly, as shown, for the purpose specified.

No. 17,731.—William Emery, Jr., of Chester, Ill —*Improvement in Machines for Husking Corn.*—Patent dated July 7, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

The inventor says: I do not claim separately any of the parts described, as analogous devices most probably have been used.

But I *claim* the combination of the rotating hub C and knife E, inclined box or trough J, and stripping hooks *o*, when the above parts are arranged to operate, as shown, for the purpose set forth.

No. 17,350.—Thomas Harding, of Springfield, Ohio, assignor to Benjamin H. Warder, John W. Brokaw, and Jonathan E. Child, of the same place.—*Improvement in Mowing Machines*—Patent dated May 19, 1857.—When it is desired to back or turn this machine, the driver draws back lever H, which turning on its fulcrum raises the forward end of yoke B, together with the front wheel A, off the ground, and depresses the rear end and wheel, thus raising bracket E and finger bar C off the ground, and supporting the whole weight of the machine upon the hind wheel, which renders it easy to back or turn the machine.

Claim.—The combination with a mowing machine of the peculiarly constructed truck A B, when both are arranged to operate in relation to each other, in the manner and for the purposes set forth.

No. 18,148.—D. W. Hughes, of New London, Mo.—*Improvement in Corn Planters.*—Patent dated September 8, 1857.—By connecting the two seed planters together in the manner represented in the engravings, they may be adjusted so as to drop the seed nearer together or further apart by merely raising or lowering the pin *l* on the pendant bar *j*.

The inventor says: I do not claim the two strips or bars, joined together, and provided with a hopper and slide, irrespective of the peculiar arrangement of the slide and hopper, for such device, having a different arrangement of parts from that shown, was formerly patented by me.

But I *claim* connecting the two implements together by means of the plates *h*, and bars *m*, and pendant bar *j* J, arranged as shown and described, for the purpose set forth.

No. 18,104.—Thomas J. Rogers, of Cassville, Ga.—*Improvement in Cotton Seed Planters.*—Patent dated September 1, 1857.—The nature of this invention will be understood by reference to the claim and engravings.

Claim.—Forming one side of the eduction aperture of a cotton seed planter of the extremity of a sharply vibrating plate F, when the opposite side of said aperture is formed of an adjustable flaring concave *k*, substantially as set forth.

No. 18,524.—Joseph D. Smith, of Lancaster, Ohio.—*Improvement in Seed Planters.*—Patent dated October 27, 1857.—This invention consists for use, in connexion with a planter to be propelled by hand, in the arrangement consisting of the double-acting valves F G, compound lever G H, double-chambered hopper B, adjustable pitman I, and swinging self-adjusting roller D; the whole being arranged so as to enable the operator to plant in hills, by hand, at each half vibration of the valve, and, when necessary, to plant in drills by the revolution of the roller.

Claim.—The use, in combination with a planter to be propelled by hand, of the arrangement consisting of the double-acting valves F G, compound lever G H *g h i*, double-chambered hopper B F, adjustable pitman I, and swinging self-adjustable roller D; the whole being arranged and combined substantially as set forth.

No. 17,594.—Micajah Tolle, of Newport, Ky.—*Improvement in Cultivator Ploughs.*—Patent dated June 16, 1857.—The bracket *c* is slotted, and the beam *d* perforated in the manner represented in the engraving, so as to admit of adjustment of the entire range of blades b, b^1, b^2, &c., longitudinally of the beam and to any angle therewith, and the individual blades to a greater or less distance from each other.

The inventor says: I am aware that various forms of hoes and harrows, having their teeth placed obliquely with the line of draught, have been employed, both for removing clods and covering seed, and also that oblique arrangements of teeth in various forms exist commonly in harrows, cultivators, &c.

I *claim* the bracket *c*, in combination with the plough beam *d*, constructed, arranged, and operated in the manner substantially as and for the purposes set forth.

II.—METALLURGY.

No. 16,732.—Charles Hutchins, of East Douglass, Mass.—*Improvement in Machines for Making Axes.*—Patent dated March 3, 1857.—Figure 1 is a front elevation; figure 2 a side view of the dies *p p;* and figures 3 and 4 sections taken at the lines A *a* and B *b;* figure 5 is the block of iron; figures 6, 7 and 8 represent its shape as it comes successively from the dies *e e p p*, and, finally, from the apparatus *s s t*. The block, when shaped as represented in figure 7, is placed on the upper face of former *s*, which corresponds with the upper inner surface of the eye of the axe when completed. The head *a* is griped by the jaw *t*, the jaw being depressed by means of treadle *v;* the sliding carriage *w* is then depressed by means of crank rod a^1, when the rollers *s s* passing downwards will bring the iron to the shape, as represented in figure 8.

The inventor says: I have described three machines which are employed in the successive operations to produce axe polls; but I do not wish to be understood as making claim to the mechanical construction of either of the said machines, as substantially such machines have been used separately for other purposes, although under modifications which would not answer the purposes specified. Nor do I wish to be understood as limiting my claim of invention to the use of machines constructed specifically as described, as they may be modified in many respects without essentially changing the mode of their operation by which they are rendered useful in the production of axe polls.

I *claim* the preparation of the bar or block of iron by longitudinal rolling between rolling dies, operating substantially as described, to form it with a projection on one face in the middle of its length, and two projections on the opposite face, one at each end, substantially as described, in combination with the cross rolling between segment dies under a mode of operation substantially such as described, to reduce the thickness of the cheeks towards the edges, and to the required swell on the edges of the cheeks, substantially as described, and for the purpose specified.

No. 16,868.—Norman Aylsworth, of Rochester, N. Y.—*Improvement in Casting Railway Car Wheels.*—Patent dated March 24, 1857.—The core *c* is made tubular for a portion of its length, namely, to the line *b*, in figure 2, and to the hole *g*, in figure 1. The fluid metal passes through this core, and reaches the wheel through the horizontal gates *g g*. The core box is formed in two parts, divided at right angles to the line of action shown in the engravings, and has the bottom *d*. Across this core box is placed the bar *e*, which forms the gates, and is supported at each end by the pins P P. The rod *r* rests upon this bar, being kept central by means of the pin I, and forms the hole for the sprue. Sand is filled in and rammed down in the usual manner of making cores; the rod *r* is removed, then one-half of the box is taken away, and the bar *e* is easily withdrawn.

Claim.—The construction of the partially tubular core *c* for the centre of railroad car wheels; the tube T being formed to within a short distance of the end of said core, and communicating with the lateral passages *g g*.

No. 17,458.—Jonathan F. Turner, of Bridgewater, Mass.—*Improved Machine for Filing Saws for Cotton Gins.*—Patent dated June 2, 1857.—The saw cylinder, containing the saws E^1, having been arranged in its proper place, the frame O which supports the file holders Y may be adjusted to its proper height by turning set screw Q^2. Rotary motion being imparted to pulley T, pulley U is rotated, and the files *h* are vibrated, acting on the back of the saw teeth of the saws E; and as the saws are turned with a continuous motion by the arrangement of belt *m*, pulley *g*, belt *r*, pulley *s*, screw *t*, wheel t^2, pulley *u*, and belt u^1, the file holders *f* yield so as to let the files spring over the teeth, the files passing from one score into the next.

Claim.—Giving the files a reciprocating rotary or rolling motion by devices such as are described, or their equivalents, for the purposes set forth.

The adjustable vibrating frame carrying the traverse rods, which operate the files when arranged to vibrate parallel with the plane of the saws, so as to adjust and adapt the files to the saws, as described.

Giving the saws a continuous rotary motion while they are operated upon by the files by means of a belt applied directly upon the saw cylinder.

A yielding or spring file holder, in combination with a traversing rod, having a reciprocating rolling motion.

No. 17,672.—WILLIAM COOPER, of Brooklyn, N. Y.—*Improved Horse Shoe.*—Patent dated June 30, 1857.—The object of the opening *o* is to admit of medicated appliances being introduced to wounded or disabled parts.

Claim.—The use of a metallic plate horse shoe covering the base of the hoof, having a suitable stopper fitting into a screwed opening in the same, or an equivalent therefor, constructed in the manner and for the purposes substantially as described.

No. 16,792.—EDMUND FIELD, of Greenwich, Conn.—*Improved Escutcheon for Key-Holes.*—Patent dated March 10, 1857.—This key-hole drop C, consisting of two parts *b* and *c*, pivoted together at *d*, can be applied to a sunken escutcheon A *a*, of much smaller diameter than if the usual drop were employed. Fig. 3 represents the drop when removed from the key-hole.

The inventor says: I do not claim the broad idea of jointing metallic or other bars by means of hinges or pivots, as this is everywhere well known.

But a key-hole drop made in two parts, pivoted together, has never before been known. It is a new article of manufacture, possessing virtues and advantages not seen in any other article of the kind.

I *claim* the key-hole drop C, composed of two parts *b c*, pivoted together.

No. 18,542.—E. L. GAYLORD, of Terryville, Conn.—*Improved Machine for Bending Metal Plates.*—Patent dated November 3, 1857.—The operation of this invention is as follows: The plates L are cut of proper size, and are bent thus: One end of a plate L is placed within the recess C, and the block C is then moved forward, by turning the screw E, until the lower end of the plate L is placed within the recess *c*, and the block C is then moved forward by turning the screw E, until the lower end of plate L is secured or clamped between the cross piece *b* and the block H. The upper part of plate L is then bent over a trifle, as shown by the dotted lines, in fig. 1, and the drop K is then allowed to descend, the drop bending the upper plate flat upon the surface of the block or bed H. The block I serves as a stop, and prevents the plate from being expanded too much in a longitudinal

direction. When the plate L is bent, the drop is raised, the block C moved back, and the cross piece *b* raised by turning the crank G, so that the bent plate may be removed.

The inventor says: I am aware that metal plates are bent or swaged in various forms by means of what are known as drop presses, and I therefore do not claim the drop K; nor do I claim broadly a drop press, nor any of the parts described, separately.

But I *claim* the block C, provided with the movable arms *a a* and cross piece *b*, the block or bed piece H, and adjustable stop I, arranged as shown, and used in connexion with a drop K, or its equivalent, for the purpose set forth.

CLAIMS OF RE-ISSUES GRANTED DURING THE YEAR 1857.

No. 420. *Improvement in Axle-Box Rollers.*—We claim giving a positive motion or rotation to the lubricating roller by the axle of the car wheel, in the manner set forth.

G. W. GEISENDORFF.
J. C. GEISENDORFF.

No. 421.—*Improvement in Moulds for Pressing Bonnet Fronts.*—I claim the hollow metallic mould, substantially such as described, of the form required to give the complete form required for bonnet fronts, and provided with a mode of imparting to it the required temperature, and the matrix of corresponding form to make pressure by a motion in or nearly in the line of the axis, when the said mould and matrix are used in connexion and in combination with the means herein described, for controlling the position of the strip to be pressed, or any equivalent therefor, as set forth.

WHITTEN E. KIDD.

No. 422.—*Improvement in Cleaning the Top Flats of Carding Engines.*—I claim suspending the top flats or lays upon pivots in the centre of the ends by which they can be raised out of the way of the adjoining flats or lays, to be turned by means of a rack working on pinions upon their pivots, or the equivalent thereof, the whole being constructed and arranged substantially as herein described, for the purpose set forth.

And I also claim stripping the flats or workers by a rotating brush, so arranged that a card may, in turn, strip the brush, and return the strippings to the main cylinder, substantially in the manner and for the purposes described.

I also claim the combination and employment of the "lickers-in" $c\,c^1$ $d\,d^1$ and worker *e*, arranged substantially as herein described, and acting as workers and strippers, in the manner and for the purpose described.

W. H. WALTON.

No. 423.—*Improvement in Machinery for Making Cord.*—I claim, first, twisting or controlling the twist of the strands, while the main frame is revolving to lay them into cord, by causing an even faced wheel, attached concentrically to and revolving with the bobbin frame, to travel over a fixed and smooth surface, friction causing the frame to revolve.

Second. Revolving the bobbin frames on their own axes to twist the strands at the same time that they are carried round a common centre to twist the cord by rolling them on the surface of a stationary annular inclined track, towards the inner or outer periphery of which they can be adjusted to run, so as to vary the relative twist of the strands and cord, substantially as herein set forth. But I make no claim to the mere turning of the bobbin frames by friction by any of the devices usually employed for similar purposes.

Third. I claim the construction and arrangement of the central stem or spindle of the bobbin frame, operating substantially as herein set forth, whereby the yarns are collectively subjected to progressively increasing tension and twist from the commencement to the end of the process of laying them into the strand, whereby the latter is rendered smooth and regular in its figure, and of uniform density and strength, and subjected to uniform tension while being laid into the cord.

William E. Nichols.

No. 424.—*Portable Steam Sawing Machine.*—I claim an independent portable steam sawing apparatus, constructed substantially as herein set forth, and connected in such manner with the boiler for generating steam that the steam sawing apparatus can be moved from tree to tree, or applied in different positions at different parts of the same tree, without moving the steam boiler, or breaking the steam connexion therewith.

Samuel R. Wilmot.

No. 425.—*Improvement in Mode of Driving Reciprocating Saws.*—I claim the mode herein described of applying the power of the engine to the saw gate or frame without being permanently connected therewith, so that the piston shall be in a great measure relieved from any lateral motion which the gate may have, which causes it to bind or cut in the cylinder, substantially as described.

I also claim driving one or more saws between two cylinders, as well as driving one or more saws on each side of a single cylinder, and the self-adjustable piston rod, or the self-adjustable slides, which accomplish the same result, as are herein before described.

Isaac Brown.

No. 426.—*Improved Raking Attachment for Reapers.*—I claim the combination of the jointed rake arms *b* and *c* with the disk C, by which the arm B is actuated, when the above parts are constructed and arranged for joint operation in the manner and for the purposes set forth.

M. G. Hubbard.

No. 427.—*Improvement in Machines for Pressing Bonnets and Bonnet Frames.*—I claim pressing the whole of a bonnet or bonnet frame, including the flaring face-piece, side crown, and tip, at one operation, by dies, substantially as specified, whether said bonnet or frame be formed of one or of several pieces, and irrespective of the particular shape of the bonnet or frame.

I also claim forming the side crown and flaring face-piece of a bonnet frame in one piece, or at one operation, as specified.

William Osborn.

No. 428.—*Improvement in the Manufacture of Hosiery.*—I claim the production of the heels and toes of hosiery by knitting a piece of spherical or other suitable form on the cylindrical or straight portions of the leg or foot by any mode of operation in which the stitches are dropped, or left upon the needles and taken up again, substantially as herein described, whereby the whole of the leg and foot is enabled to be produced by a continuous operation of the machinery or devices employed.

William H. McNary.

No. 429.—*Improved Machine for Making Clothes Pins.*—I claim, 1st. The use of holes in a wheel, or of tubes secured to a wheel, and into which the pieces of wood are fed, and are thus retained in and moved forward to the right position, to be acted upon by the lathe, saw, or bit.

2d. I claim the sliding or vibrating lathe and tail block, whereby the pieces of wood to be turned are carried forward to the action of the cutters or chisels.

3d. I claim the cutters or chisels, in combination with the lathe.

4th. I claim a holder essentially the same as shown and described, to hold the pieces while being sawed or bored, the succeeding piece forcing the preceding one out of the holder, and it drops between the holder and saw or bit; and whether the holder be movable or stationary, the saw or bit being made to move to and from the holder, or the holder be made to move to and from the saw or bit.

5th. I claim a saw or bit, either movable or stationary, in combination with the holder.

6th. I claim a punch, or its equivalent, to force the pieces into the holder.

George W. Parker.

No. 430.—*Bituminous Ground for Photographic Pictures.*—I claim sensitized bitumen, prepared as above, for the purpose of taking photographic impressions on paper, metallic sheets, or other substance.

V. M. Griswold.

No. 431.—*Improvement in the Mode of Constructing a Combined Caldron and Furnace for the use of Agriculturists and others.*—I claim combining a caldron with a small square or rectangular or box stove of less area than the caldron, by spreading out the upper part of the box stove to a circular form to surround the caldron by a flue space, substantially as and for the purpose specified.

I also claim making the casing to form a flue space around the caldron by elevating and spreading the plates of the stove, in combination with sectional side pieces, substantially in the manner and for the purpose specified.

JORDAN L. MOTT.

No. 432.—*Improvement in Looms for Weaving Pile Fabrics.*—First, I claim the method of constructing and operating the pincers, or other equivalents, for successively operating the pile wires, so that they shall carry said pile wires forward to the fell of the cloth, and hold them in position with their proper edges upwards until they are otherwise secured, substantially as specified.

I also claim constructing the pincers for successively operating the pile wires, with grooved jaws opening and closing in a line with the pile wire, and with a motion in advance of the lathe, substantially as specified, whereby collision with the lathe is easily avoided.

I also claim the employment of a support or guide to successively receive the inner ends of the pile wires as they are drawn from the cloth and carry them to the position where they are to be introduced into the shed of the warps and guide them therein, substantially as specified.

I also claim the employment of long, horizontal guides to guide the pile wires as they are being inserted in the shed of the warps, substantially as specified.

I also claim holding the pile wires and guiding and adapting the pincers, or their equivalents, to a suitable position to engage therewith, substantially as specified.

I also claim, in combination with the pile wires, a bar or guide which shall successively press against said pile wires to keep them in a proper position during the operation of cutting the pile, substantially as specified.

And I finally claim the method of applying the tension weight and brake directly to the whip roller by means of the arms g^6 and i^6, substantially in the manner and for the purpose specified.

ERASTUS B. BIGELOW.

No. 433.—*Improvement in Breech-loading Fire-Arms.*—I claim a cone-headed pin with two or more expanding rings, substantially as shown and described, for the purpose specified. And in making the exterior of a breech-pin, as described, cone-shaped, for the purpose as above set forth. Also combining the same with the radial or hinge-breech, substantially as shown and described.

B. F. JOSLYN.

No. 434.—*Improvement in Carding Engines.*—I claim, first, the application to carding engines of two or more variable cylinders arranged and operated in the manner substantially as herein set forth, for the purpose of preventing the filling up of the main cylinder.

Second. The use of a doffer, in combination with strippers or cleaners, arranged and operating in the manner substantially as herein described, for the purpose of preventing the filling up of the main cylinder and producing an uniform sheet.

A. D. SHATTUCK.

No. 435.—*Improvement in Saw Mills.*—We claim the means above described to regulate the deflection of the saw blade when at work; that is to say, the application of the feed rollers to the back of the saw blade for the purposes as herein set forth.

We also claim the driving power to the lower pulley *b*, when the saw is designed to work in its downward motion, substantially as herein set forth.

WILLIAM P. WOOD.
SAMUEL DE VAUGHAN.

No. 436.—*Improvement in Looms for Weaving Pile Fabrics.*—I claim, first, successively drawing the pile wires from the cloth by a latch or hook, substantially as specified.

I also claim constructing and operating said latch or hook, so that after drawing said pile wires from the cloth, it successively delivers them to a carrier or other apparatus, which completes their movement, substantially as specified.

I also claim, in combination with a latch or hook for drawing the pile wires from the cloth, a carrier or apparatus to successively receive said pile wires from said latch or hook, and transfer them to the fell of the cloth, substantially as specified.

And I finally claim the method of inserting the pile wires into the upper shed of the warps, while the shuttle is passed through the lower shed, substantially in the manner, and for the purpose specified.

ERASTUS B. BIGELOW.

No. 437.—*Improvement in Running Gear of Carriages.*—I claim, first, the combination and arrangement of the pivot in the rear of the fore axle and the segments with the perch and head block or perch cross-bar of carriages having perches, as herein before described, or the equivalents thereto, for the purpose of enabling carriages to turn in a shorter space than by the common mode of coupling with perfect safety.

2d. I claim the additional set of segments or their equivalents, the pivot placed perpendicularly above the lower turning point, to be employed where the springs are fastened to the axle and move with the same.

GUSTAVUS L. HAUSSKNECHT.

No. 438.—*Improvement in the Machine for Sawing off Logs.*—We claim revolving a log or block while being sawed, in order that the pieces sawed off may be of uniform thickness on all sides, and the mechanism herein described, or its equivalent, for raising and lowering said block, that it may be sawed into pieces of any desired thickness without being removed from the machine, said block being centred but once in sawing up the entire log, substantially as herein set forth.

CORNELIA WATERMAN,
FOR WATERMAN & RUSSELL.

No. 439.—*Improvement in Sugar Works.*—I claim, first, the employment of a vacuum pan or pans in combination with an evaporating pan or pans or boiler in which the saccharine juice or other fluid is evaporated under a pressure lower, equal to, or greater than the atmosphere, which last mentioned pan or pans or boiler prepares the saccharine juice, &c., from the vacuum pan or pans, and at the same time supplies the necessary vapor from the saccharine juice, &c., to complete the evaporation or concentration of the syrup, &c., in the vacuum pan or pans, as fully described above.

Second. The employment of a weighted throttle or other regulating valve in the main steam-pipe, arranged and operating in the manner and for the purpose as herein before described.

Norbert Rillieux.

No. 440.—*Improvement in the Machine for Forming the Web for Cloth, of Wool, Hair, or other suitable substance, without Spinning or Weaving.* What is claimed is the mode of operation, substantially as herein described, by means of which the slivers of the weft fibres are kept properly distended until their entire surface is in contact with the surface of the sliver of warp fibres, substantially as described.

Stiles Curtis,
President of the Union Manufacturing Co., Norwalk, Conn.

No. 441.—*Improvement in Vault Covers.*—I claim grooving or channelling the upper surfaces of the metallic portions of illuminating covers, substantially in the manner and for the purpose herein set forth; but this I only claim when the glasses in said grooved covers are so arranged as to bring their upper surfaces flush with, or a little above, the upper surfaces of said covers, substantially as represented in the accompanying drawings.

John B. Cornell.

No. 442.—*Improvement in Setting Mineral Teeth.*—I claim a new and useful mode and improvement in setting mineral teeth on metallic plates, by means of a fusible mineral compound or cement which is used to fill up the interstices between and around the base of the teeth and upon the plate, of which a continuous artificial gum is formed without seam or crevice.

John Allen.

No. 443.—*Improvement in Window Curtain Fixtures.*—I claim attaching the curtain to its roll by a piece or strip which fits into a groove in the roll and is secured thereto by caps at the ends, in the manner substantially as herein set forth.

Silas S. Putnam.

No. 444.—*Improvement in Planing Machines.*—I claim, first, the combination of the rotary disk cutter with the pressure and bed, substantially in the manner and for the purposes herein described.

2d. I claim the combination of the Bramah wheel, so called, with the rotary disk cutter, and its accessories, for the purpose of planing, substantially as herein set forth.

3d. I claim the method of planing with a continuous drawing cut substantially as described.

James A. Woodbury.

No. 445.—*Improvement in Platform Scales.*—I claim my improved arrangement and combination of four bearing multiplying levers C C C C, a multiplying lever E, and a lever F, made as described, so as to act at the same time as an equalizing and a multiplying lever, the whole being applied to a steelyard weighing lever by means substantially as set forth.

I also claim arranging the suspension bridge so that its arched standards shall extend upwards by the sides of the platform, and between it and the sides of the pit, in manner as stated, in combination with arranging the transverse levers C C and their bearings below the platform, the same affording the necessary room for the vertical play of the longitudinal levers, while it secures an advantage as regards the depth of the pit, as stated.

Thaddeus Fairbanks.

No. 446.—*Improvement in Furnaces for Burning Wet Fuel.*—I claim using green bagasse, wet tan, wet sawdust, and other wet carbonaceous or vegetable substances, as fuel, for the production of intense heat, by mingling the gases issuing from a highly heated mass thereof with those arising from carbonaceous combustion, by the intervention of a flue or chamber, with which the chamber or chambers containing the fire and charge of wet substances communicate, and in which said gases meet, mingle, and consume each other on their way to the apparatus to be heated, and to the stack.

I also claim the combustion, for the purposes of a high degree of heat, of bagasse, refuse tan, sawdust, and other wet refuse substance, or very wet and green wood, by the employment of a series of fire chambers, arranged in any manner substantially as described, to communicate with one common flue or mixing chamber when any number of said chambers are nearly closed to the admission of air when first charged, as described, whilst the remaining chamber or chambers is in full communication with the mixing chamber, and has a proper supply of air admitted, and the ash-pit of each chamber, in its turn, is nearly closed, and then opened and has air admitted, whereby the heat required is rendered continuous and comparatively uniform, while the fuel in some of the chambers is being heated and decomposed, and its gases sent forward to the mixing chamber to any desirable degree, as herein set forth.

Moses Thompson.

No. 447.—*Improved Portable Steam Cross-cut Sawing Machine.*—I claim the combination of a saw, and a direct acting engine for driving it, with an apparatus for securing the whole to the object to be sawed in such manner that the latter forms the support or basis by which the steam cylinder is maintained in the proper position.

Samuel B. Wilmot.

No. 448.—*Improved Carpenters' Gauges.*—I claim the invention and exclusive use of point holders, or holders for the points, markers, or cutters of gauges and instruments equivalent thereto, irrespective of any particular or definite form or kind of gauge, and irrespective of any definite form or kind of holder, means, or contrivance, having a screw thread cut within the same, and corresponding with a screw thread cut upon the said points, markers, or cutters, so as that the said points, markers, or cutters are operated within the said holders, to be raised or lowered through the instrumentality of the said screw threads within the said holders, and upon the said points, markers, or cutters of the said gauges, or instruments equivalent thereto, as herein set forth.

Joel Bryant.

No. 449.—*Improvement in Reaping Machines.*—I claim the combination of a vibrating scalloped cutter, the indentations of whose edge act as a series of moving shear blades, with slotted guard fingers, the sides of which act as a corresponding series of fixed shear blades, the parts of such fingers forming the slot, being connected at the front ends only, leaving the rear of the slot open and free for the escape of material that would otherwise clog the cutter, substantially as described.

Obed Hussey.

No. 450.—*Improvement in Reaping Machines.*—I claim the improved bevelling of the edges of the blades of scalloped sickles, as herein described.

Obed Hussey.

No. 451.—*Improvement in Reaping Machines.*—I claim the combination of a slot, formed between the long and short parts of the guard finger, with an opening in the rear of the short part, substantially as described.

Obed Hussey.

No. 452.—*Improvement in Sewing Machines.*—I claim regulating the tension of the thread, after it has been unwound from the bobbin, by means of apertures and bars within, upon, or through the thread case, either separate or combined, or by any equivalent means, when said means are within, upon, or form part of the bobbin case itself, for the purpose specified.

I also claim regulating the tension of the shuttle thread in the act of leaving the bobbin, by a combination of one or more screws with a spring or any yielding or elastic substances, or any combination of equivalent devices producing the same effect.

Joseph P. Martin,
Assignee of John A. Bradshaw.

No. 453.—*Improvement in Sewing Machines.*—I claim the covered shuttle to be used in a sewing machine, or, in other words, constructing that portion of the bobbin case which comes in contact with the

loop, cylindrical, or in any form which does not present edges in its transverse sections.

Joseph P. Martin,
Assignee of John A. Bradshaw.

No. 454.—*Improvement in Looms.*—I claim supporting the wag staff at its lower end, so that it may slide longitudinally in connexion with supporting it in other respects by a joint link, or its equivalent, applied so as to cause that part of the staff which strikes the shuttle to move in a line parallel or about parallel to the race beam, as specified.

And I also claim connecting the lower end of the two staffs below their fulcra, by means of a spring, having an intermittent action for drawing them back, in combination with the application of a positive motion above for driving the shuttle, whereby the returning staff aids in arresting the momentum of the shuttle, substantially as herein described.

Warren W. Dutcher.

No. 455.—*Improvement in Refrigerators.*—I claim placing shelves or fixtures for holding articles to be refrigerated, or the articles themselves, in the descending current directly under an open bottom ice box, in combination with a dividing partition open above and below, as set forth.

I claim, in combination with said shelves or fixtures so placed, constructing the open bottom of the ice box in such manner that the air may pass freely down through the same, and fall directly from the ice upon the articles to be refrigerated, while at the same time the drip of the water is prevented, as set forth.

D. W. C Sanford.

No. 456.—*Hinge for Picture Cases.*—I claim my improvement in the application of a hinge of a daguerreotype or picture case, moulded of a plastic material, or made of a frangible substance or substances, such hinge being made with each of its leaves bent twice, as set forth, and so applied to the halves of the box that it may not only embrace two contiguous sides of such halves, and be independent thereof, or not have any tenon or projection to enter the same, but may extend or lap over and be fastened to the top and bottom plates of said box, substantially as described.

A. P. Critchlow.

No. 457.—*Improvement in Seed Drills.*—I claim the regulating at pleasure the quantity of seed discharged, by means of the transverse slides *f*, or their equivalent, in combination with the reciprocating slides E, as herein shown and described.

James Selby.

No. 458.—*Improved Saw Mill for Re-sawing Boards and other Lumber.*—I claim the mode of operation, substantially as herein described, of gauging, guiding, and presenting boards to the action of a saw, which mode of operation results from combining with a slitting saw the mechanism, substantially as described, for gauging and guiding one face of the boards, and the mechanism for making a self-adjusting pressure, substantially as described, on the opposite face of the boards, so that the boards will be clamped between the two said mechanisms on opposite faces, and immediately in front of the cutting edge of the saw, so as to present the gauged face of the boards, however warped or bent they may be, in a plane parallel with the plane of the saw, as set forth.

And I also claim, in combination with a slitting saw, and the arrangement of the gauge and pressure rollers, substantially as described, connecting the said gauge and pressure rollers with the mechanism from which they derive motion by means of universal joints, substantially as and for the purpose specified.

And I also claim the method, substantially as herein described, of hanging and straining the saw by the combination of the three stirrups at the ends of the saw, constructed and connected in manner substantially as herein described.

Pearson Crosby.

No. 460.—*Improvement in Turn Tables.*—I claim balancing the platform of the turn table upon a transverse shaft, or other suitable bearing or bearings, resting upon or connected with the carriage which supports said platform, in such a manner that the table, when in a horizontal position or thereabouts, is elevated above its under supports or end bearings, to admit of its free swing, and so that the table may be depressed at either end, to bring the ends of its rails on either side of the carriage into line or level with the rails of the track for the purposes set forth.

Jacob C. Robie.

No. 461.—*Improvement in Looms for Weaving Brussels Carpets, &c.*—1st. I claim, in combination with the pile wire or wires for weaving piled fabrics, a grooved receptacle or trough for holding said pile wire or wires in position whilst being pushed into the shed of the warp, substantially as specified.

2d. I claim pushing said pile wire or wires into the shed of the warps, by a driver or pusher, substantially as specified.

3d. I claim guiding and supporting the pile wires as they are inserted into the shed of the warps, by a guide or guides through, over, or on which said wires slide, substantially as specified.

E. B. Bigelow.

No. 462.—*Improvement in Machinery for Grinding and Polishing Metallic Surfaces, particularly Saw Plates.*—I claim, in combination with the rotary and traversing motion of a cylindrical lap or grinding or polishing surface, substantially as described, the reciprocating motion of the carriage which carries the plate to be reduced or polished at right angles to the traversing motion of the rotating lap or grinding or polishing surface, or, as the equivalent thereof, a rotary motion, substantially as described.

And I also claim constructing the said grinding or otherwise reducing or polishing surface of a series of plates of any suitable substance, with spaces between the several plates, substantially as and for the purpose specified.

Richard M. Hoe.

No. 463.—*Improvement in Hanging Shafts in Mills.*—I claim constructing the boxes for hanging shafting in mills, with circular cavities on the outer surface and on opposite sides, each cavity surrounding a bulb or projection in the form of a segment of a sphere, and having the required thickness of metal outside of such cavities for strength, as substantially described, when such boxes are combined with holding sockets which embrace said bulbs, and which are so placed within the said concavities as to allow the boxes thus held to play within the sockets in the manner of a universal joint, substantially as specified.

And I also claim combining the box, which is provided with segments of a sphere on its outer surface, substantially as specified, with the hanger, pedestal, or pillow block, by means of adjustable sockets, substantially as specified.

Joseph Bancroft,
Executor of Edward Bancroft, deceased.

No. 464.—*Machine for Drying and Pressing Paper.*—1st. I claim the encasing of the cylinders in part, and attaching of brushes inside of said cases, and the application of sawdust or other proper substance for the purpose of cleaning the outer surface of the pressing cylinders, as specified.

2d. I claim combining two or more hollow steam or heated chests, at proper distances apart, so as to admit of the sheets of paper to pass between said chests free and unobstructed by means of endless belts, or their equivalents, for the purpose specified.

3d. I claim encasing the outer surface of the heated chests, as combined, by non-conducting substances, for the purpose of retaining the heat, as specified.

4th. I claim, in combination with the pressing cylinders, as herein described, the drying apparatus, consisting of heated chests, between which the sheets of paper are passed on tapes, or their equivalents, without touching or dragging thereon, as specified.

John North.

No. 465.—*Improved Cowl or Draught-Accelerator for Steamers.*—I claim their combination constructively, in the manner and for the purposes hereinbefore described and shown.

Peter C. Guion.

No. 466.—*Improvement in Grass Harvesters.*—I claim, 1st. Extending the shoe H G from the heel of the rack or finger-bar upward and forward, and firmly connecting its continuation with the draught, when the finger-bar is located as set forth, so that the power by which the machine is drawn shall, through the shoe, be communicated to and draw forward the heel of the rack or finger-bar, thus relieving the great strain which would otherwise come upon the lateral connexions of the rack or finger-bar with the wheel frame, while the heel is enabled to slide over obstructions, substantially as shown.

2d. When the main wheel and inner end of the finger-bar or rack D are located relatively, as described, I claim continuing the shoe H G from the heel of the rack or finger-bar upward and forward until the upper end of its extension reaches a part of the machine which always runs above the mown grass, and which will keep the said grass down and prevent its rising over the point of the extended shoe, thus aiding the shoe to ride over the mown grass, even when accumulated before it, substantially as shown.

3d. Supporting the heel of the rack or finger-bar sufficiently near the ground and at a convenient distance laterally from the main wheel by arms extending upwards and forwards and upwards and backwards therefrom, and connected with the frame or strong bars firmly bolted across the frame in front and rear of the said rack or finger-bar, while the said frame and bars are elevated to pass over the cut grass, and the above parts are arranged substantially as shown.

4th. Supporting the rack or finger-bar at the side of and lower than the main frame by means of auxiliary framing in a fixed position at the side thereof, and extending downwards and forwards, so that while the finger-bar is held as near the ground as desired, and lower than the main frame, the main frame may be nearly horizontal in the line of draught and at any convenient height to avoid clogging or accommodate the diameter of the main wheel, as shown; such an auxiliary frame as a whole is shown in the drawings, composed of the bar C, rods E E I, and rack or finger-bar D; but its details may, of course, be varied, while the principle of my invention is retained.

5th. Supporting the rack or finger-bar D in its position at the side of and lower than the main frame by extending a strong bar C behind said rack or finger-bar, firmly supported by said frame, and rigidly connecting said rack or finger-bar to said bar C by a straight brace or braces E E; said frame being elevated and said bar being elevated and placed sufficiently in rear of said rack or finger-bar to avoid clogging or lodging of the mown or falling grass against either, when said parts are arranged in relation to each other substantially as shown.

6th. Supporting the outer end of the rack or finger-bar by a rod extending downwards and forwards from the cross-bar C to the finger-bar, parallel or nearly so to the face of the main wheel, when the frame and bar C are elevated above the rack or finger-bar, in the manner and for the purposes contemplated in the last claim, to avoid the falling or clogging of the cut grass against such rod, as set forth.

William M. Ketchum.

No. 467.—*Improvement in Gas-Burners.*—I claim combining the gas distributer B, or the same and the purifier C, as herein described, with the burner, so as to operate therewith substantially as set forth.

I also claim elevating the top of the orifice *a* for injecting the gas into the chamber of the burner above the base of said chamber by a cone, or its equivalent, and so as to form a channel around said orifice for holding tarry matter, as well as for removing it from the orifice.

And I also claim extending the orifice *a* into the distributor and among its wires, so as to attain advantages as above explained.

Charles H. Johnson.

No. 468.—*Improvement in Cast Iron Car Wheels.*—I claim the connecting of the rim of the wheel with the hub in cast iron car wheels, by means of two curved plates starting from near the ends of the hub and joining at a part of the distance between it and the rim, thus forming a hollow ring or arch around the hub, and joining said ring with the rim by a single plate, or its equivalent, for the uses and purposes above set forth.

Anson Atwood.

No. 469.—*Improvement in Ships' Blocks.*—We claim passing the straps through grooves in the inner faces of the cheeks of the blocks, as herein described.

Isaac D. Russell.
Cornelia Waterman,
For Stephen Waterman.

No. 470.—*Improvement in Locomotive Fire-Box.*—We claim the downward and rearward inclination of the top or roof, in combination with the flat grate surface and the usual feeding hole or door, and with or without the fuel feeding boxes through the roof, as herein described.

Ross Winans.
Thomas Winans.

No. 471.—*Improvement in Locomotive Tenders.*—We claim the tender, with an upper and lower platform, in combination with and for the purpose of feeding with greater convenience the furnace of a locomotive steam engine having upper and lower feeding holes, substantially as herein described.

Ross Winans.
Thomas Winans.

No. 472.—*Improvement in Means for Guiding Line Ferry Boats or Flying Bridges.*—I claim adjusting the boat A, relatively with the cable or rope x x, by the means herein described, or by any mechanism, when said mechanism is so arranged as not only to effect the adjusting or turning the boat, but also to retain it when adjusted, for the purpose set forth.

William A. Jordan.

No. 473.—*Improvement in Flouring Mills.*—I claim the tapering burr F, when covered with steel plates G, having teeth in disjointed lines and oblique with the axis of the burr, in combination with the steel pieces h, having also oblique teeth, but inclined in a contrary direction to those of the burr, and being dovetailed into projections cast to the shield H, the said projections forming longitudinal grooves i, running lengthwise on the cone and crossing the inclined dress, substantially in the manner and for the purposes set forth.

JOSEPH WEIS.

No. 474.—*Improved Portable Field Fence.*—I claim connecting the panels or sections of a fence by the projection of one or more rails, in whole or in part, from one section or panel beyond the slats or battens, and between the slats and battens of the adjoining panel, and supporting and locking the fence by compound triangular braces, substantially as shown and described, and arranged with reference to the projection of the rails or their equivalent keys, for the purpose specified.

JAMES G. HUNT.

No. 475.—*Improvement in Looms for Weaving Piled Fabrics.*—First. I claim the method of transferring the pile wires in series from the cloth to the shed of the warps, substantially as specified.

Second. I also claim the method of successively cutting the rows of loops or pile on the pile wires, substantially as specified.

MERTONN C. BRYANT.

No. 476.—*Improvement in Machines for Manufacturing Hat Bodies.*—What is claimed is, the method of felting hats, by passing them or rolling them between the revolving endless planking table and a series of rollers, as described, or their equivalents, whereby a vibrating, reciprocating, and forward motion is communicated to the hats, thereby working it up in a perfect manner; but this we claim only when the vibrating and reciprocating motion is communicated to the hats in the direction of the revolving motion of the travelling belt, so as to give the hats a rolling motion, alternately forward and back, as they pass through the machine.

JAMES S. TAYLOR.
HIRAM L. STURDEVANT,
Per JAS. S. TAYLOR,
Administrator.
ELIJAH STURDEVANT,
Per JAS. S. TAYLOR,
Attorney.

No. 477.—*Improvement in the Method of Cutting out the "Uppers" of Boots and Shoes.*—We claim the cutting or otherwise making the leather or other material to form the upper of a boot, by folding, without crimping, of the form substantially as shown in figure 4, and having its characteristics herein fully described, whether the said form be produced by a single piece of material or by the union of two or more pieces.

JOHN CHILCOTT.
ROBERT SNELL.

No. 478.—*Improved Bomb for Killing Whales.*—We claim, first, inserting the end of the fuse through a short holding pipe or collar *e*, and securing it firmly therein by compressing the same; and the driving or forcing this within the end of the fuse pipe having a conical enlargement at its rear end.

Second. Enlarging the end of the fuse cord by winding it with twine, or its equivalent, so that it cannot be drawn through the pipe, and inserting it in the fuse pipe, either with or without the fastening pipe *e*; and putting gypsum, brimstone, or wax, around it within the nut A to hold it securely.

Third. We claim the application of the sliding collar *h* on a projectile carrying a cylindric metallic plate, covering the projectile, and either slit to form wings *k*, or unslit as a cylinder case, and so constructed that the said collar with the case or wings shall slide to the rear after being discharged from the gun, either by the action of the spring or the resistance of the air to guide its direction.

Fourth. We claim so constructing and applying these wings *k* that they may coincide with the cylindric surface of the projectile while in the gun, and that their rear ends may be thrown up therefrom by their elasticity after being discharged, so as to stand in positions diverging from that surface in the rear.

Fifth. The application of helical or spiral springs S on the surface of a projectile, to force to the rear a collar *h*, (either with or without the guides *k*,) after leaving the gun, substantially as described.

NATHAN SCHOLFIELD.
WILLIAM W. WIGHT.

No. 479.—*Machine for Bending the Lips of Wrought Iron Railway Chairs.*—What is claimed is, first, a suitable support for a chair blank, in combination with bending levers or a bending apparatus, and a former, or the equivalents thereof, acting in combination, substantially as specified herein.

Second. A drop hammer, or its equivalent, in combination with bending levers, a former, and a suitable support for the chair blank, or their equivalents, all substantially such, and acting in combination, substantially in the manner hereinbefore set forth.

JACOB ROWE, [L. S.]
President of the Railroad Chair Co.

No. 480.—*Improved Method of Making Wire-Strengthened Spoons.*—I claim casting the spoon handle in a mould of larger dimension than the finished handle is required to be, as herein set forth, and subsequently swaging the handle into the proper shape, and condensing the metal upon the strengthening wire, by means of the drop press and dies, as described.

CHARLES PARKER.

No. 481.—*Improvement in Distributing Apparatus of Flouring Mills.*—I claim the double series of spouts and valves arranged and connected with the bolting chamber, substantially as herein set forth.

I also claim the arrangement of the conveyer A, in combination with a double series of valves and spouts, as set forth.

ALFRED T. CLARK.

No. 482.—*Improvement in Rice Hullers.*—I claim operating the pestle by having it attached to a rod passing through the bottom of the mortar, and receiving motion through a crank, or its equivalent, substantially as and for the purpose and object herein set forth.

PETER McKINLAY.

No. 483.—*Improvement in Boot Crimps.*—I claim the manner above described of arranging the block A and clasps C, so that the turning up of the straining screw shall at the same time perform the double operation of confining the ends of the leather between the block and clasp, and of stretching the leather over the boot-form, the whole being substantially as above specified.

J. M. READ.

No. 484.—*Improvement in Reed Musical Instruments.*—I claim so connecting the board which contains the reed seats or perforations for the reeds with the exhausting bellows, that it shall form substantially a part of the stationary leaf or cover of the exhaust chamber thereof, while the exhausting or pumping chamber is placed in immediate connexion with the said exhaust chamber without the intervention of tubes; thus improving the tone of the reeds, expediting their speaking, and giving a compact, light, convenient, and graceful form to the instrument, substantially as described.

I also claim the reed cells, in combination with the reed seats or openings, substantially as described.

I also claim the concentrating chamber, in combination with the reed cells and reed seats, substantially as described.

I claim the last two combinations specified, only when they are to be used with a suction or exhaust bellows, capable of producing a continuous current of air through the reed opening, as set forth.

J. CARHART.

No. 485.—*Improvement in Glass Journal Box.*—I claim a journal box, composed of a metal shell or body and anti-friction lining surface of vitreous material, when said vitreous material is combined with its metal back, substantially as and for the purposes set forth.

EDWARD CAMPBELL.

No. 486.—*Improved Automatic Regulator for Wind Wheels.*—1st. I claim the combination and arrangement of the air passages F, with the peculiar devices herein fully described; for the purpose of making a self-regulating wind wheel, as set forth.

2d. I claim the swinging wing *g* and slide *l*, arranged as set forth, and operating in the manner described.

3d. I claim the peculiar arrangement of slats *s*, cord *d*, and weight *c*, when operated in the manner and for the purpose set forth.

JOSEPH DUNKLEY.

No. 487.—*Improvement in Ovens.*—We claim, 1st. The combination of flues and furnaces, substantially such as are hereinbefore specified, with an endless apron, or its equivalent, substantially in the manner hereinbefore described, whereby the amount of heat imparted to either side of an apron or chain may be regulated independently.

2d. In combination with an endless apron and oven, or their equivalents, discharging and charging apertures, located substantially as hereinbefore set forth, in such manner that dough may be charged and withdrawn in lines perpendicular, or nearly so, to the line of motion of an endless apron.

WILLIAM E. TREADWELL,
WILLIAM HUSTACE,
Executors of Ephraim Treadwell, deceased.

No. 488.—*Improvement in Capstans for Steamboats.*—I claim the drum C on the shaft of the capstan B as arranged, the capstan being steam driven by geared shafting connecting it with the "little nigger," and the whole being combined and made operative through the pulley I, substantially in the manner and for the purpose described.

JOHN SCHAFFER.

No. 489.—*Improvement in Looms.*—1st. We claim employing the positive take-up mechanism or cloth roll, or any mechanism acted on or affected by the strain of the cloth when a positive take-up is used, as the point through which the variable strain and wind of warps is made to act more sensitively than from or by the variable vibratory re-acting motion of the whip rolls or sudden jerking of the beam or movable reed.

2d. Effecting and producing a regular delivery and uniform strain of the warps, by the equalizing strain lever P, or equivalent; said lever being acted upon by the variable strain of the warps or cloth through the positive take-up mechanism or cloth roll, as represented.

3d. The equalizing strain lever P, or analogous device, when operating in connexion with the positive take-up mechanism or cloth roll, or when effected by the strain of the cloth, in combination with any mechanism for producing rotary motion to the beam, and with any device or means for regulating the delivery and strain of the warps as the beam decreases in diameter and as the desired strain requires.

4th. Employing the rod T with the pen X, or equivalent, to act upon the strain lever P as a means of moving the weight K when the balance spring S, or equivalent device, is not sufficient to move it.

5th. In combination with the pulley F and pinion C, we claim the movable weight K, the fixed or yielding sectional friction piece G, and friction lever J, as and for the purpose represented.

6th. In combination with the weight K and friction lever J, we claim the rack N, or its equivalent, to so act upon weight K, through catches L, or analogous devices, as to gradually move this weight K towards the fulcrum of lever J as the beam decreases in diameter and as the desired strain of warp requires.

7th. In combination with the weight K and friction lever J, or equivalent devices, we claim the jointed or stationary sectional friction piece G and set screw H, as and for the purpose represented.

DANIEL W. SNELL.
STEPHEN S. BARTLETT.

No. 490.—*Improvements in Carding Machines.*—What I claim is, suspending the top flats or workers upon pivots in the centre of their ends, by which they can be raised out of the way of the adjoining flats and turned by a rack working into pinions, or the equivalent thereof; the whole being constructed and arranged substantially as herein described, for the purpose set forth.

I also claim stripping the flats or workers by a rotating brush, so arranged that a card may strip the brush and return the strippings to the main cylinder, substantially in the manner and for the purposes described.

I also claim the combination and employment of two or more "lickers-in," acting as "lickers-in" and "workers," by running in contact with each other, or their equivalent, for the purpose of working the fibre before it enters on to the main cylinder, in the manner specified and for the purposes set forth.

W. H. Walton.

No. 491.—*Improvement in Roofing Compositions.*—I claim the use of lime, in combination with the rubber or gutta percha and shellac solutions in the composition, as set forth and for the purpose specified.

James West.

No. 492.—*Improvement in "Elastic Gore Cloth."*—I claim, as an improved manufacture, an elastic band or gore cloth, when made not only of a fabric composed of a cement of India rubber or gutta percha and two pieces of cloth, in which the warp and weft of each piece are made to cross one another diagonally or at acute angles, but with the edges of the cloth cut and overlapped and cemented down in a line or lines out of parallelism with either the warp or weft threads, the line of maximum elasticity in the binding making that angle with the warp as well as the weft which is the complement of half the angle which they make with each other.

Charles Winslow.

No. 493.—*Improved Abdominal Supporters.*—I claim the bandage *a*, substantially as described, provided with a series of cords *g* and laces *b*, or their equivalents, applied and operated substantially in the manner and for the purposes set forth.

Julia M. Milligan.

No. 494.—*Improvements in Looms.*—I claim, first, mounting a loom with two distinct sets of harness, each governing all the warp threads, for the weaving of a web on one side of an intended button hole or slit, and capable of being thrown out of action, each by itself, while the other set is in action during the process of weaving button holes, substantially in the manner and for the purposes hereinbefore specified.

Second. I claim connecting each set of harness capable of being thrown in and out of action, and governing all the warp by a cam or catch, or the equivalents thereof, to throw one or the other of the said sets of harness out of action when necessary, substantially as described.

Third. I claim the combination of the mechanism hereinbefore described, for causing one set of harness to cease its action, or any equivalent therefor; with another mechanism substantially such as is hereinbefore described, for determining the periods during which one set of harness shall remain out of action or lie dormant, or the time or moment at which such harness shall cease to act, or any equivalent therefor, the combination acting substantially as and for the purposes set forth.

Fourth. I claim the combination of a slow-moving cam or cams, or its or their equivalent, for determining the time and period, or time or period, during which a set of harness shall be out of action, as hereinbefore set forth; with harness substantially such as is hereinbefore described, mounted in sets, each set governing all the warp threads on one side of a button hole, so that different sets of harness may be in action or lying dormant at proper times and for proper periods, for purposes substantially such as are described.

Fifth. I claim a contrivance, substantially such as is herein specified, for throwing the take-up motion out of gear, or any equivalent therefor, for stopping the take-up, in combination with two sets of harness, each governing warp-threads, substantially as hereinbefore set forth, the combination acting substantially in the manner and for the purposes described.

And, lastly, I claim the combination of a slow-moving cam, substantially such as is specified, or any equivalent thereof, with a mechanism for stopping or starting a take-up motion, substantially such as is herein described, or any equivalent therefor, whereby the time and period, or time or period, of the stoppage or cessation from action of a take-up motion may be determined automatically, for the purposes substantially as set forth.

W. V. Gee.

No. 495.—*Improvement in Apparatus for Stencilling Window Shades.* What I claim is, first, producing patterns on window shades, in which long or continuous lines form a prominent feature, by means of a pair or pairs of stencils, of the full size of the design, prepared substantially in the manner herein set forth.

Second. The mode of registering the stencils by the use of the plates *e* and pins *c*, for the purpose of adjusting and readily adapting the stencils to shades, as herein specified.

Daniel Lloyd,
For Gibbons L. Kelly.
Dudley M. Ferguson,
Assignees of entire right.

No. 496.—*Improvement in Coating Water Pipes.*—What I claim is, lining metallic pipes with hydraulic cement, by means of a cone, or its equivalent, guided through the pipe so as to lay on the cement of equal thickness and with great certainty and economy, substantially as described.

Jonathan Ball.

No. 497, B.—*Improvement in Cast Iron Car Wheels.*—What I claim is, connecting the rim of a wheel cast in one piece with a solid hub by means of a single waved plate, in combination with the dished flanch or flanches of the hub, forming a ring concentric with the rim of the wheel, substantially as described, whereby the several parts can yield to the unequal contraction in all directions without strain of the metal.

ANSON ATWOOD.

No. 498, C.—*Improvement in Cast Iron Car Wheels.*—What I claim is, a cast iron disk, corrugated in the manner substantially as and for the purposes described, when used in connexion with the chilled rim of a cast iron wheel.

ANSON ATWOOD.

No. 499.—*Improvement in Seed Planters.*—What I claim is, first, in combination with a machine that drops its seed automatically, a hand lever and clutching apparatus, that enables the operator to quicken or retard the dropping, so as to bring it to the exact spot, substantially as herein described, and without disarranging or injuriously affecting the automatic movement.

I also claim, in combination with the wheel S, having its centre of motion at *e*, and furnished with openings *i*, the lever *m*, with its plate *p*, and hung or pivoted at a point eccentric to the point *e*, so that the plate *p* can cover or be drawn within the range of the openings *q* at stated intervals, substantially as set forth.

I also claim the employment or use of the indicator b^1, connected with the valve U, and arranged and operated as shown, and for the purpose herein set forth.

SOLOMON T. HOLLY.

No. 500.—*Process for Removing Photographs from Glass to Paper.*—What I claim is, the herein described use of beeswax, or its equivalent, laid upon the surface of the glass plate previous to applying the collodion film, chemicals, and colors, as herein described, for the purpose of facilitating the removal of the picture; together with the manner of causing the backing paper to adhere to the finished picture, thus giving it strength to overcome the adhesion of the wax, or its equivalent, to the plate of glass, in the manner specified.

EDWARD HOWELL.

No. 501.—*Improvement in Ladies' Skirts.*—What I claim is, constructing hoops intended for ladies' dresses, substantially as and for the purposes set forth, consisting of a spiral formed of any proper material, metallic or vegetable, as described, either with or without a core to support the same, which can be bent into the form of a hoop, and inserted into ladies' skirts, as herein fully made known.

EDWARD F. WOODWARD.

No. 502.—*Improvement in the Manufacture of Sulphuric Acid.*—I claim the process of preparing native metallic sulphurets by pulverizing them and mixing them with the substances above described, in order to extract all, or nearly all, the sulphur from them, for the purpose of making sulphuric acid.

ALFRED MONNIER.

No. 503.—*Improved Locomotive Lamp.*—What I claim is, first, constructing the can B with several compartments in communication with each other, substantially as and for the purpose specified.

Second. The combination of the perforated inverted cone *b*, cap F, funnel *d*, and perforated tube *c*, constructed, arranged, and operating as hereinbefore set forth, for admitting air to the can and preventing the slopping of oil from the vent.

J. A. WILLIAMS.

No. 504.—*Improvement in Cordage Machinery.*—What I claim is, first, the method herein described of equalizing the paying out of the strands from the bobbins, for the purposes set forth.

Second. The arrangement of a friction or rubbing collar *m*, operated by a plunger *o*, passing upward within the supporting stem *b* and the weighted lever *p*, as described, or equivalent devices, for regulating the degree of facility of the rotation of the bobbin spindles.

HENRY PEARCE.

No. 505.—*Improvement in the Manufacture of Iron.*—What I claim is, blowing blasts of air, either hot or cold, up and through a mass of liquid iron, (the oxygen in the air combining with the carbon in the iron, causing a greatly increased heat and ebullition in the fluid mass,) and decarbonizing and refining said iron without the use of fuel.

WILLIAM KELLY.

No. 506.—*Improvement in Ploughs.*—What I claim is, the curved standard, with its front or concave side rounded off, and its curved surface extended to intersect the mould board along its upper edge *x x x*, substantially as and for the purposes set forth.

GEO. WATT.

No. 507.—*Improvement in Diaper Pins.*—What I claim as the invention of the said Joshua Heilmann is, the combination of the sliding curved pin C with the shield or case A, substantially in the manner and for the purposes herein described.

IGNATIUS STURN.

No. 508.—*Improvement in Seed Planters.*—What I claim is, in combination with the hinged frames or hinge joint, the locating of the conductor's or driver's seat in rear of the supporting axle, so that, as he moves forward or back on his seat, the rear frame may act as a lever for lowering or raising the seeding part of the machine, and thus throw it into or out of the ground, as circumstances may require, in turning around or for passing over any obstruction, substantially as set forth.

GEO. W. BROWN.

No. 509.—*Improvement in Carding Machines.*—What we claim is, the application of two or more sets or pairs of feeding rollers to the working cylinders of carding engines, substantially in the manner and for the purpose set forth; and this we claim whether said feed rollers deliver the material directly on to the main cylinder or to lickers-in, when said lickers-in are so arranged as to work in connexion with each other and with the main cylinder, for the purpose and in the manner substantially as set forth.

We also claim the reversing of the relative velocities of the peripheries of the main working cylinder and stripper M at intervals by an automatic movement for the purpose of cleansing or preventing the clogging of the main cylinder, substantially as described.

HORATIO N. GAMBRILL.
SINGLETON F. BURGEE.

No. 510.—*Improvement in Watches.*—What I claim is, the arrangement of the barrel in respect to the pillar plate, so that it shall extend through the plate and be fastened to the dial side of it.

I also claim arranging the main gear wheel with the retaining power and barrel arbor, so that the said wheel shall serve the purpose of a barrel head or cover to the barrel.

I also claim the application of the retaining power directly to the fixed barrel, substantially as specified.

GEO. P. REED.

No. 511, A.—*Improvement in Grain and Grass Harvesters.*—What I claim is, the combination of the platform, the driving gear, the space between the platform and driving gear for the discharge of the gavel, the draught pole, and the stand or rest on the platform for the forker, when the same are arranged substantially as described.

WM. H. SEYMOUR.

No. 512, B.—*Improvement in Grain and Grass Harvesters.*—What I claim is, the combination with the stand or rest W, upon the rear side of the platform, for the person who rakes off the grain, and with the platform of a strong rail V firmly secured to the outer side of the main frame, and extending thence along the rear side of the platform to support it, and the stand for the forker, substantially as herein set forth.

WM. H. SEYMOUR.

No. 513, C.—*Improvement in Grain and Grass Harvesters.*—What I claim is, the method herein described of protecting the gearing from being injured by the working and twisting of the main frame, by mounting the said gearing in an auxiliary metallic frame, constructed and firmly attached to the main frame, as herein described.

WM. H. SEYMOUR.

No. 514.—*Improvement in Cleaning Top Cards of Carding Machines.*—I claim, first, the application and adaptation of the grooved cam, arranged with a sliding bar, substantially as specified, or the equivalent therefor, as a means of producing the reciprocating motions by which the raising and depressing of a top card, or the reciprocating movements of the brush bar in cleansing a top card, may be effected.

Second. I claim the combining of lifter cams T T and a brush bar V with one rotary shaft R, so that, by the movements of such shaft in the manner specified, the operations of raising and depressing a top card and cleansing it may be effected in the manner set forth.

HORACE WOODMAN.

No. 515.—*Improvement in Wheels for Carriages.*—What I claim is, the rim of the hub, which is made in sections, which, being constructed in this manner, will press on all the spokes and hold them all firm in the hub; and their on plate which covers these sections, which will bend and let the sections fit the spokes, with the pressure of the screws, and holds the sections to their places; and the nuts on the spokes, which holds the fellies and the tire to their proper places.

THOMAS BROWNFIELD.

No. 516.—*Improvement in Automatic Grain Weighing Machines.*—What I claim is, first, the combination of the tripping rods *s* with the valve plate N and knuckle braces *i* and *j*, whereby the movement of the valve gate I, (which is operated by means of scale beams F) causes the contents of the buckets B to be discharged alternately, as set forth.

Second. The knuckle braces *i* and *j*, in combination with the trapdoor *m*, whereby the latter is spontaneously closed and fastened immediately after the grain is discharged, as set forth.

Third. The balance beams F, with horns I, in combination with valve plate N and catch levers T, so arranged that the weight of grain in one bucket changes the position of the valve gate so as to turn a portion of the current of the grain into the other bucket; before the first bucket receives the quantity, the second horn trips the catch, and thereby turns the balance of the current of the grain into the other bucket, as set forth.

RUFUS PORTER.

CLAIMS OF ADDITIONAL IMPROVEMENTS GRANTED DURING THE YEAR 1857.

[ILLUSTRATED BY ENGRAVINGS.]

No. 158, to original Letters Patent No. 16,244.—*For Improvement in Harvesting Machines.*—I claim allowing the roller *c* to come against an elastic or yielding stop, when the machine returns to its position, after passing any inequality in the ground, for the purpose of saving the machine from sudden jars, as set forth.

ROBERT J. MORRISON.

No. 159, to original Letters Patent No. 13,724.—*For Improvement in Looms.*—I claim the change in the relative position of cams 2 and

4—6 and 8, in the manner and for the purposes substantially as set forth in the above specification.

James O. Leach.

No. 161, to original Letters Patent No. 15,521.—*For Improved Fire-Arm.*—I claim the employment of a permanent cone, combined with a ring lying between it and the chamber of the barrel with a disk fitted upon the ring, the ring being divided on one of its sides by a cut, into which is fitted a pin or wedge; the cone and wedge being so shaped in reference to the ring as to expand it against the charge chamber upon the least reaction of the charge when fired.

Frederick D. Newbury.

No. 162, to original Letters Patent No. 15,646.—*For Improved Filter.*—I claim, 1st. So constructing that part of the filter to which the filtering medium is attached, and providing it with a seat in the case, that it may be raised from said seat or turned upon it, so that the water shall be free to pass in from the faucet, through and around the filtering diaphragm, in such manner as to wash away the impurities from the surface of the diaphragm, substantially as described, also to relieve the force of the stream of water when drawn without filtering.

2d. I also claim, in combination with the ring *i*, the flange *n*, for holding in their place the additional layers, substantially as set forth.

3d. I claim the grooves on the outer surface of J, in combination with the ring, whether separate or continuous, like the thread of a screw, with or without a corresponding inside screw formed in the ring for greater certainty in holding the diaphragm, also the rebate shown in fig. 10, so that the ring may reach a little below the largest part of J, at *f* and *h*, for the same purpose.

David N. B. Coffin, Jr.

No. 163, to original Letters Patent No. 15,201.—*For Improvement in Safety Hatches for Warehouses.*—We claim the opening and closing of vertical doors attached to the tube or box of an elevator, by means of the action of the traversing car or platform and its attachments, as herein fully set forth.

Wm. H. Thompson.
Eustis P. Morgan.

No. 164, to original Letters Patent No. 14,851.—*For Improved Farm Gate.*—I claim the arrangement and combination of the levers B and C with the ropes or chains F F and platforms A A, they forming a self-acting or balance gate, as fully set forth in the foregoing specification.

Charles N. Cole.

No. 165, to original Letters Patent No. 13,188.—*For Improvement in Spring Bed Bottoms.*—I claim arranging and combining with such bars and springs, substantially as specified, flexible bands or strips *g g*, or analogous devices, so that the several bars and springs may be connected and made to operate together substantially as specified.

Hiram Tucker.

No. 166, to original Letters Patent No. 10,087.—*For Improved Cutter for Boring Wheel Hubs.*—1st. I claim an additional reamer, in connexion with the shaft *c*, for the purposes set forth.

2d. I claim a serrated, notched, sickled, or ragged edge of reamers or cutters, as at *y y* and *w w*, for the purposes set forth.

Leonard S. Maring.

No. 167, to original Letters Patent No. 13,731.—*For Spoke and Axe-helve Machine.*—I claim the jointed guides having slots *c d e*, in combination with the slots *f g h* of the bed, and bolts securing said guides to the bed; the aforesaid slots having the relative position hereinbefore set forth.

Owen Redmond.

No. 168, to original Letters Patent, No. 14,339.—*For Improved Sawing Machine.*—I claim the vertical guides D and guide rollers *m* and *n*, in combination with the swivel link saw bearings I, arranged and operating in the manner set forth.

William P. Wood.

No. 169, to original Letters Patent, No. 11,069.—*For Improvement in Winnowing Machines.*—We claim the arrangement of the inclined perforated diaphragm S^2 within the removable blast trunk C, as and for the purposes set forth.

Joseph Keech.
Stephen Stilwell.

No. 170, to original Letters Patent, No. 16,402.—*For Improved Box Fitting Apparatus.*—I claim, in combination with the boring shank or shaft, the collar A with its double flanges *o o*, one above and the other below the frame C; the holes *c* and the stop E; the whole being arranged to operate in the manner and for the purpose specified.

John Shaerer.

No. 171, to original Letters Patent, No. 15,521.—*For Improved Fire-Arm.*—I claim the placing of the tape priming within the chamber of the arm D, and operating the priming by the movement of the arm, through and in combination with the ratched rod and spring *x*, and pawl spring *u*, or their equivalents, substantially as set forth in this specification.

F. D. Newbury.

No. 172, to original Letters Patent No. 12,217.—*For Improvement in Machine for Kneading Dough.*—I claim so forming the kneading wings that they shall in their revolution present alternate concave and convex surfaces to the dough, substantially as and for the purpose specified; and this I claim, whether these concave and convex surfaces are obtained by revolving blades alone, or by a revolving blade or blades in connexion with a pressing roller, as herein set forth.

J. L. Rolland.

No. 173, to original Letters Patent No. 17,422.—*For Improvement in Packing Pistons and Stuffing Boxes of Steam Engines.*—I claim the above described foil packing with cloth cemented or otherwise fastened on one or both sides of it, in the manner described and for the purpose named.

PATRICK CLARK.

No. 174, to original Letters Patent No. 9,870.—*For Improvement in Gutta Percha Stereotype Compositions.*—I claim the compound of gutta percha, gums, and metallic powders, herein described, combined as herein set forth, and for the purposes herein mentioned.

LEONARDO WESTBROOK.

No. 175, to original Letters Patent No. 16,965.—*For Improvement in Hoisting Winches for Ship-Board.*—I claim the invention and use of winches (or compound winches) for hoisting, constructed and operating substantially as described and set forth in the original and in this additional description and specification of new and additional improvements in winches.

JOEL BRYANT.

No. 176, to original Letters Patent No. 16,405.—*Improved Mechanism in Looms for Weaving Cloth.*—We claim, first, the application of the worm gear F, in combination with the pinion shaft E and pinion C, as and for the purpose represented.

Second. The spring H, acting as shown, for the purpose of giving a yielding motion to the beam at the change of harnesses and beating up of the reed.

DANIEL W. SNELL.
STEPHEN S. BARTLETT.

No. 177, to original Letters Patent No. 17,436.—*For Improvements in the Consumption of Smoke in Locomotive Engines.*—What I claim is, the fire-box extended into the barrel of the boiler, in combination with transverse fire-brick bridges, and with water-bridges or chambers fitted with tubular stays, through which a fresh supply of air is admitted to the combustion chamber, or extended portion of the fire-box, for the purpose of assisting the combustion, and of preventing the formation of smoke, substantially as set forth.

J. E. MCCONNELL.

No. 178, to original Letters Patent No. 13,807.—*Improvement in Straw Cutting Machines.*—What I claim is, the arm K K and adjustable cross piece *c*, and hinged plate *s*, or, severally, their equivalents, when vibrating or oscillating in connexion with the knife, substantially in the manner and for the purpose set forth. I also claim the hinged or jointed knife-bed G, in combination with the arms K K and crank shaft J, by which means the knife is made to reciprocate in a line parallel with the arms K K, for the purpose of preventing the edge of the knife from picking or scraping on the bed against which it cuts.

LOREN J. WICKS.

No. 179, to original Letters Patent No. 17,147.—*Improvement in Inkstands.*—What I claim is, the straight tube *d*, in combination with a simple cup or receptable E, substantially as and for the purposes described.

KINGSTON GODDARD.

No. 180, to original Letters Patent No. 14,877.—*Improvement in Portable Chairs.*—What I claim is, the jointed braces I and the strap P, so constructed and operated on the chair or other article that, by opening it, the legs will be swung outward and firmly held by the straightening and holding and setting the joints of these braces, essentially in the manner and for the purposes fully set forth.

I claim the peculiar arrangement and operation of the springs Q, to start or commence folding the braces I, or for unsetting the joints, substantially in the manner and for the purposes fully set forth.

ZEBULON LYFORD.

No. 181, to original Letters Patent No. 8,884.—*Improvement in Winnowers.*—What I claim is, the employment of an extended or elongated uppermost riddle No. 1½, diagram L, formed as set forth, and combined with the double sloping top screen No. 1, diagram M, said screen No. 1 being provided with the longitudinal central strip or supporting ridge rail d^2 a^2: the whole of said devices arranged, combined, and operated substantially in the manner as set forth and described.

THOMAS J. DOYLE.

No. 182, to original Letters Patent No. 14,586.—*Improvement in Skates.*—What I claim is, casting in one piece the bar A, heel plate B, and loop e^1, having a point *g* which assists to support the bar A.

2d. I claim forming the obtuse angles *a b c*, and a^1 b^1 c^1 of the bar A, to prevent the stock or wood of the skate from separating, substantially as described and shown in the drawings.

FERDINAND KLEIN.

No. 183, to original Letters Patent No. 17,176.—*Improvement in Bag or Sock Holder.*—What I claim is, the cast iron clamp or clasp and its adjustment, substantially as set forth.

AUGUSTUS STONER.

DISCLAIMERS ENTERED DURING THE YEAR 1857.

Letters Patent No. 491, dated November 25, 1837.—Re-issue No. 247, dated September 13, 1853.—*Improvement in the Figure Power Loom.*—Your petitioners, therefore, hereby enter their disclaimer to that part of the aforementioned specification which commences: "The position I give the jacks," and ends "principle of my invention," being the last sentence of the next to the last paragraph thereof, and also to the *fifth*, *seventh*, and *eighth* claims of said patent; which disclaimer is to operate to the extent of the interest in said letters patent vested in your petitioners, who have paid ten dollars into the treasury of the United States, agreeably to the requirements of the act of Congress in that case made and provided.

M. A. Forbush.
George Crompton.

Letters Patent No. 3,895, dated August 31, 1845.—*Improvement in Reaping Machines.*—Your petitioner, therefore, prays that he may be permitted to, and does hereby, enter his disclaimer to that part of the claim in the said specification which is in the following words to wit: "I claim the reversed angle of the teeth of the blade in manner described;" which disclaimer is to operate to the extent of the entire interest in the said patent, no assignment having been made at any time of any portion of the exclusive right granted thereby; your petitioner having paid ten dollars into the treasury of the United States, agreeably to the requirements of the act of Congress in such case made and provided.

C. H. McCormick.

Letters Patent No. 17,096, dated April 21, 1857.—*Improvement in Illuminating Vault Covers.*—Your petitioner, therefore, hereby enters his disclaimer to the feature covered by the aforesaid claim, save when it shall be qualified by the following explanation, viz: But this I only claim when the said glasses and the illuminating with which they are combined are of such a shape that the inclined surfaces of the pyramidal or polygonal portion of the glasses descend partially or entirely below the under surface of the sash or metallic portion of said frame, for the purpose of enabling said glasses to widely diffuse the light which may pass through them, substantially as herein set forth.

The above disclaimer is to operate to the extent of the entire interest in the aforesaid letters patent vested in your petitioner, who has paid ten dollars into the treasury of the United States, agreeably to the requirements of the act of Congress in that case made and provided.

G. R. Jackson.

CLAIMS OF EXTENSIONS GRANTED DURING THE YEAR 1857.

Letters Patent No. 3,016, March 21, 1843.—*Improvement in Burning Bricks.*—What I claim is, the particular arrangement and combination of the flues, dampers, and fire compartments therein; there being a double flue along the centre, from which lateral flues branch off in a curved or angular manner, so as to admit of the employment of dampers in each, in the manner herein represented and made known.

Joel W. Andrews.

Letters Patent No. 3,092, dated May 19, 1843.—Re-issue No. 438, dated March 17, 1857.—*Improvement in the Machine for Sawing off Logs.*—We claim revolving a log or block, while being sawed, in order that the pieces sawed off may be of a uniform thickness on all sides; and the mechanism herein described, or its equivalent, for raising and lowering said block, that it may be sawed into pieces of any desired thickness without being removed from the machine, said block being centred but once in sawing up the entire log, substantially as herein set forth.

Cornelia Waterman,
For Waterman & Russell.

Letters Patent No. 3,114, dated June 1, 1843.—*Improvement in Corn Shellers.*—I claim the arrangement of the inclined concave and toothed cylinder, as described, and in combination therewith the angular piece *a*, the whole being constructed and operating as above described.

Francis N. Smith.

Letters Patent No. 3,117, dated June 1, 1843.—*Improvement in Fire-Proof Chests and Safes.*—I therefore claim the application and use of plaster of paris, or gypsum in its raw state, or prepared as above, either alone or with mica, in the construction of all iron chests or safes, in the manner above described, or in any other manner substantially the same.

Daniel Fitzgerald.

Letters Patent No. 3,168, dated July 12, 1843.—*Improvement in Cast Iron Pavement for Streets.*—I claim the manner of using iron in the pavement of streets by means of boxes connected by flanges or keys and commissures, and divided into small sections which leave openings or interstices, as above described and shown in the drawings annexed, to be filled inside and between the rims with any composition which may be best adapted to the purpose—using for that purpose boxes of any form divided into sections in any manner which will produce the intended effect.

W. D. Terry.

Letters Patent No. 3,237, dated August 26, 1843.—Re-issue No. 439, dated March 17, 1857.—*Improvement in Sugar Works.*—I claim, first, the employment of a vacuum pan or pans, in combination with an evaporating pan or pans or boiler, in which the saccharine juice or other fluid is evaporated under a pressure lower, equal to, or greater than the atmosphere; which last mentioned pan or pans or boiler prepares the saccharine juice, &c., from the vacuum pan or pans, and at the same time supplies the necessary vapor from the saccharine juice, &c., to complete the evaporation or concentration of the syrup, &c., in the vacuum pan or pans, as fully described above.

Second. The employment of a weighted throttle, or other regulating valve, in the main steam pipe, arranged and operating in the manner and for the purpose as herein before described.

N. Rillieux.

Letters Patent, No. 3,275, dated September 23, 1843.—*Improvement in the Machine for Knitting Stockings, &c.*—I claim the mechanism for "narrowing and widening," the same consisting of the movable stops a^2 a^2, combined with a rack of teeth, or other suitable contrivance, formed upon the shifting bar, and acting upon the carriage O of the yarn guide, as set forth; or, of a pattern cylinder c^3, combined with the shifting bar and the carriage O, and operating therewith substantially as described.

Also, the stop rack k^1, combined with the tube S of the yarn guide, and actuated in the manner and for the purpose as set forth.

Also, the mechanism which effects the changes of the clutches, the same consisting of the shifting bar, the arbor u^2, having a circular depression and radial recesses in its heads and levers, and other parts connected to the same, and connecting the same with the clutches, the whole being arranged and operating substantially as herein before specified.

Also, the stationary roller y^1, and the projections t^3 u^3, and their intervening curve, (formed upon the shifting bar,) in combination with the spring S^3 of the sliding toggle bars, and also in combination with the rail t^1 and its depressions, the whole being for the object as described.

Also, the cloth bar c^1, arranged and operating in the manner and for the purpose as set forth.

Also, the particular method by which the depressing bar c is carried and forced down upon the pointed ends of the needles, in order to press them into the grooves in their shanks, viz: by a combination of bent levers f^2, g^2, h^2, and arms i^2, the same being actuated substantially as described.

Also, the manner of raising the stitch hooks, viz: by an elevating plate y, through which they extend, and which is combined with and operates them, as set forth.

Also, the method of clearing the point or lower end of the yarn guide from the depressing bar when the latter descends upon the needles, viz: by a ledge b on the latter, in combination with a roller a applied to the T-piece of the yarn guide, the whole being as specified.

Also, the method of clearing the point of the yarn guide from the stitch hooks when the roll r passes by the thread guide, or as soon as the lateral motion of the thread guide is stopped, viz: by the bevelled edge plate k^4 (applied to the cross piece n) in combination with the screw or other contrivance of similar character projecting from the T-piece of the yarn guide.

Also, the mode of adjusting or regulating the distance to which the points of the needles shall retreat, viz: by the movable curved pieces o^2 p^2 making part of the cam m^2, the same being arranged and operating substantially as explained.

Also, the combination with the mechanism (the arm q and shaft o, supported by pivots p p) which sustains and carries the roller r of the depressing and elevating bar v raised and depressed by machinery, substantially as described.

HENRY BURT.

Letters Patent No. 3,292, dated October 6, 1843.—Re-issue No. 142, dated September 4, 1849.—*Improvement in the Machine for Breaking and Screening Coal.*—I claim the arrangement of the teeth on the two rollers, substantially as herein described, so that, in their rotation, the teeth of one shall come opposite the spaces between the teeth of the other, with sufficient space between to hold lumps of the required size, the rollers being so combined by gearing as to make them rotate in opposite directions and with the required velocities to retain the relative position of the teeth of the two rollers, as described.

JOSEPH BATTIN.

Letters Patent No. 3,354, dated November 24, 1843.—Re-issue No. 196, dated March 25, 1851.—*Improvement in Washing Machine for Cleaning Rags.*—I claim an adjustable rotating water-elevator and strainer, arranged, substantially as herein set forth, in such manner that it can be raised or lowered in the vat of the washing or beating engine, to vary the quantity of water discharged therefrom, or can be raised entirely from the vat, to stop the discharge of water, or for other purposes, as herein set forth.

I also claim a rotating prismatic screen or strainer, for straining the water from the paper stock in the vat of a washing or beating engine, in combination with devices for discharging the strained water, the prismatic screen being not only more efficient than a cylindrical screen, but also admitting of more ready repair.

JAMES PHELPS.

Letters Patent No. 3,375, dated September 15, 1843.—Re-issue No. 496, dated September 15, 1857.—*Improvement in Coating Water Pipes.*—I claim lining metallic pipes with hydraulic cement by means of a cone, or its equivalent, guided through the pipe, so as to lay on the cement of equal thickness, and with great certainty and economy, substantially as described.

JONATHAN BALL.

Letters Patent No. 3,380, dated December 15, 1843.—Re-issue No. 399, dated October 7, 1856.—*Improvement in the Buff for Polishing Spoons and other articles.*—I claim a cylindrical buff, composed of soft leather disks or rings, when the outer portions of said disks are left perfectly free from each other, so as to admit of the yielding necessary to their proper action, substantially as herein described.

LUTHER BOARDMAN.

Letters Patent No. 3,394, dated December 30, 1843.—*Improvement in Hay Presses.*—I claim filling the box with the substance to be pressed into bale by means of a driver raised by machinery, and made to descend upon the substance in the box successfully by gravity as the follower descends, whether effected in the manner above described or in any other mode analogous thereto.

SAMUEL HEWITT.

CLAIMS OF PATENTS FOR DESIGNS GRANTED DURING THE YEAR 1857.

No. 860.—*Design for Upright Stoves.*—I claim the design of the base or pedestal, the rings, door, and cap plate connected, as shown and described.

ABNER J. BLANCHARD.

No. 861.—*Design for Ever-pointed Pencil Cases.*—I claim making the case A in the form of a cannon, provided with the beads as shown and described, the whole forming a new and original design for a pencil case.

JOHN H. KNAPP.

No. 862.—*Design for Clock-Case Fronts.*—I claim the configuration of the wreath and projecting scrolls, as described, the whole forming a new and ornamental design for a clock-case front.

CHARLES CHINNOCK.

No. 863.—*Design for Printing-Types.*—I claim the design of the said type, as described and shown.

GEORGE BRUCE.

No. 864.—*Design for Parlor Stove.*—I claim the combination and arrangement of ornamental figures and forms represented in the accompanying drawings forming the plates, being part of the above described stove.

SAMUEL F. PRATT.

No. 865.—*Design for Cooking Stove.*—I claim ornamenting the panels and feet of cooking stoves having elevated ovens, in the manner herein specified and shown in the annexed drawings.

N. S. VEDDER.

No. 866.—*Design for Cook Stoves.*—I claim the ornamental design and configuration of cook stove plates, such as herein described and shown in the annexed drawing.

N. S. VEDDER.

No. 867.—*Design for Parlor Cook Stoves.*—I claim the ornamental design and configuration of parlor cook stove plates, such as herein described and shown in the annexed drawing.

N. S. VEDDER.

No. 868.—*Design for Railroad Car Stoves.*—I claim the ornamental design and configuration of the top plate, of the bottom plate, and of the door herein described and represented in the annexed drawings.

JAMES L. HOWARD.

No. 869.—*Design for Cooking Ranges.*—I claim the ornamental design of the front plate doors and edge of the top plate, as described and represented in the drawing.

CHARLES J. SHEPARD.

No. 870.—*Design for Cooking Stoves.*—I claim the combination and arrangement of the ornamental design herein described and shown.

JAMES E. STEVENSON.

No. 871.—*Design for Parlor Cooking Stoves.*—I claim the design, configuration, and arrangement in bas relief on the front and top of the stove, as described, forming a new and original design for stove, called a parlor cooking stove.

DANIEL WILSON.

No. 872.—*Design for Wood Stoves.*—I claim the new design for a stove, consisting of the ornamental configurations herein above described and represented in the drawings.

A. C. BARSTOW.

No. 873.—*Design for Cooking Stoves.*—I claim the design and configuration of the several parts of the stove, in combination with the projecting pilasters, mouldings, and ornaments in relief, substantially as specified and represented in the drawings.

ALLEN COMSTOCK.

No. 874.—*Design for Stove Doors.*—I claim the central ornament within the annular bead *e*, the angular corrugations *f* on the face or panel of the door, and the beads *d* around the edges of the panel, and the bevelled or inclined edges of the door, having the ovolo beads *b* upon them, and the obtuse quirks *c c*, when the above parts are arranged and combined, as herein shown and described, to form a new and ornamental design for a door or panel of a cooking stove.

M. C. BURLEIGH.

No. 875.—*Design for Floor Oil-Cloths.*—I claim the arrangement of ornamental figures forming a design for floor cloths, as shown in the aforesaid drawing.

JAMES HUTCHISON.

No. 876.—*Design for Soda Water Apparatus.*—I claim the design and configuration of the parts A B H H of the self-cooling draught apparatus, as herein shown and described.

JOSEPH BERNHARD.

No. 877.—*Design for Radiator Stoves.*—I claim the ornamental design and configuration of the end plate with its fire door, hearth, and feet, of the illuminated side door with its frame, and of the pothole frame with its cover; all as herein described and represented in the annexed drawing.

N. S. Vedder.

No. 878.—*Design for Cooking Stoves.*—I claim the general design and configuration of said stove.

N. S. Vedder.

No. 879.—*Design for Legs and Posts of Bedsteads.*—I claim the posts B with scroll bars *l* and vines *c*, the panels *j* with ornaments *k*, and the legs A having the leaf scrolls *a a*, leaf edging *f f*, and the tulip and fluted ornaments *g h*, the whole being arranged as described, to form a new and ornamental design for the legs and posts of a cast metal bedstead.

William Maurer.

No. 880.—*Design for Iron Railings.*—I claim the form of all the parts of the railing, as above described—that is, the design as above set forth, reference being had to the accompanying drawing, which is an accurate representation of the same, at a scale of three-quarters of an inch to the foot.

Robert Wood.

No. 881.—*Design for the Plates of Stoves.*—I claim the new design for stove plates, consisting of the mouldings and ornamental raised figures, as herein above described and represented in the drawings.

A. C. Barstow.

No. 882.—*Design for Clock Cases.*—I claim the design for a clock case, as herein described, with a wood circular sash C to the dial, in combination with the square top case; also, the carved enrichment E on the glass of the tablet, substantially in the manner as herein set forth and described.

Elias Ingraham.

No. 883.—*Design for Clock-Case Fronts.*—I claim the base A, pilasters C C on the jamb posts B B, cap plate D, panel H, pilasters I I, and door G, when the whole are arranged specifically, as herein shown and described, to form a new and original design for a clock-case front.

Chauncey Jerome.

No. 884.—*Design for Plates of a Cooking Stove.*—I claim the ornamental design for the lower front plate, foot, and doors of a cooking stove, herein described and fully represented in the annnexed drawings.

N. S. Vedder.

No. 885.—*Design for Stoves.*—We claim the design, configuration, nd arrangement of the ornaments upon the several plates and castings, as herein described and set forth in the accompanying drawings, constituting the design of cook stove, "Union Complete."

Jacob Steffe.
James Horton.
John Currie.

No. 886.—*Design for Cooking Stoves.*—We claim the design for cooking stove, as herein above illustrated and set forth.

Jacob Beesley.
E. J. Delany.

No. 887.—*Design for Stoves.*—We claim the design involved in the ornamenting of a stove by the external configuration thereof, substantially as herein set forth.

Russel Wheeler.
Stephen A. Bailey.

No. 888.—*Design for Churns, Egg-beaters, &c.*—I claim the general configuration of the vessel, as shown in figure 1, with the ornamental standard or bearings *h i j*, substantially as shown, described, and for the purposes set forth.

John S. Gallaher, Jr.

No. 889.—*Design for Picture Frames.*—I claim the combination and arrangement of the ornamental forms, as specified and represented in the accompanying drawings, as a design for a picture frame.

A. P. C. Bonte.

No. 890.—*Design for Furnaces.*—I claim the shape and configuration of the several parts of the said furnace, as herein above described and shown in the drawings.

Willis S. Bronson.

No. 891.—*Design for Stoves.*—We claim the design, configuration, and arrangement of the several ornaments in bas relief upon the plates of the stove, as herein described and shown in the accompanying drawings, constituting the design of stove "Noble Cook."

Garrettson Smith.
Henry Brown.
S. H. Sailor.

No. 892.—*Design for Cooking Stoves.*—We claim the general design and configuration.

Thomas H. Wood.
Henry S. Hubbell.
John E. Roberts.

No. 893.—*Design for Cooks Stoves.*—I claim the bead work on the sides, and the ornaments on the two doors and back, as herein described, when combined to produce an ornamental design for a cooking stove.

John D. Marshbank.

No. 894.—*Design for Busts of Napoleon Bonaparte.*—I claim the new design for a bust of Napoleon Bonaparte, as herein above described and represented in the drawing.

THOMAS BALL.

No. 895.—*Design for Stoves.*—I claim the combination of ornaments, as herein described, the whole forming an original design for an elevated oven cook stove.

S. W. GIBBS.

No. 896.—*Design for Coal Cooking Stoves.*—We claim the configuration and arrangement of the several ornaments, as set forth in the annexed drawings, forming a new and original design for coal cooking stoves, to be known and called the "Tropic."

CONRAD HARRIS.
PAUL W. ZOINER.

No. 897.—*Design for Wood Parlor Stoves.*—We claim the combination and arrangement of the several ornaments, as set forth in the annexed drawings, forming a new and original design for wood parlor stoves, to be known and called the "Magic."

CONRAD HARRIS.
PAUL W. ZOINER.

No. 898.—*Design for Dining Room Stoves.*—We claim the combinations and arrangements of the figures, scrolls, and foliage, as set forth in the annexed drawings, forming a new and original design for dining room or oven parlor stoves, to be known and called the "Black Swan."

CONRAD HARRIS.
PAUL W. ZOINER.

No. 899.—*Design for Cooking Stoves.*—I claim the design and configuration of the mouldings and ornaments, as herein described, forming an ornamental design for stoves.

S. W. GIBBS.

No. 900.—*Design for Stoves.*—I claim the design and configuration of the mouldings and ornaments, as herein described, forming an ornamental design for stoves.

N. S. VEDDER.

No. 901.—*Design for Stoves.*—We claim the design of parlor cooking stove, as herein above illustrated and set forth.

JACOB BEESLEY.
E. J. DELANY.

No. 902.—*Design for Stove Ornaments.*—I claim the arrangement and combination of the various figures and mouldings, the whole forming an ornamental design for stoves, as herein described.

SAMUEL D. VOSE.

No. 903.—*Design for Stove Ornaments.*—I claim the arrangement and combination of the various figures and mouldings, the whole forming an ornamental design for stoves, as herein described.

SAMUEL D. VOSE.

No. 904.—*Design for Stove Ornaments.*—I claim the arrangement and combination of the various figures and mouldings, the whole forming an ornamental design for stoves, as herein described.

SAMUEL D. VOSE.

No. 905.—*Design for Stoves.*—I claim the ornamental design herein specified and fully shown in the annexed photographic drawing, for the upper and the lower front plates with their respective doors, and the top plate of the lower section of a parlor stove.

JOHN C. SMITH.

No. 906.—*Design for Stoves.*—I claim the combination and arrangement of ornamental figures and forms, represented in the accompanying drawings, forming together the ornamental design for the plates of a cooking stove.

S. W. GIBBS.

No. 907.—*Design for Stoves.*—I claim the combination and arrangement of ornamental figures and forms, represented in the accompanying drawings, forming together the ornamental design for the plates of a cooking stove.

SAMUEL W. GIBBS.

No. 908.—*Design for Stoves.*—I claim the combination and arrangement of ornamental figures and forms, represented in the accompanying drawings, forming together the ornamental design for the plates of a cooking stove.

SAMUEL W. GIBBS.

No. 909.—*Design for Grate or Stove Fronts.*—I claim the design, configuration, and arrangement of the several ornaments in bas relief, as herein described and set forth in the annexed drawing.

JOHN E. BENDIX.

No. 910.—*Design for Cooking Stoves.*—We claim the design for star cooking stove, as herein above illustrated and set forth.

J. MAGUIRE.
JOSEPH A. READ.
DN. WRIGHT.

No. 911.—*Design for Stoves.*—I claim the design and configuration of the mouldings and ornaments, as herein described, forming an ornamental design for stoves.

N. S. VEDDER.

No. 912.—*Design for Stoves.*—I claim the combination and arrangement of ornamental figures and forms represented in the accompanying drawings, forming together the ornamental design for the plates of a cooking stove.

S. W. Gibbs.

No. 913.—*Design for Stoves.*—I claim the combination and arrangement of ornamental figures and forms represented in the accompanying drawings, forming together the ornamental design for the plates of a cooking stove.

S. W. Gibbs.

No. 914.—*Design for Parlor Stoves.*—I claim the ornamental design and configuration of stove, such as herein described and shown in the annexed drawings.

E. J. Cridge.

No. 915.—*Design for Cooking Stoves.*—I claim the ornamental design and configuration of the several plates or castings of a cooking stove, herein described, and fully represented in the annexed drawings.

James R. Hyde.

No. 916.—*Design for Clock Cases.*—I claim the figure dressed in the military costume, as herein shown and described, and forming a new and original design for a clock case.

Pietro Cinquinni.

No. 917.—*Design for Iron Railings.*—I claim the design of the ornamental iron railing, composed of the arch-shaped bars *b* and ornaments *c d* and *f*, and bars *a* and *e*, as described and represented in the drawing.

Henry Jenkins.

No. 918.—*Design for Medallions of Franklin to Mark Pens and Pen-Holders.*—I claim the device above described, viz: A head or profile likeness of Franklin within a medallion, for stamping or marking steel pens or pen-holders.

William Ball.

No. 919.—*Design for Statues of General Warren.*—I claim the design as represented.

Henry Dexter.

No. 920.—*Design for Stoves.*—We claim the ornamental design of the lower section of the stove, consisting of the parts A B and C, as herein described and shown in the annexed drawing.

And we also claim the external form or configuration of the upper section of the stove, consisting of the parts D and E, shaped as herein specified and shown in the drawing.

James J. Dulley.
Russell Mann.

No. 921.—*Design for Stoves.*—I claim the combination and arrangement of figures and forms as represented, forming the ornamental *design* of a *toy parlor stove.*

S. W. Gibbs.

No. 922.—*Design for Cooking Stoves.*—I claim the design as represented.

Elias Young.

No. 923.—*Design for Stoves.*—I claim the combination and arrangement of ornamental figures and forms represented in the accompanying drawings, forming together the ornamental design for the plates of a parlor stove.

Thomas Barry.

No. 924.—*Design for Stoves.*—I claim the combination and arrangement of ornamental figures and forms represented in the accompanying drawings, forming together the ornamental design for the plates of a stove.

Thomas Barry.

No. 925.—*Design for Stoves.*—I claim the combination and arrangement of ornamental figures and forms represented in the accompanying drawings, forming together the ornamental design for the plates of a stove.

Thomas Barry.

No. 926.—*Design for Stoves.*—I claim the combination and arrangement of ornamental figures and forms represented in the accompanying drawings, forming together the ornamental design for the plates of a stove.

Thomas Barry.

No. 927.—*Design for Stoves.*—I claim the combination and arrangement of ornamental figures and forms represented in the accompanying drawings, forming together the ornamental design for the plates of a stove.

Thomas Barry.

No. 928.—*Design for Stoves.*—I claim the combination and arrangement of ornamental figures and forms represented in the accompanying drawings, forming together the ornamental design for the plates of a stove.

Thomas Barry.

No. 929.—*Design for Stoves.*—I claim the combination and arrangement of ornamental figures and forms represented in the acccompanying delineations, forming together the ornamental design for the plates of a stove.

S. H. Ransom.

No. 930.—*Design for Stoves.*—I claim the combination and arrangement of ornamental figures and forms represented in the accompanying delineations, forming together the ornamental design for the plates of a stove.

S. H. Ransom.

No. 931.—*Design for Stoves.*—I claim the combination and arrangement of ornamental figures and forms represented in the accompanying delineations, forming together the ornamental design for the plates of a parlor stove.

S. H. RANSOM.

No. 932.—*Design for Stoves.*—I claim the combination and arrangement of ornamental figures and forms represented in the accompanying delineations, forming together the ornamental design for the plates of a stove.

S. H. RANSOM.

No. 933.—*Design for Stoves.*—I claim the combination and arrangement of ornamental figures and forms represented in the accompanying delineations, forming together the ornamental design for the plates of a stove.

S. H. RANSOM.

No. 934.—*Design for Stoves.*—I claim the combination and arrangement of ornamental figures and forms represented in the accompanying delineations, forming together the ornamental design for the plates of a stove.

S. H. RANSOM.

No. 935.—*Design for Clock-Case Front.*—I claim the scrolls, vines, and basket, combined and arranged as shown, to form an ornamental design for a clock-case front.

PIETRO CINQUINNI.

No. 936.—*Ornamental Design for Brick.*—We claim the combination of the ornamental design and configuration for a building brick, as represented in the accompanying drawings.

G. W. SHOLL.
CHARLES STEWART.

No. 937.—*Design for Stoves.*—I claim the design or combination of elephant, base, and stove extension, as shown in the drawing.

THOMAS D. WORRALL.

No. 938.—*Design for Stoves.*—I claim the design and configuration of the mouldings and ornaments as herein described, forming an ornamental design for stoves.

N. S. VEDDER.

No. 939.—*Design for Stoves.*—I claim the combination and arrangement of ornamental figures and forms represented in the accompanying drawings, forming together the ornamental design for the plates of a stove.

THOMAS BARRY.

No. 940.—*Design for Type.*—I claim the design of the said type, as described and shown.

GEORGE BRUCE.

No. 941.—*Design for Sad-Iron Stove.*—I claim the configuration of ornaments and mouldings as herein described, forming an ornamental design for a sad-iron stove.

S. W. GIBBS.

No. 942.—*Design for Stoves.*—We claim the ornamental design of the several castings before stated, as herein described and delineated in the accompanying drawing, forming a design for a stove.

GARRETTSON SMITH.
HENRY RROWN.
S. H. SAILOR.

No. 943.—*Design for Gas-Burner Shades.*—I claim the new design for shades for gas-burners, &c., which consists of the circular rims or borders ornamented, as herein described and represented in the drawings.

GEORGE B. FOSTER.

No. 944.—*Design for Stands to Hold Shovels and Tongs.*—I claim the new design for a shovel and tongs stand, consisting in the ornamental figures of the base or dish, the upright, the arms or hook, and the handle, as set forth in the accompanying drawing.

JULIUS MEYER.

No. 945.—*Design for Stands to Hold Shovels and Tongs.*—I claim the new design for a shovel and tongs stand, consisting in the ornamental figures set forth in the accompanying drawings.

JULIUS MEYER.

No. 946.—*Design for Clock Cases.*—I claim the figure, its general configuration and arrangement of parts, as shown and described, to form a new and original design for a clock case, termed the Santa Claus.

PIETRO CINQUINNI.

No. 947.—*Design for Coal Scuttles.*—I claim the general configuration of the parts, as herein shown and described, the whole forming a new and original design for a coal scuttle.

GOTTFRIED THULEMEYER.

No. 948.—*Design for Shelf Brackets.*—I claim the open relief paneled border at the side and top of the bracket, and the peculiar configuration of the griffin-head, in connexion with the scroll work, as shown in the drawing.

IRA CHASE, JR.

No. 949.—*Design for Shelf Brackets.*—I claim the peculiar configuration of the griffin-head and scroll work, as shown in the drawing.

IRA CHASE, Jr.

No. 950.—*Design for Clock Fronts.*—I claim the design of the two dolphins, and the design of the figure of the female with the child holding the lyre, combined to form a design for clock-case fronts.

NICHOLAS MULLER.

No. 951.—*Design for Clock Fronts.*—I *claim* the ornamental pedestal, the two figures *d* and *e* resting on its sides, the wreath surrounding the frame of the dial hole, and the top ornament *f*, all as represented in the drawing, the whole forming a design for a clock-case front.

NICHOLAS MULLER.

No. 952.—*Design for Metal Kegs.*—We claim the combination of the curved hoops in relief on a foundation forming a regular bulge with the beading and ornamental configuration of the bottom and top of the keg, in the manner described and shown in the drawing, the whole forming a new ornamental design for a metal keg.

C. L. REHN.
H. EVERETT.

No. 953.—*Design for Six plate Stoves.*—We claim the ornamental design of the stove, as shown in the drawings.

NATHANIEL PUTNAM RICHARDSON.
WILLIAM WALLACE STEPHENS.

No. 954.—*Design for Stoves.*—We claim the configurations and ornaments above described and shown in the drawings as a design for stoves.

NATHANIEL PUTNAM RICHARDSON.
WILLIAM WALLACE STEVENS.

No. 955.—*Design for Stoves.*—We claim the combination of the various ornamented plates, as shown in the drawing, the whole forming a design for a hall or parlor stove.

GARRETTSON SMITH.
HENRY BROWN.
JOSEPH A. READ.

No. 956.—*Design for a Cooking Stove.*—We claim the ornamented plates and doors, as combining to form an ornamental cook stove.

GARRETTSON SMITH.
HENRY BROWN.
JOSEPH A. READ.

No. 957.—*Design for Grave Borders.*—I claim the ornaments and configurations combined as above described and shown, for a grave border.

IRA CHASE, Jr.

No. 958.—*Design for Shelf Brackets.*—I claim the ornamental configuration of the said bracket, above described.

IRA CHASE, Jr.

No. 959.—*Design for Clock Cases.*—I claim the combination and arrangement of various architectural mouldings, so as to produce, by their relative position and their combined artistical effect, the design for clock cases herein before set forth.

SAMUEL B. JEROME.

No. 960.—*Design for Cooking Stoves.*—We claim the combination and arrangement of ornamental figures and forms represented, forming together an ornamental design for a cooking stove.

GARRETTSON SMITH.
HENRY BROWN.

No. 961.—*Design for Parlor Stoves.*—We claim the combination and arrangement of ornamental figures and forms represented, forming together an ornamental design for a parlor stove.

GARRETTSON SMITH.
HENRY BROWN.

No. 962.—*Design for Stoves.*—We claim the combination and arrangement of ornamental figures and forms represented, forming together an ornamental design for parlor stoves.

GARRETTSON SMITH.
HENRY BROWN.

No. 963.—*Design for Stoves.*—I claim the design of the base plate, each of the doors, door frame, the cap plate, constituting a design for stoves, as shown in the drawings.

WM. T. COGGESHALL.

No. 964.—*Design for Barometer Cases.*—I claim the design of barometer case, as herein set forth.

T. R. TIMBY.

No. 965.—*Design for Match Boxes.*—I claim the peculiar external shape or configuration of the box, as herein described and shown by the annexed drawings, and to such shape or configuration I confine my claim.

ELISHA WATERS.

No. 966.—*Design for a Cooks' Stove.*—I claim the ornamental design of cooking stove, substantially as herein exhibited.

ELIAS YOUNG.

No. 967.—*Design for Cooks' Stoves.*—We claim the design, configuration, and arrangement of the several ornaments in bas relief upon the stove castings, as heretofore described and set forth in the annexed drawing, constituting the ornamental design of cook stove "National."

GARRETTSON SMITH.
HENRY BROWN.

No. 968.—*Design for Laundry Stoves.*—I claim the new design for the front and bottom plates of a laundry stove, consisting of the ornamental configuration, as herein above described and represented in the drawings.

A. C. BARSTOW.

No. 969.—*Design for Stoves.*—I claim the design substantially as represented in the aforesaid drawings.

B. W. DUNKLEE.

No. 970.—*Design for Clock Fronts.*—What I claim is, the design for clock or time piece front sashes, with two circular parts A and B, and the rosettes D and E, in the manner and for the purpose substantially as herein set forth and described.

ELIAS INGRAHAM.

No. 971.—*Design for Trade Marks on Plough Springs, &c.*—What I claim is, the design herein represented to be stamped, painted, moulded, or in any manner affixed on vulcanized India rubber, or its substitute, when used for the purpose of spring clevises for ploughs, or any other similar purpose.

J. D. WILLOUGHBY.

No. 972.—*Design for a Cooking Stove.*—We claim the combination and arrangement of figures and forms represented in the accompanying drawing, forming together the ornamental design for the plates of a cooking stove.

JACOB STEFFE.
JAMES HORTON.
JOHN CURRIE.

ILLUSTRATIONS.

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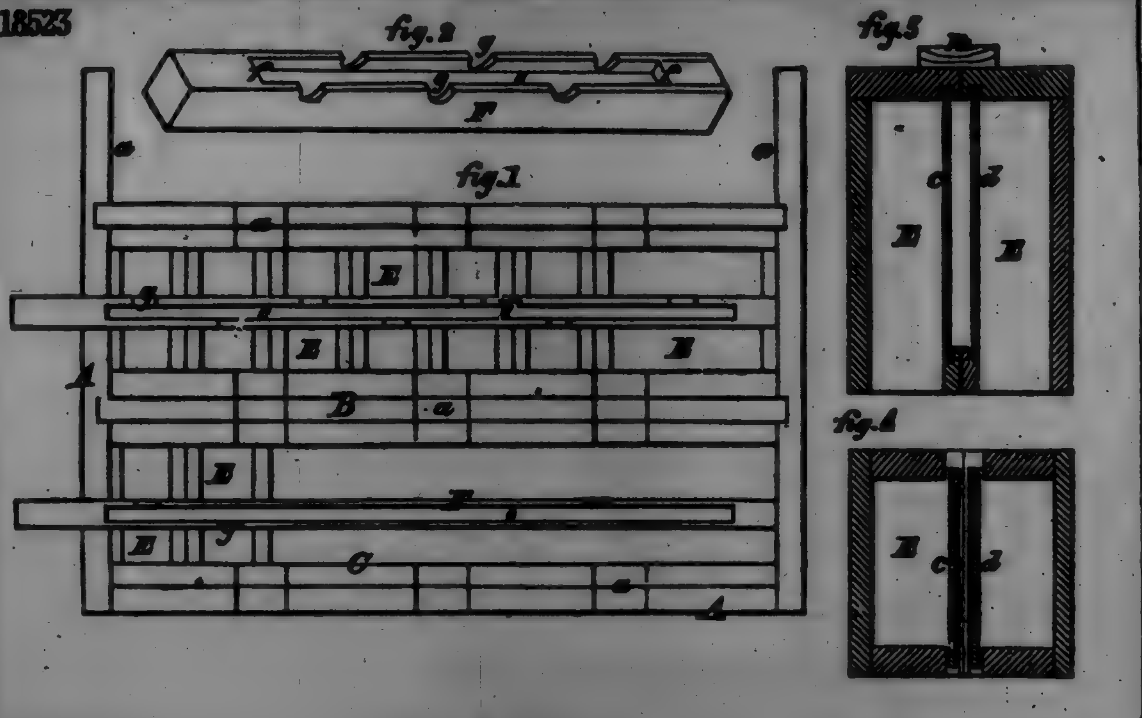

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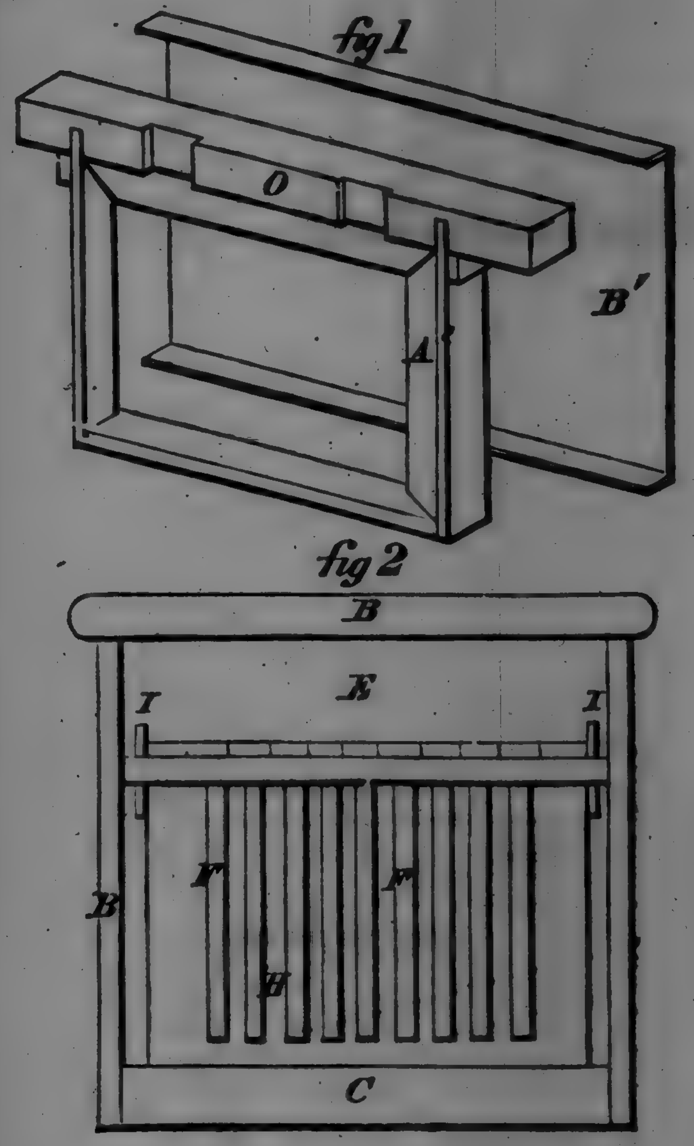

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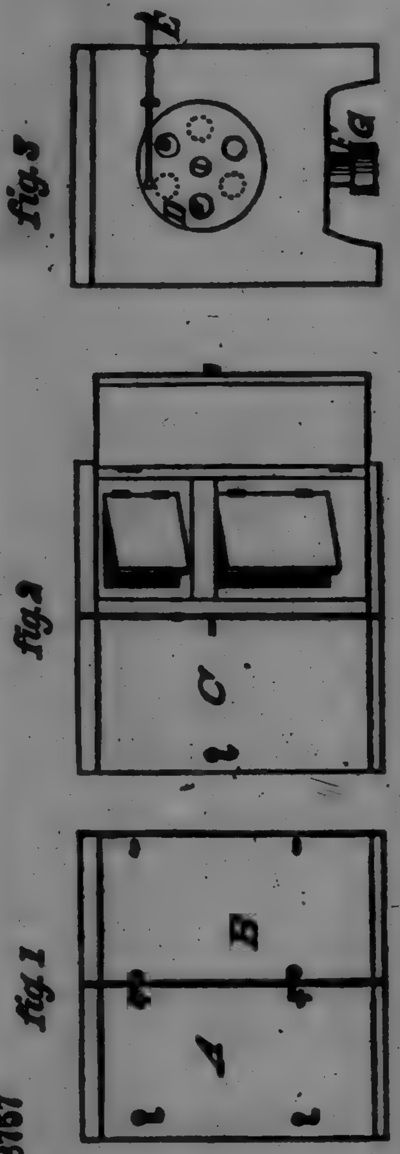

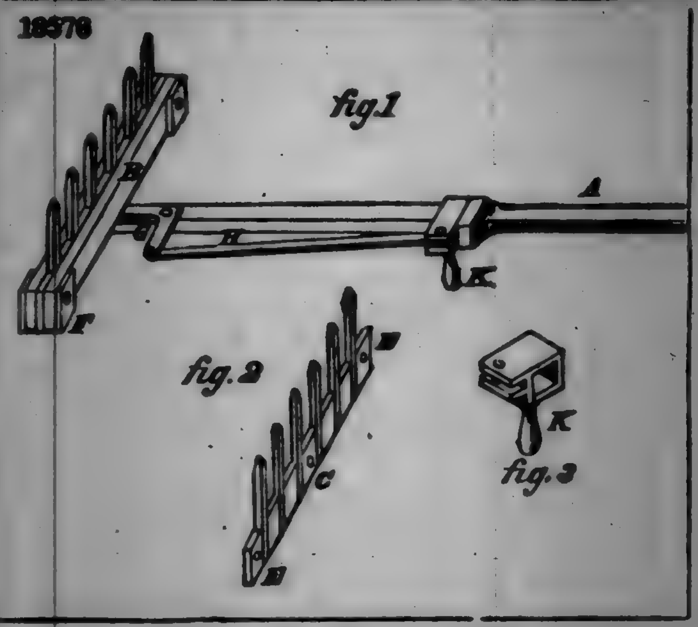
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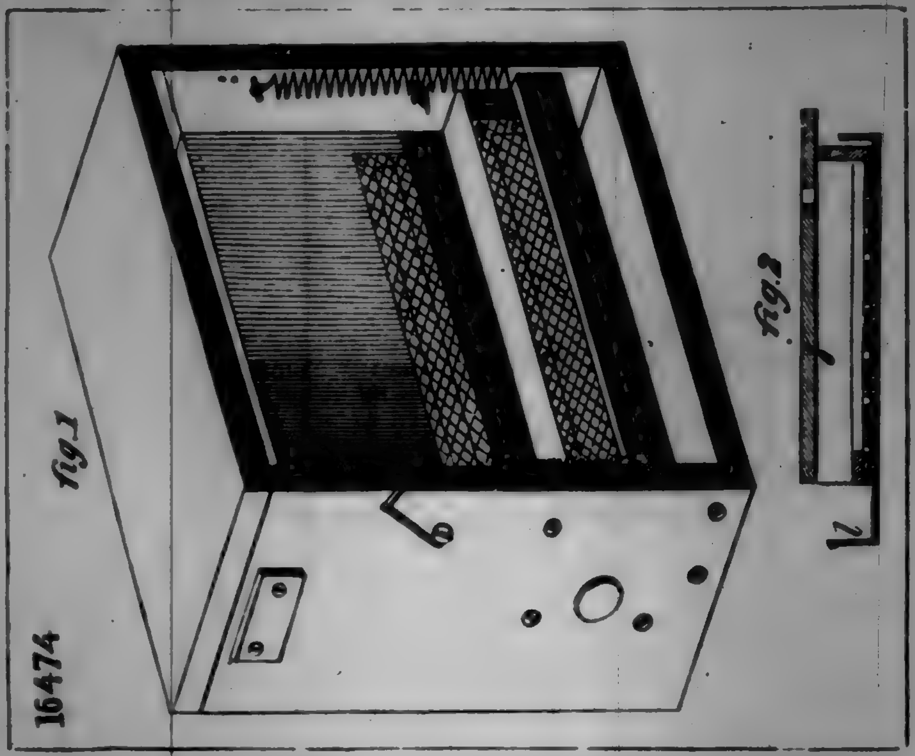
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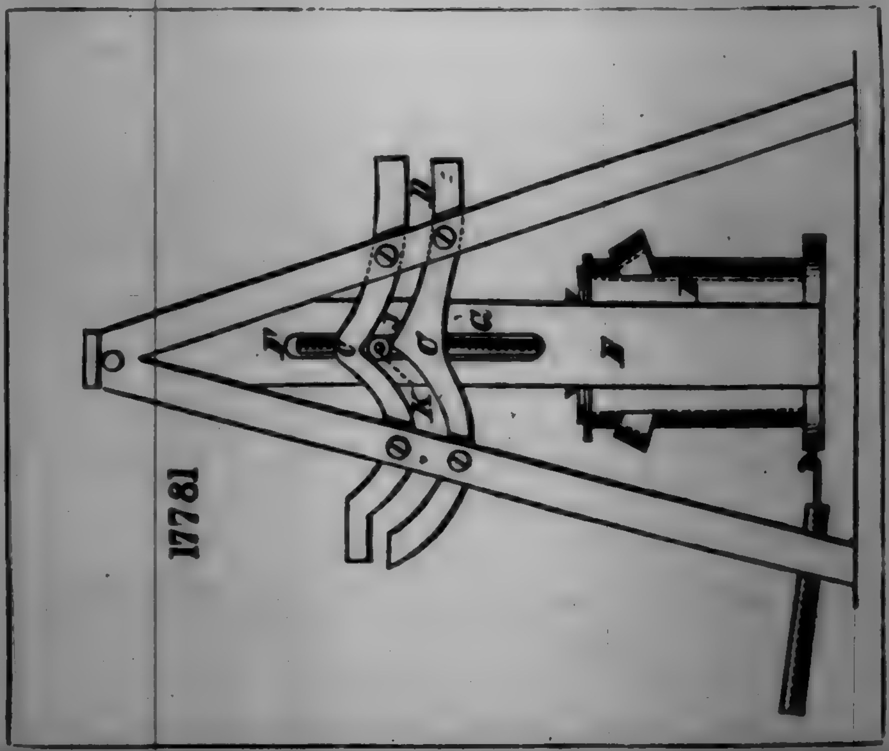
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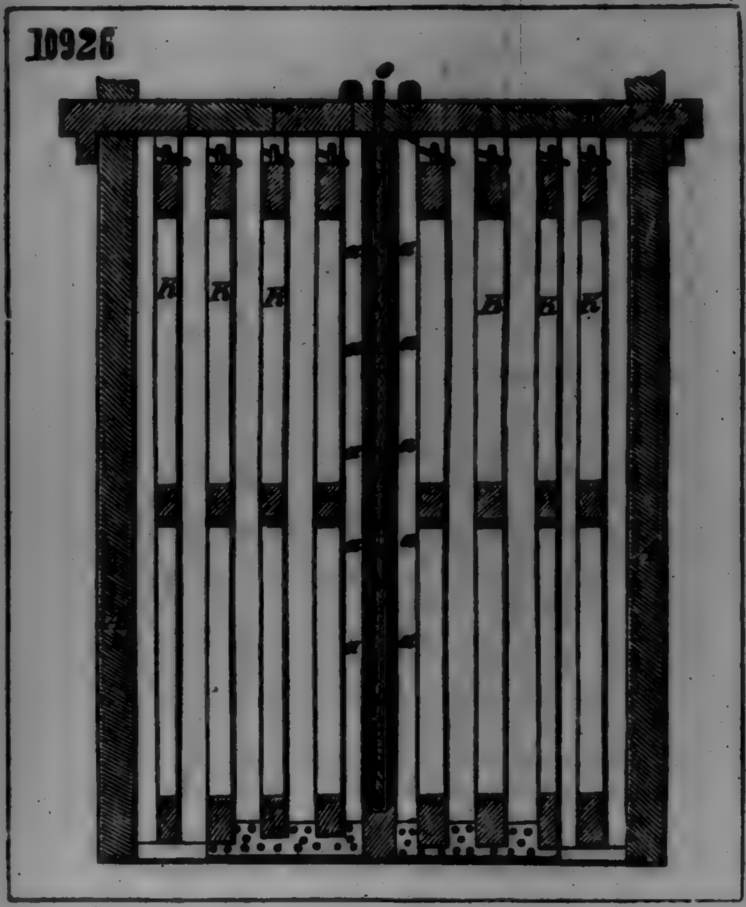
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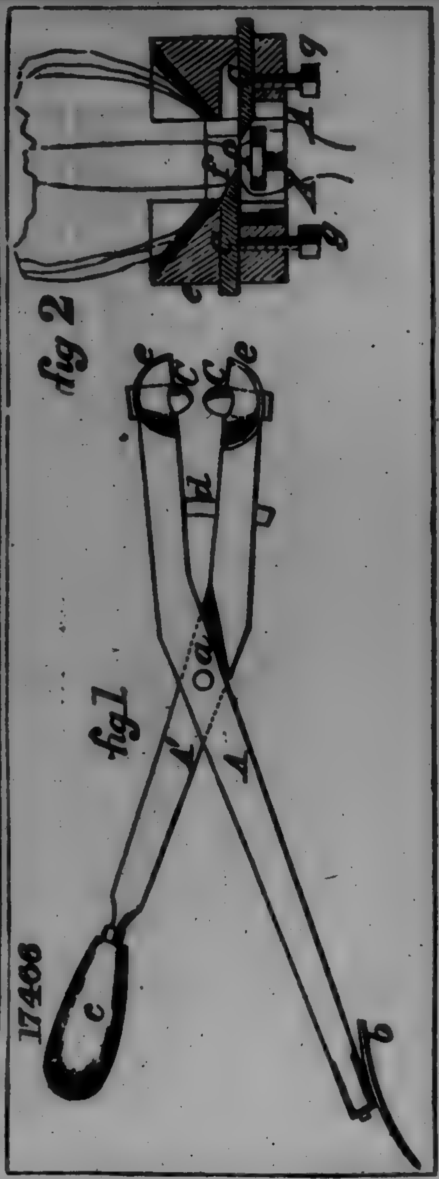
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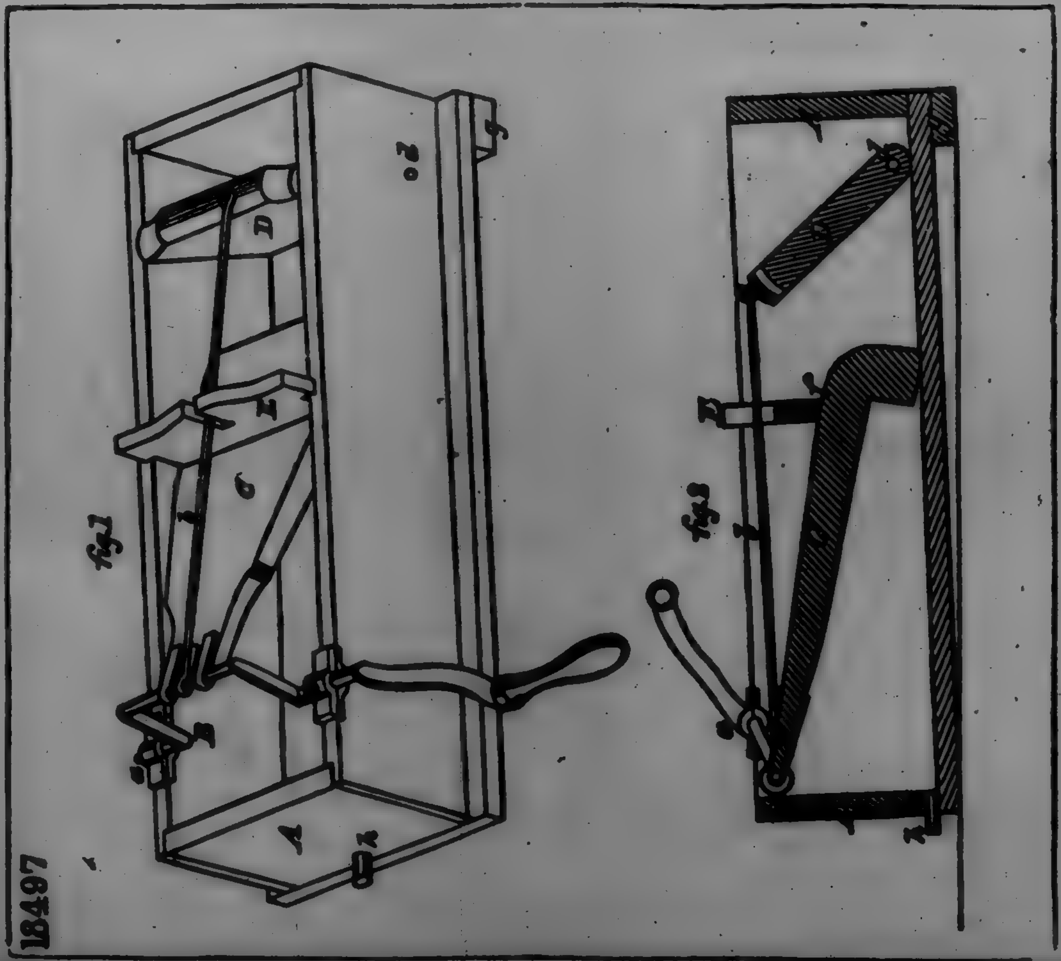
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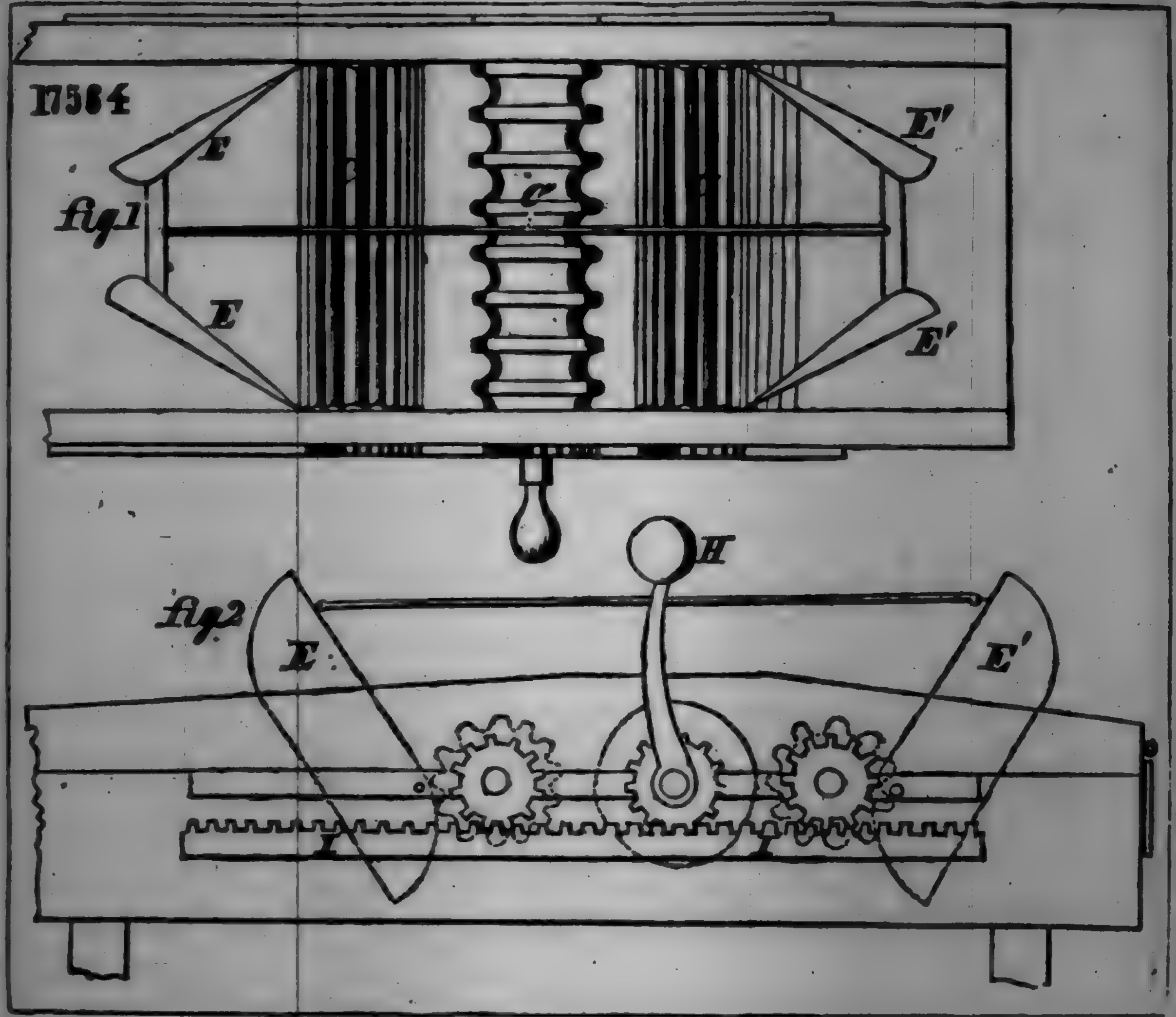

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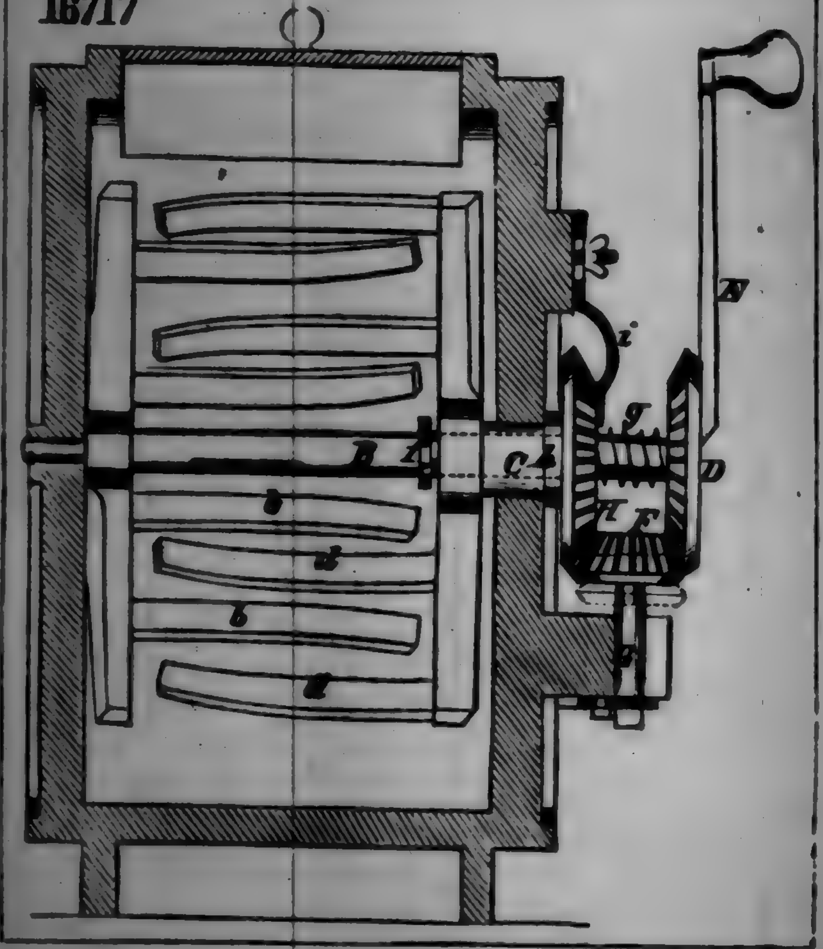

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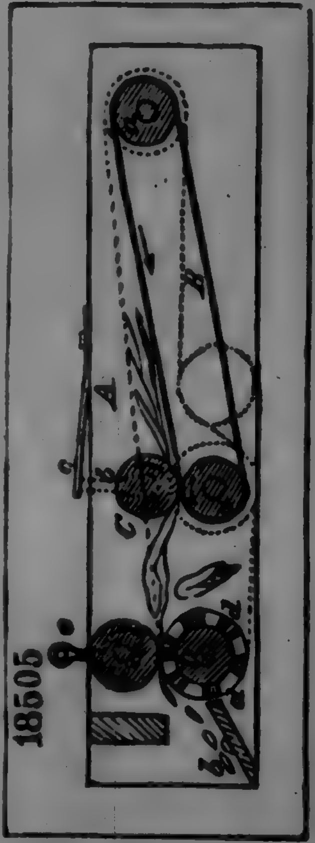

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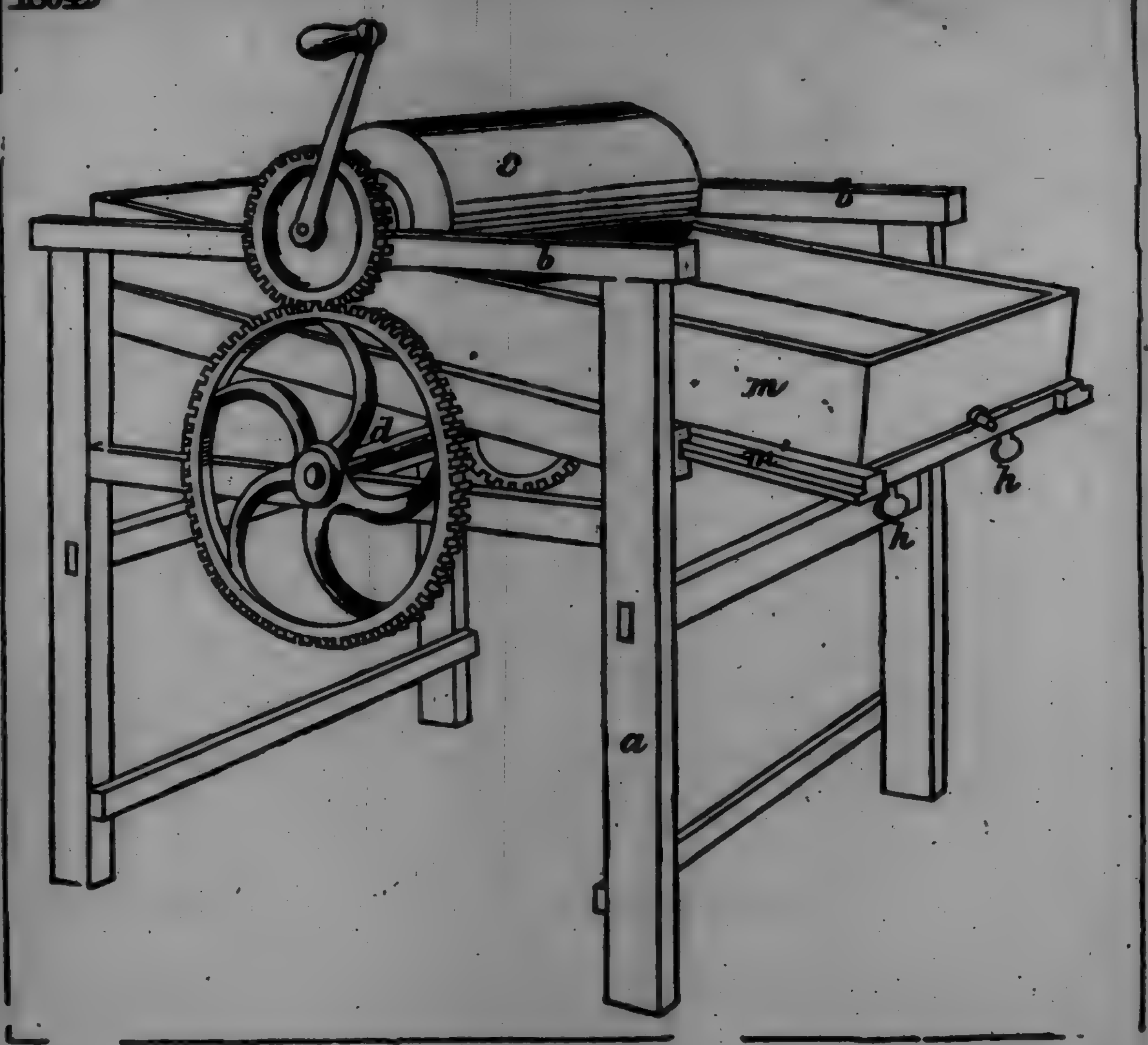

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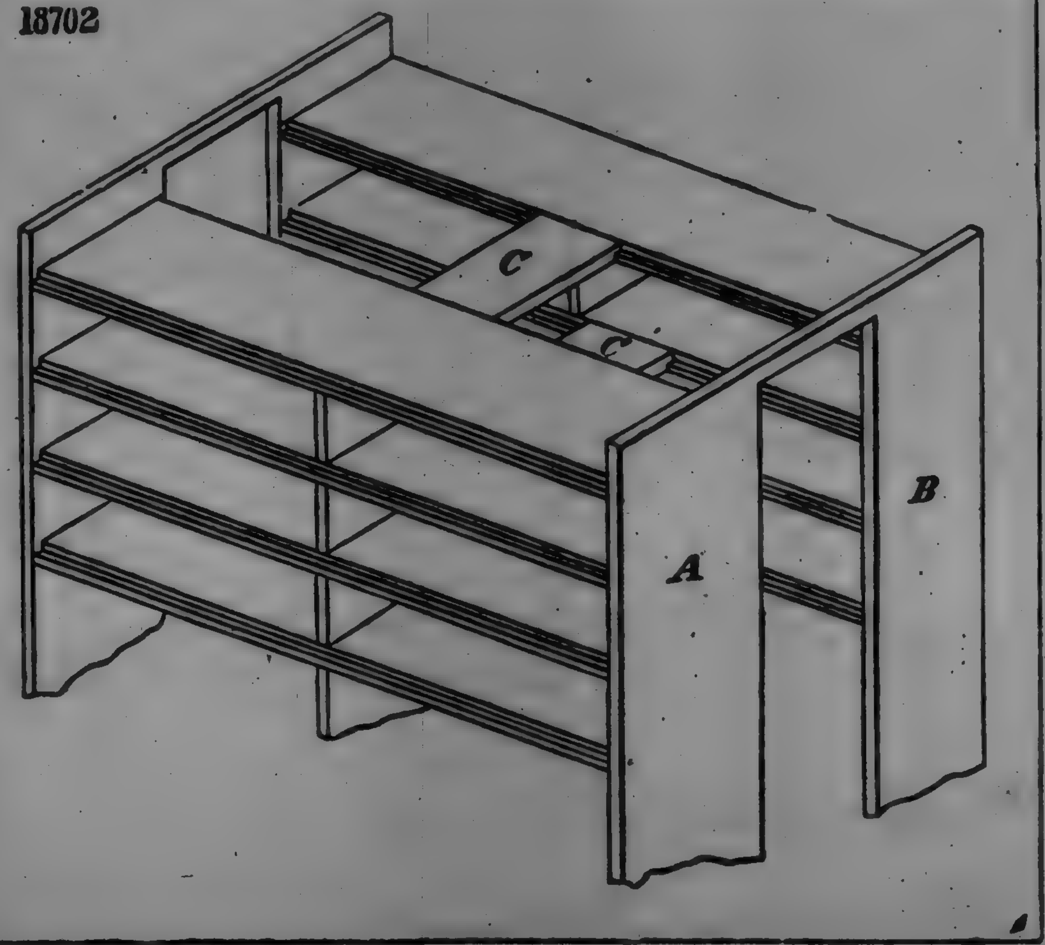

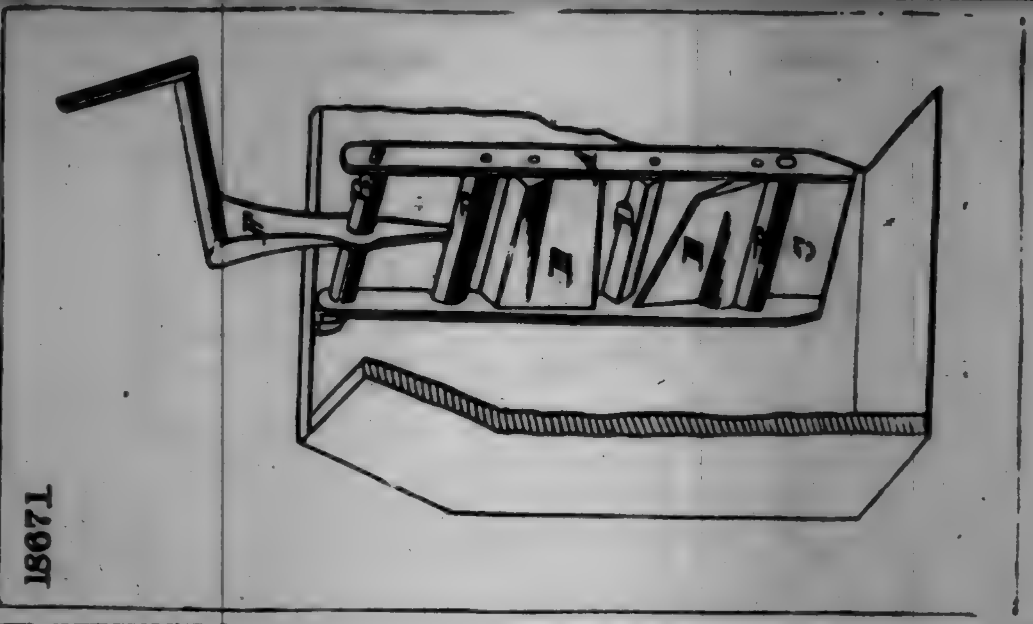
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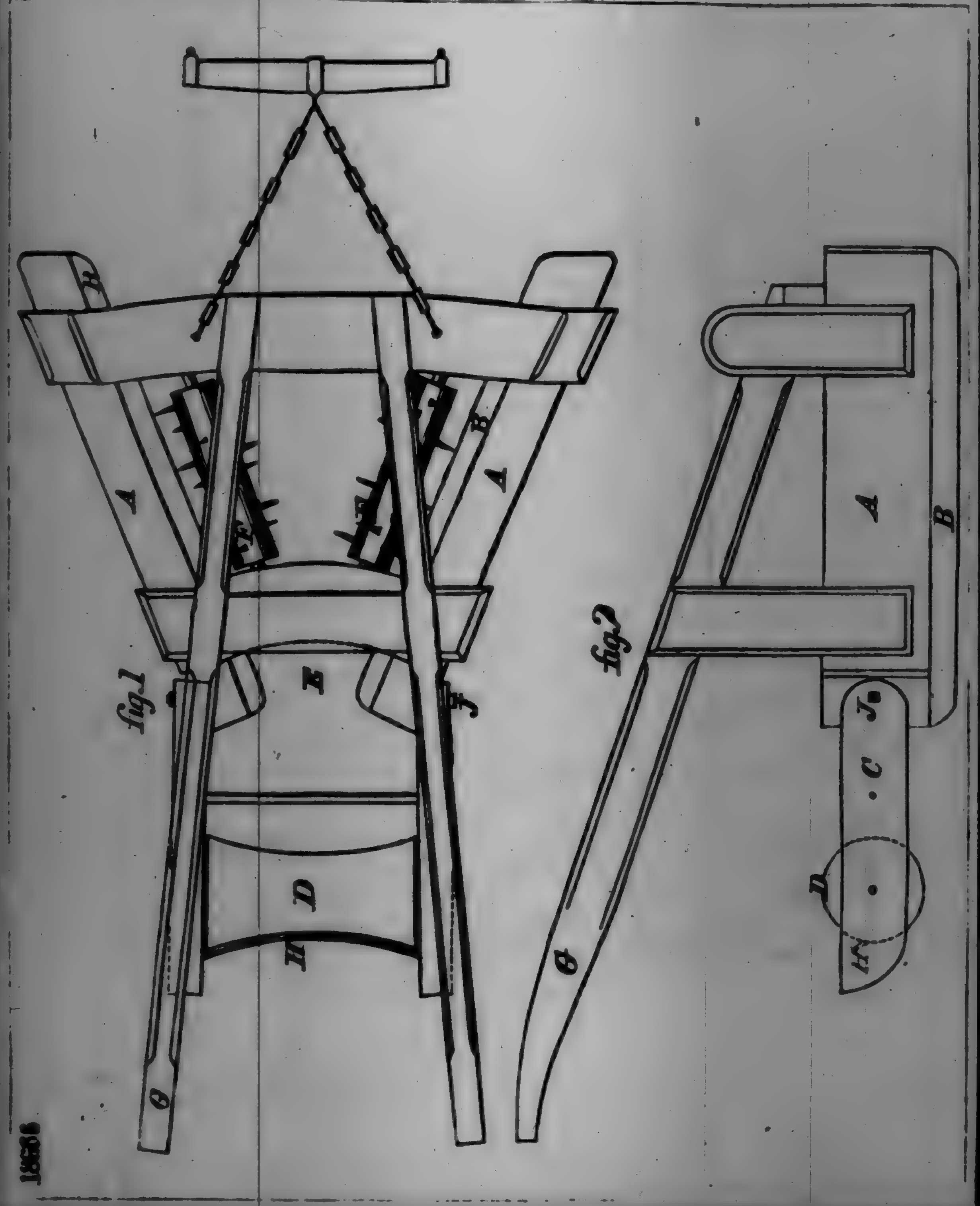
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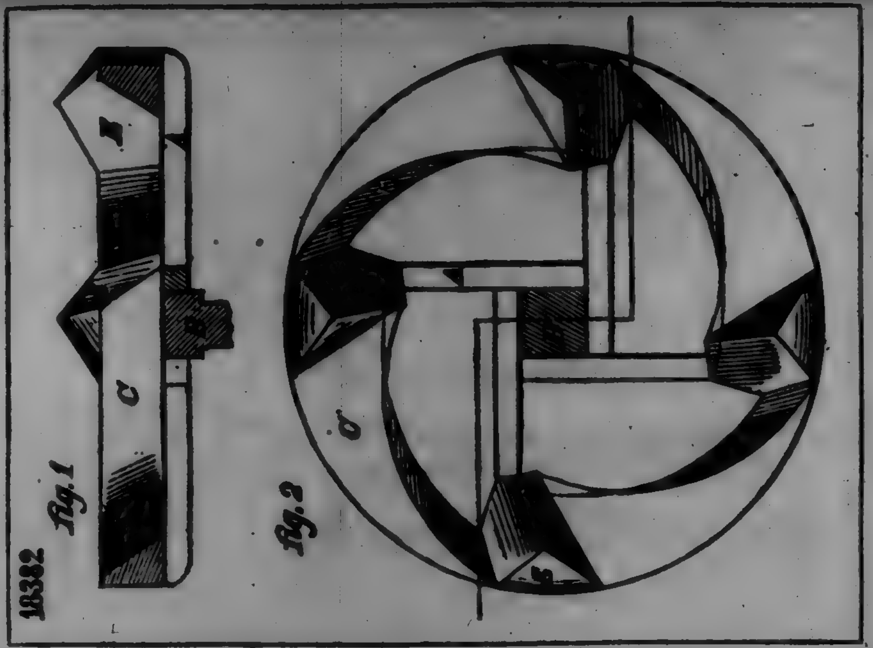
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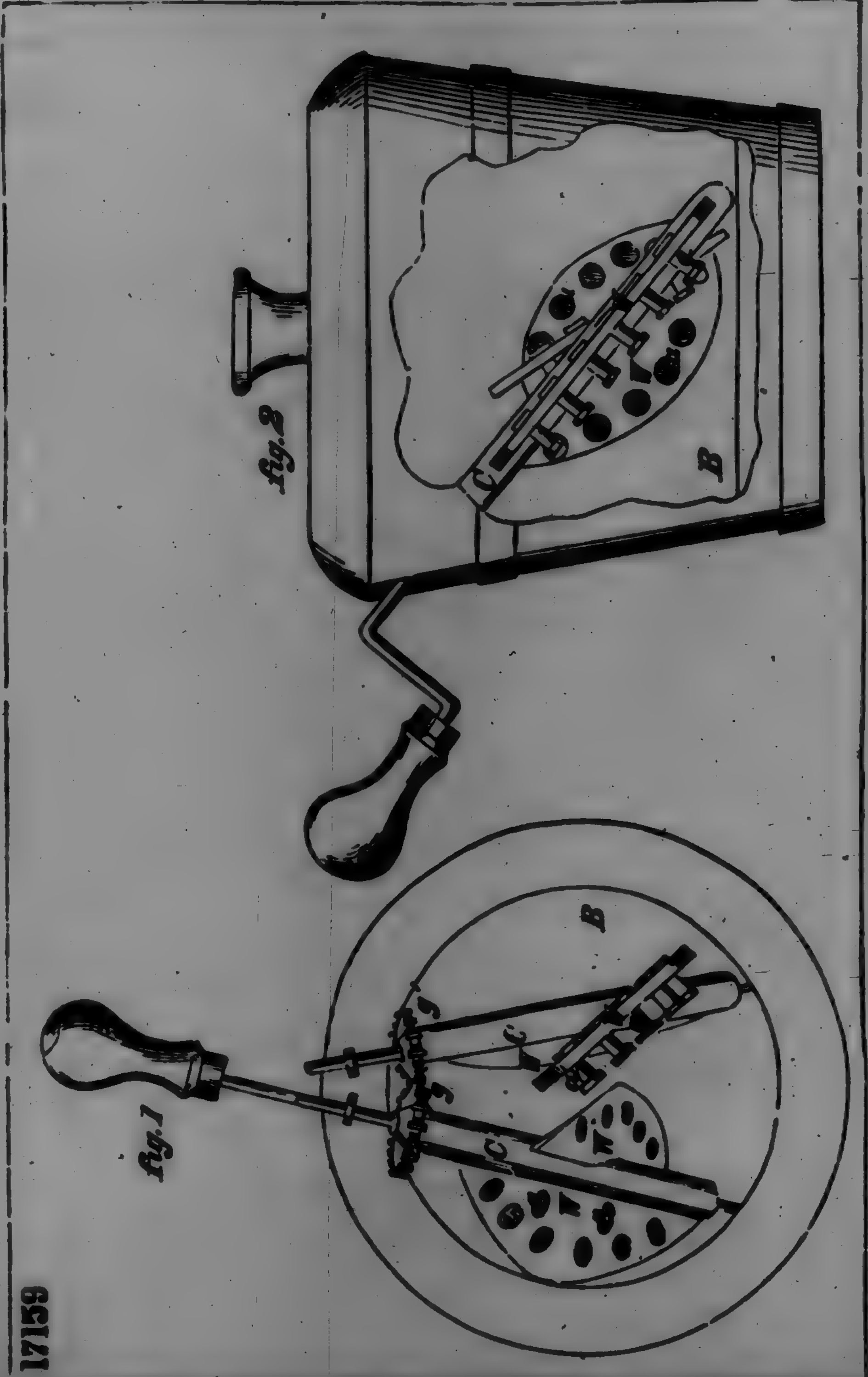
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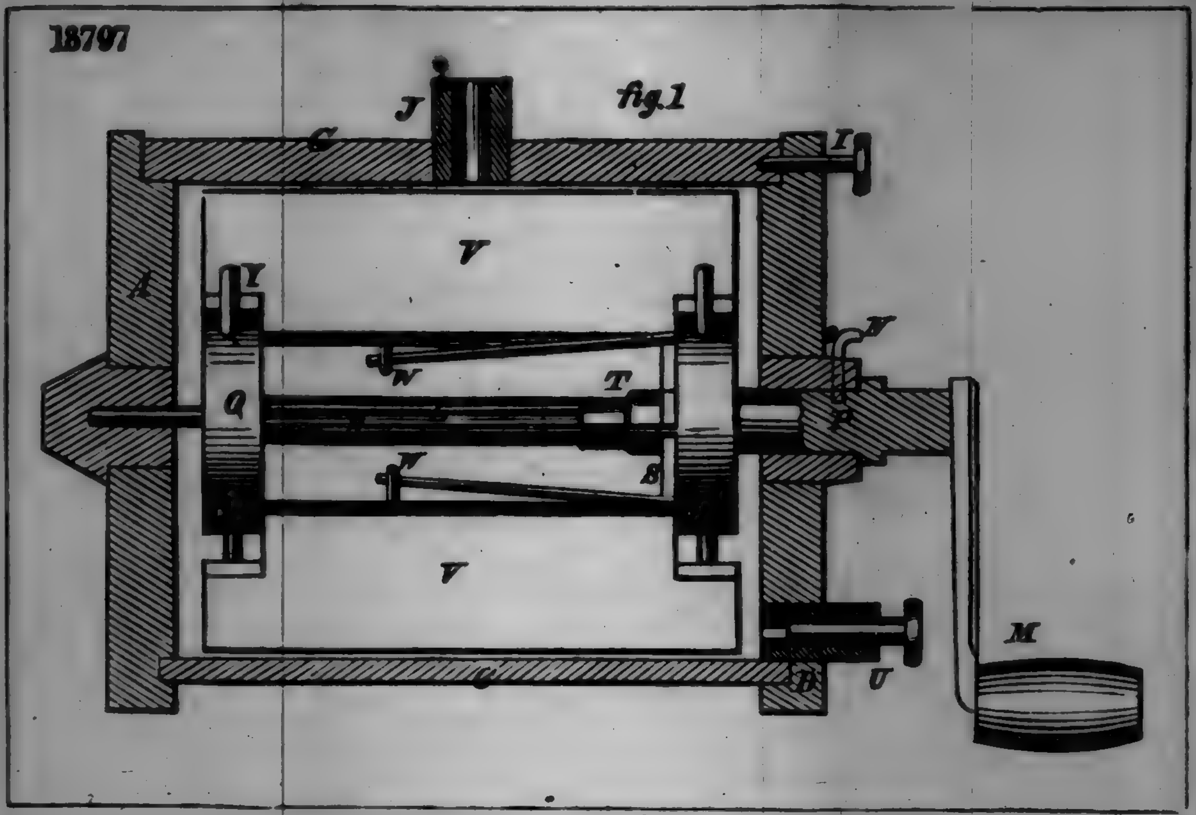

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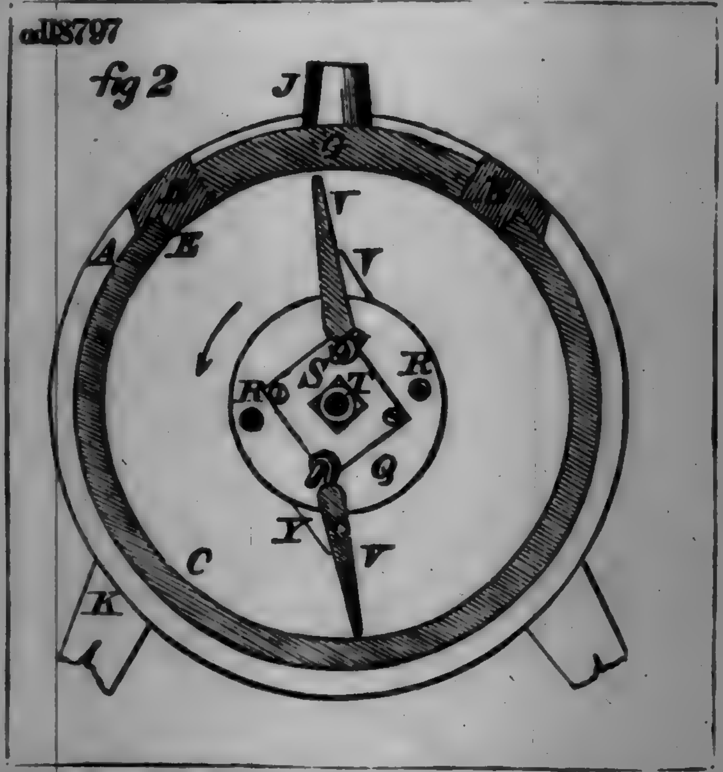

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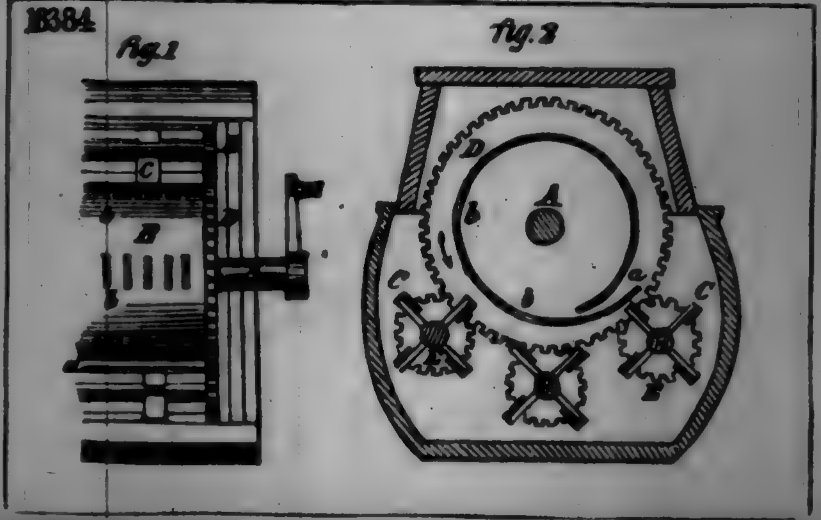

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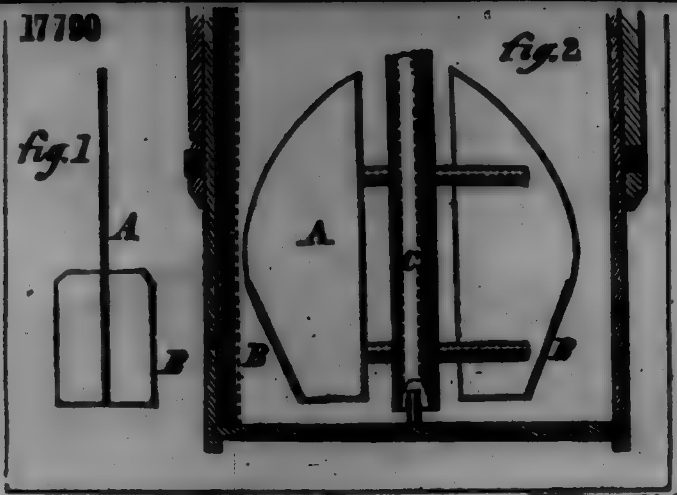

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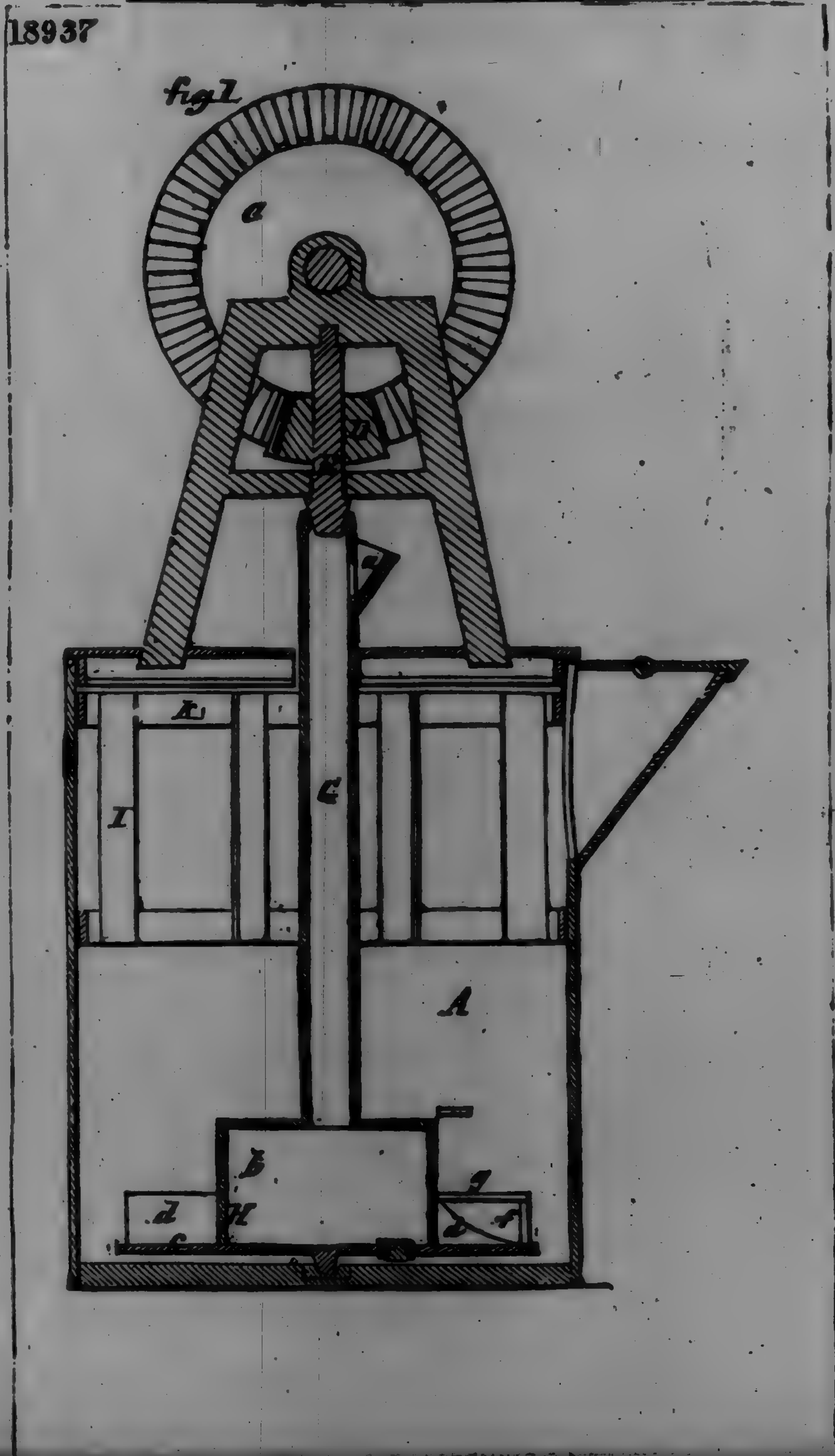

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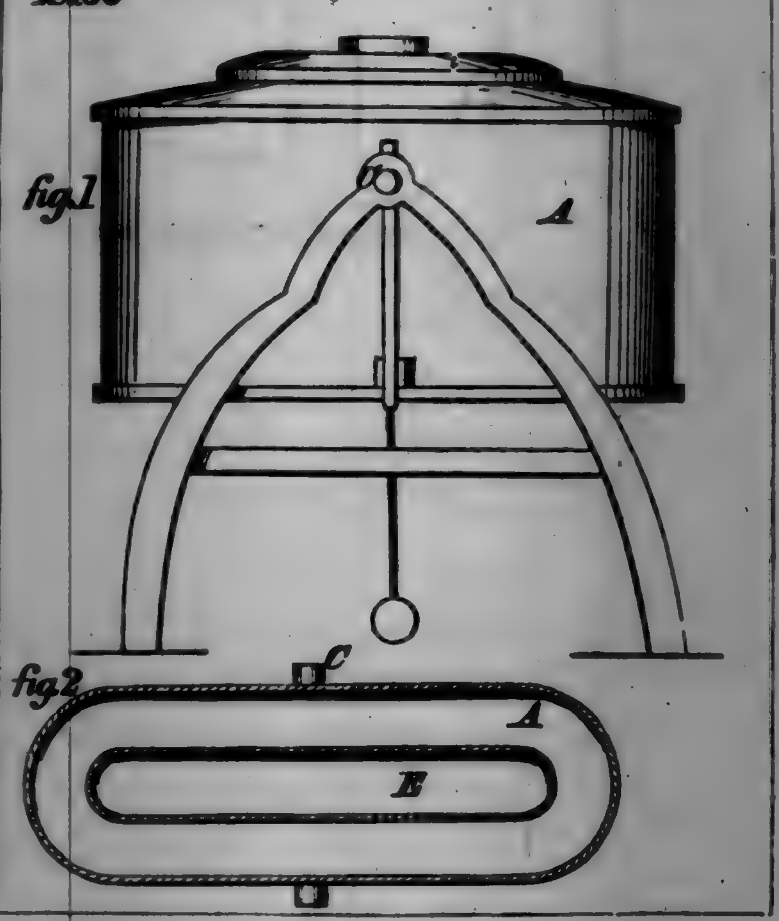

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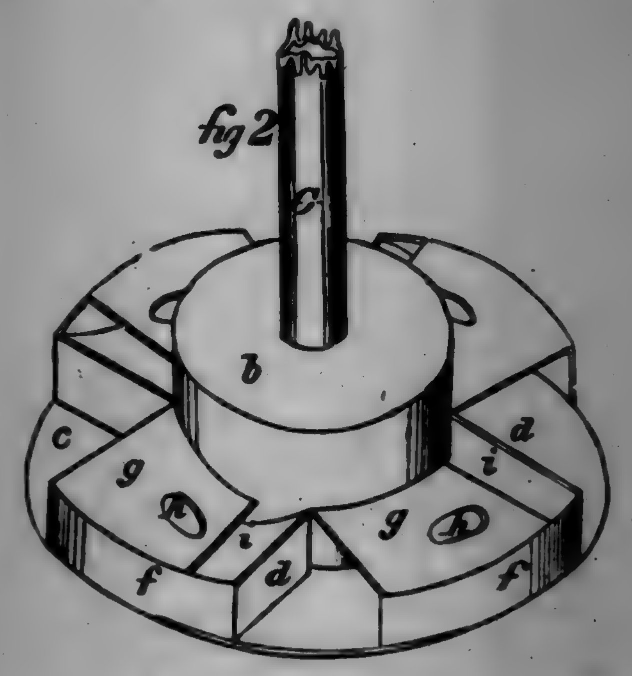

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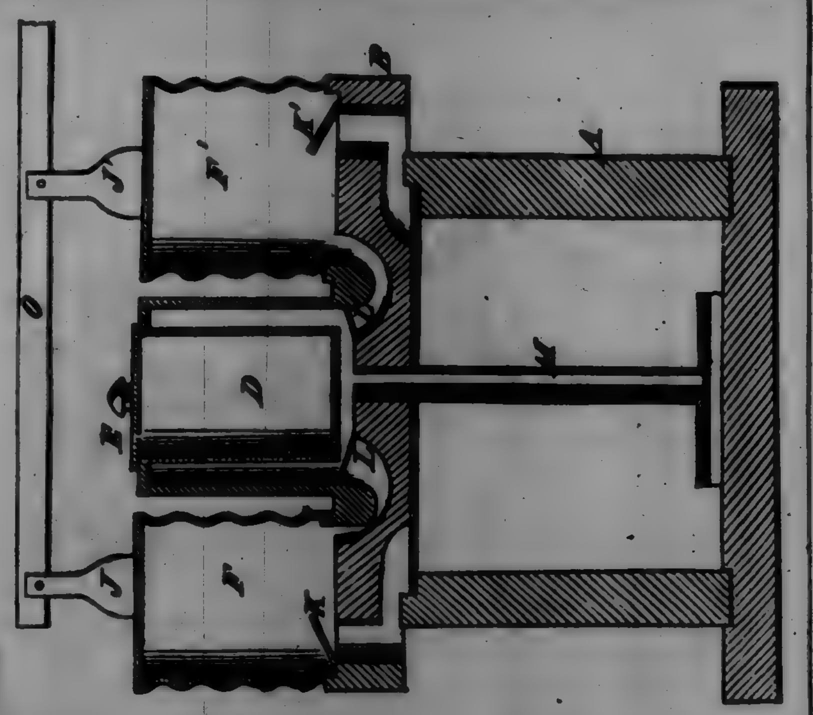

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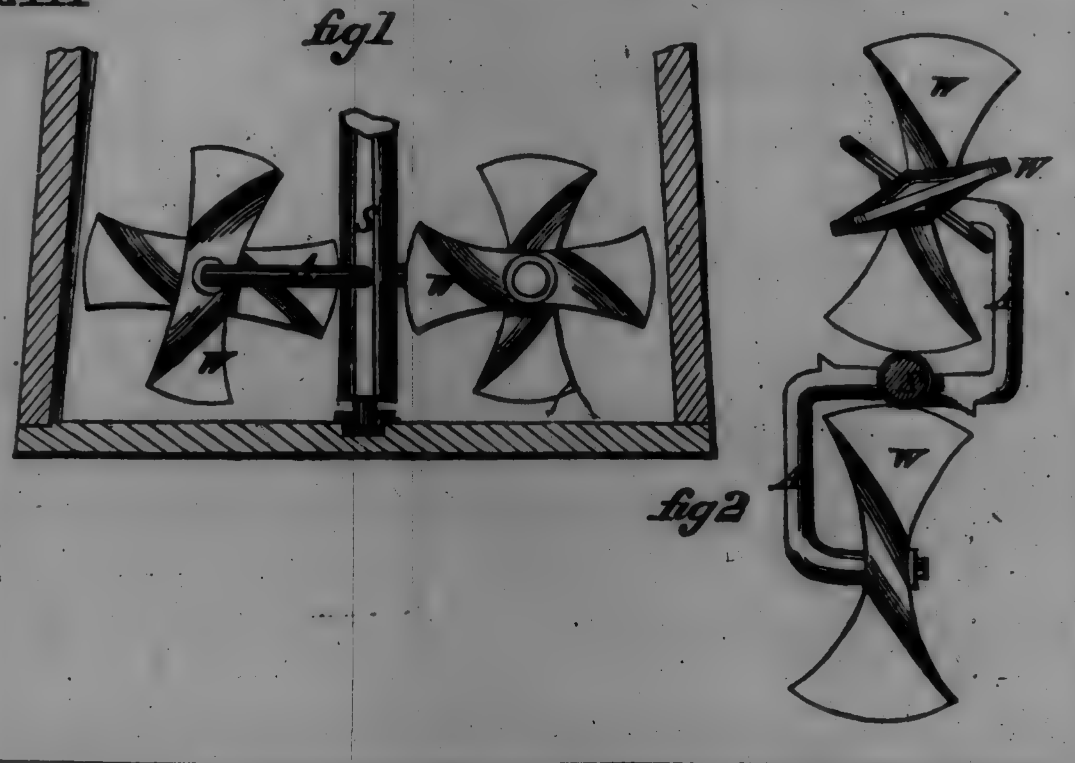

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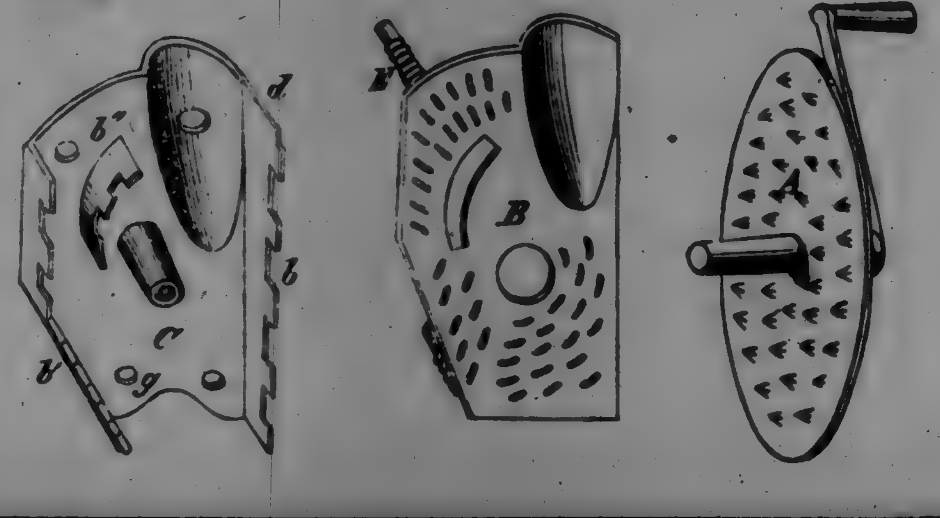

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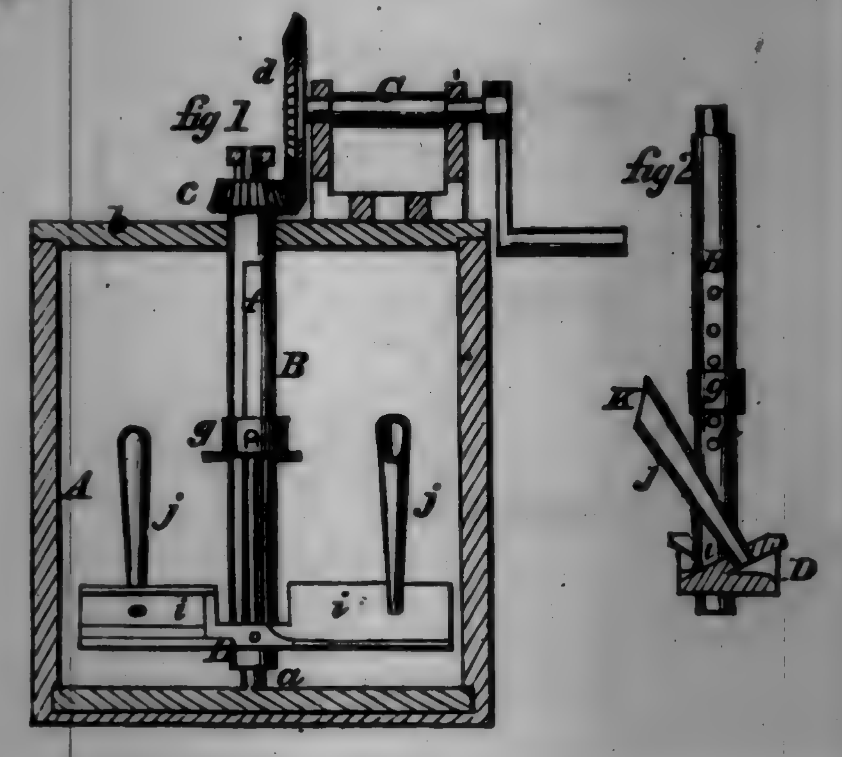

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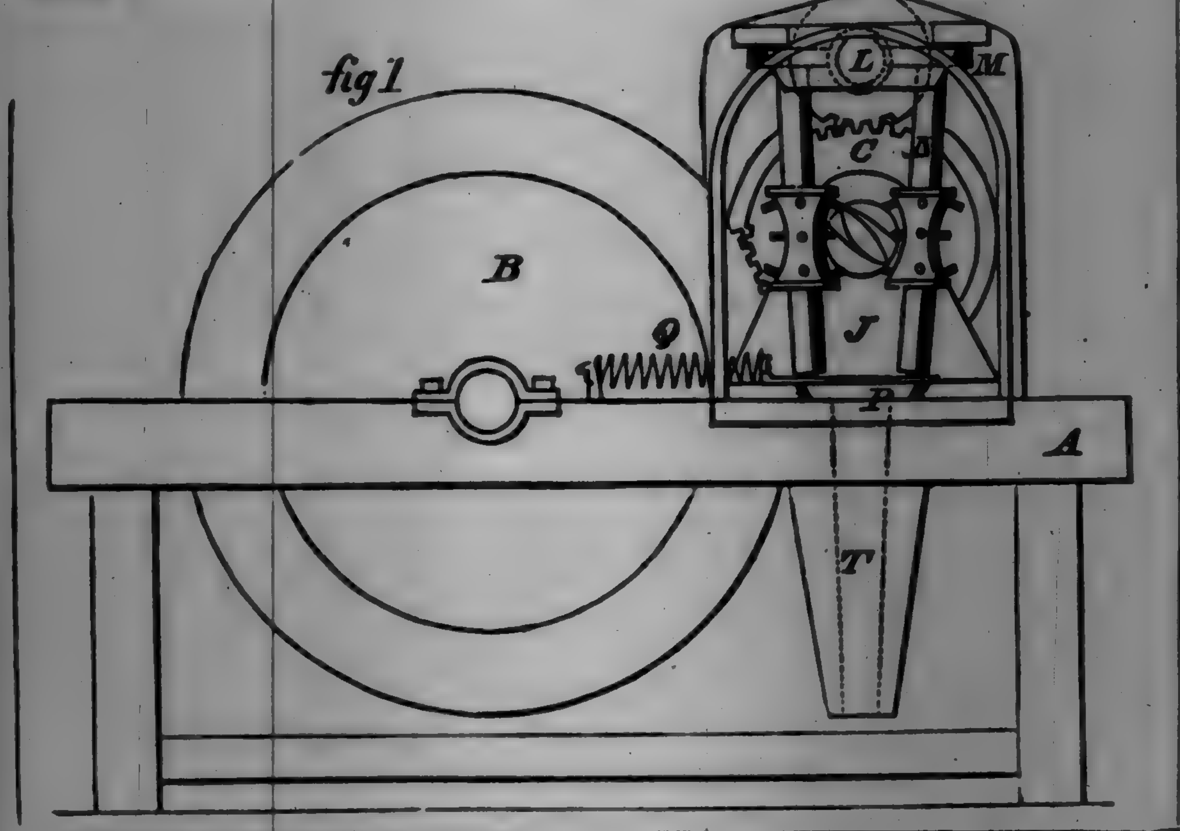

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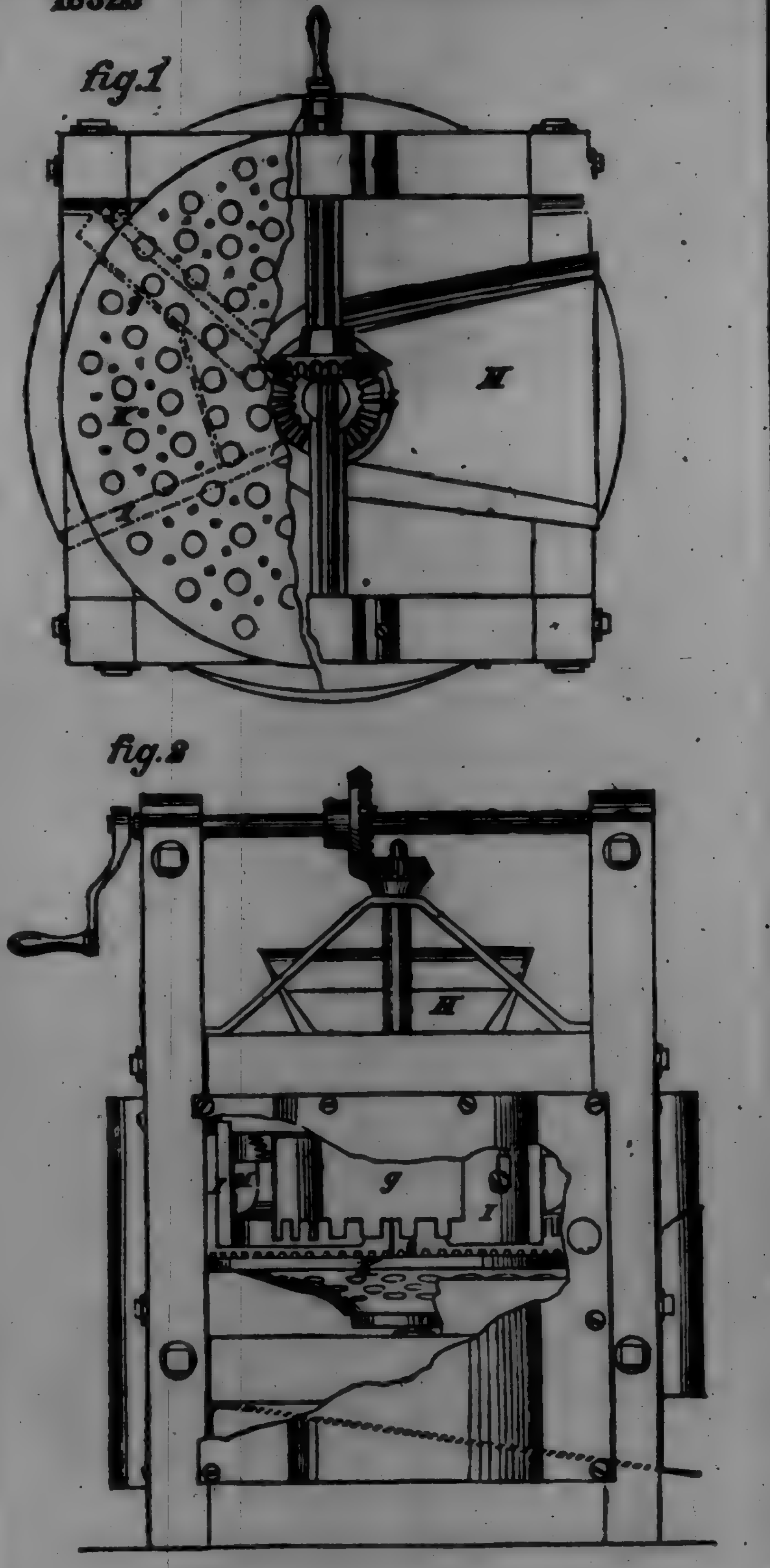

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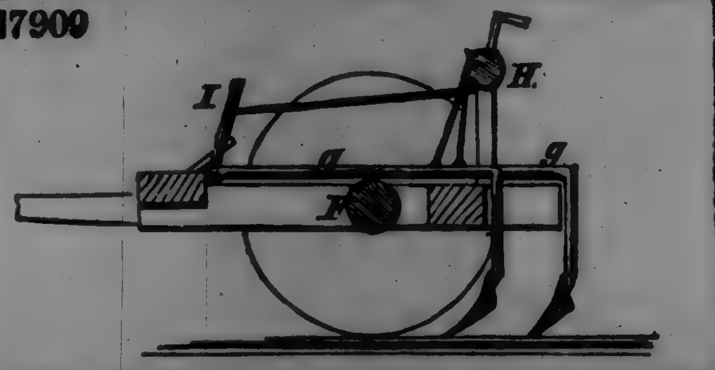

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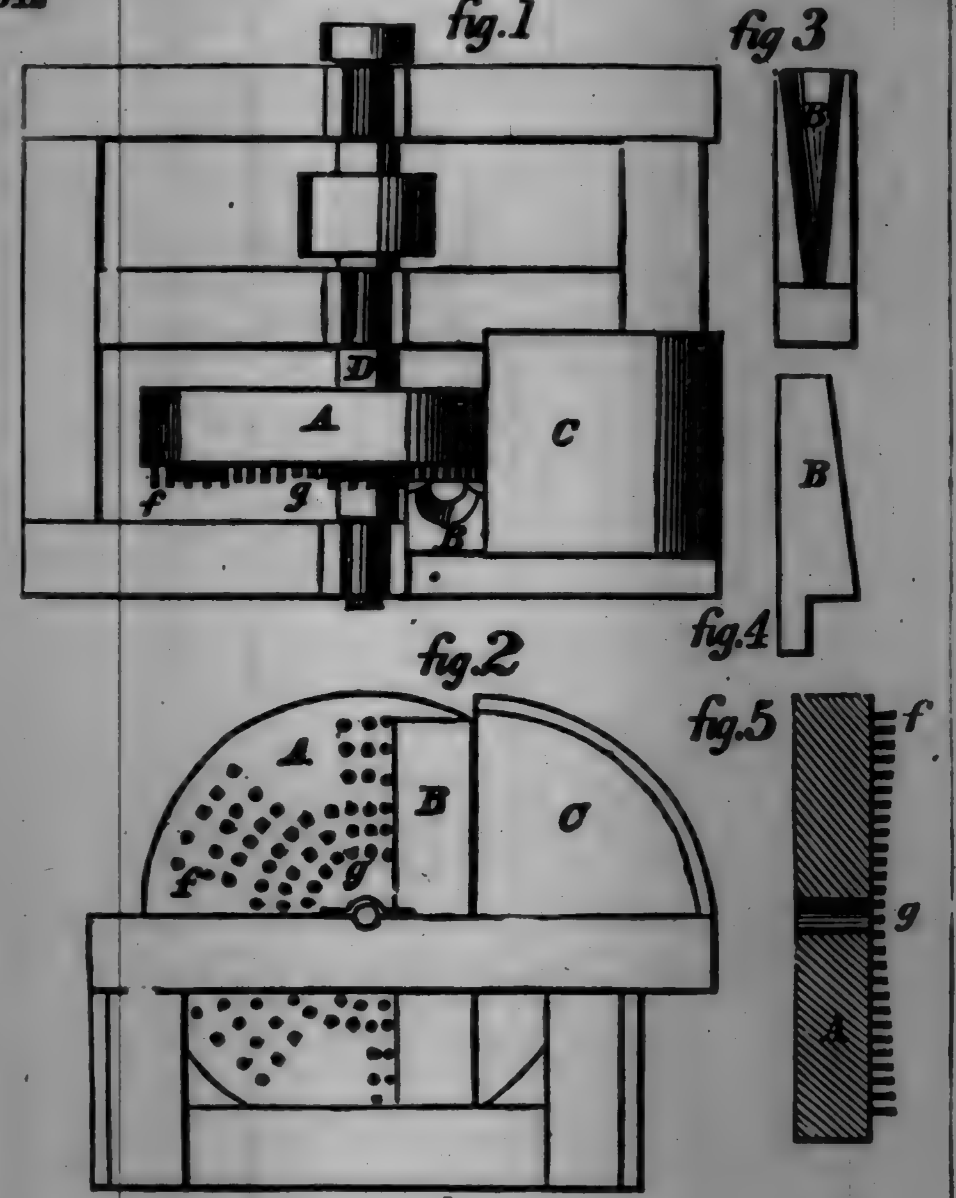

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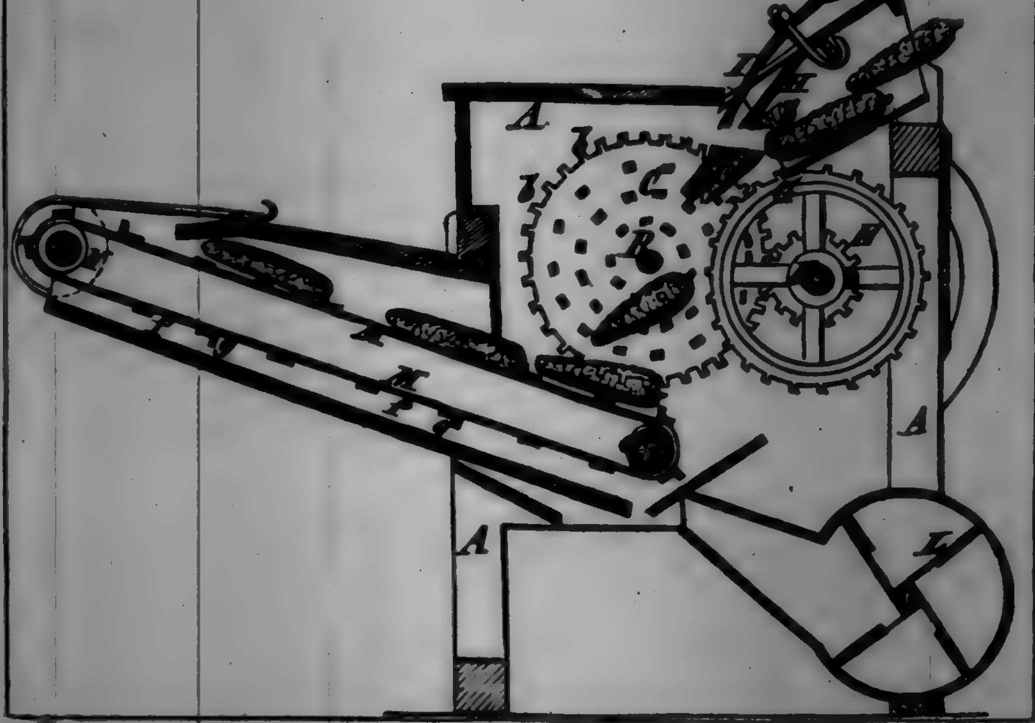

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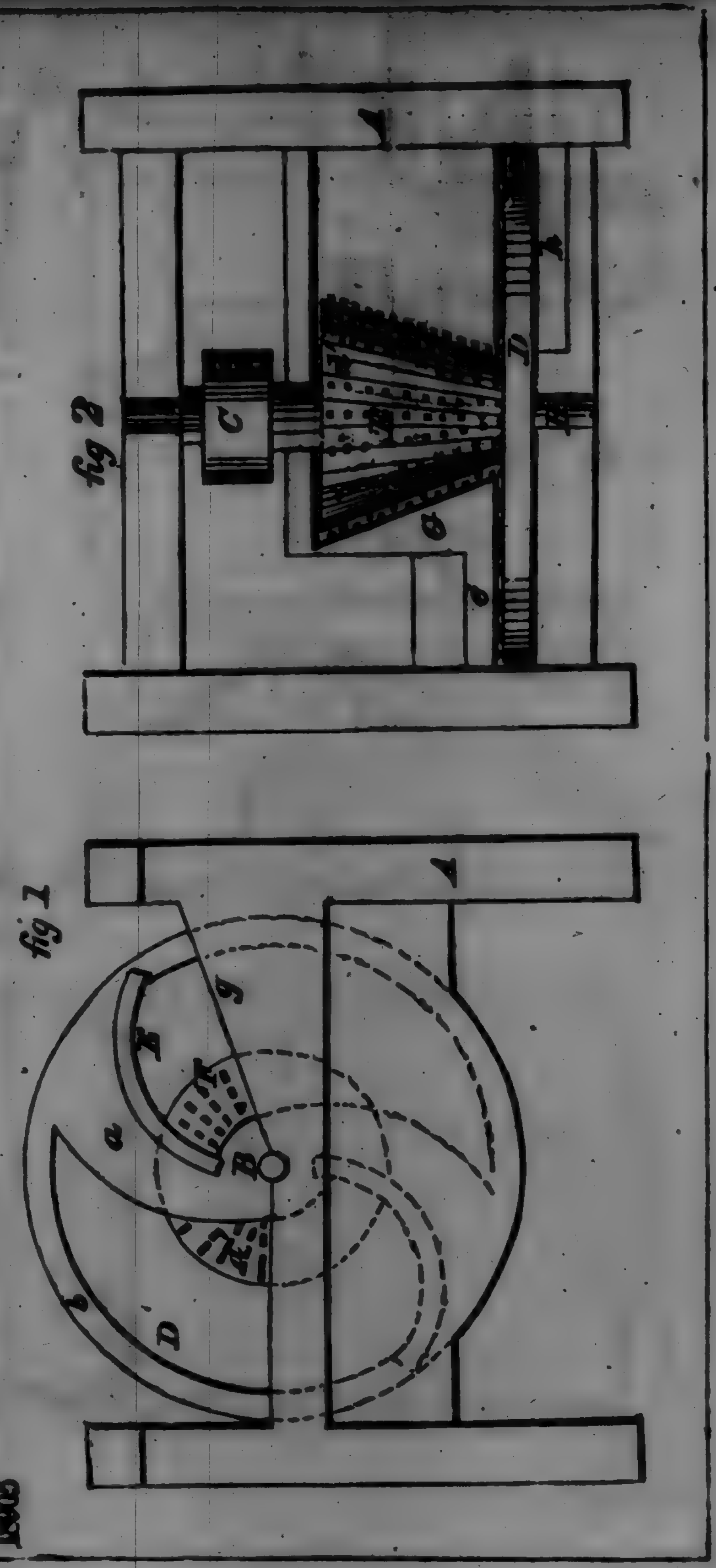

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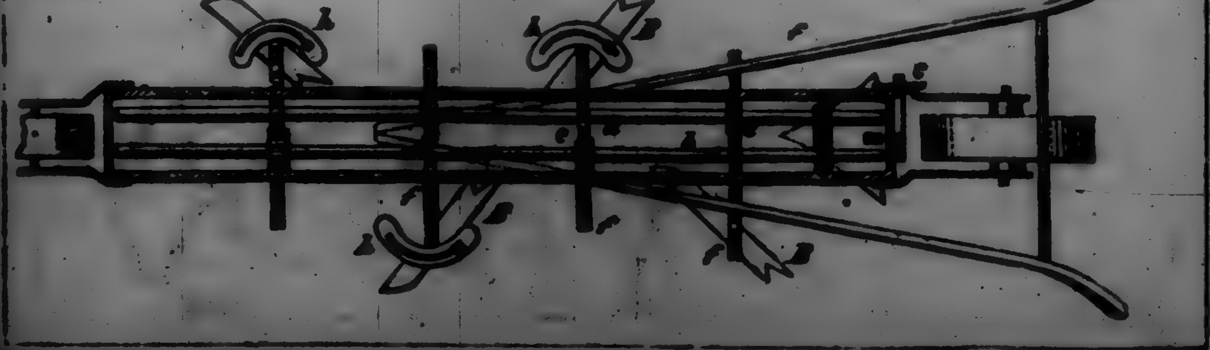

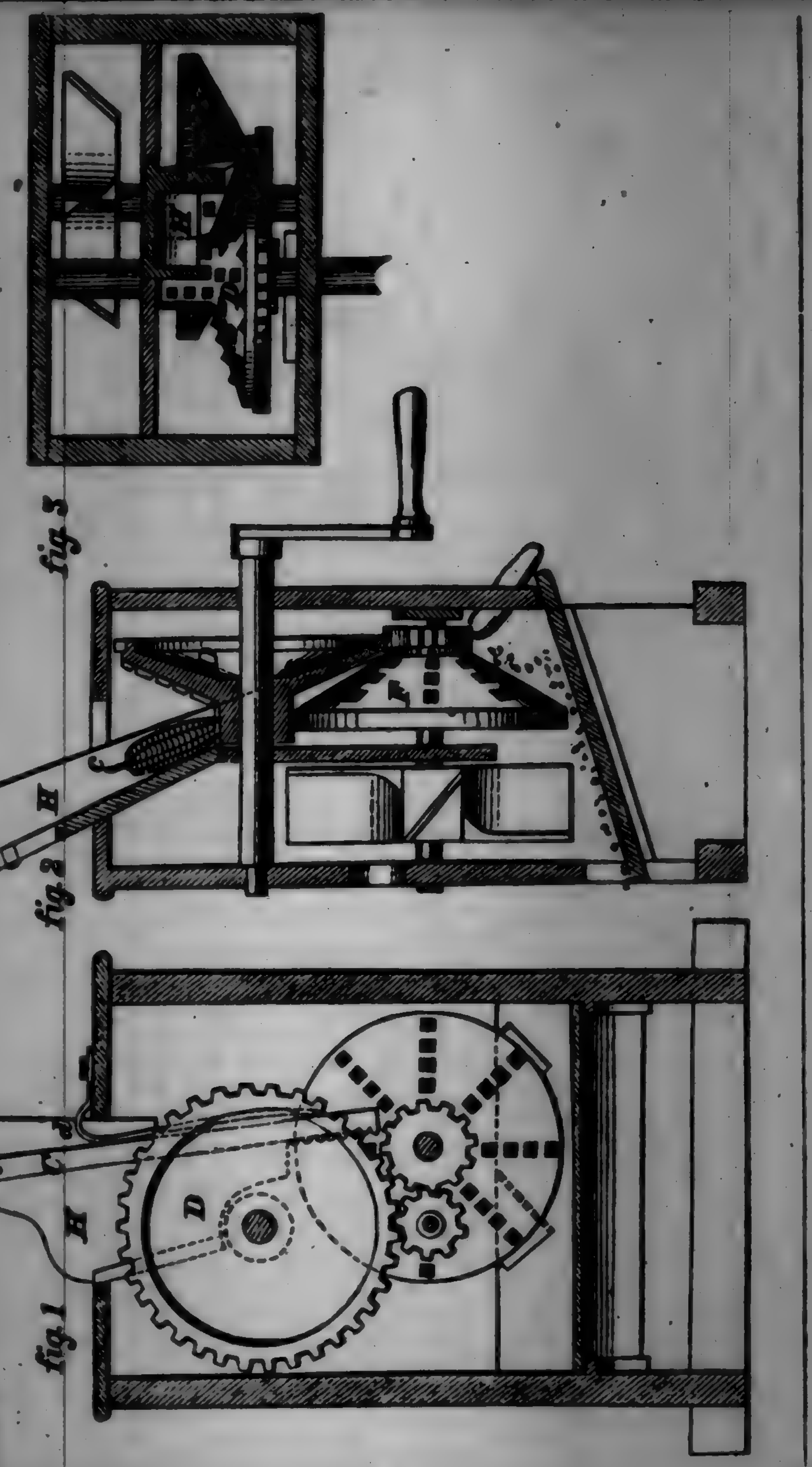

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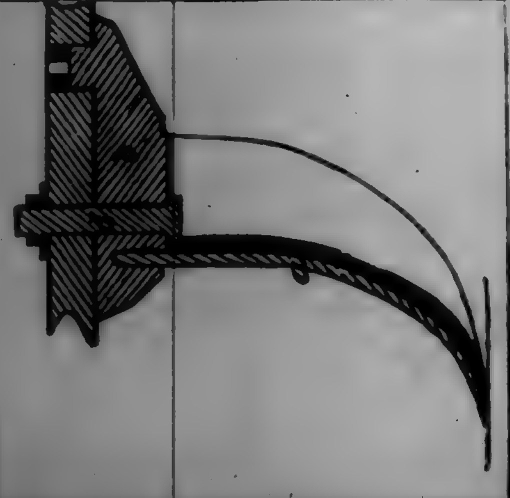

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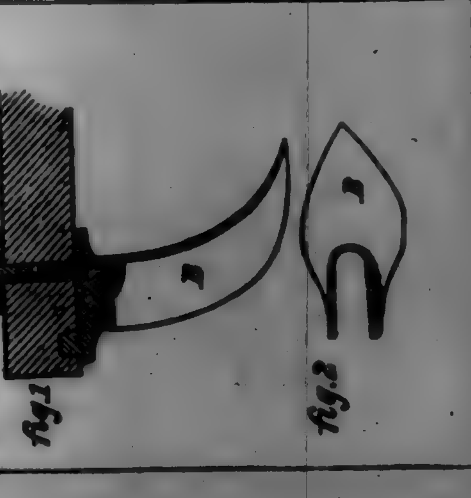

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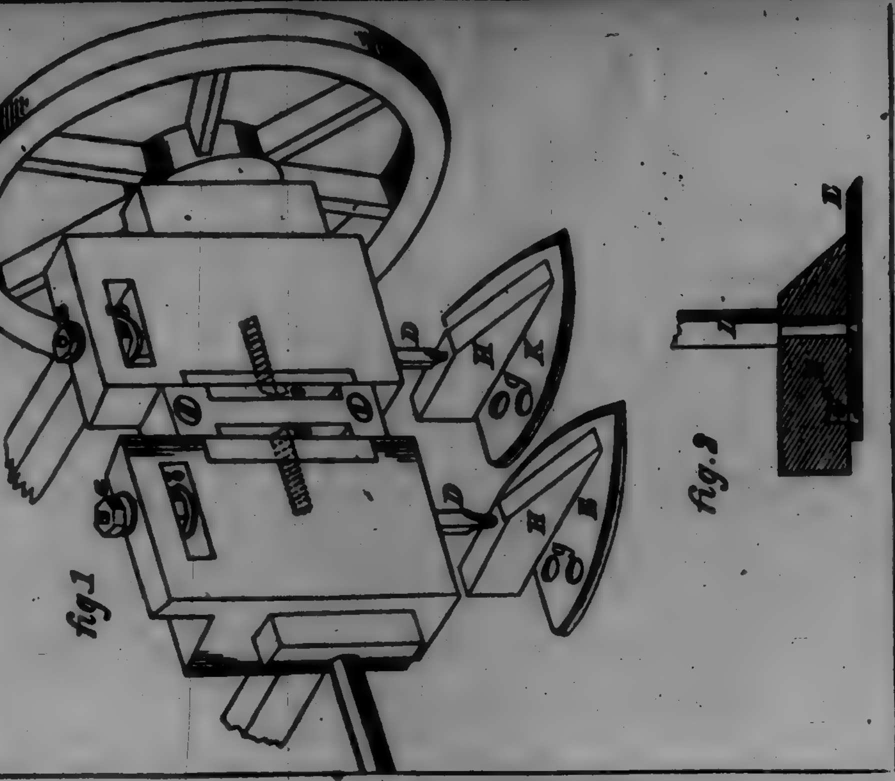

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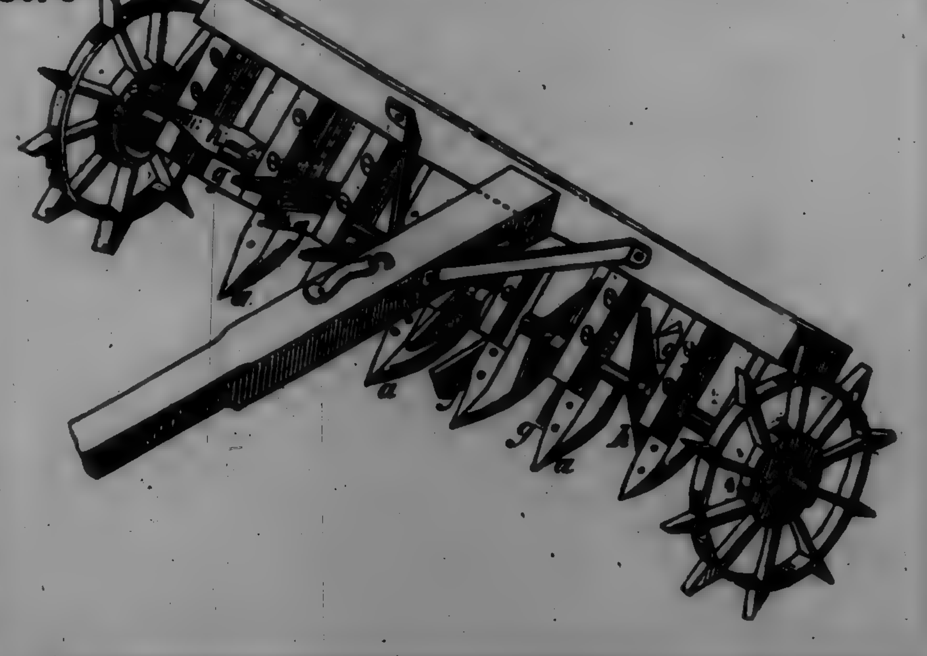

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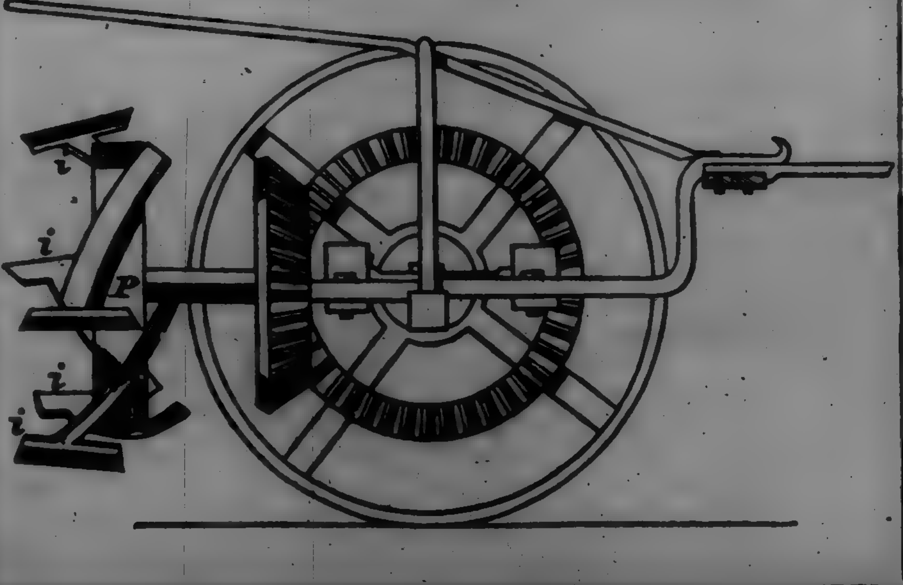

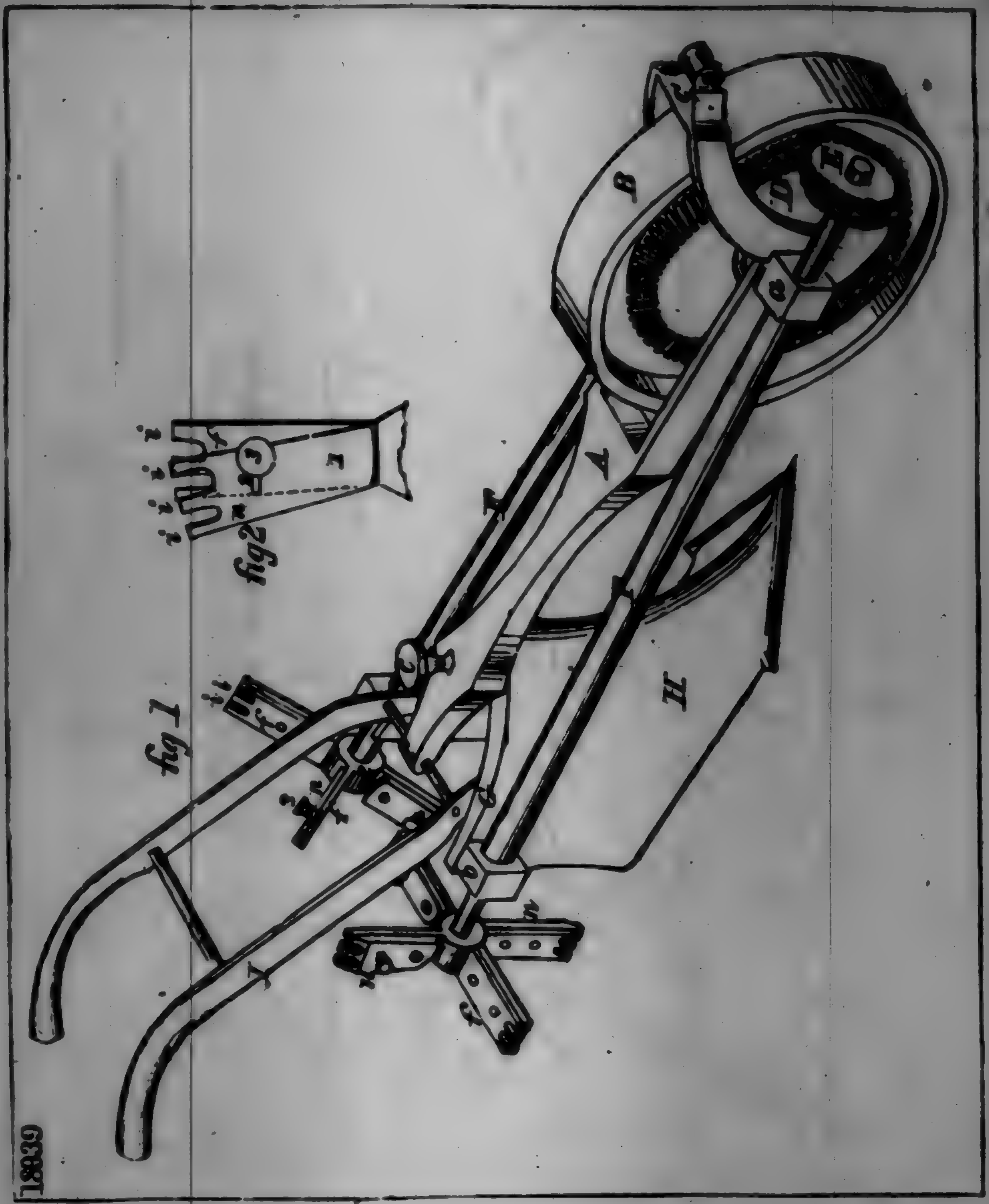

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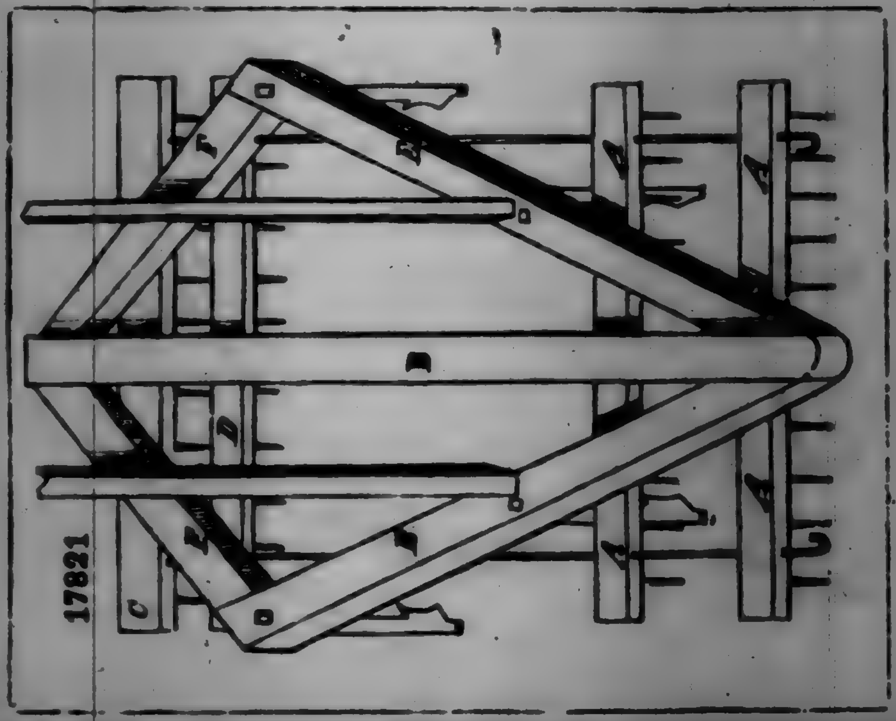

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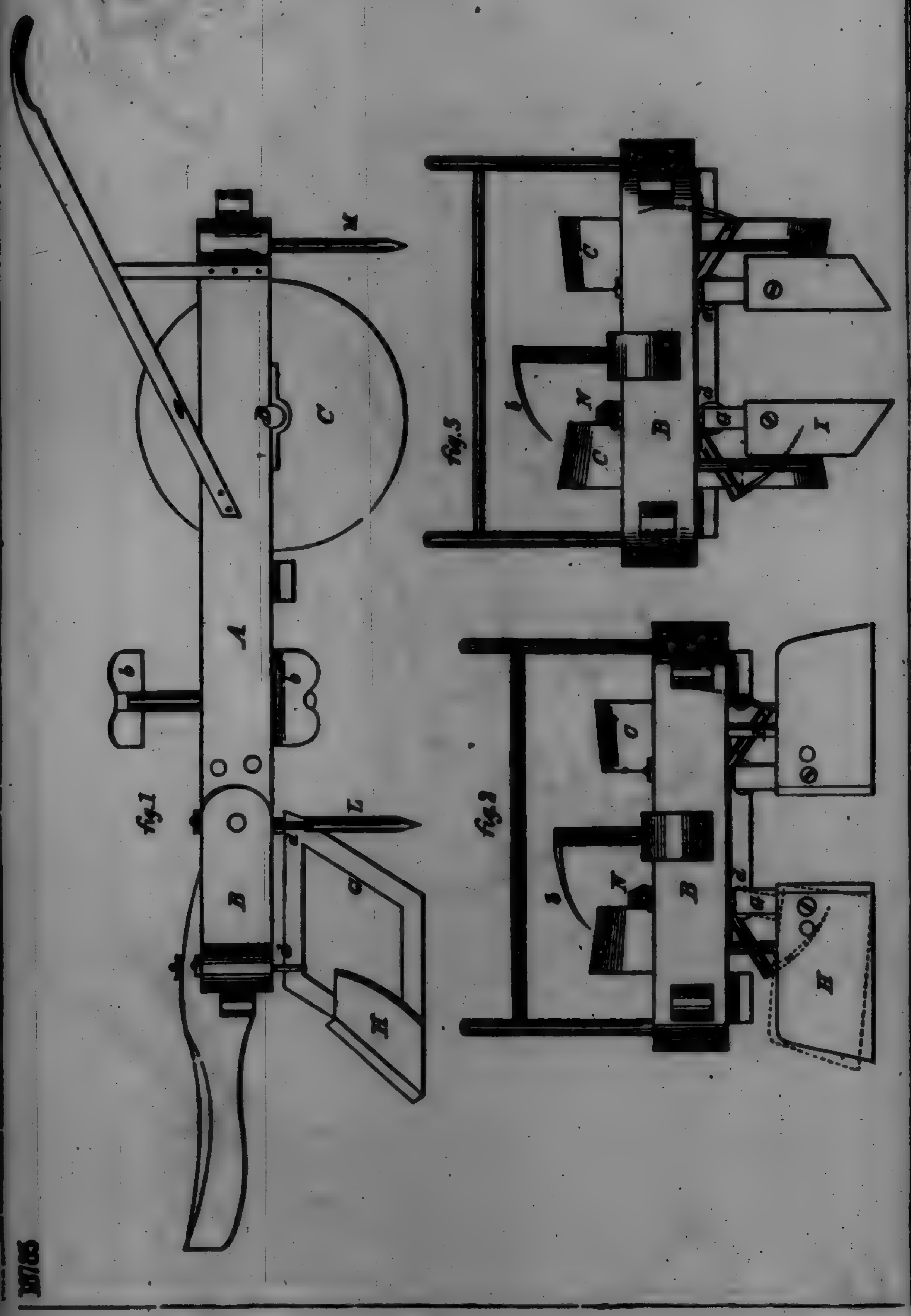

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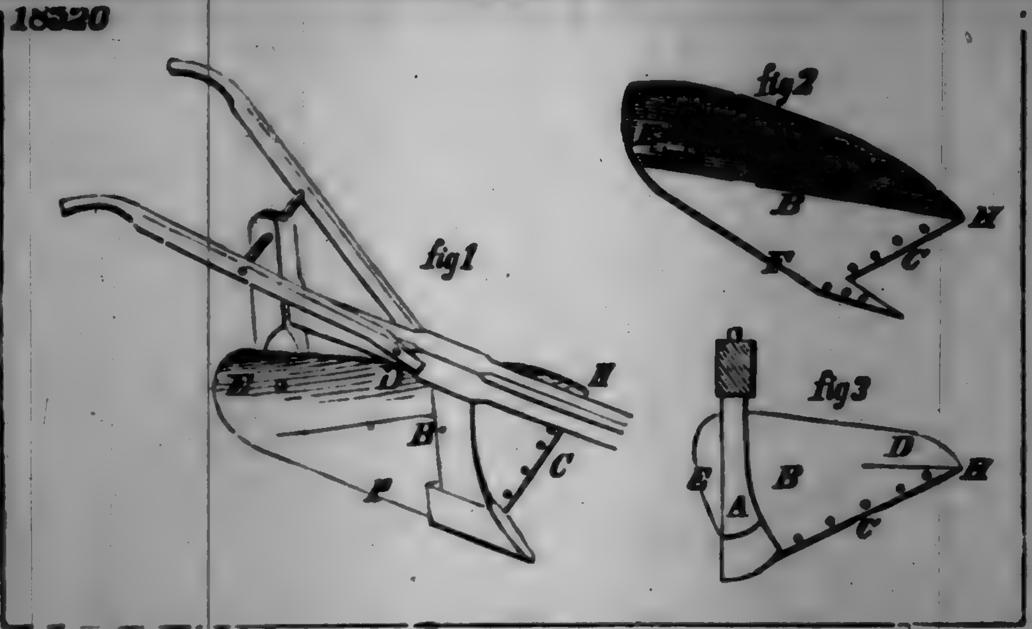

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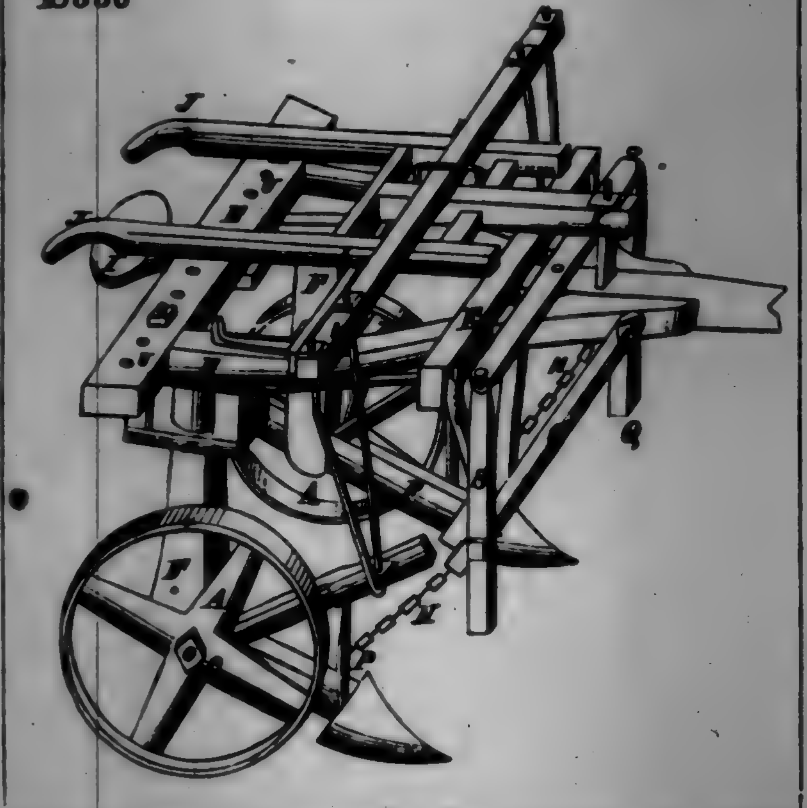

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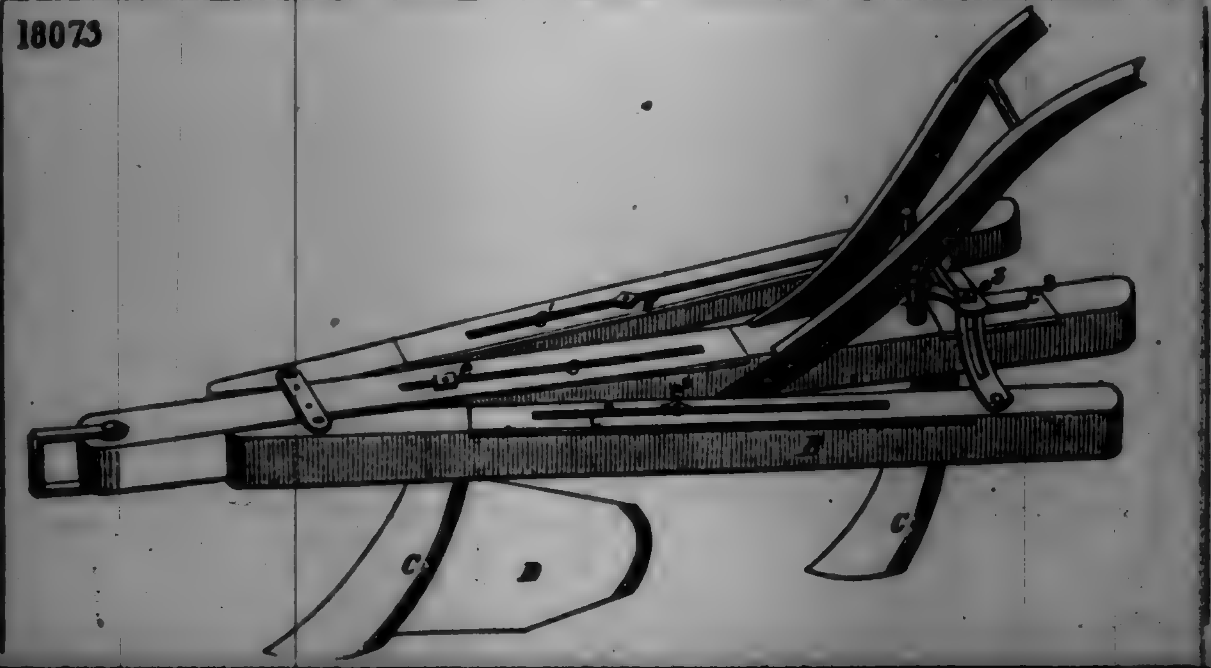

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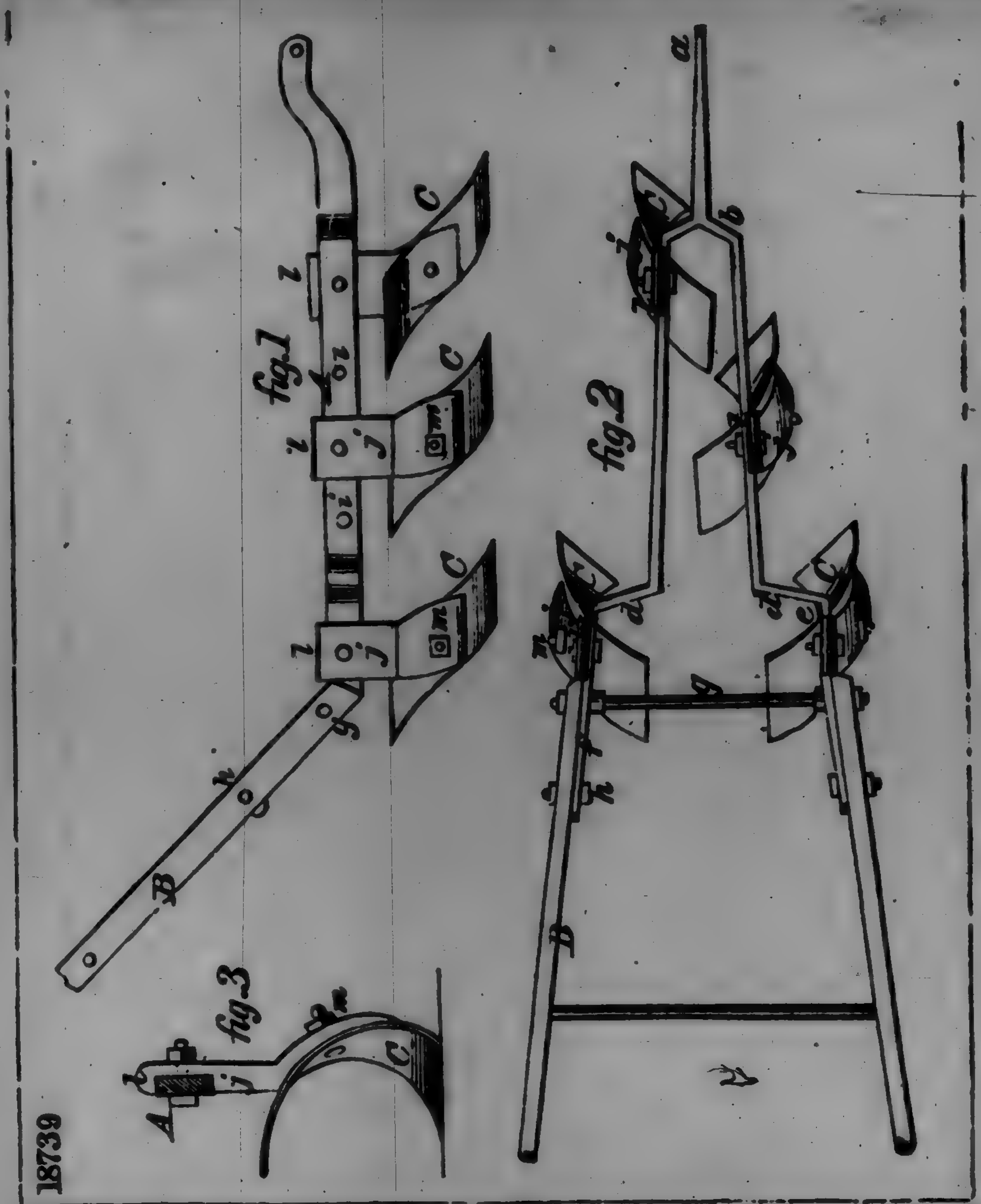

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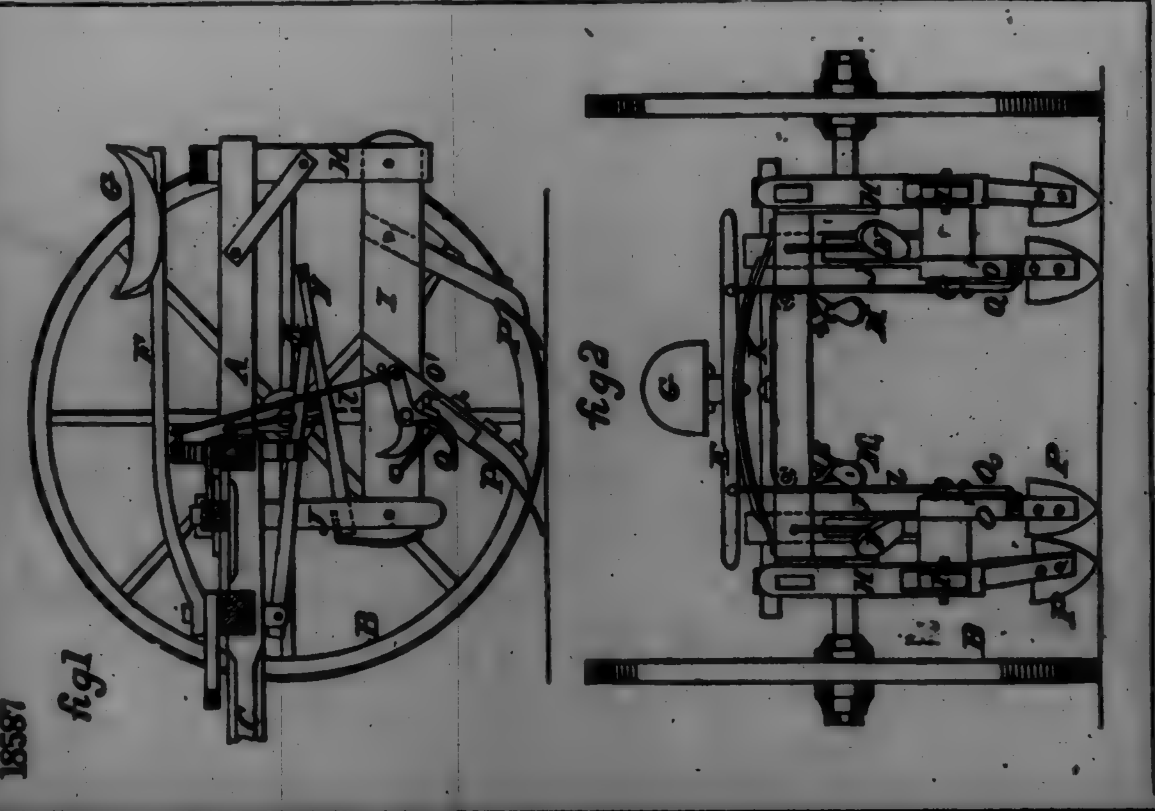

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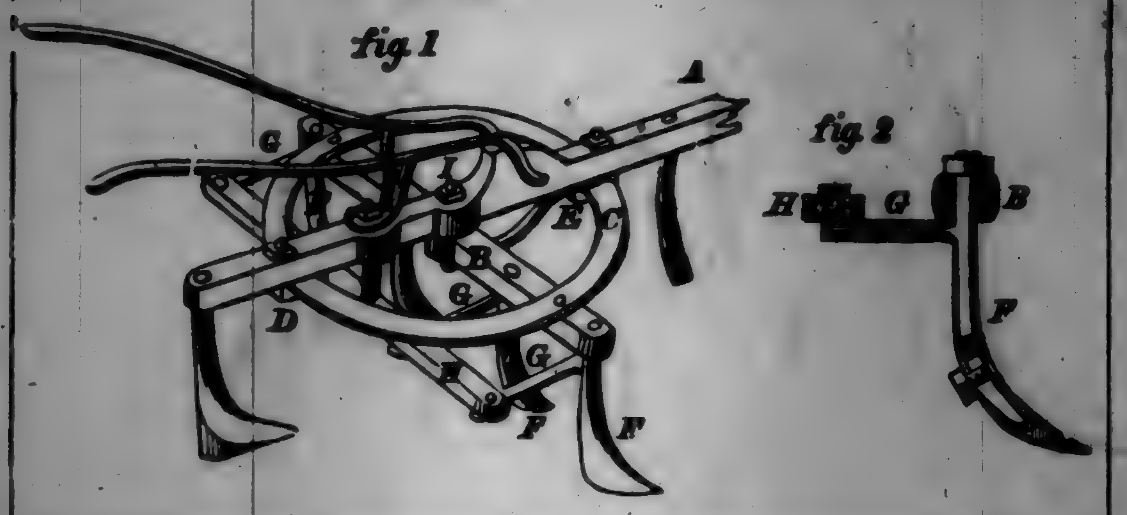

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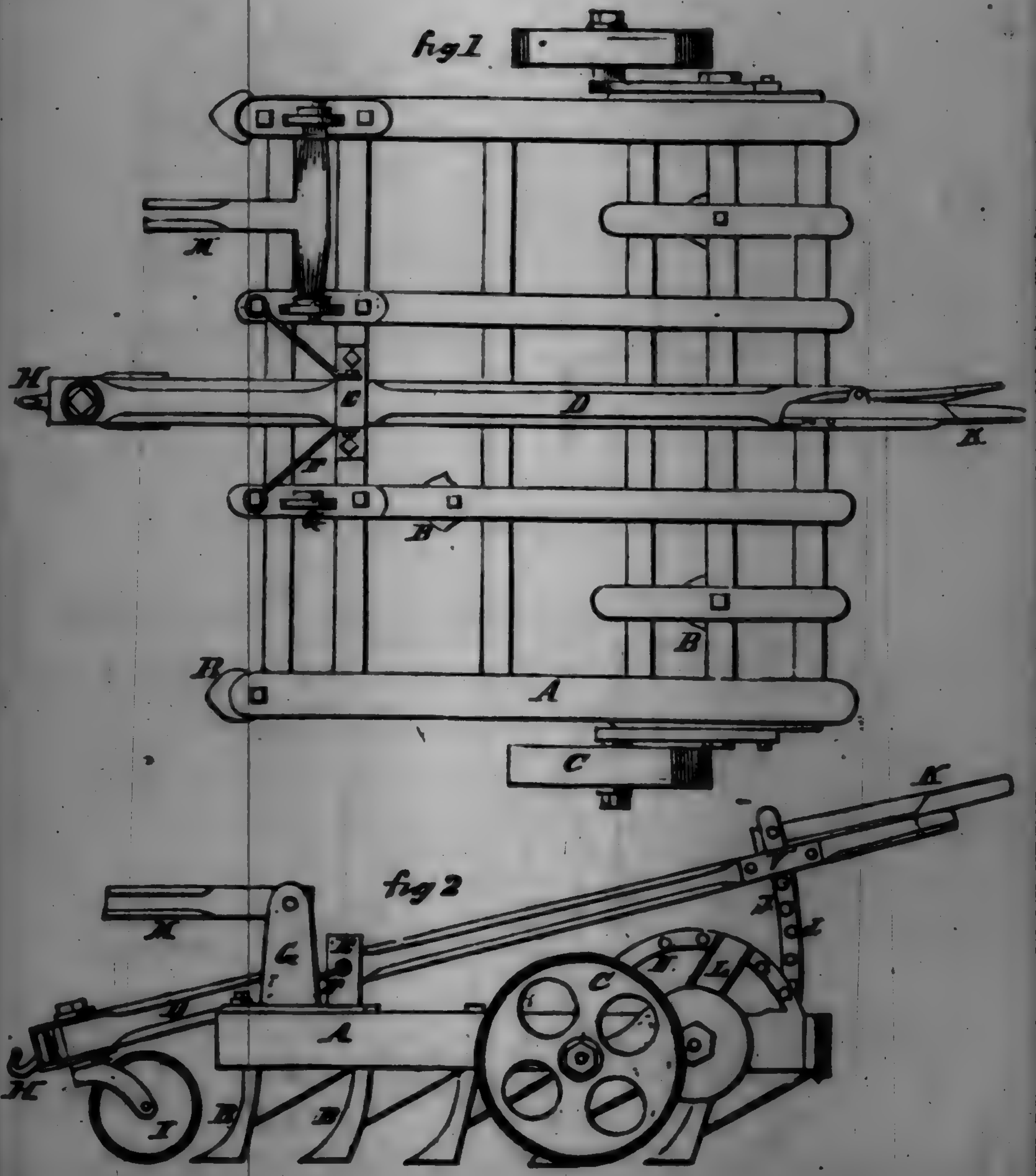

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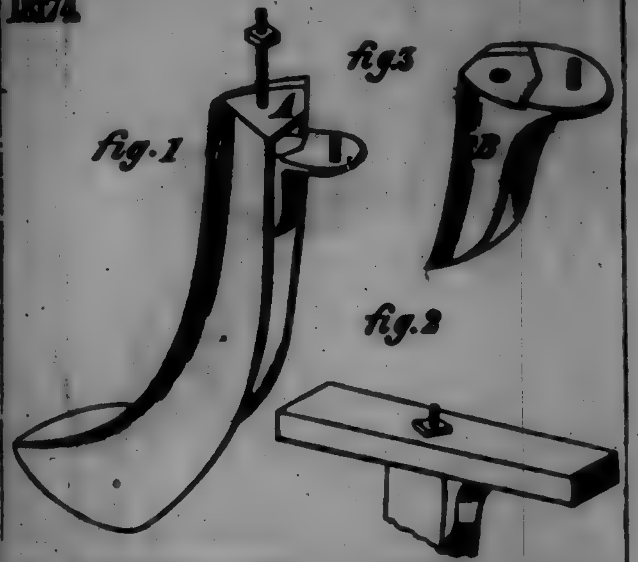

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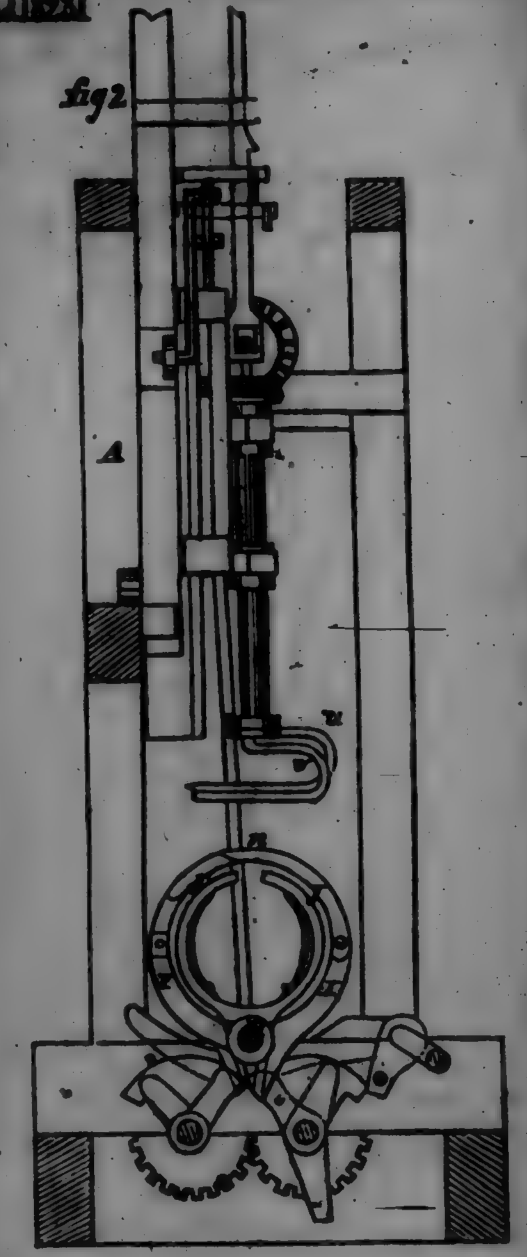

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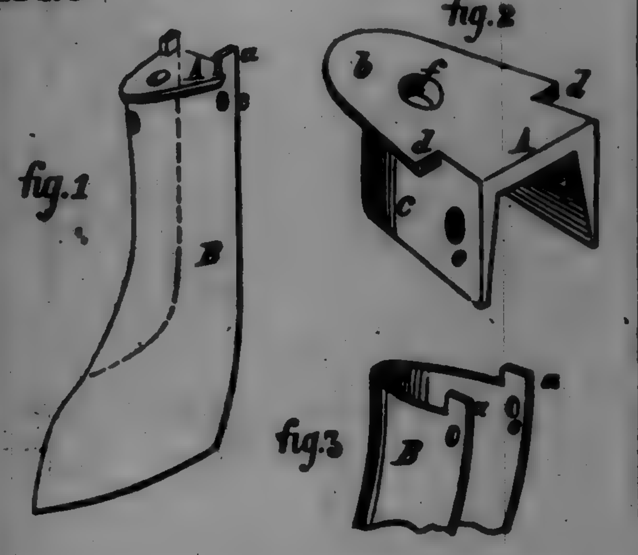

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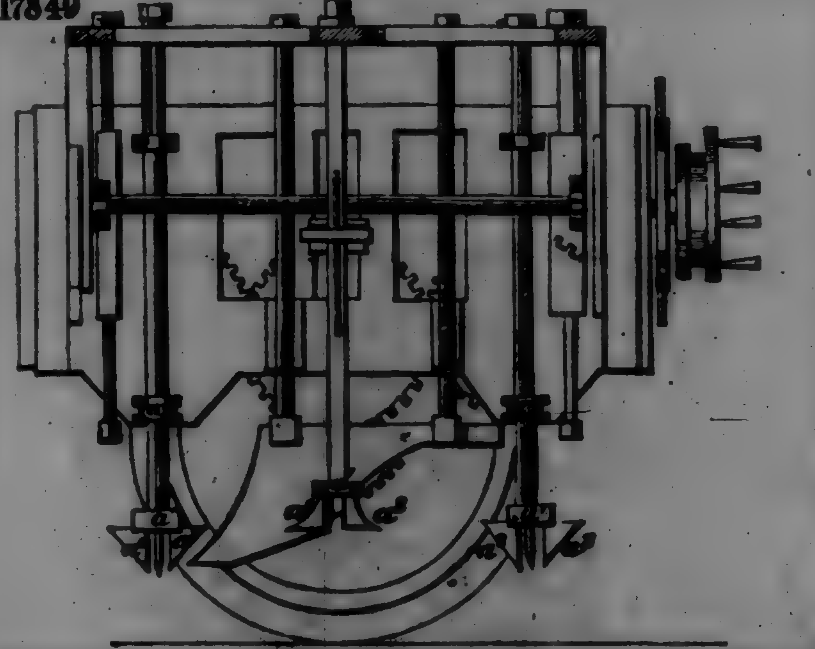

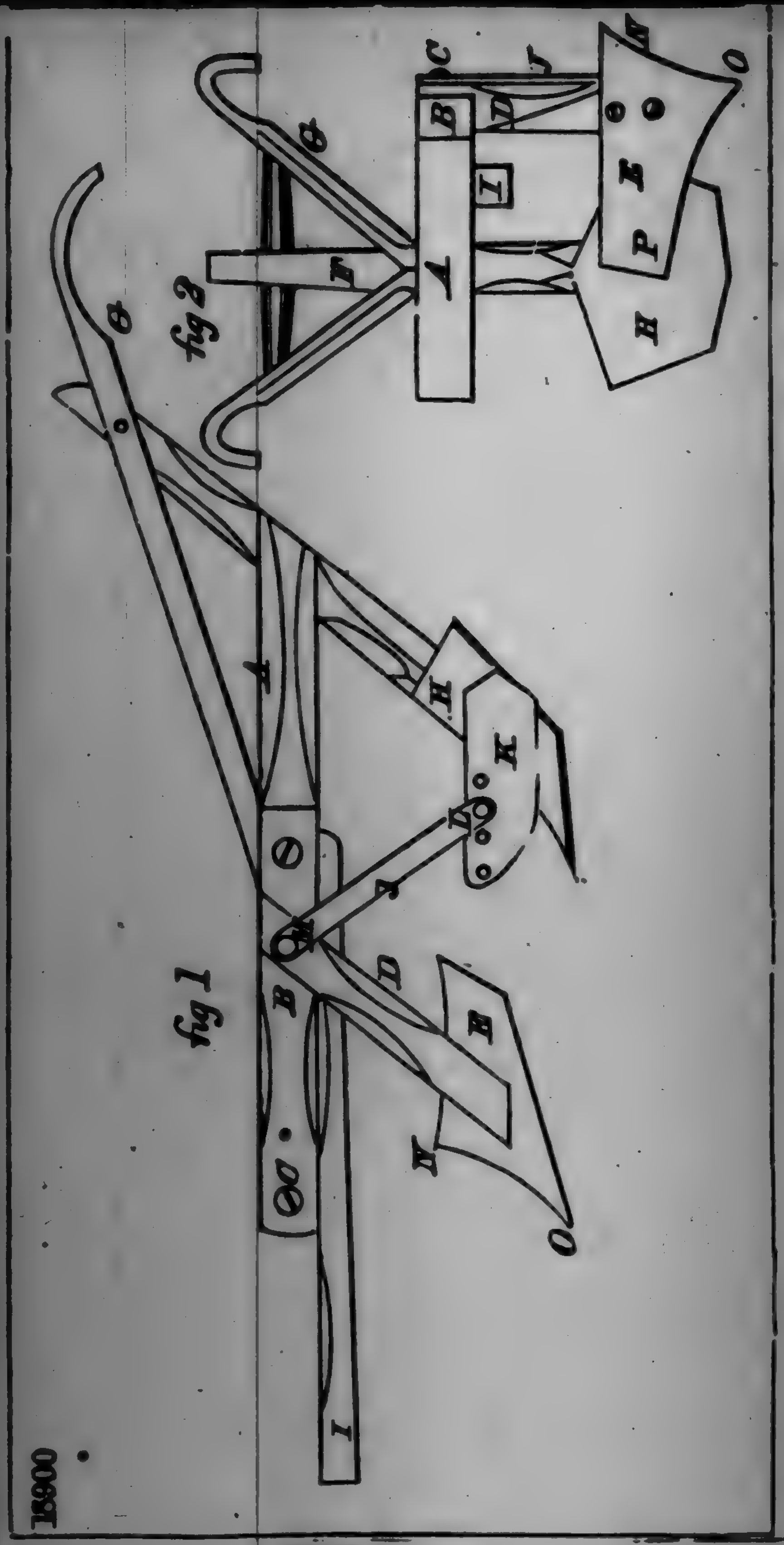
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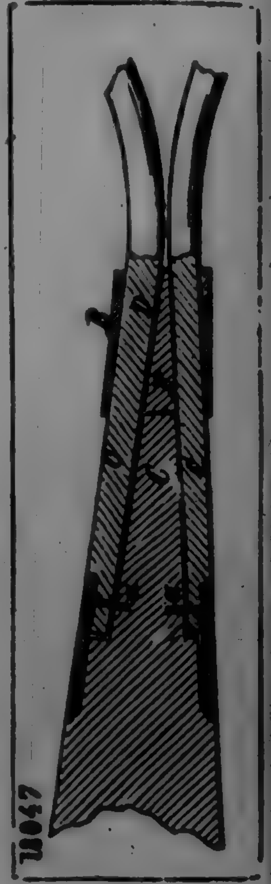
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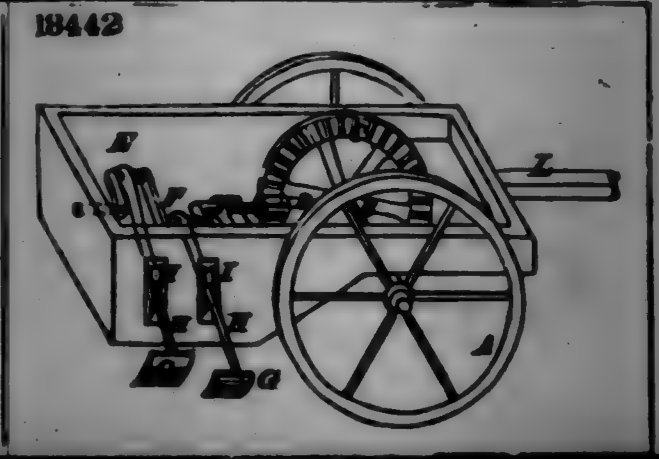
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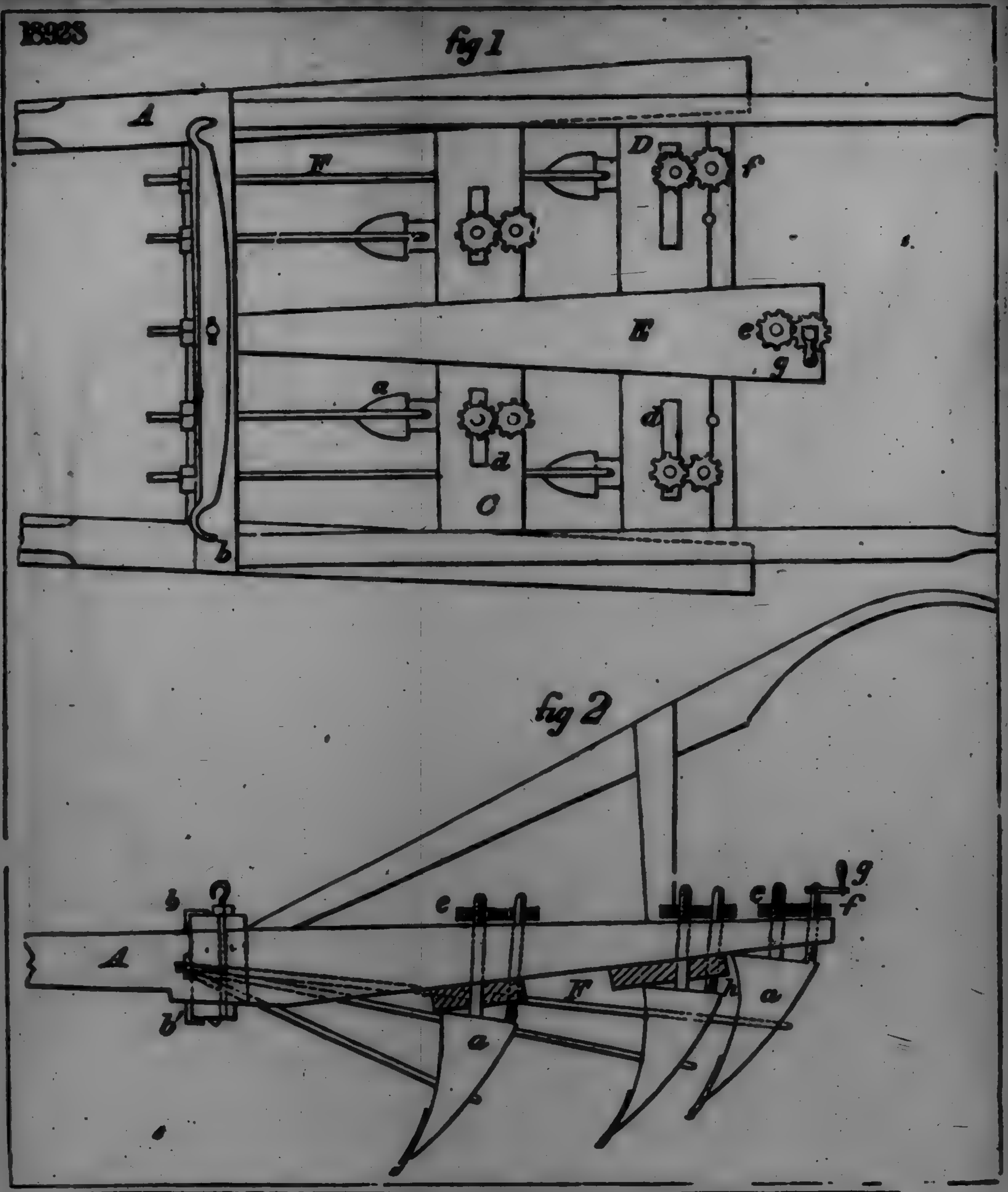
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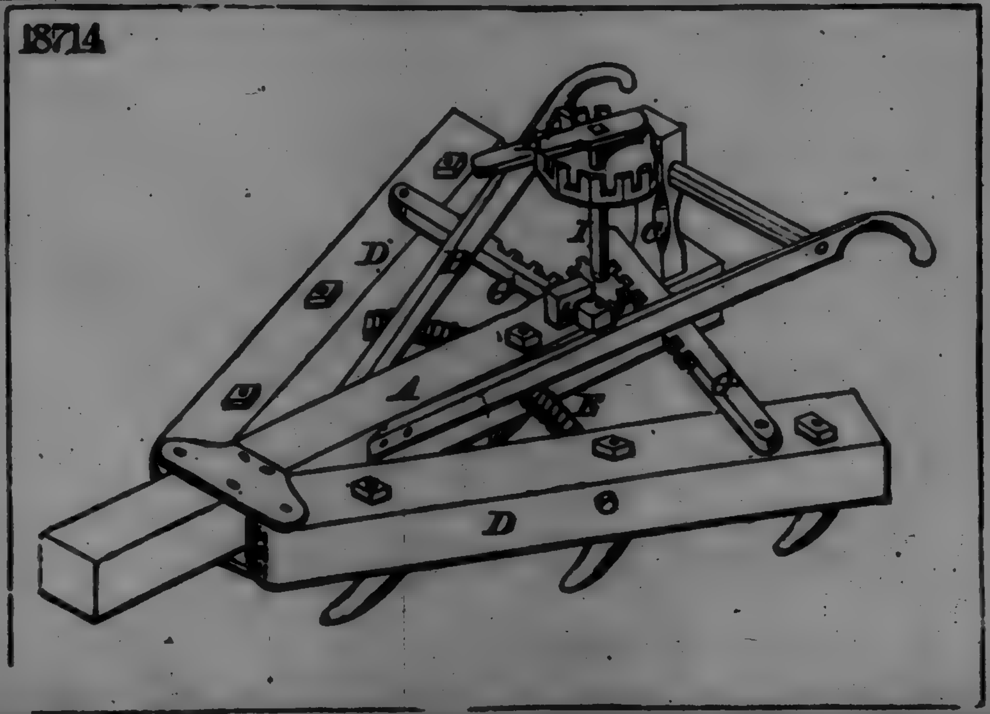
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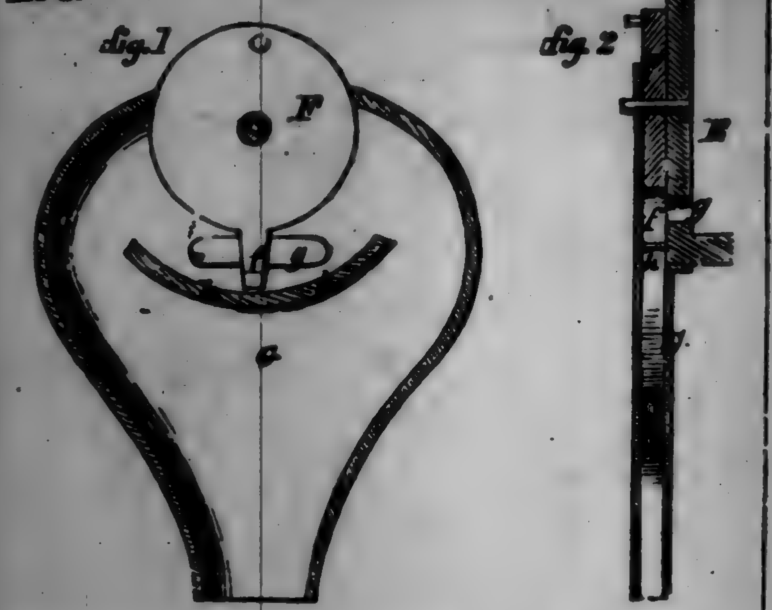

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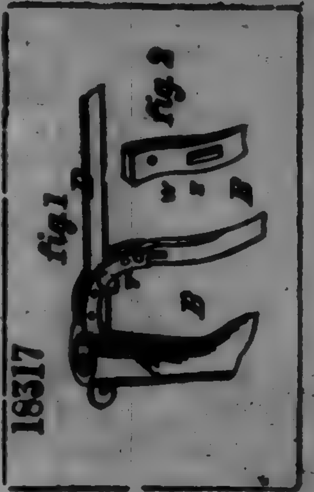

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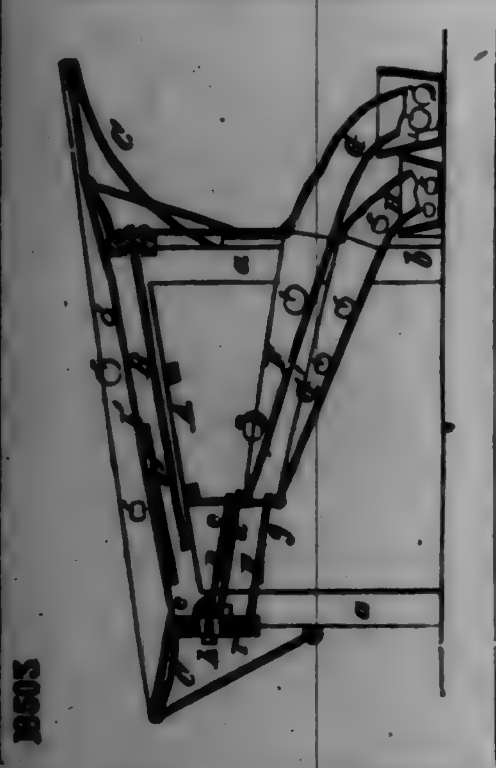

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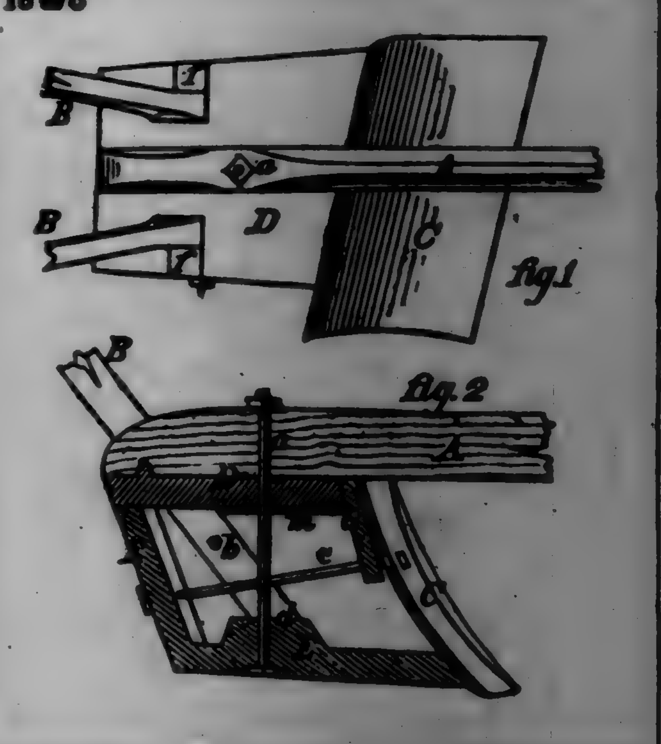

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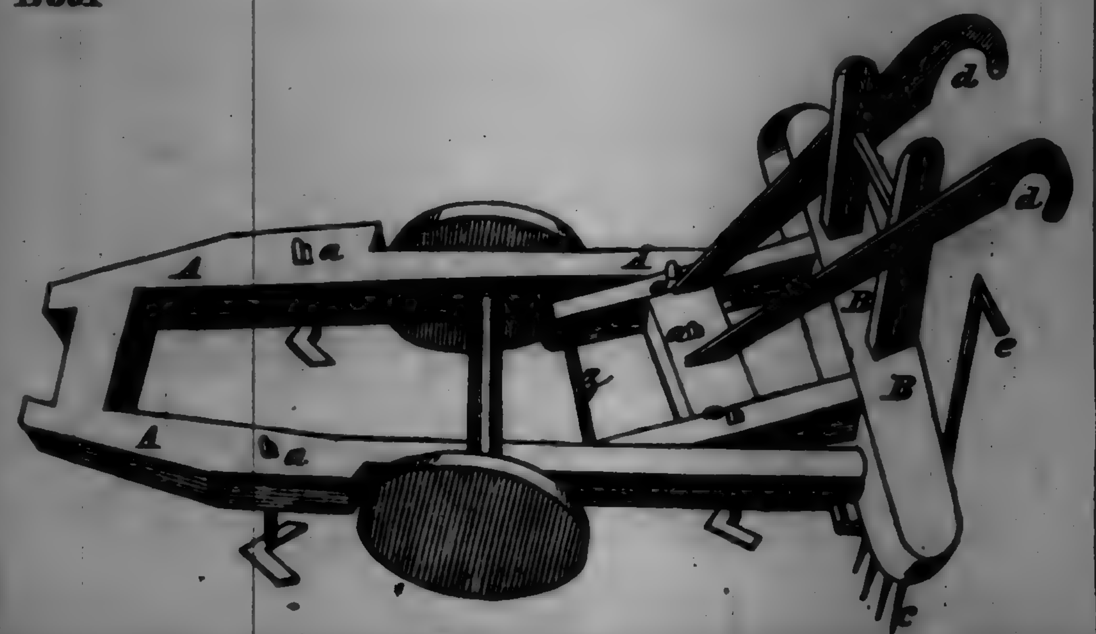

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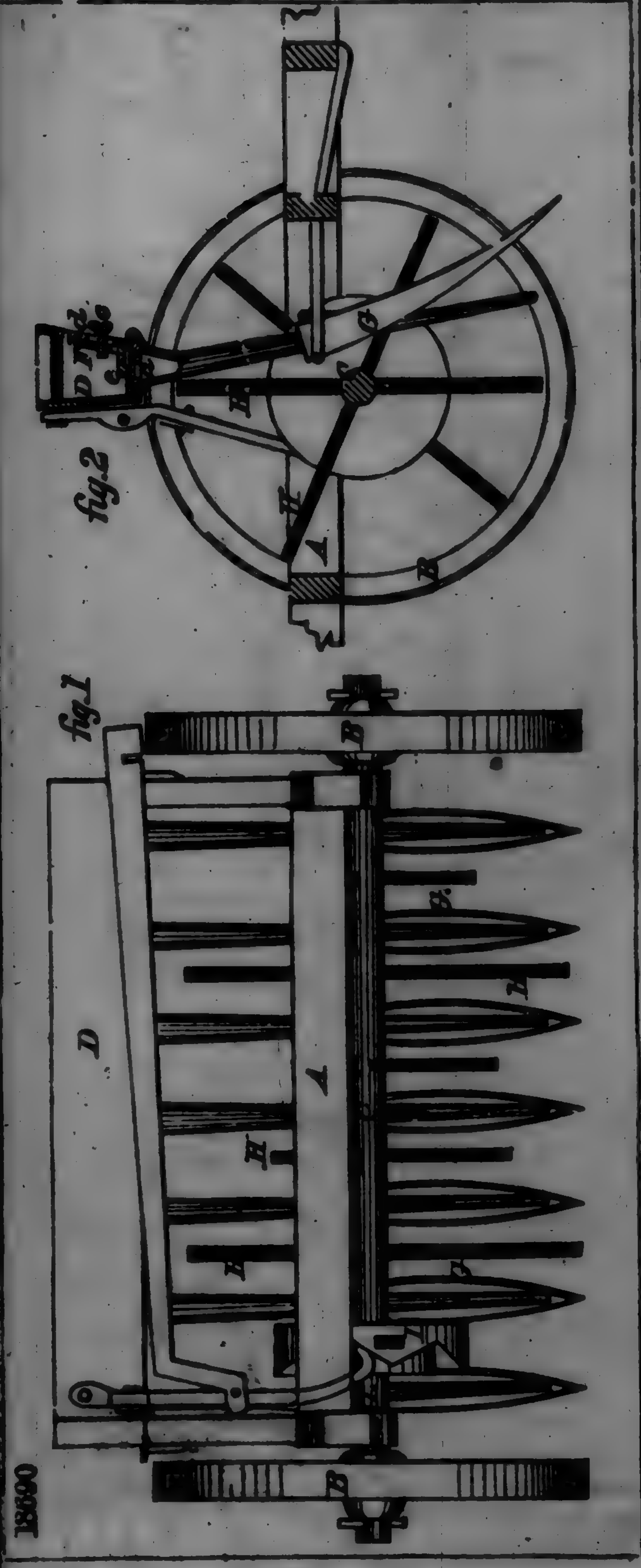

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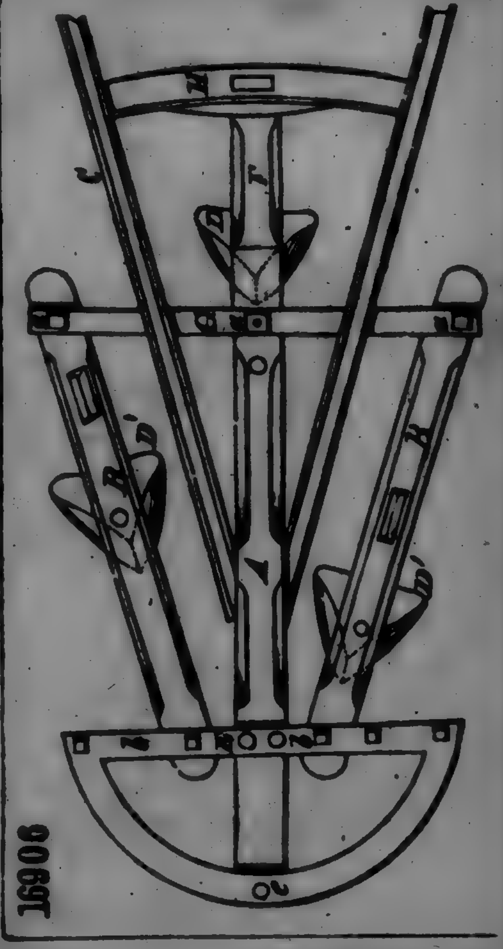

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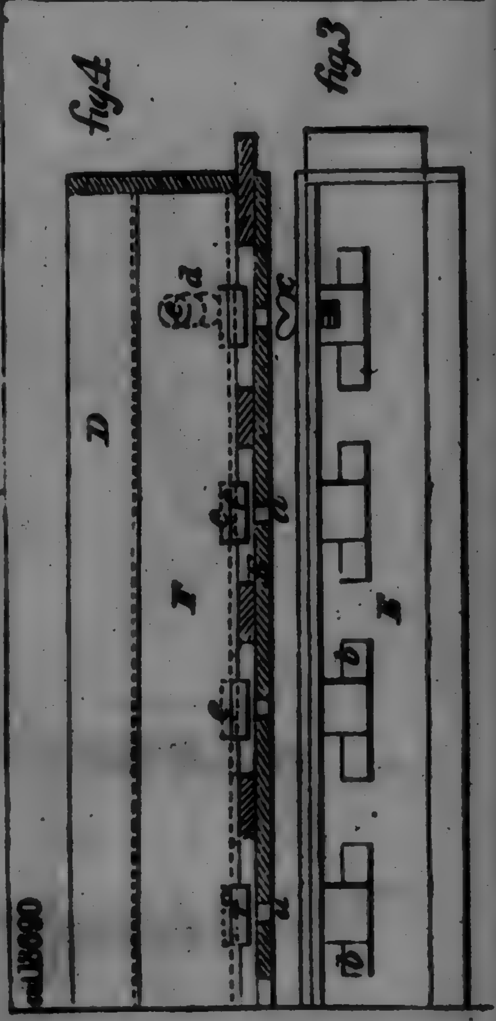

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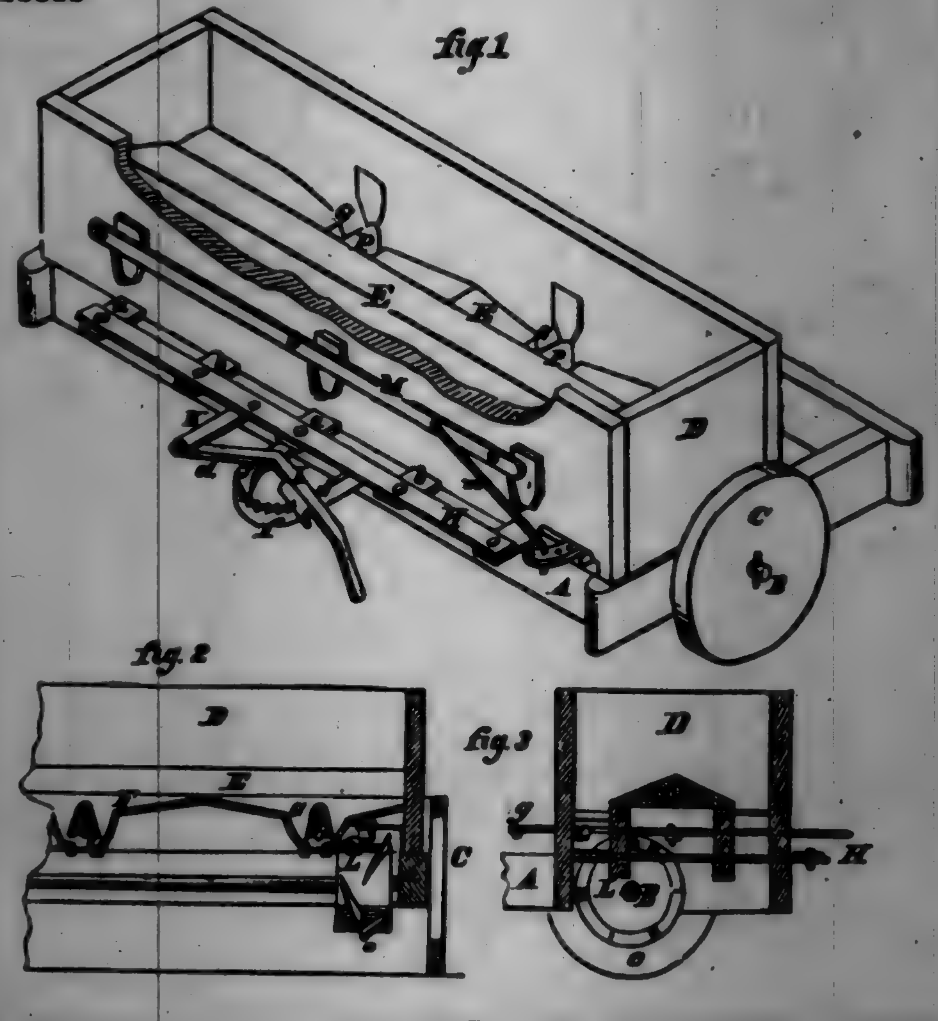

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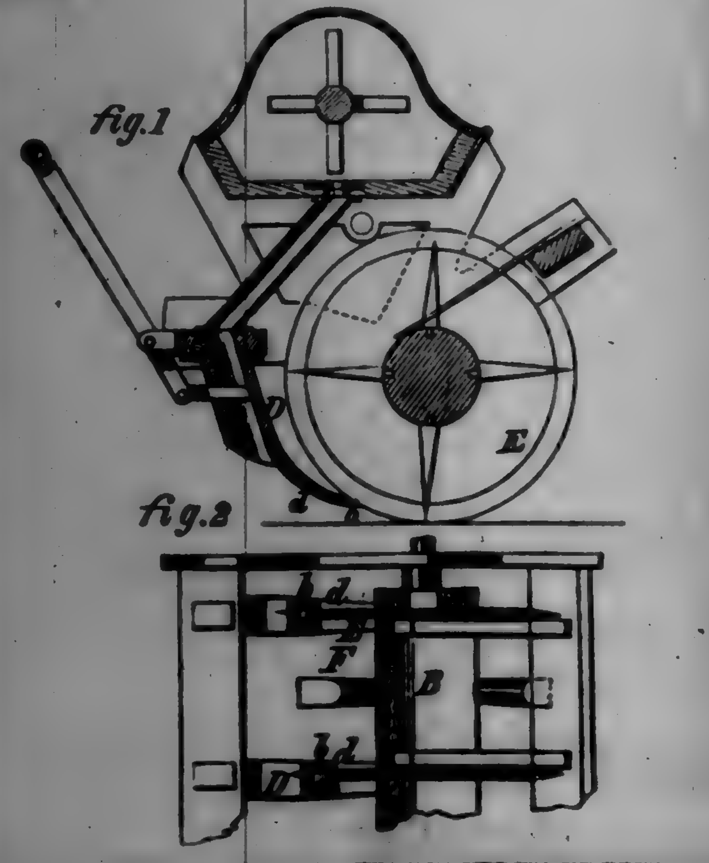

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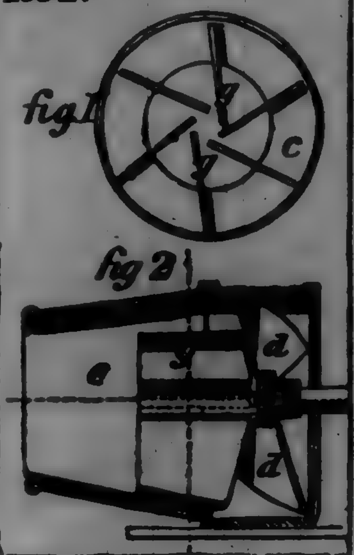

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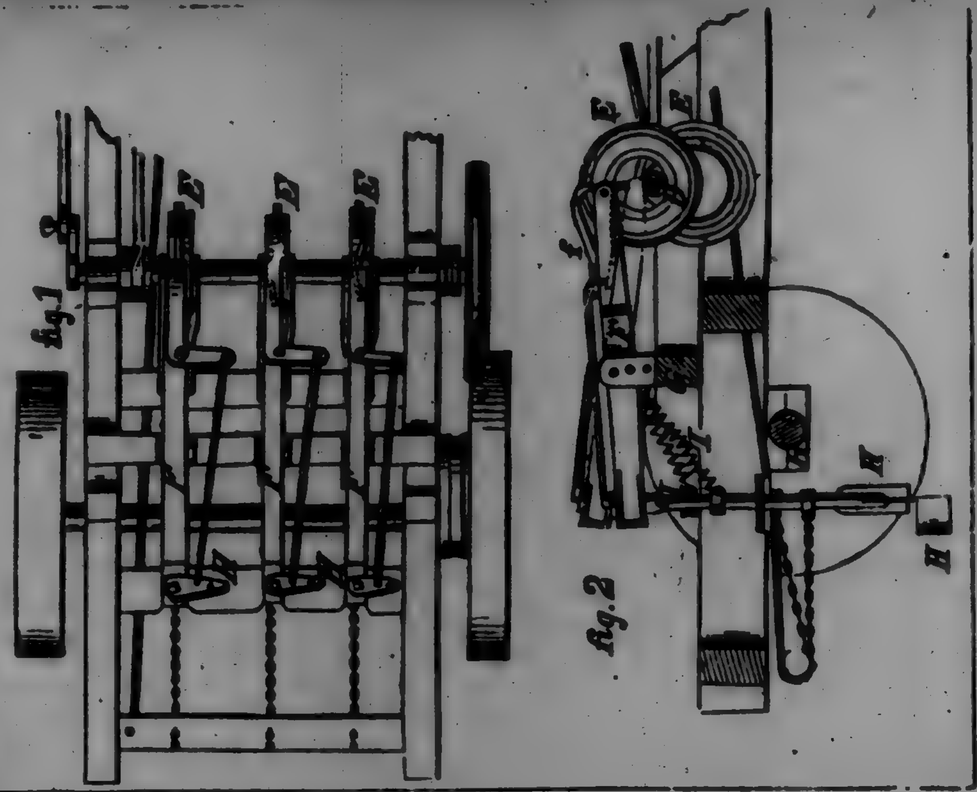

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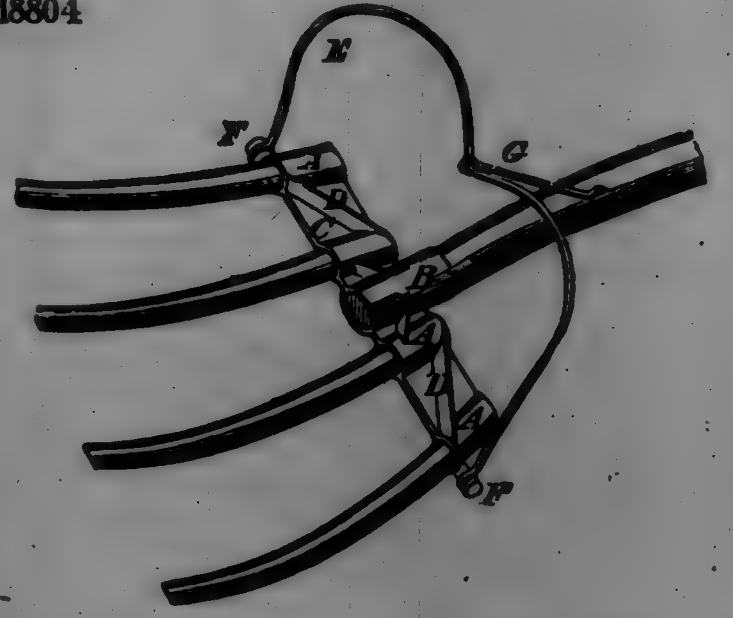

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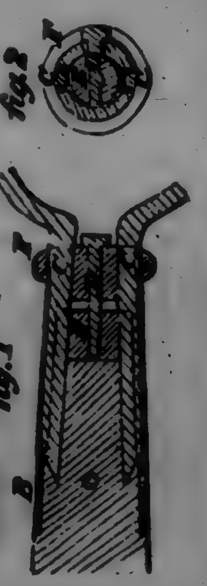

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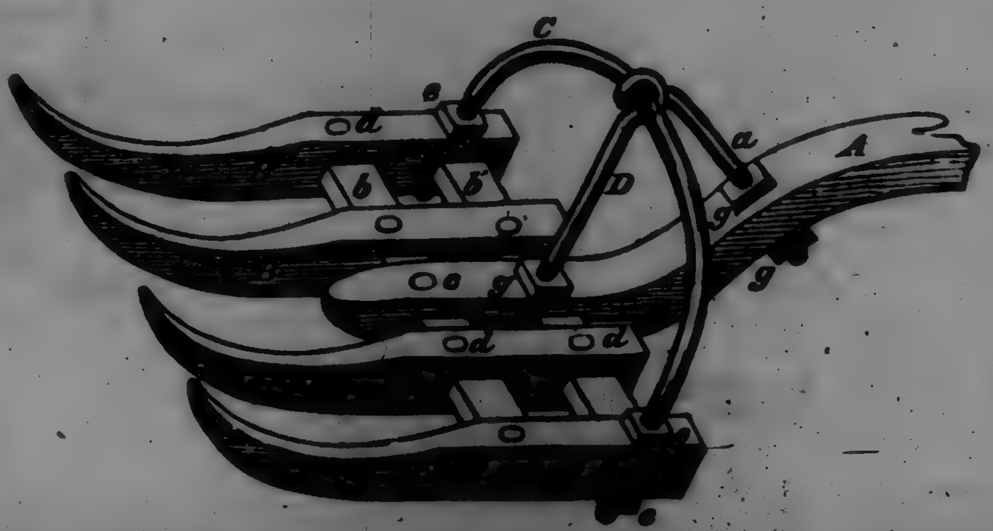

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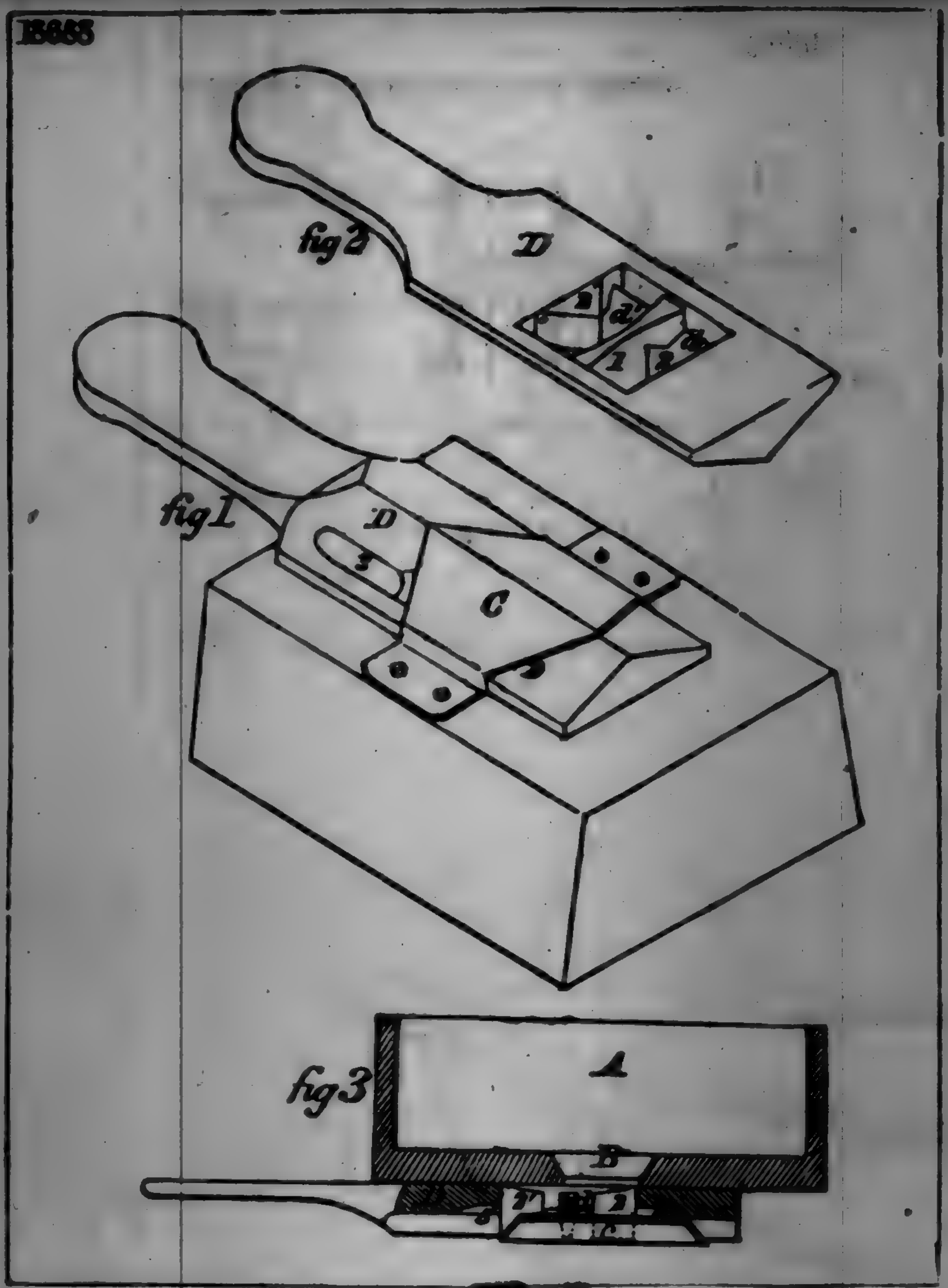

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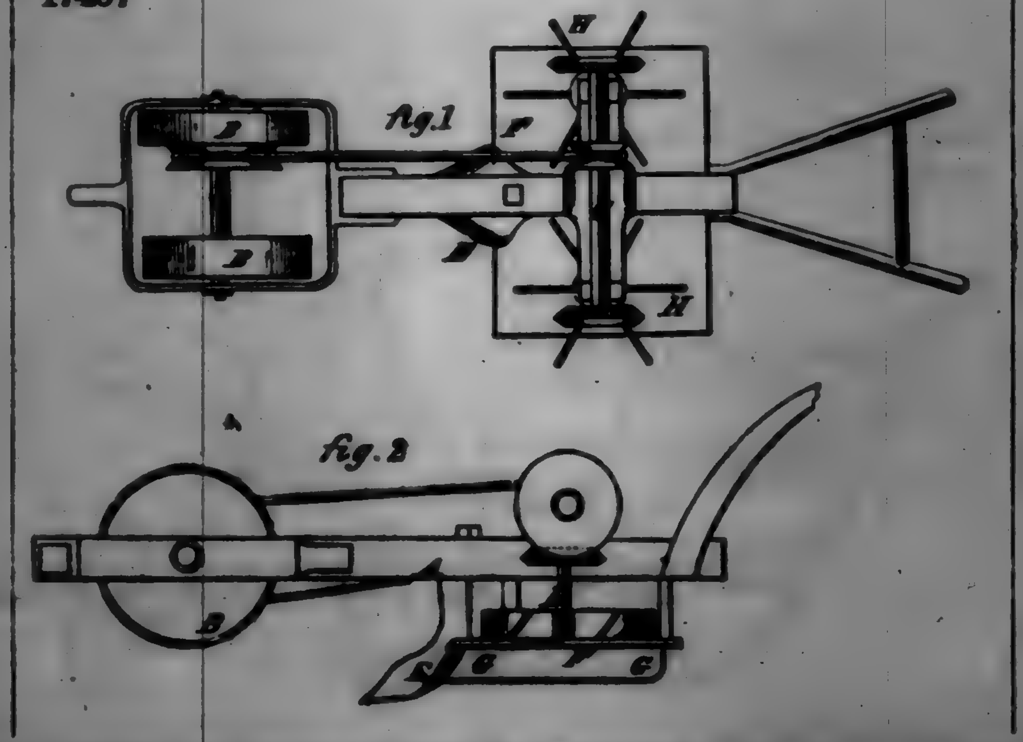

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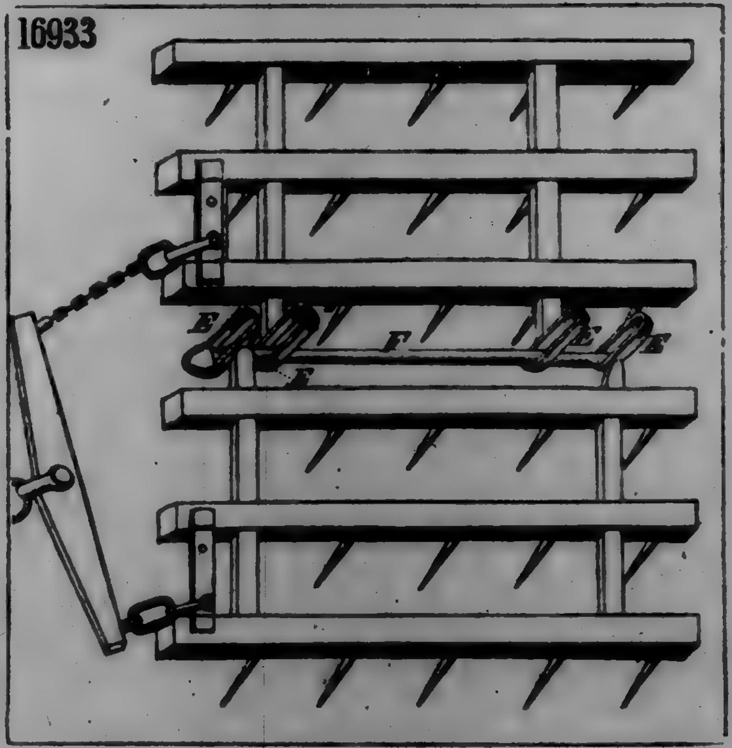

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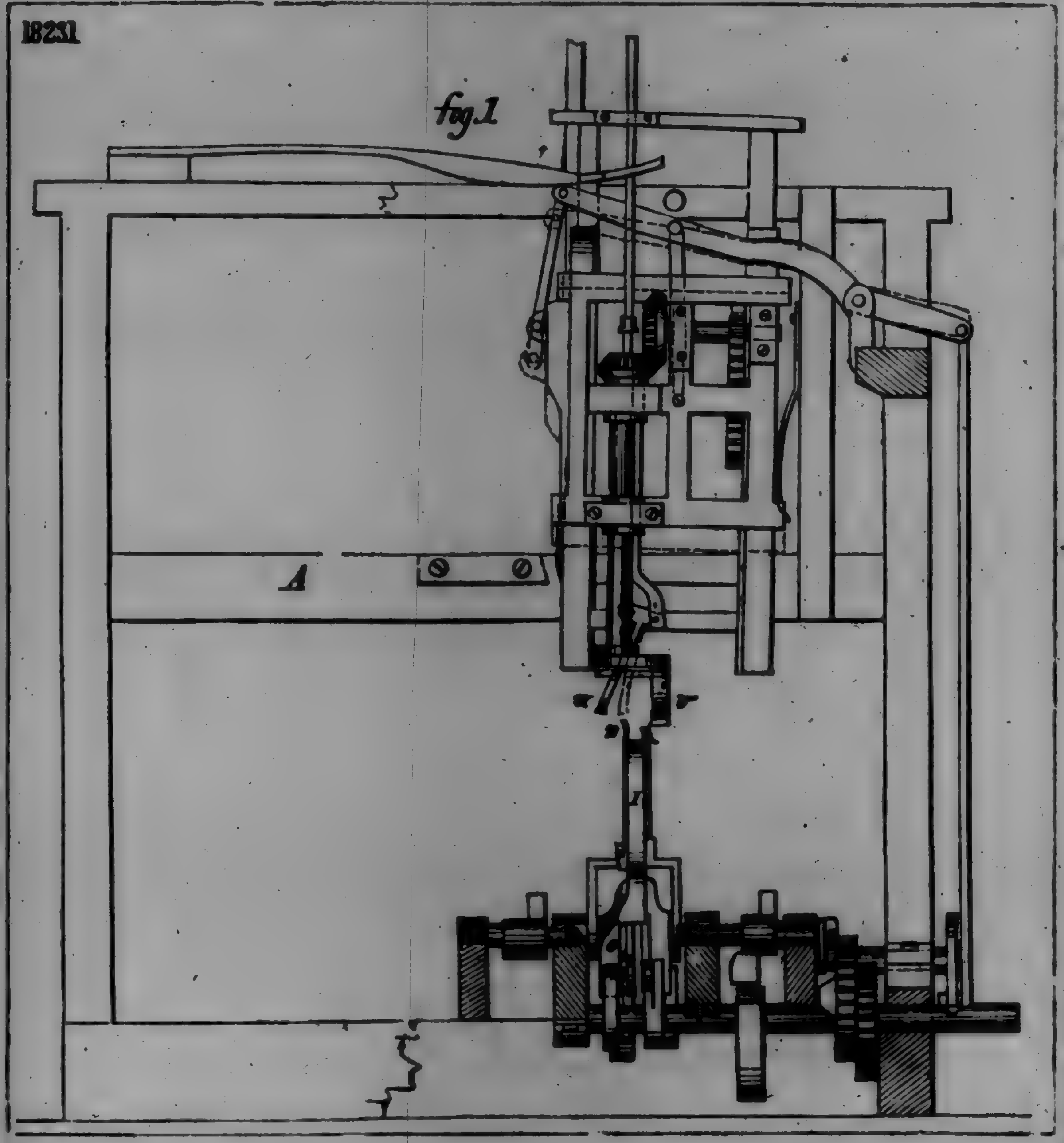

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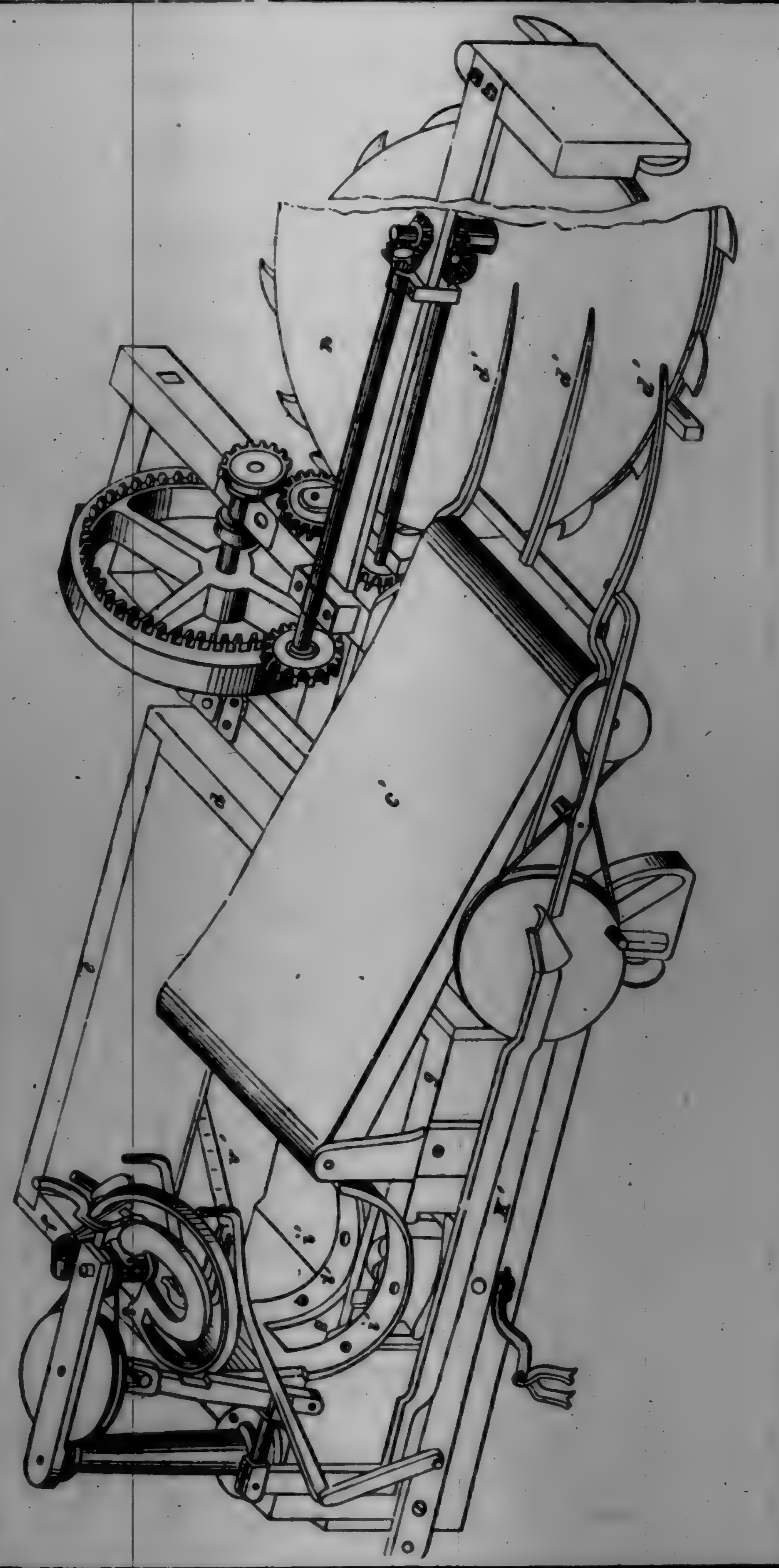

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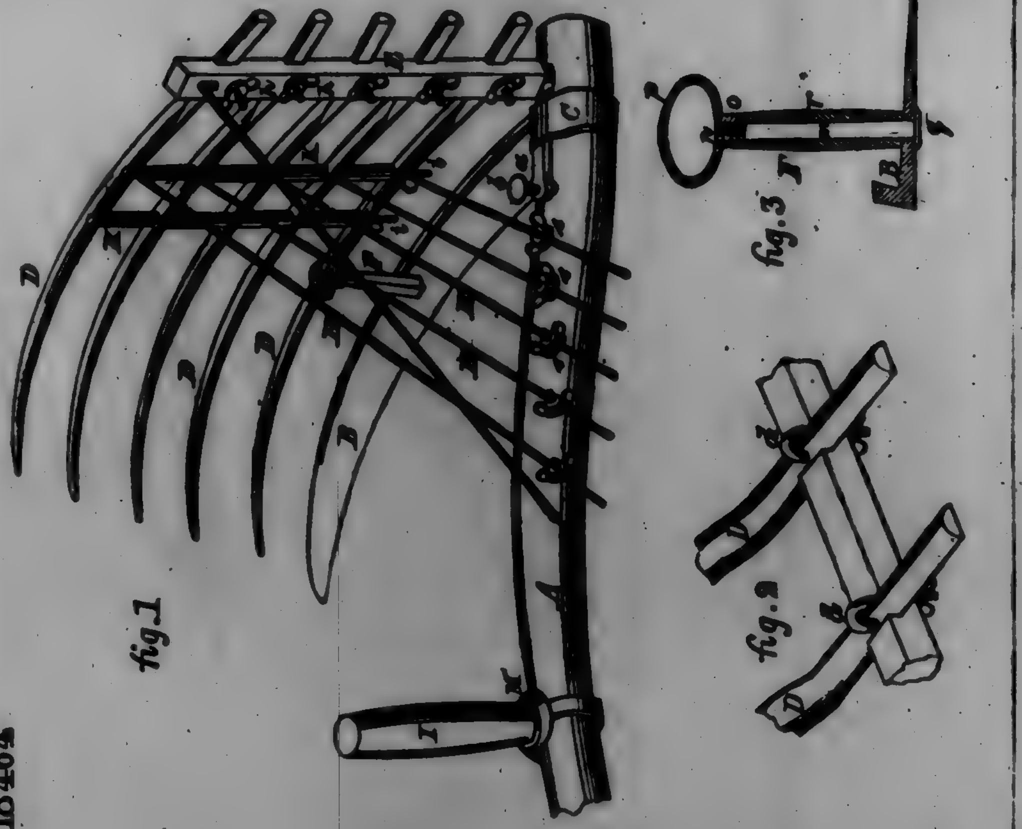

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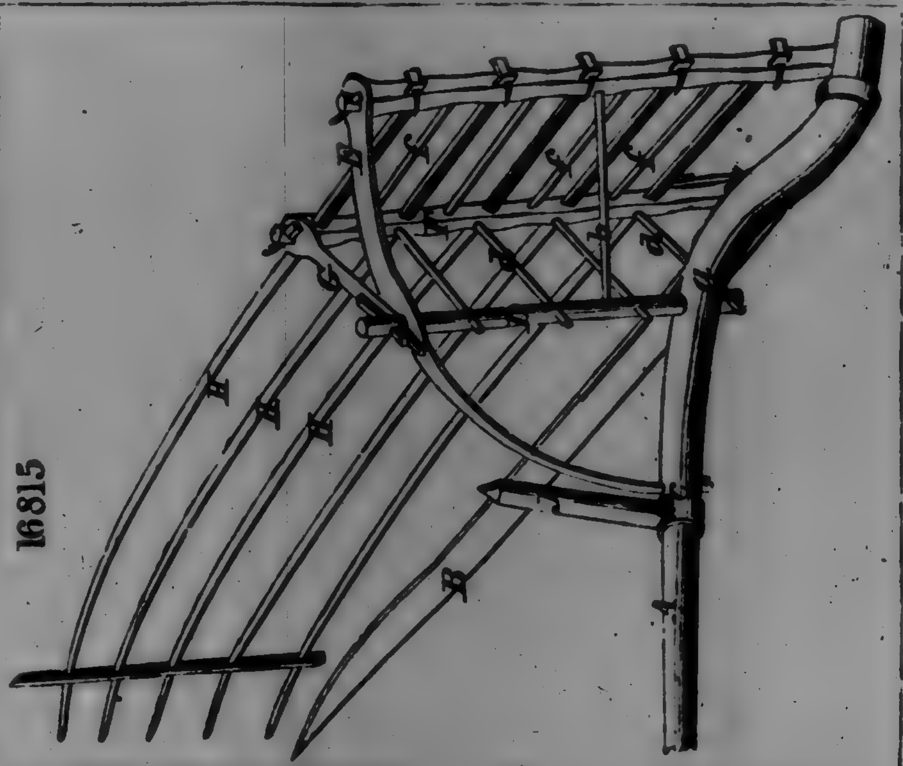

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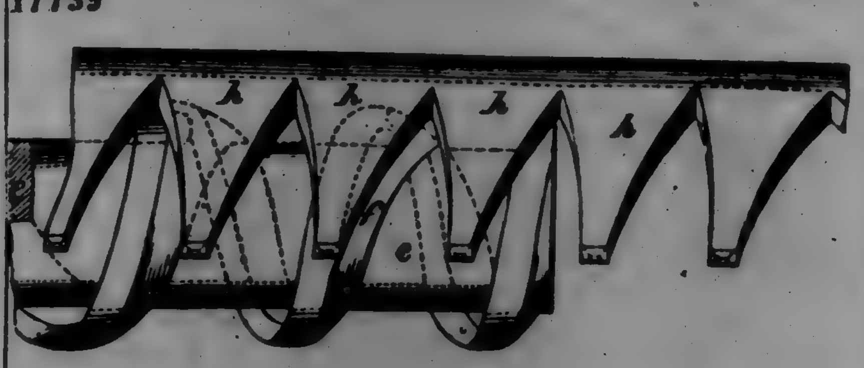

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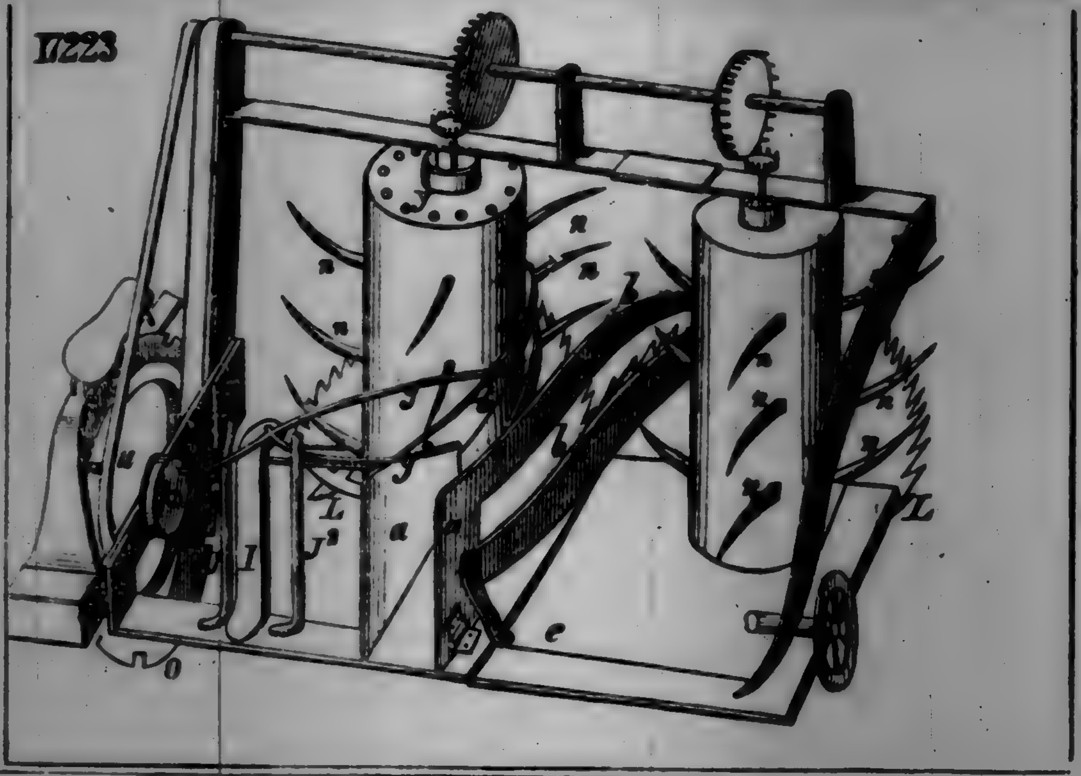

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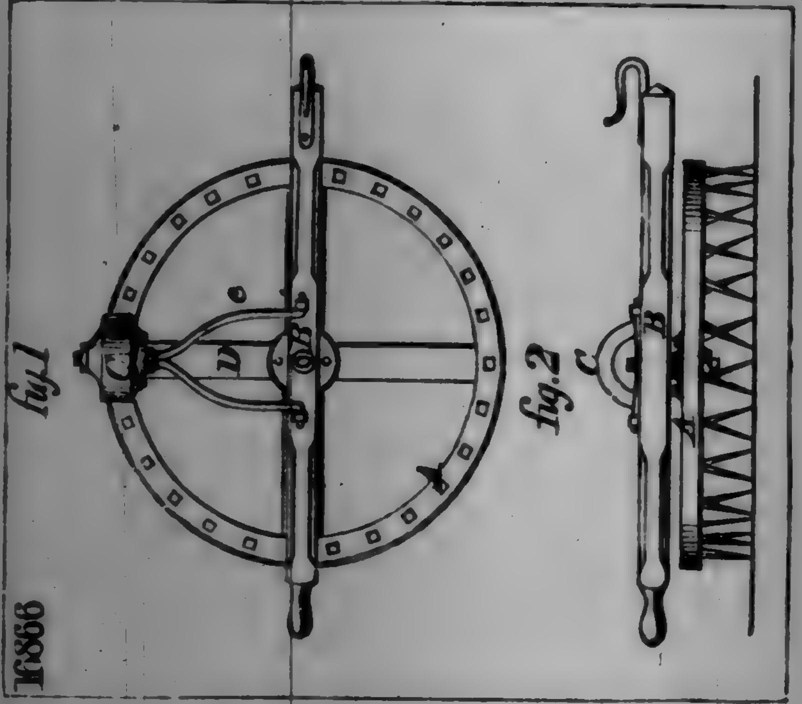

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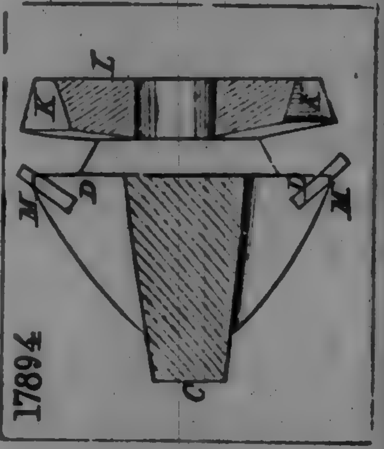

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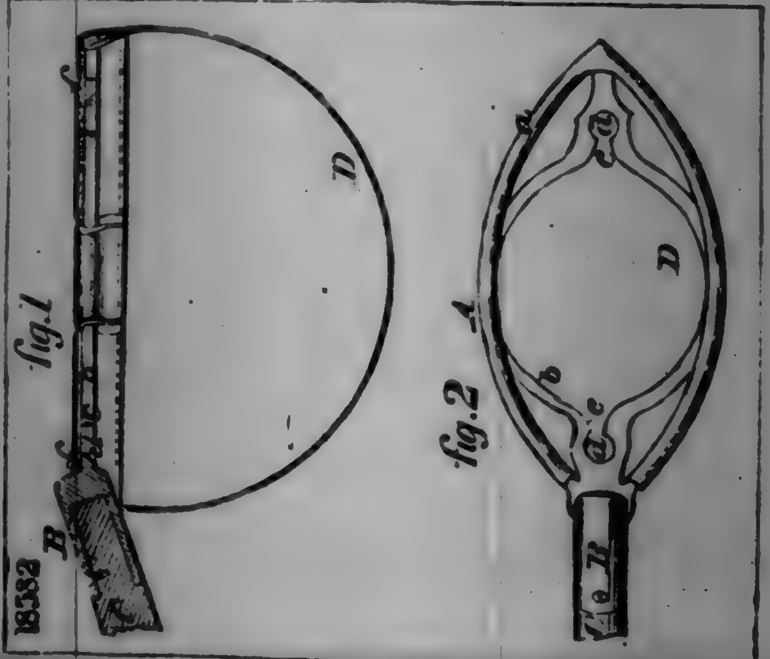

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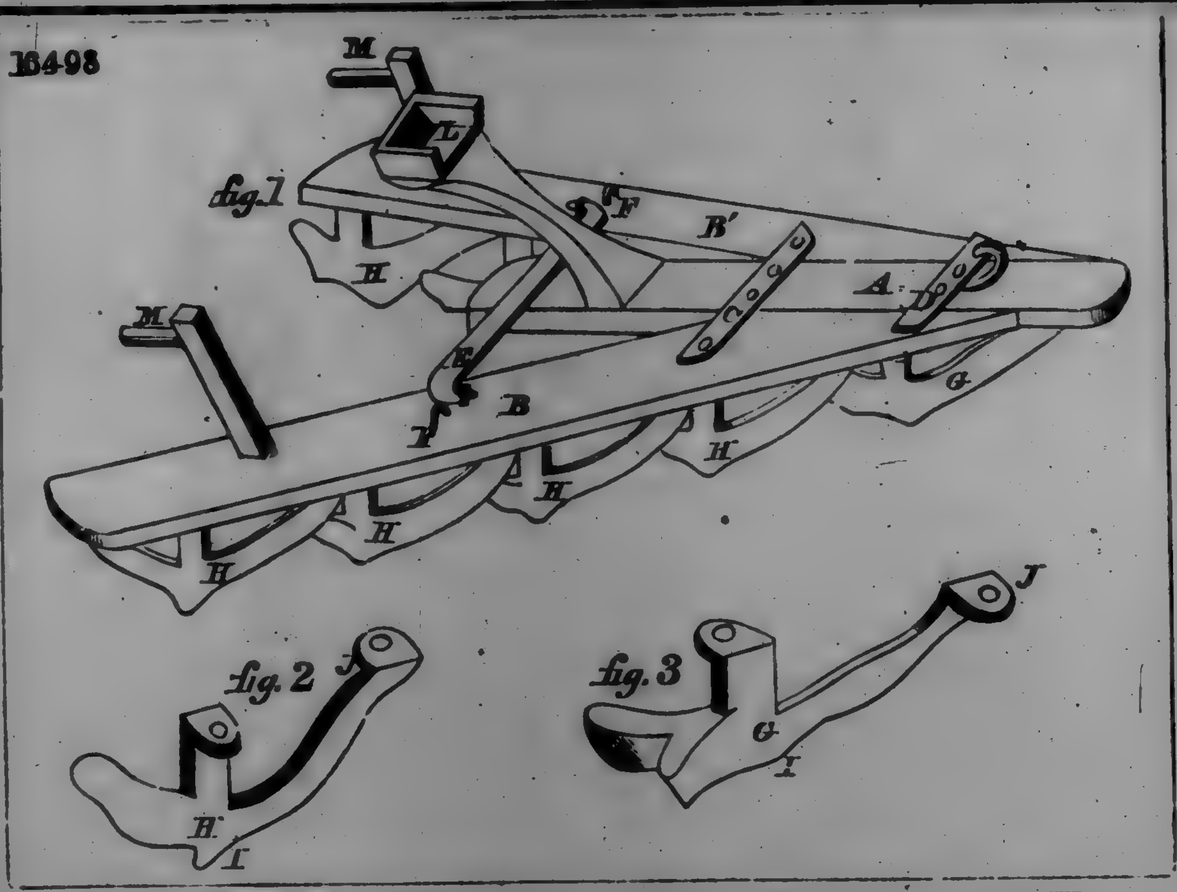

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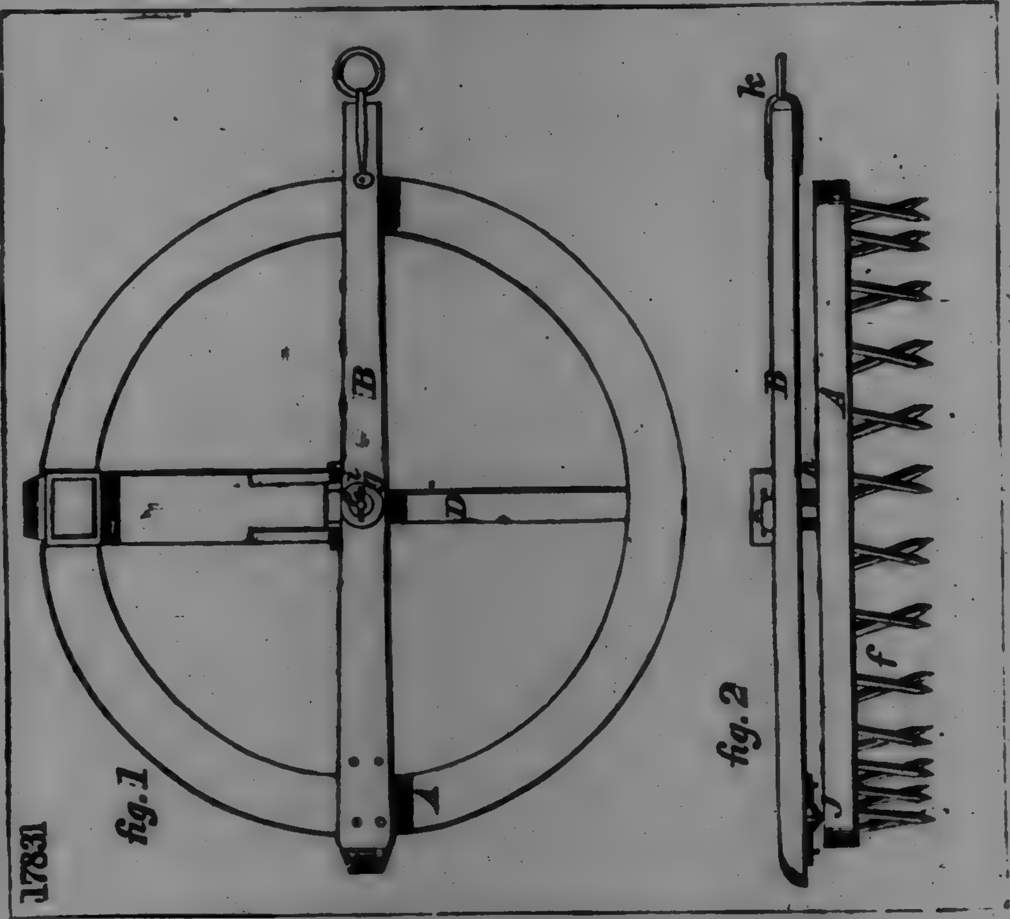

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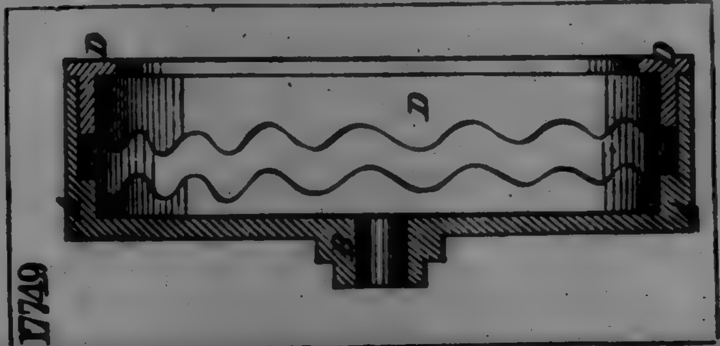

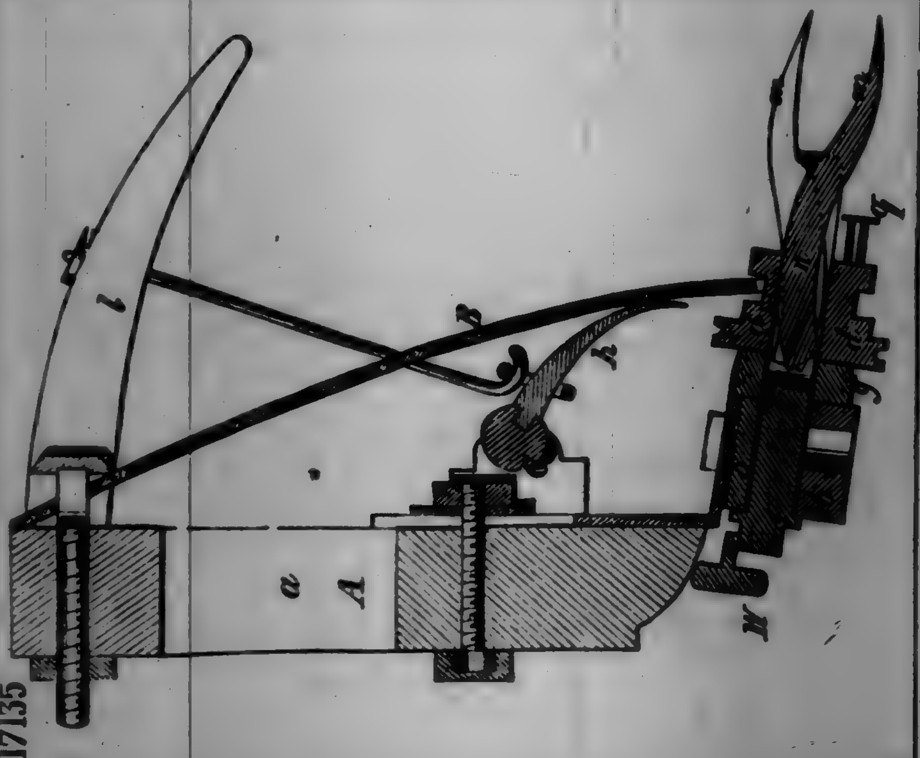

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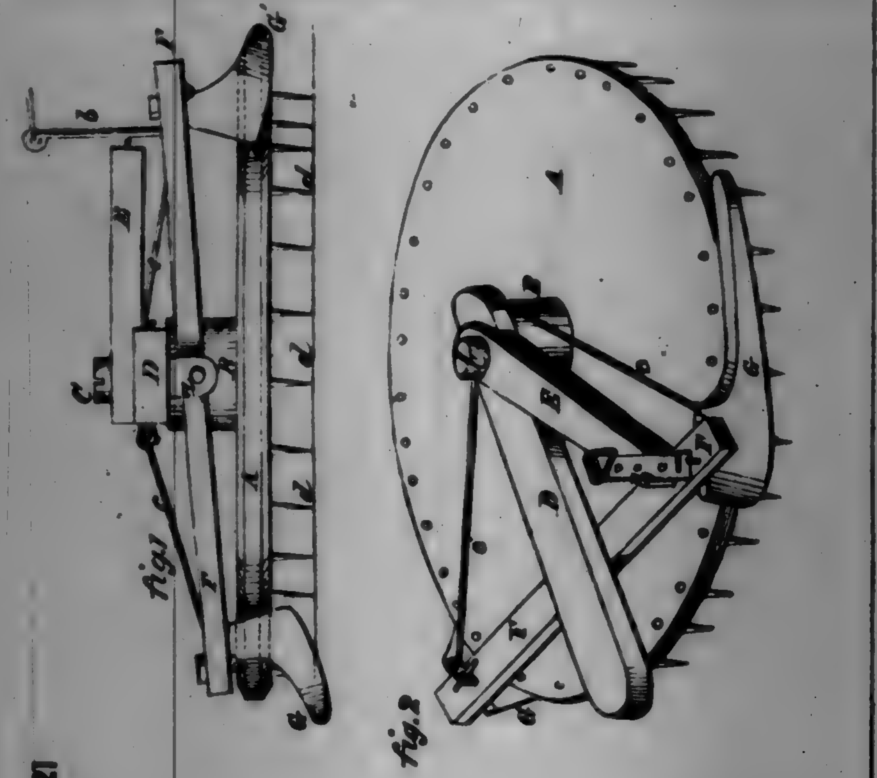

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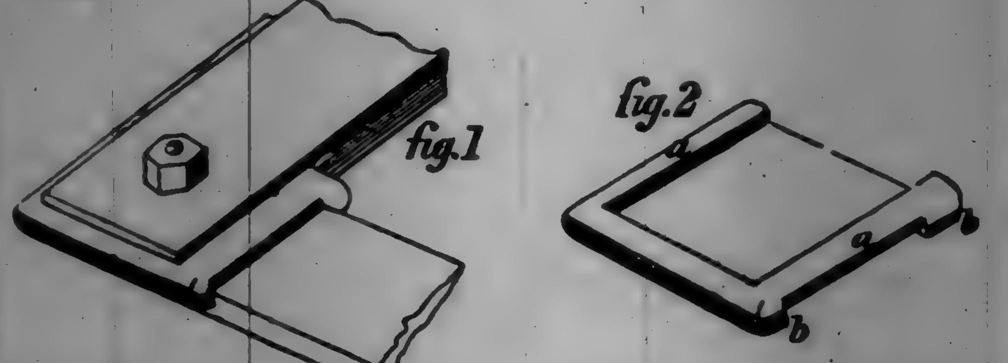

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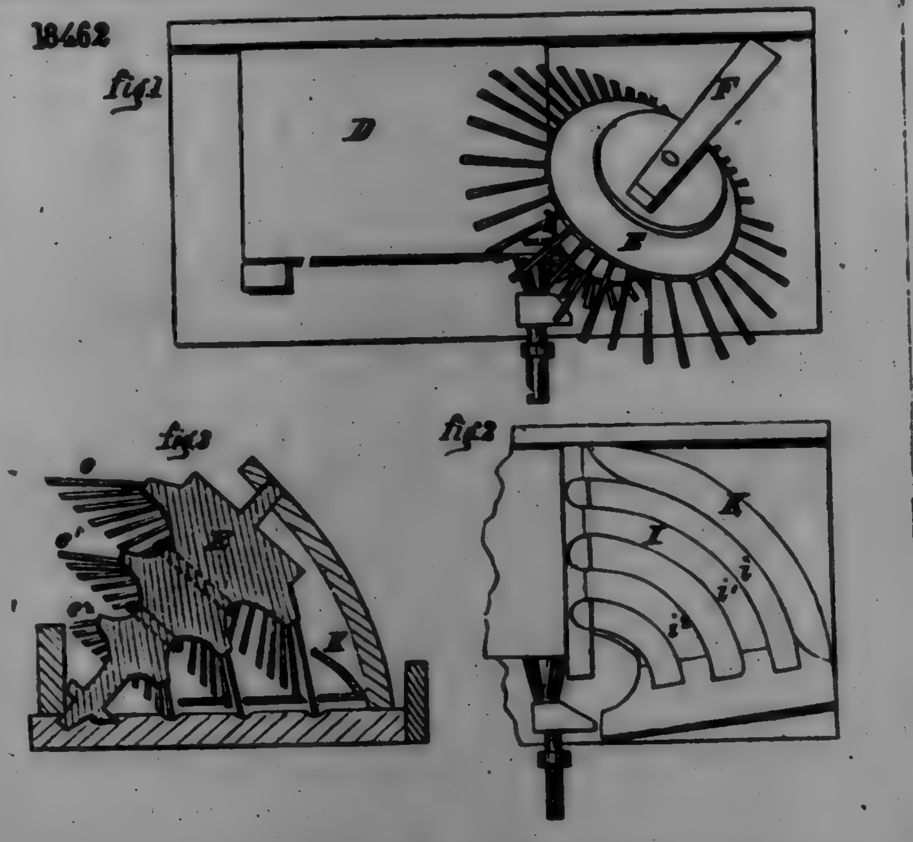

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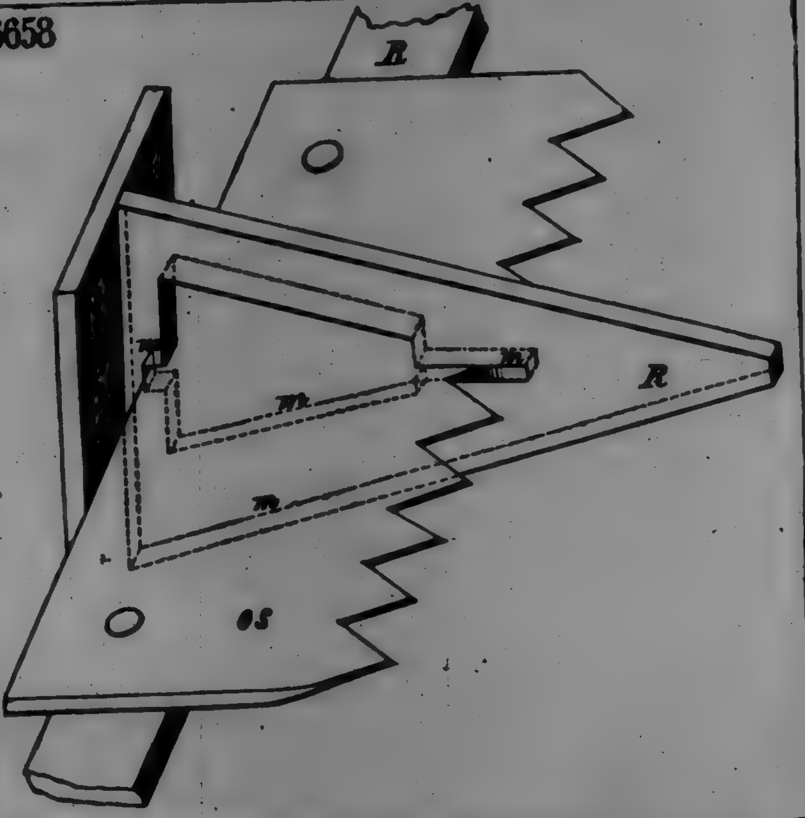

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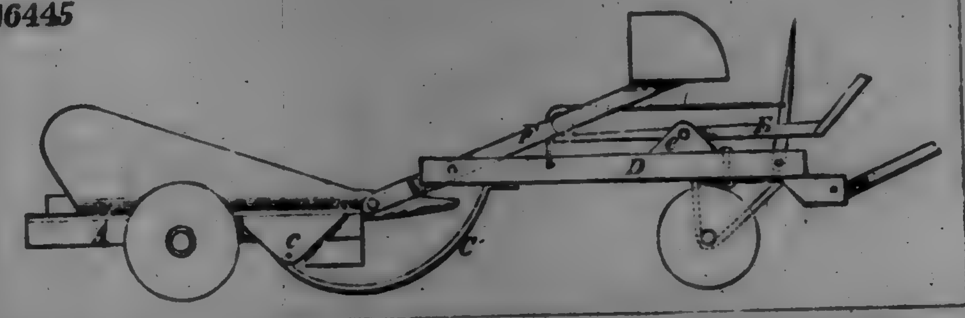

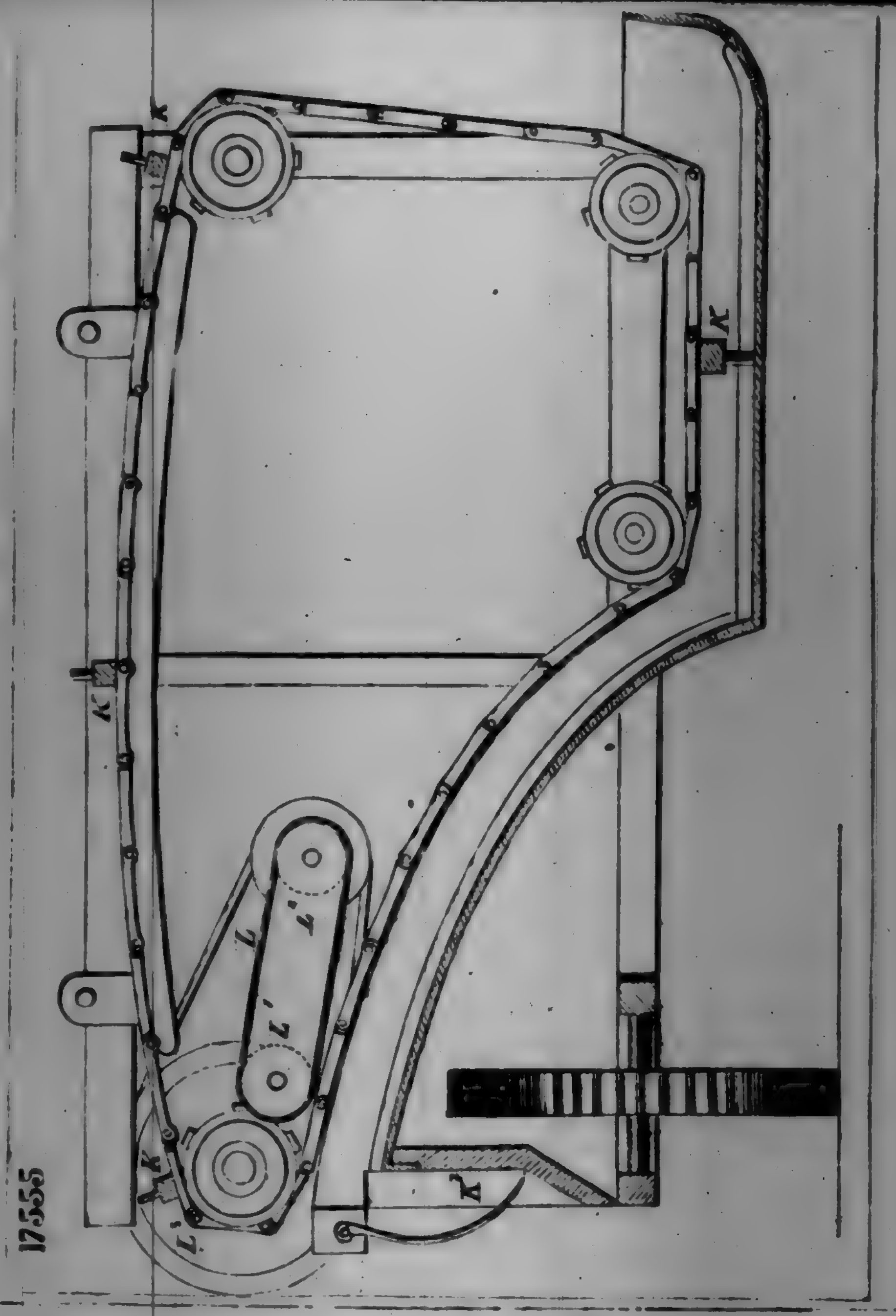
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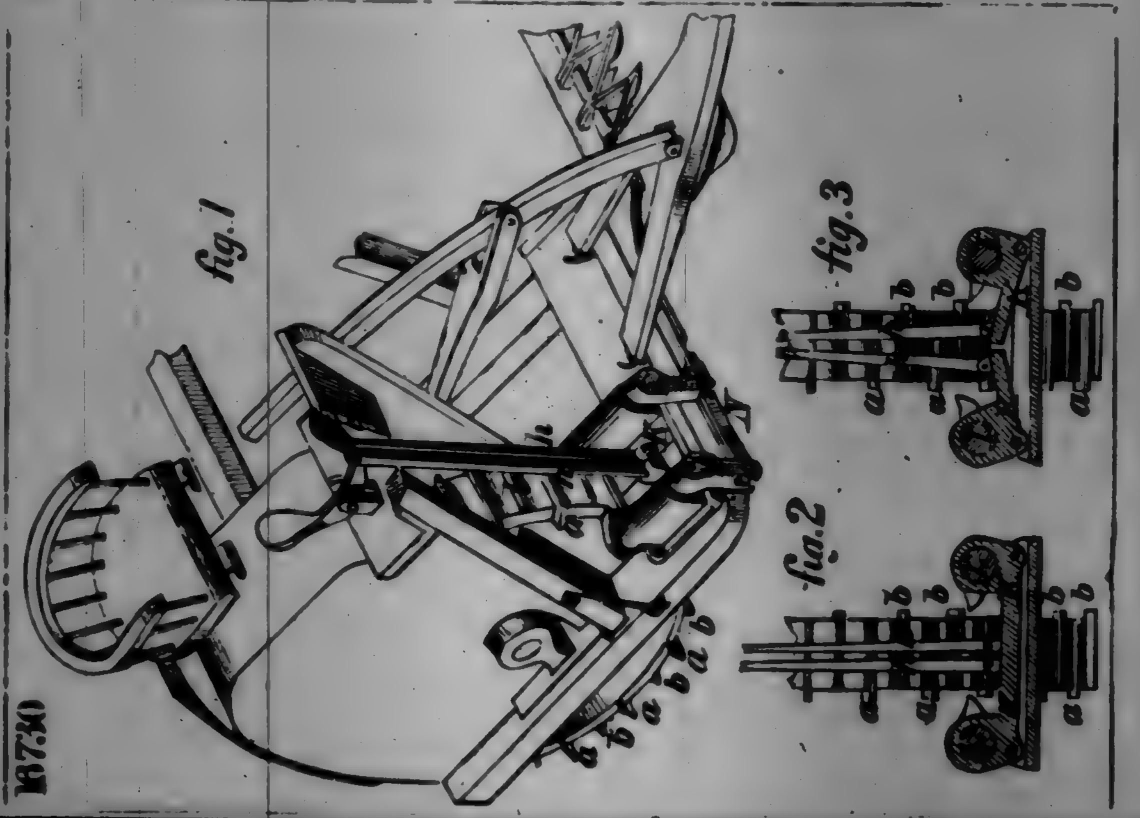
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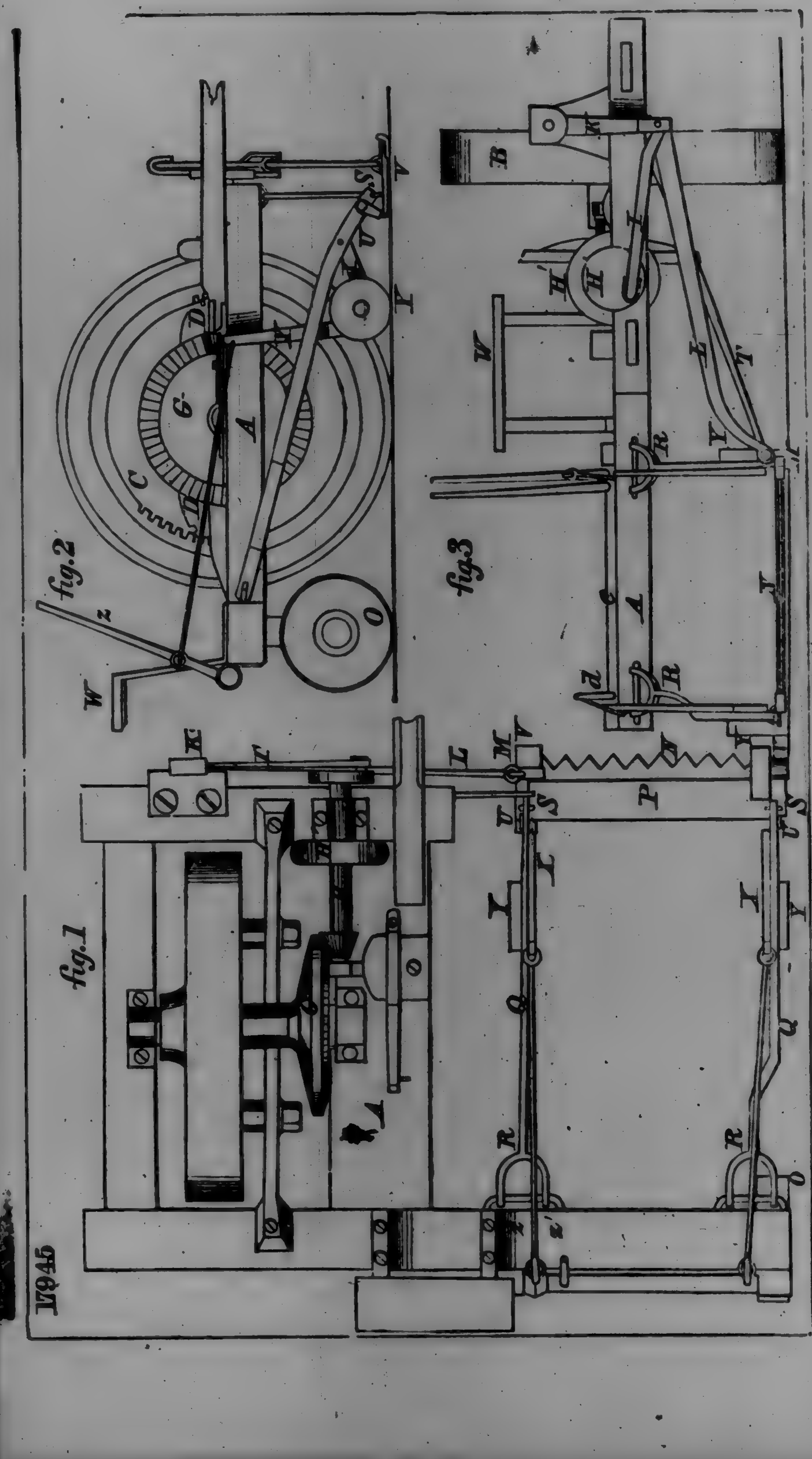
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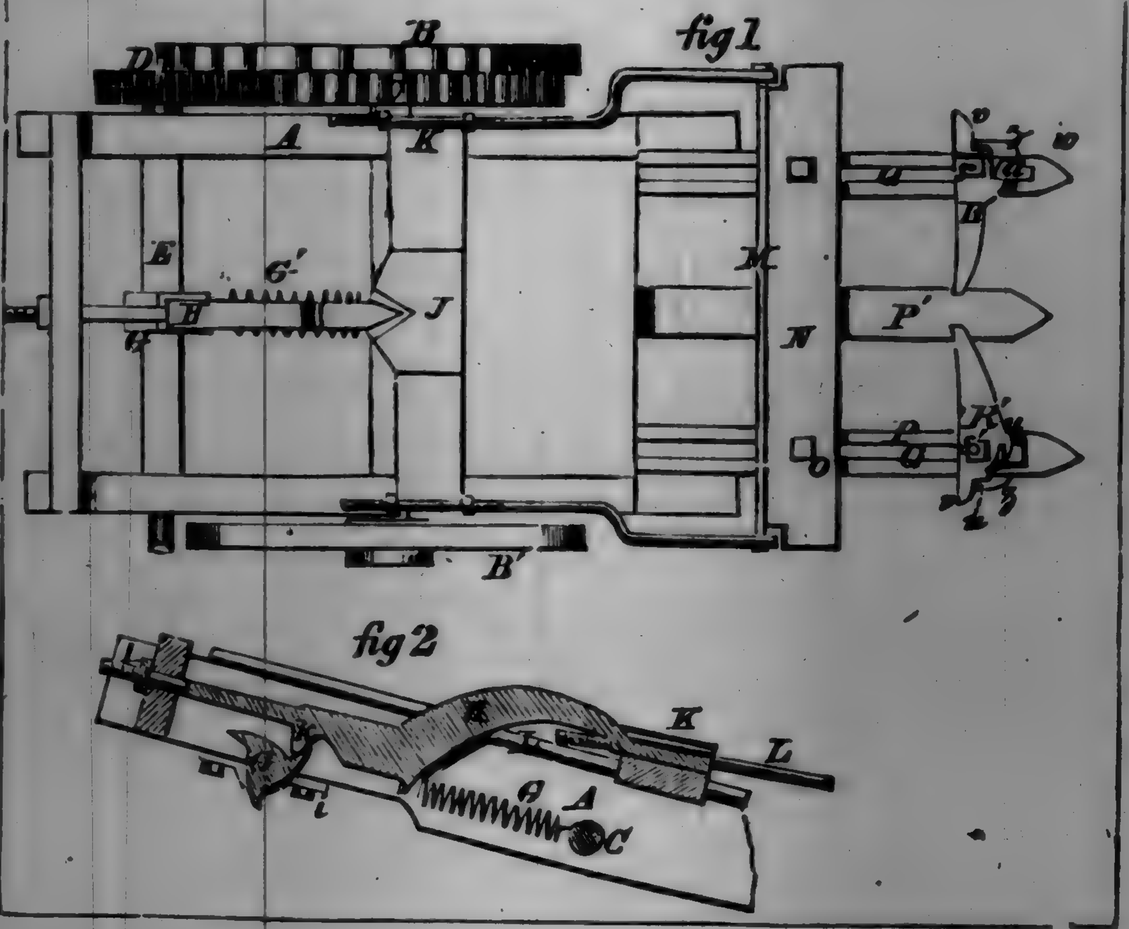

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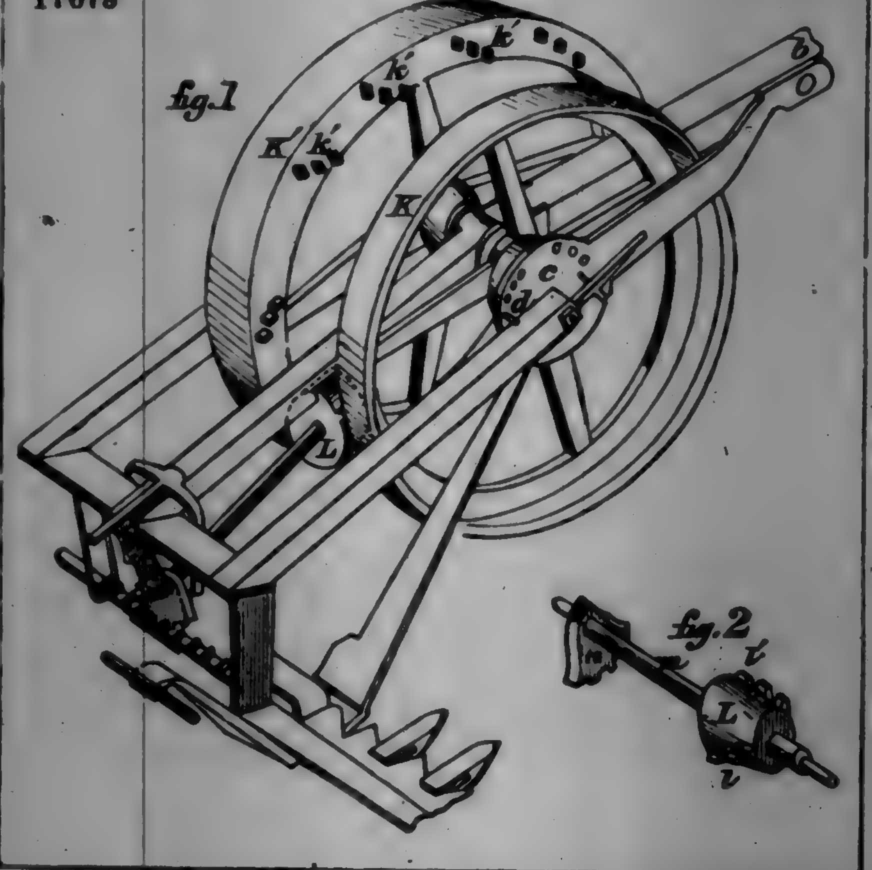

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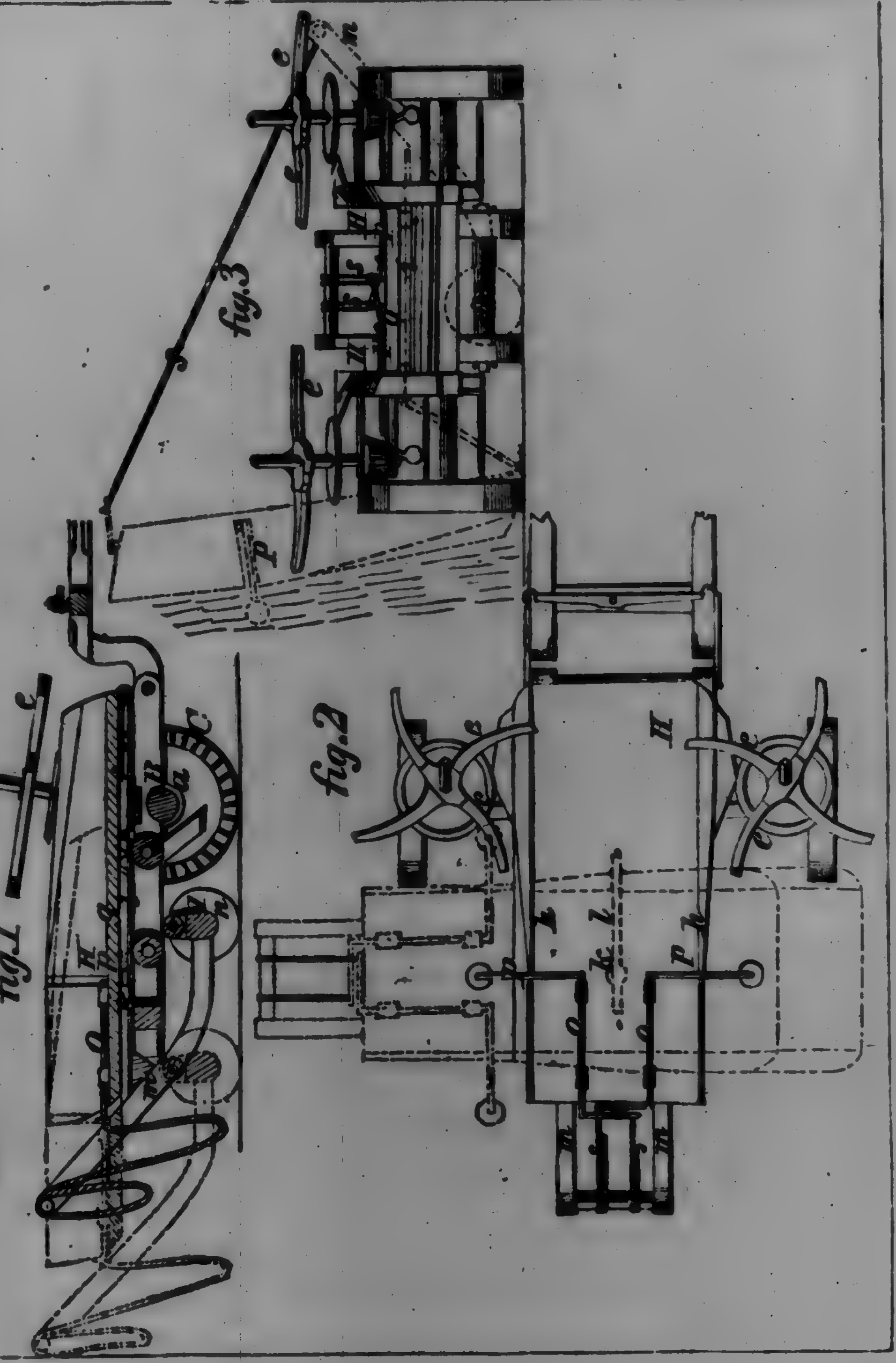

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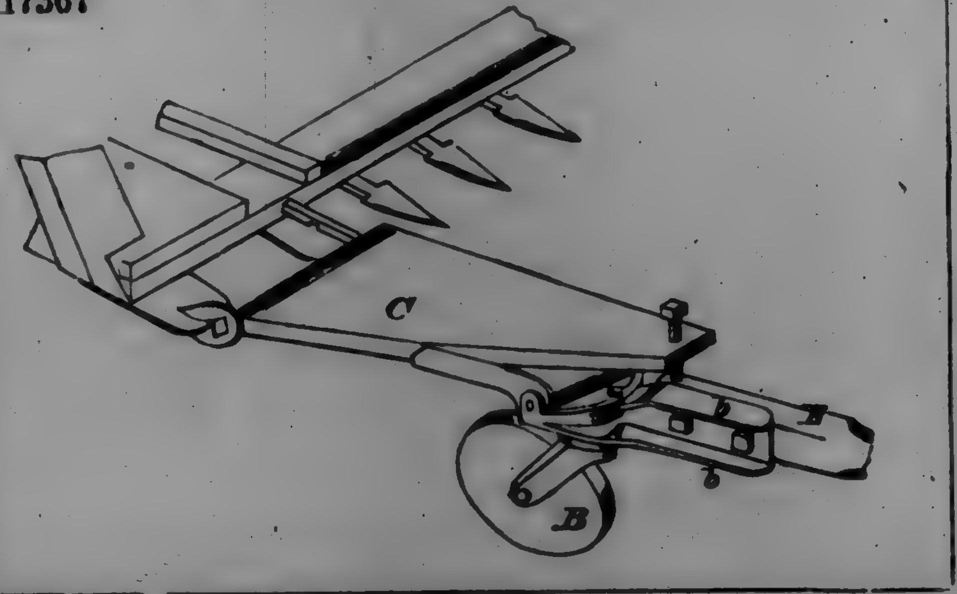

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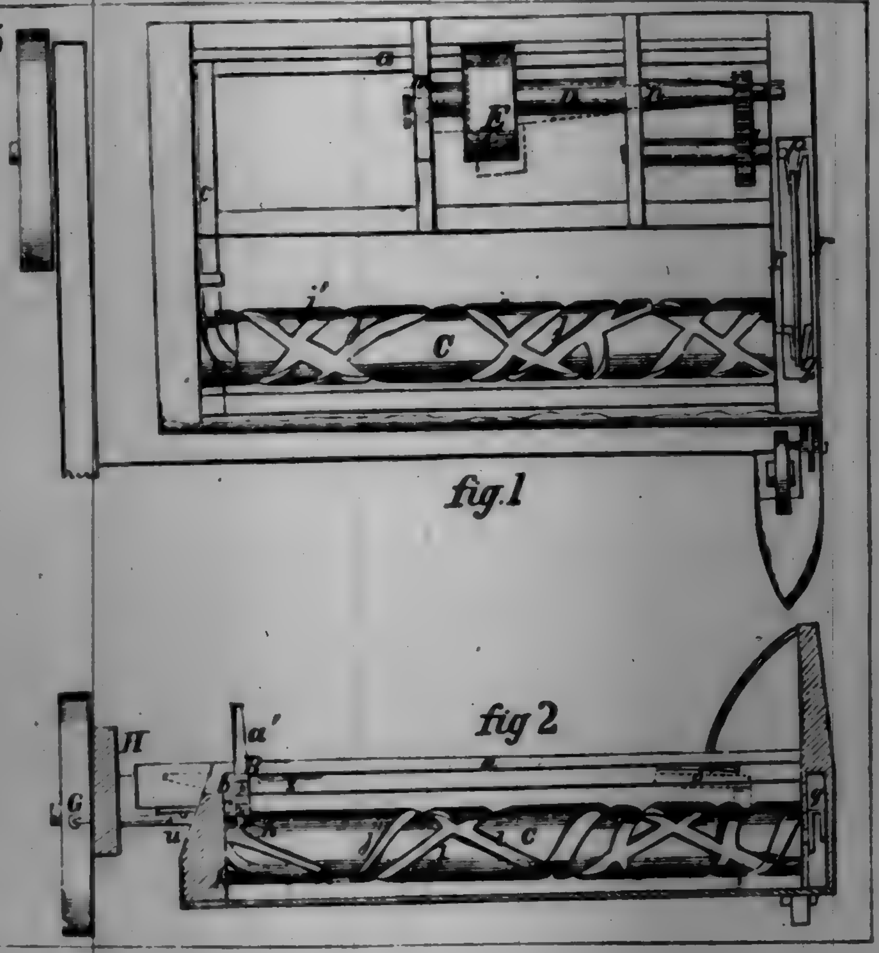

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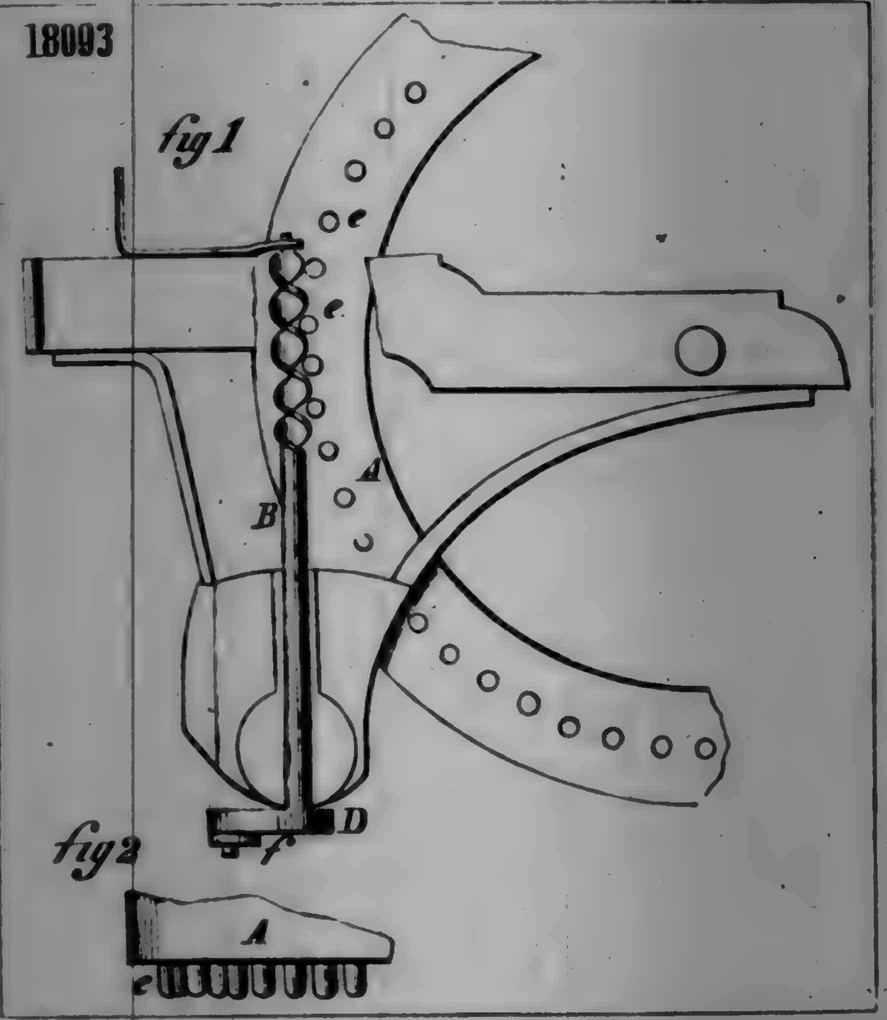

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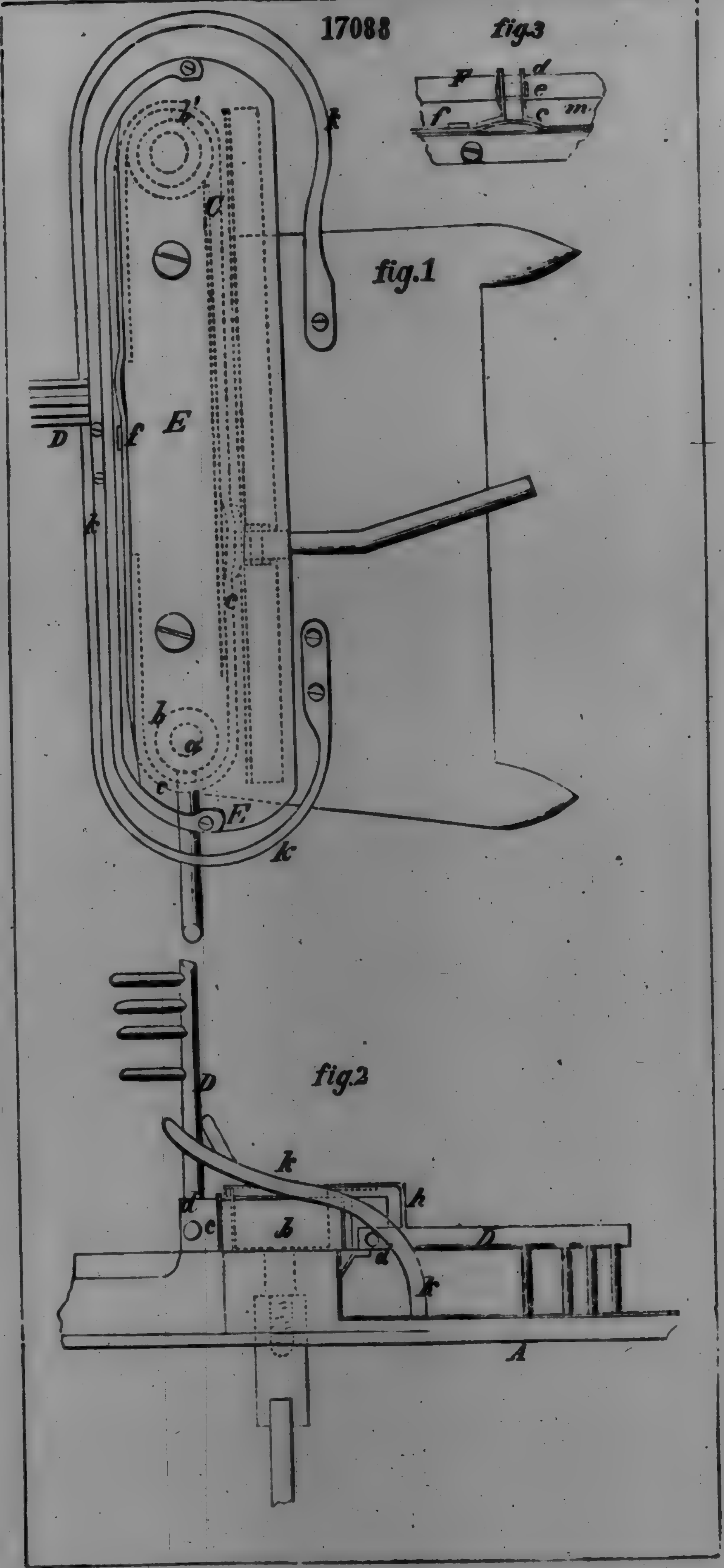

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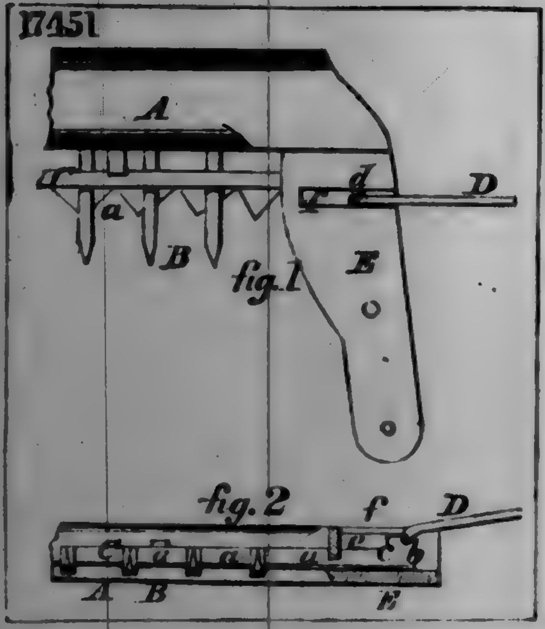

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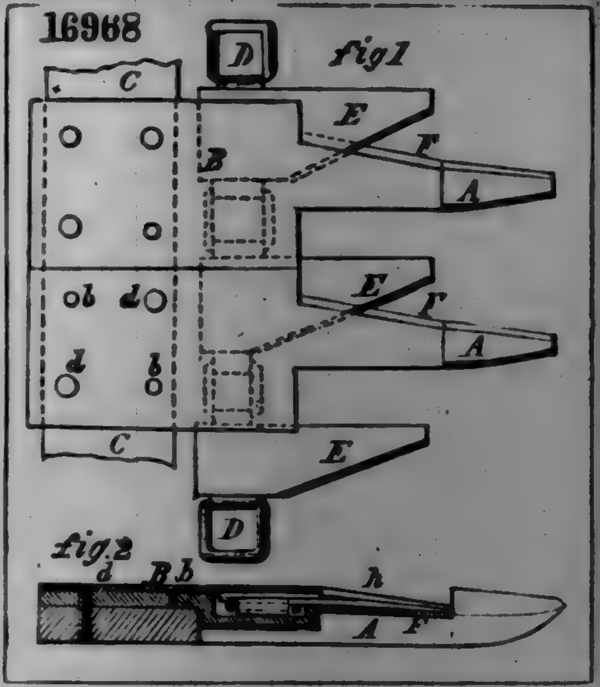

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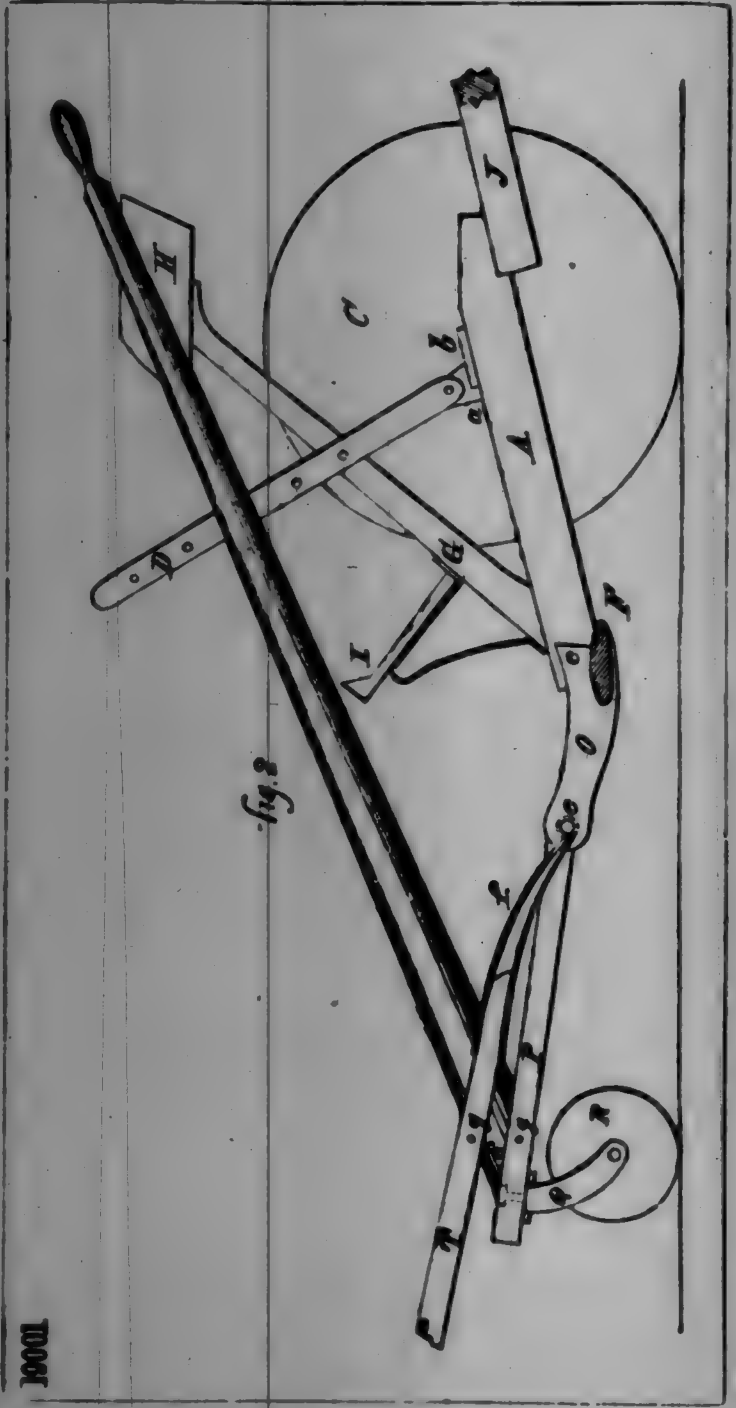

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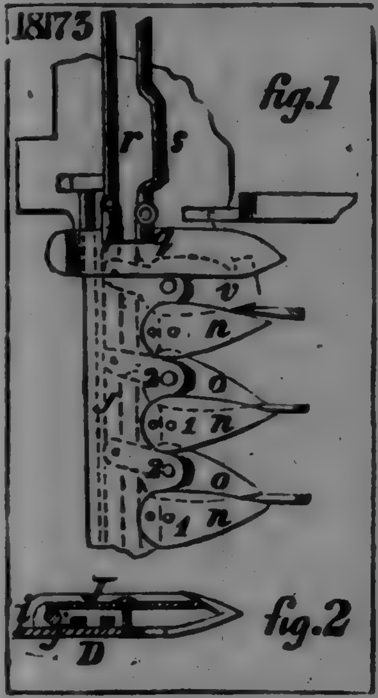

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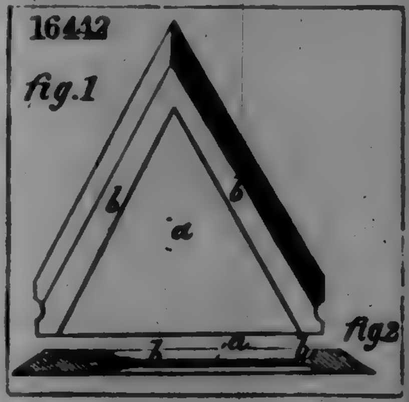

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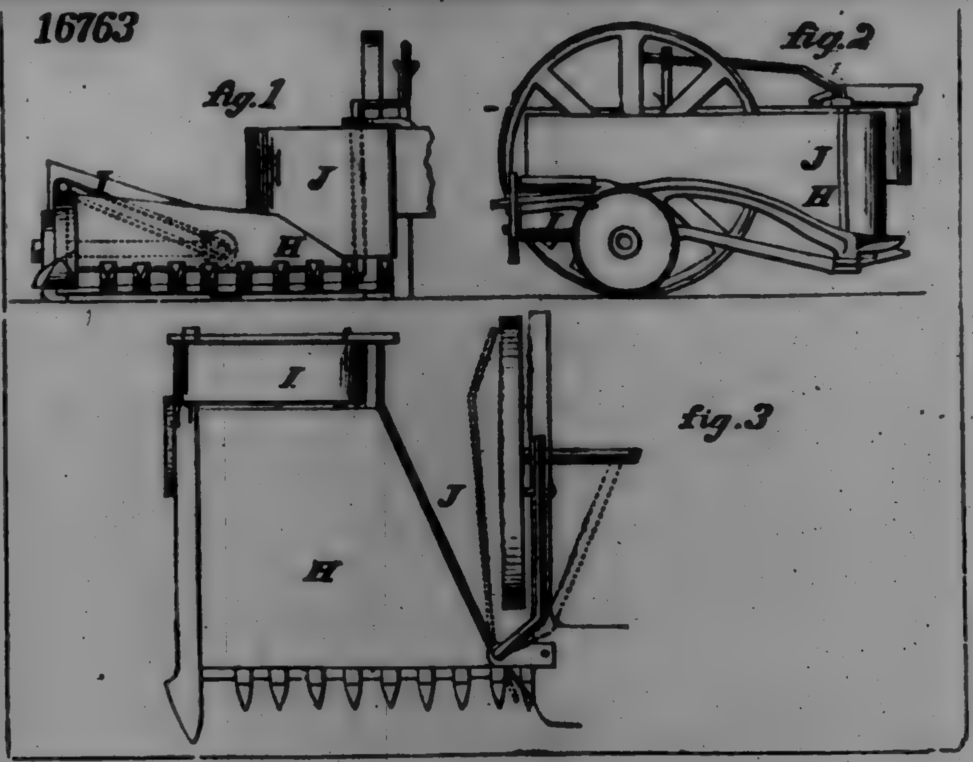

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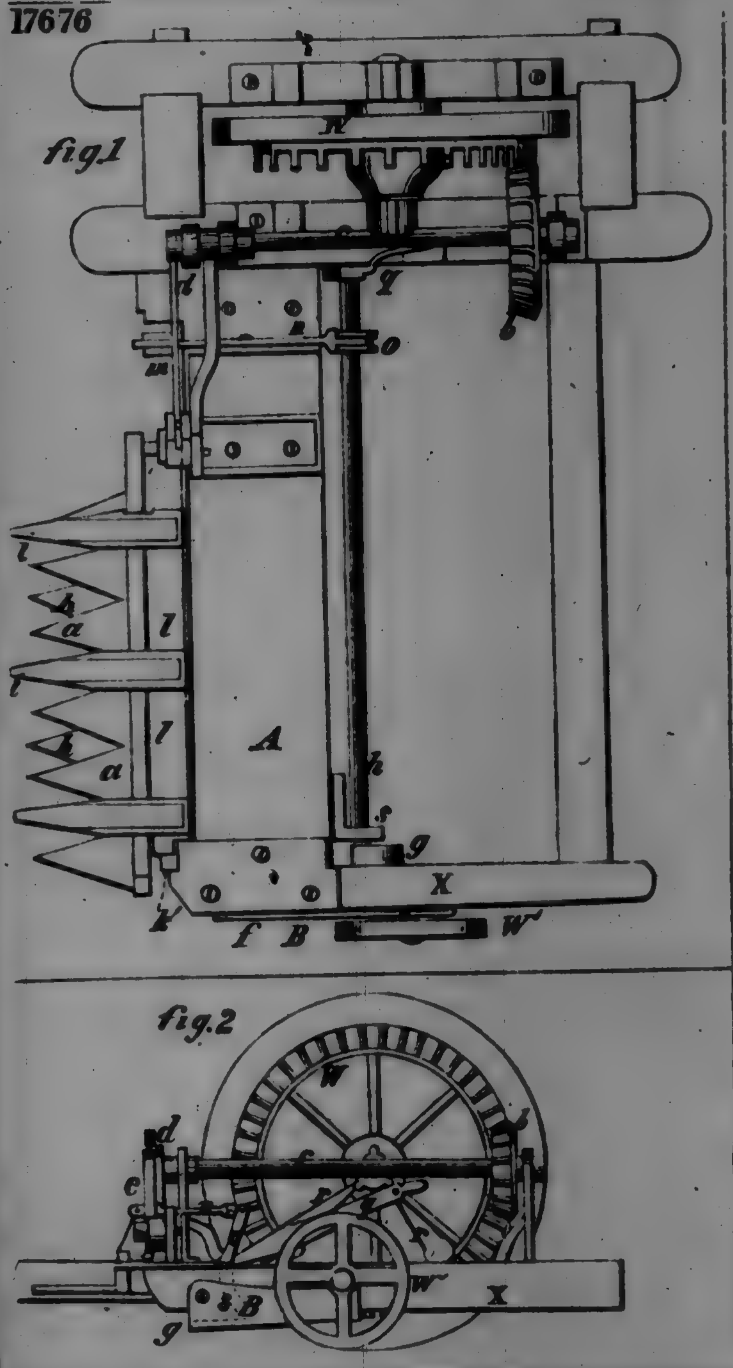

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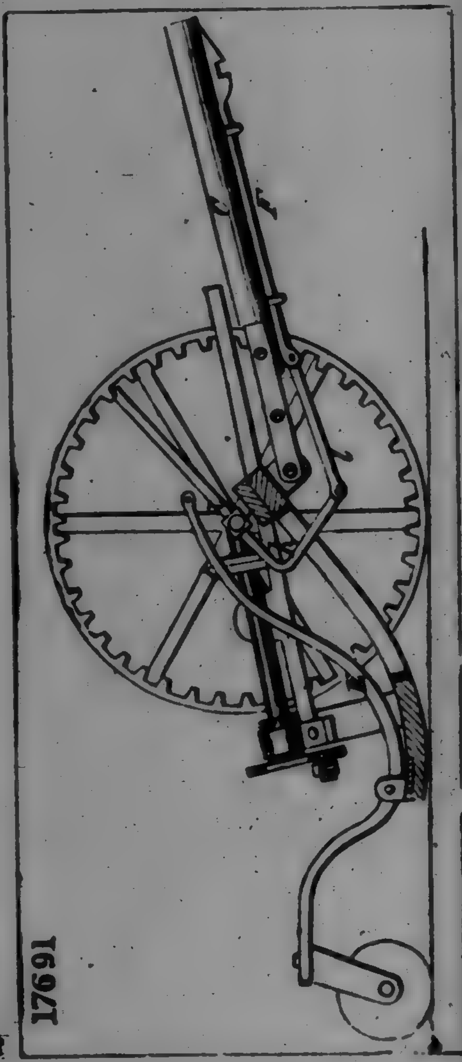

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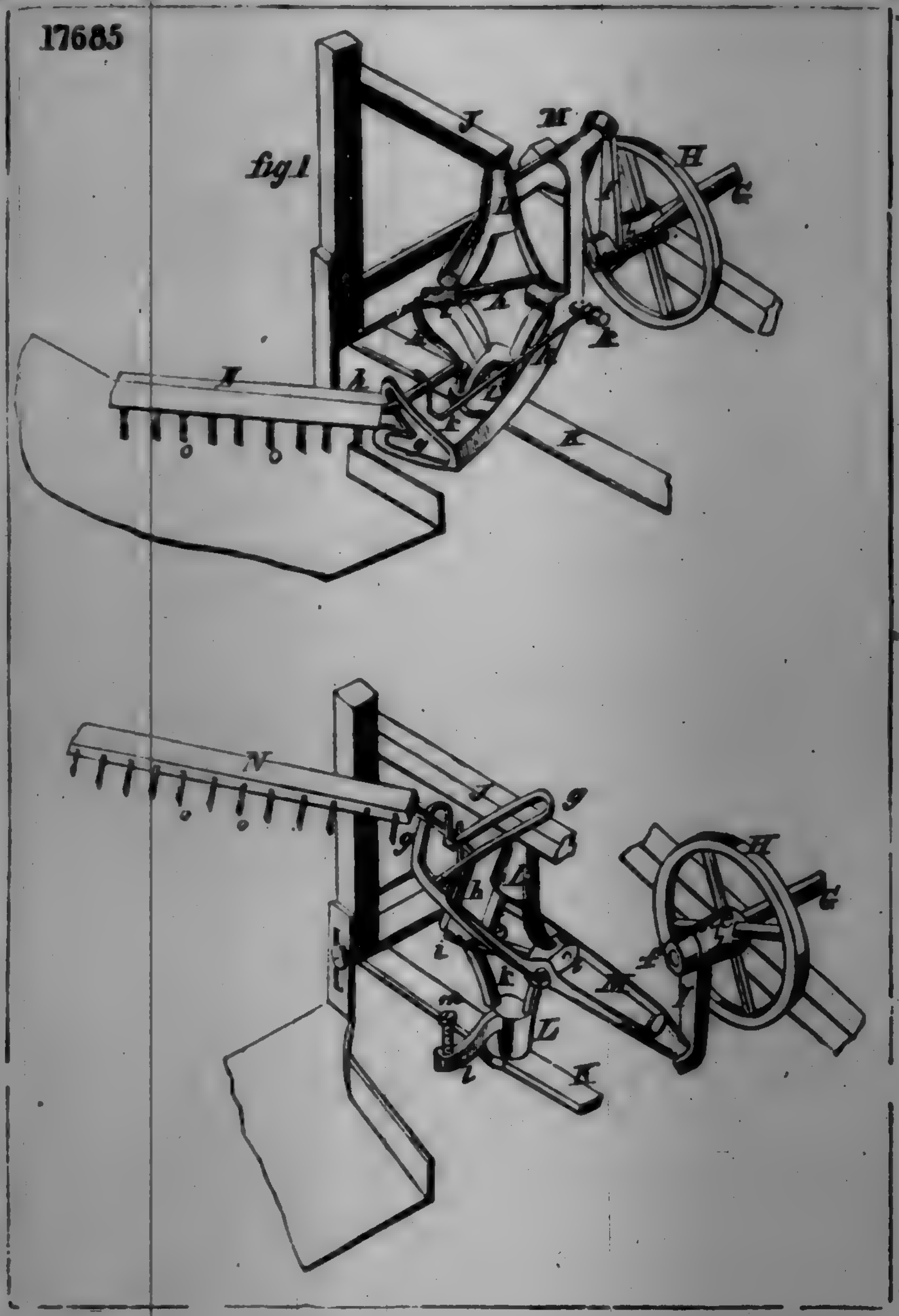

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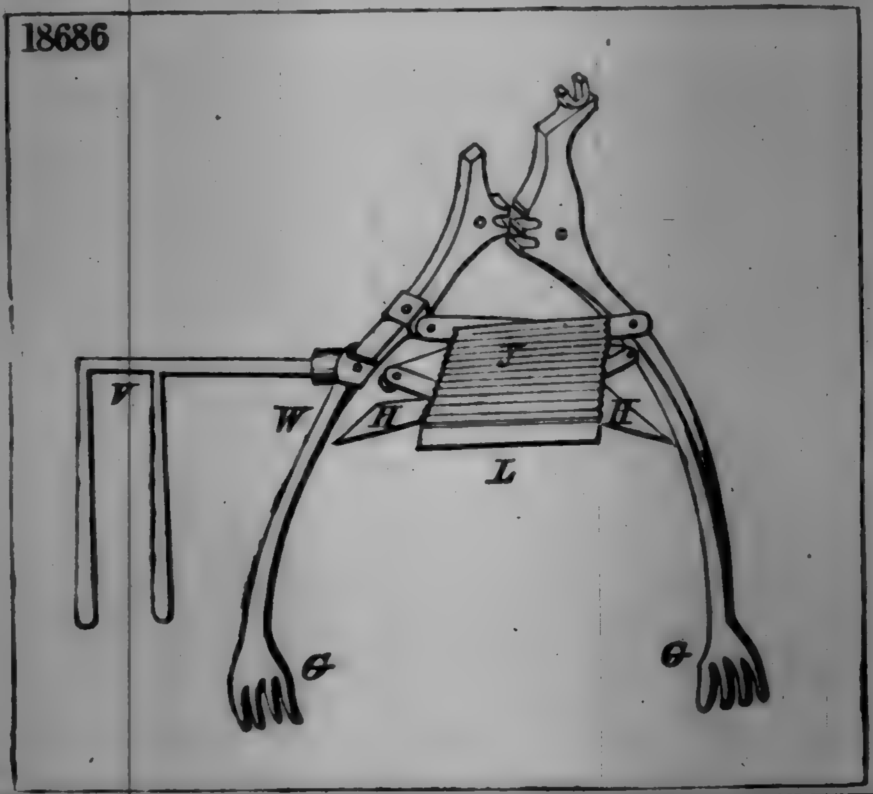

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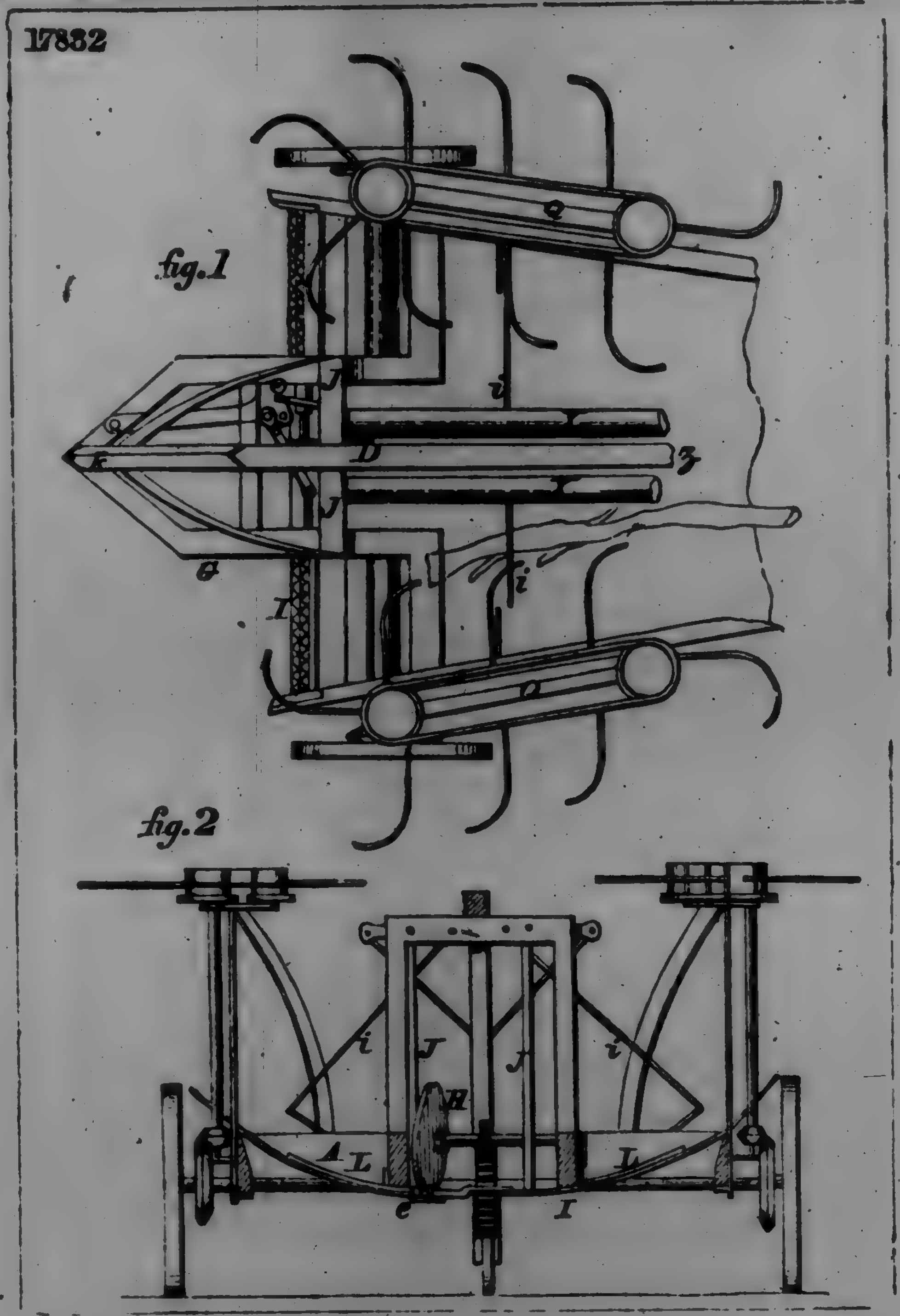

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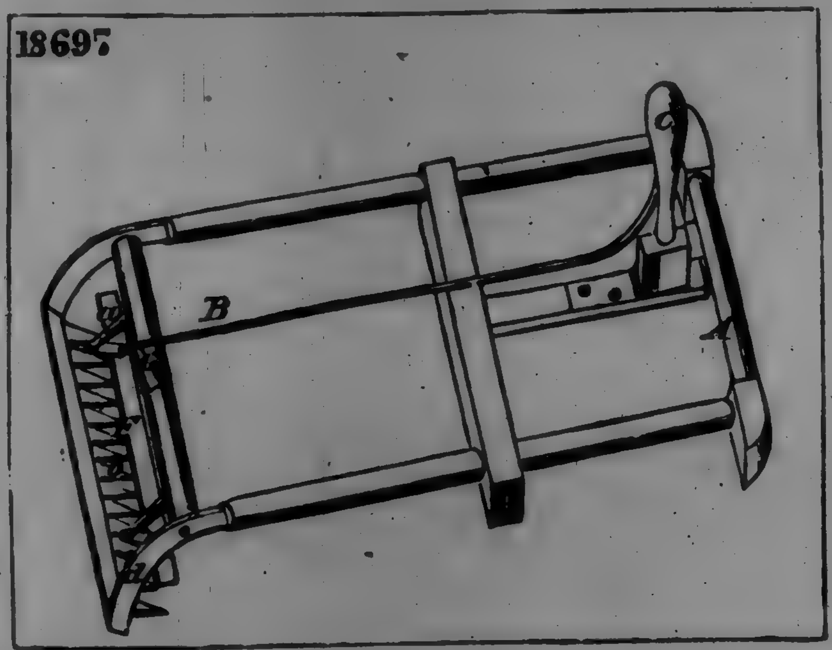

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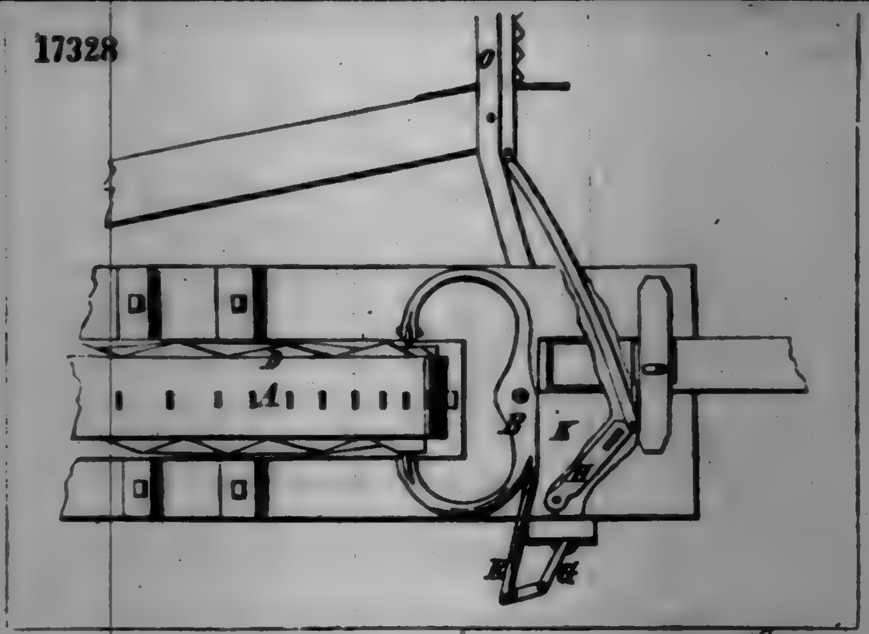

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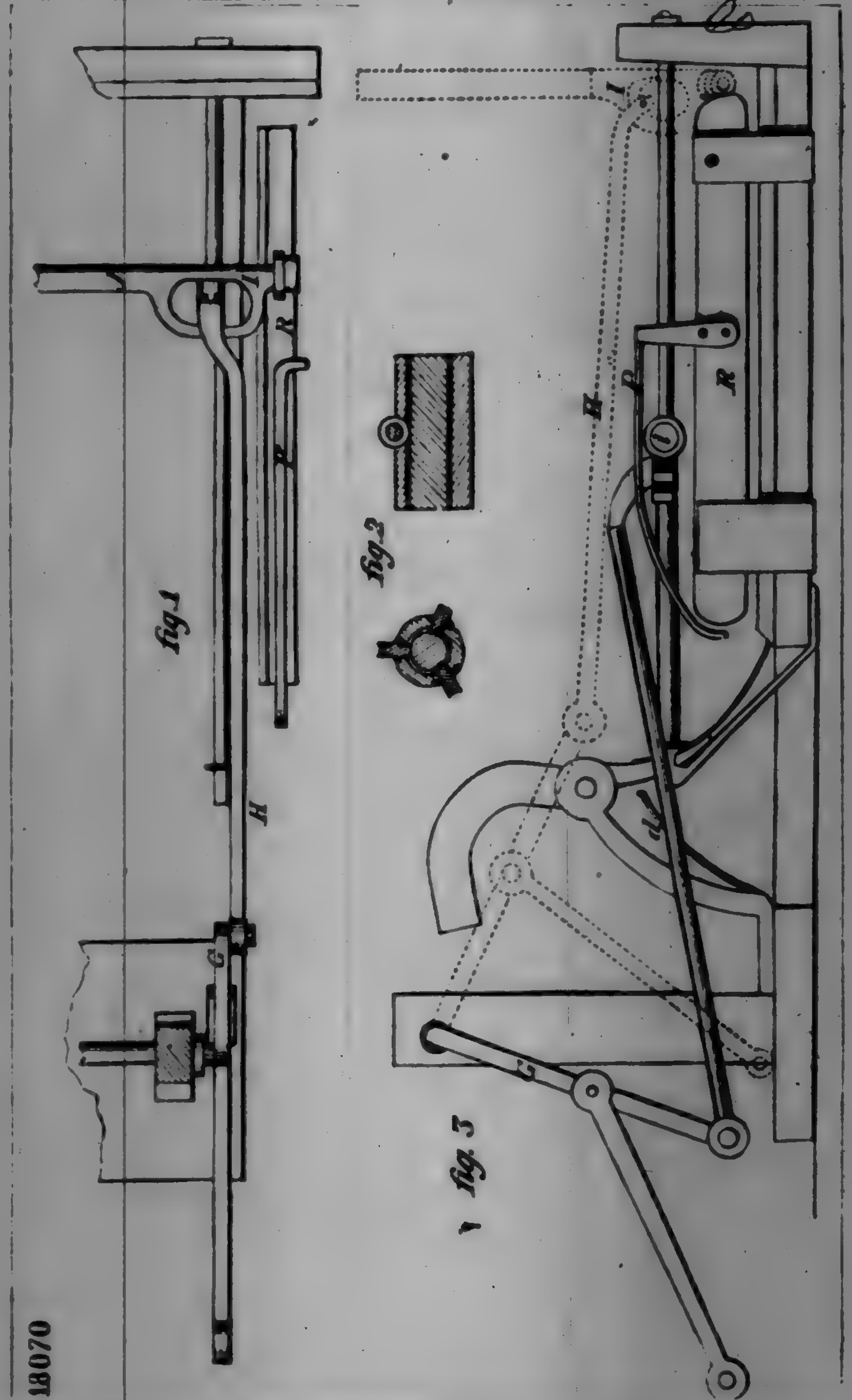

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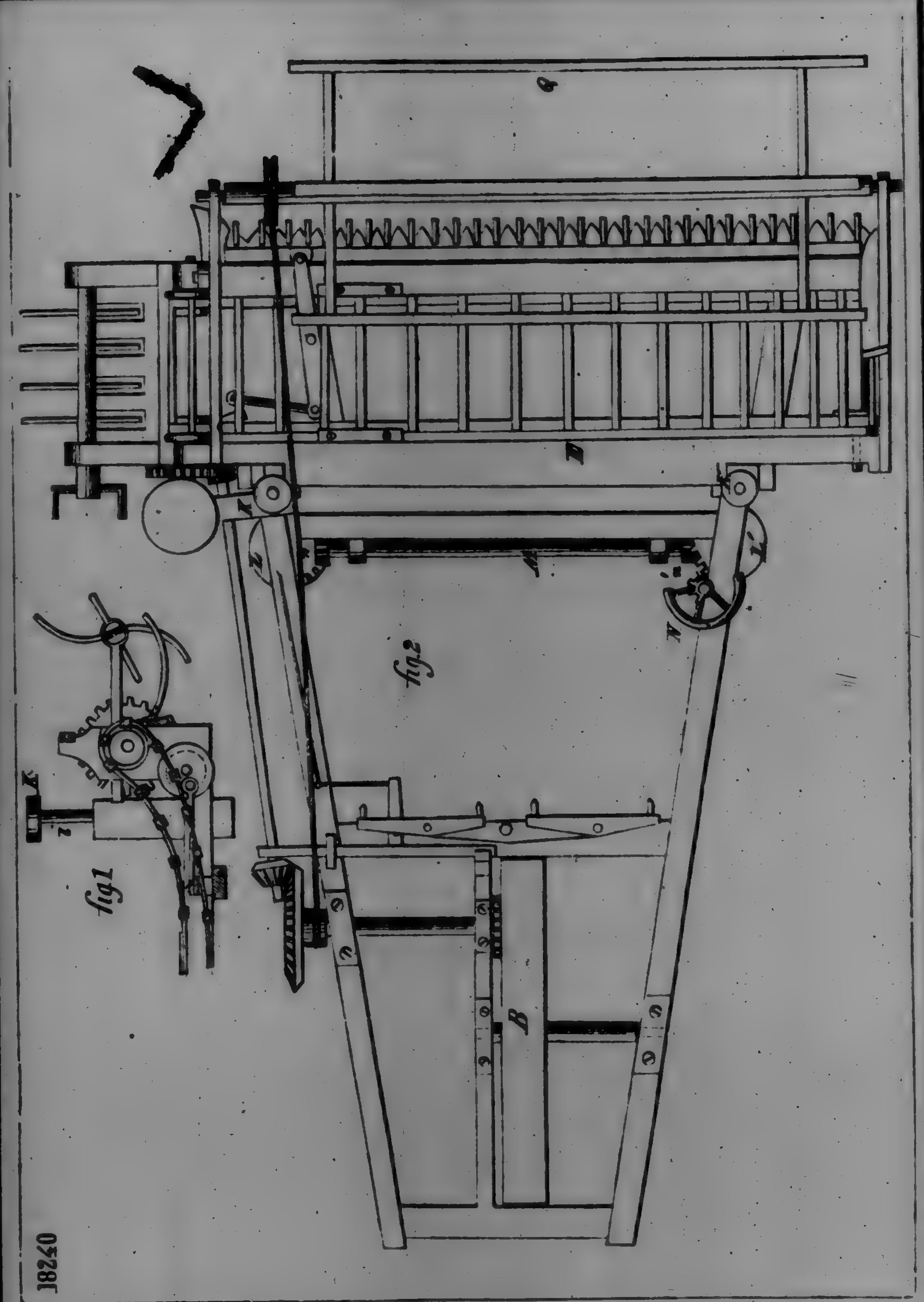

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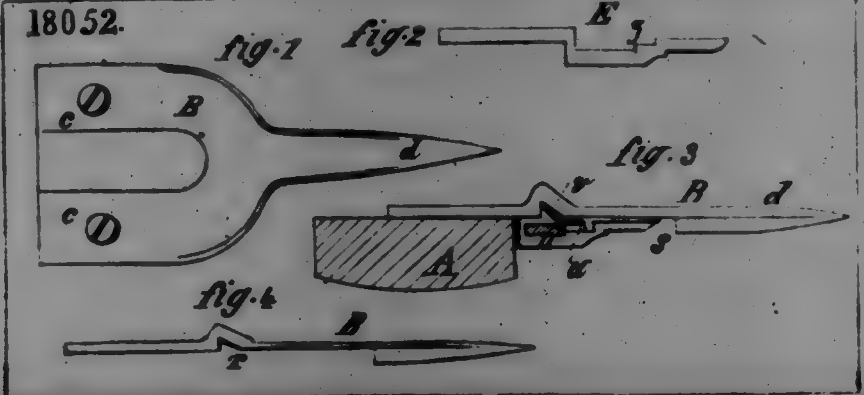

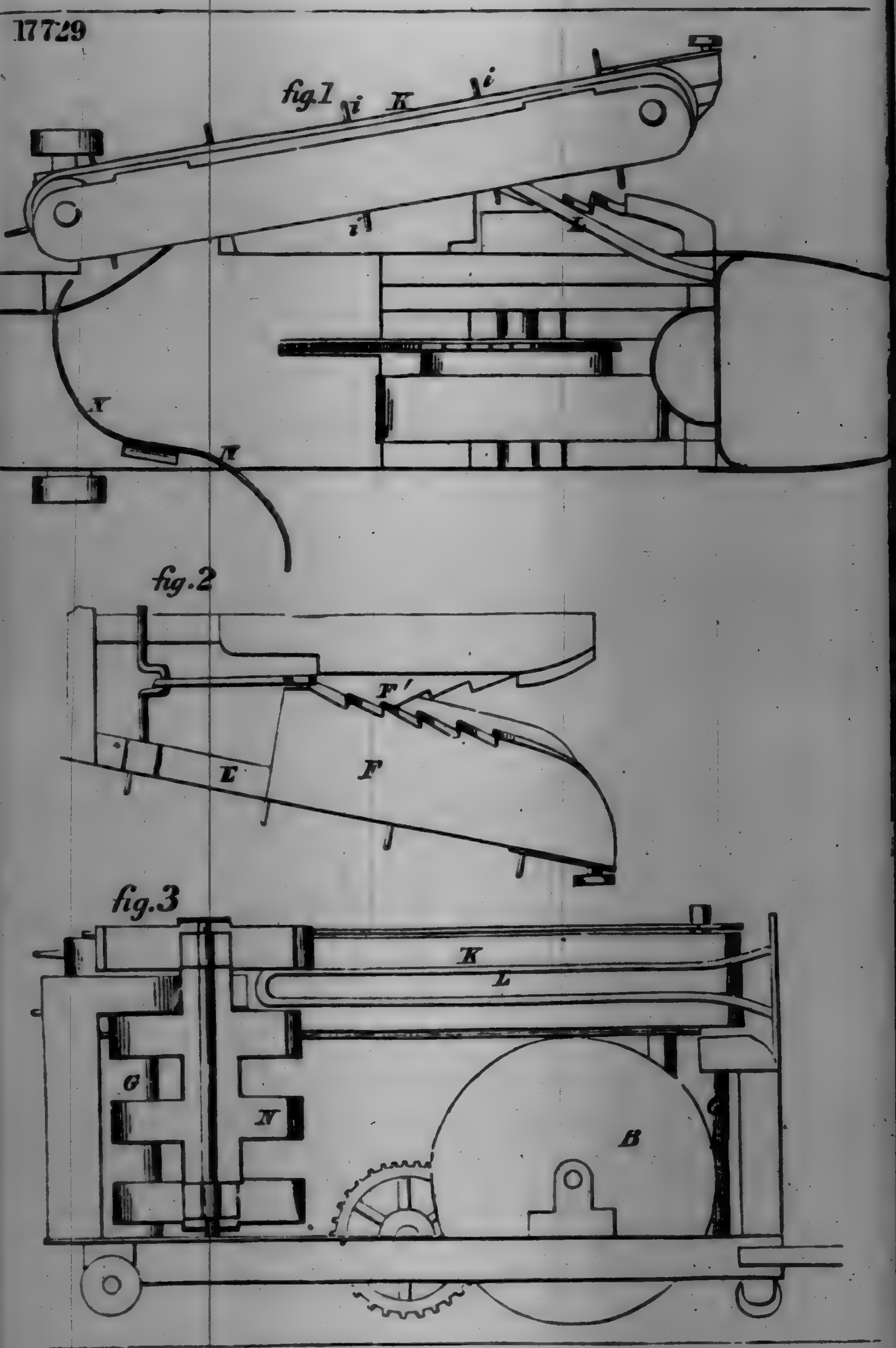
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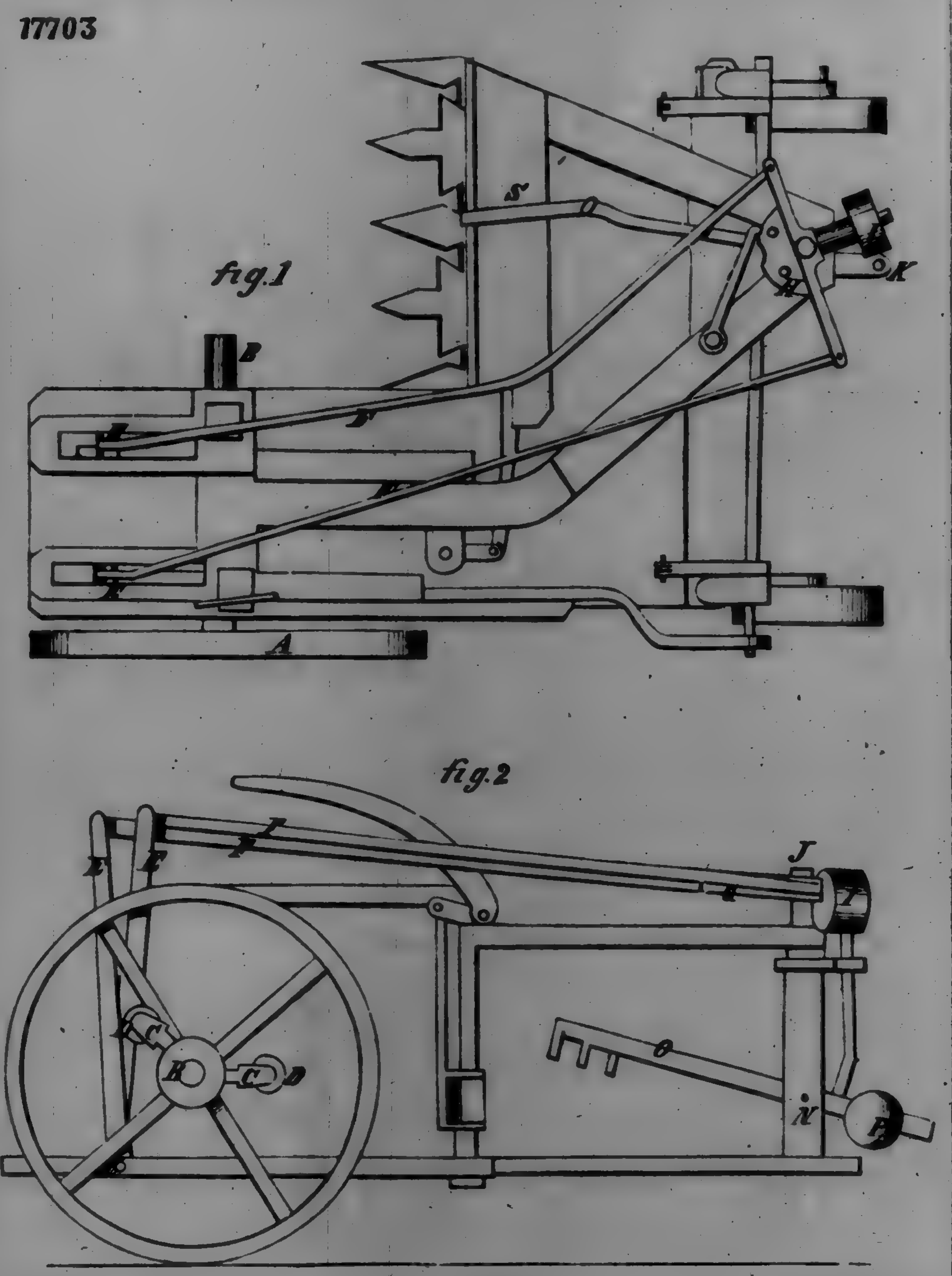
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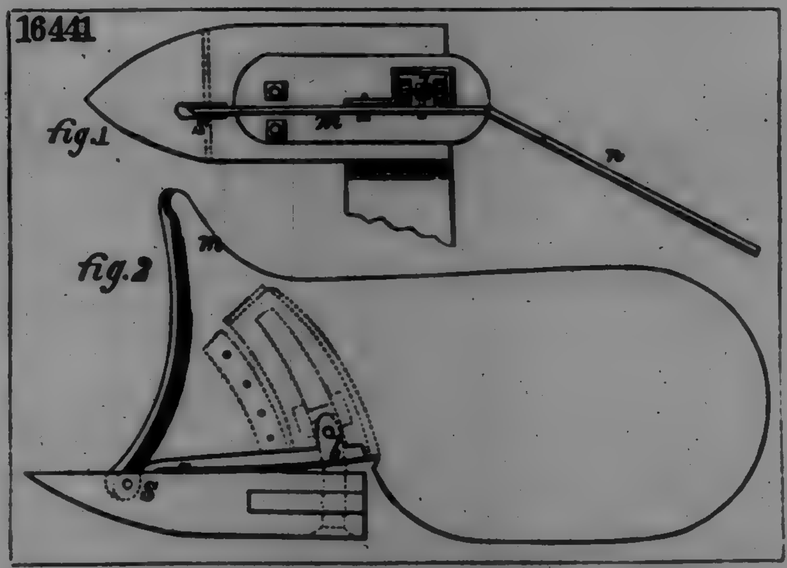
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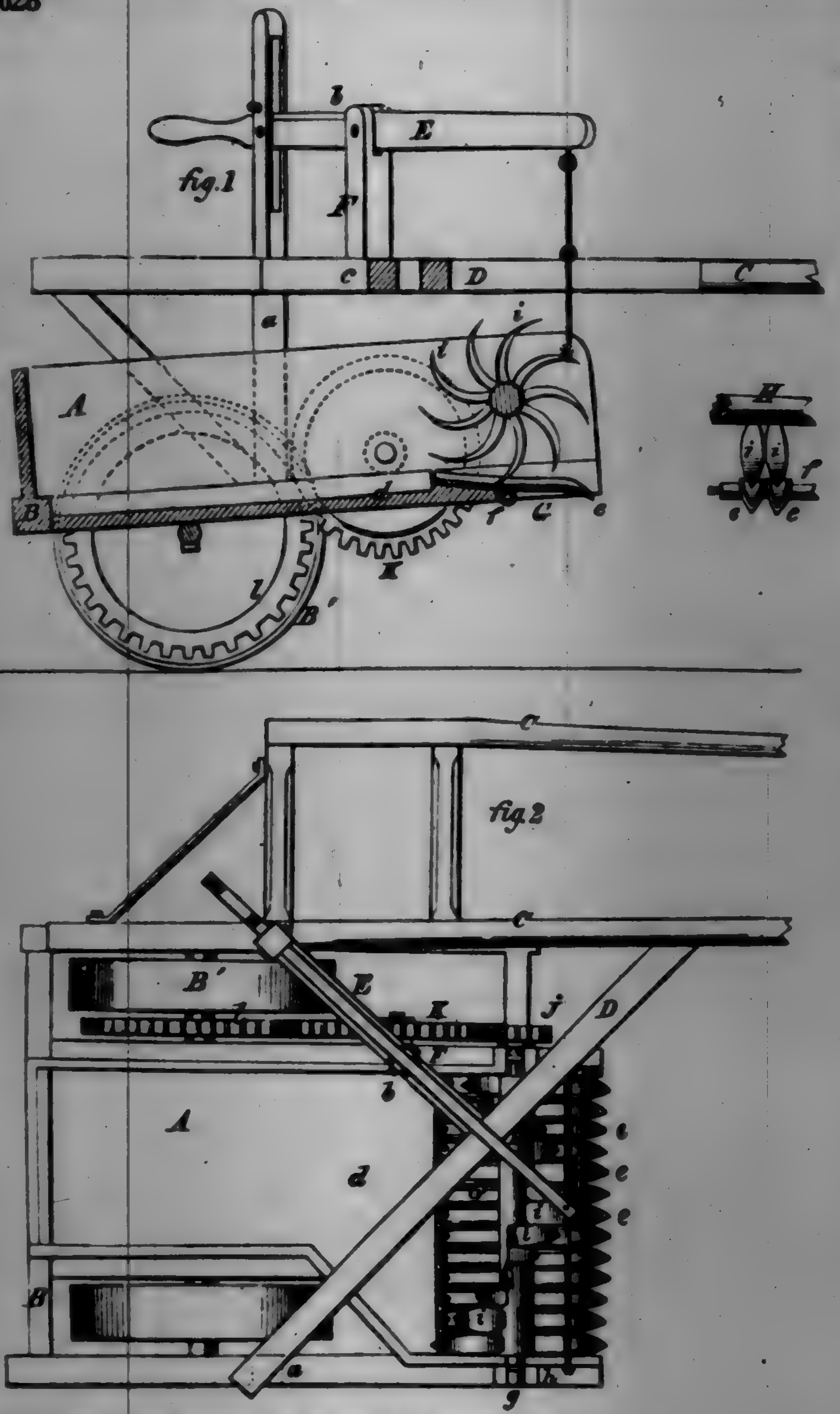

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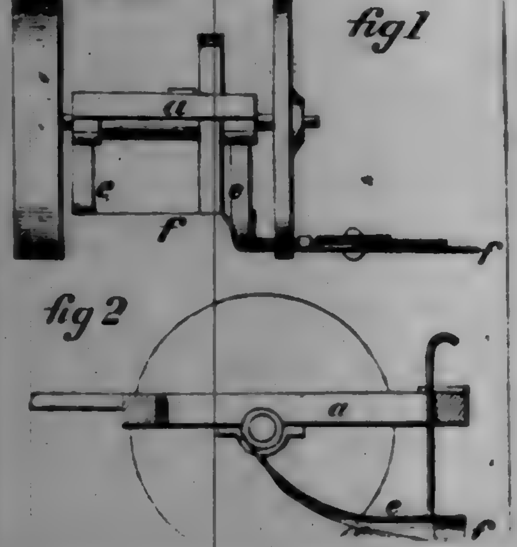

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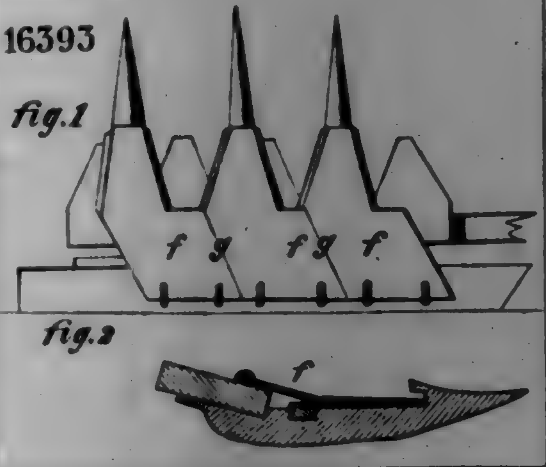

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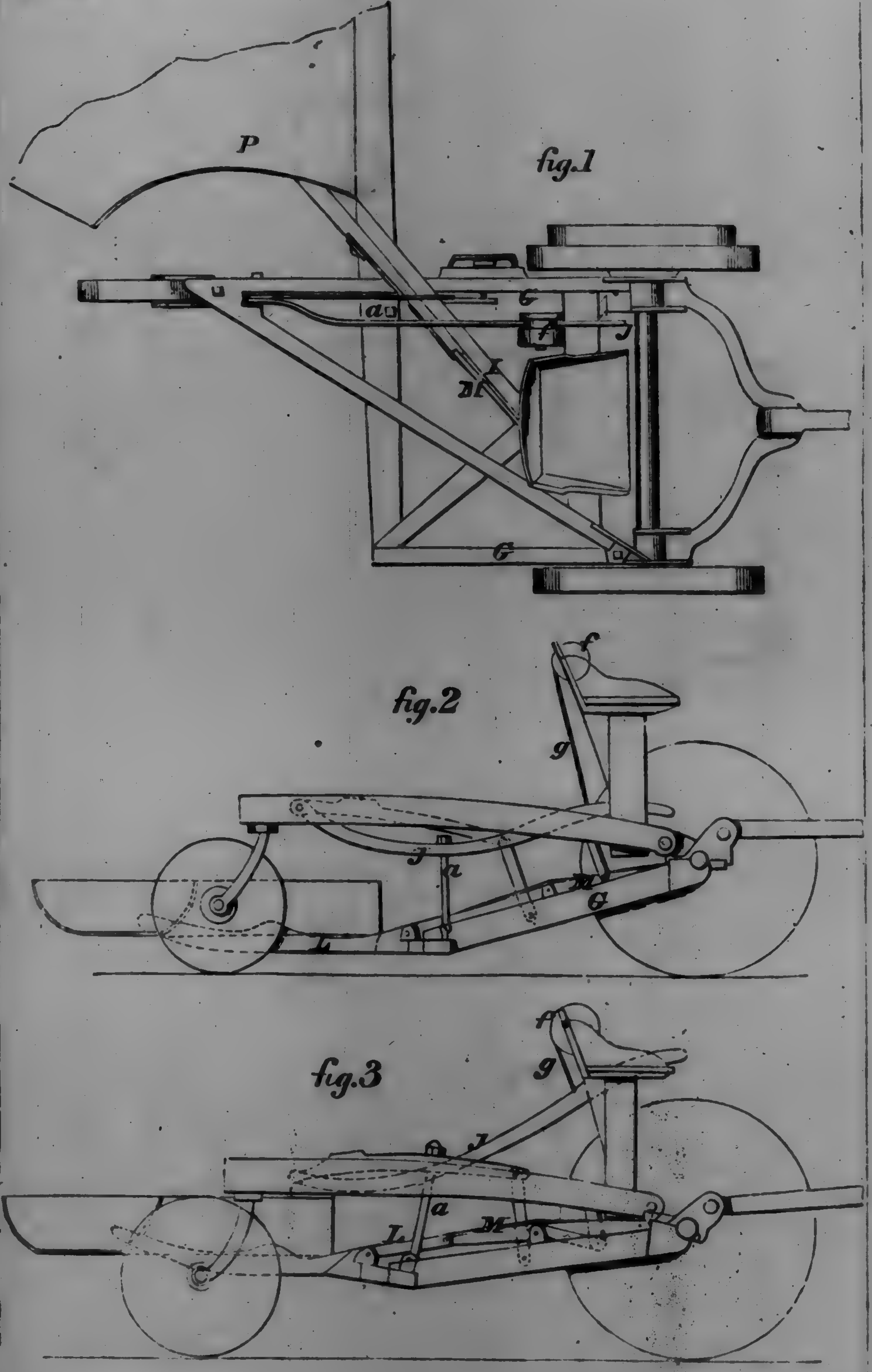

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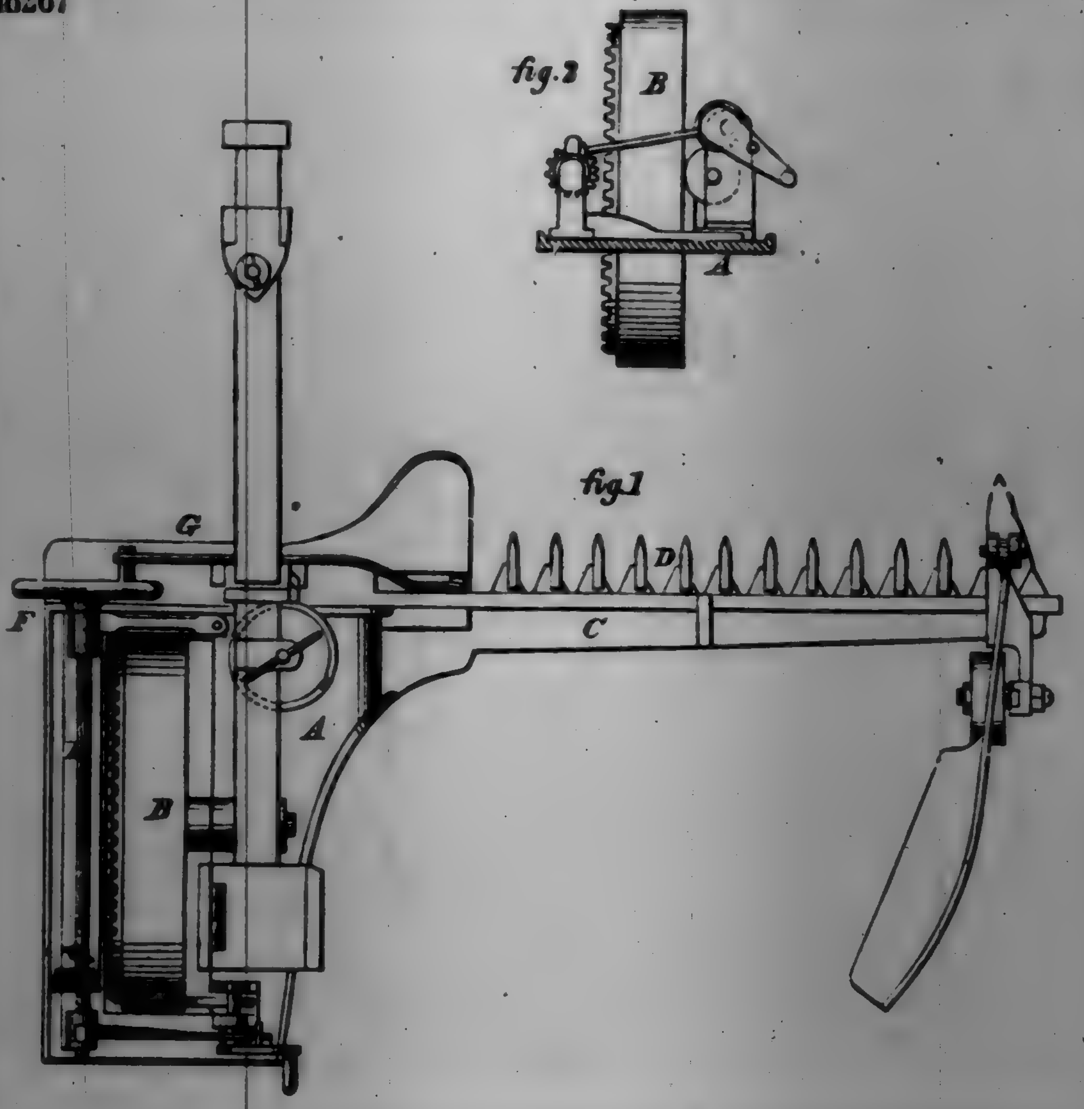

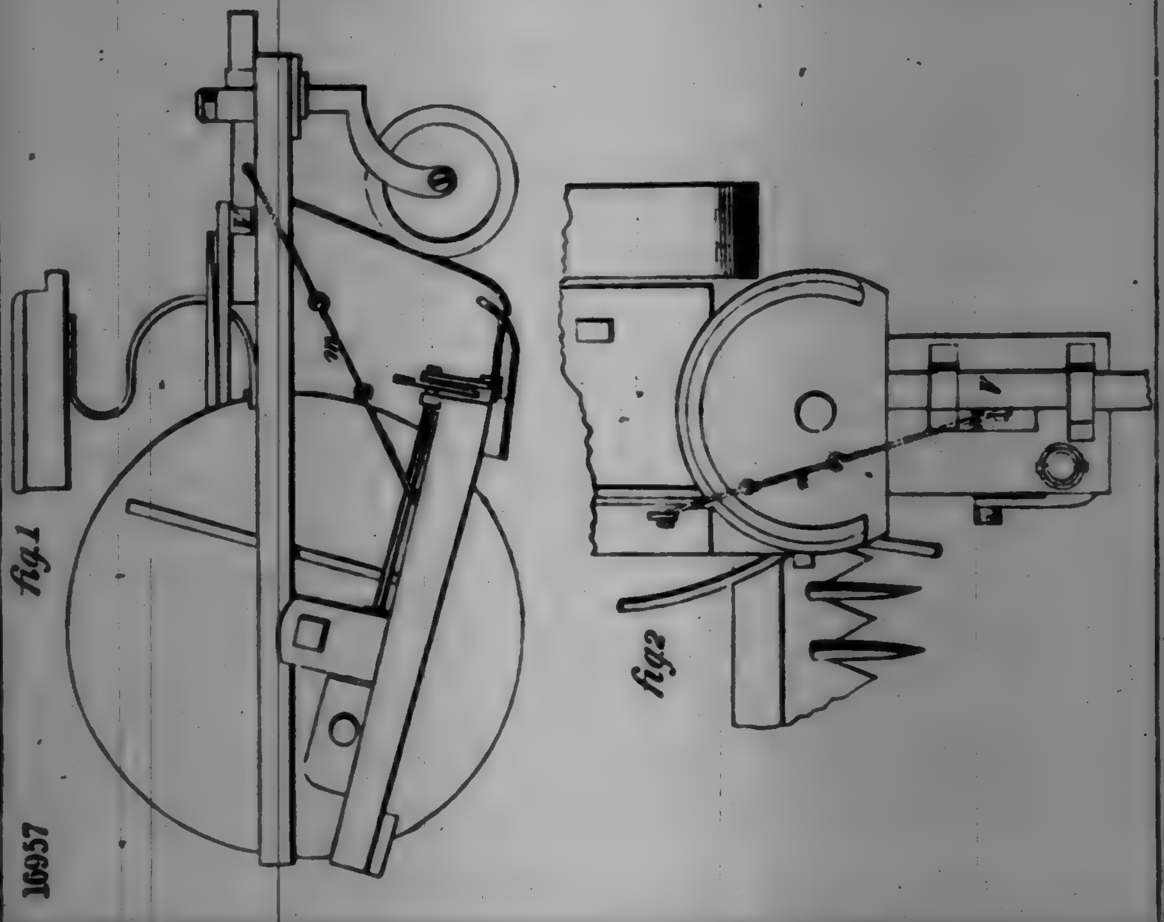

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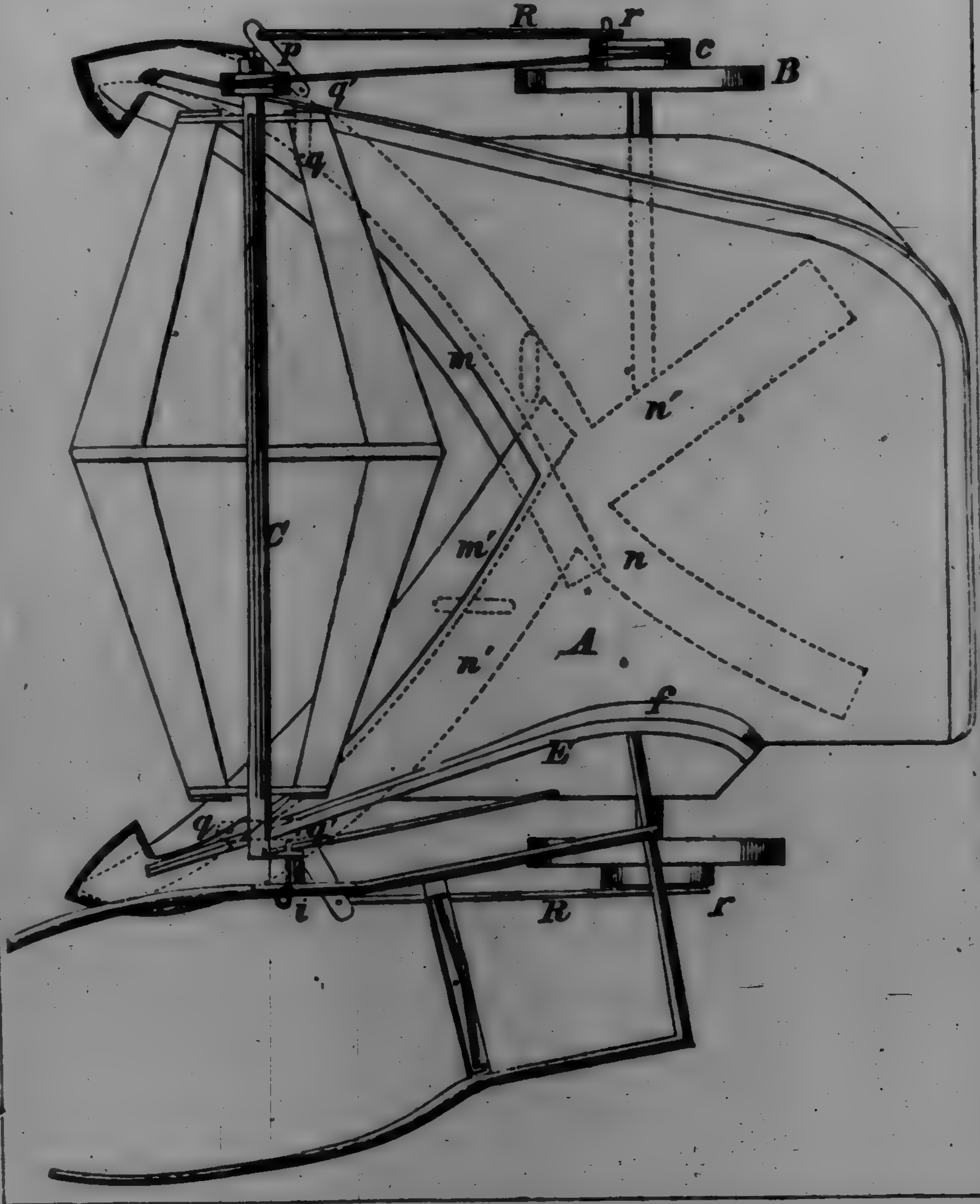

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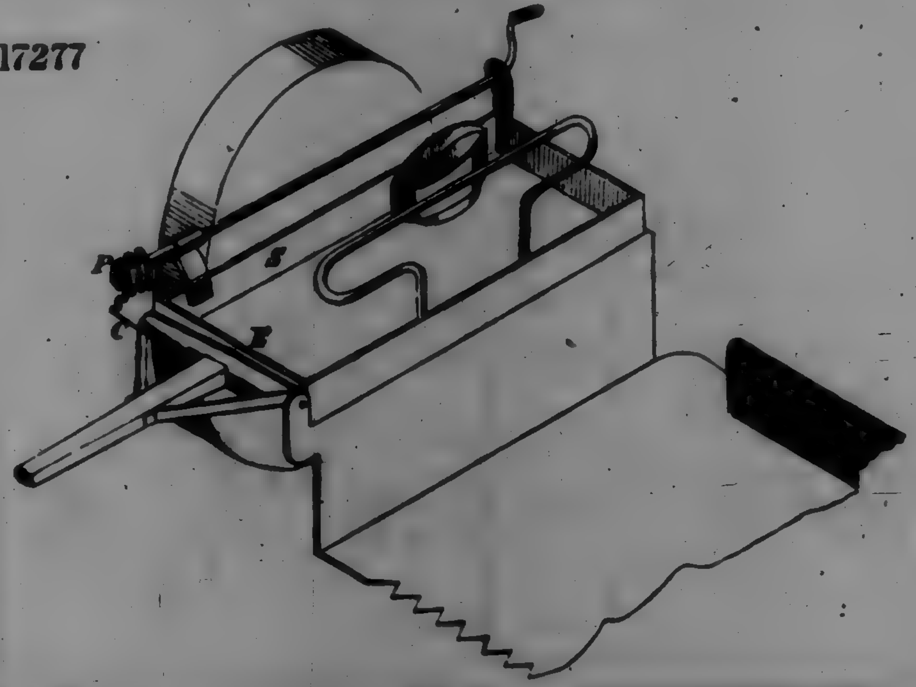

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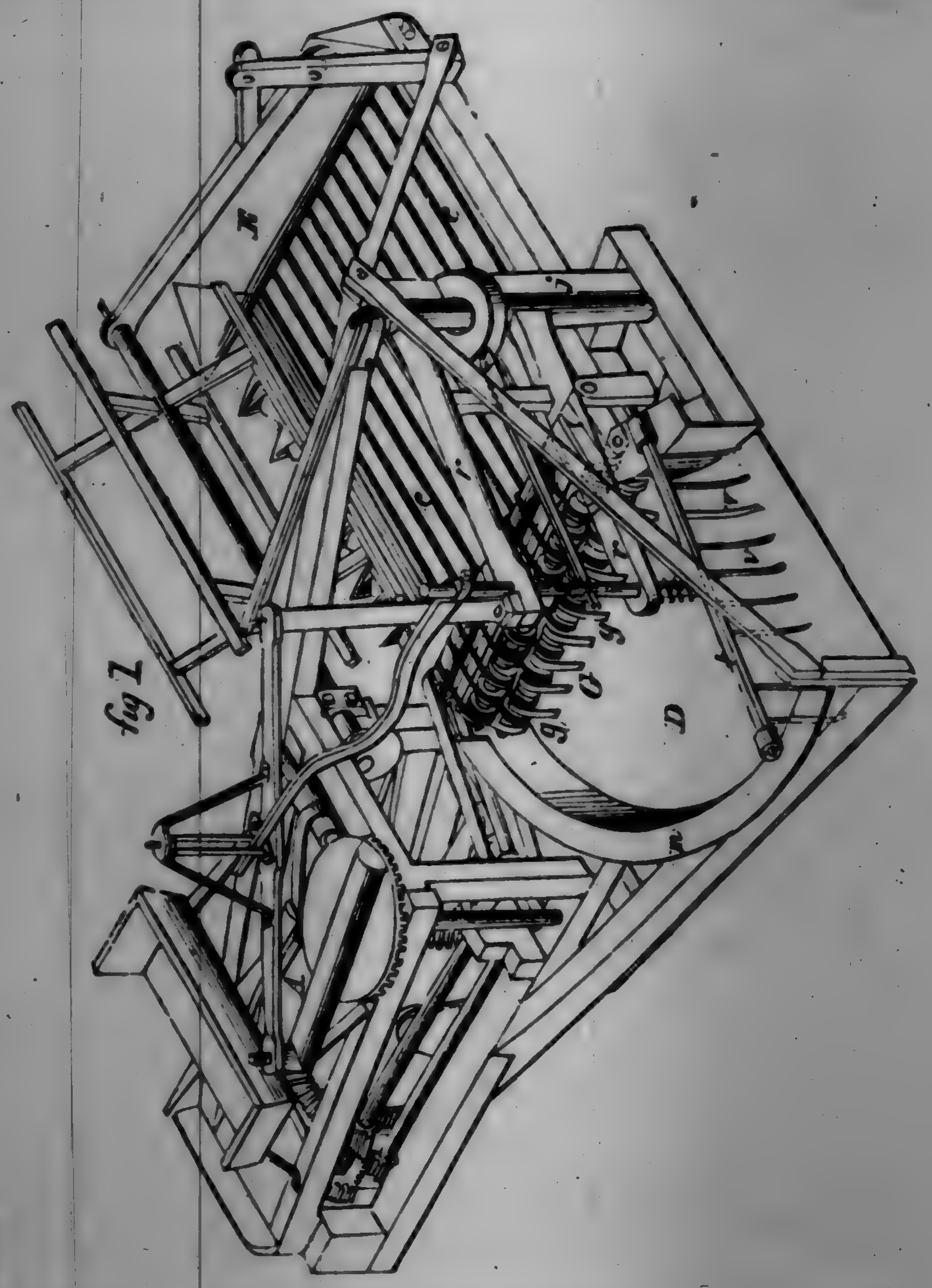

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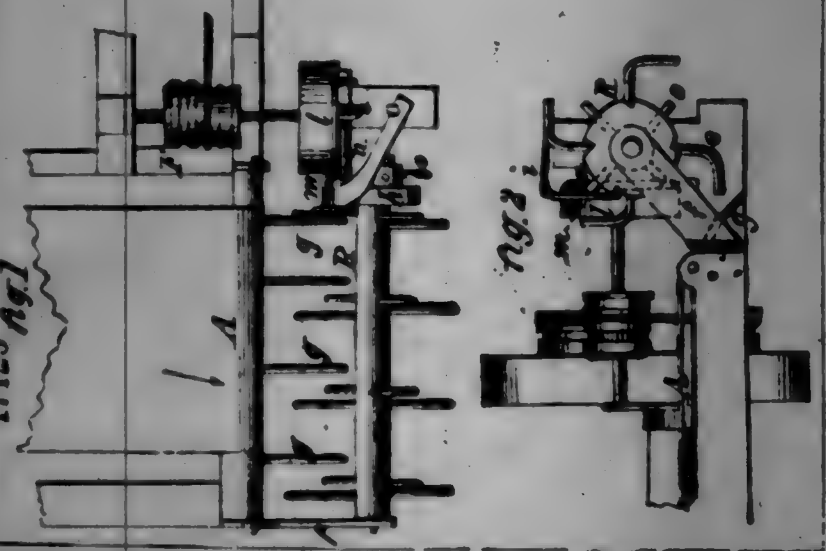

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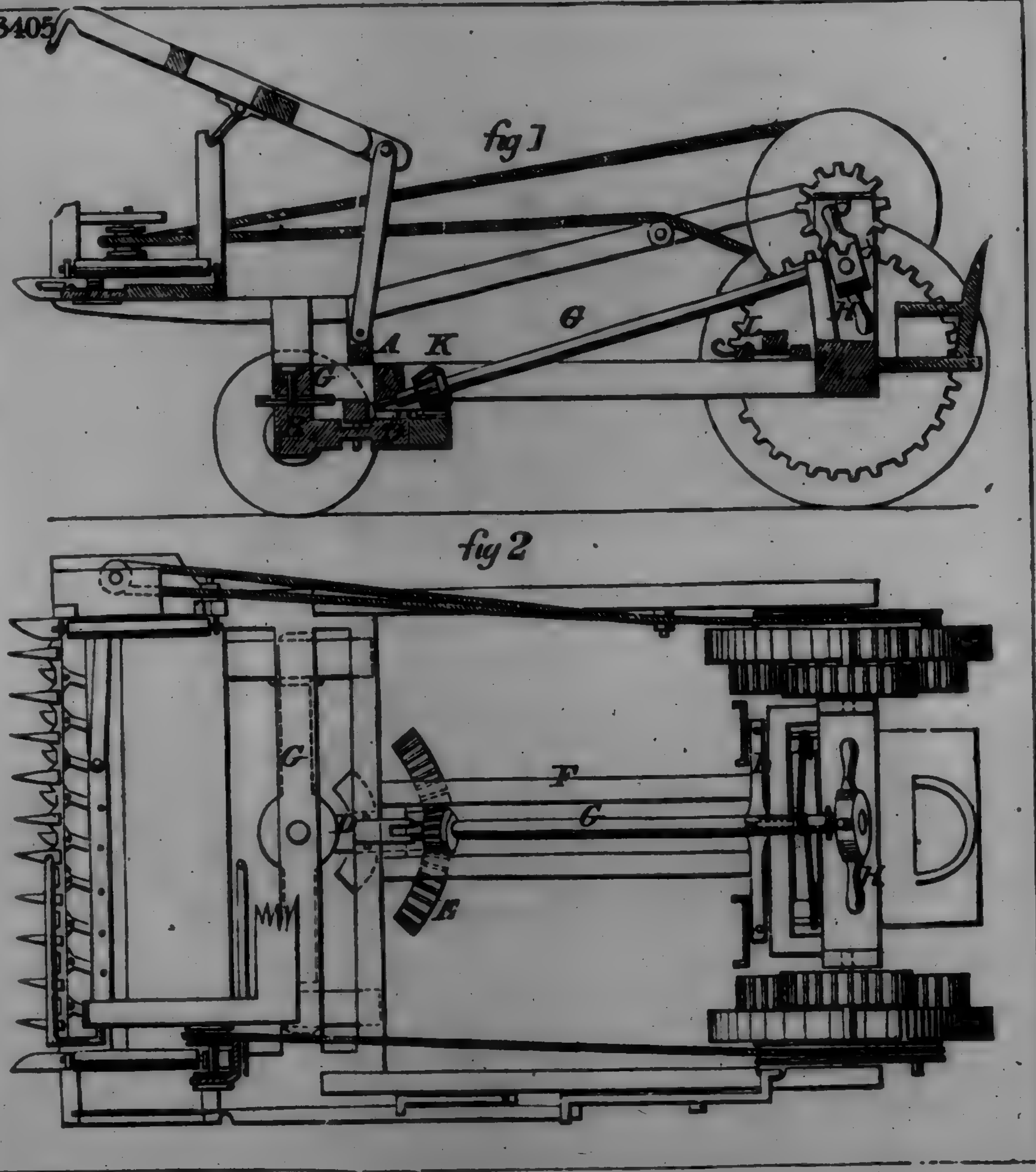

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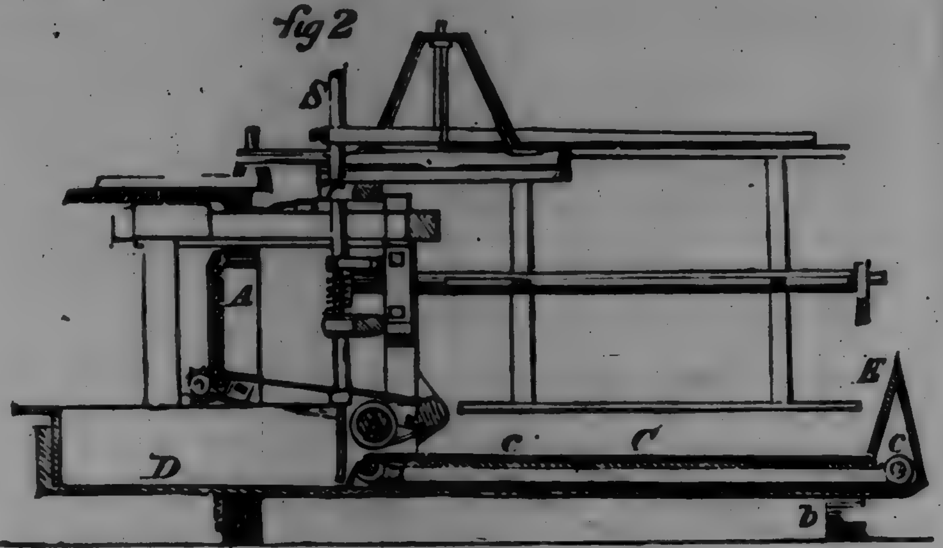

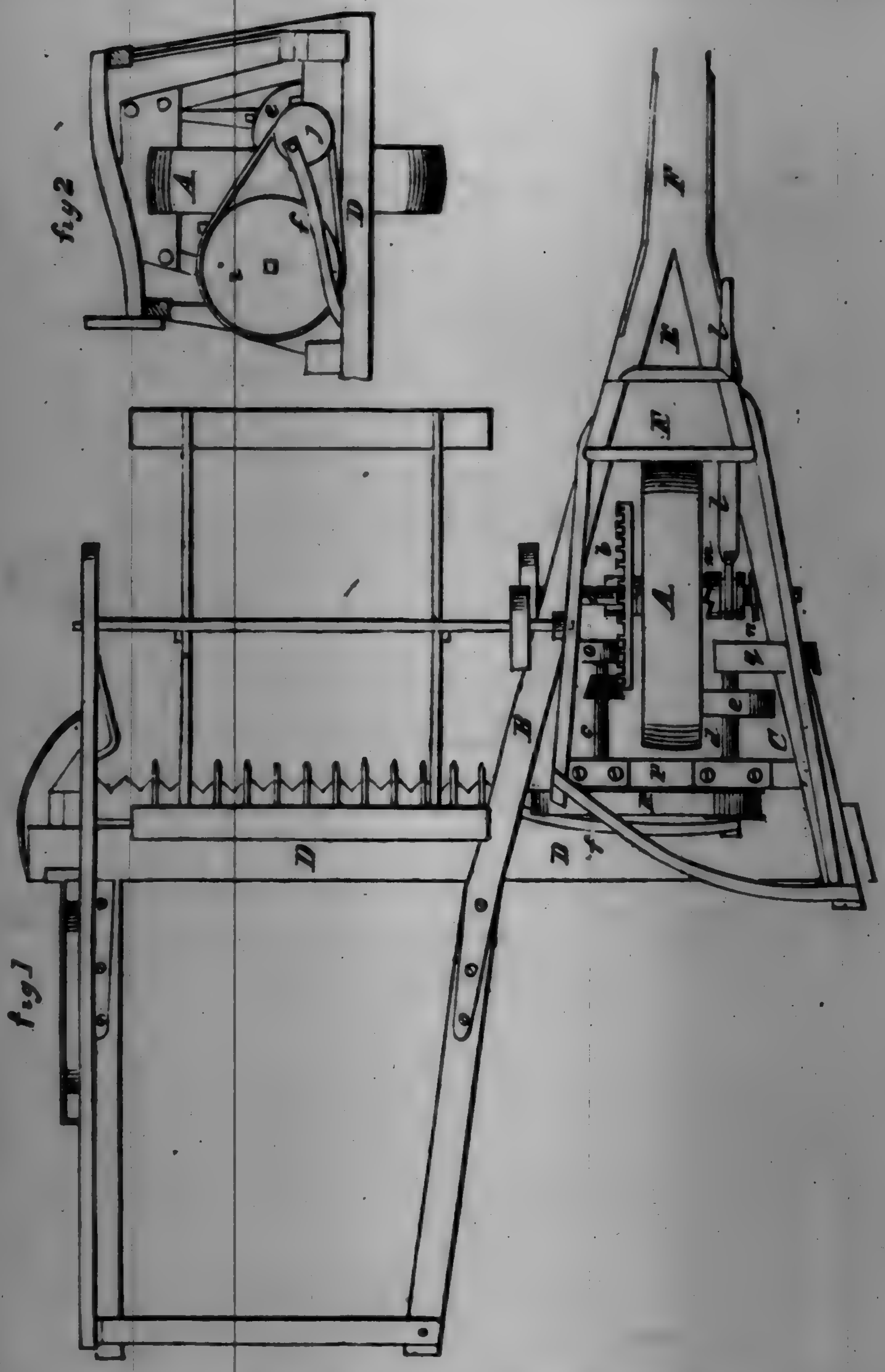

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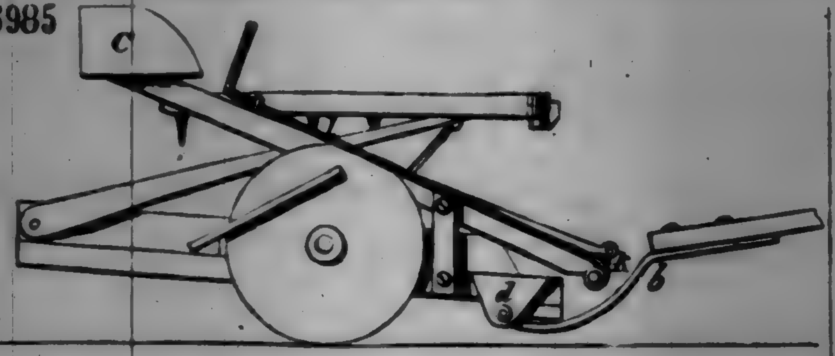

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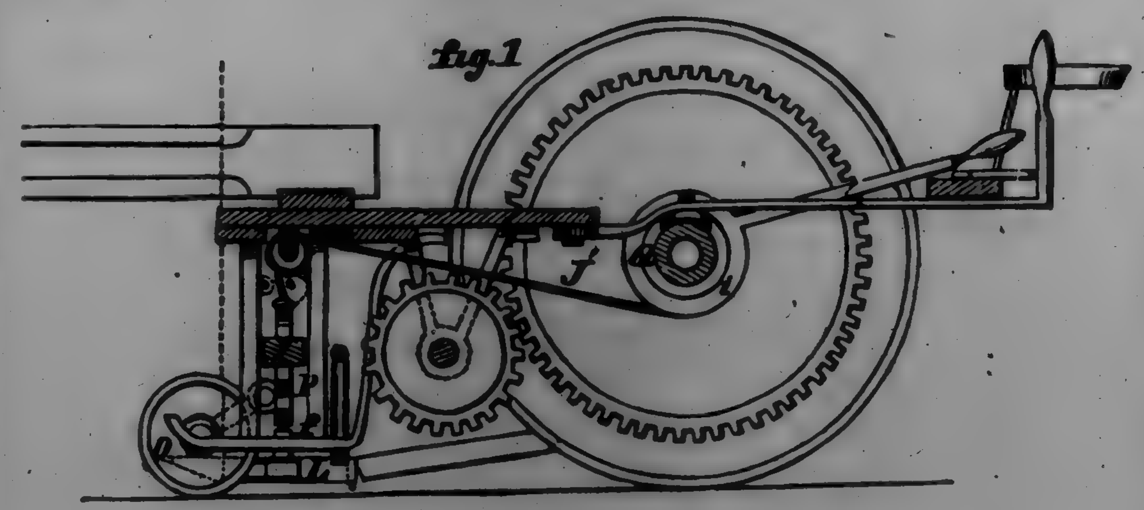

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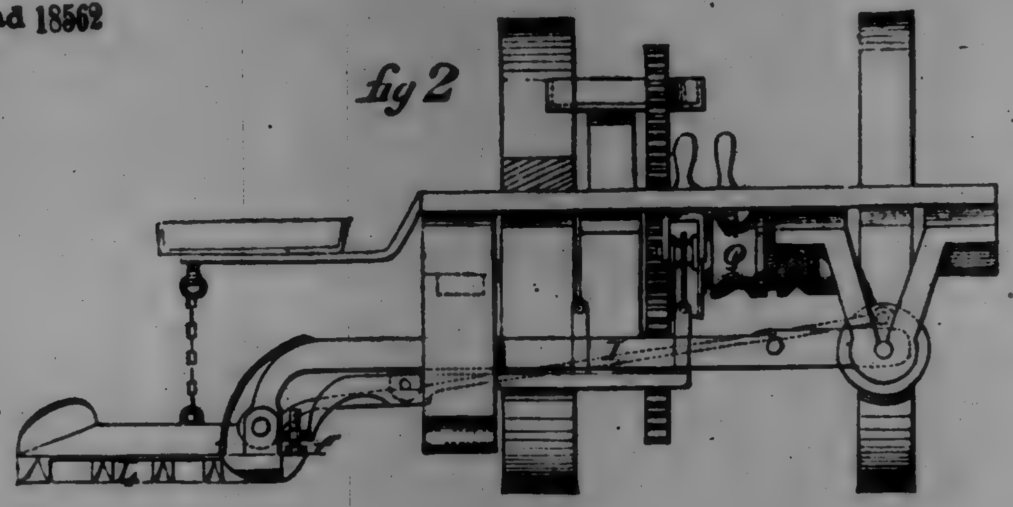

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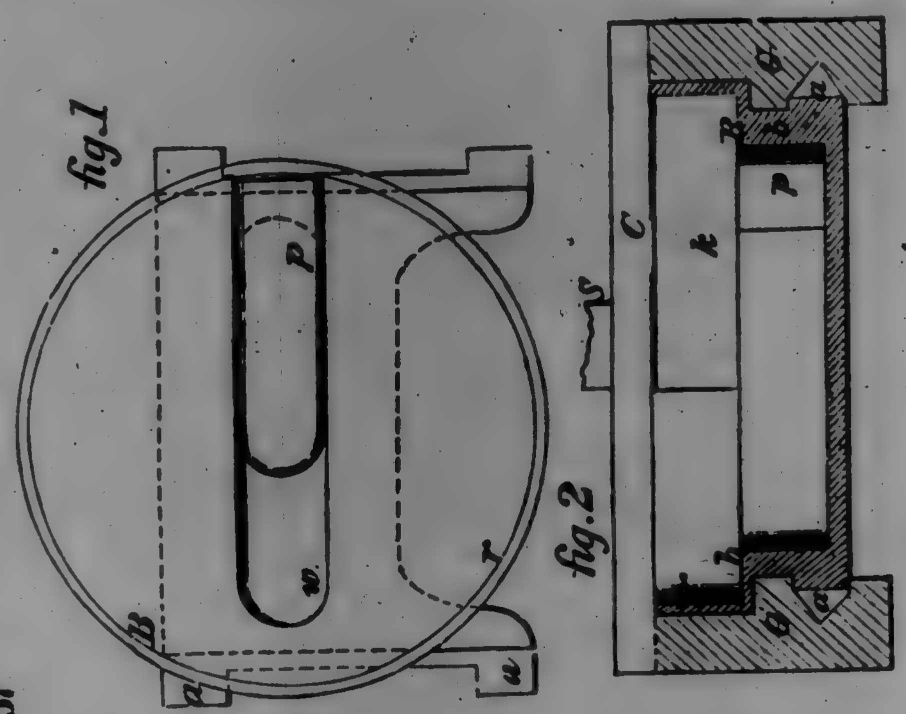

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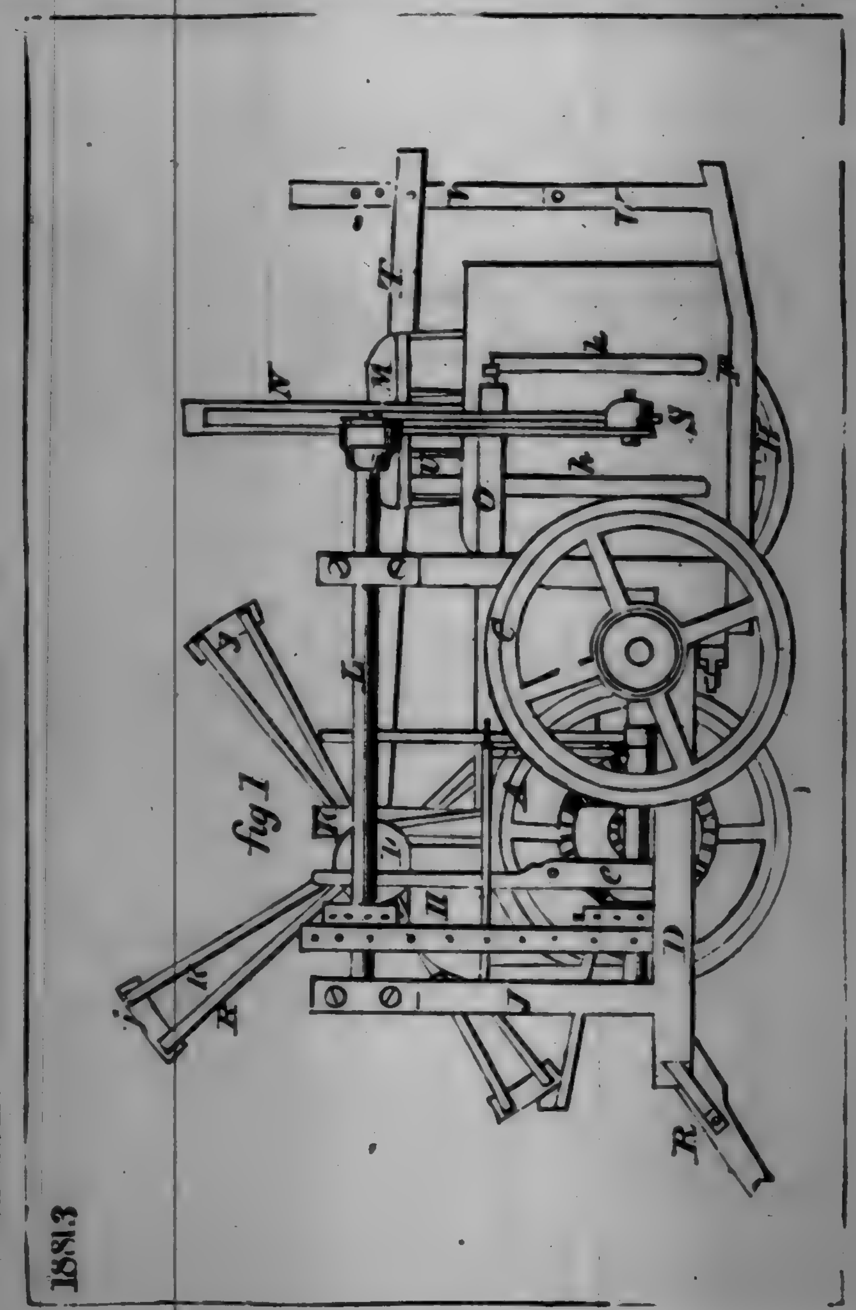
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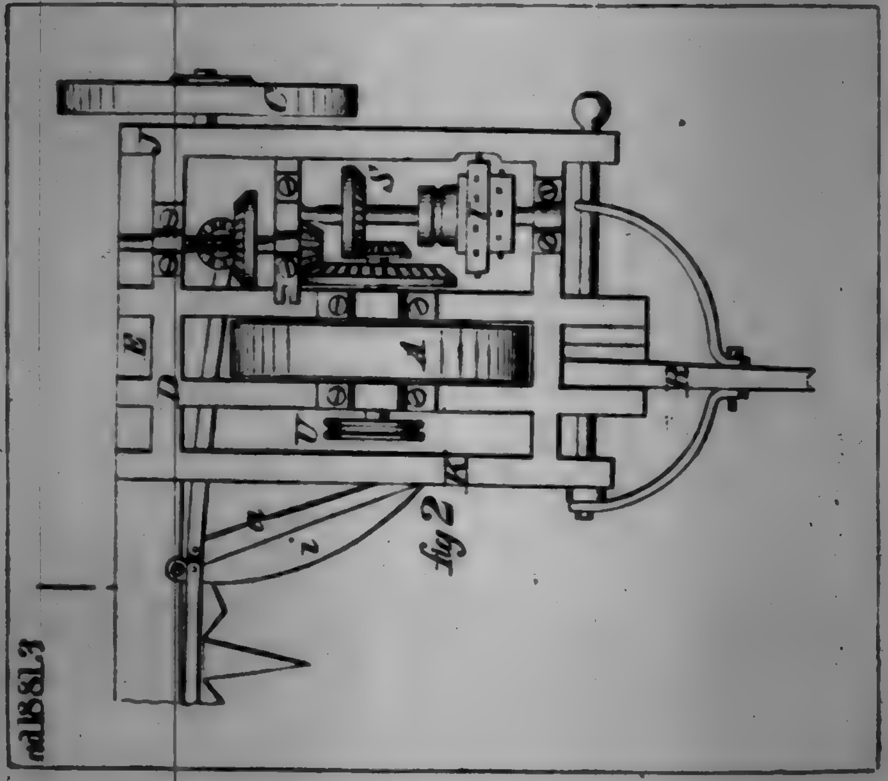
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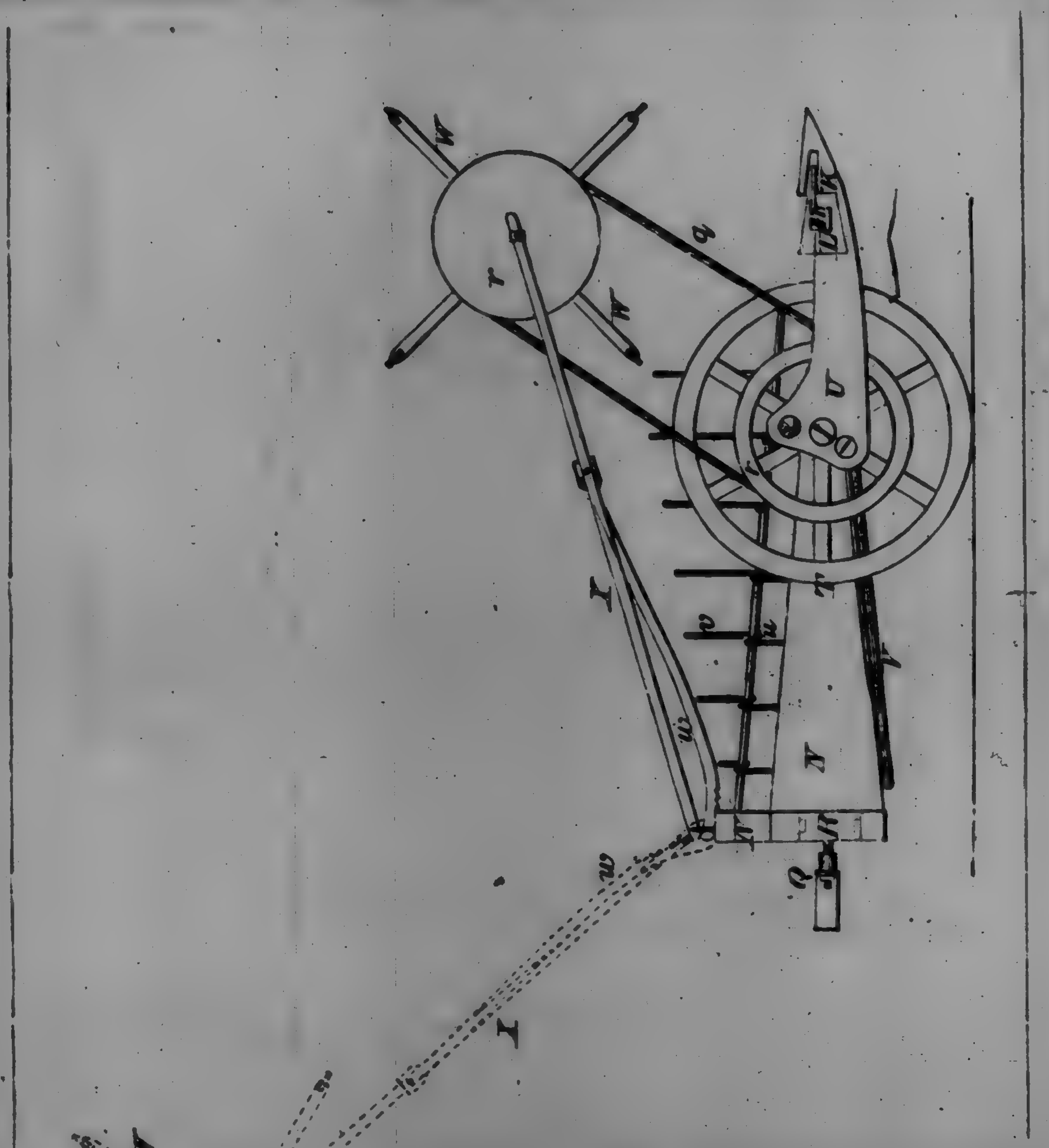
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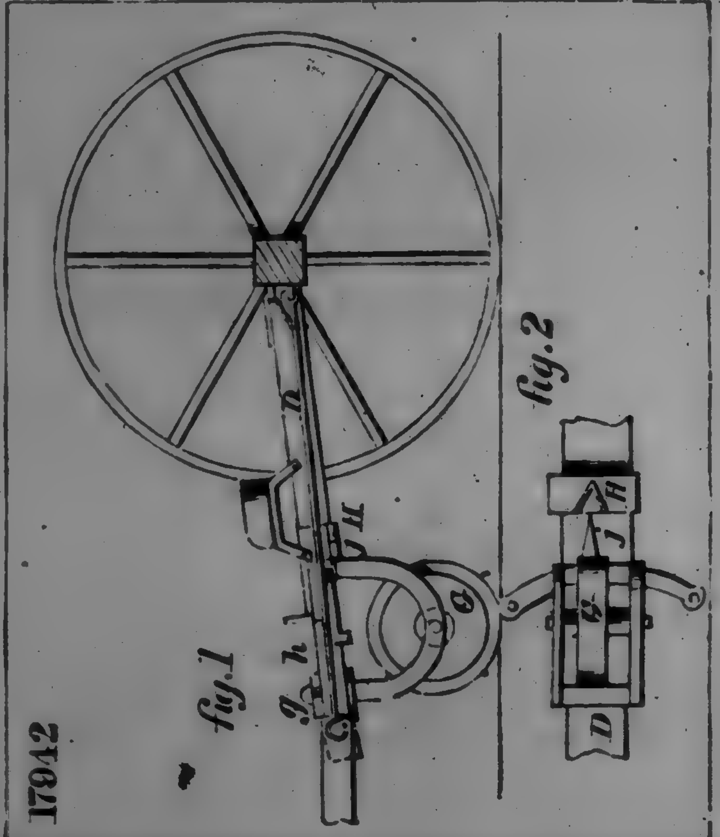
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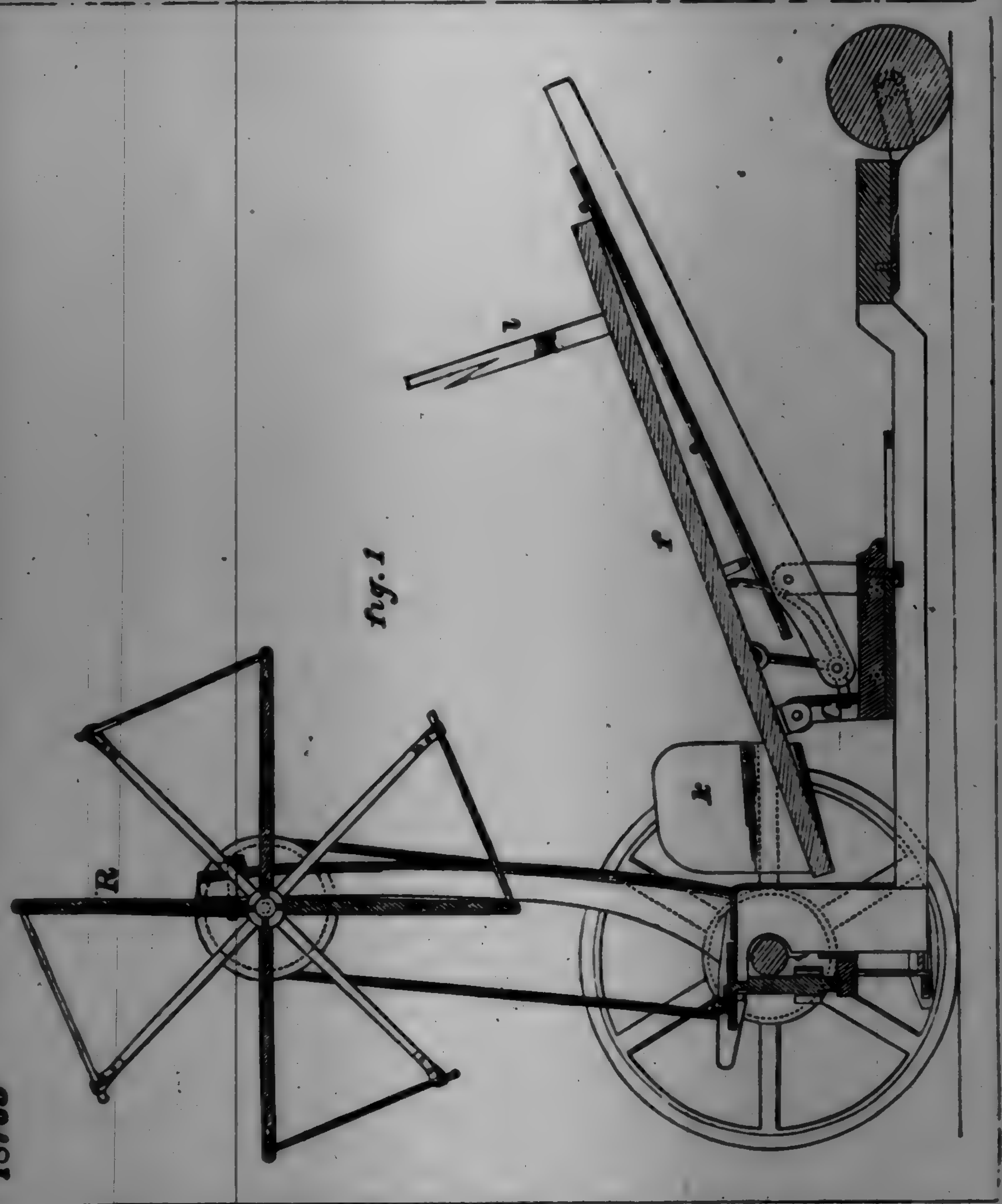

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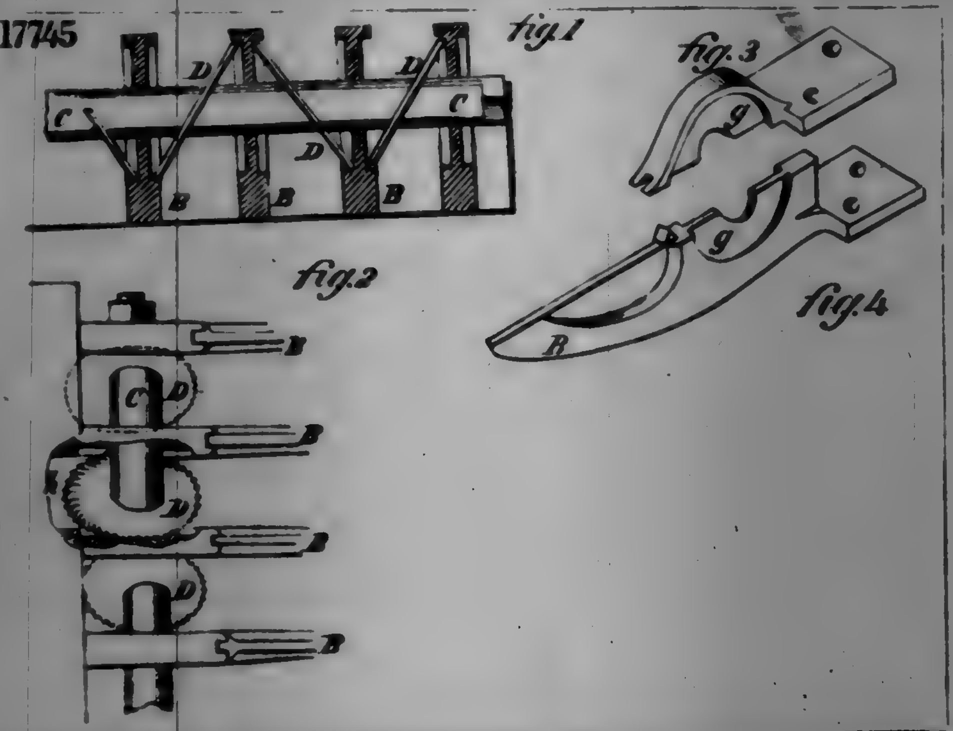

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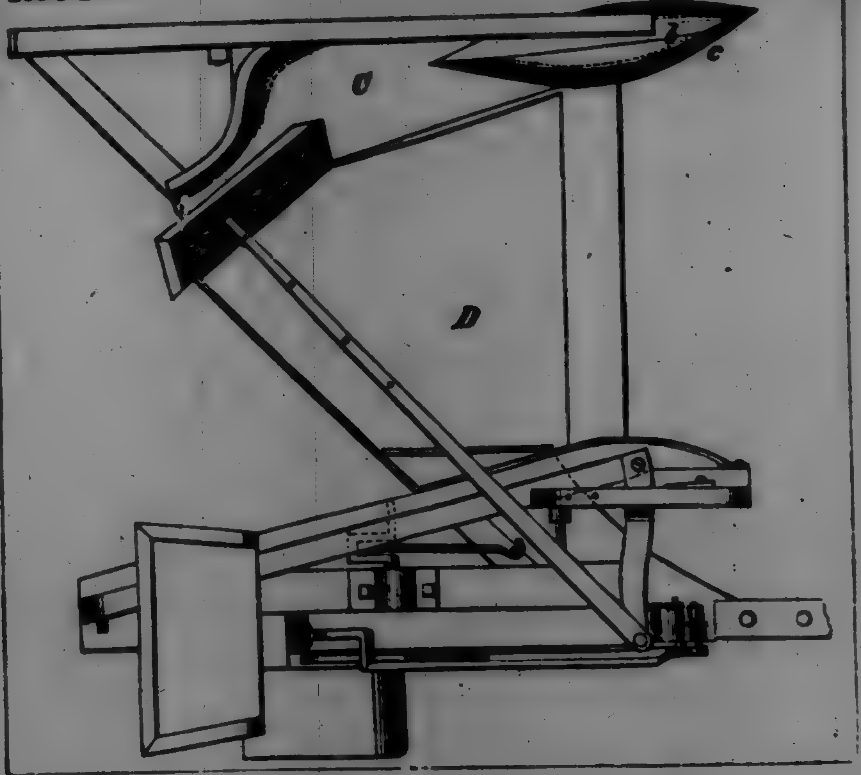

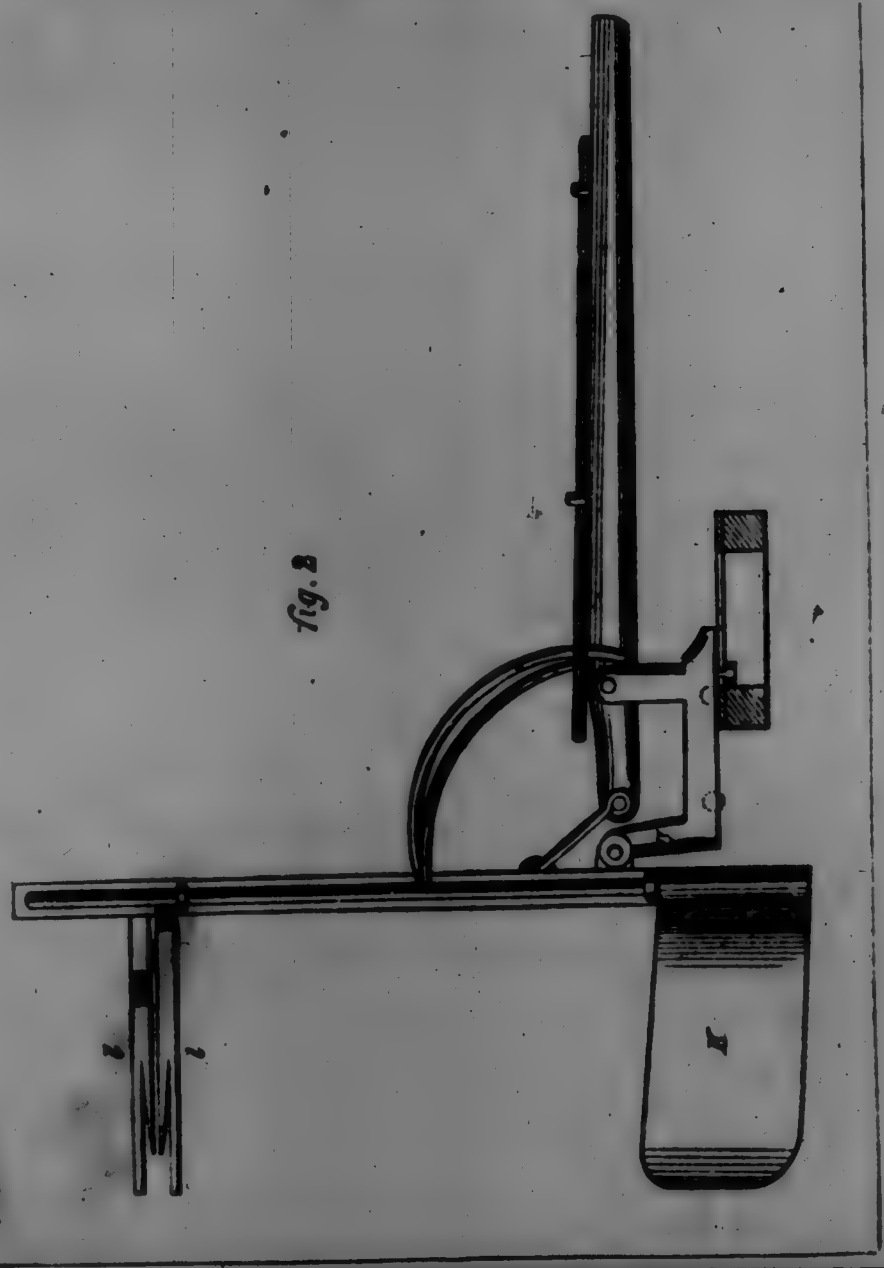

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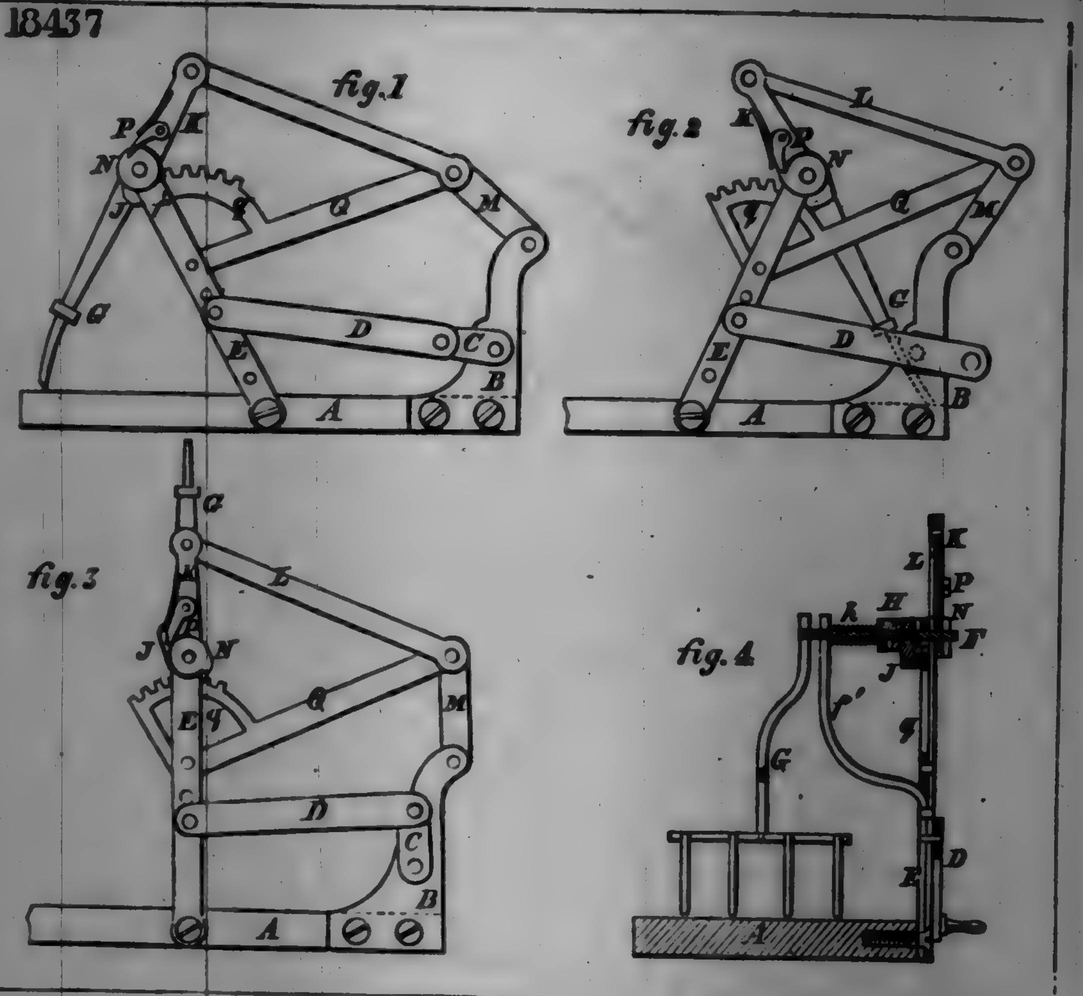

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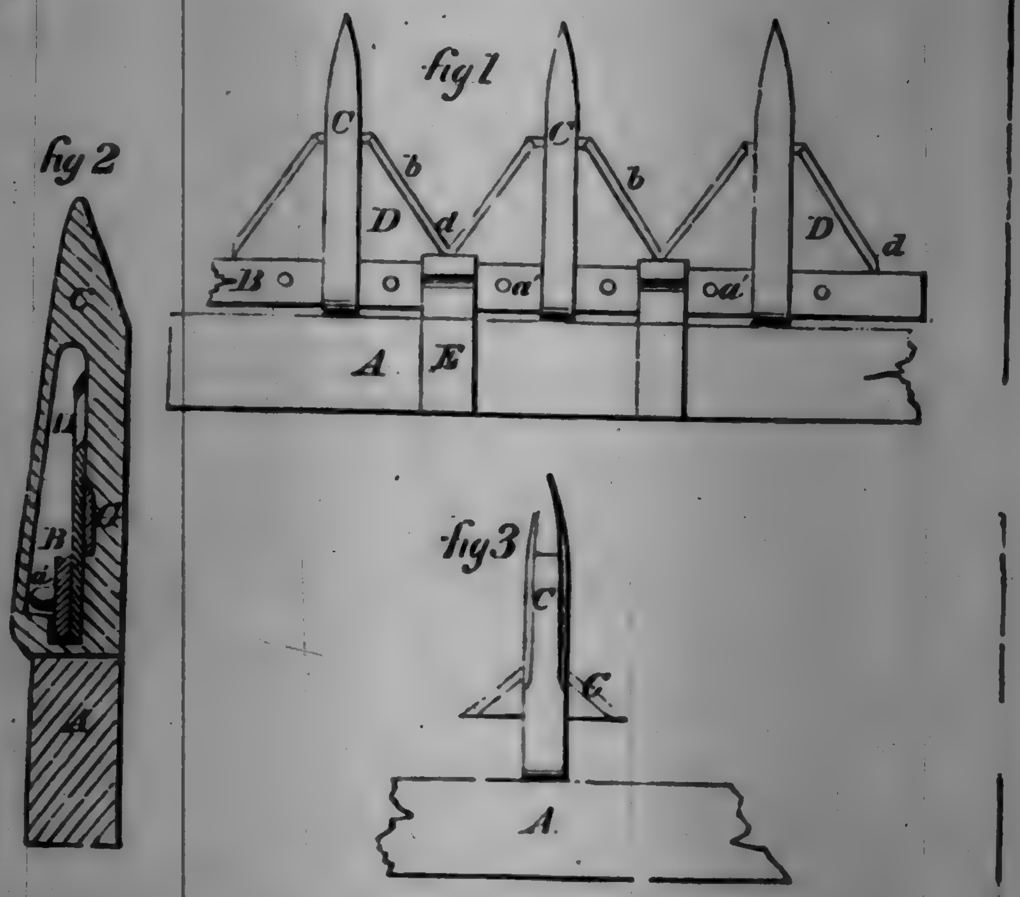

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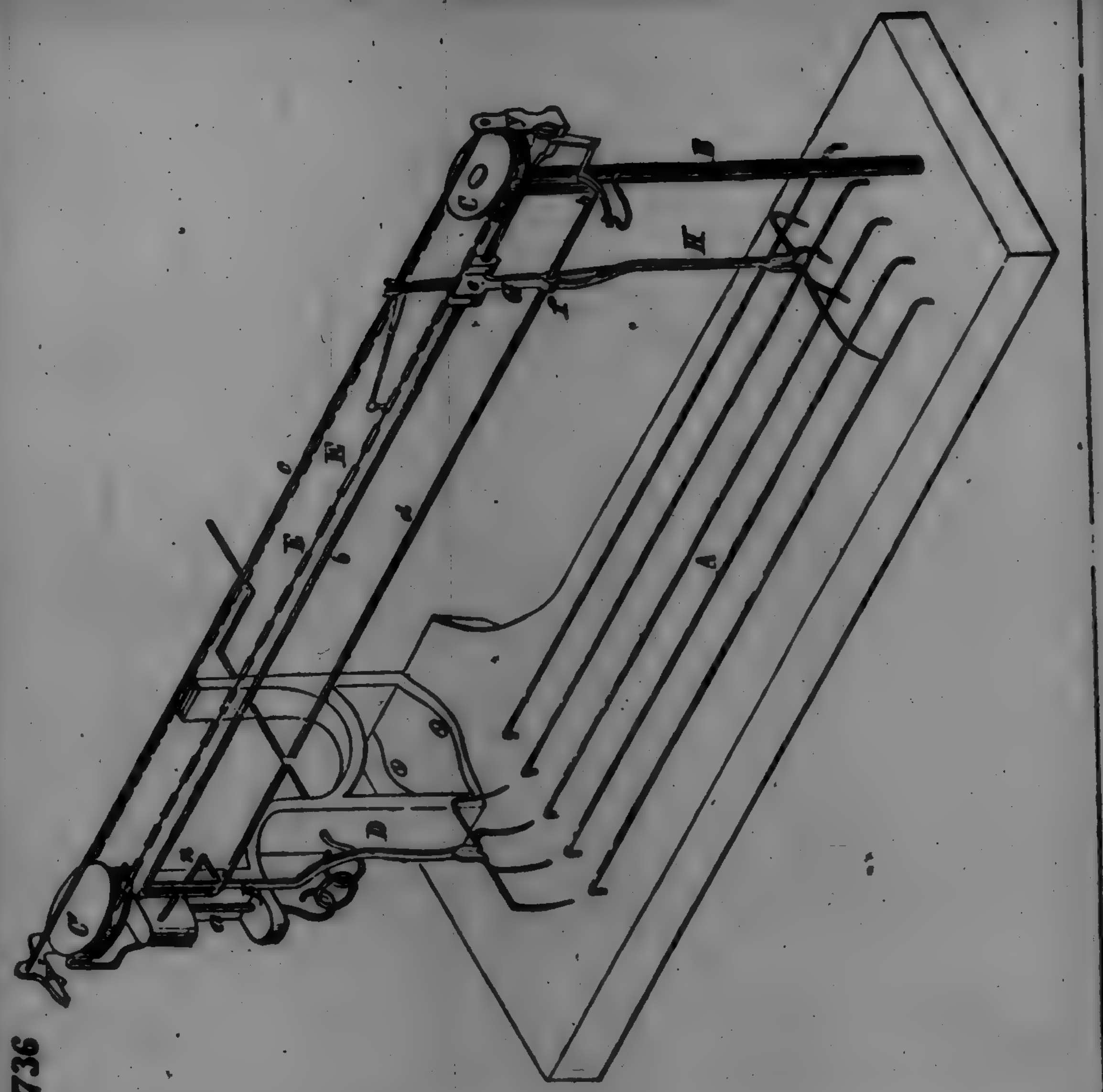

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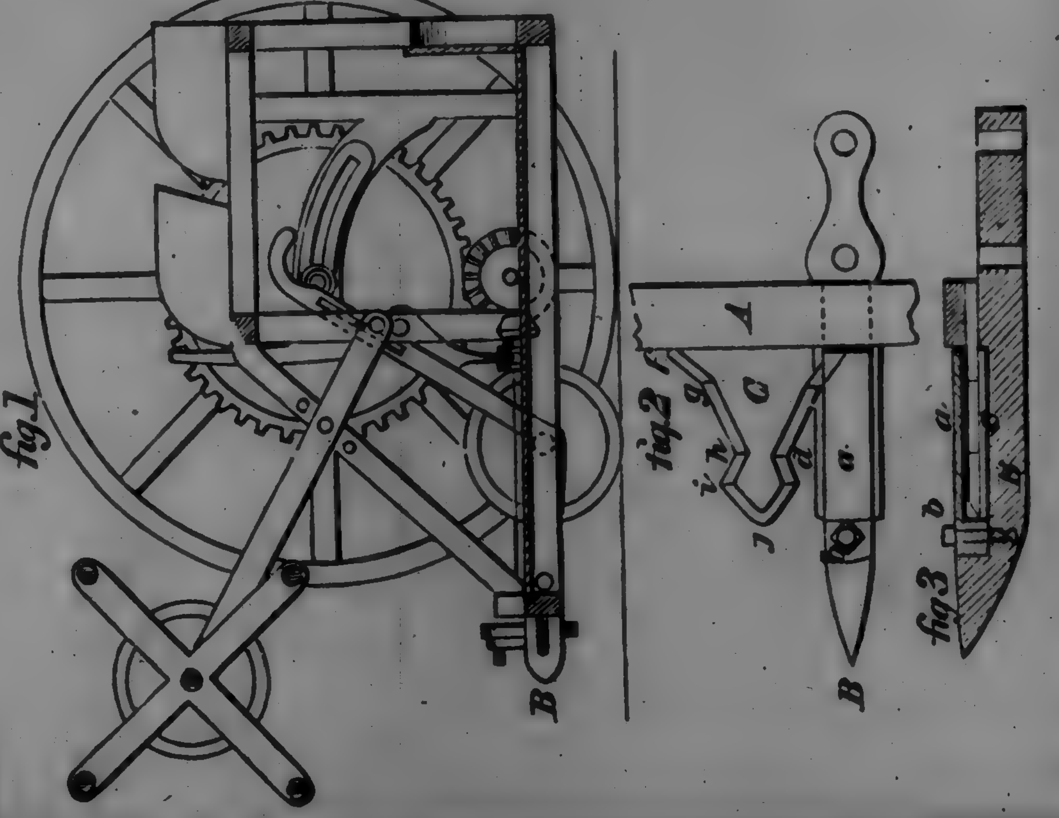

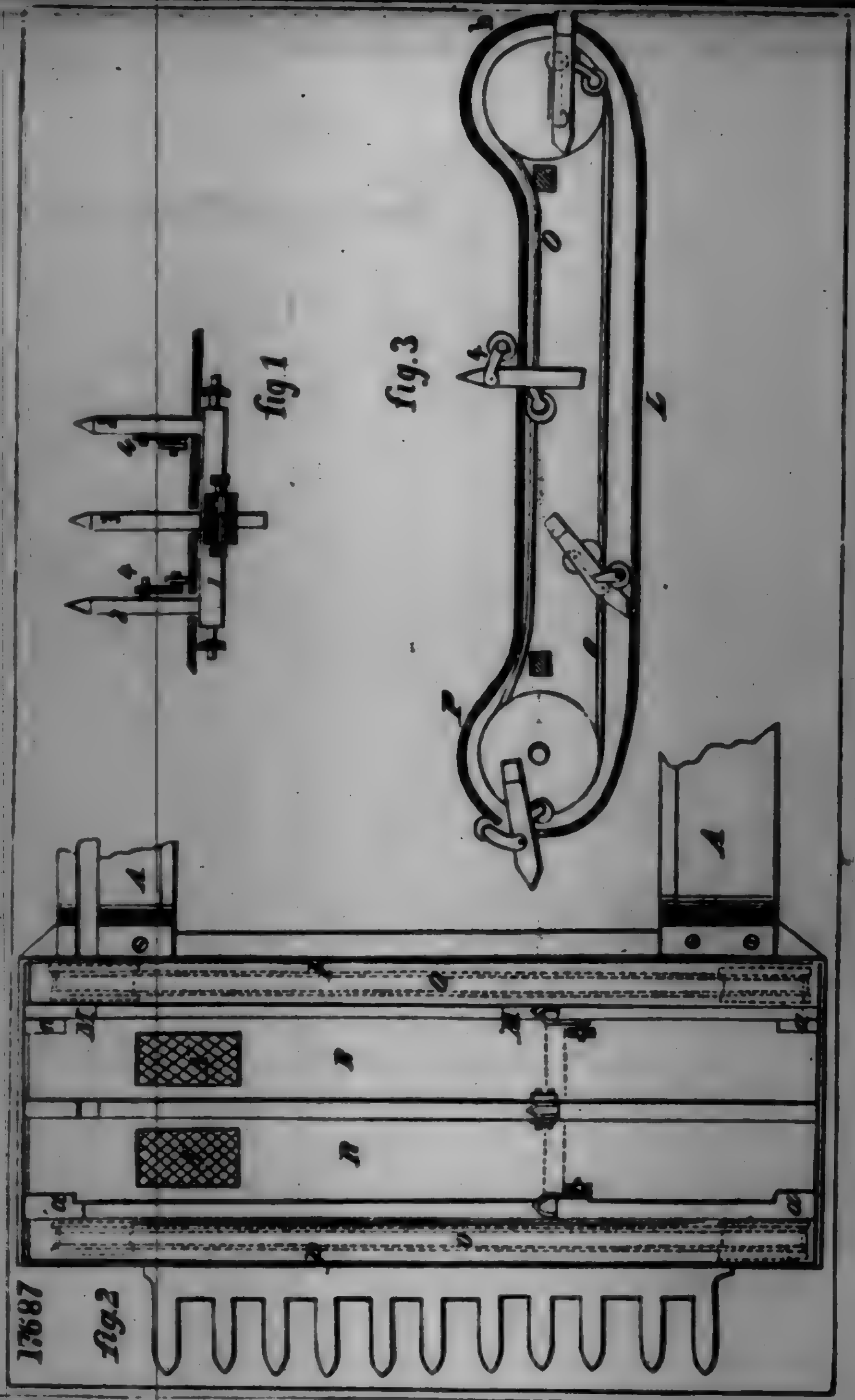
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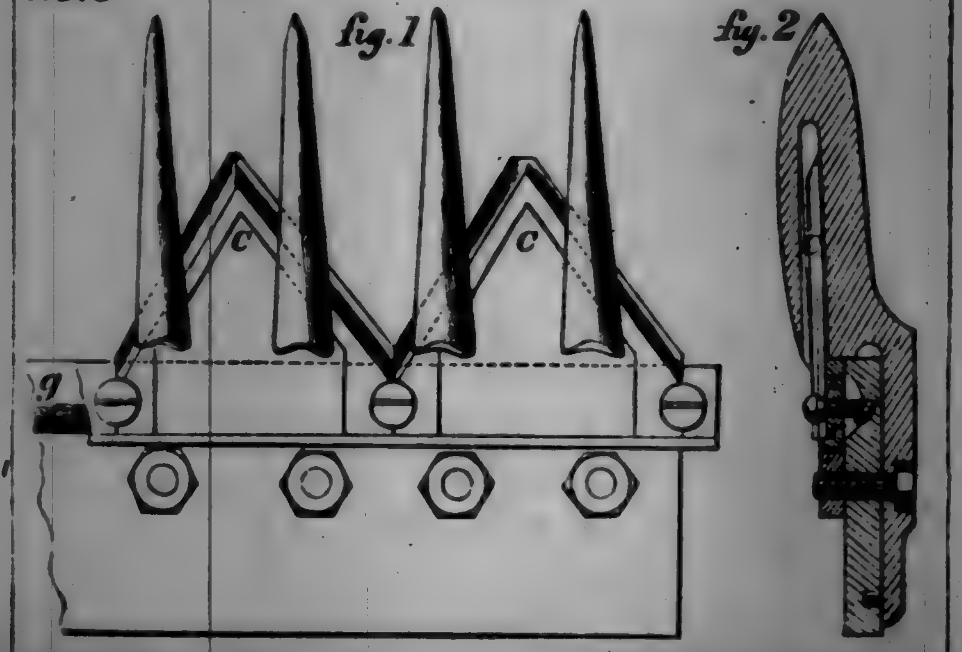
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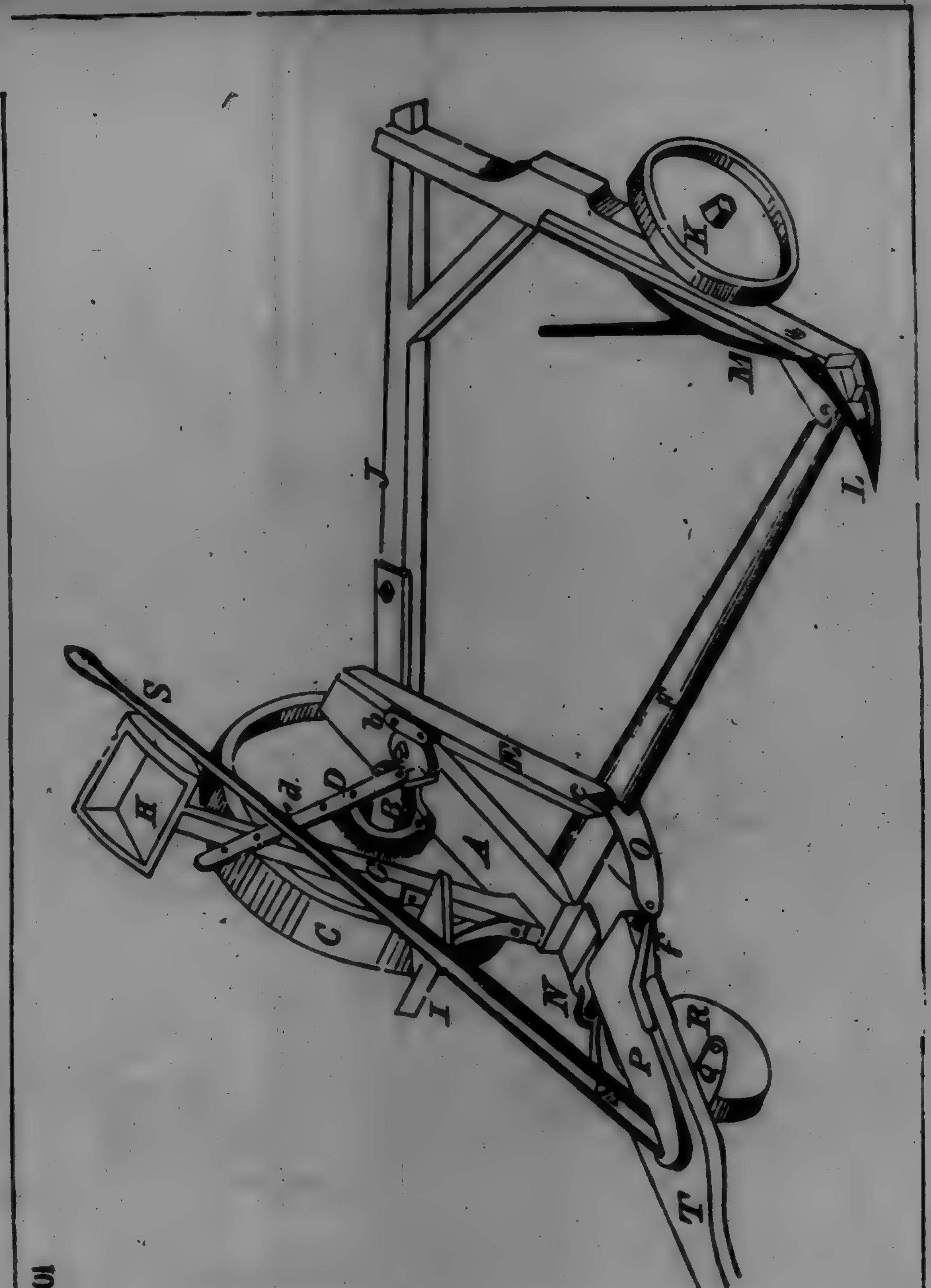
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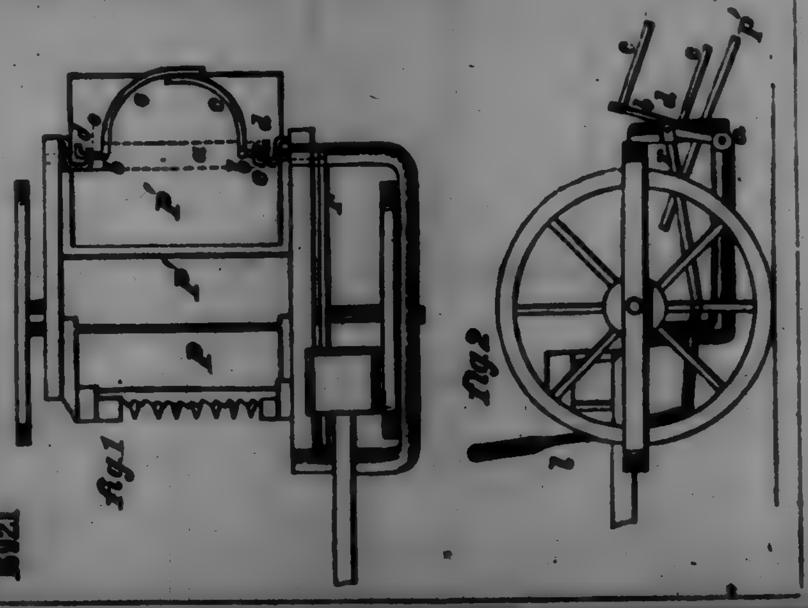
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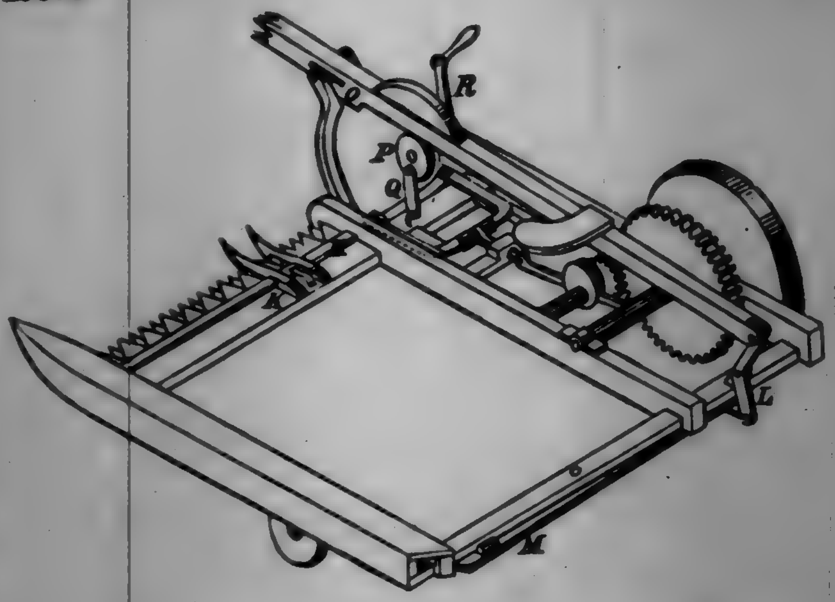

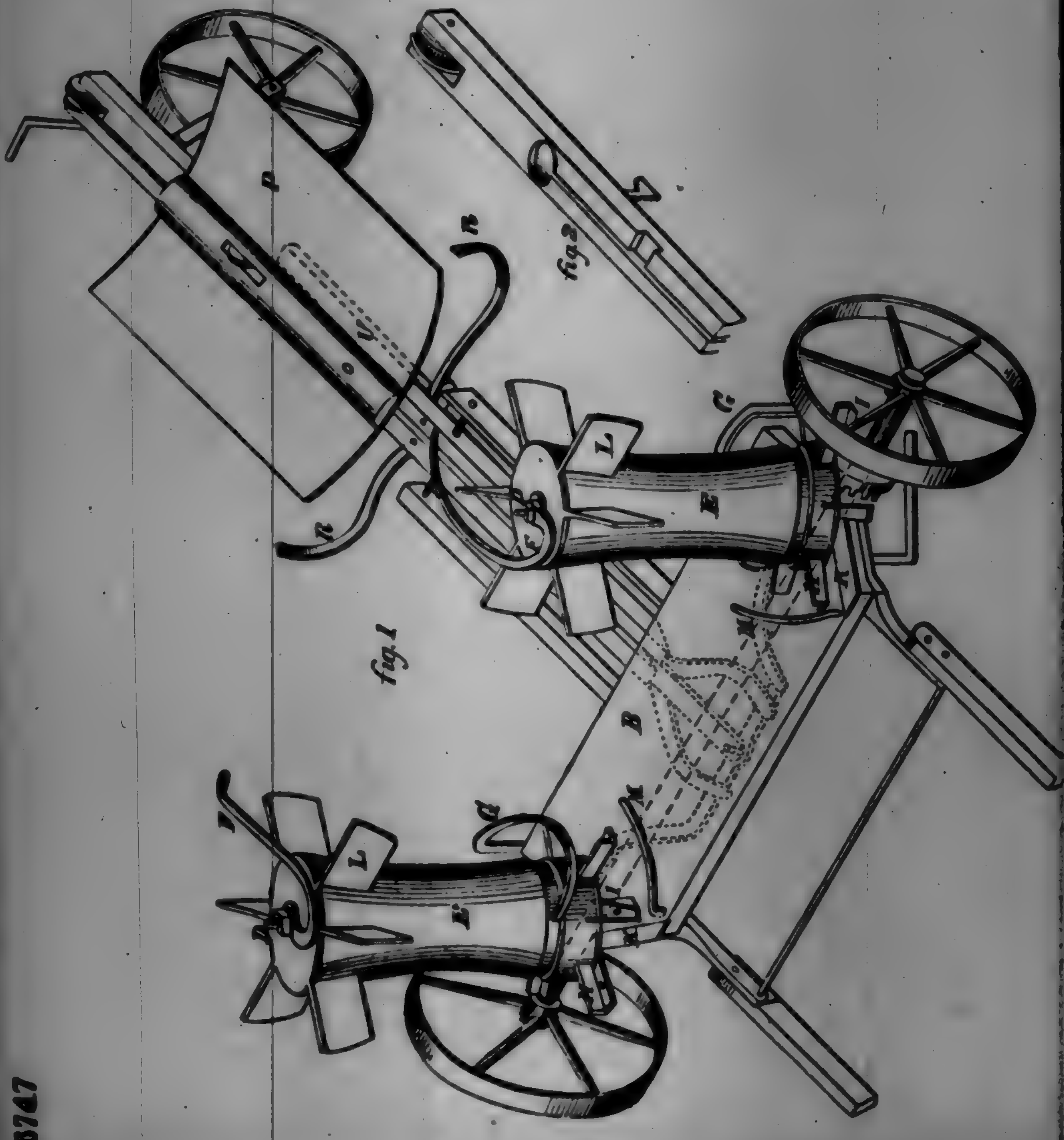

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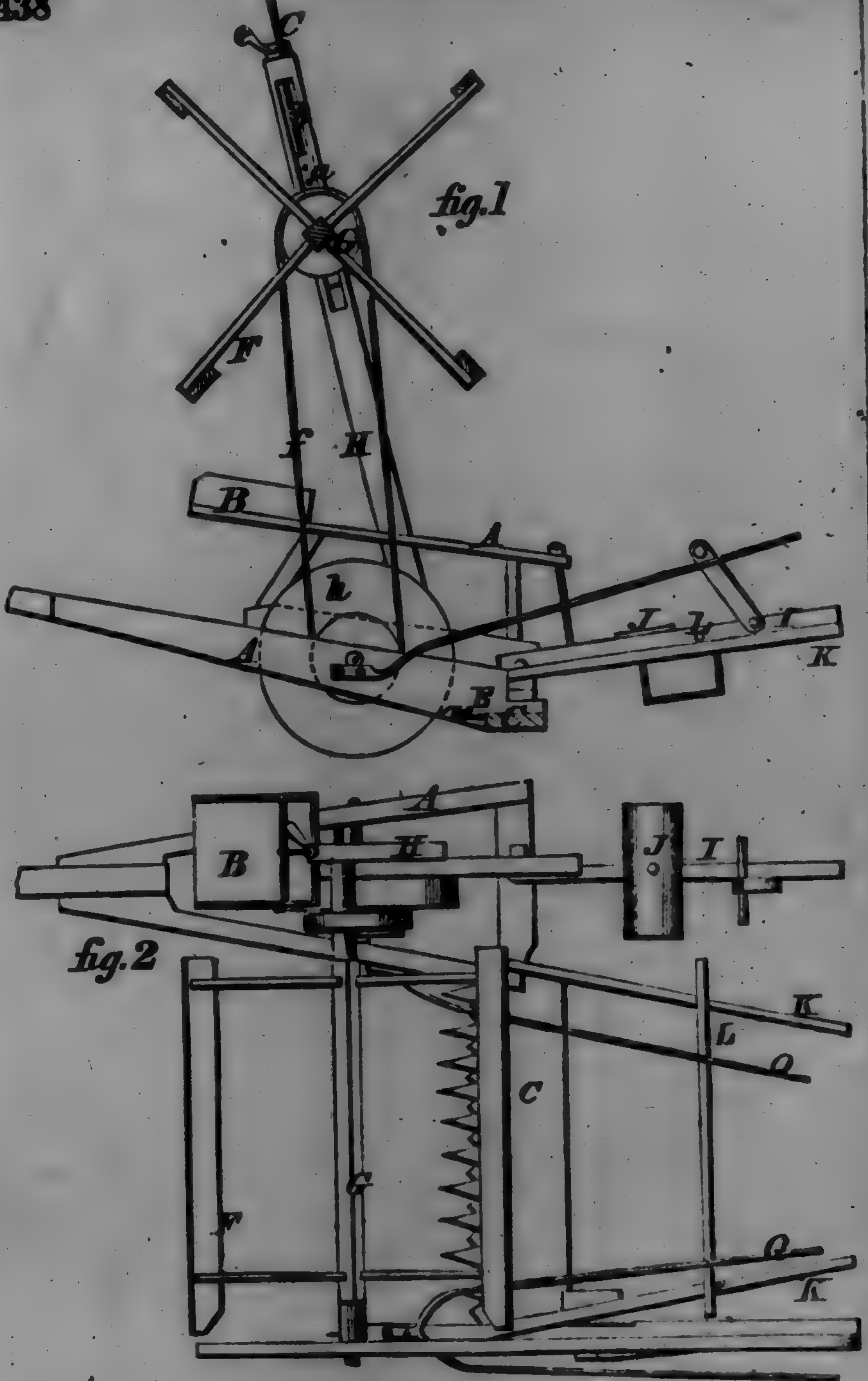

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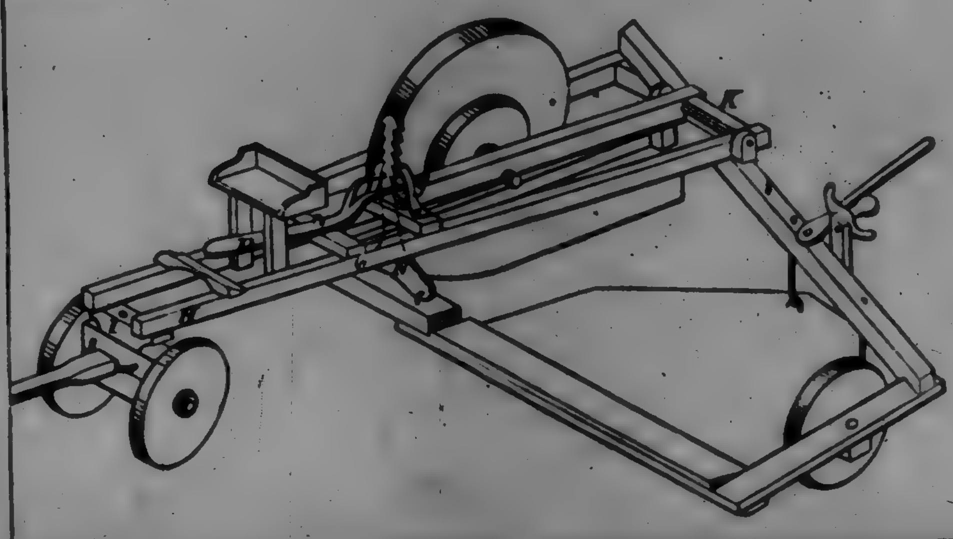

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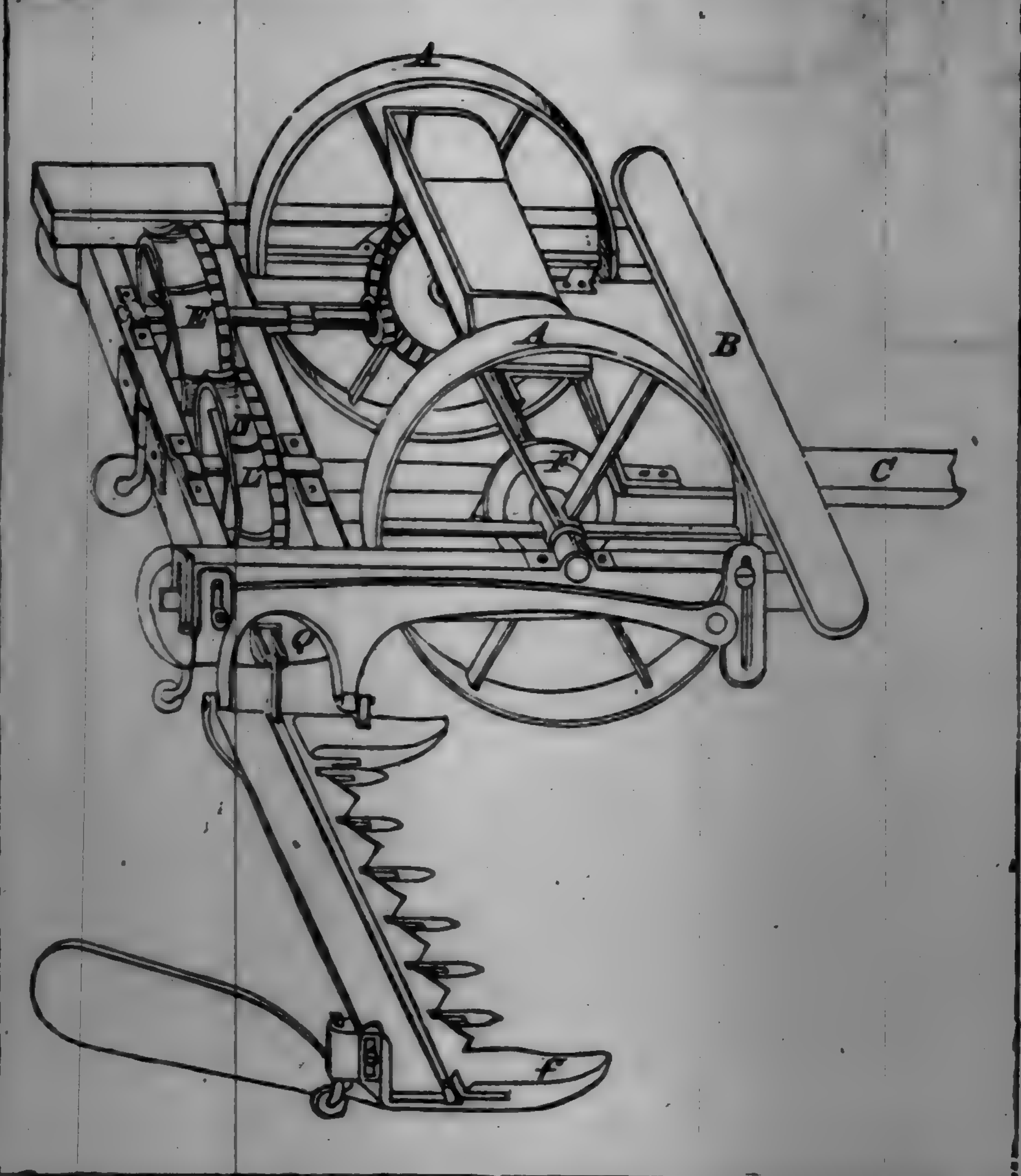

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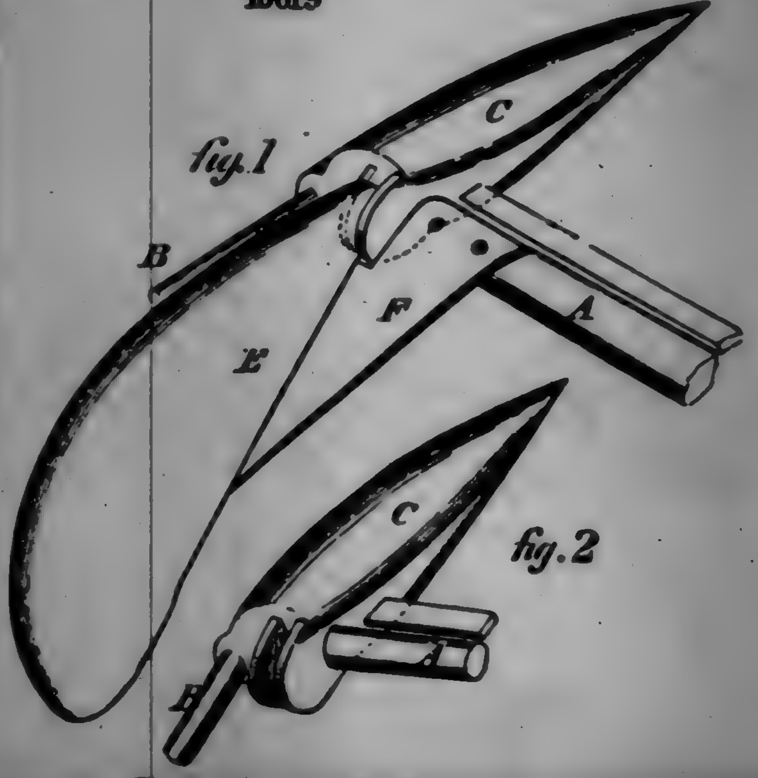

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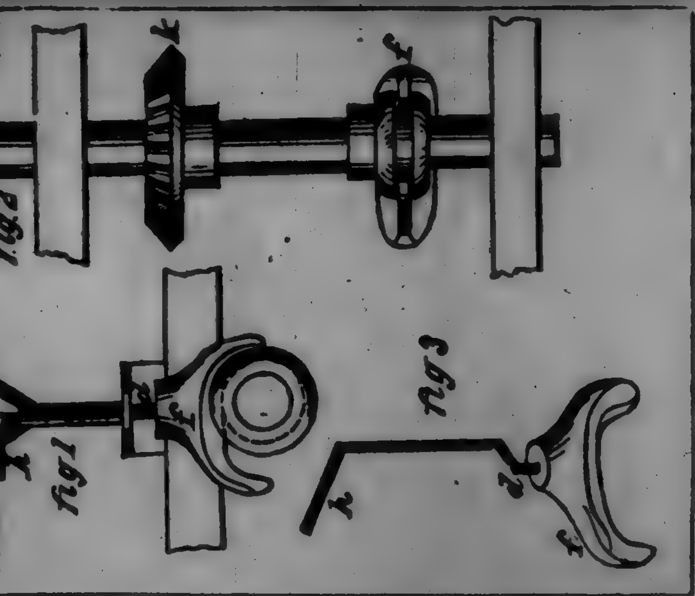

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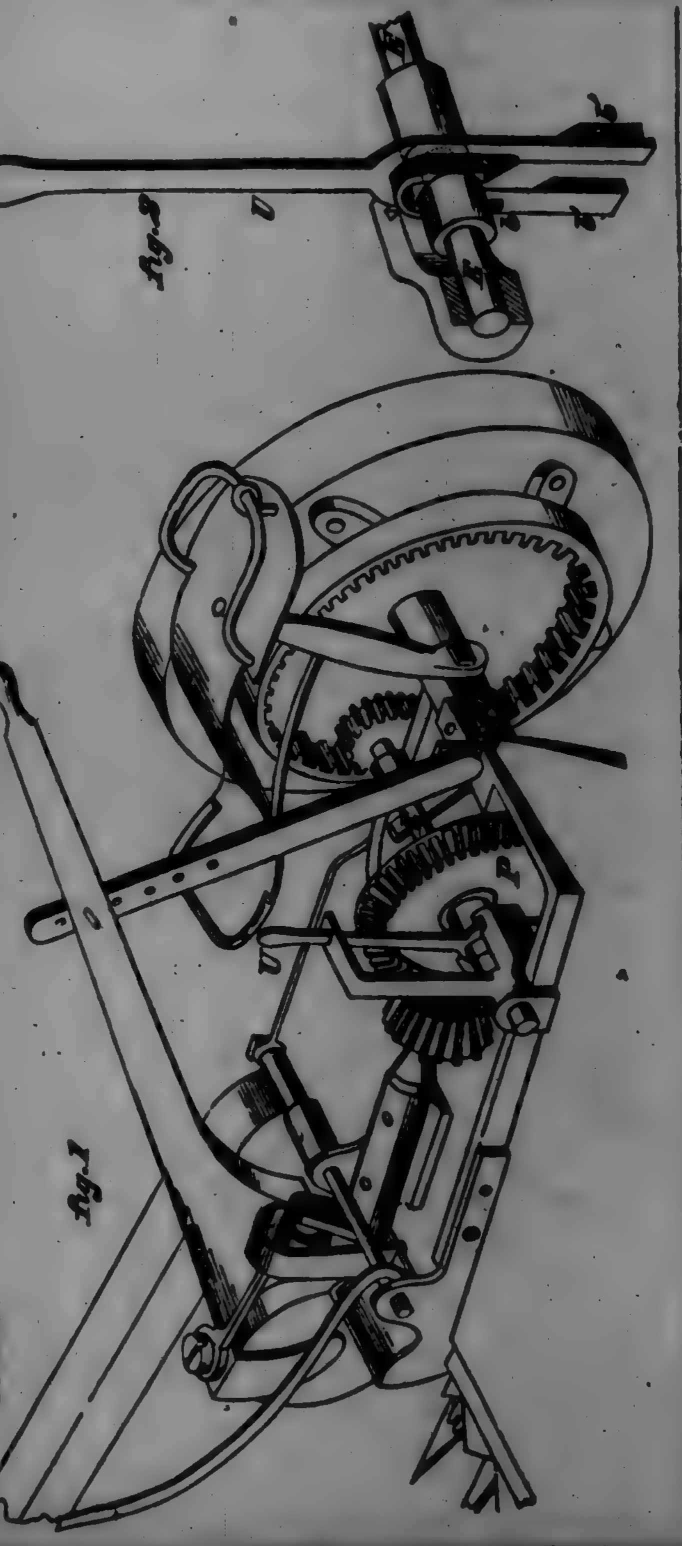

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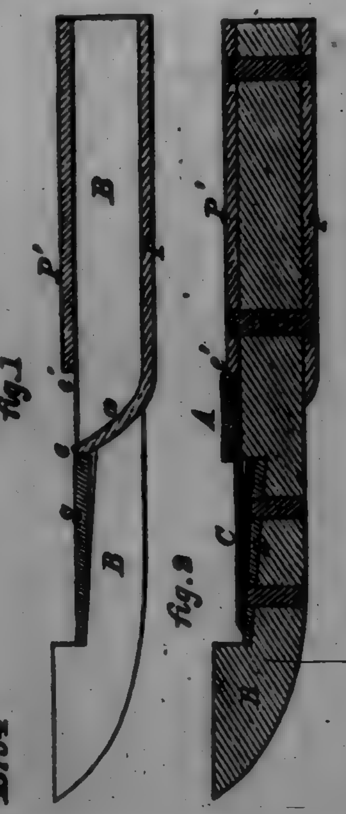

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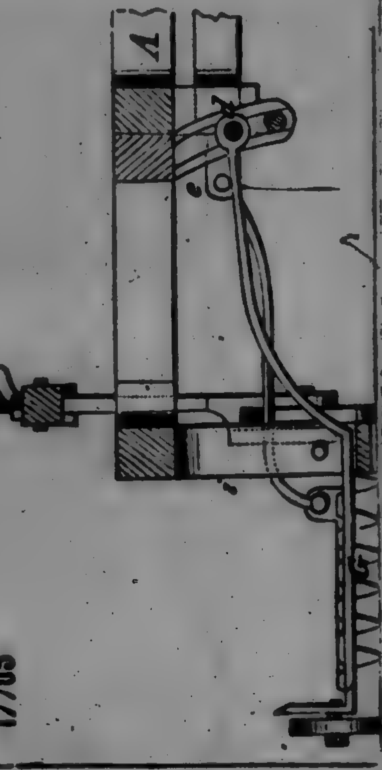

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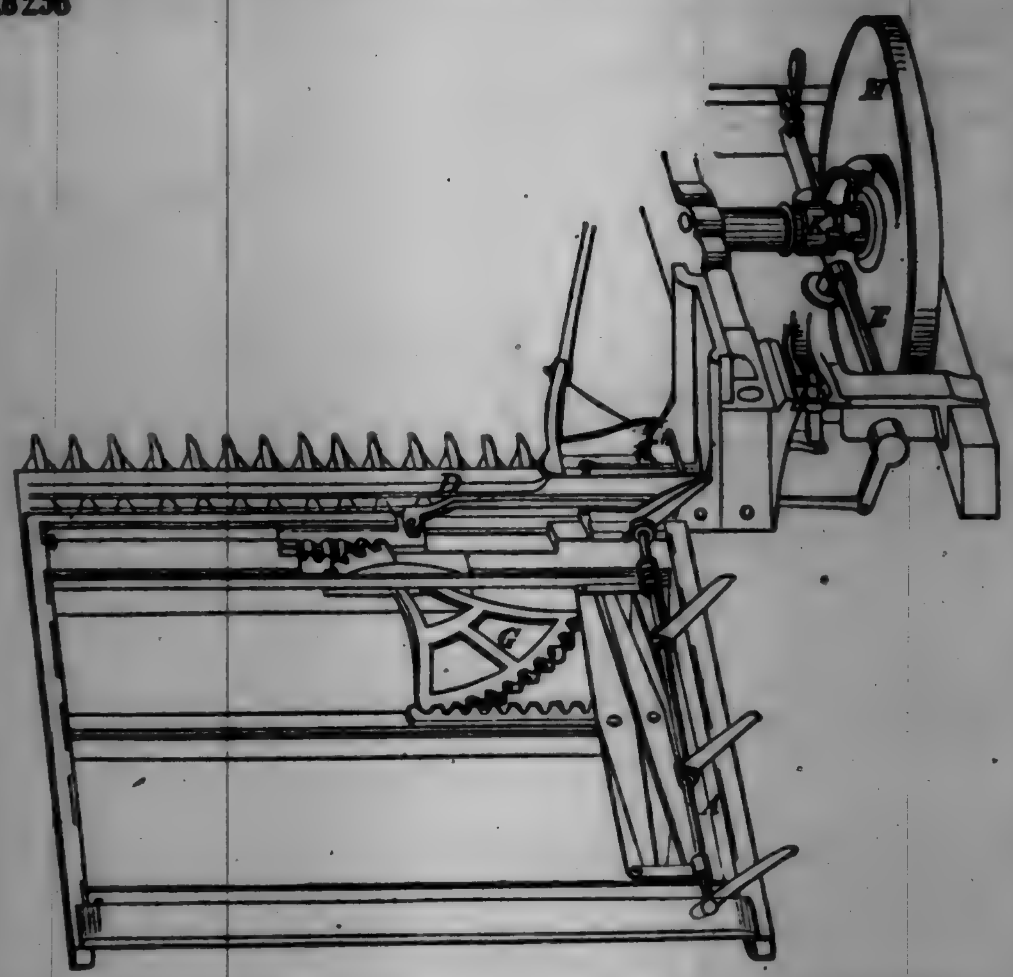

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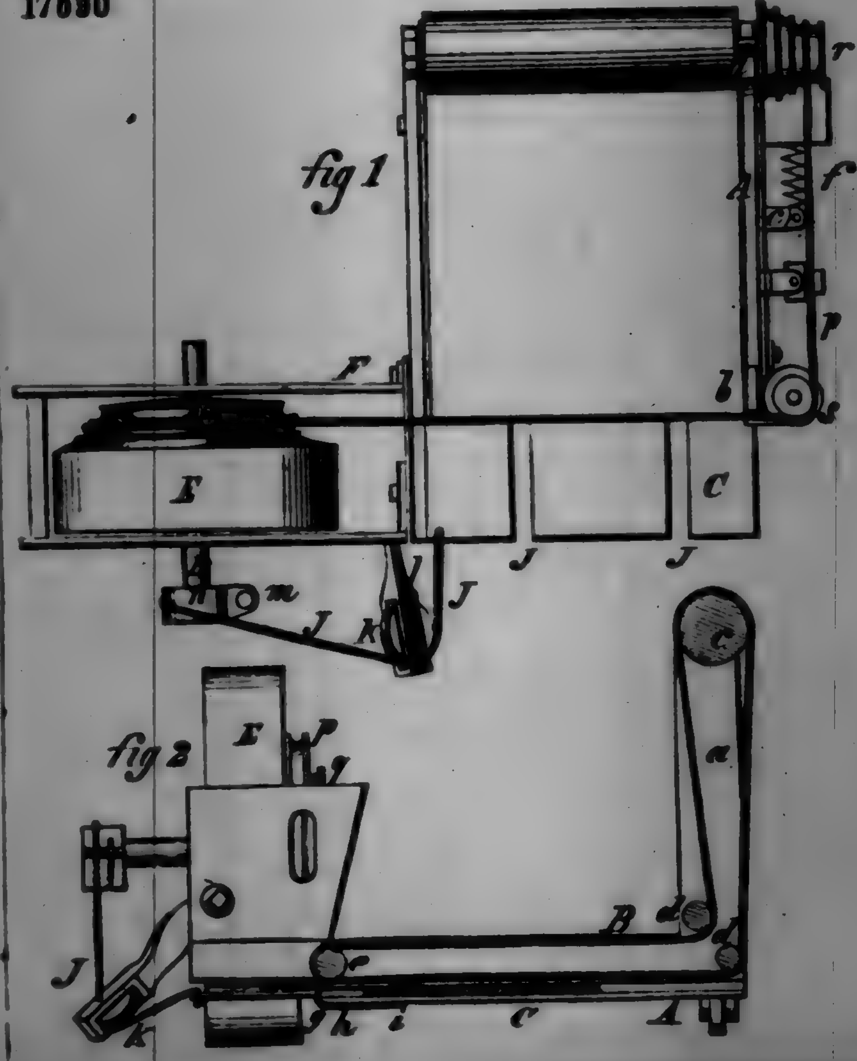

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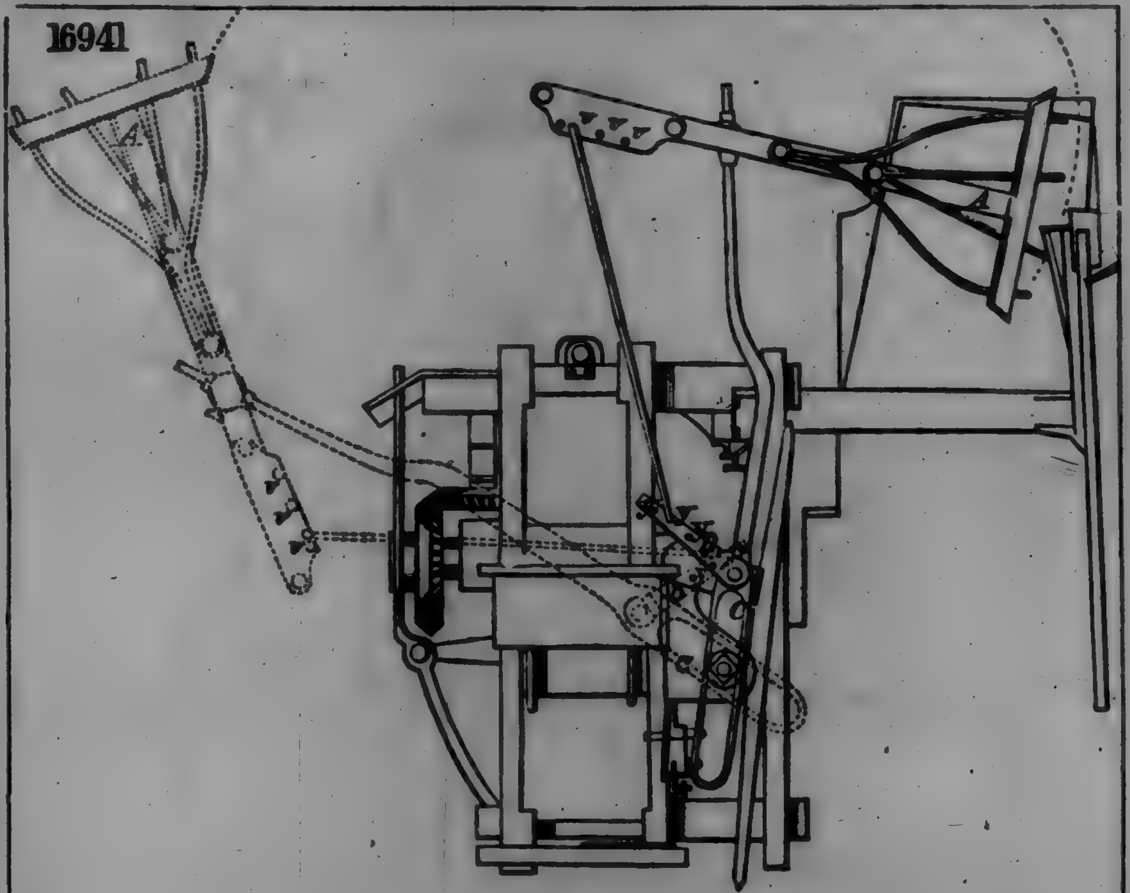

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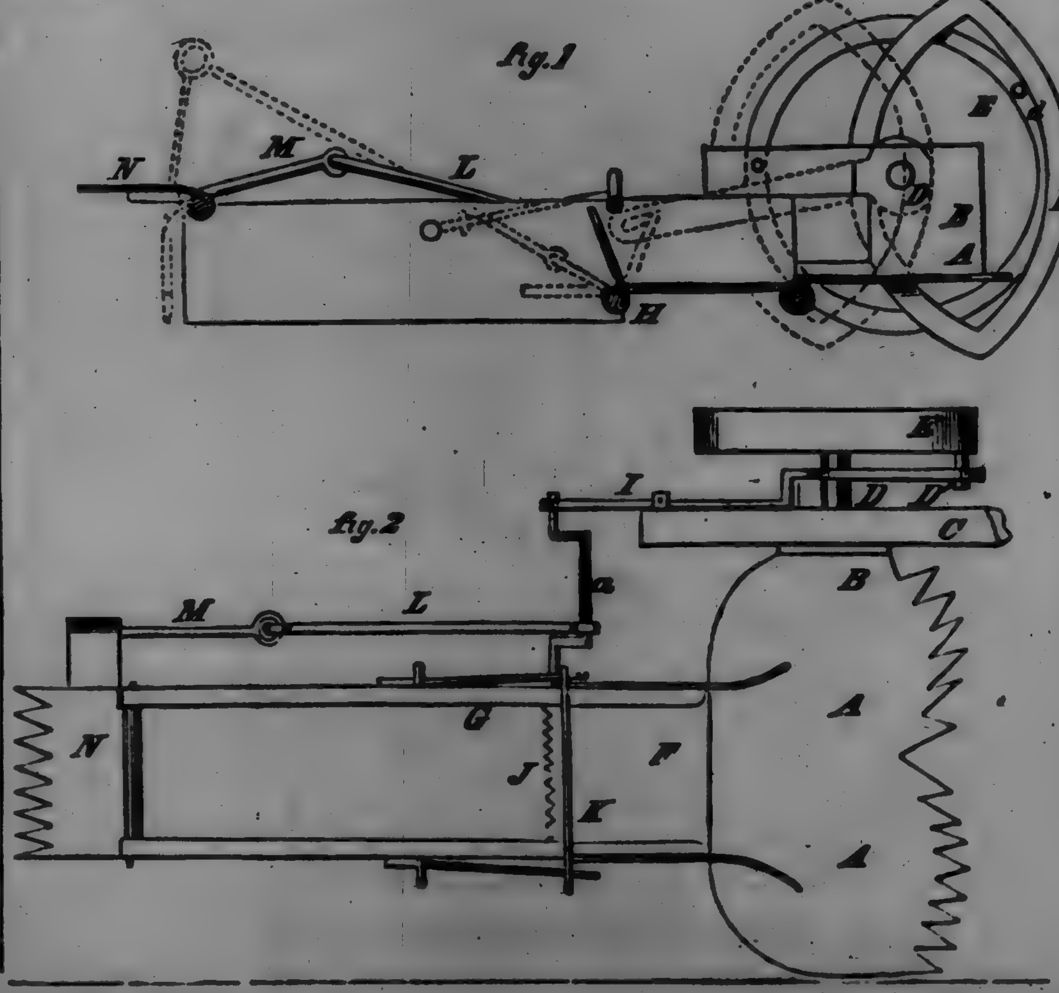

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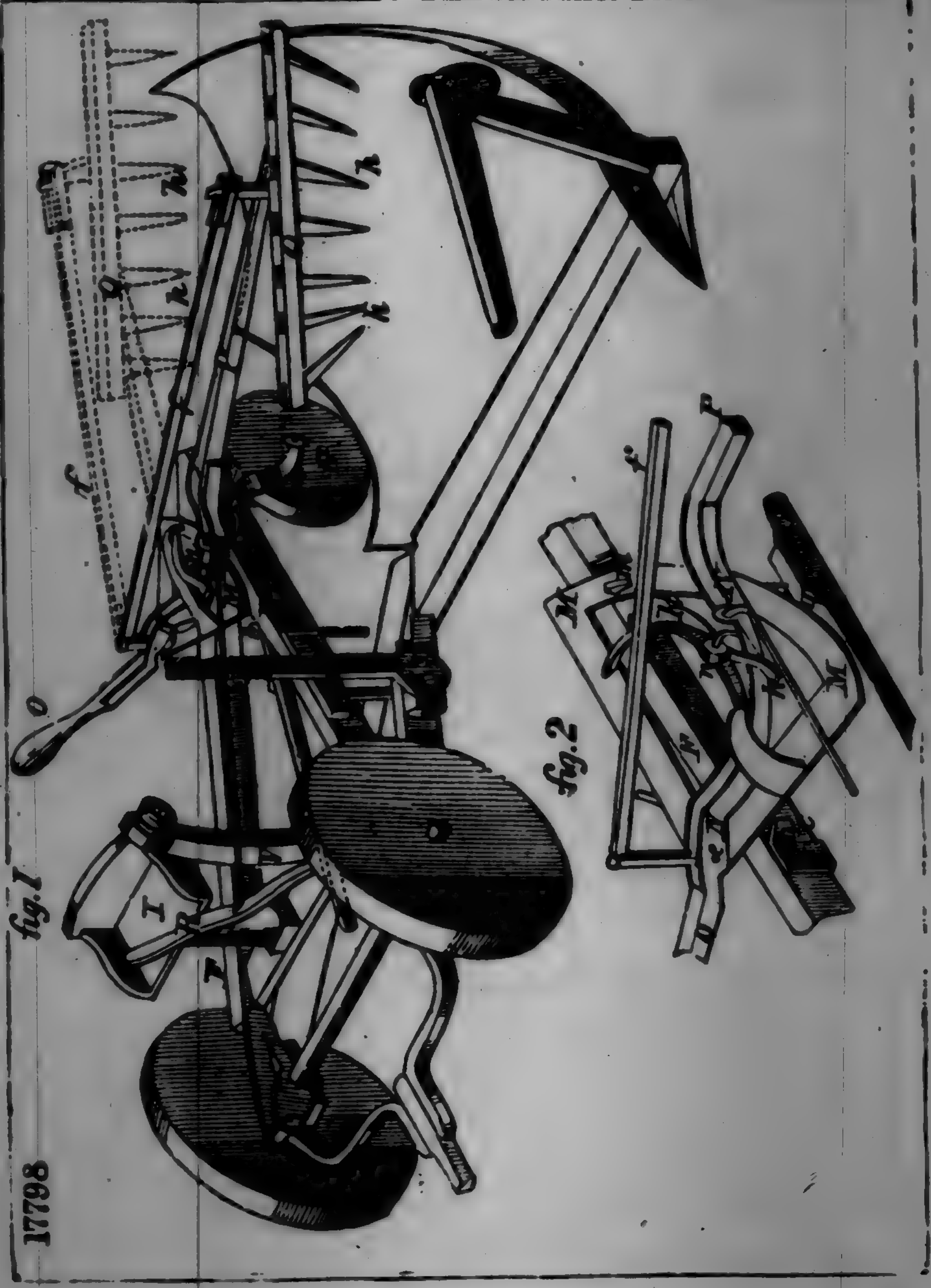

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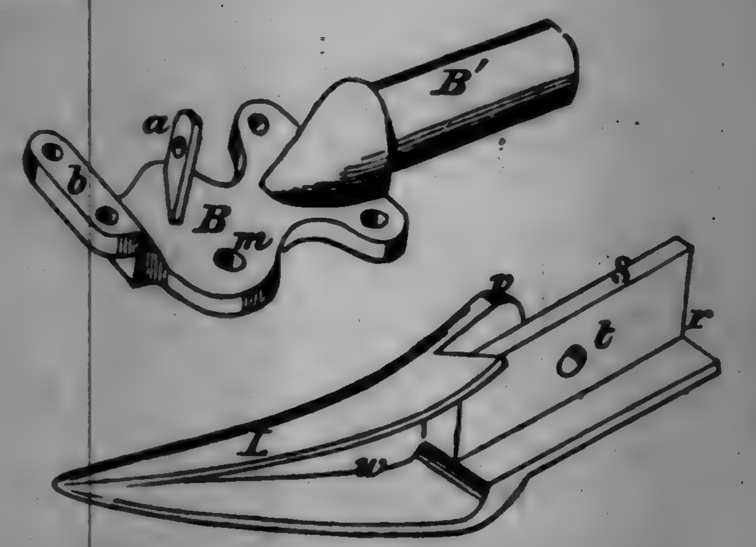

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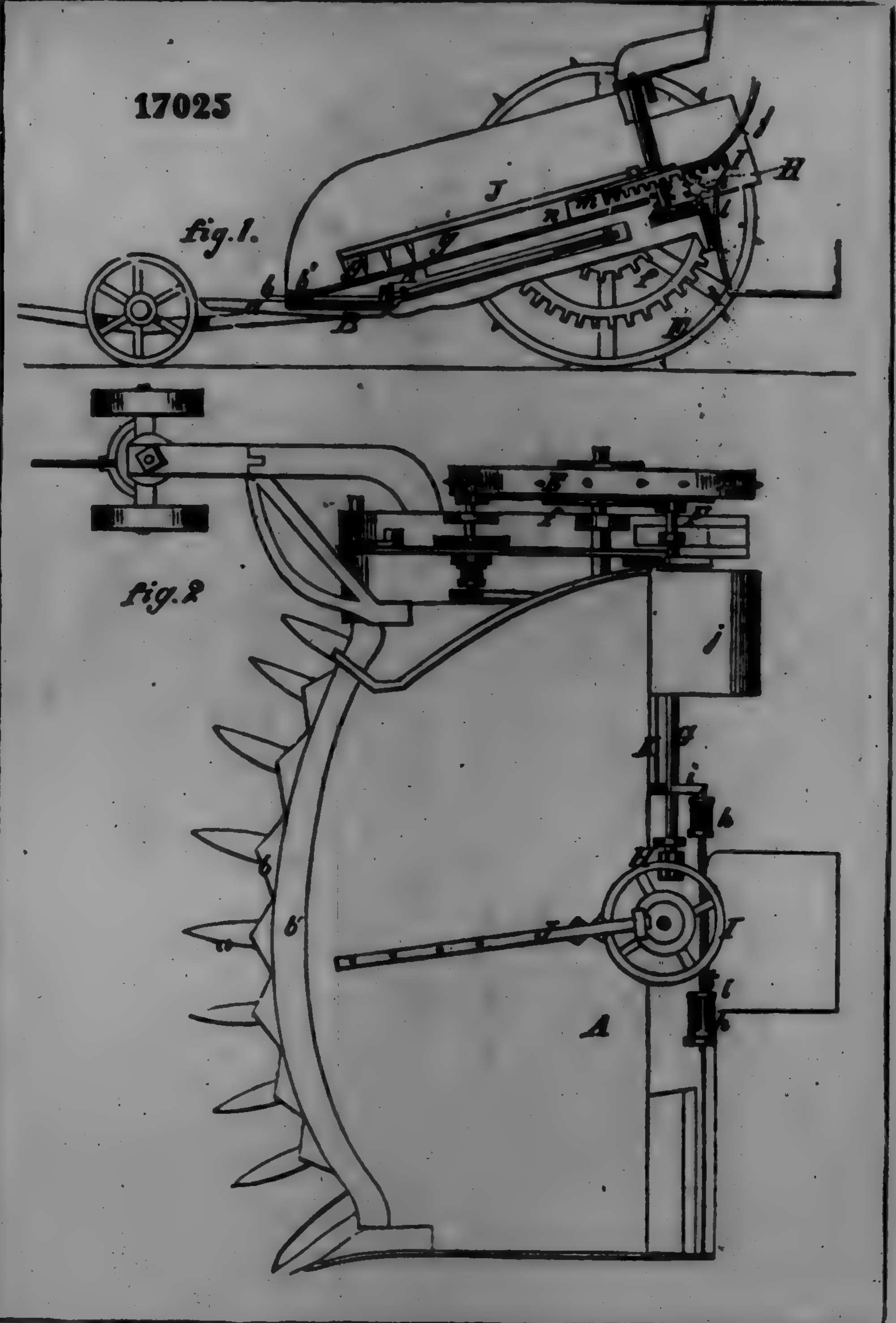

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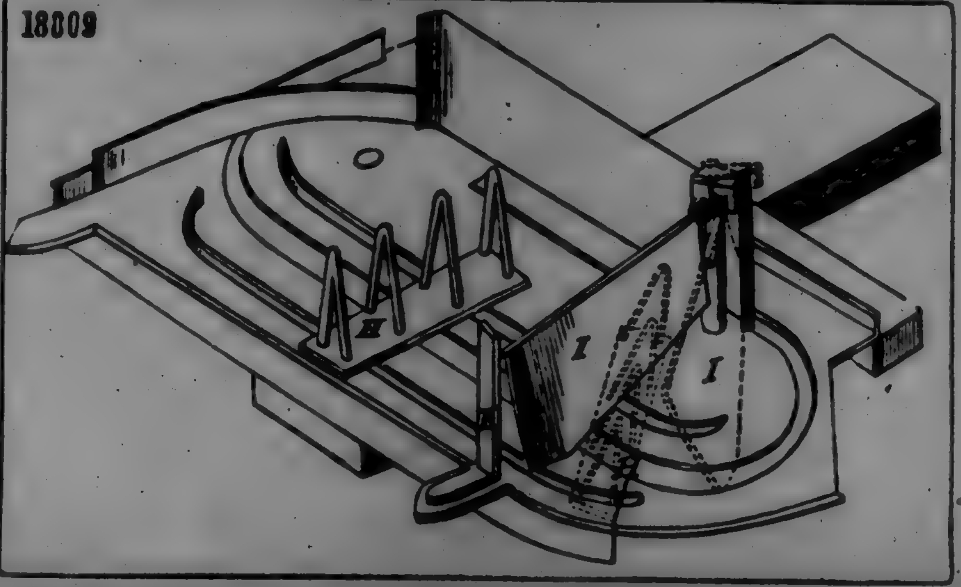

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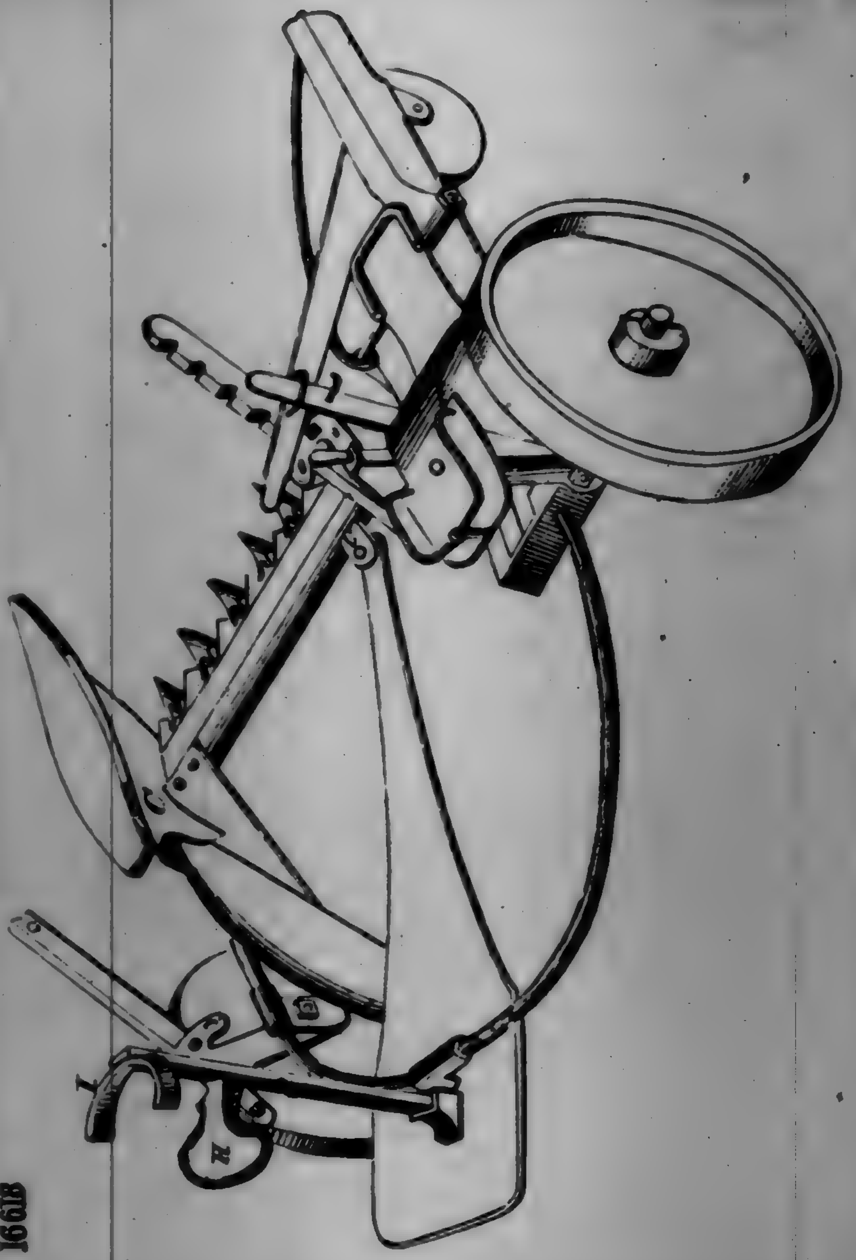

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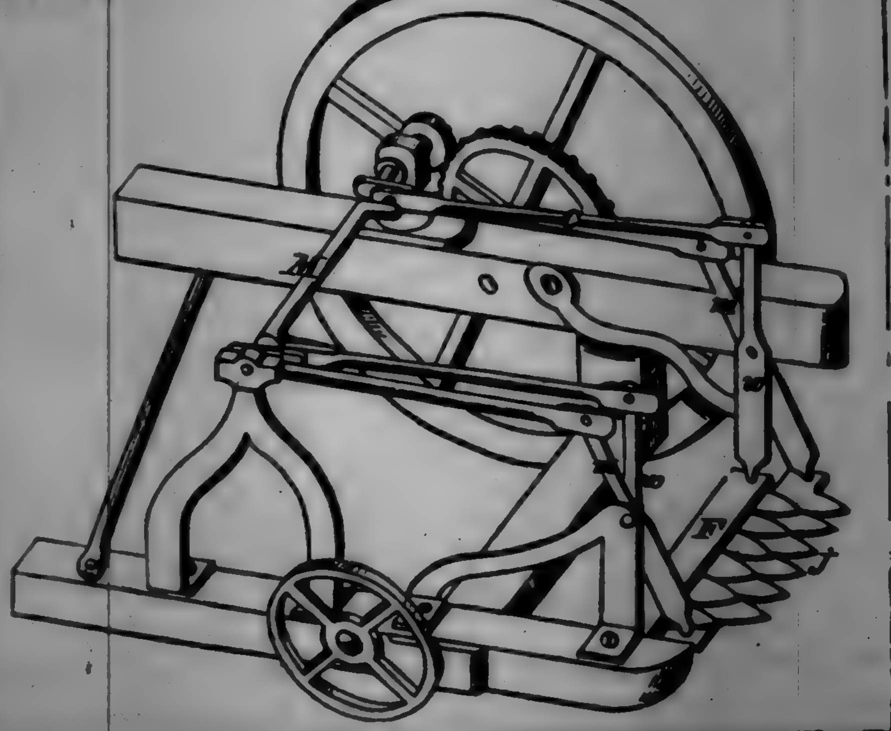

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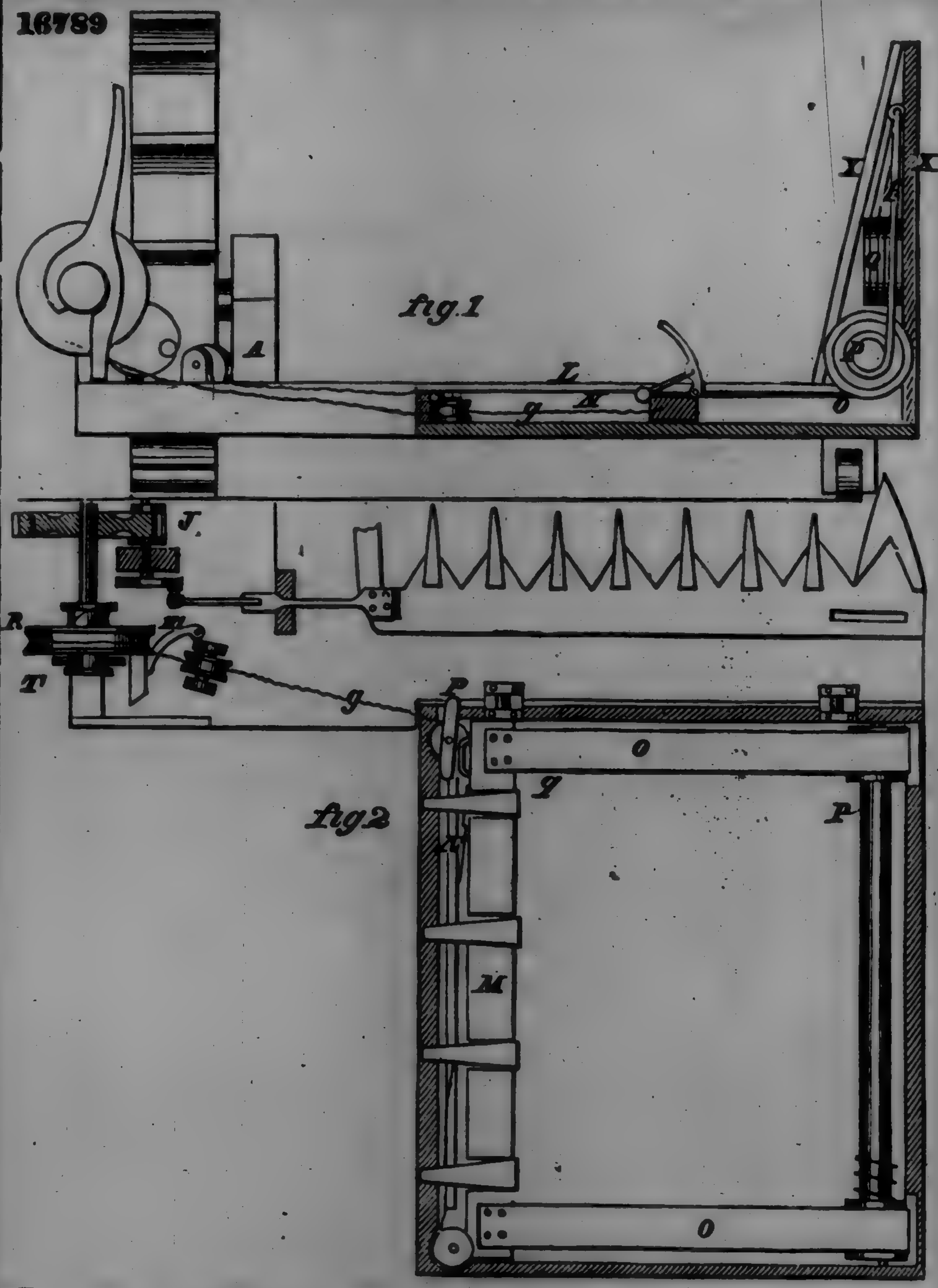

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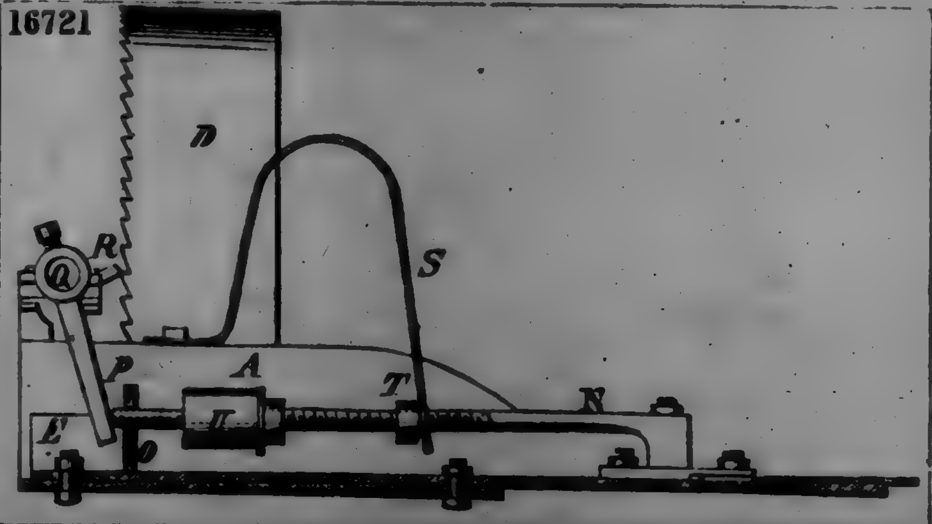

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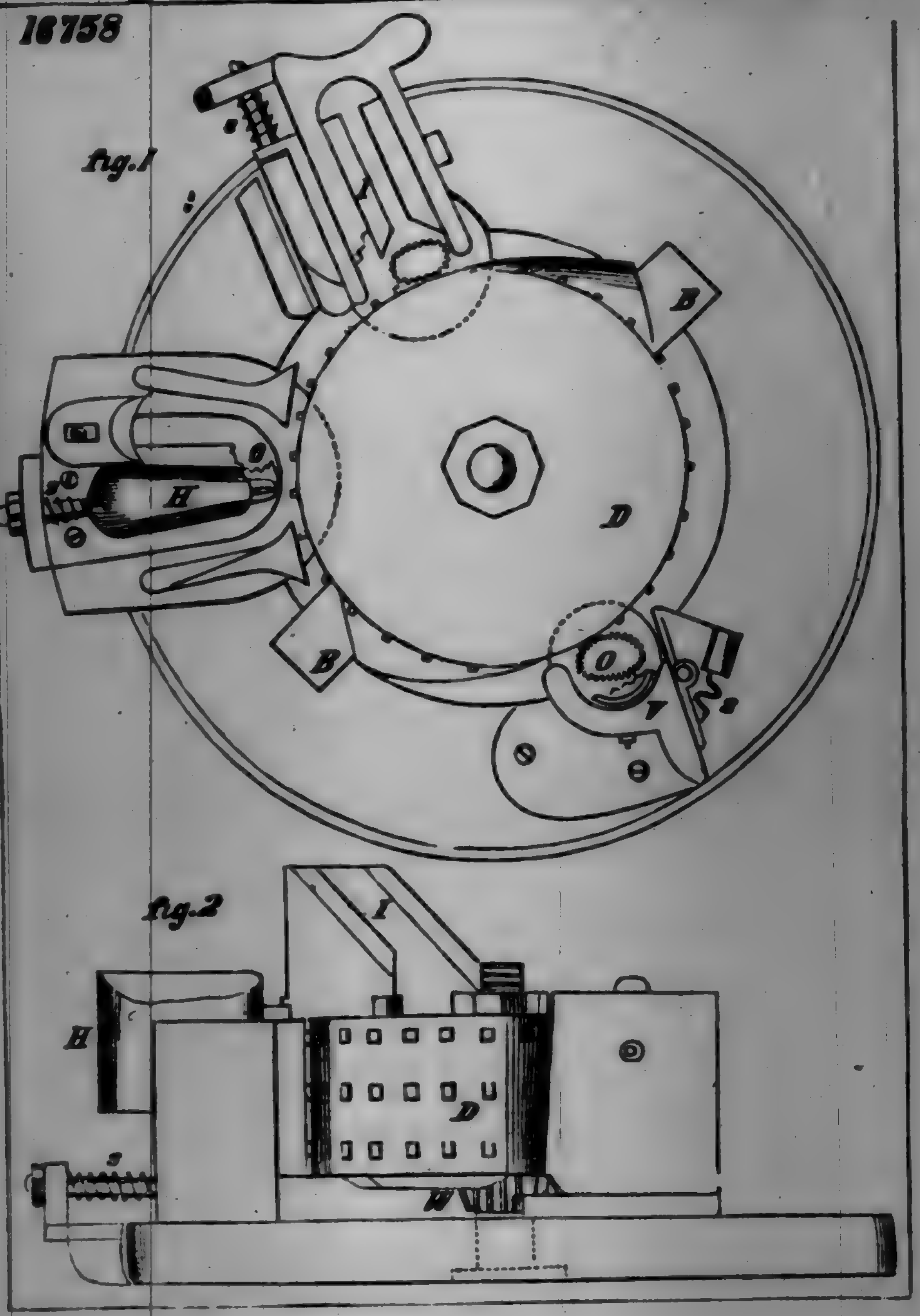

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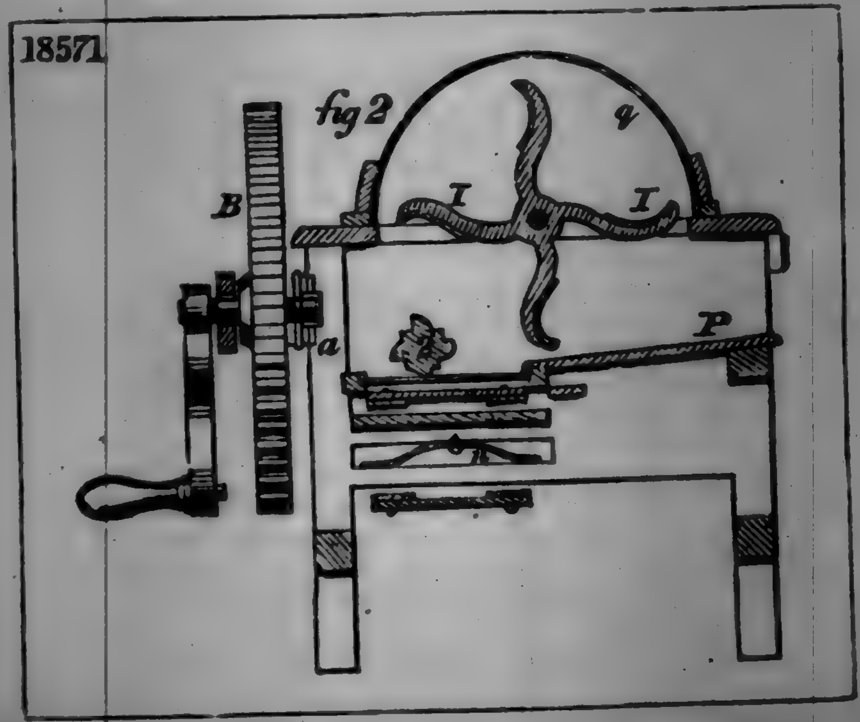

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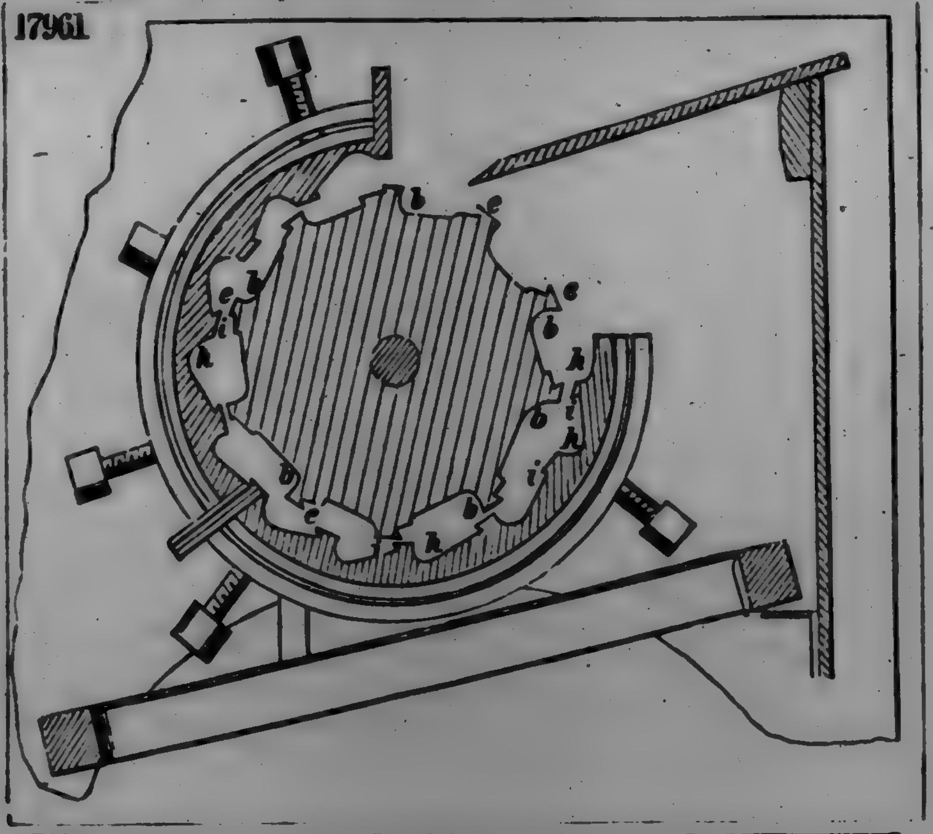

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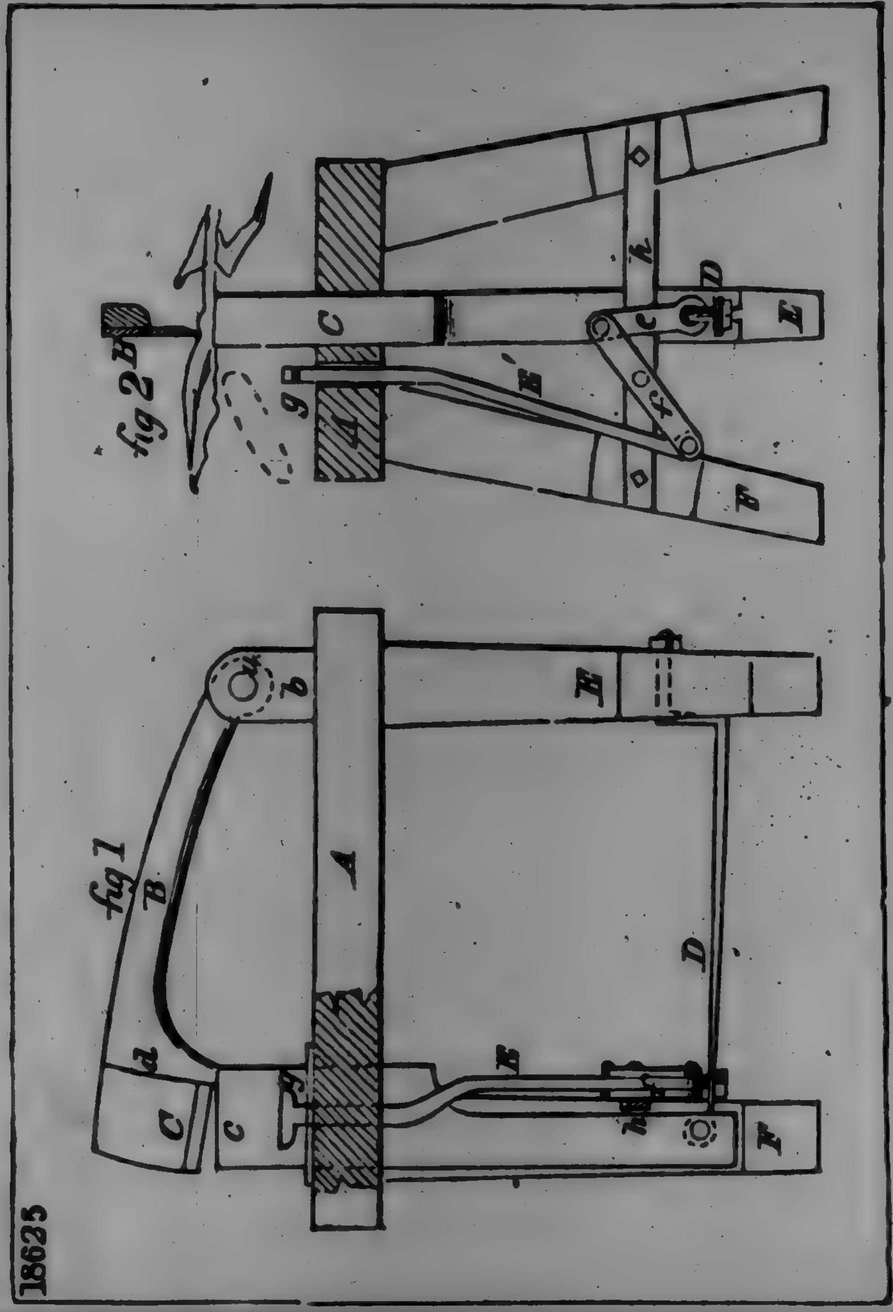

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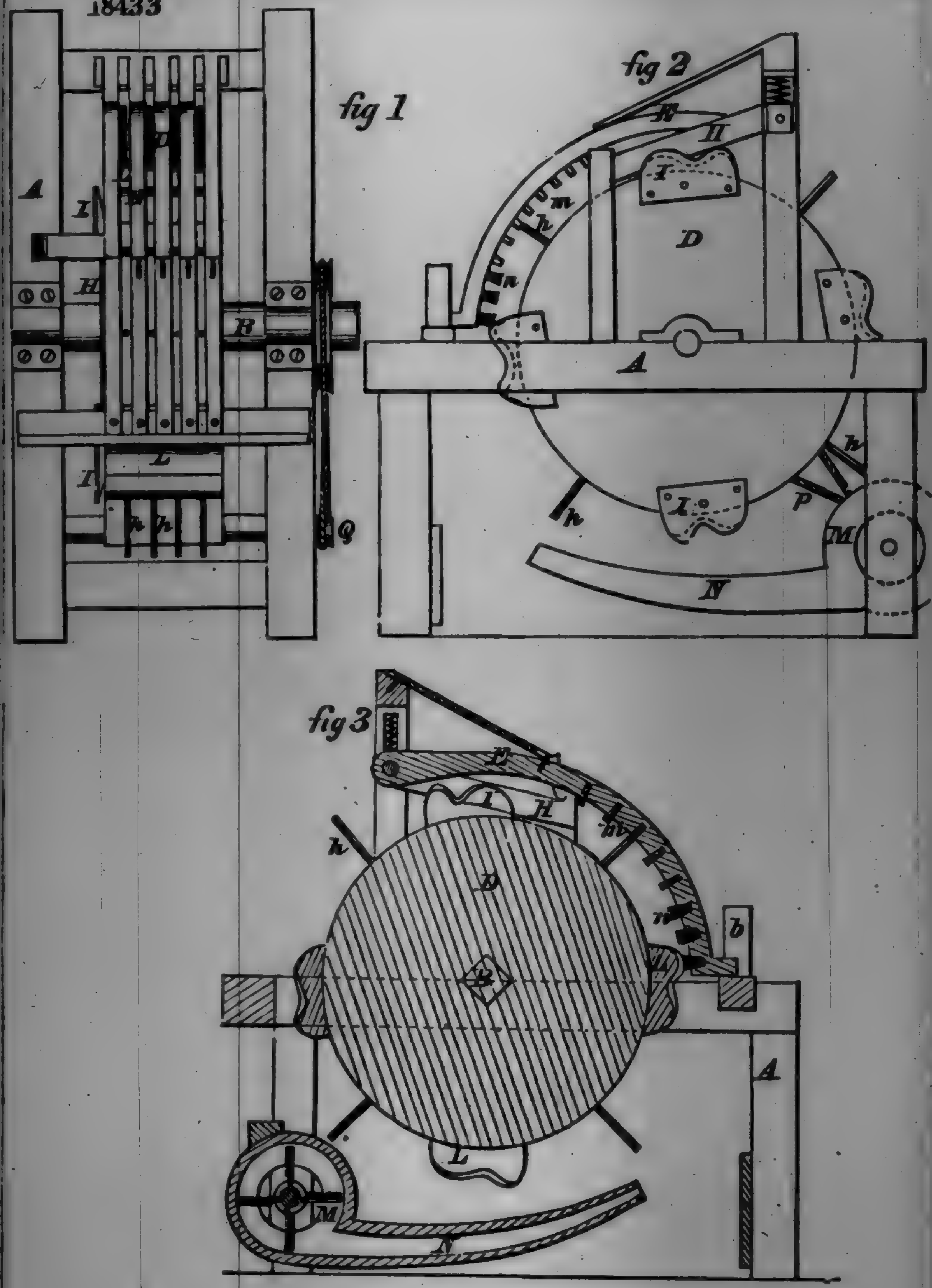

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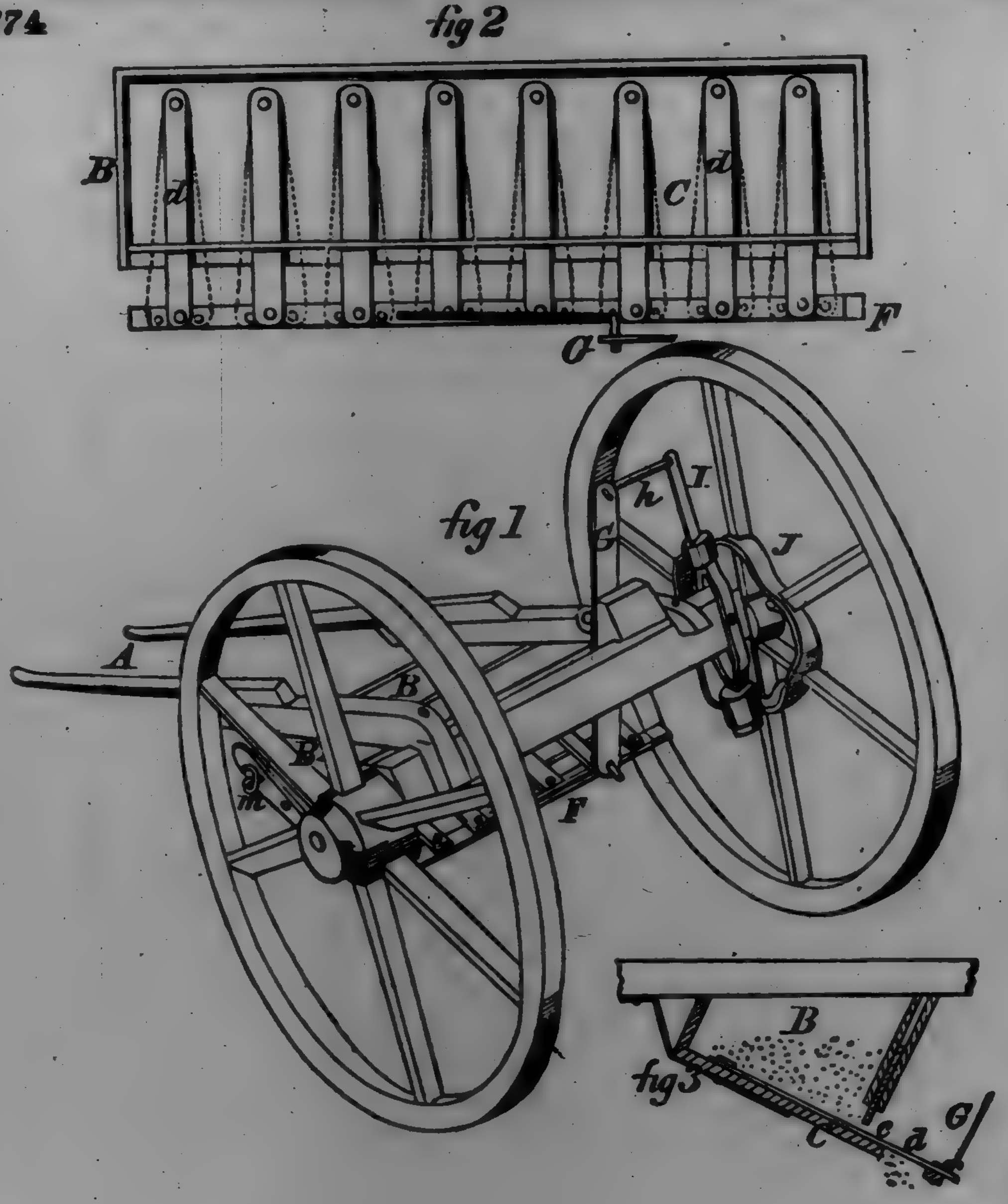

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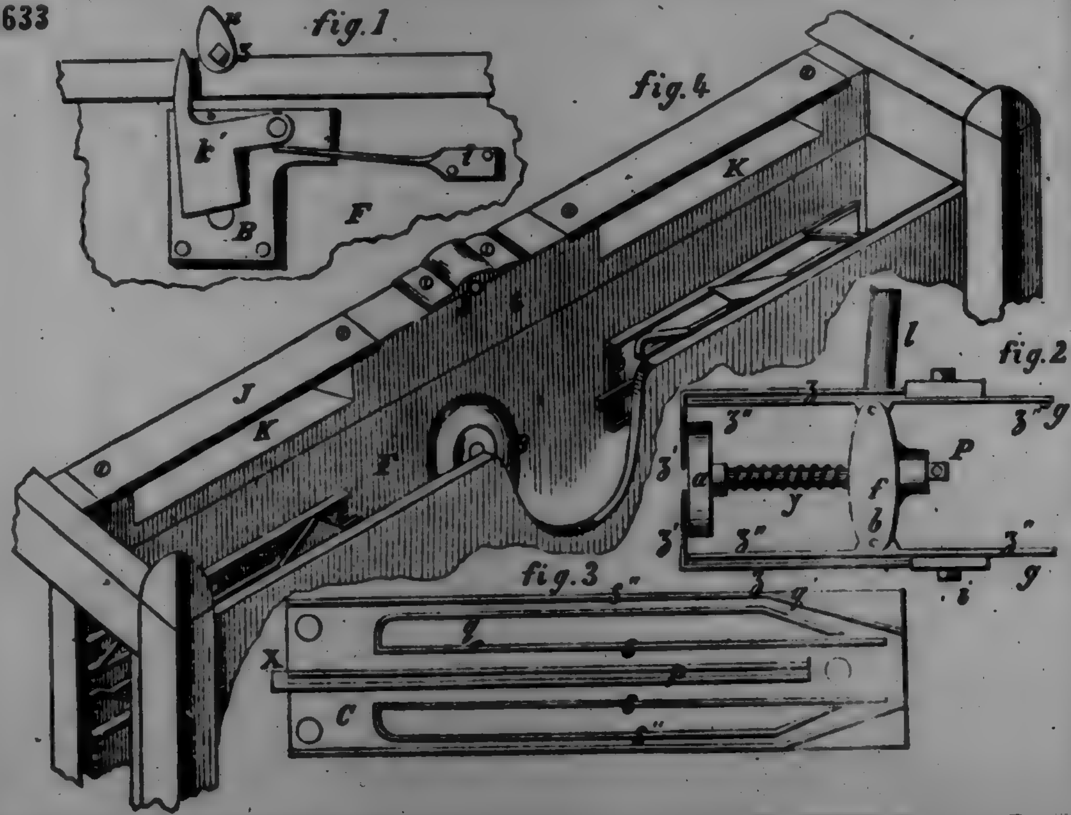

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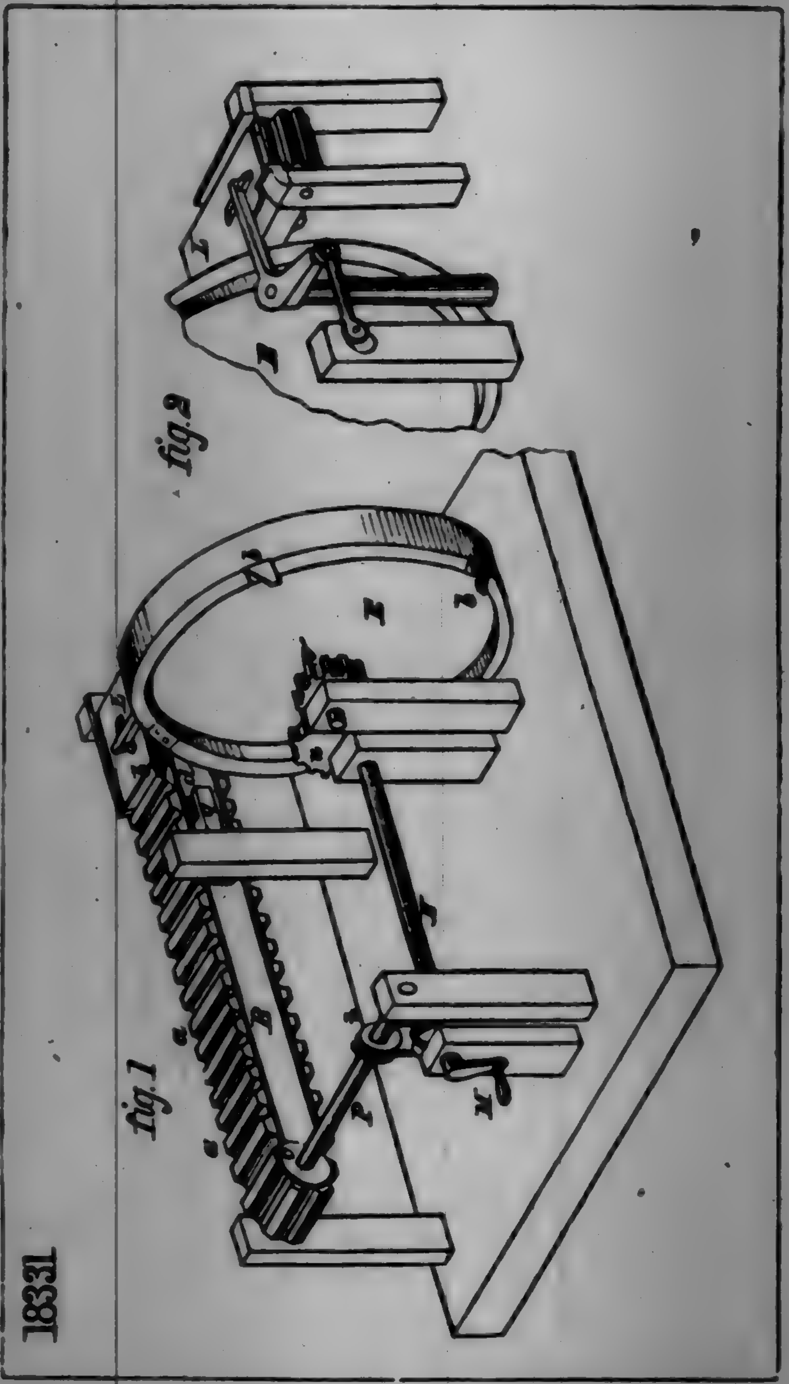

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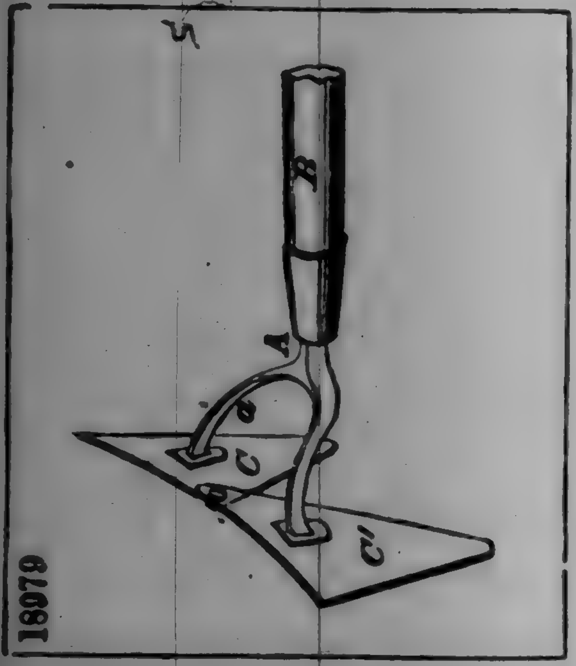

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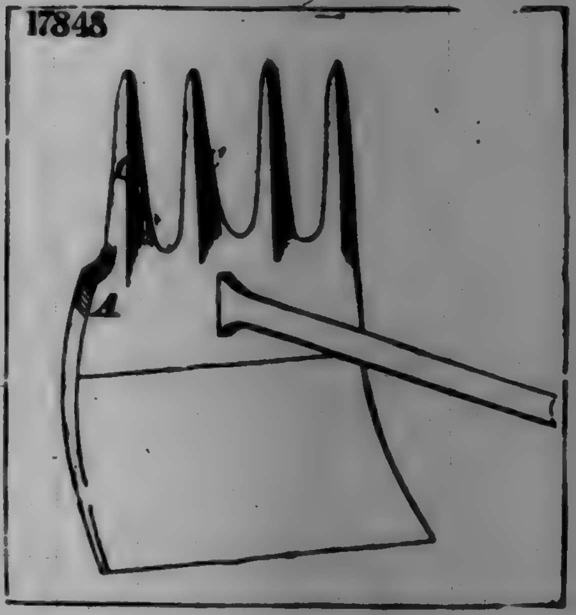

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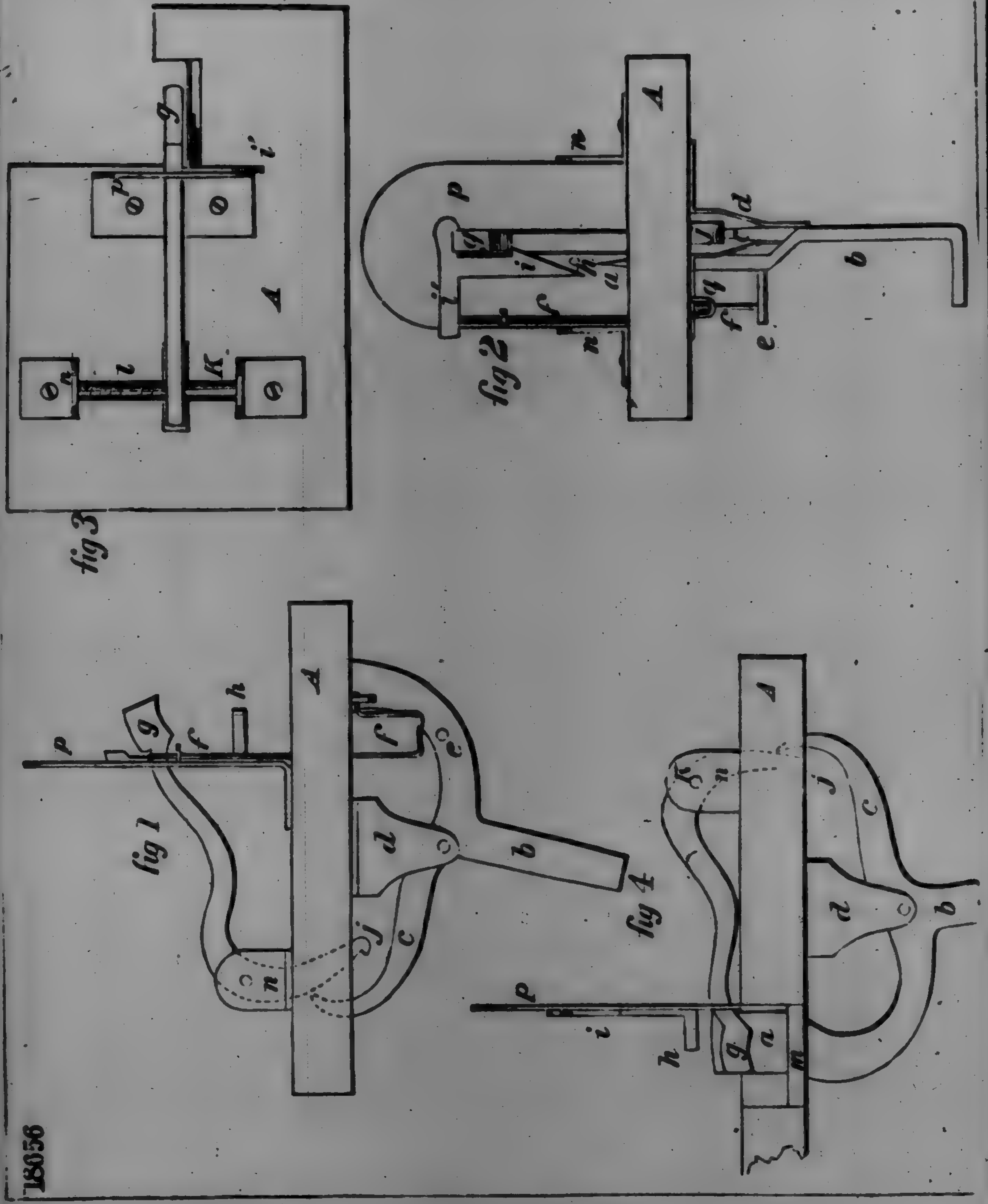

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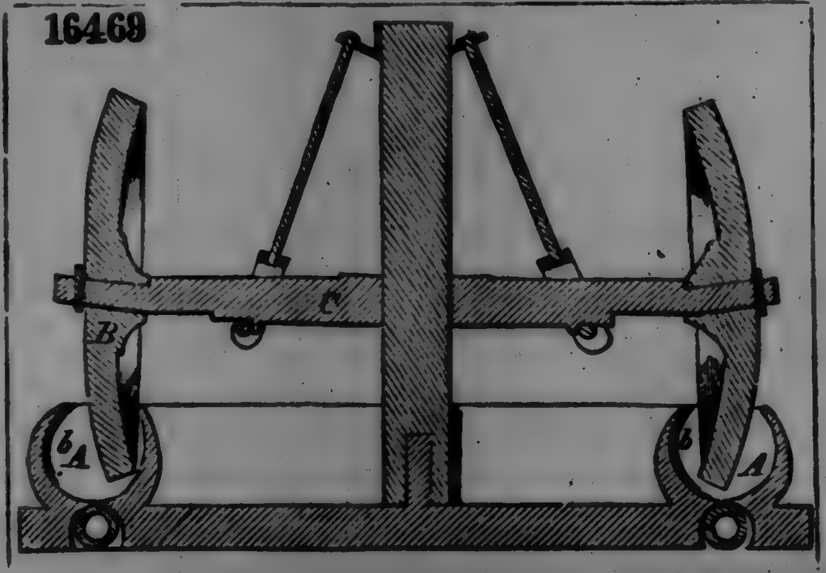

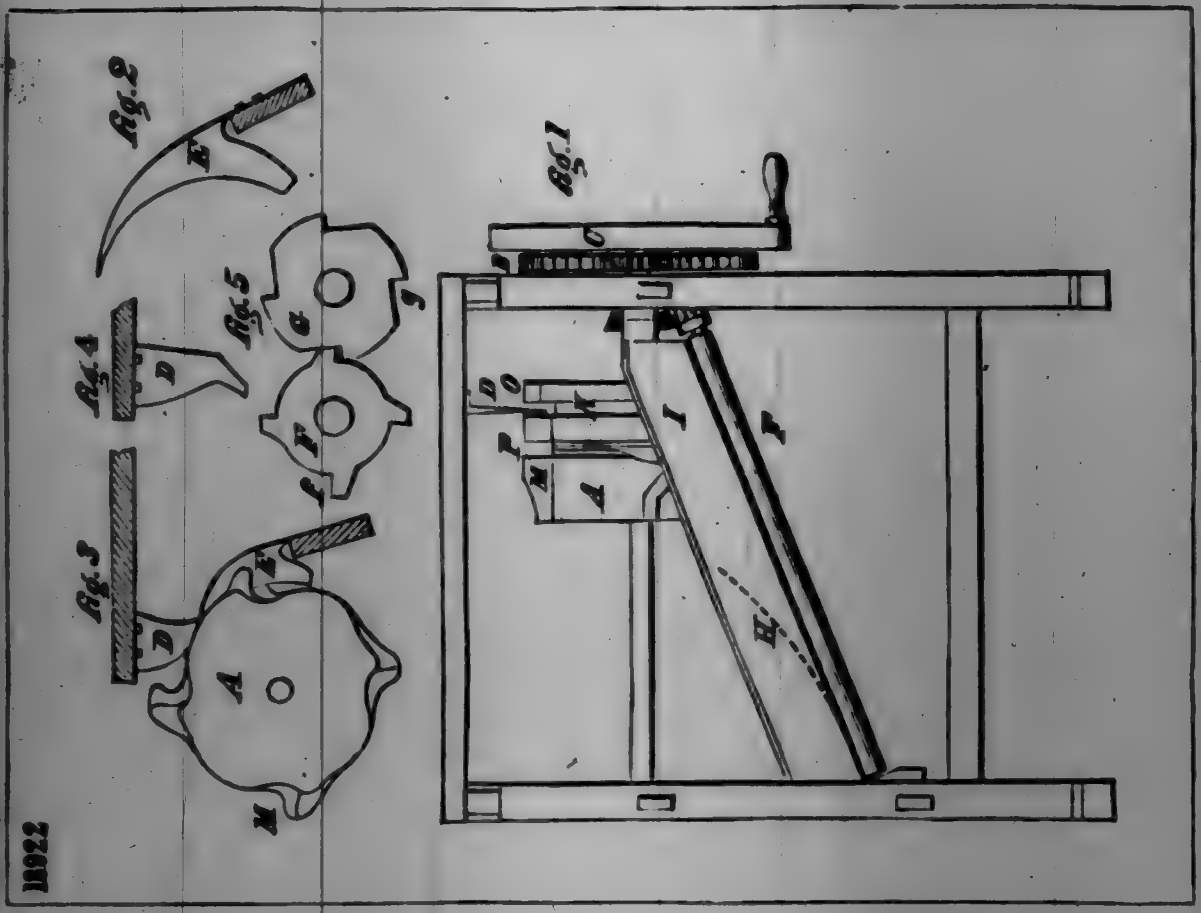

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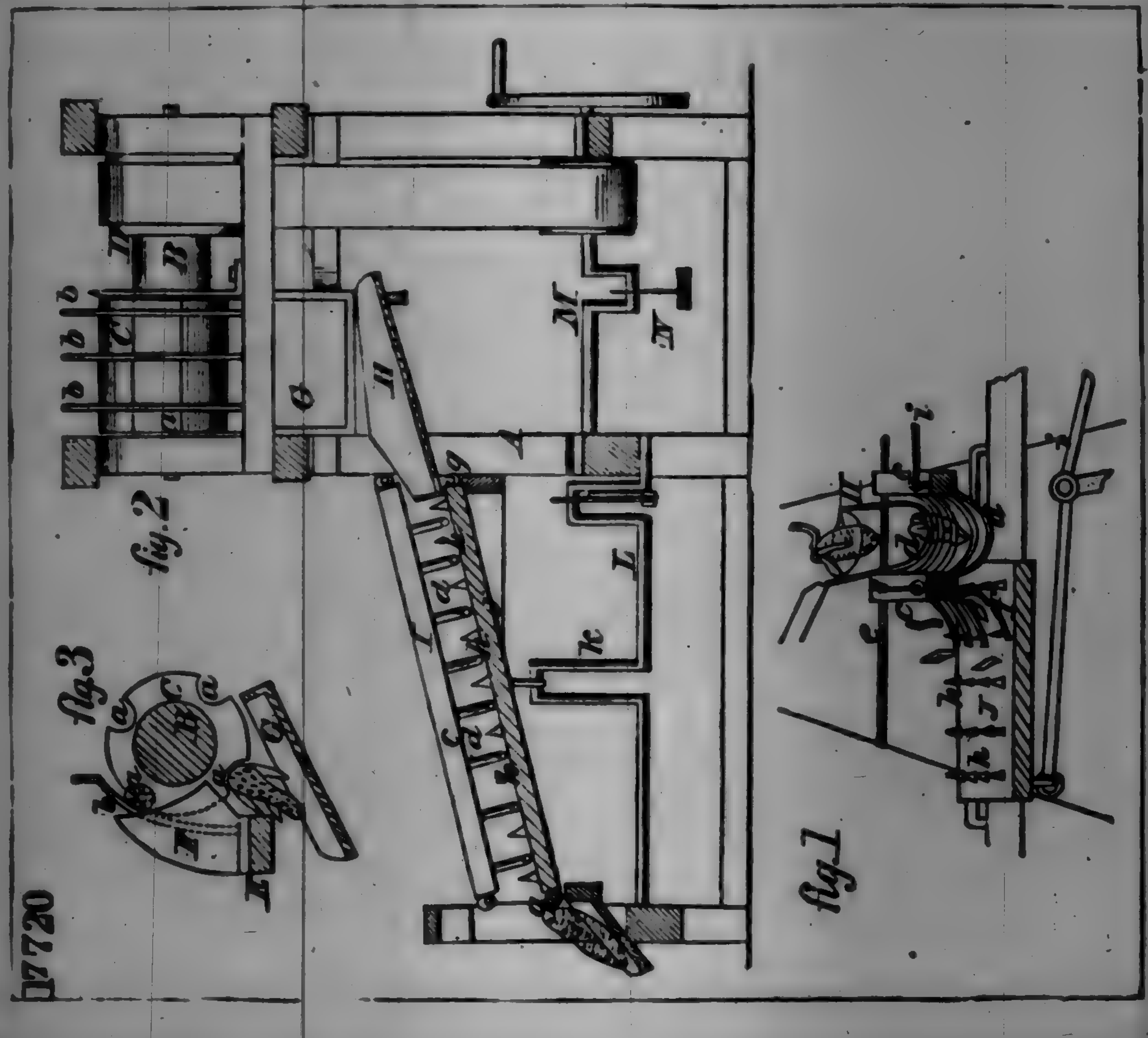

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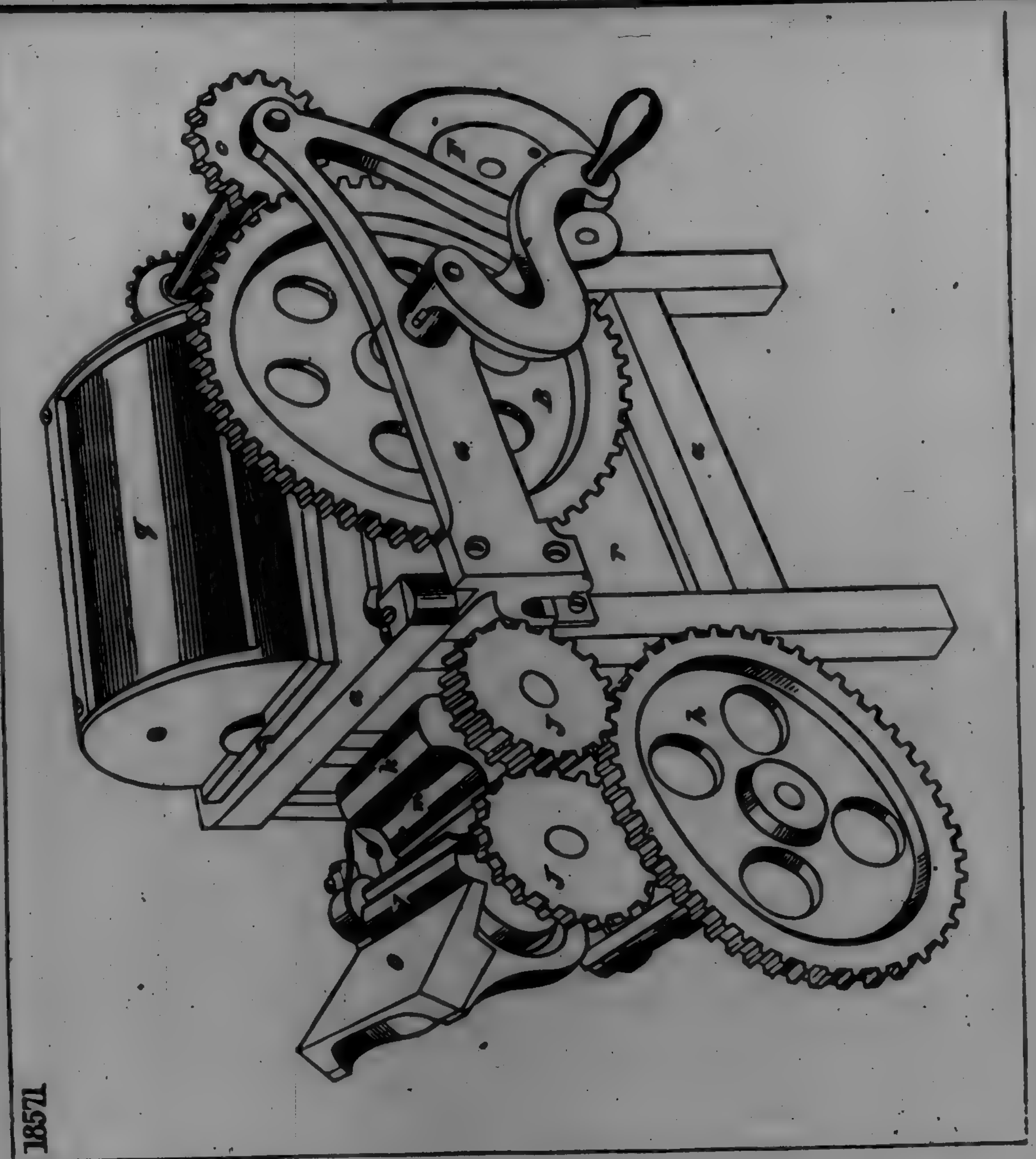

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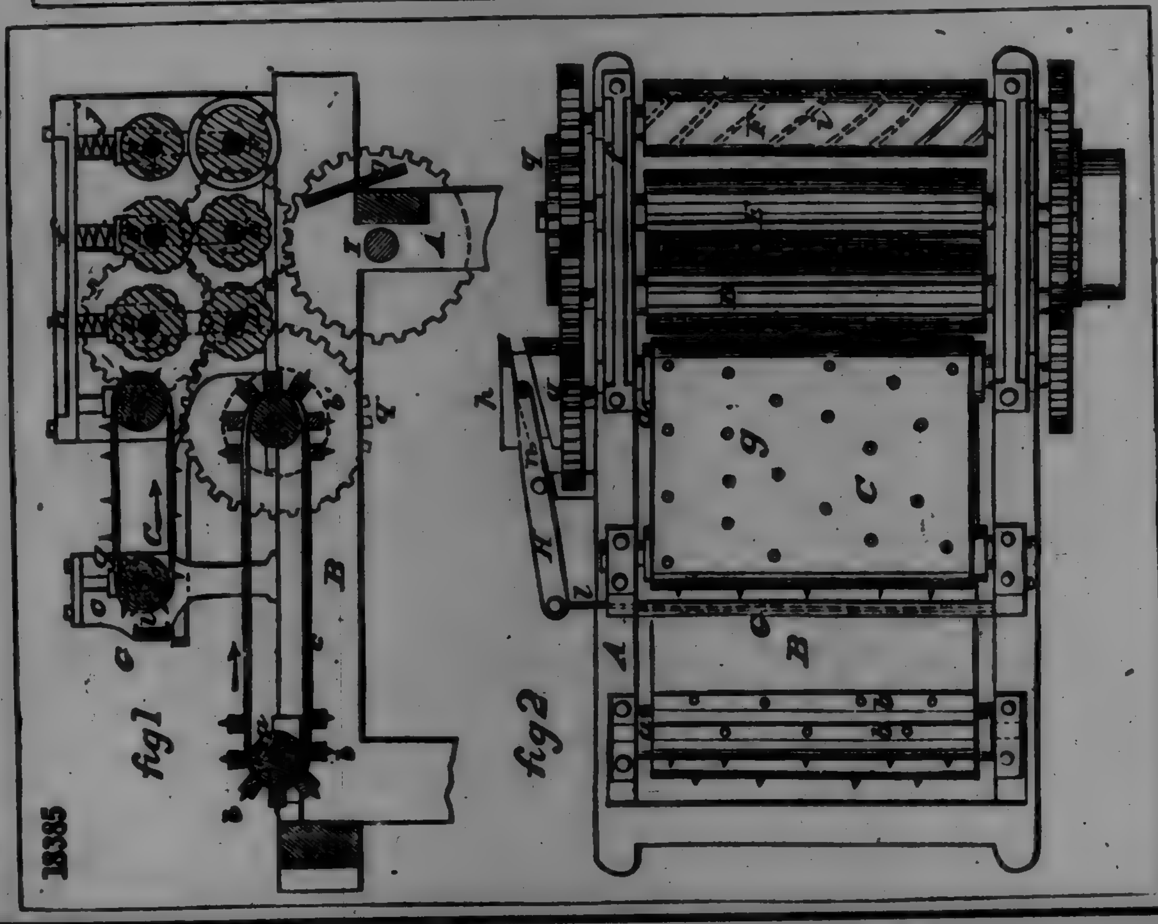

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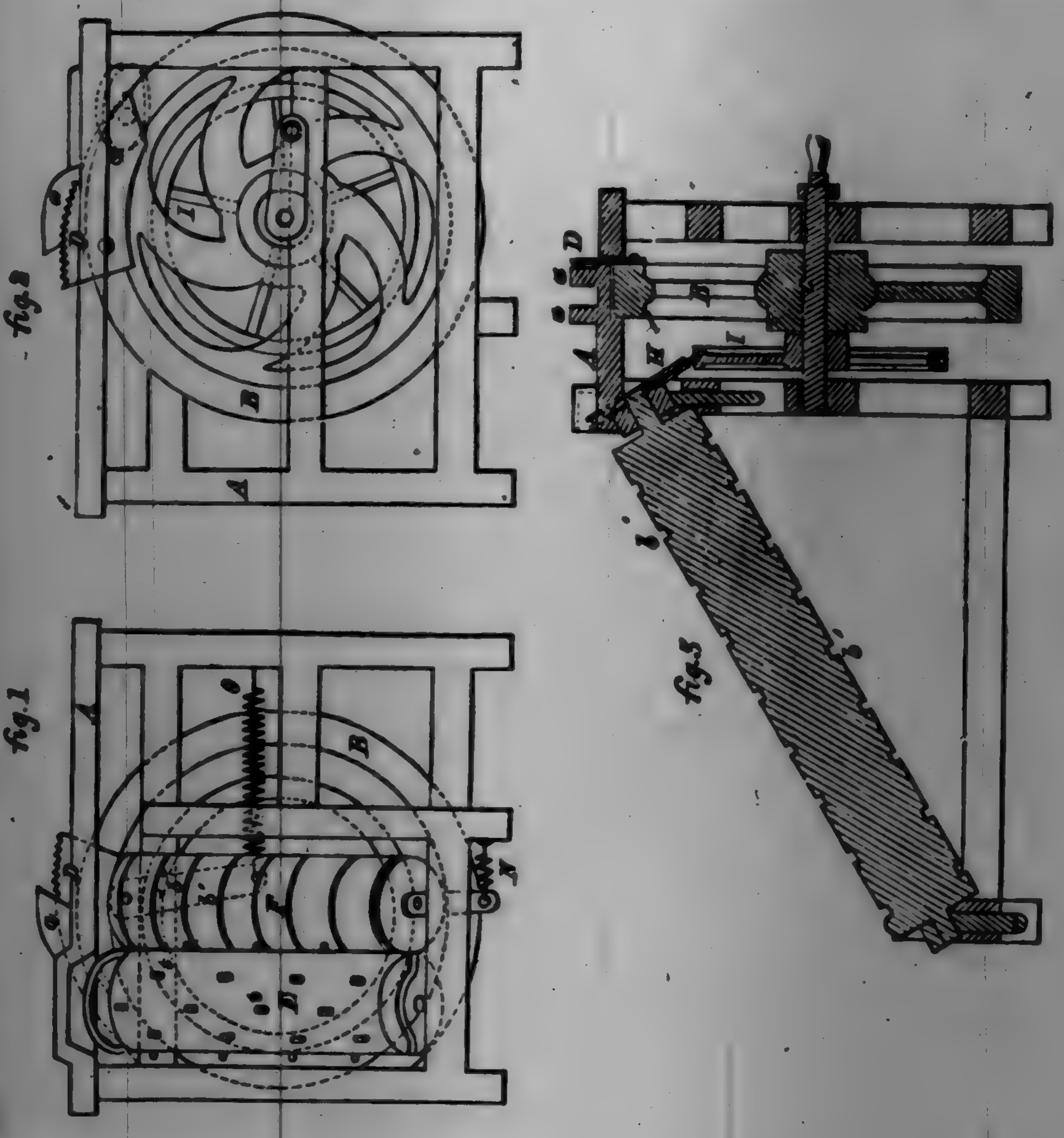

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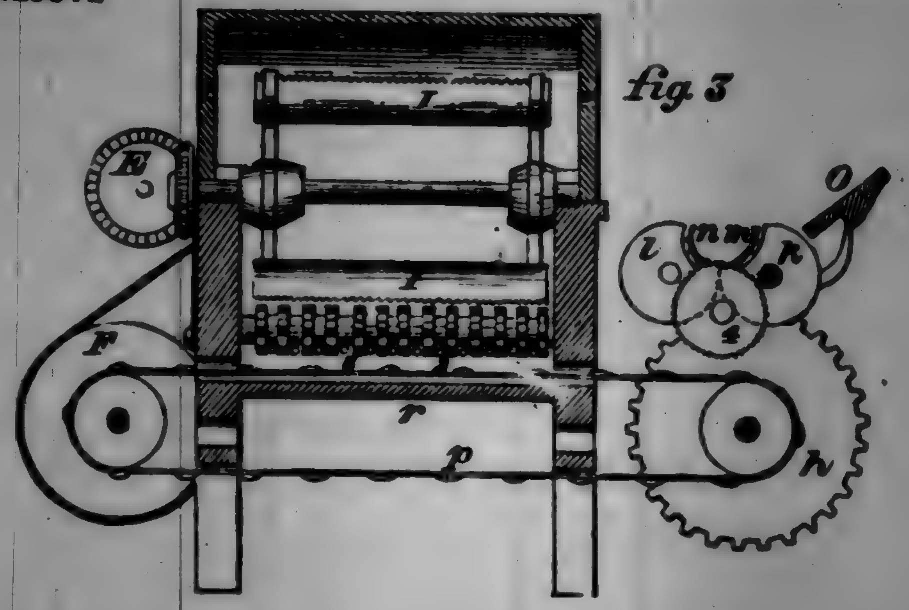

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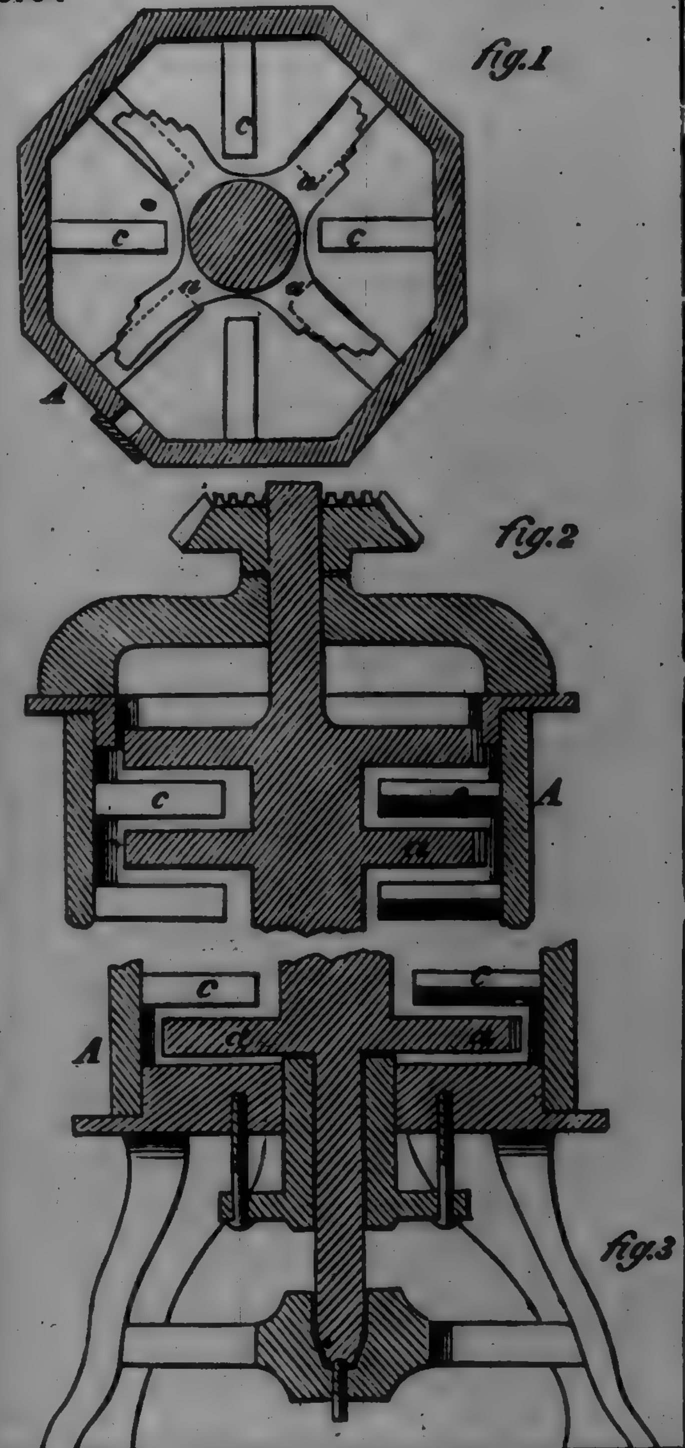

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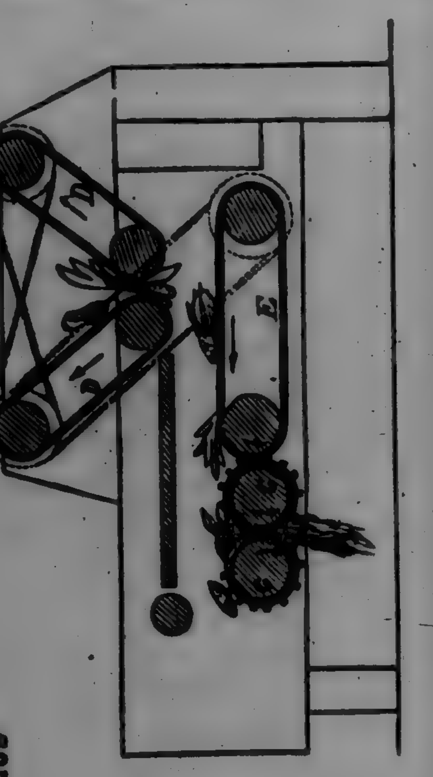

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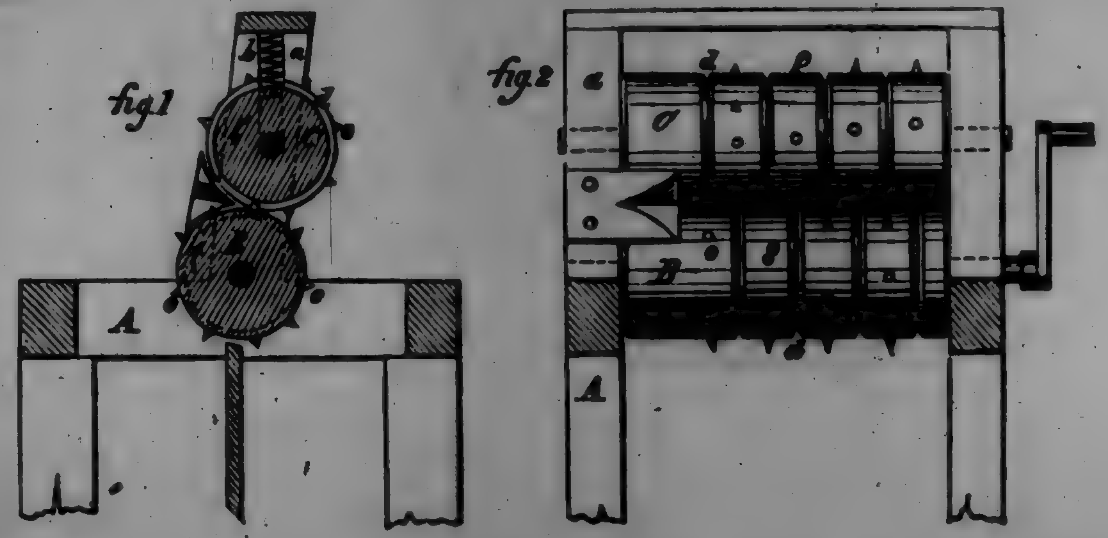

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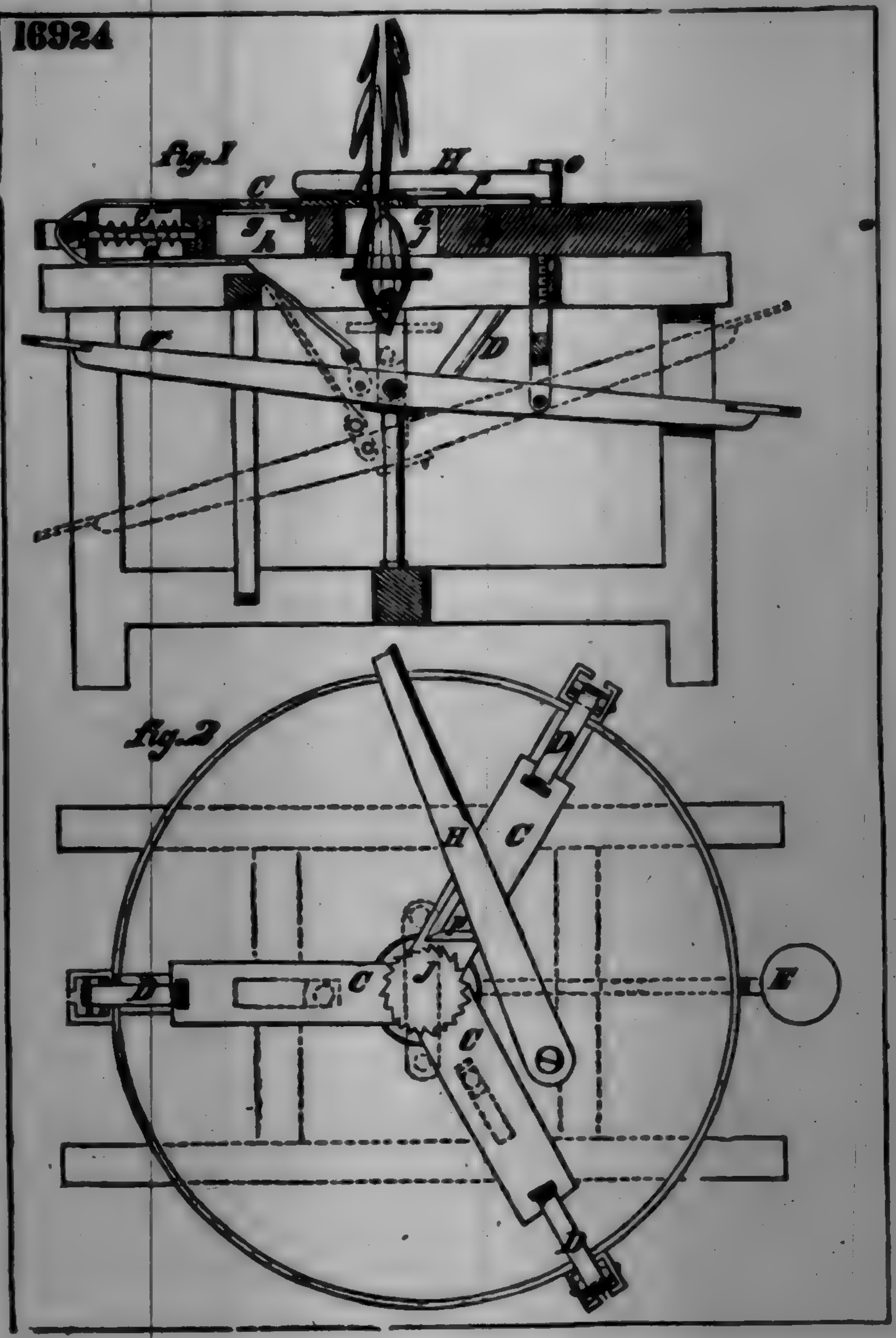

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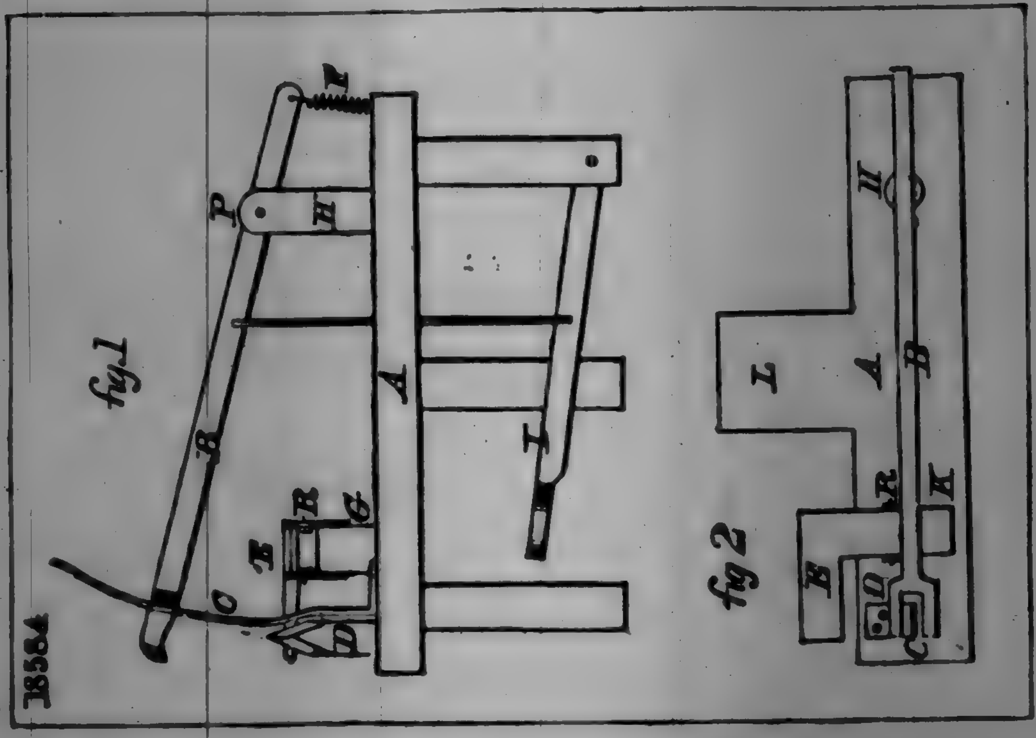

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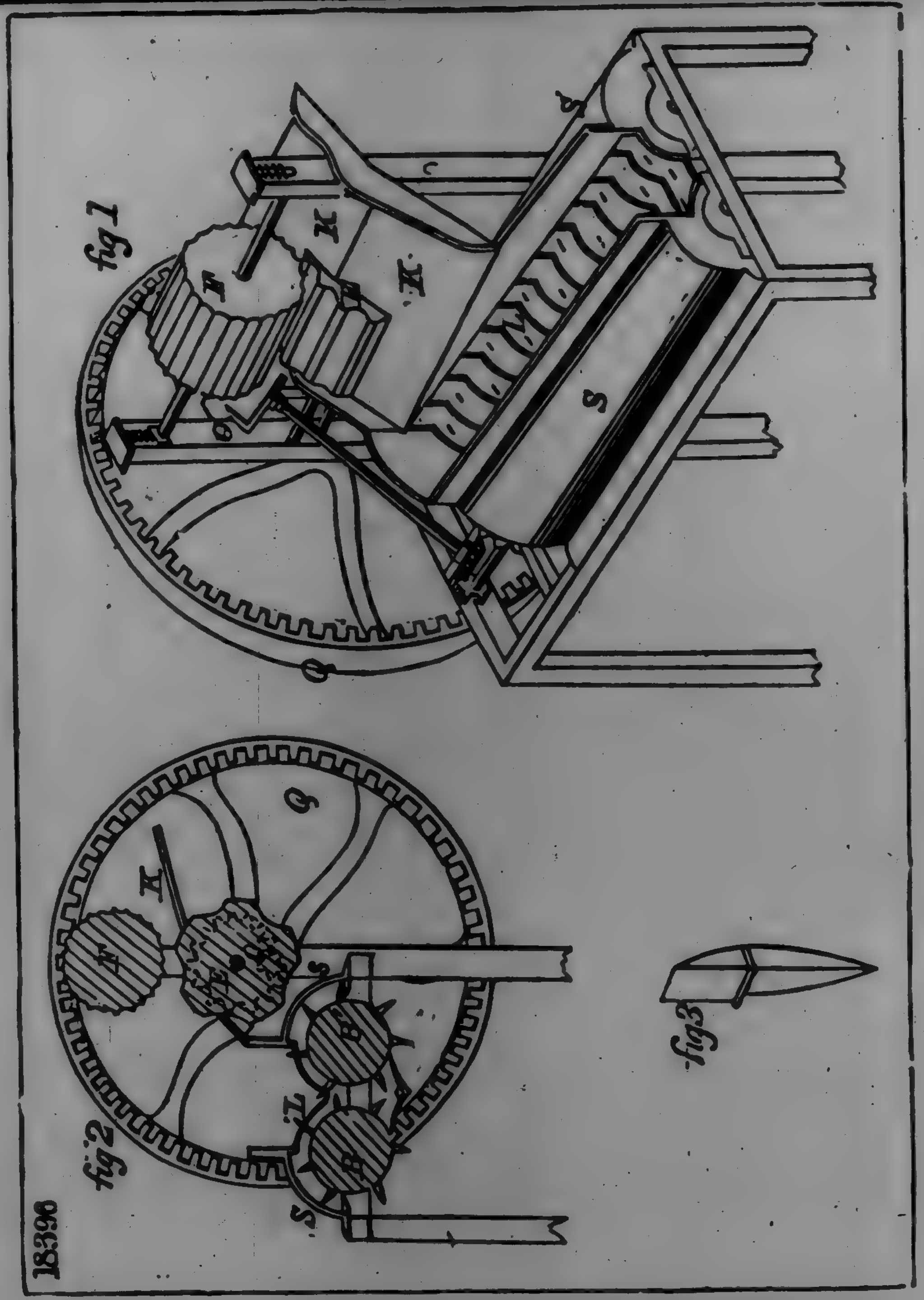

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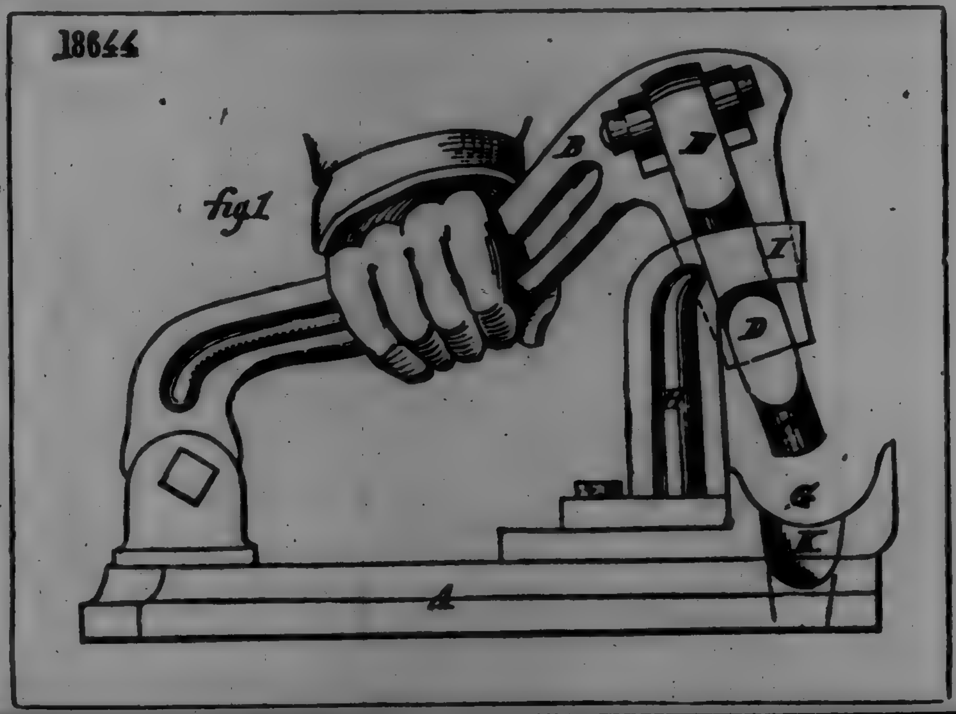

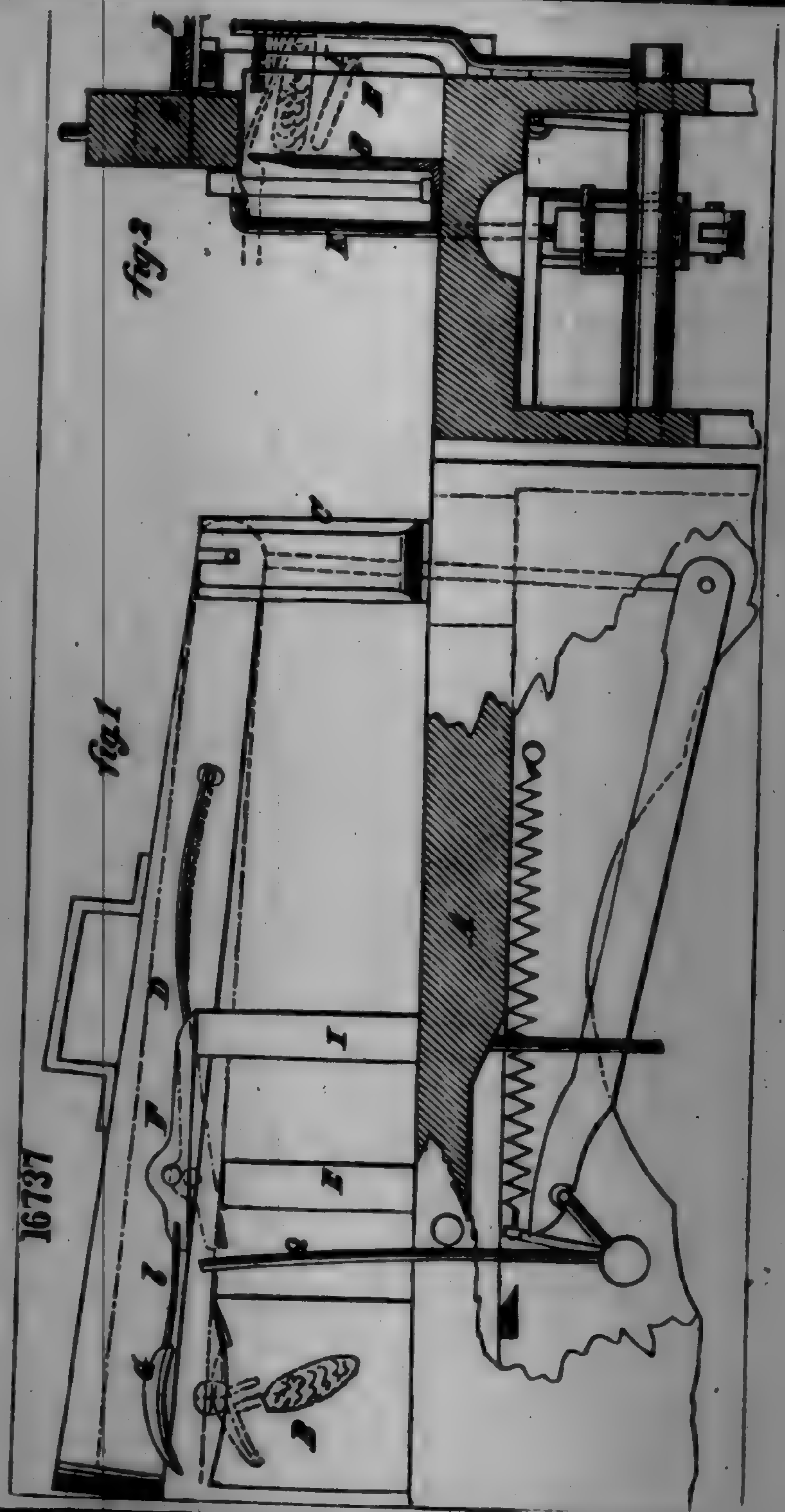

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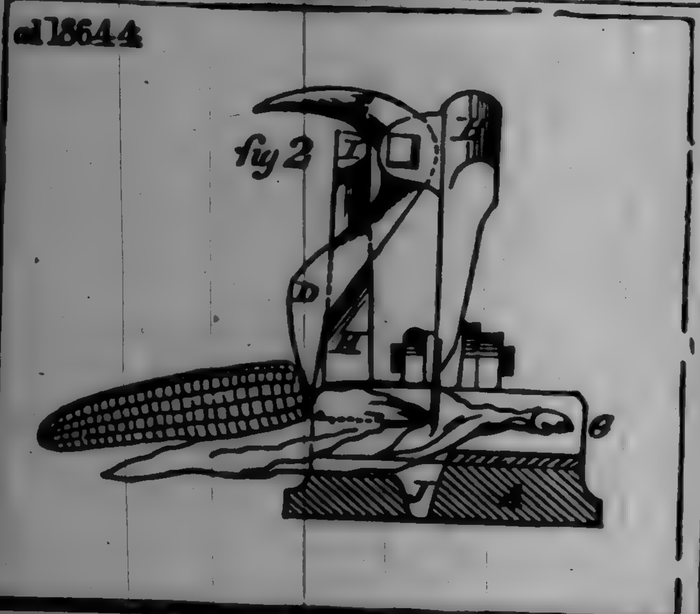

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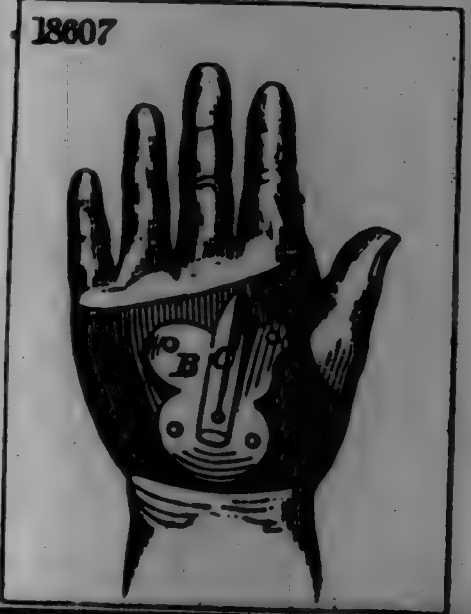

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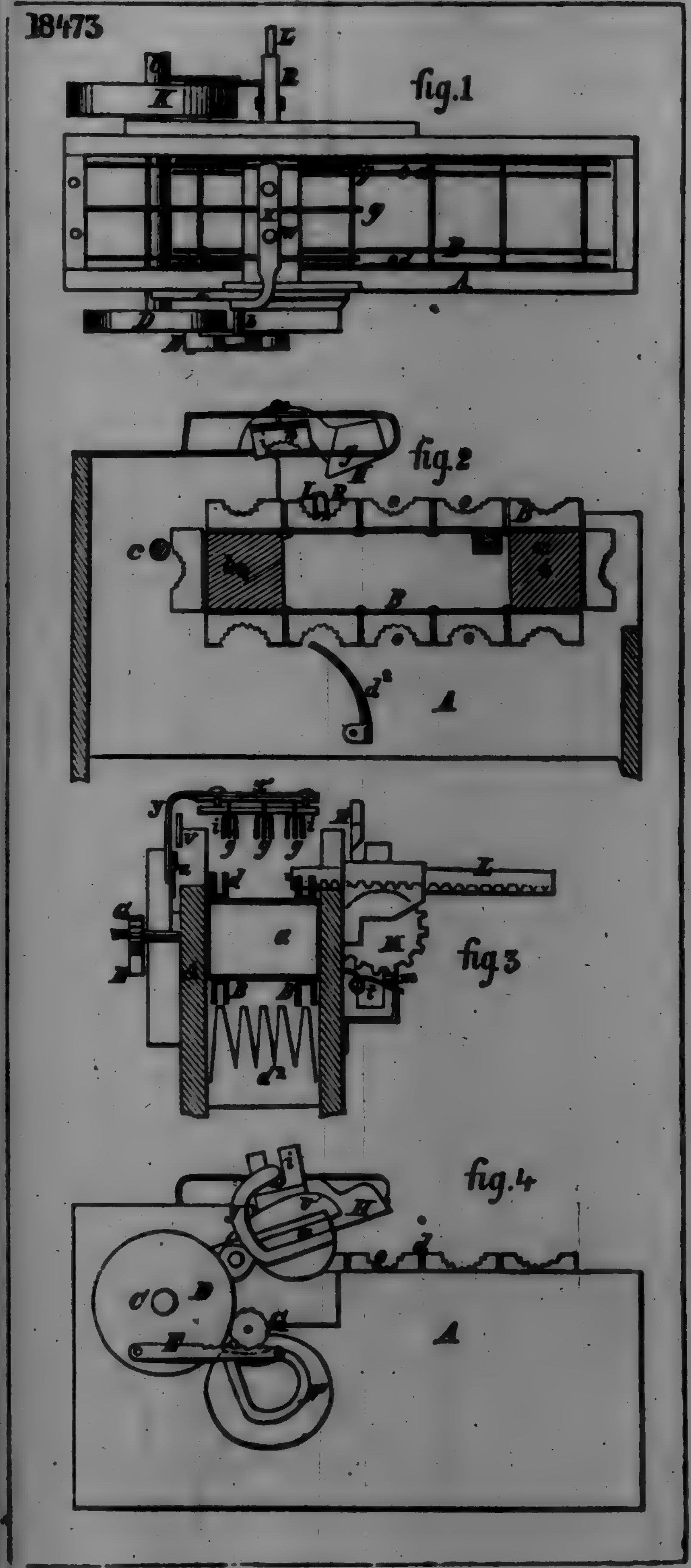

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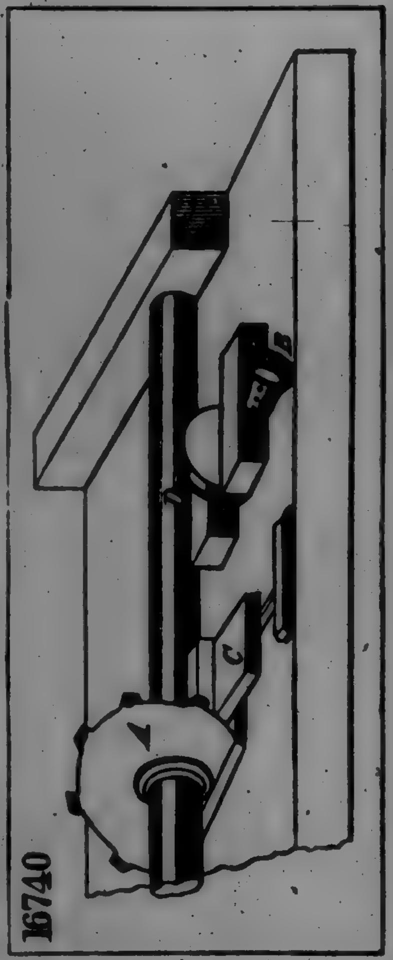

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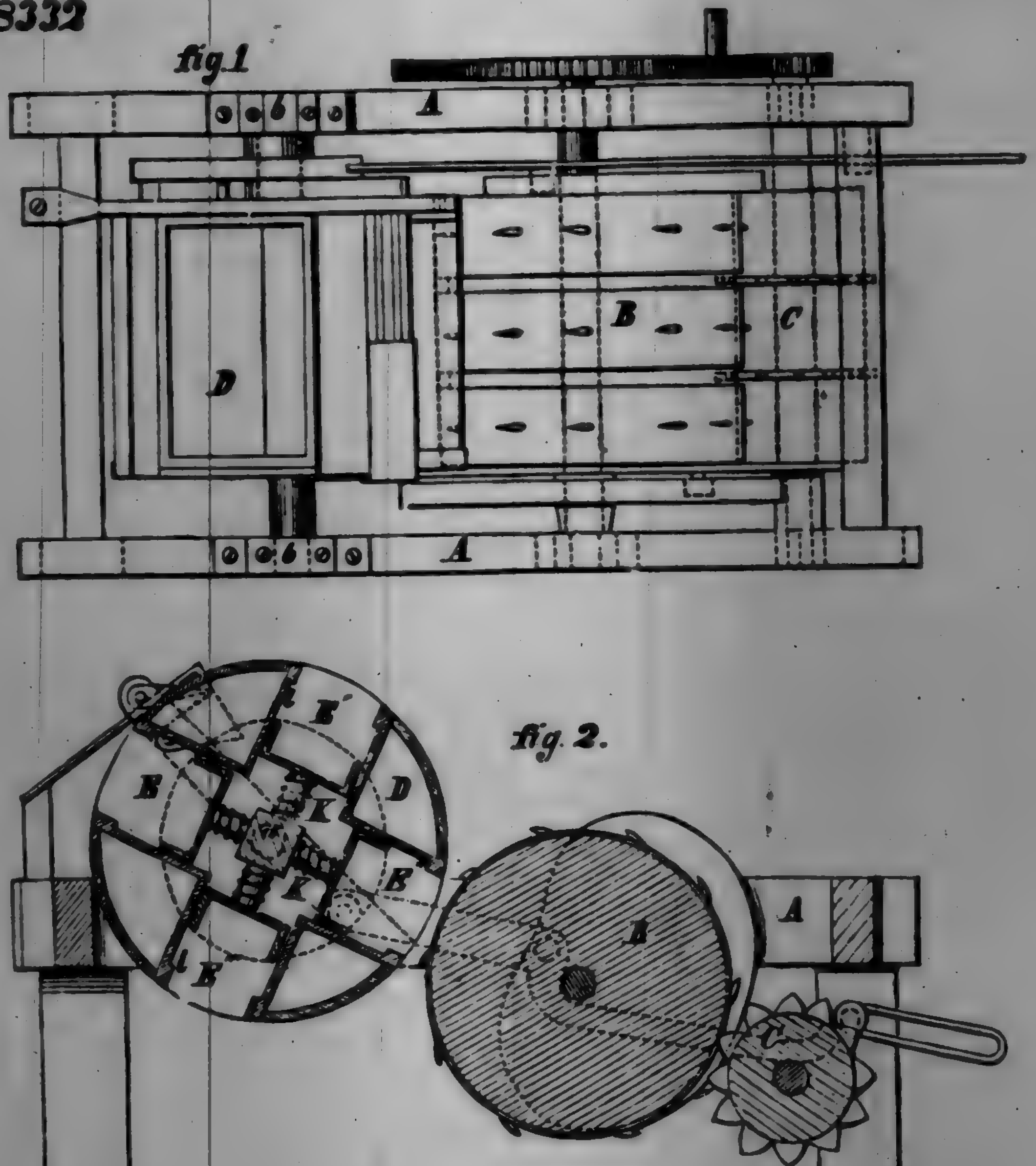

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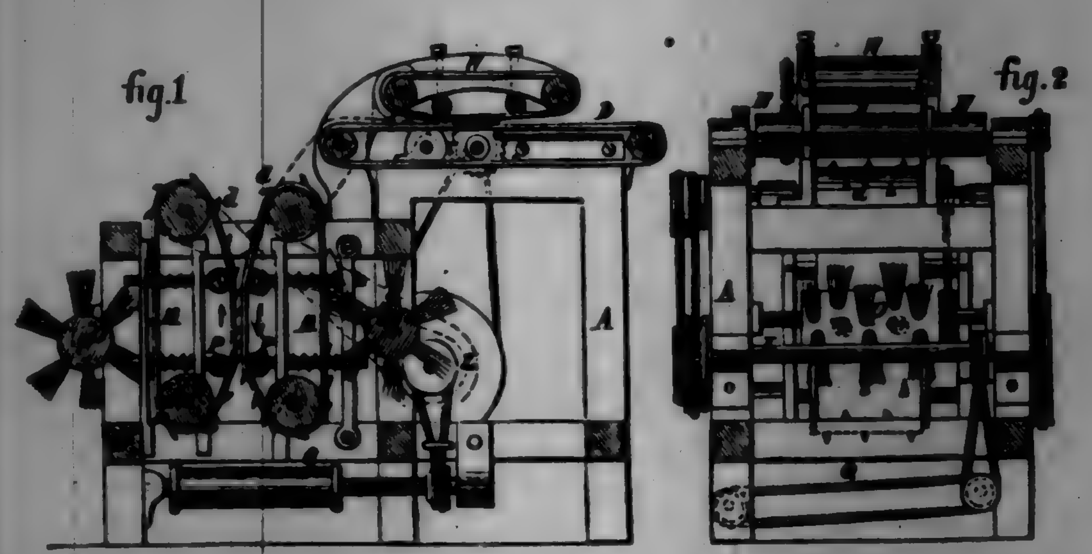

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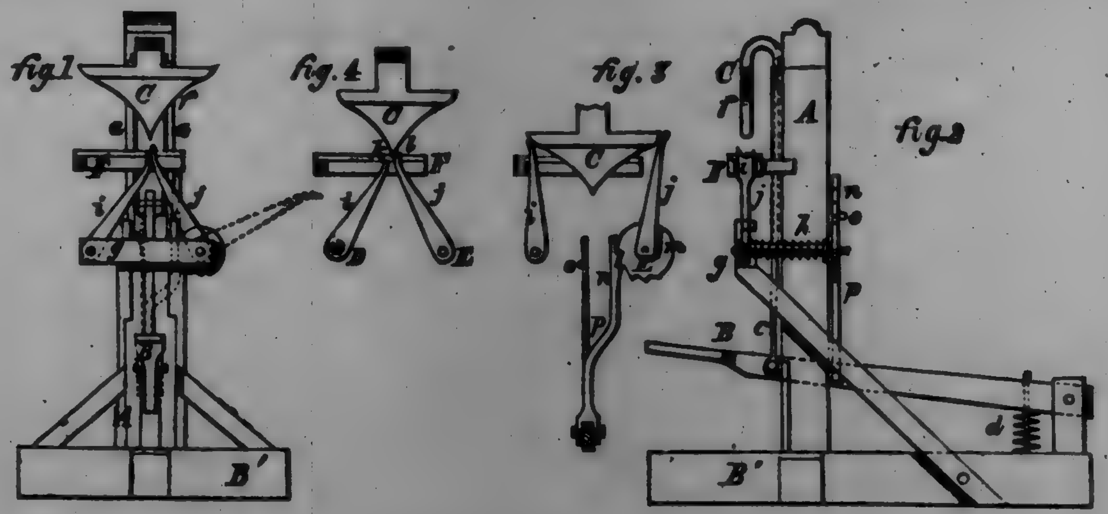

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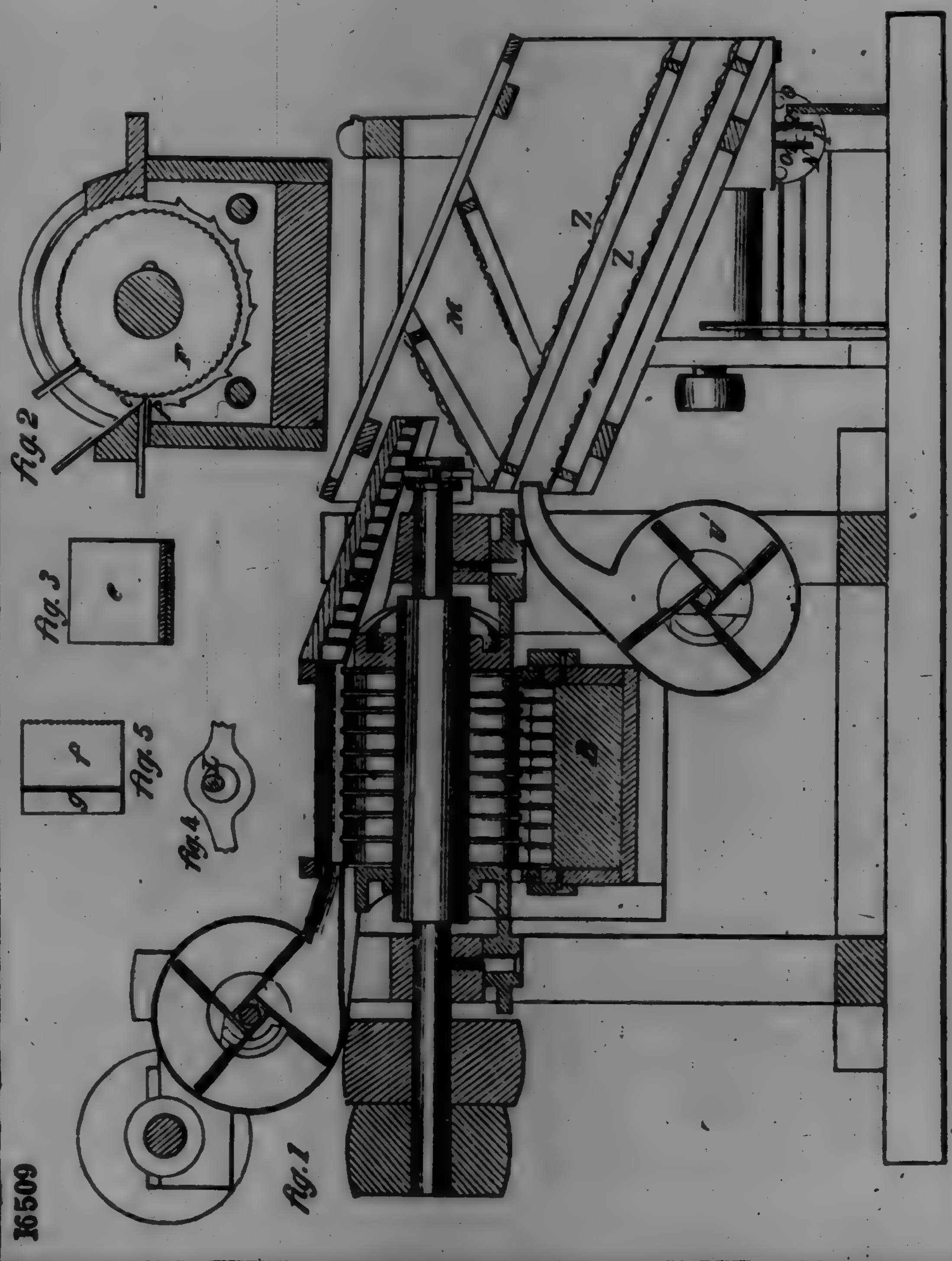

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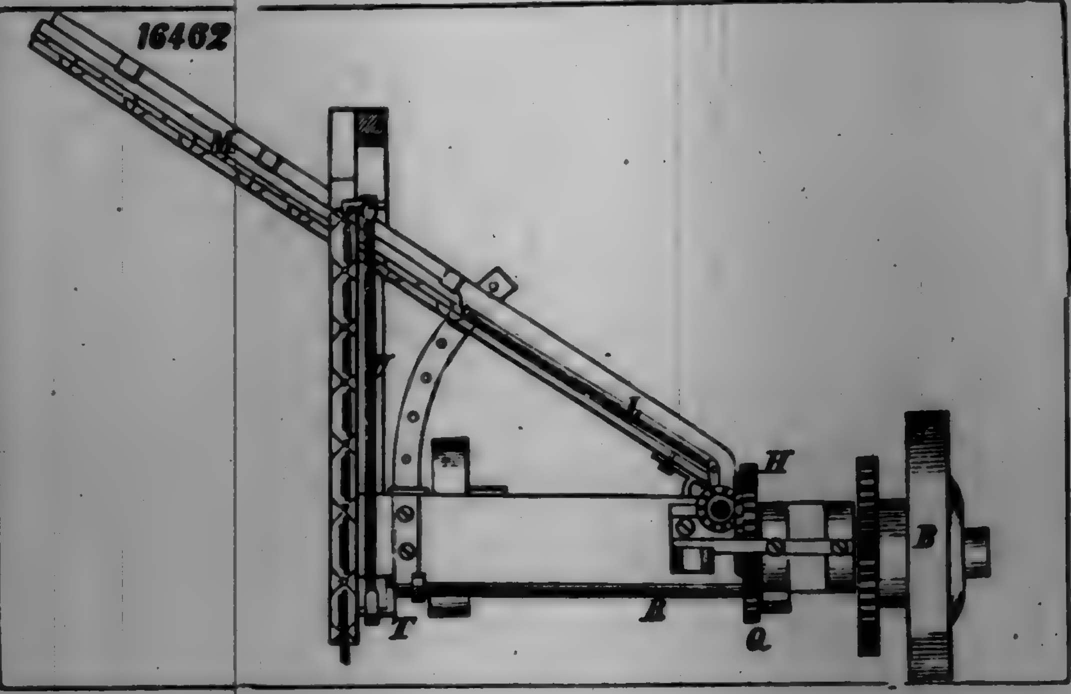

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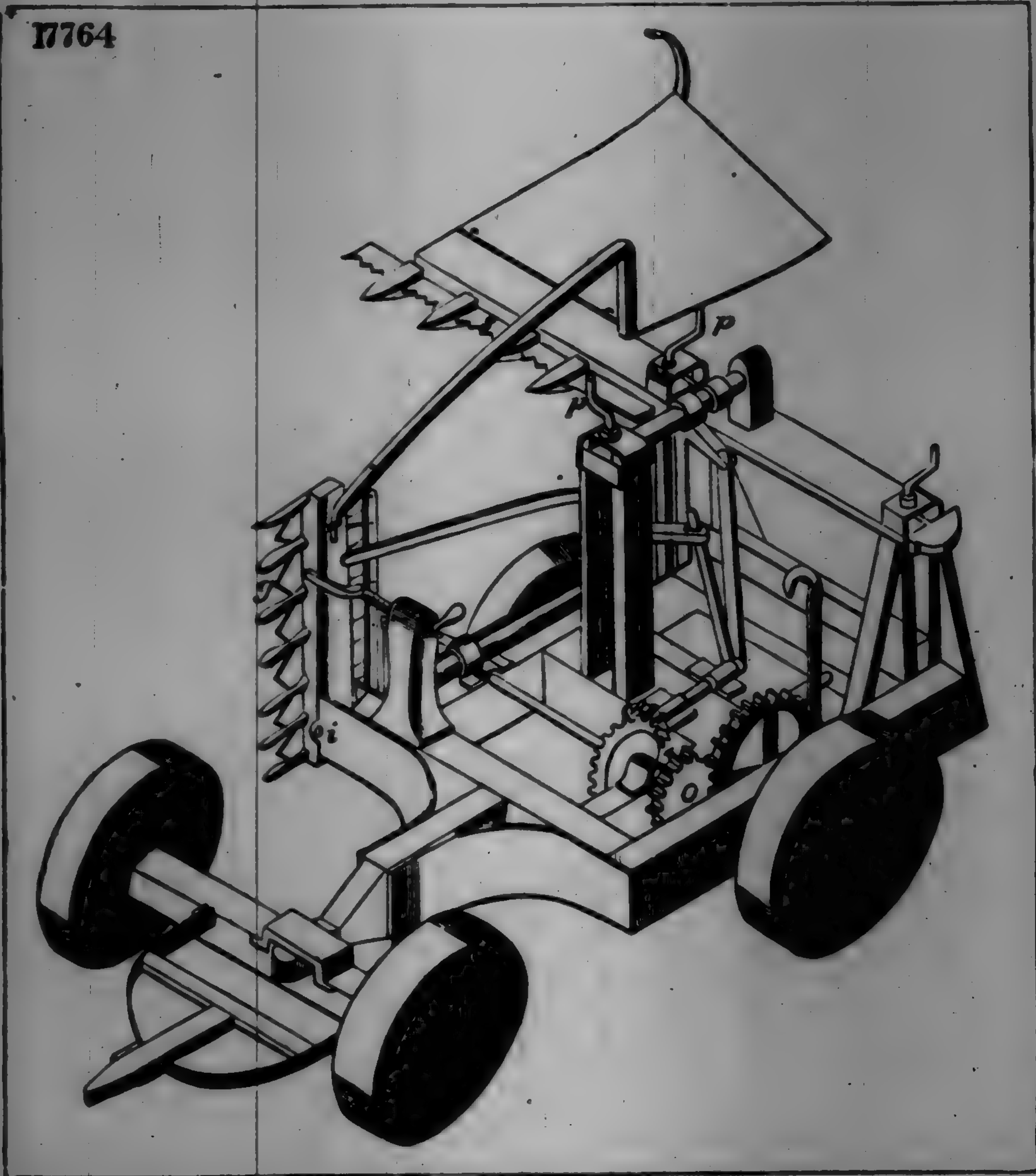

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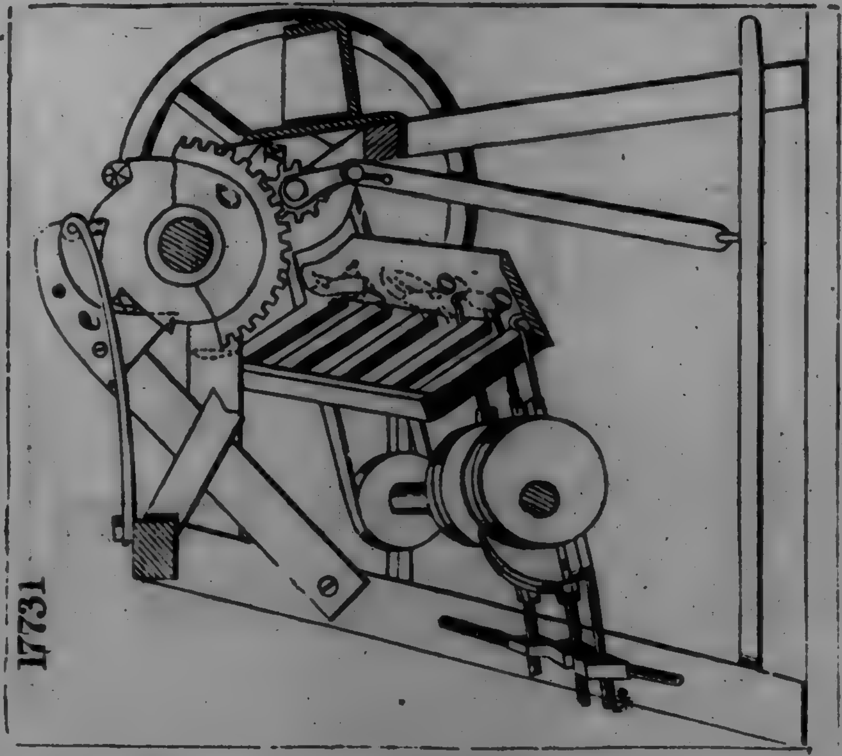

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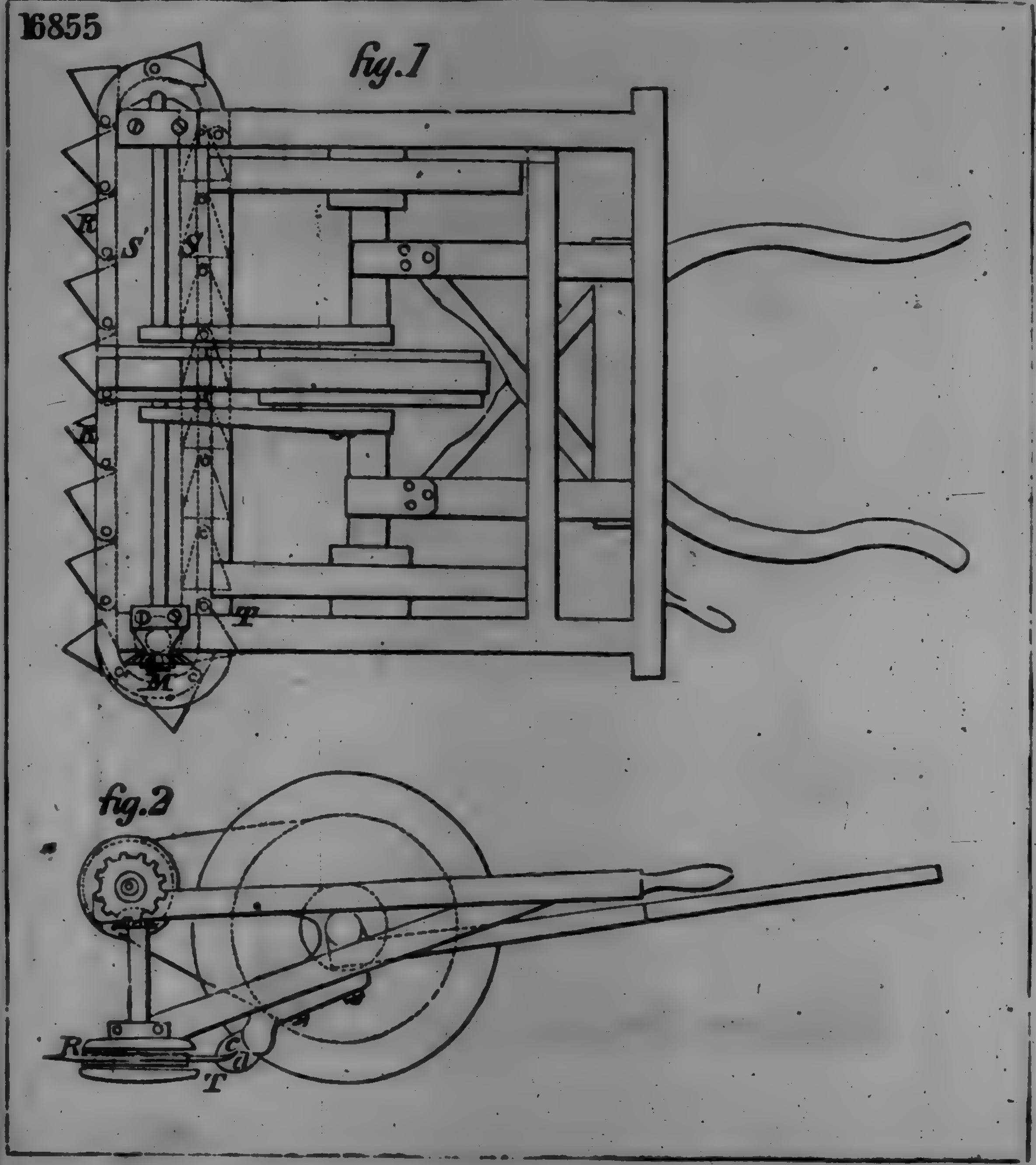

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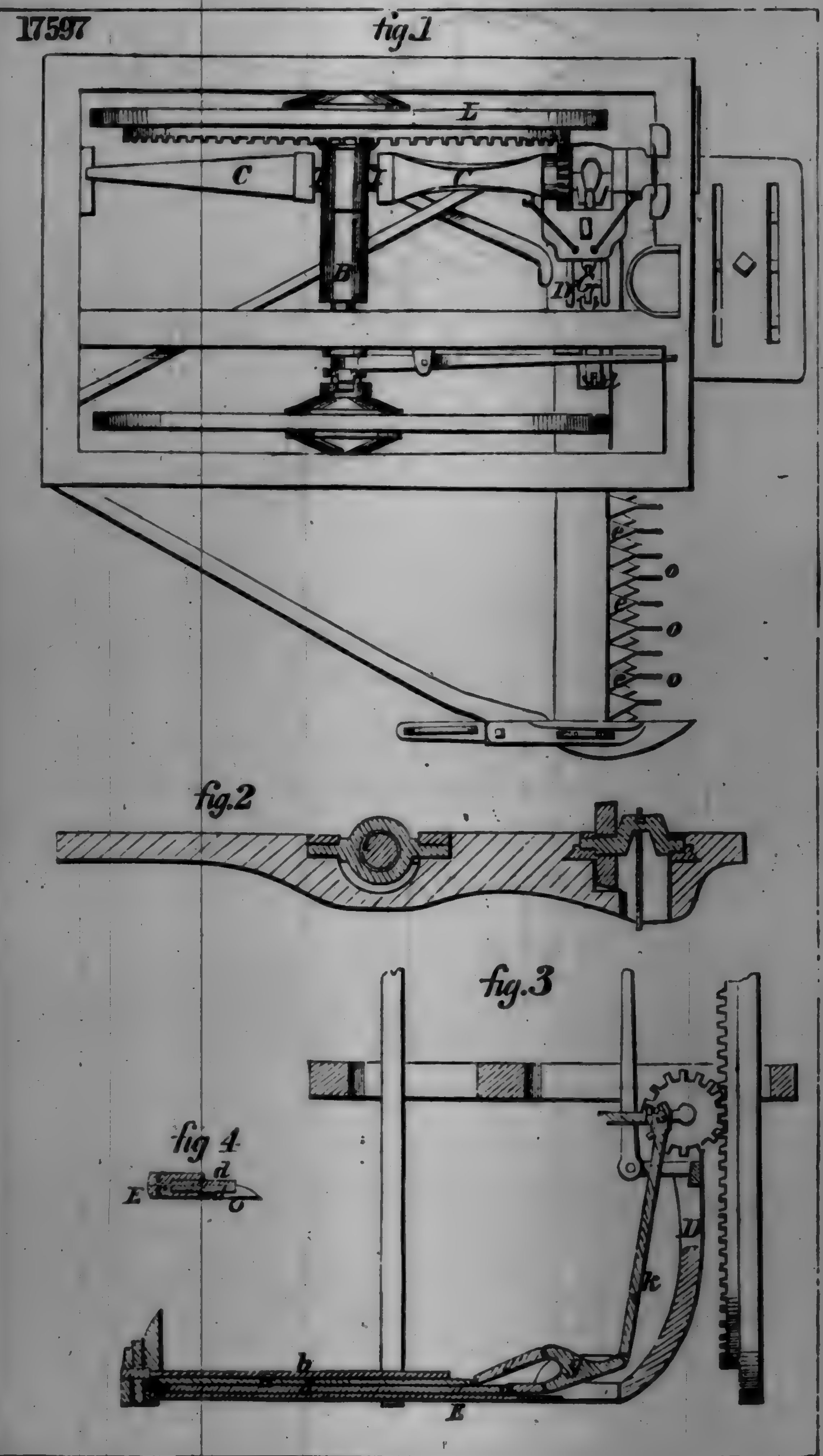

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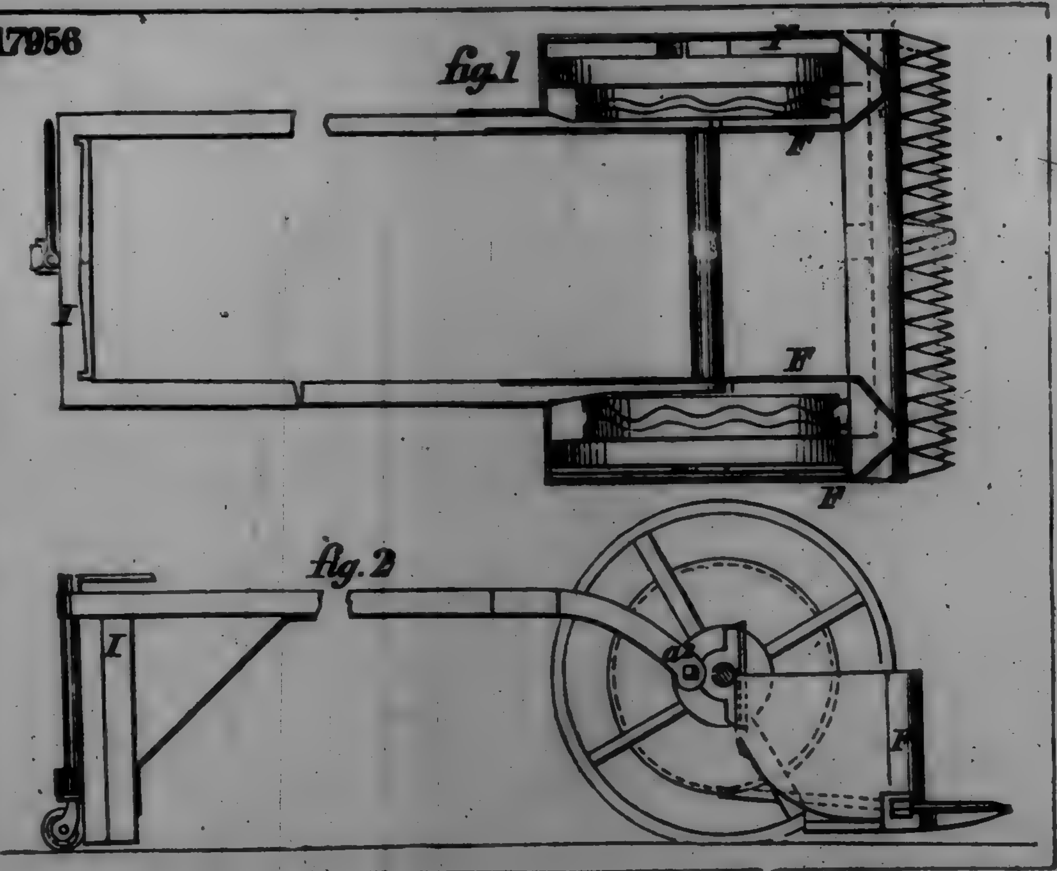

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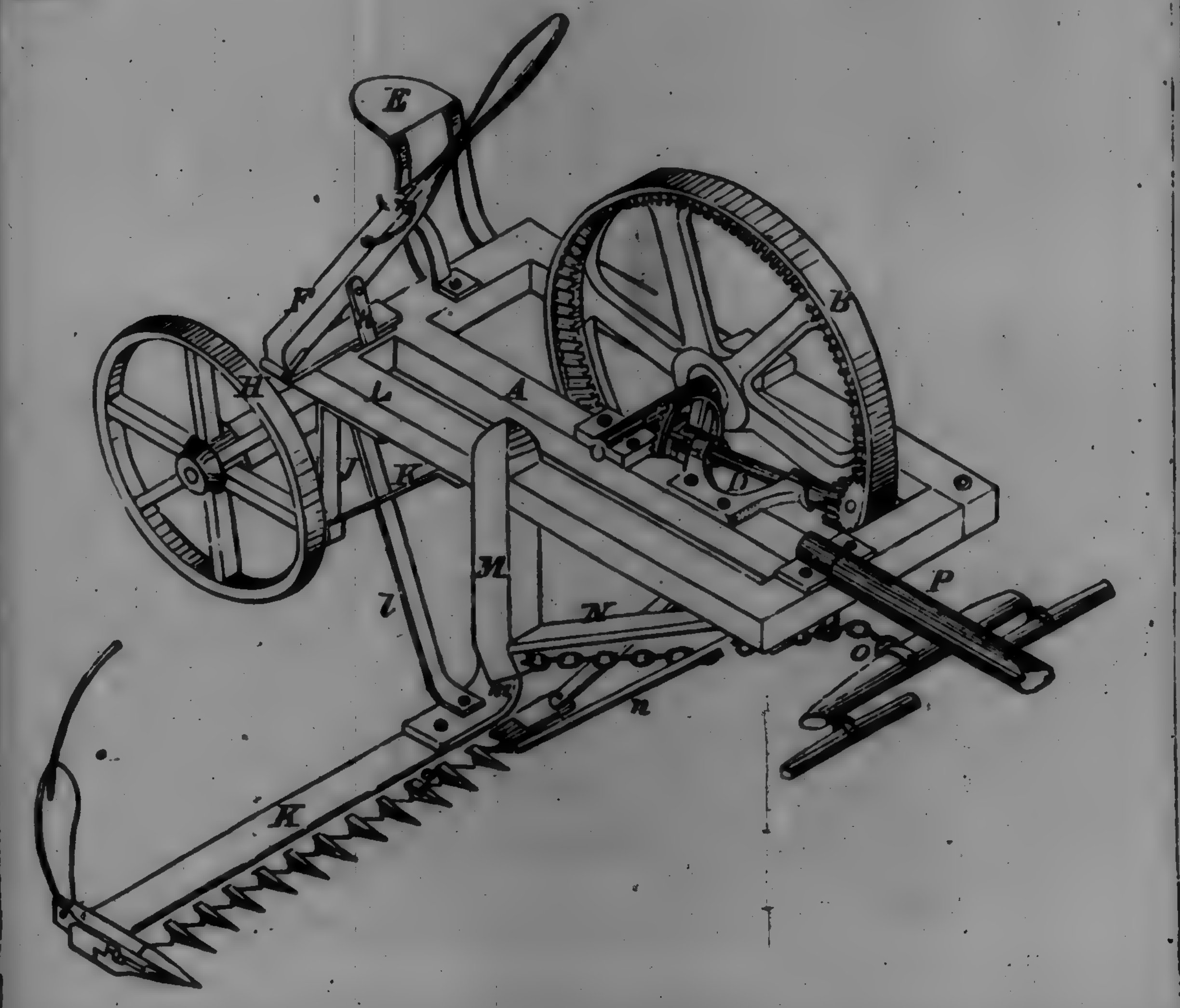

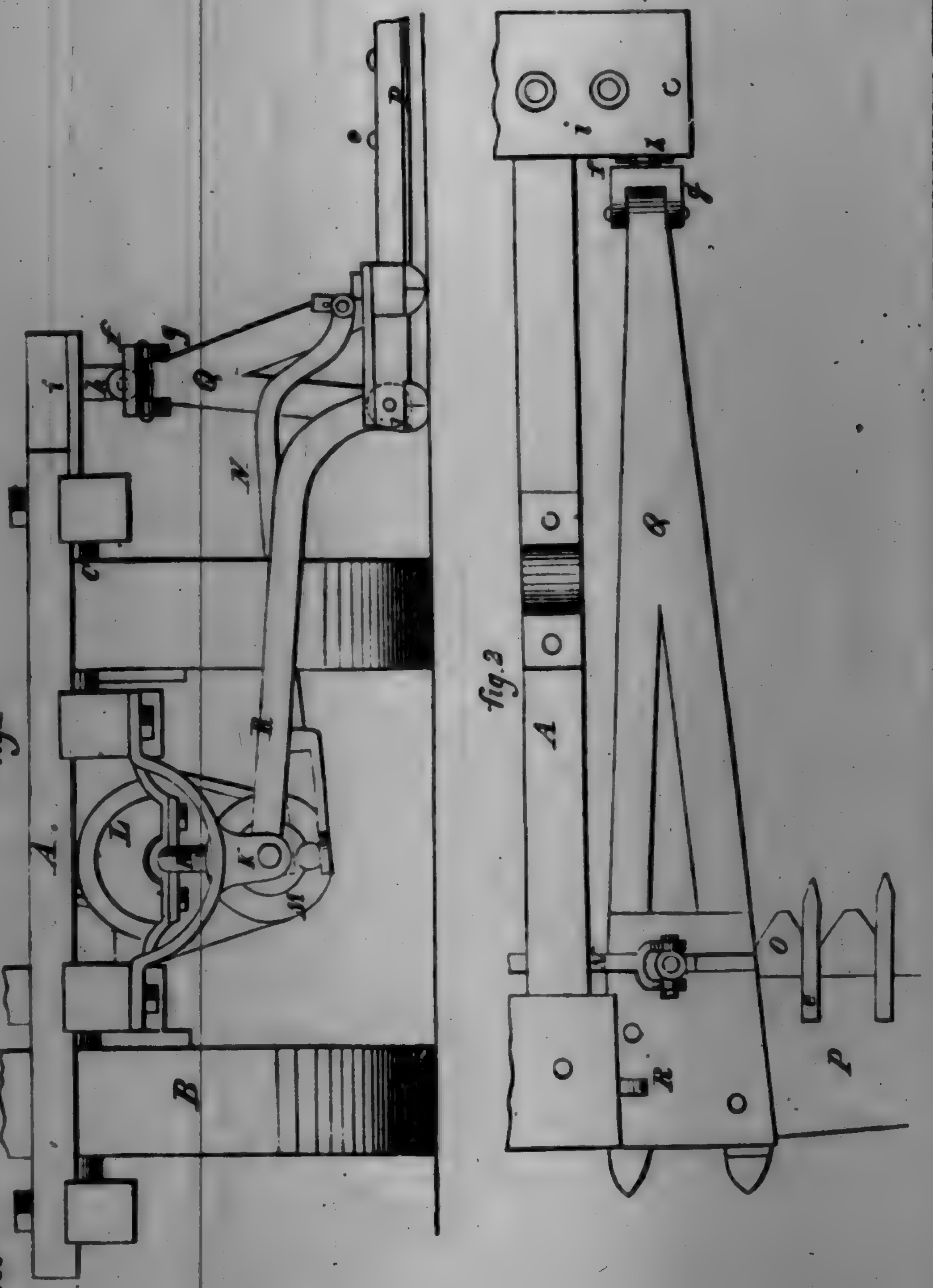

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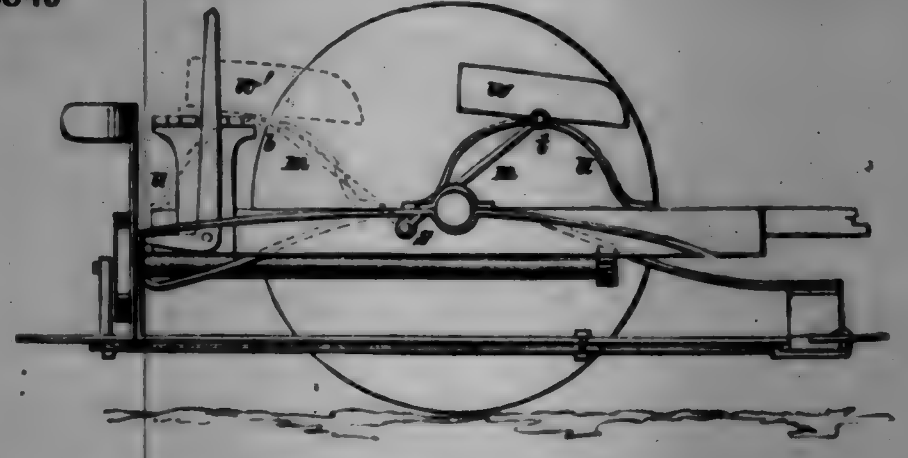

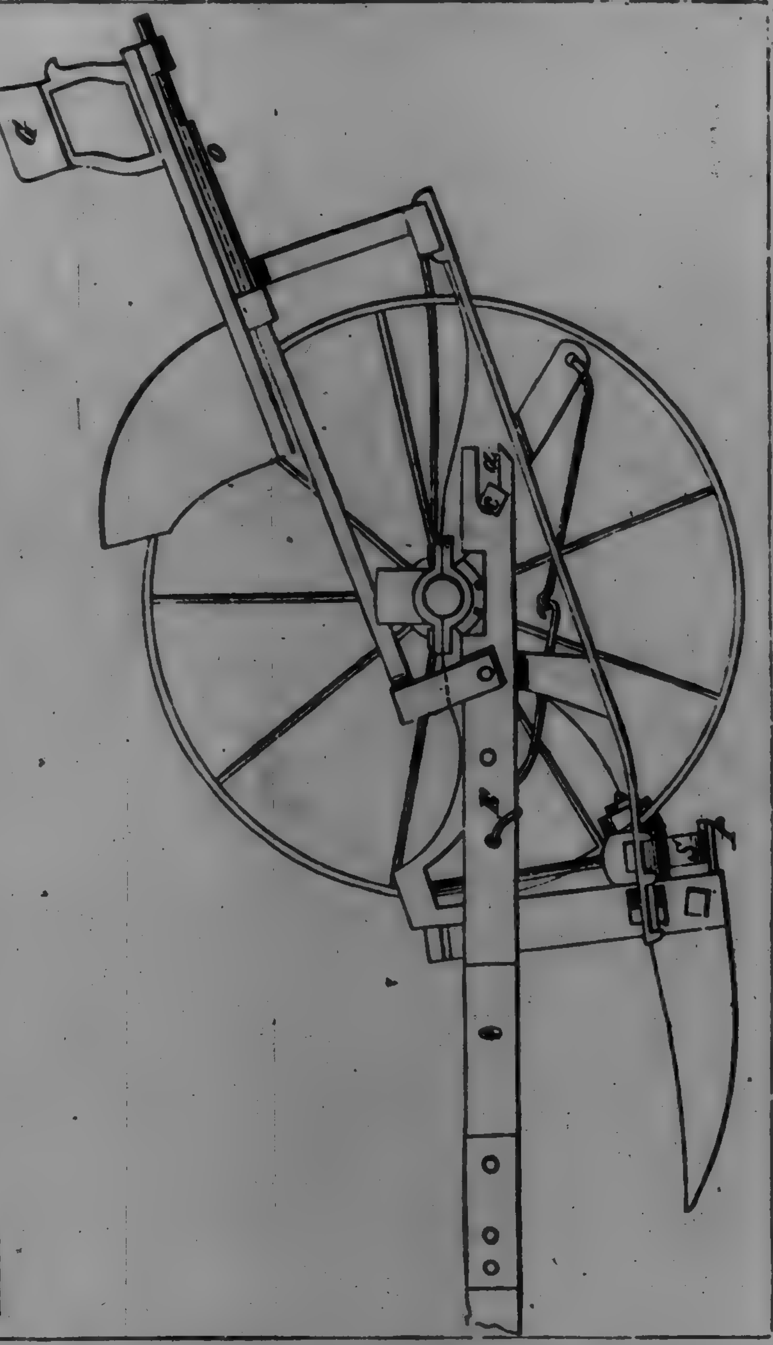

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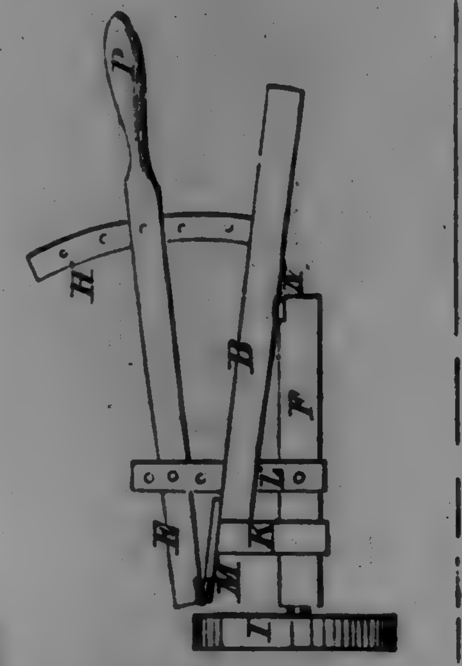

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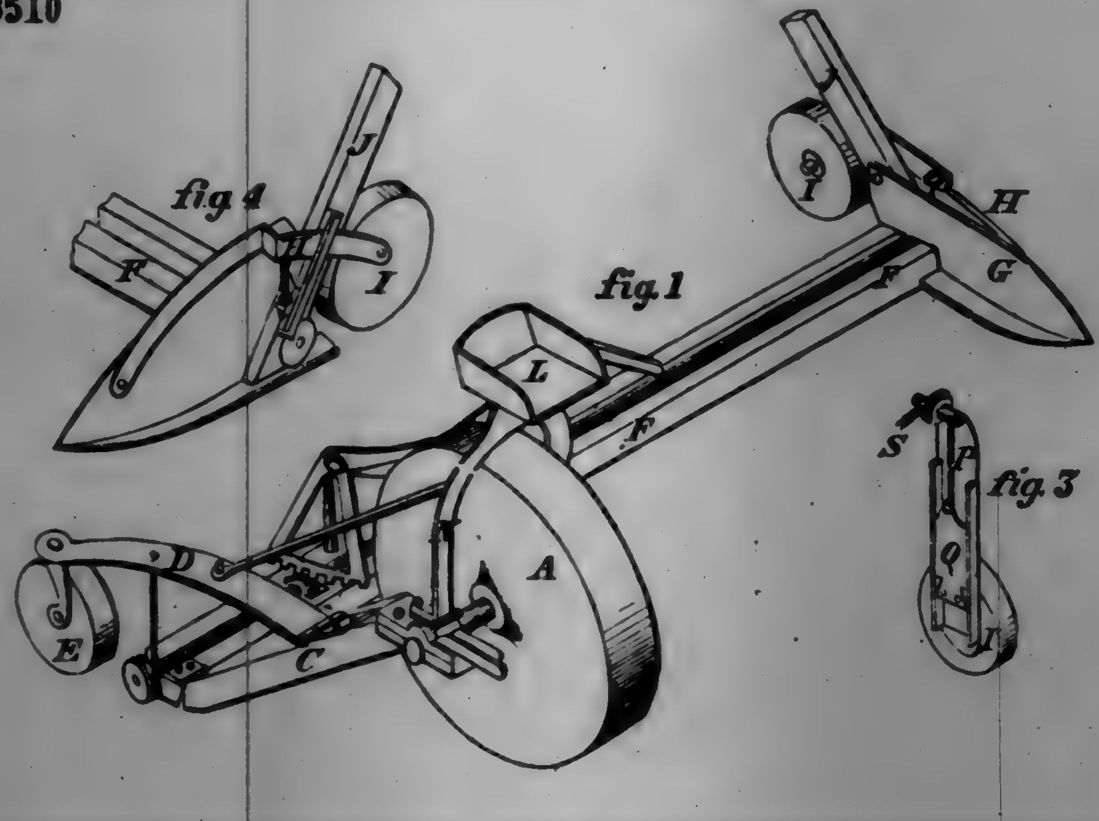

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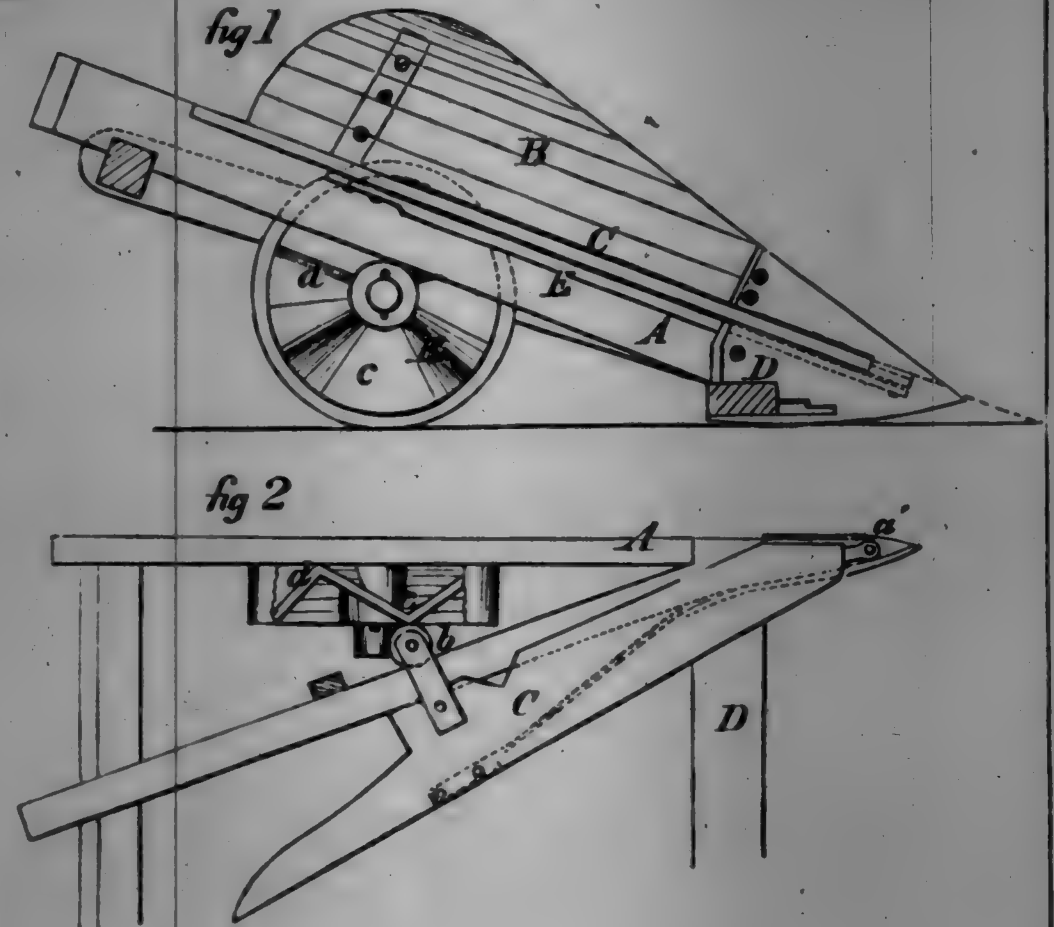

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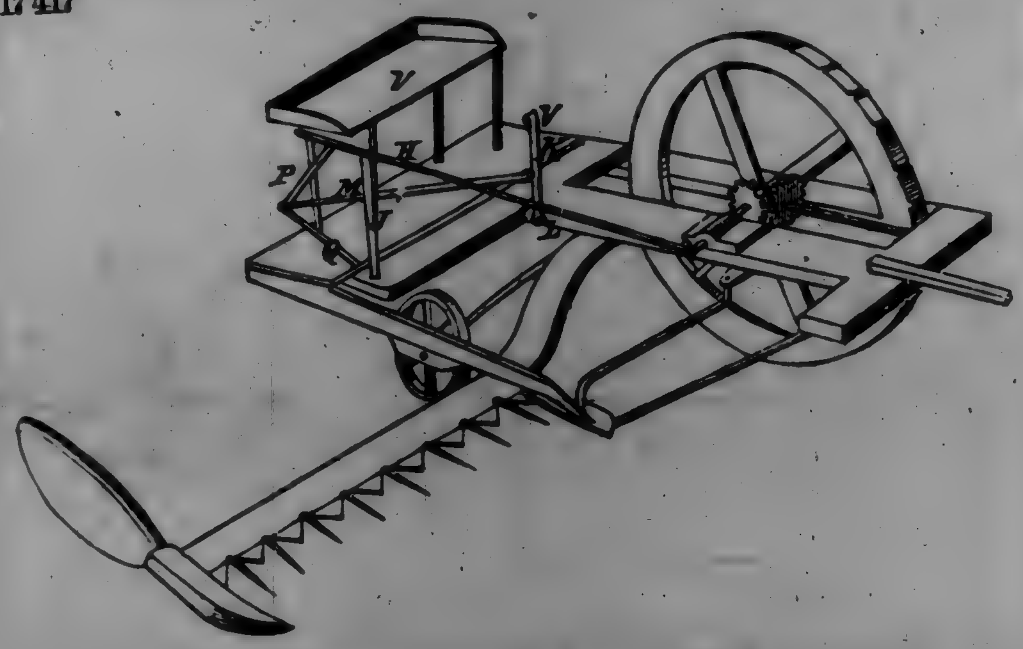

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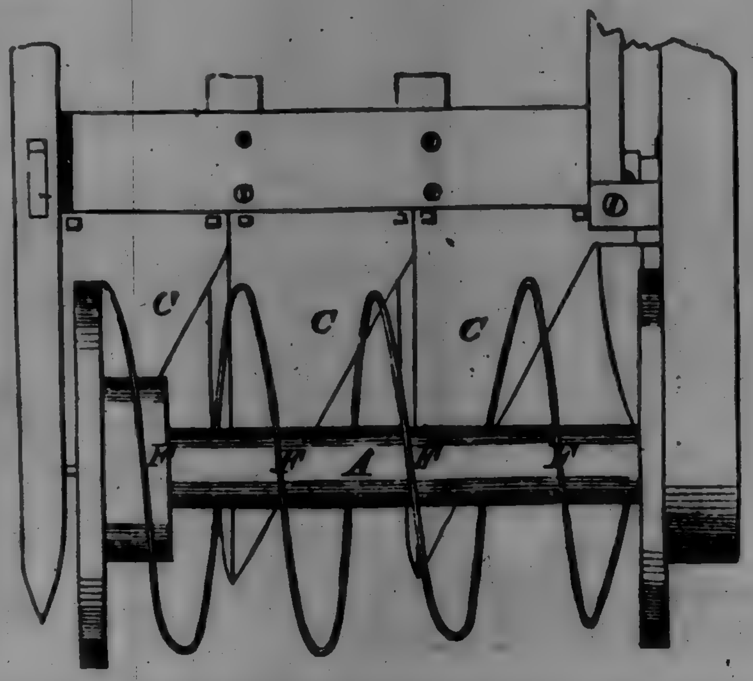

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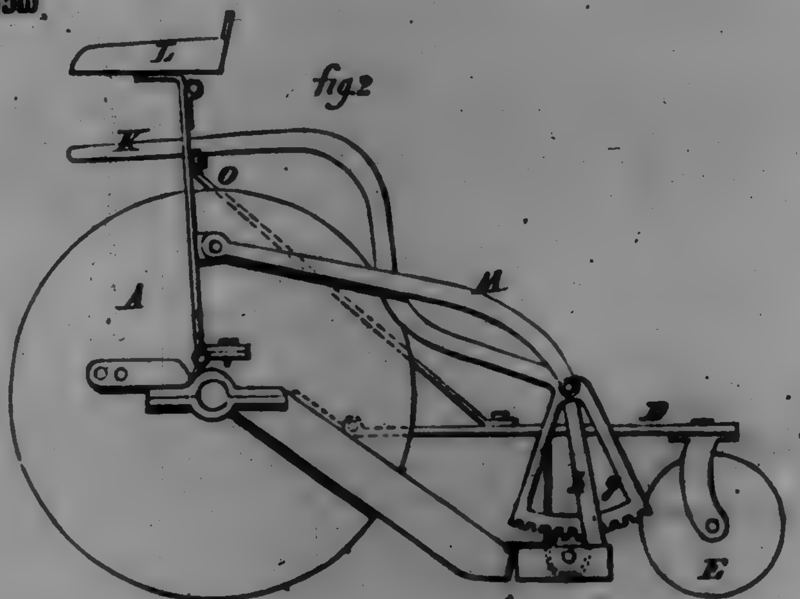

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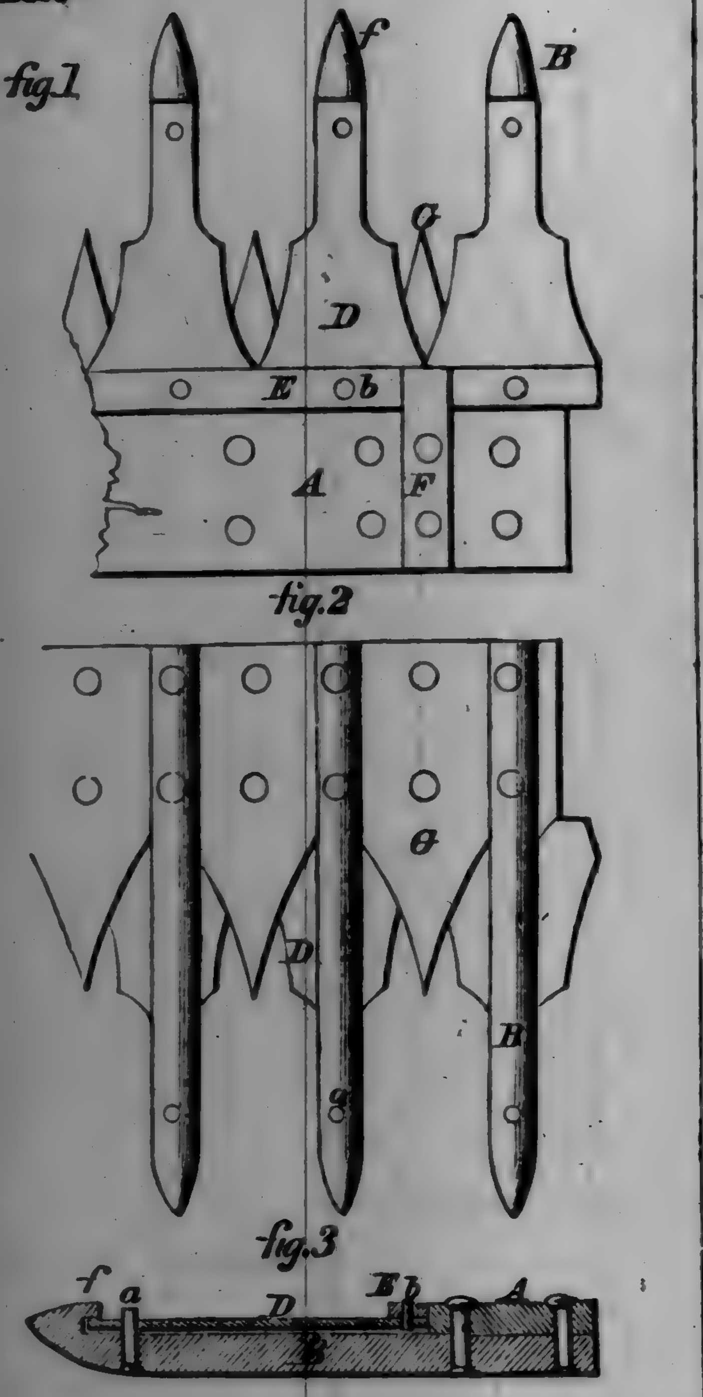

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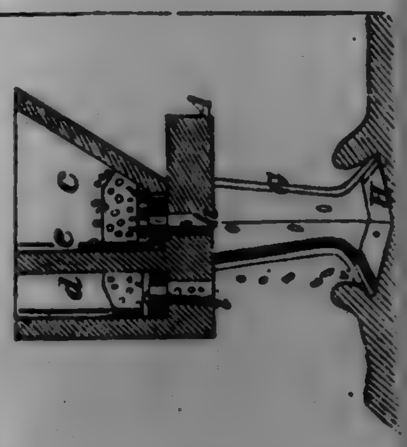

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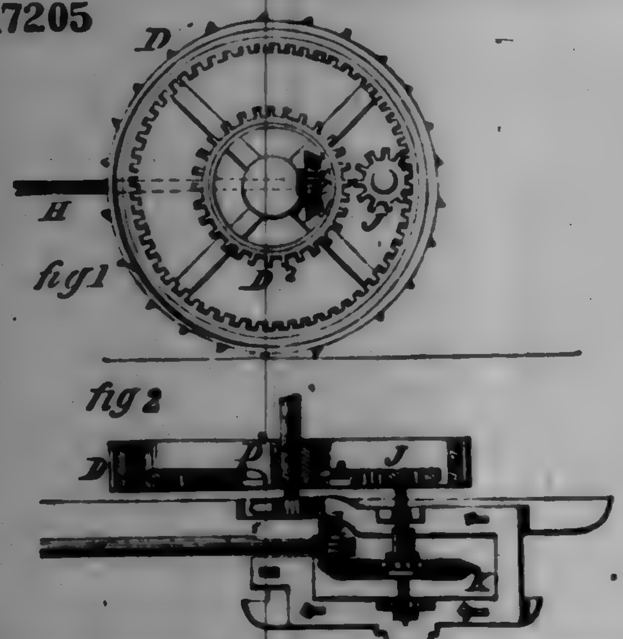

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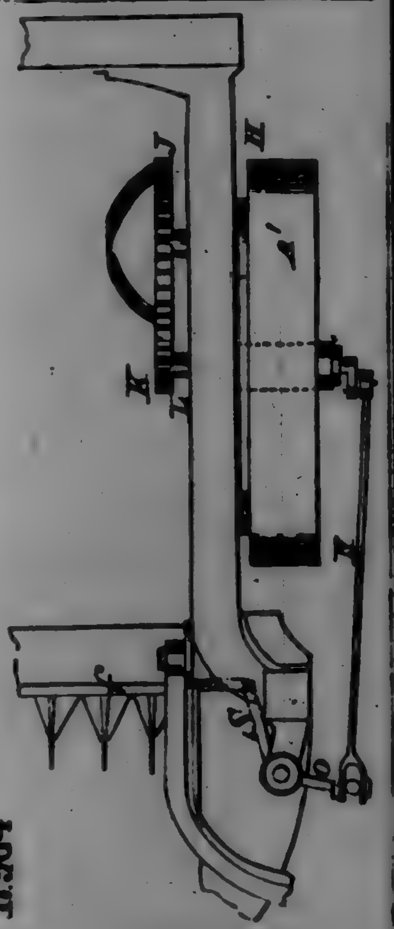

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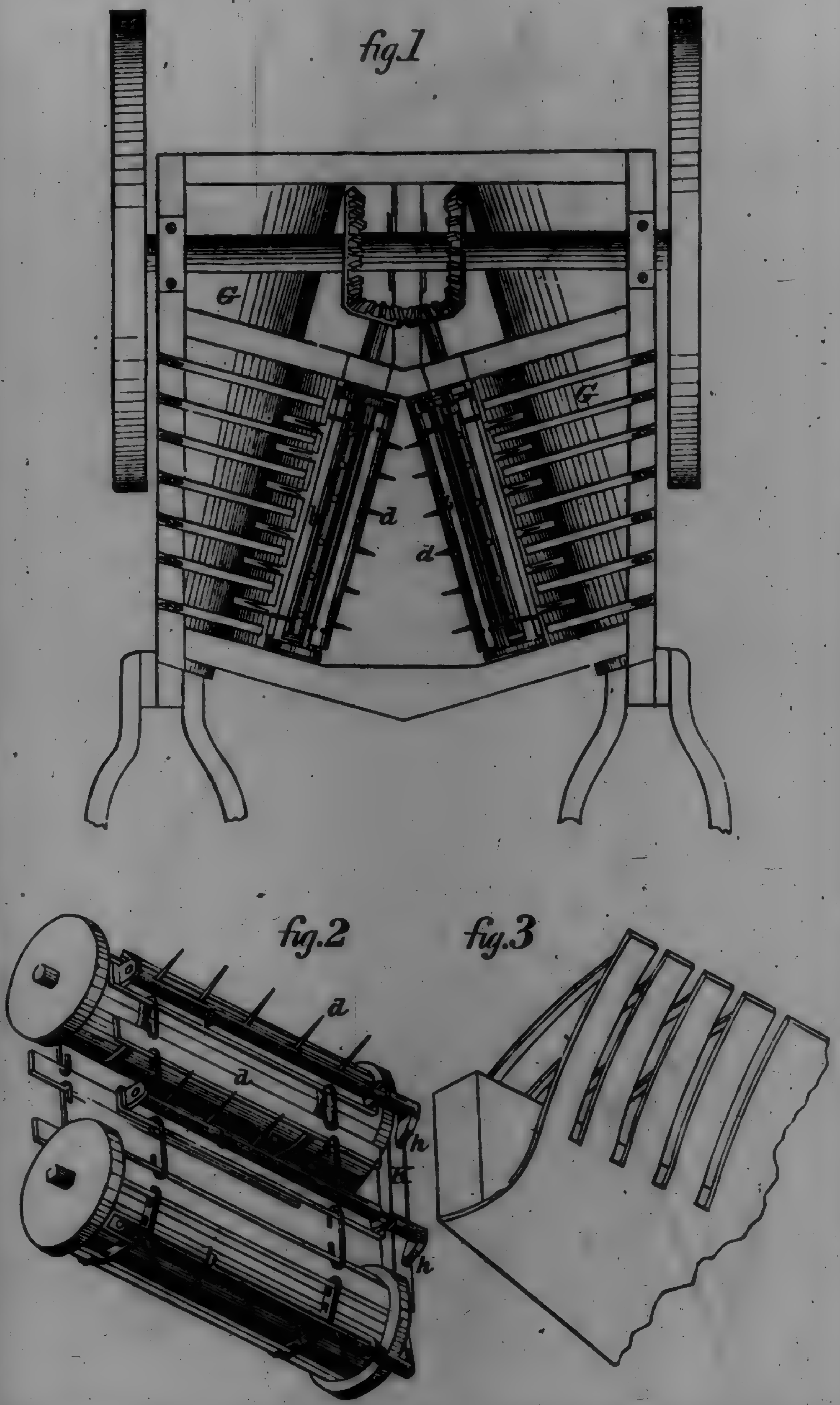

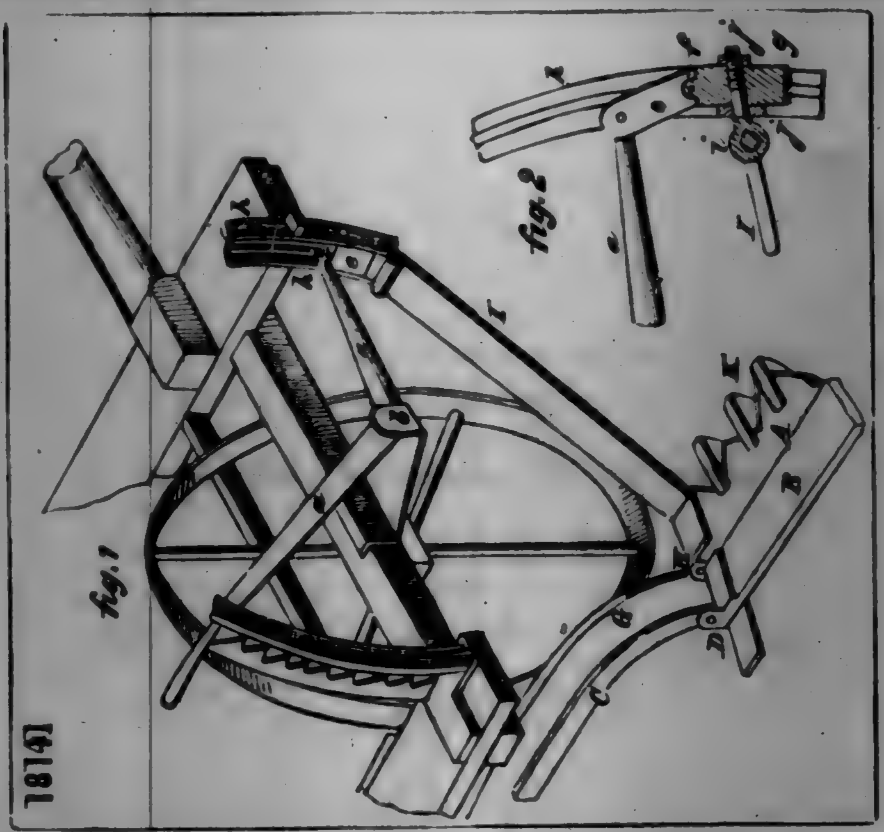
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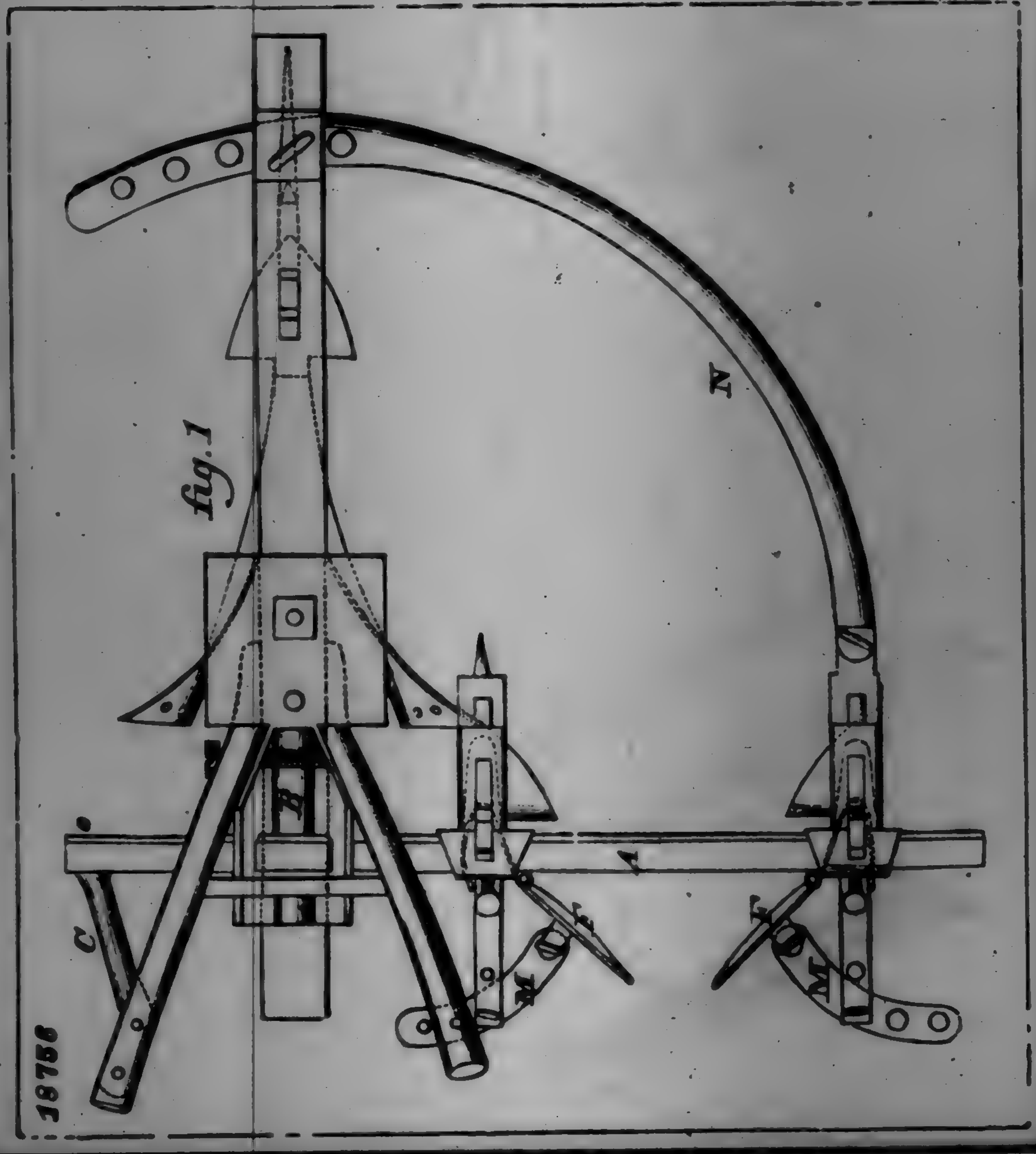
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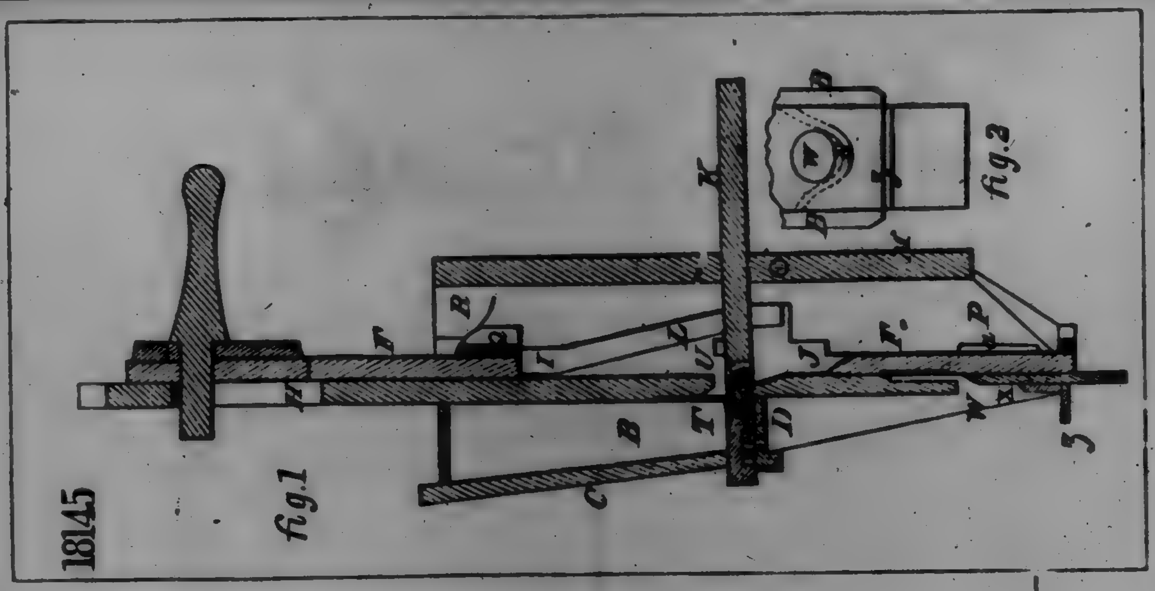
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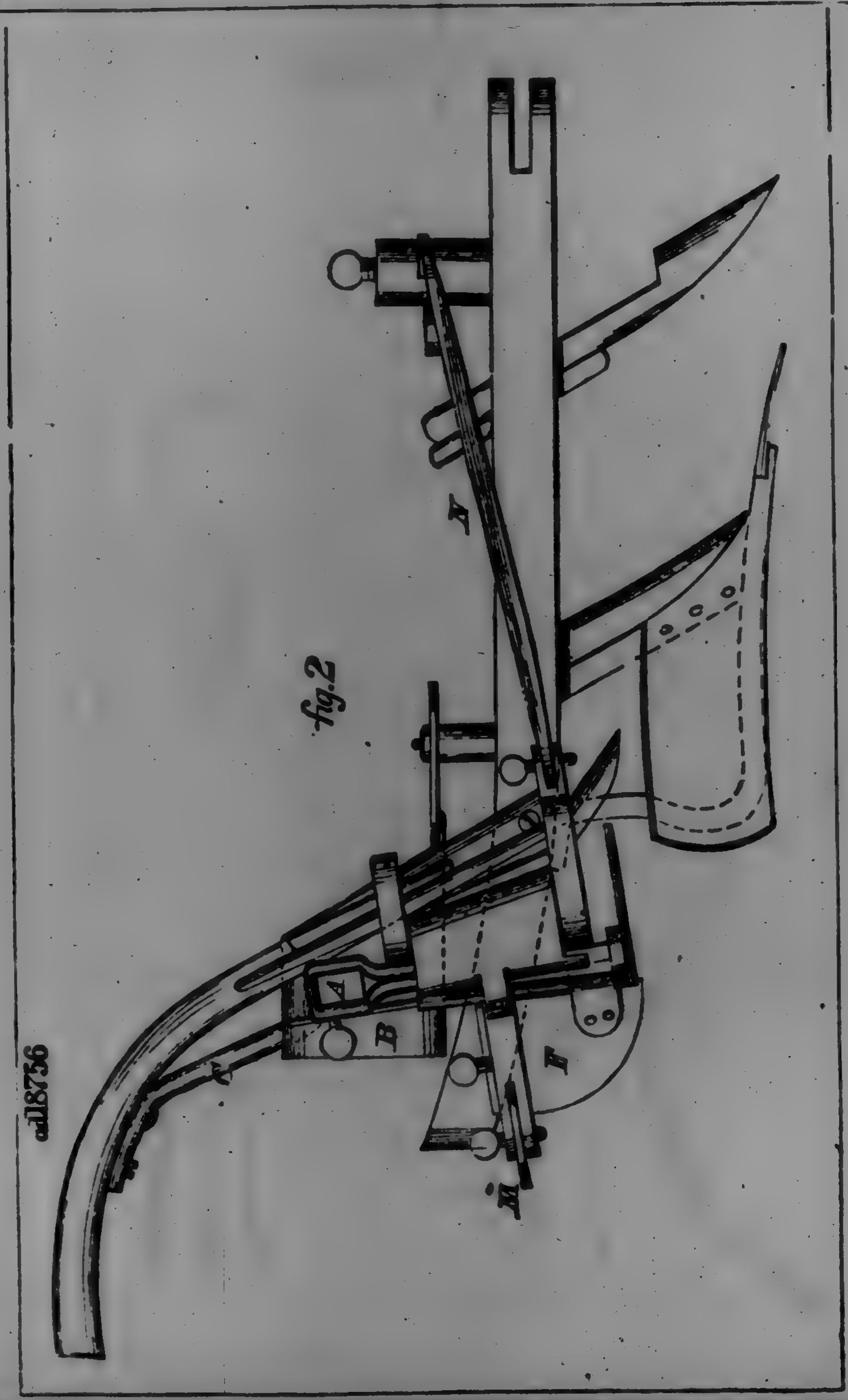
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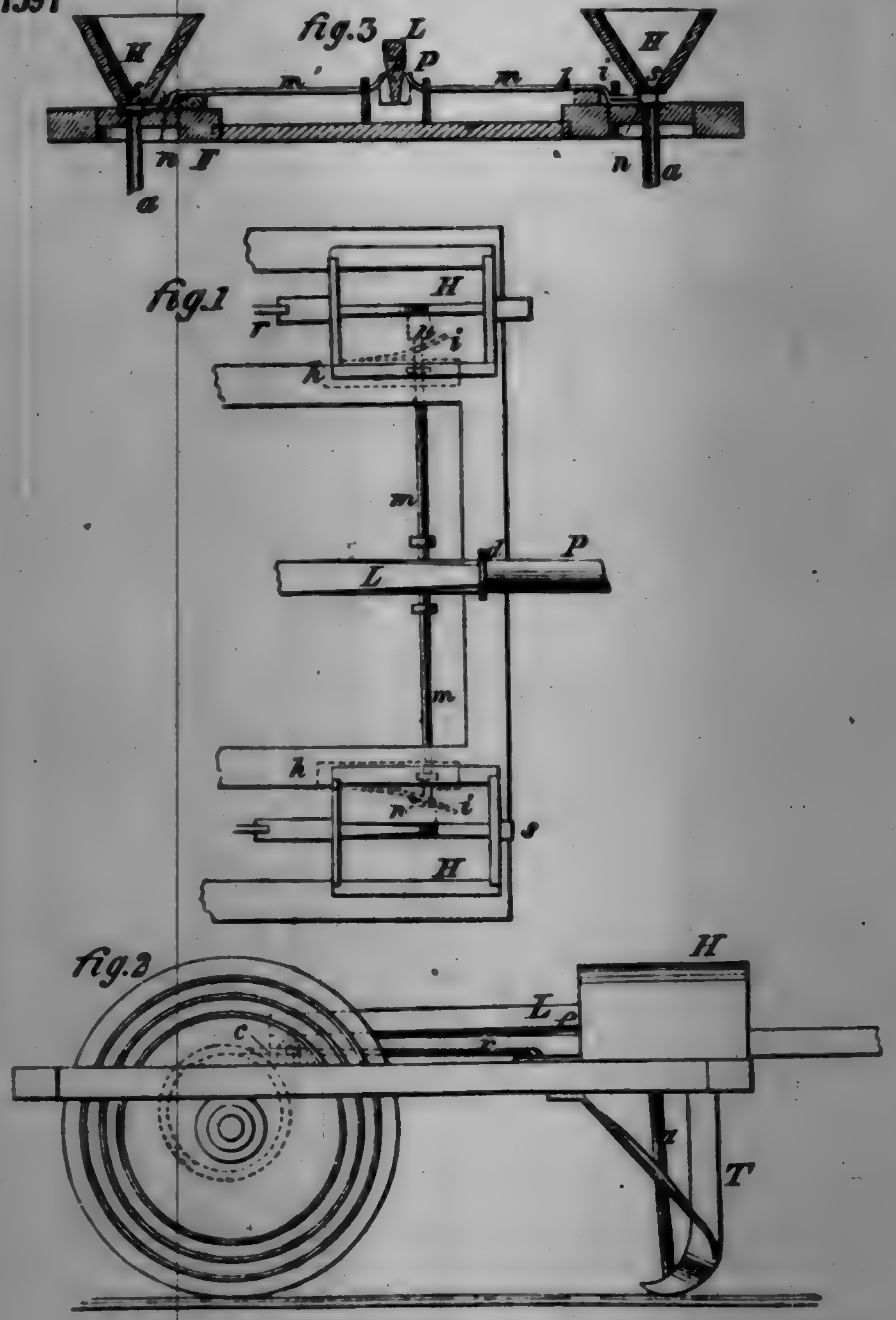

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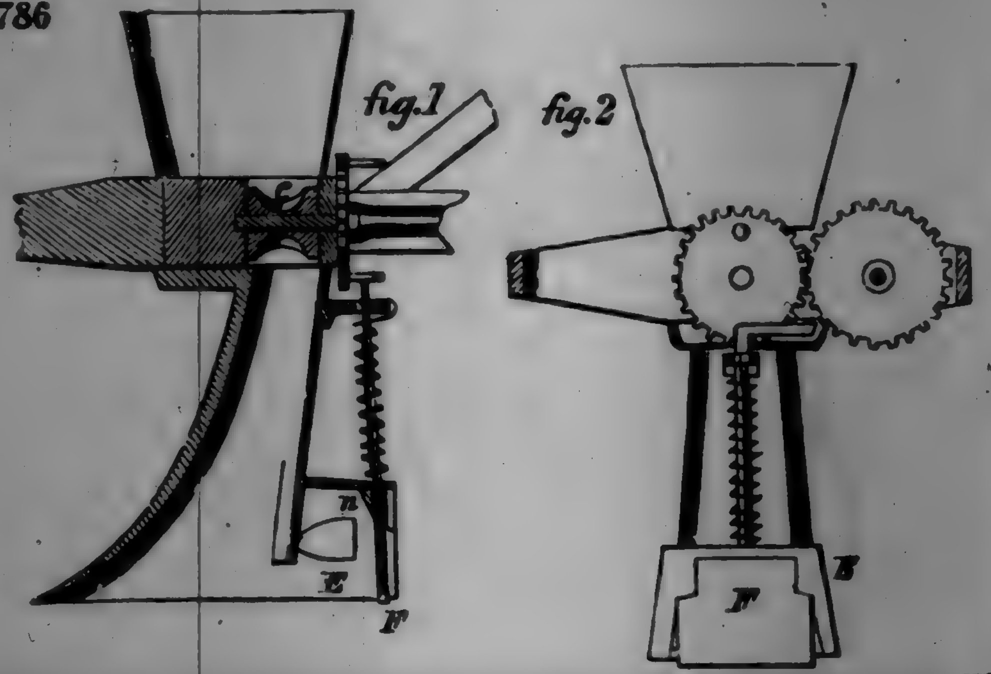

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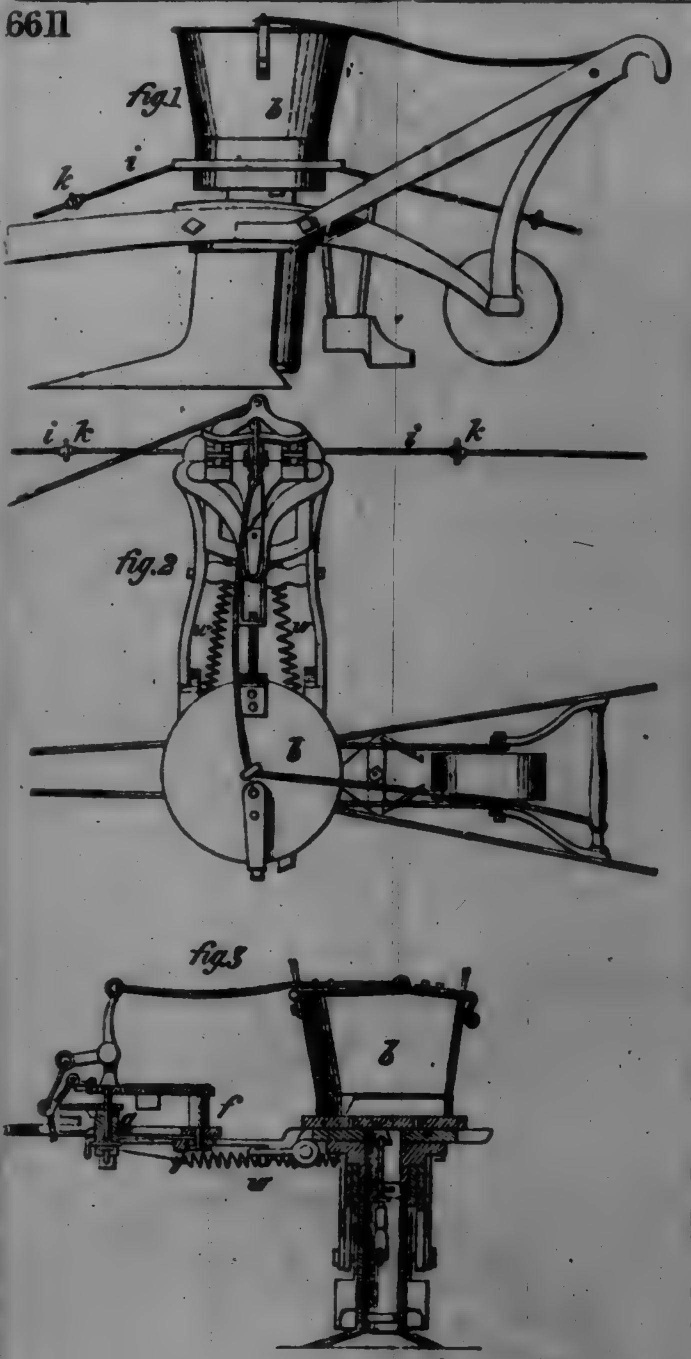

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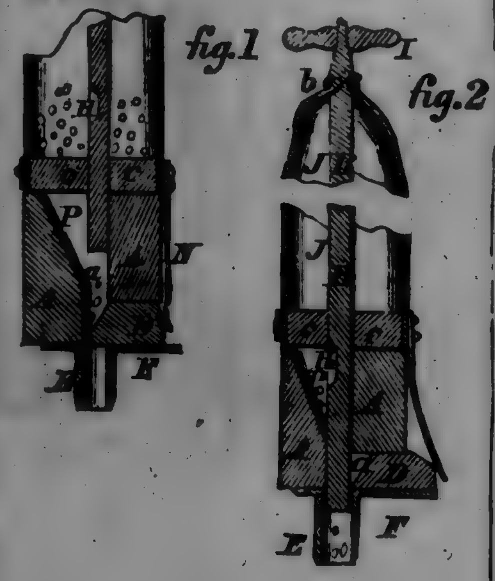

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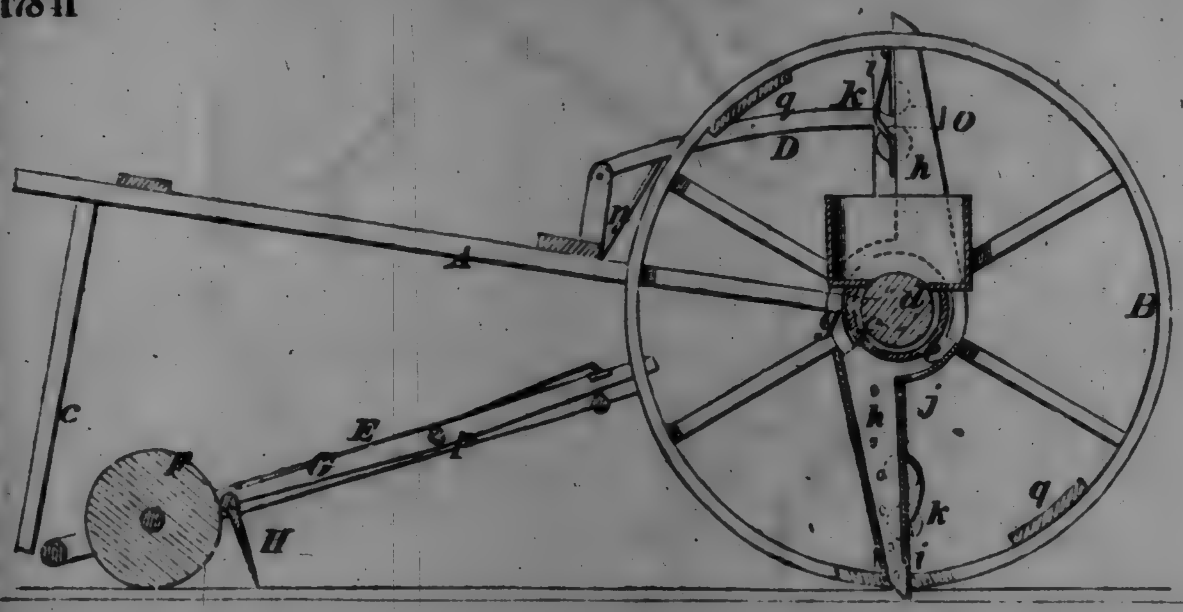

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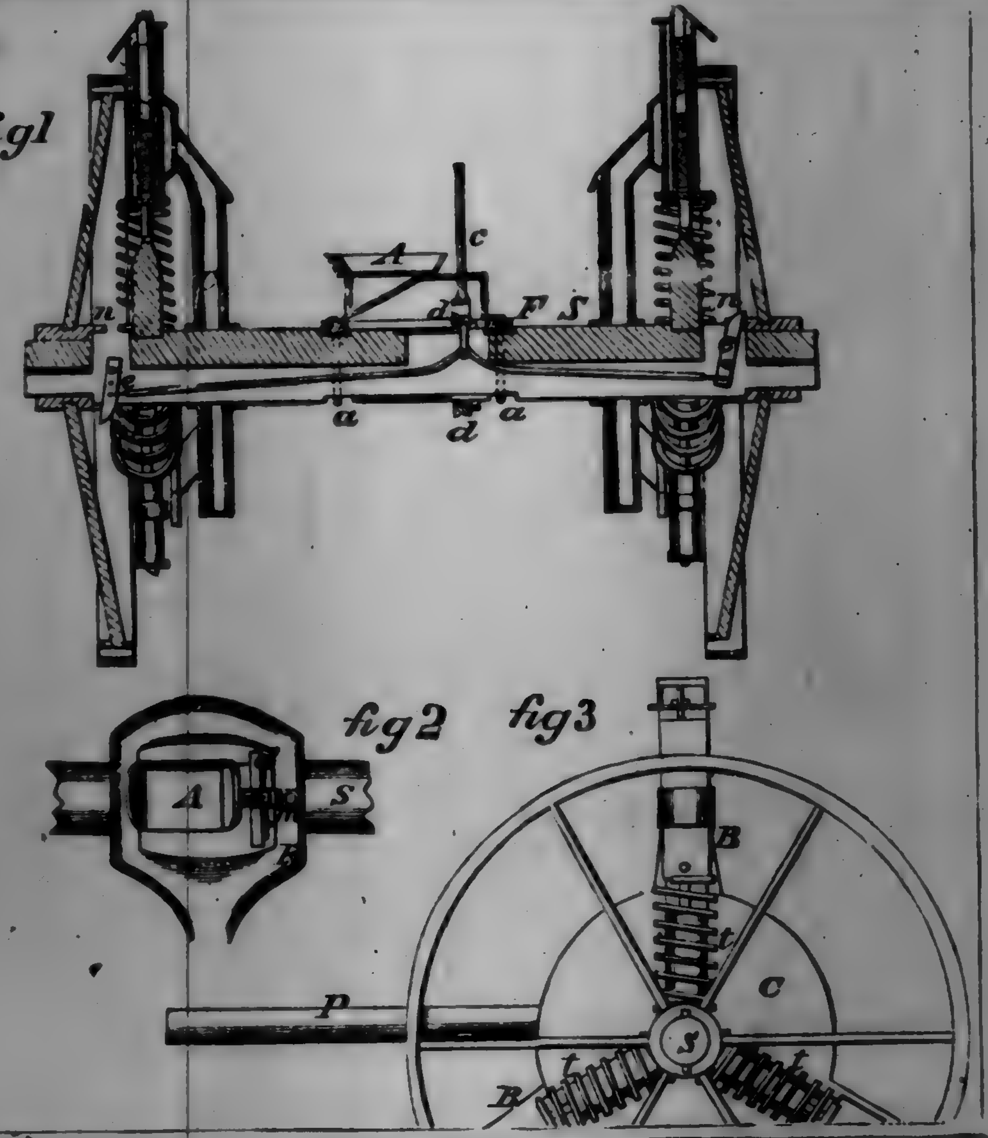

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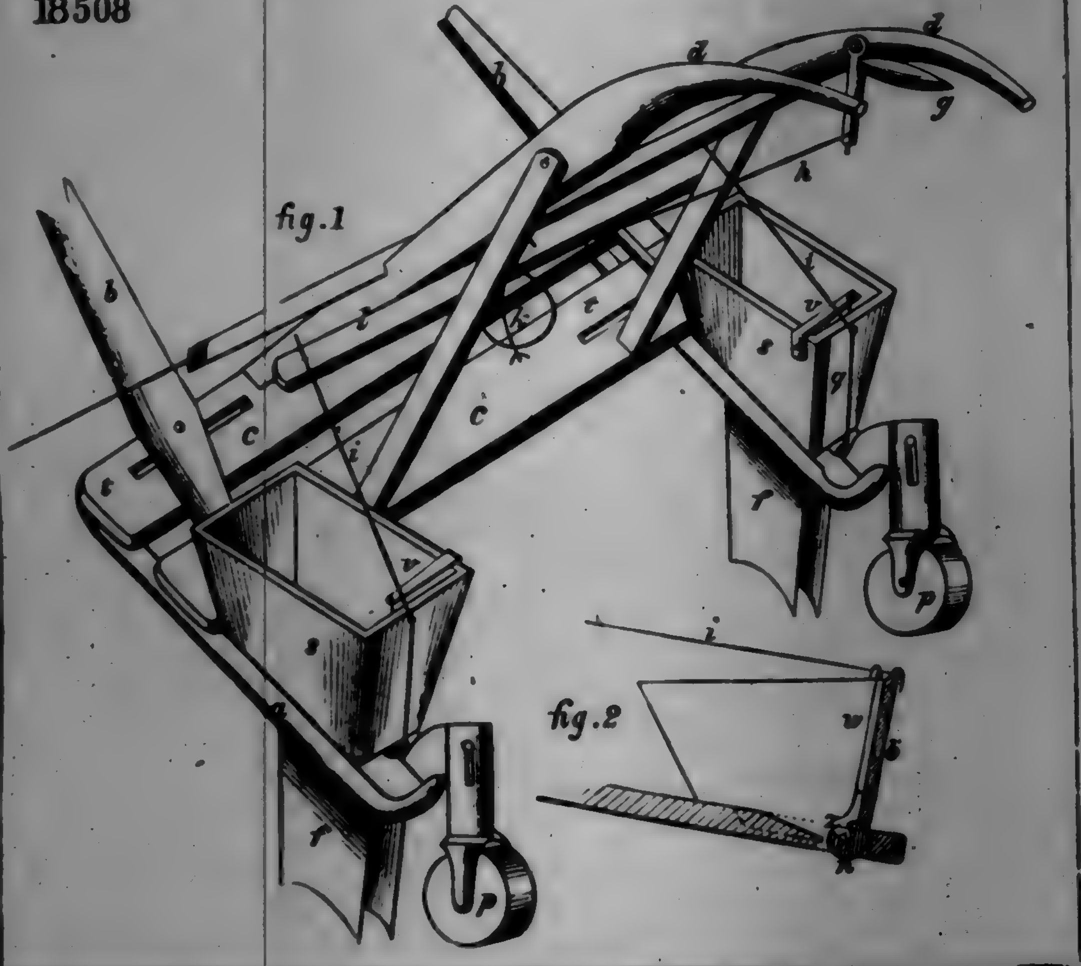

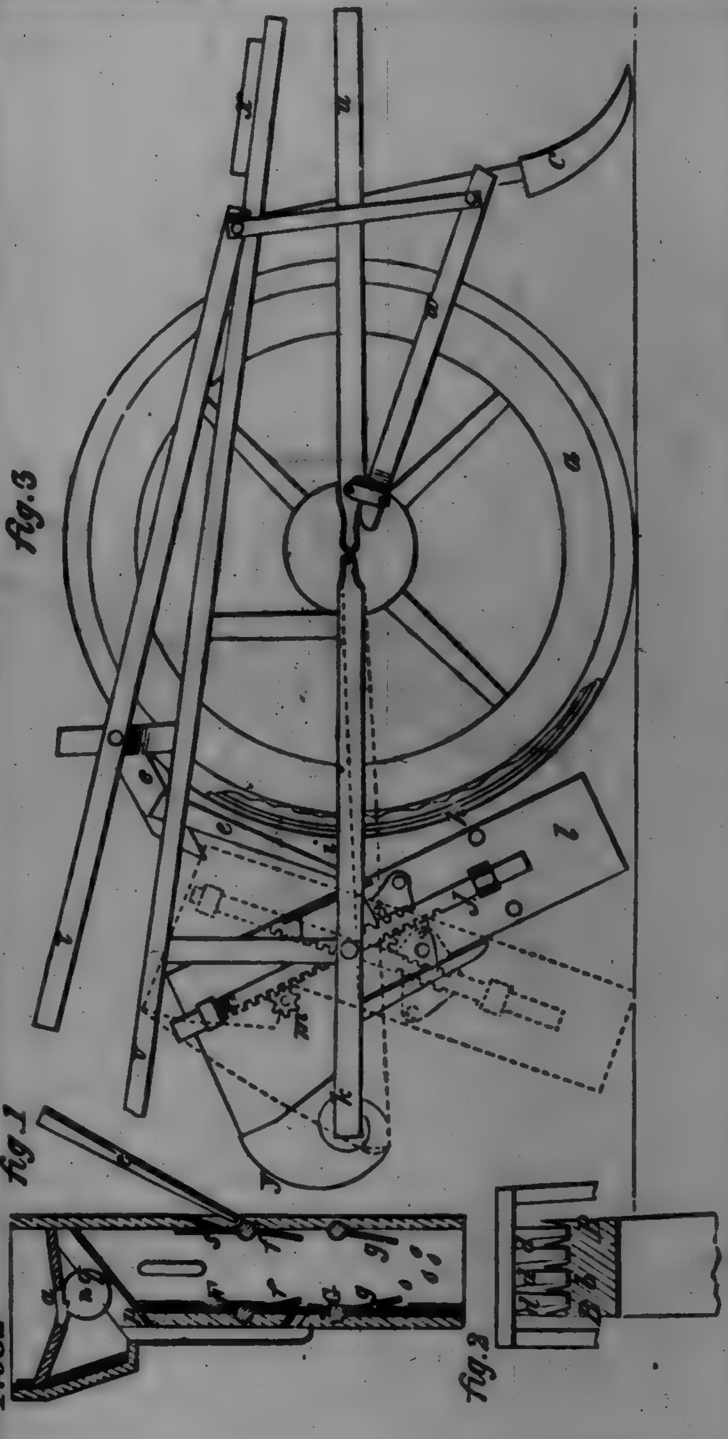

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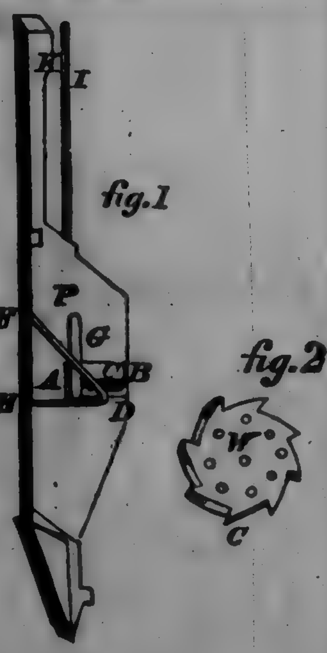

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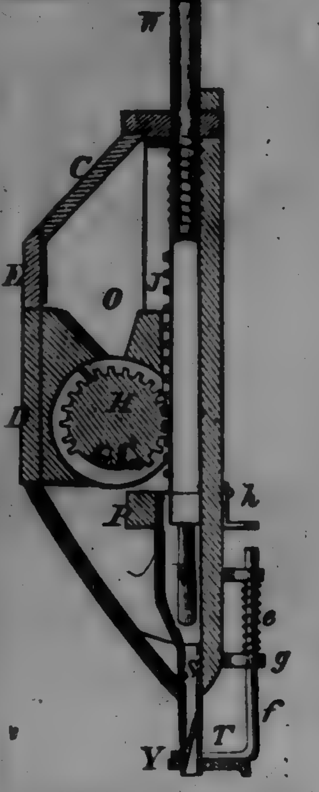

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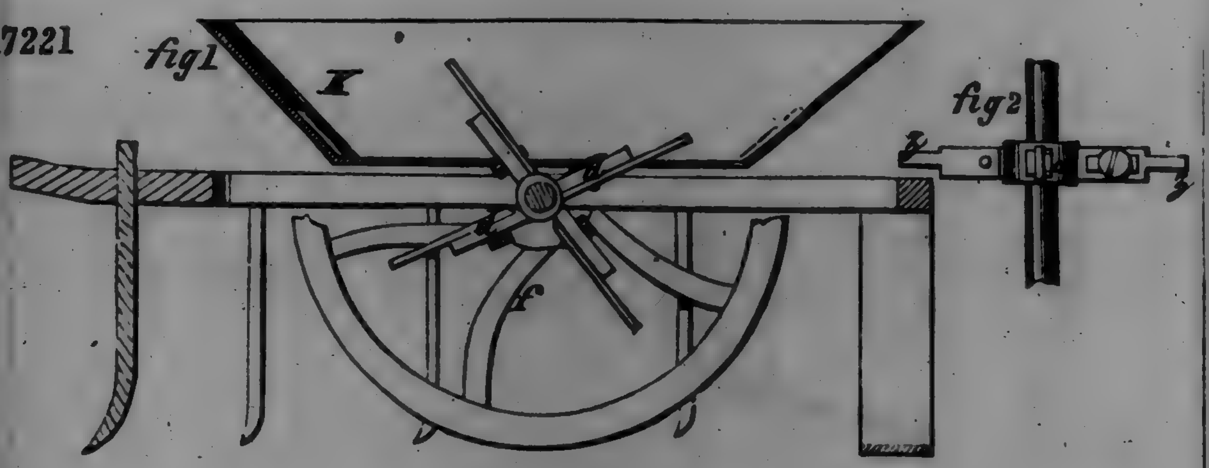

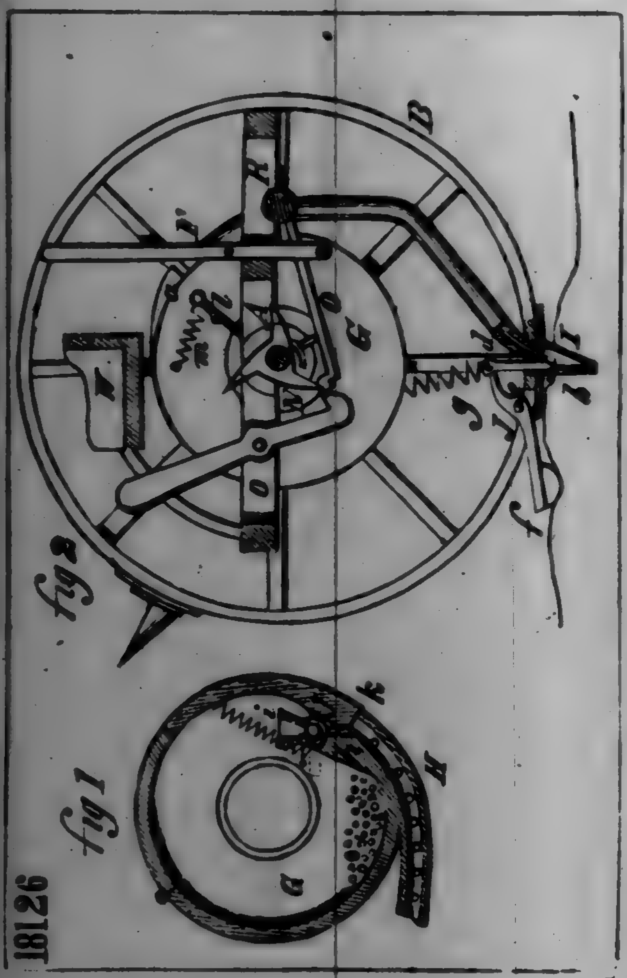
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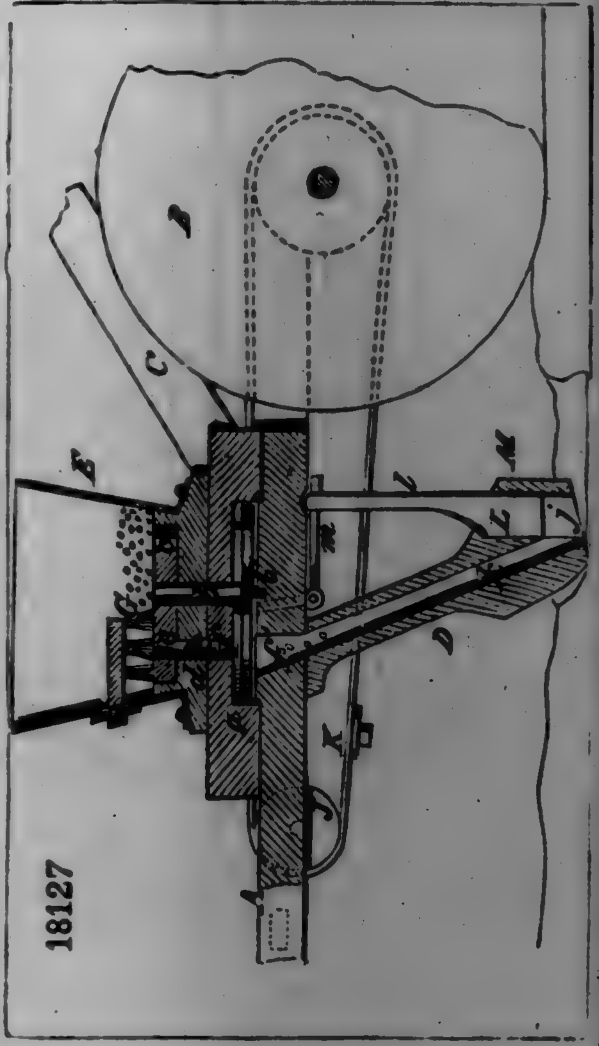
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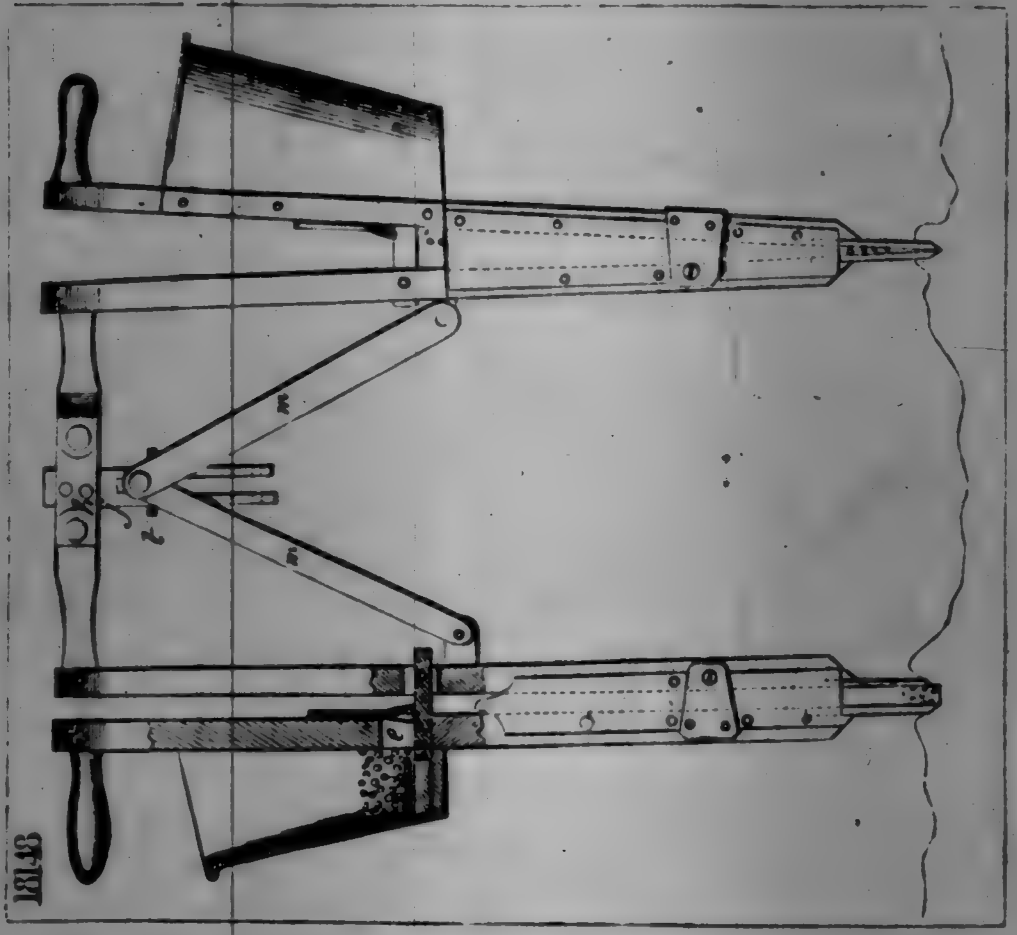
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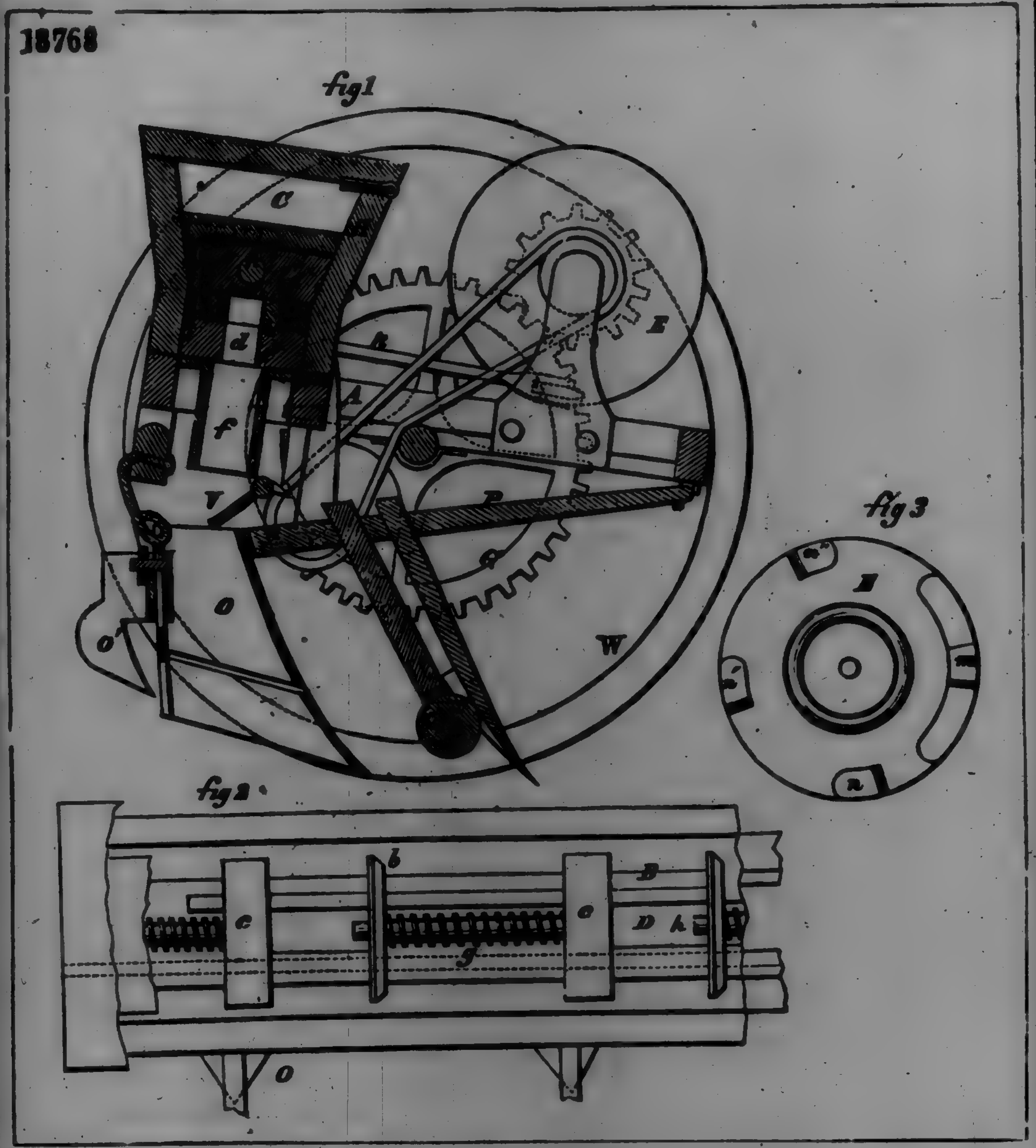
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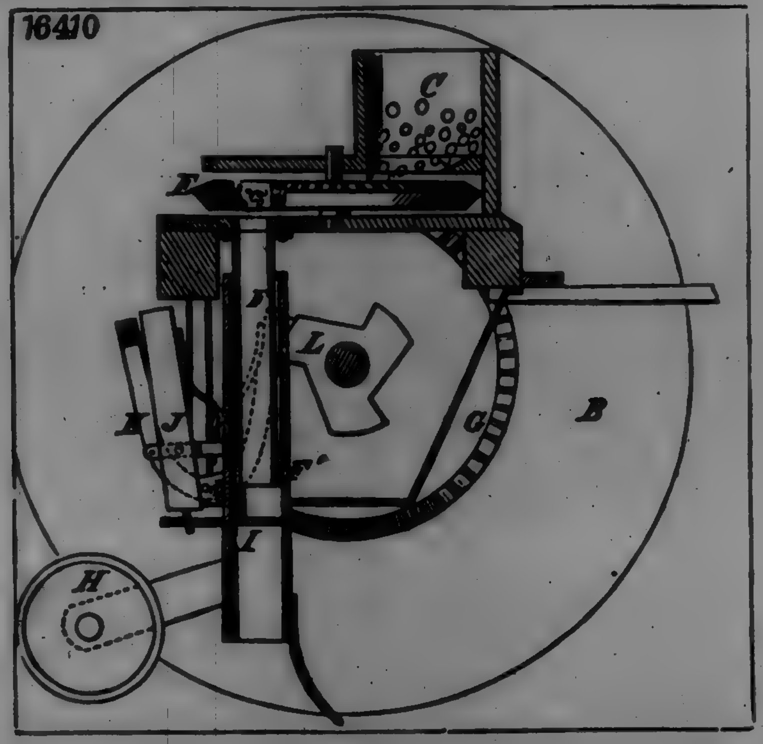
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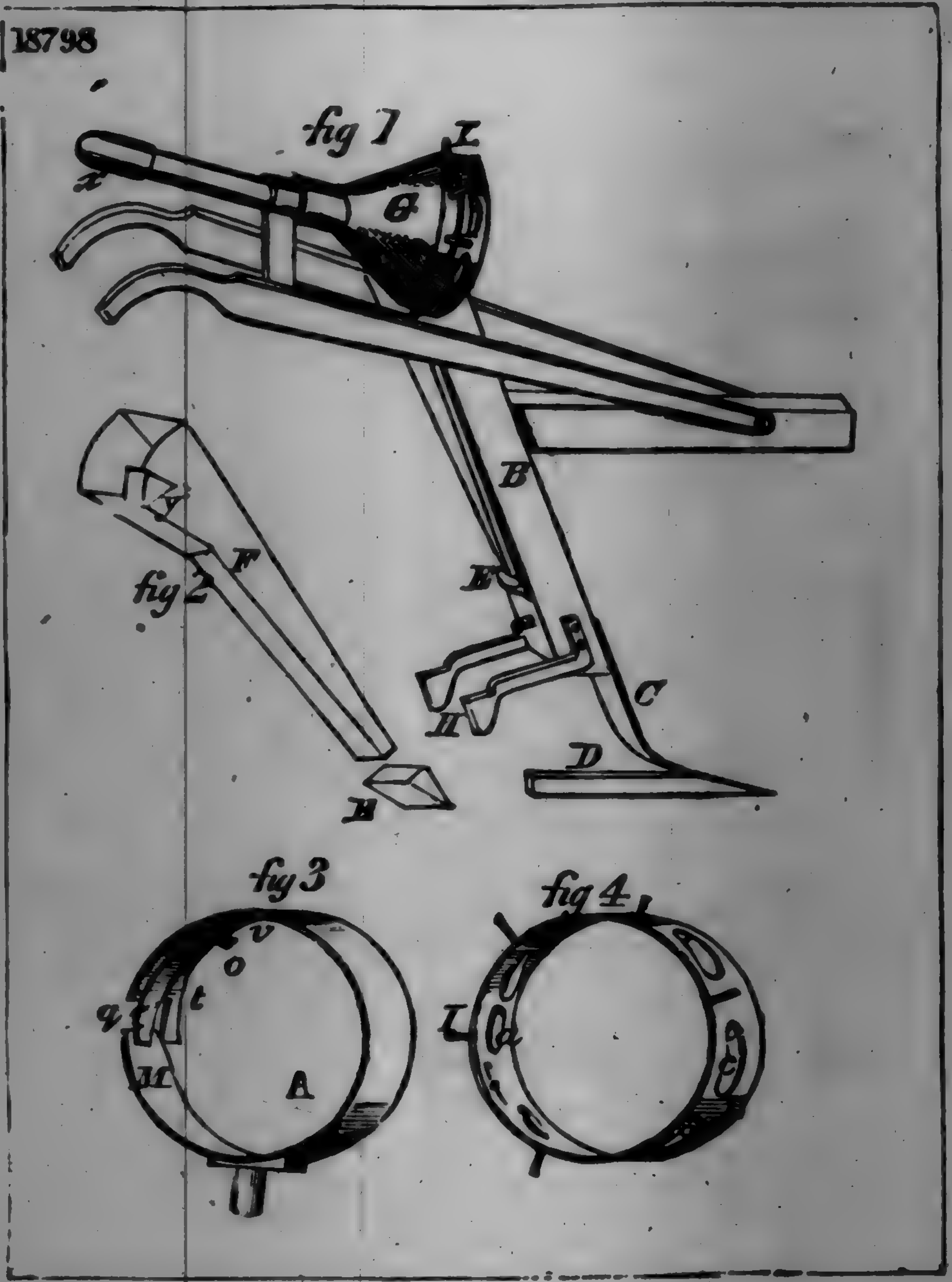

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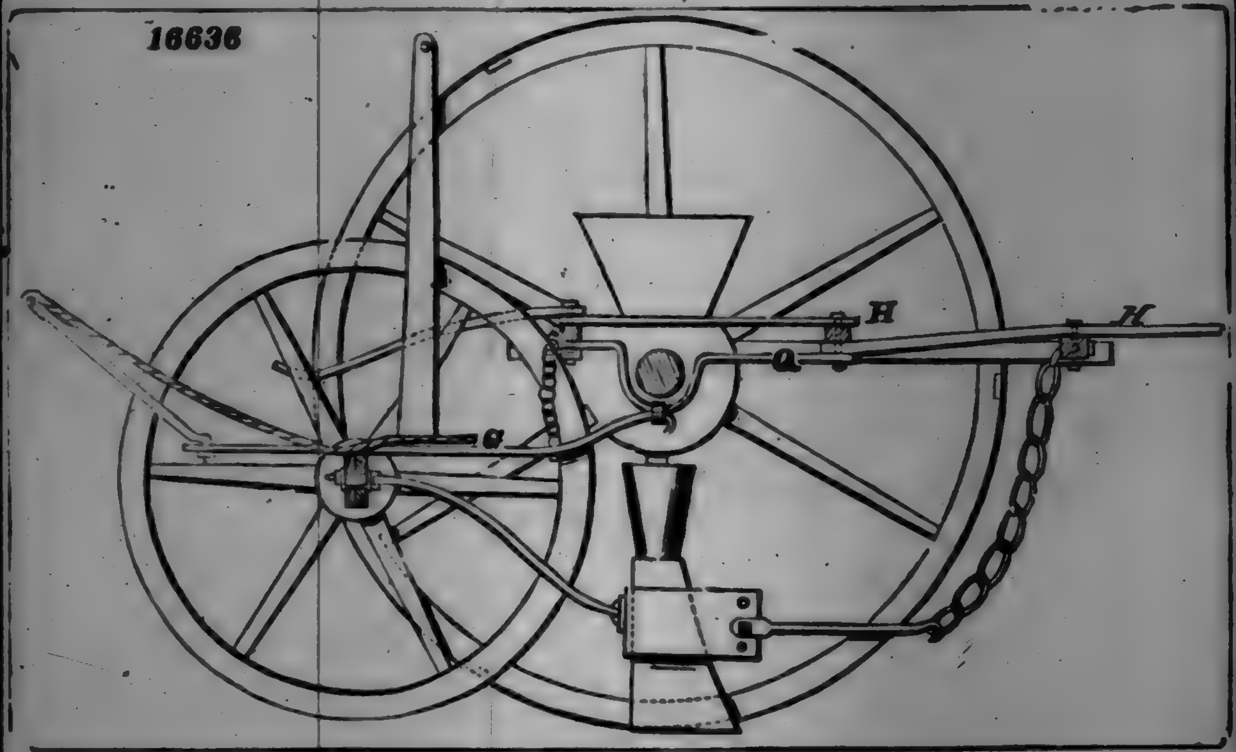

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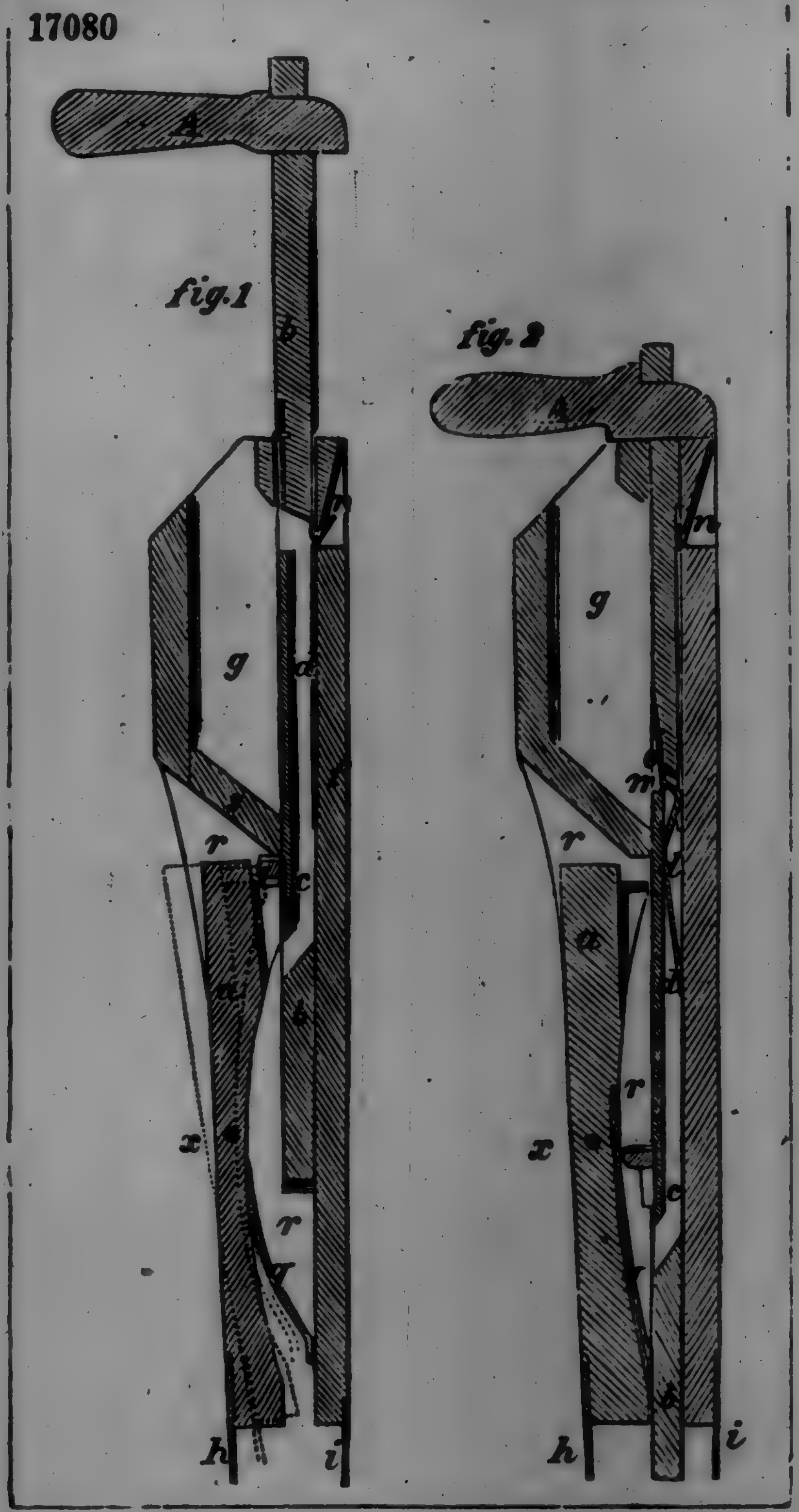

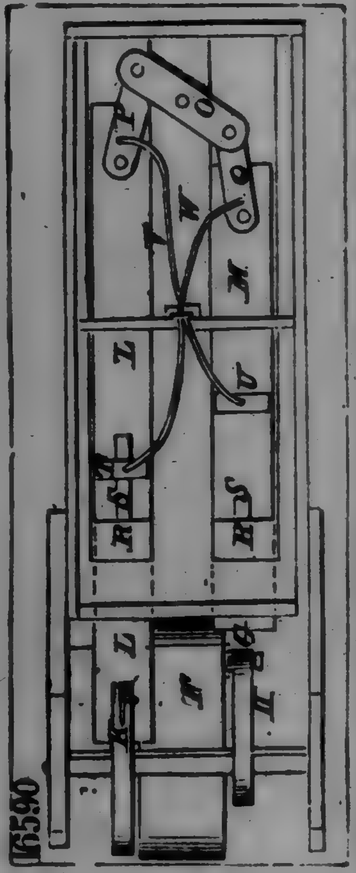

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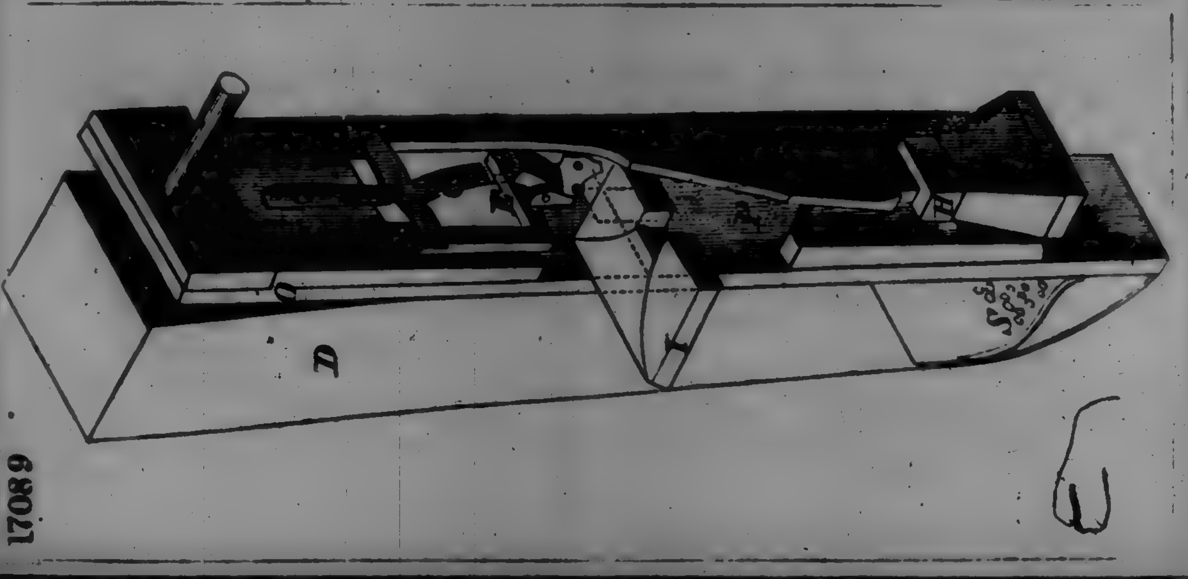

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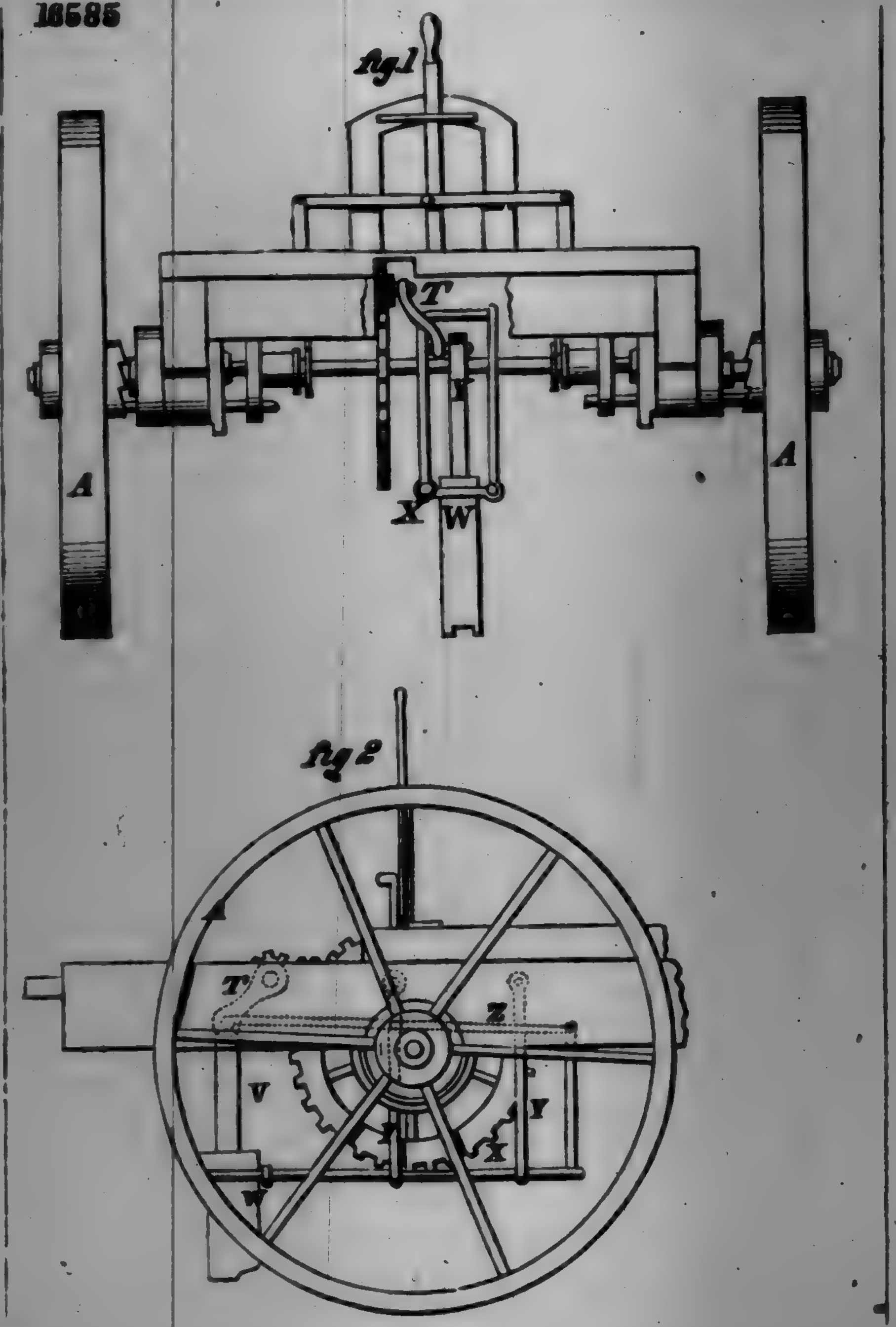

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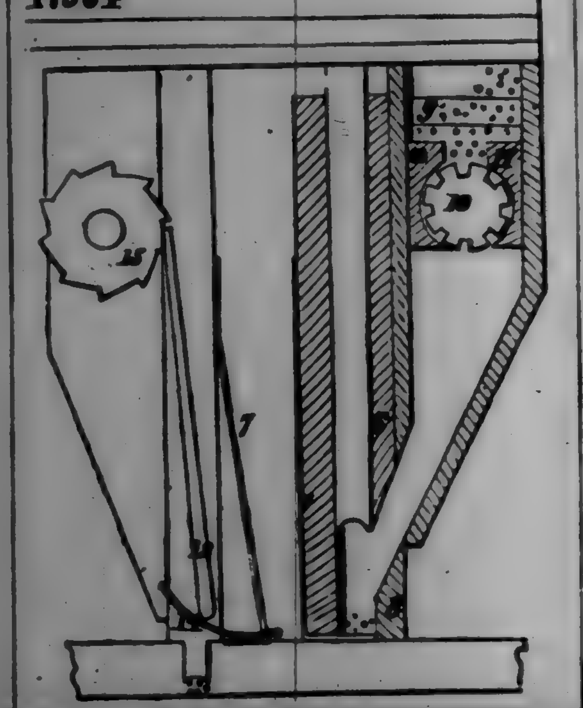

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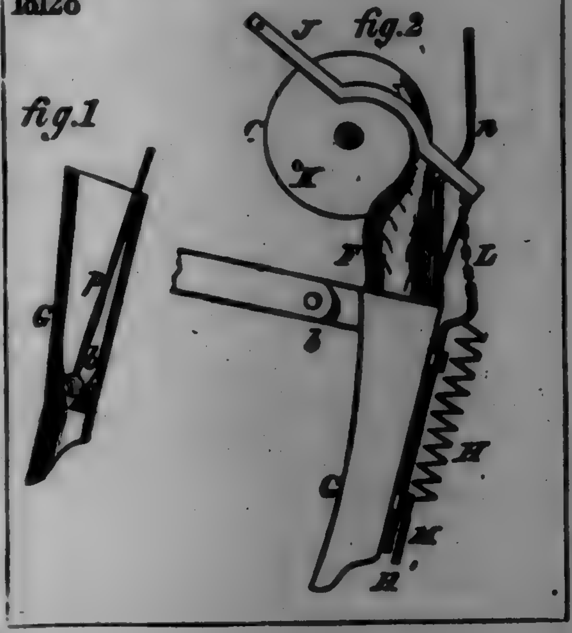

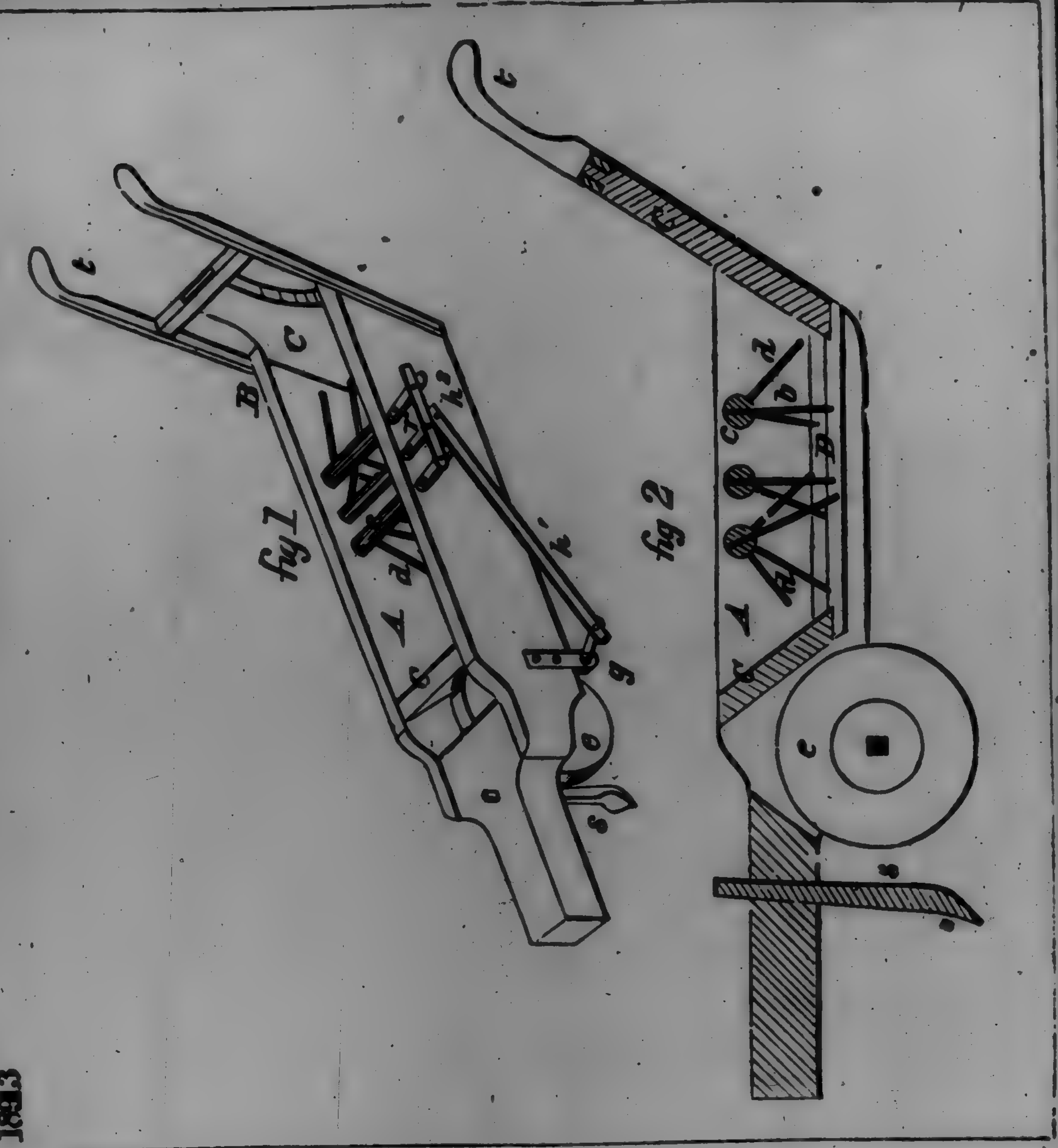

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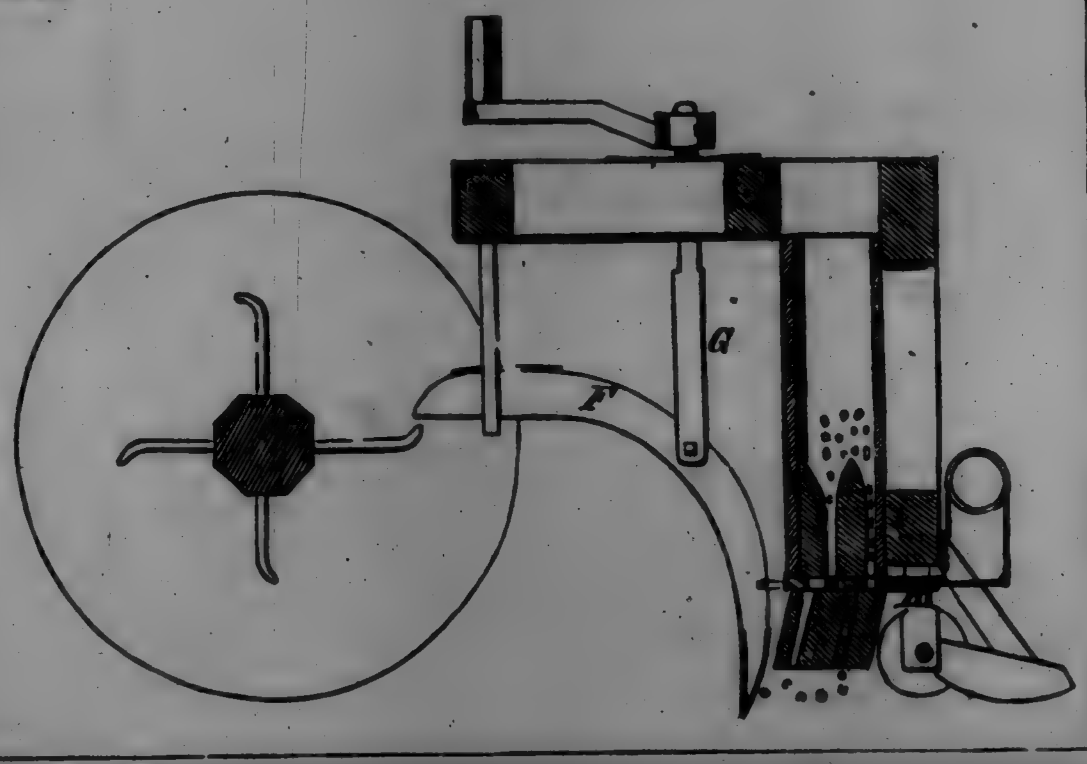

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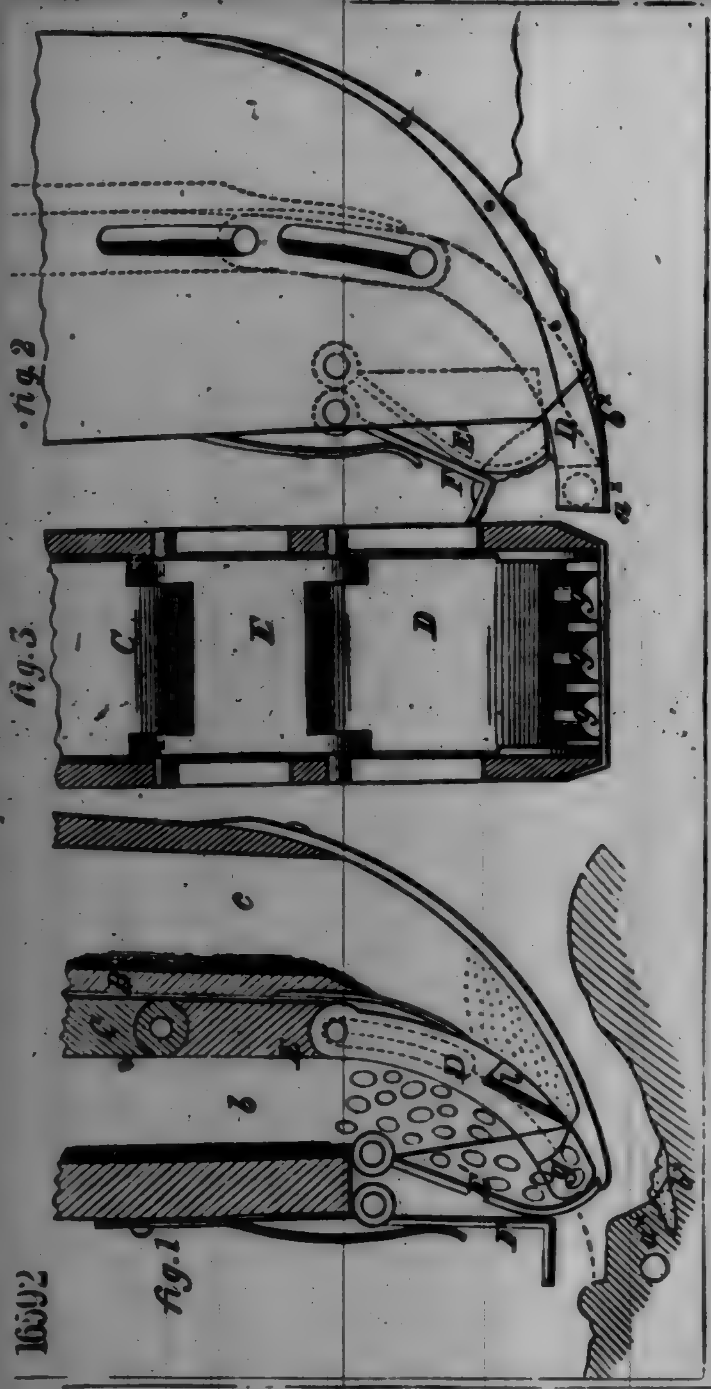

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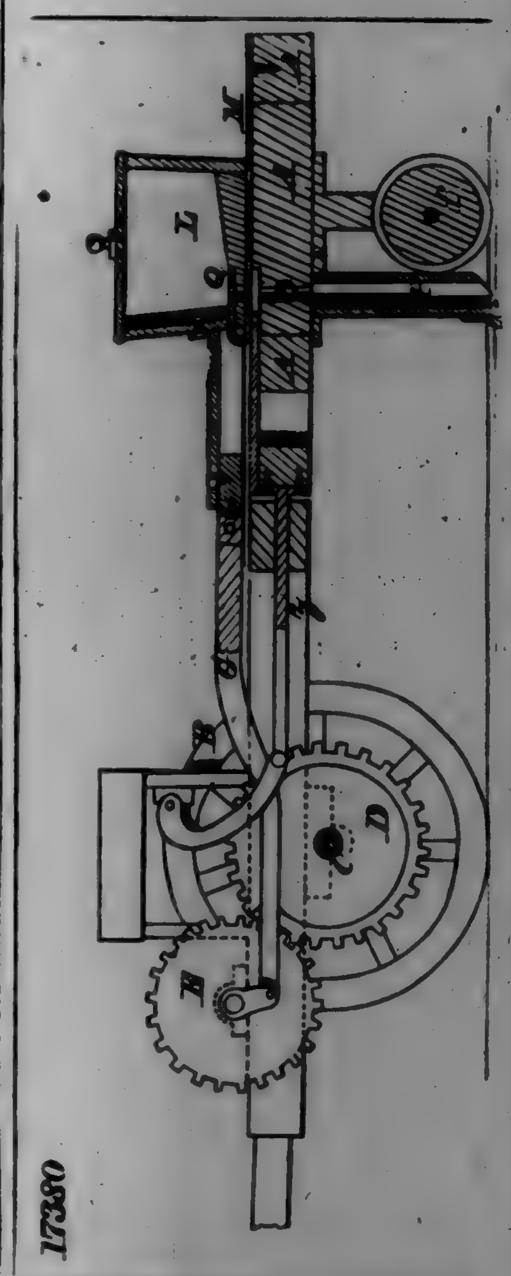

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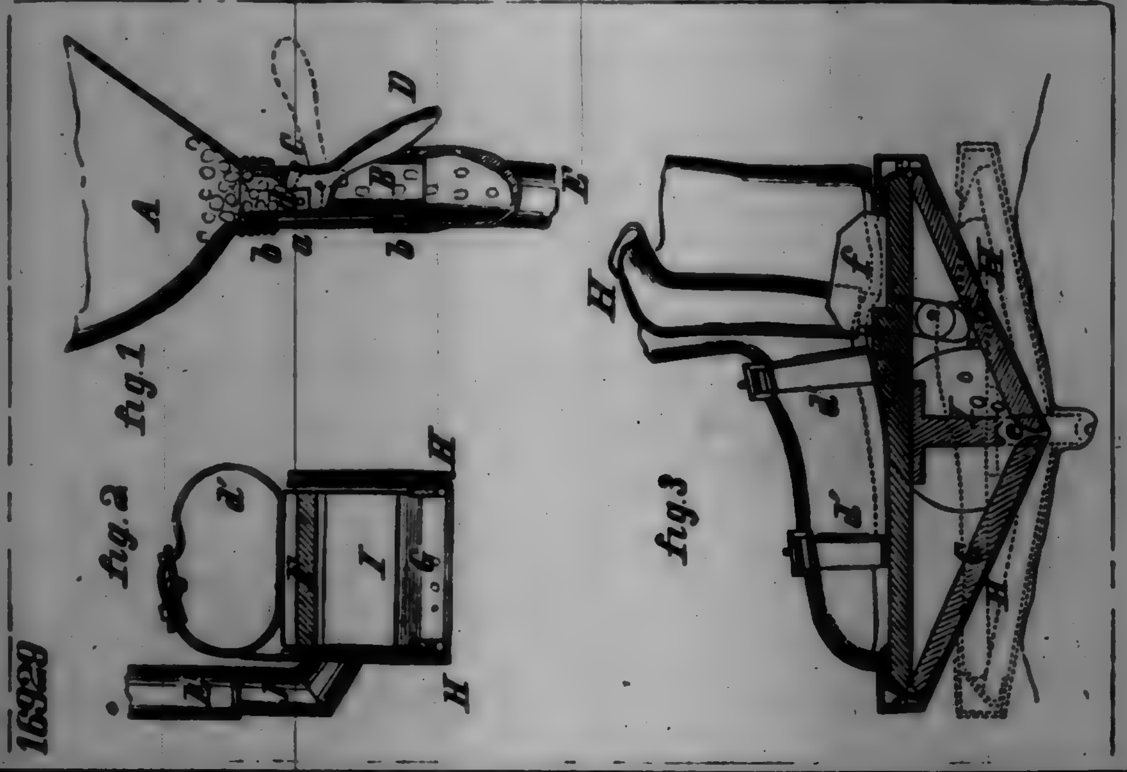

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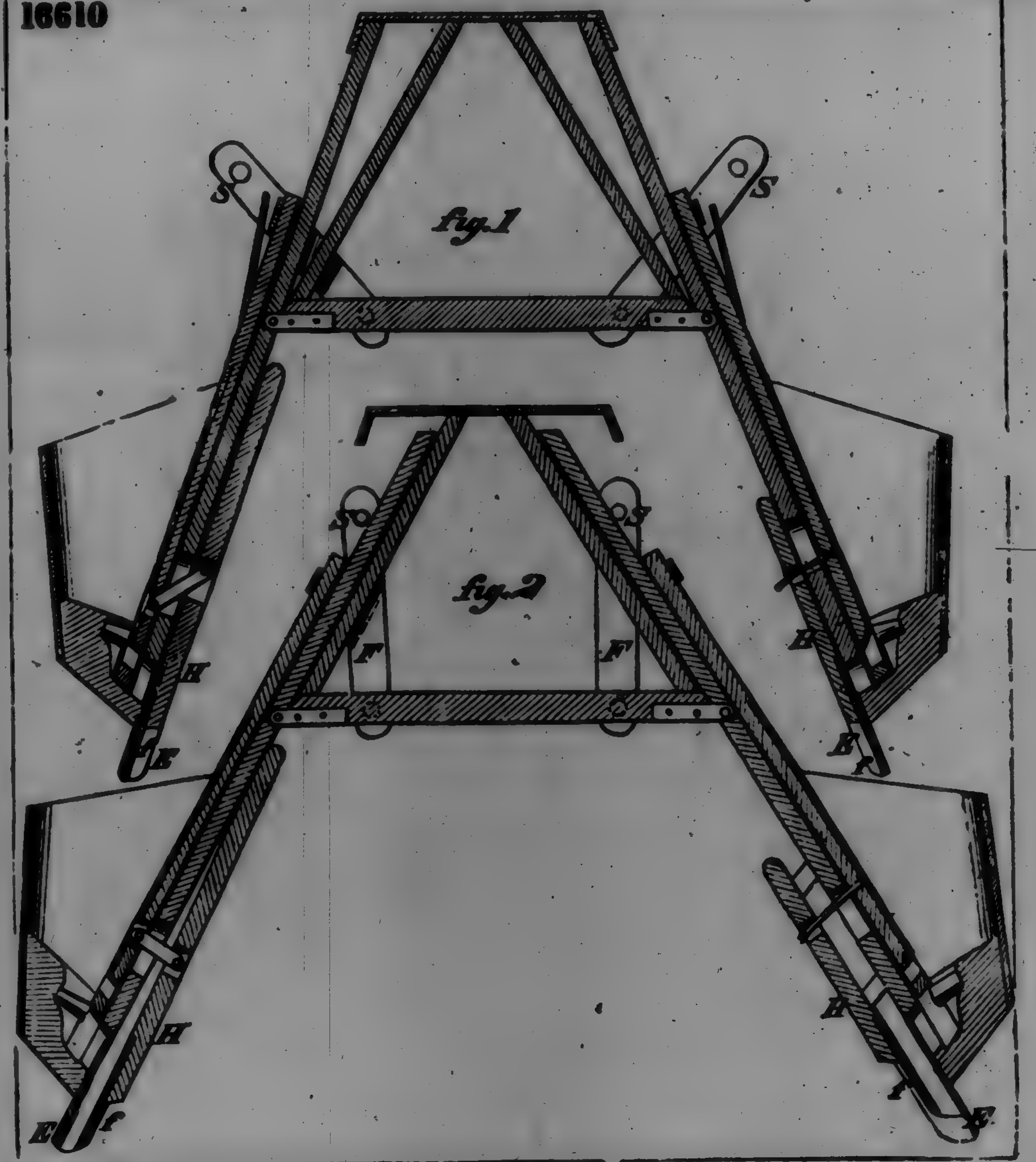

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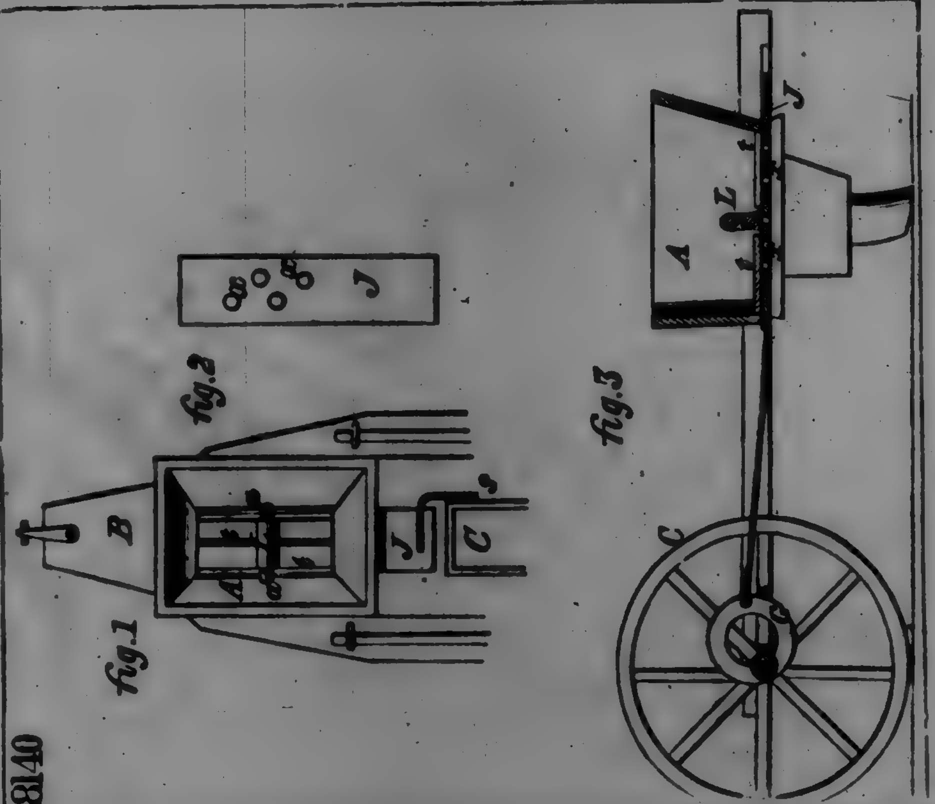

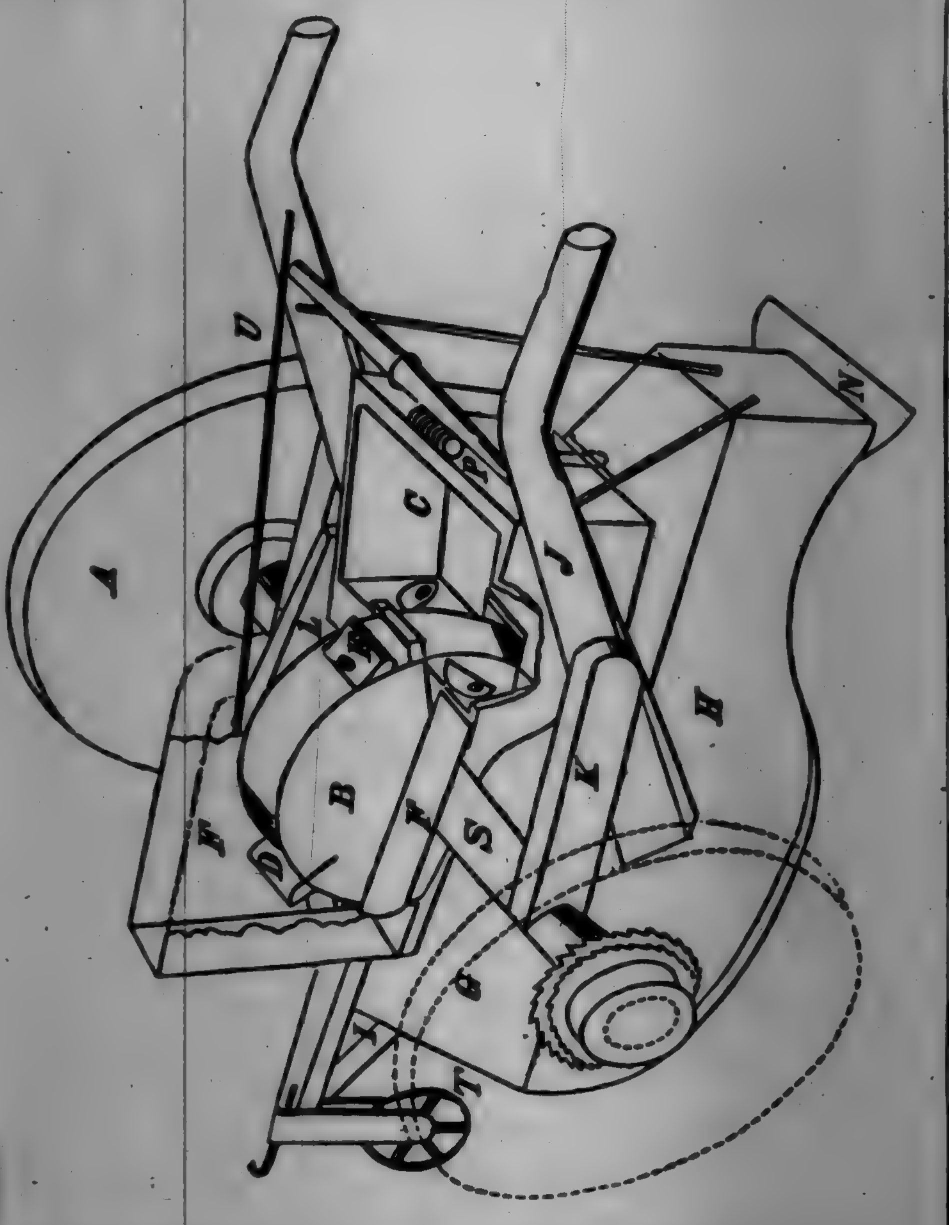

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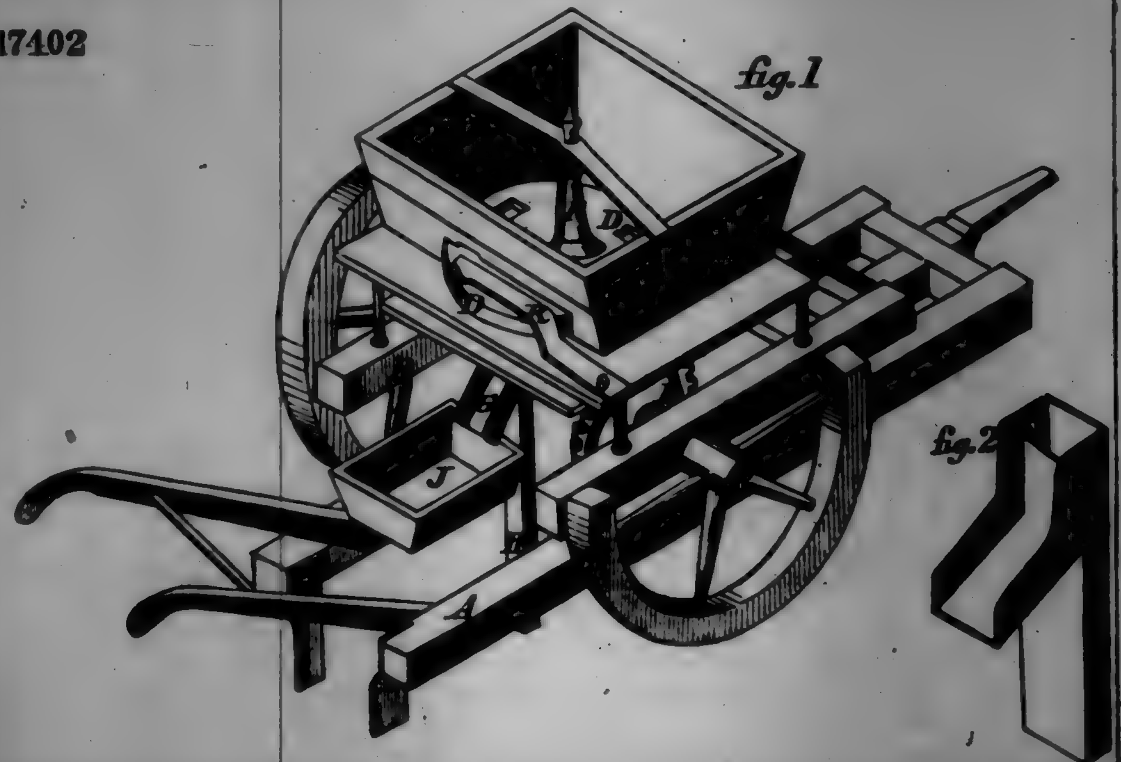

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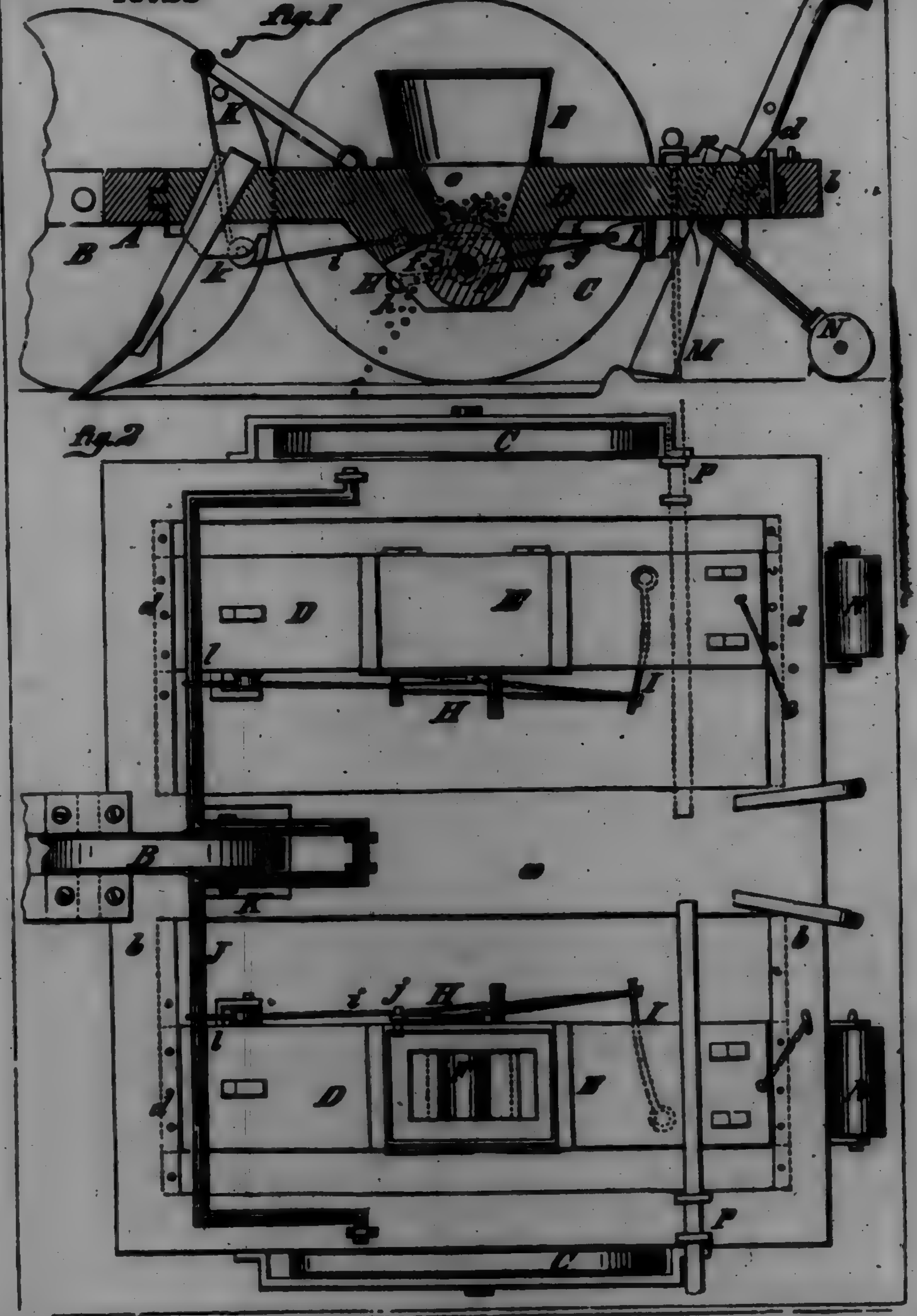

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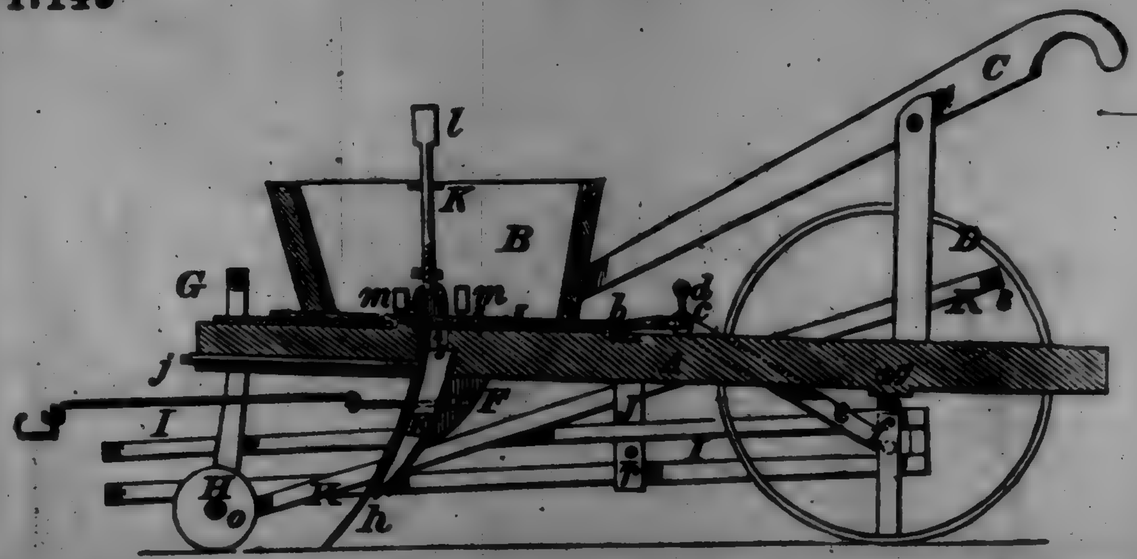

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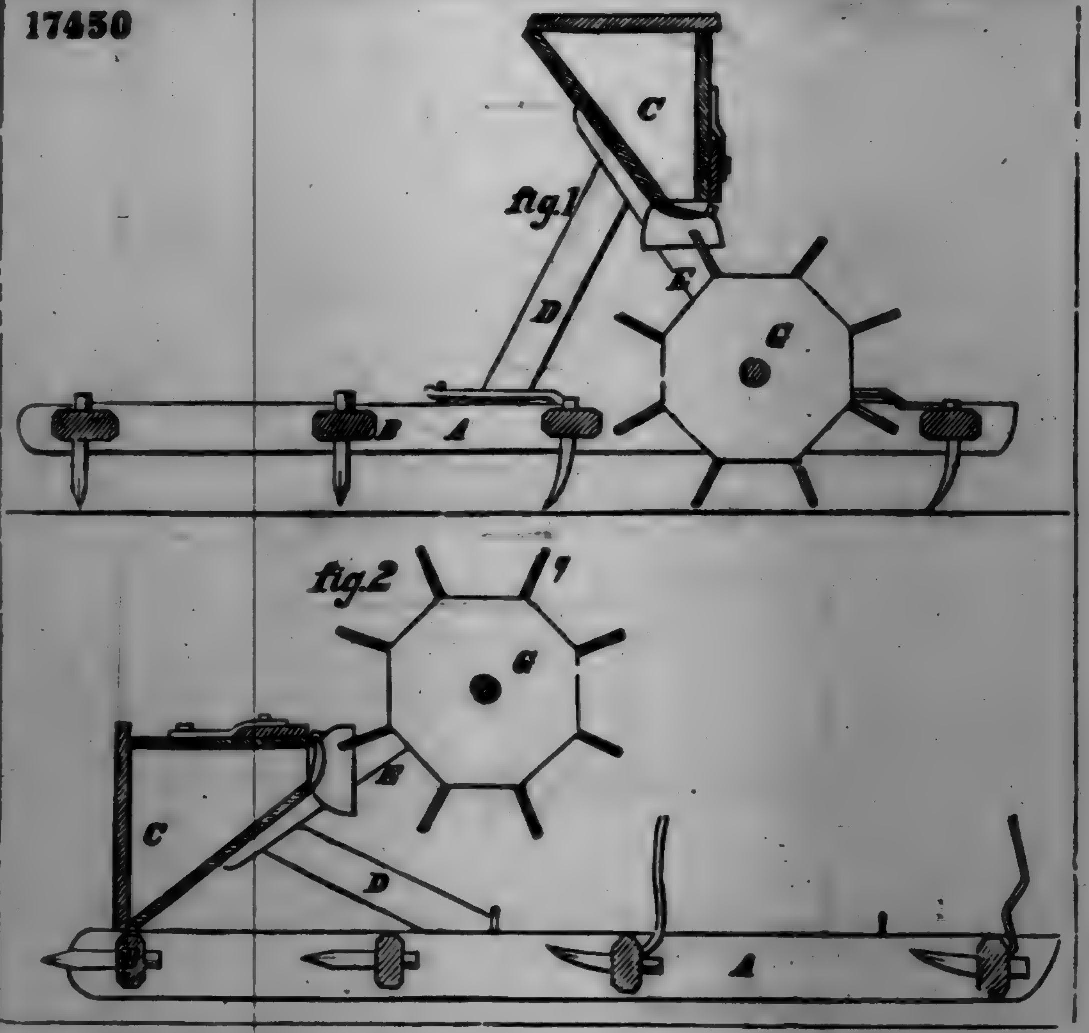

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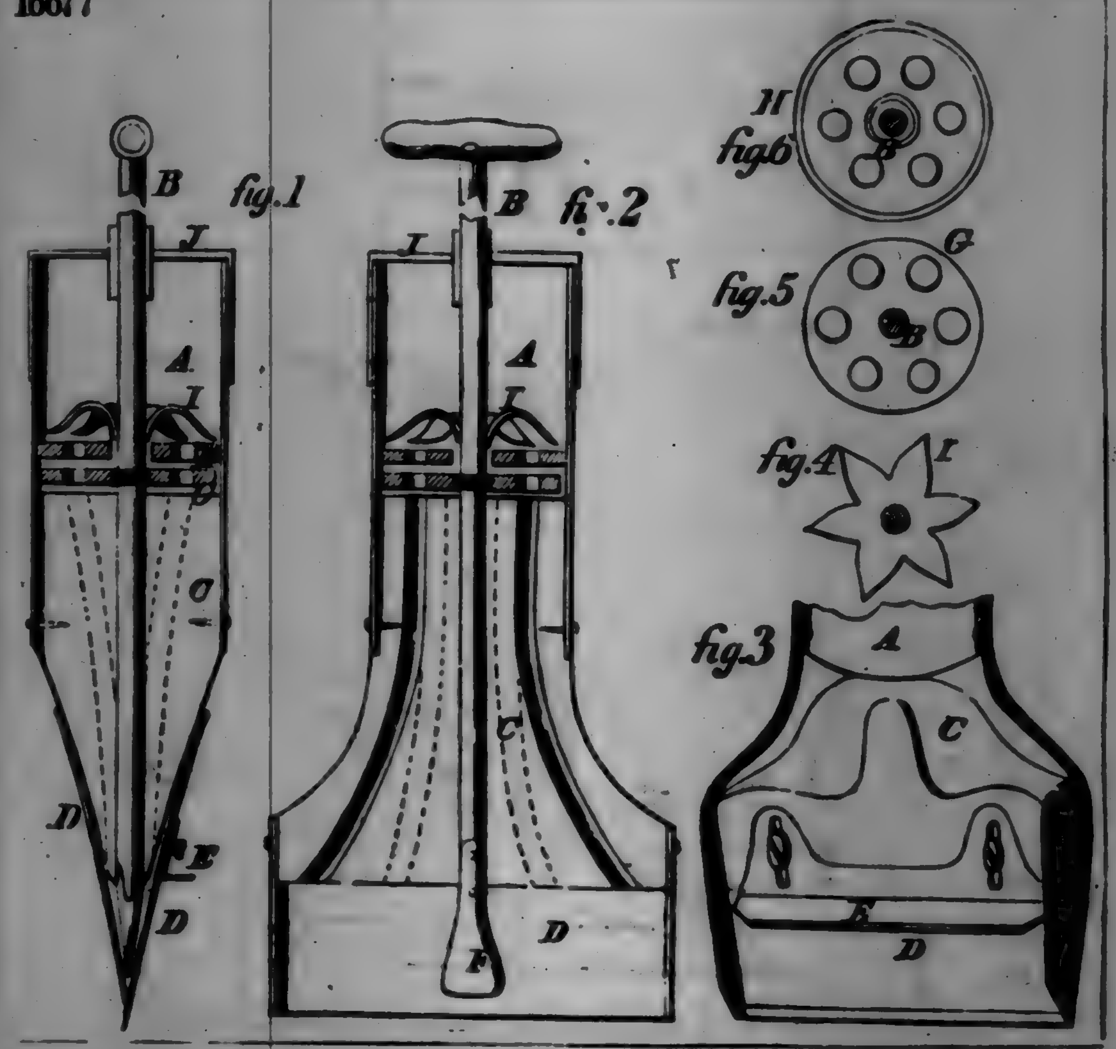

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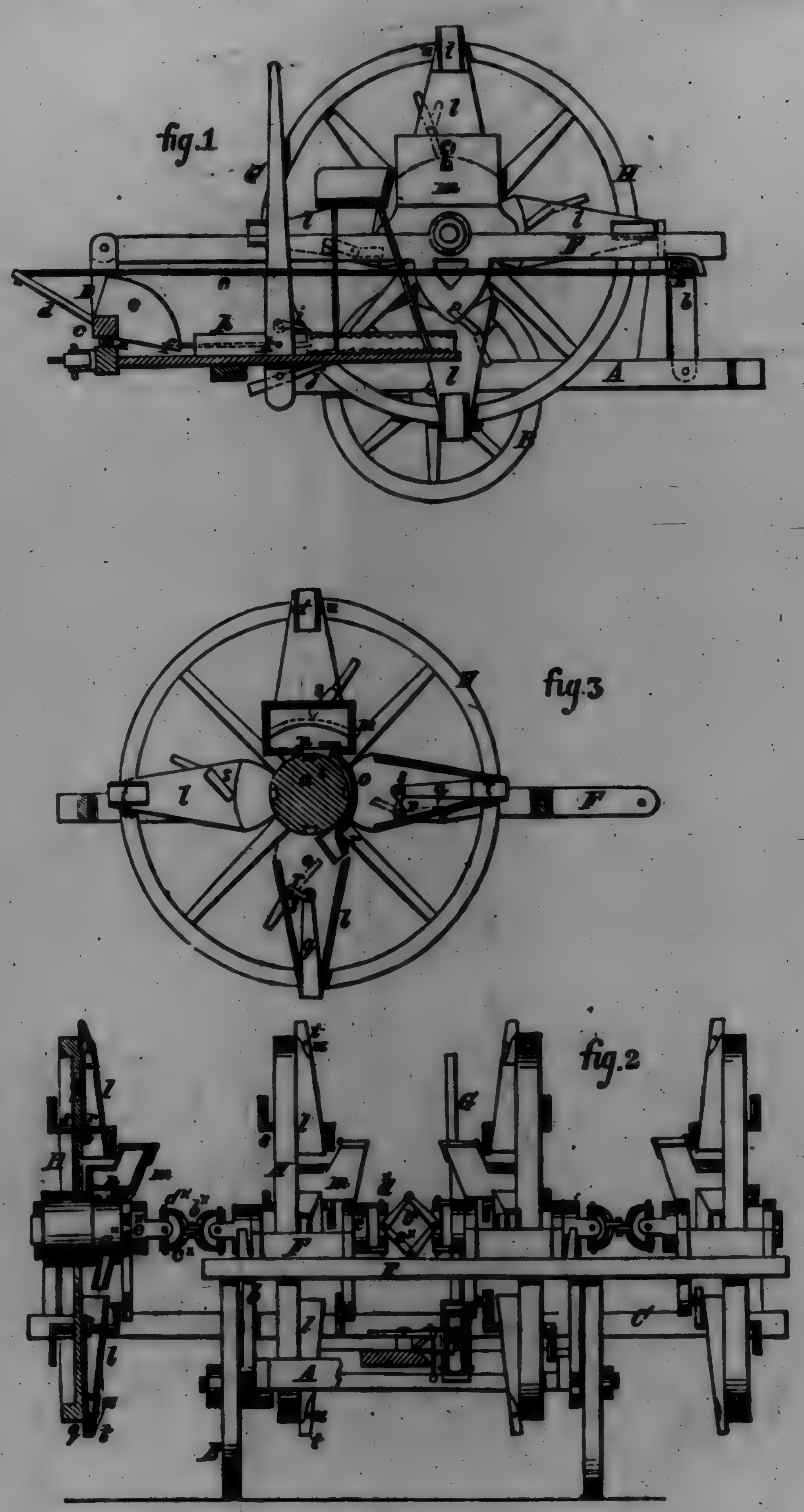

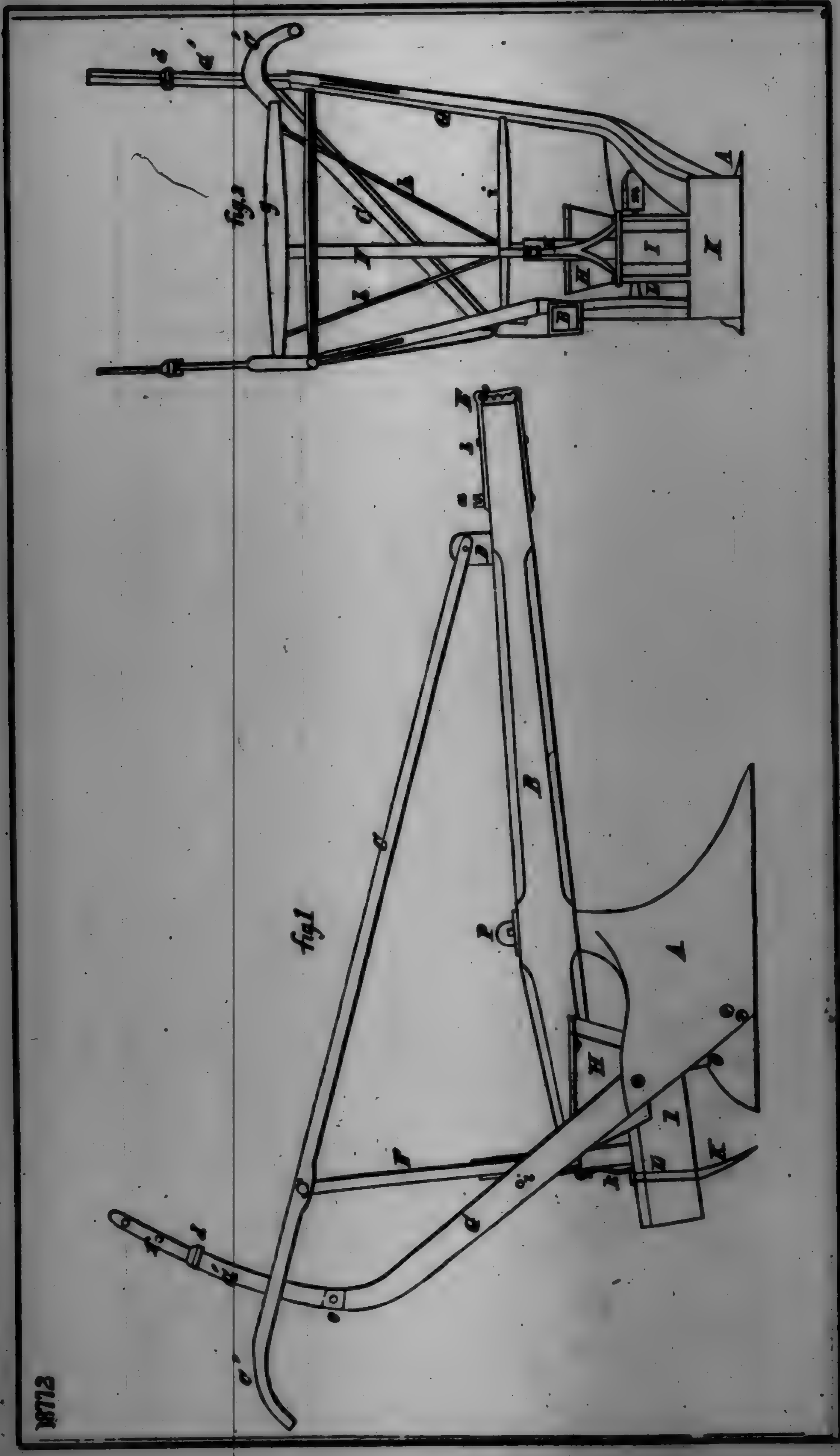

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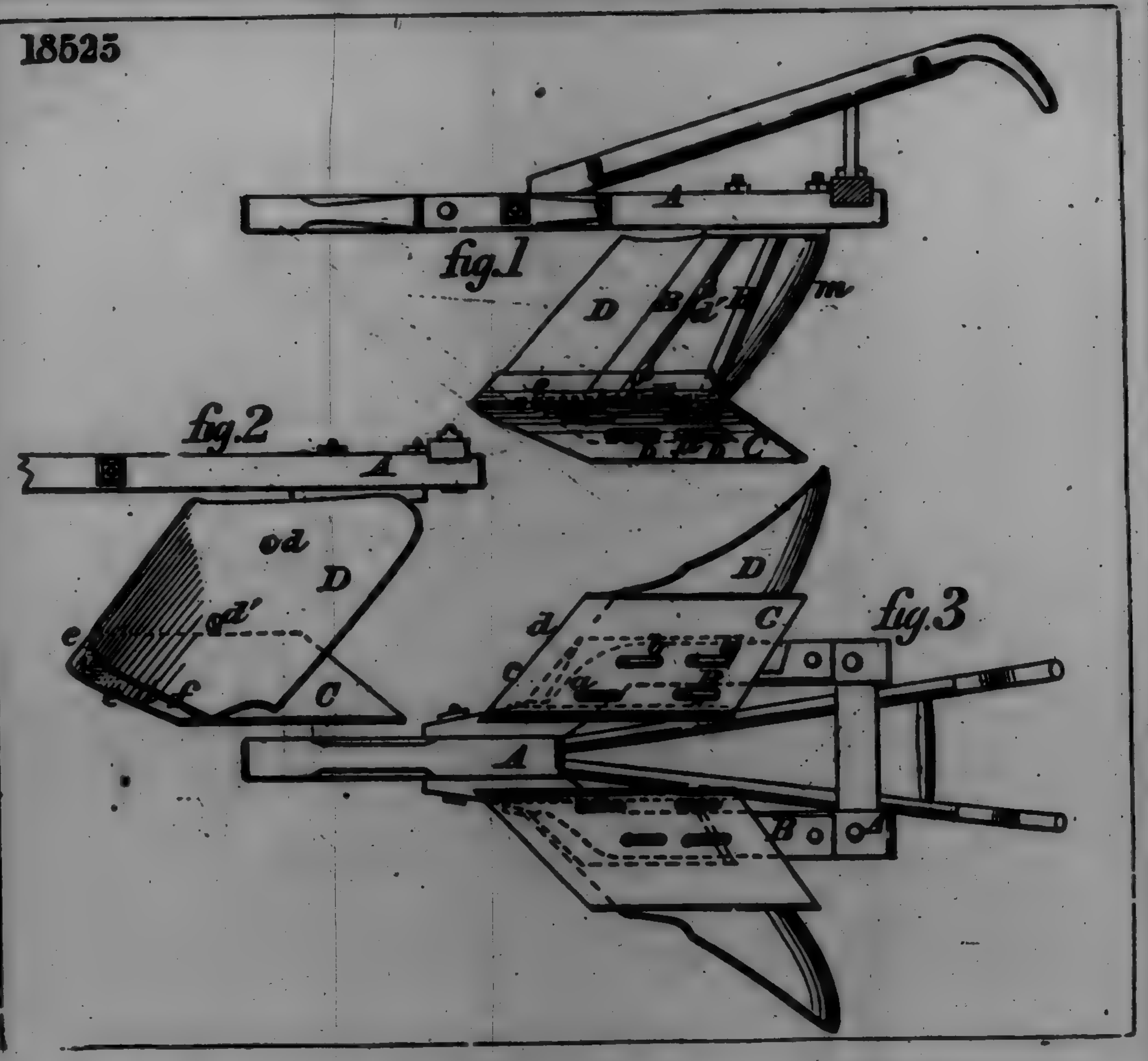

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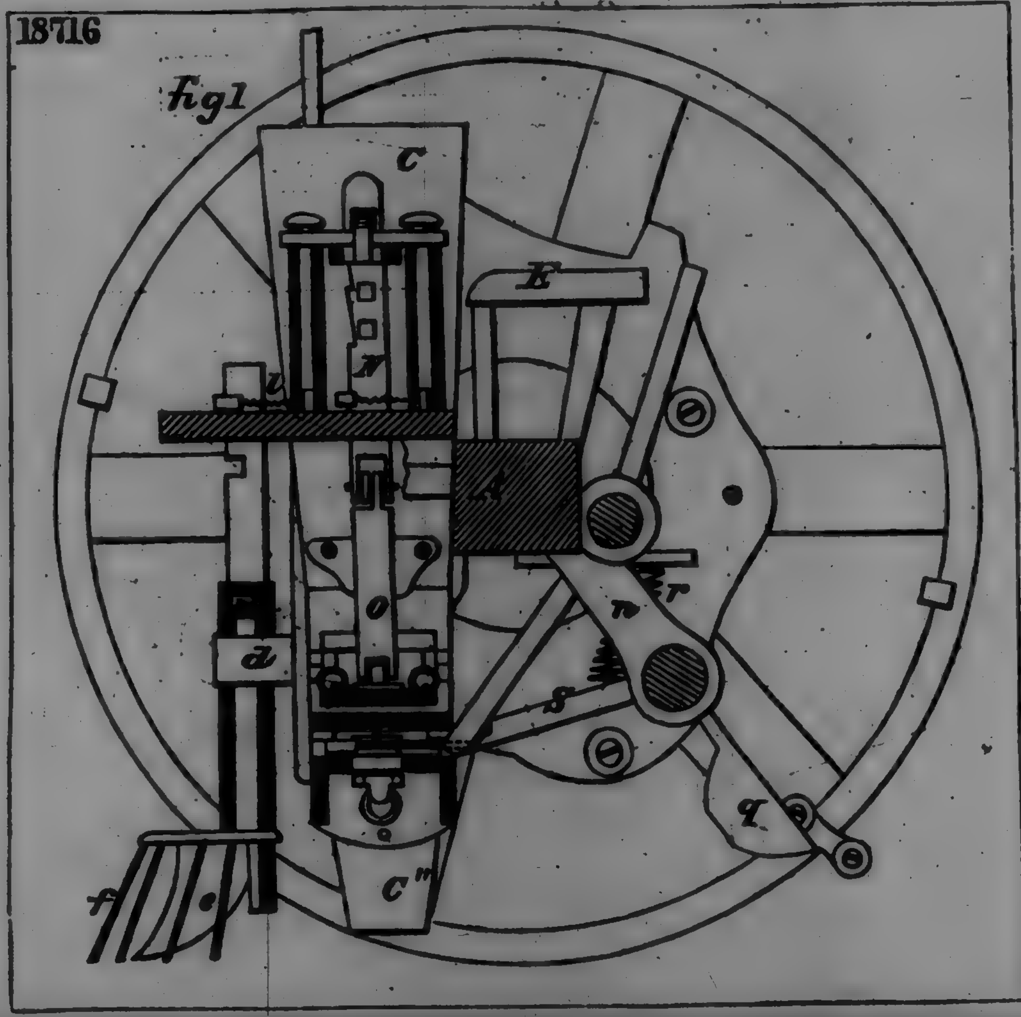

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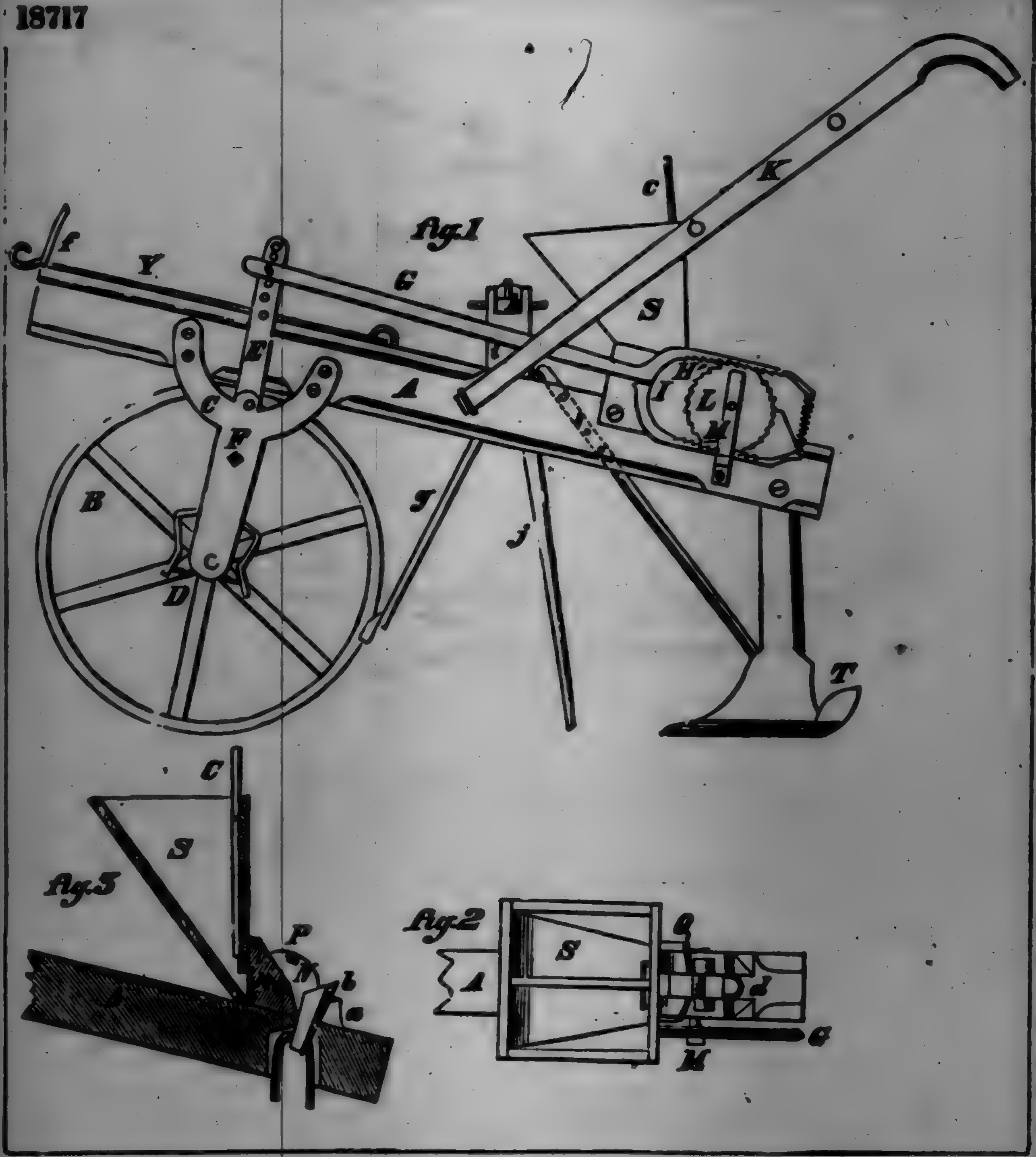

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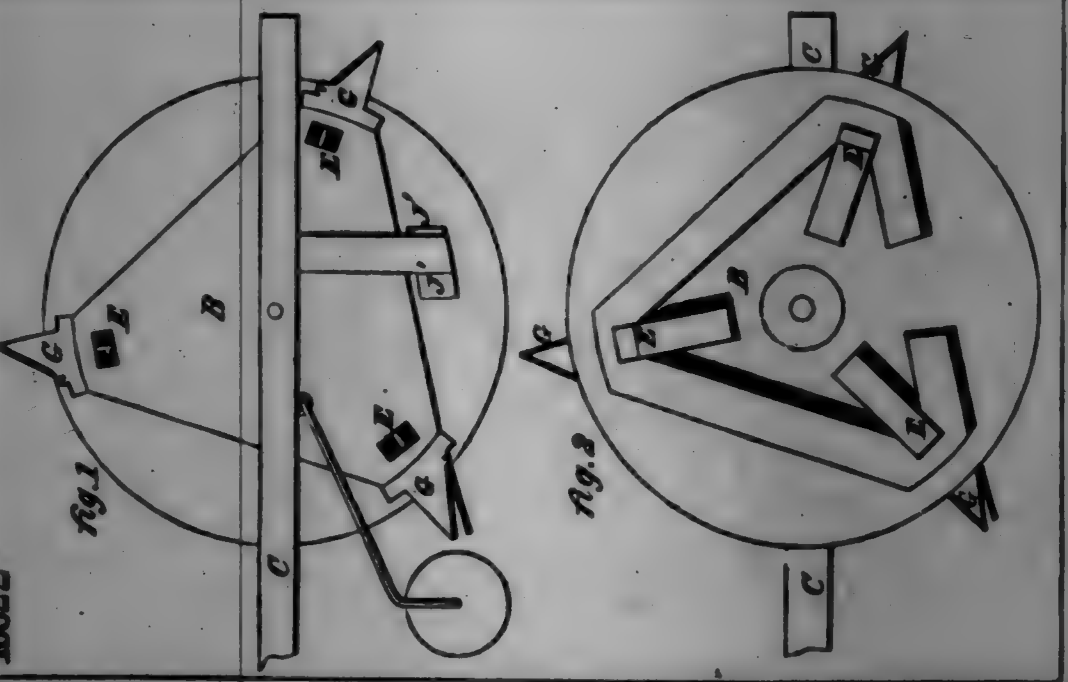

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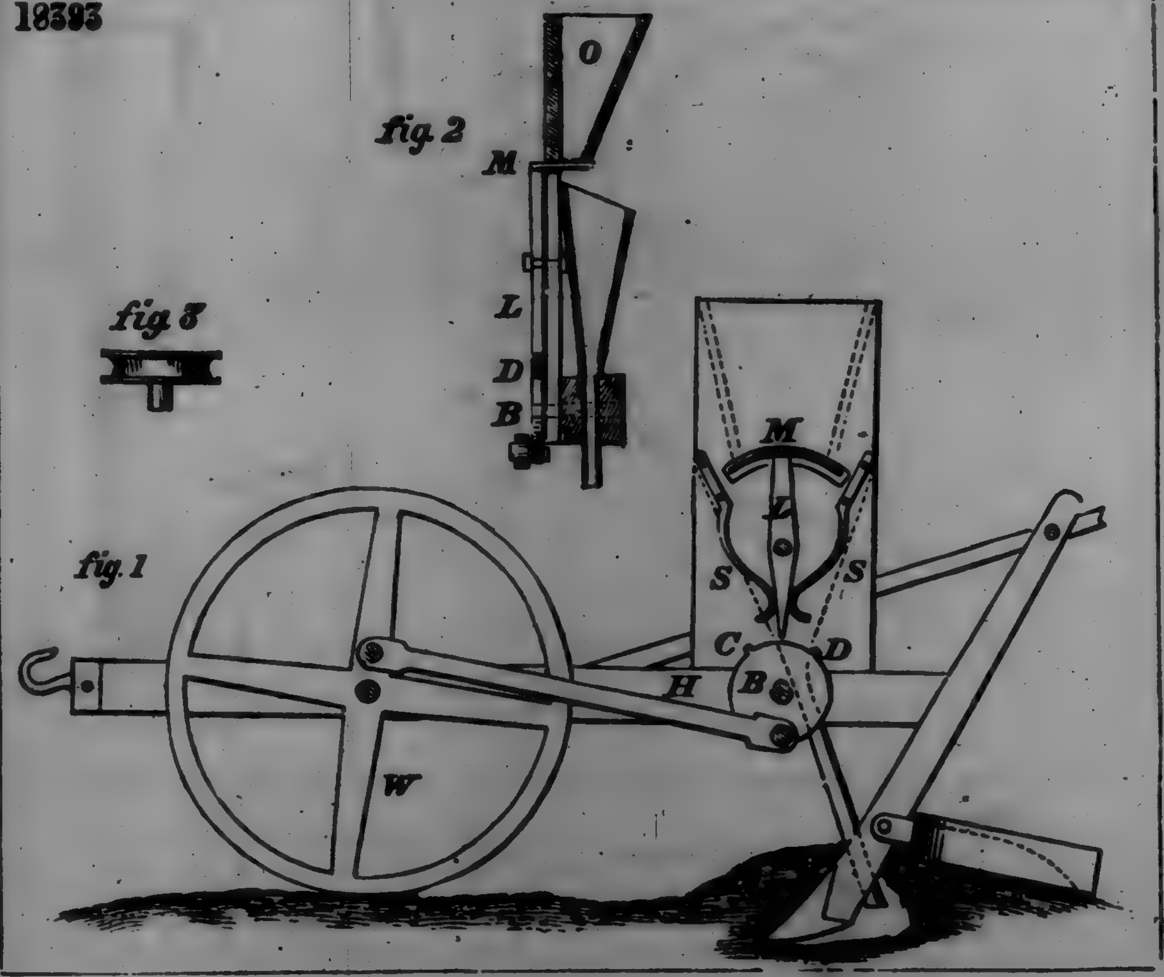

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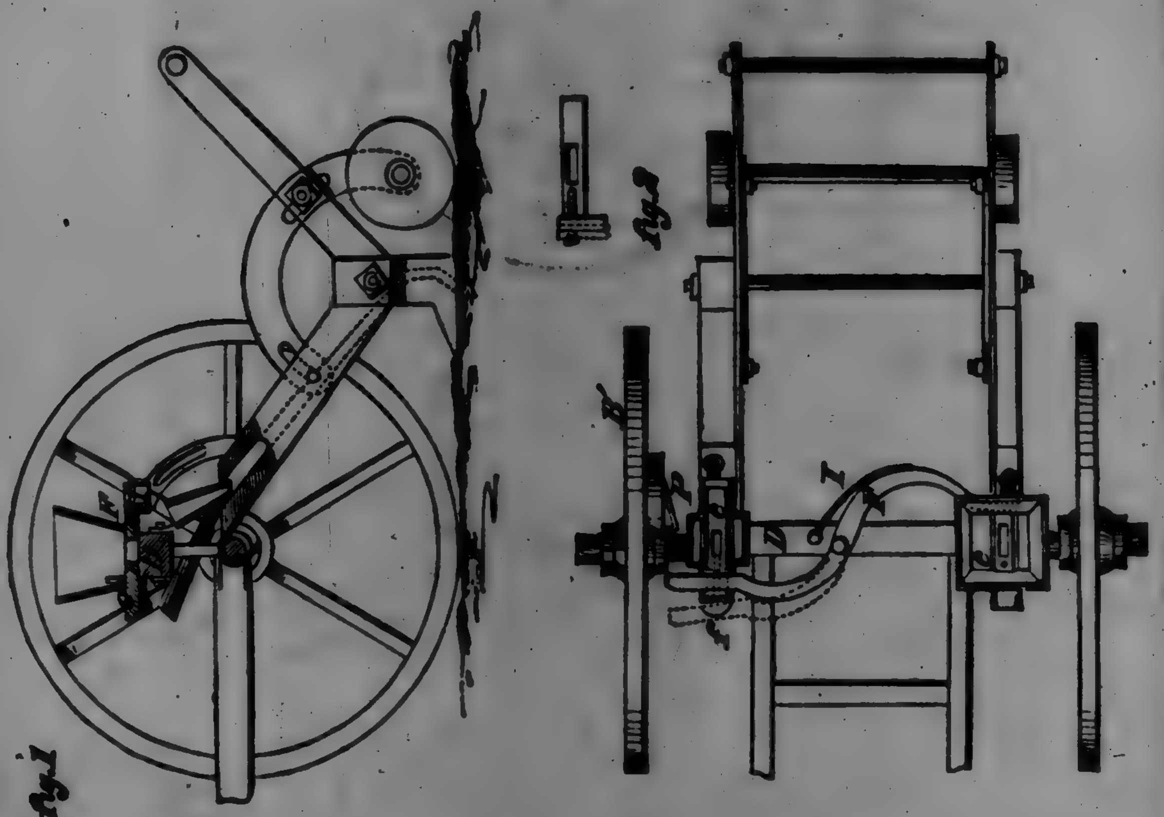

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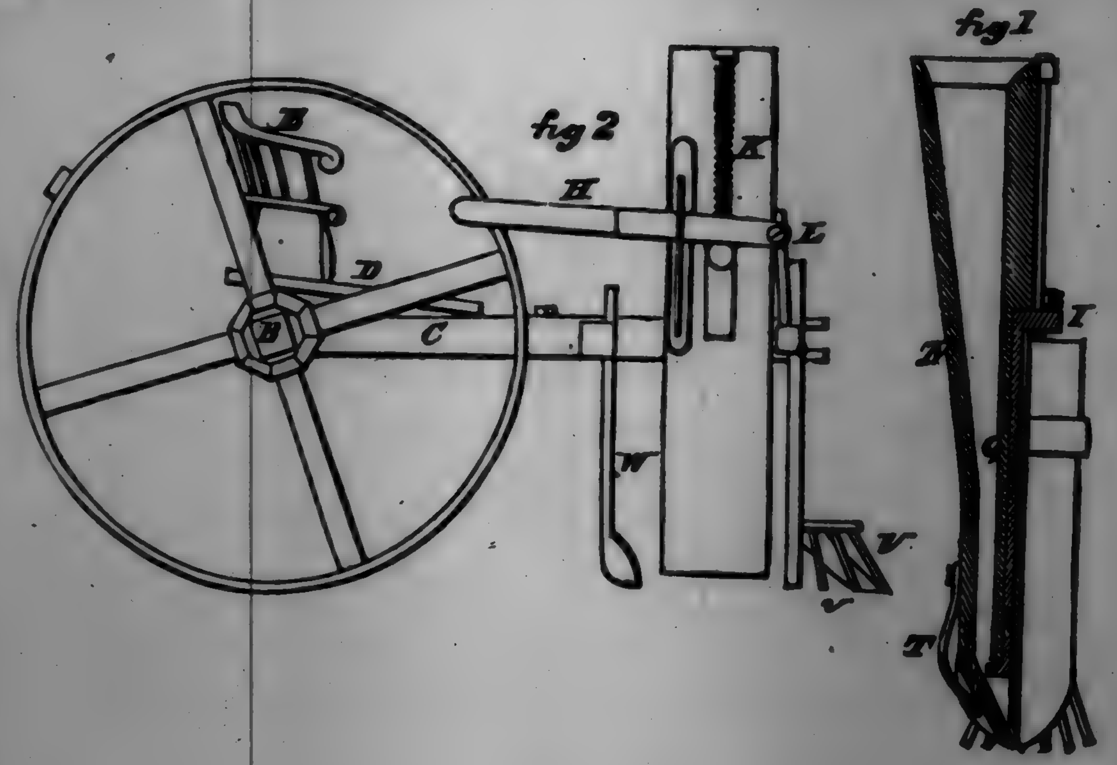

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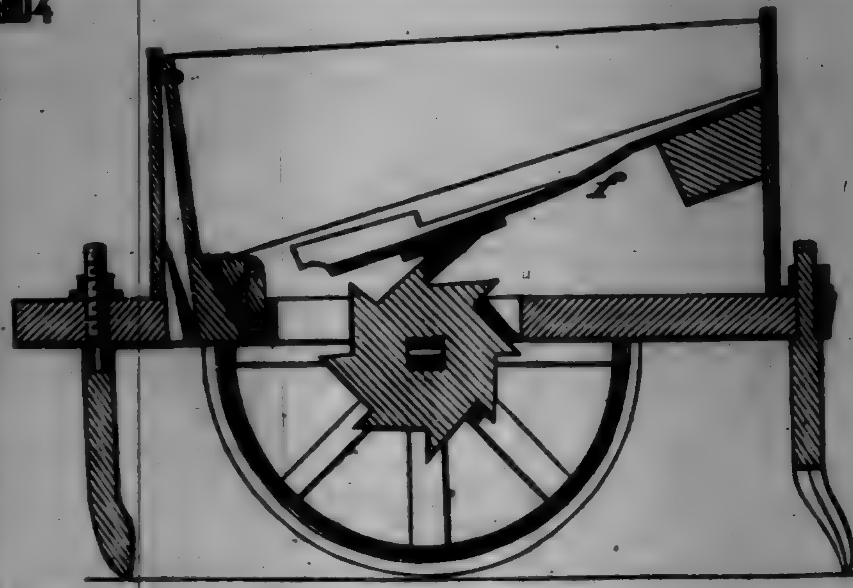

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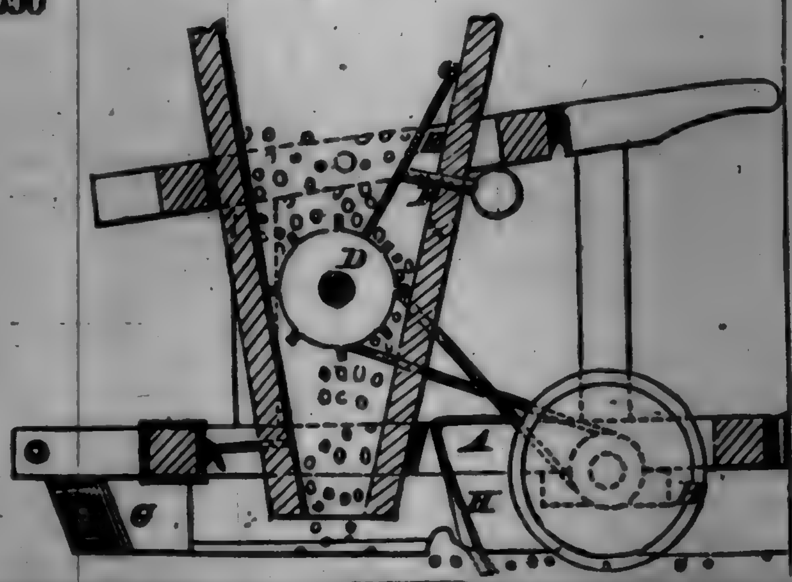

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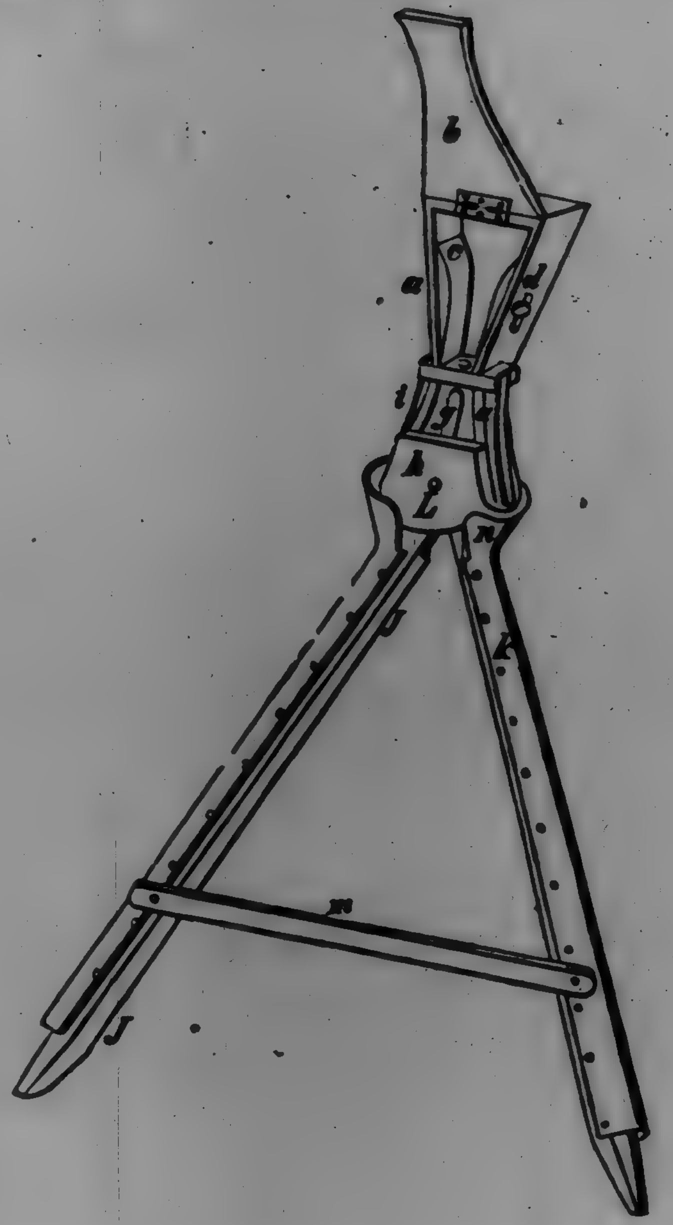

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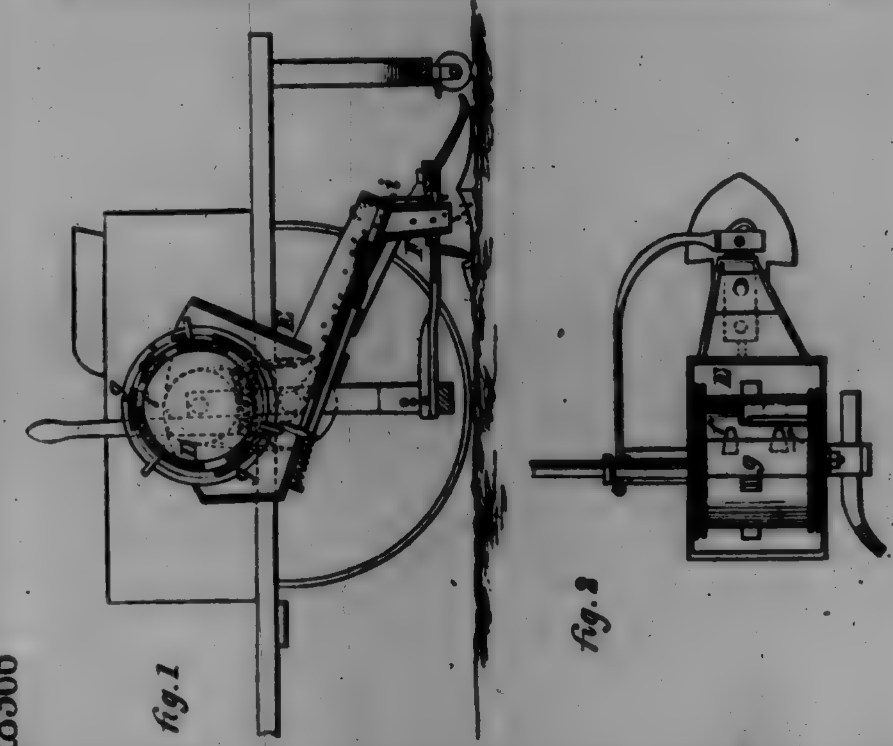

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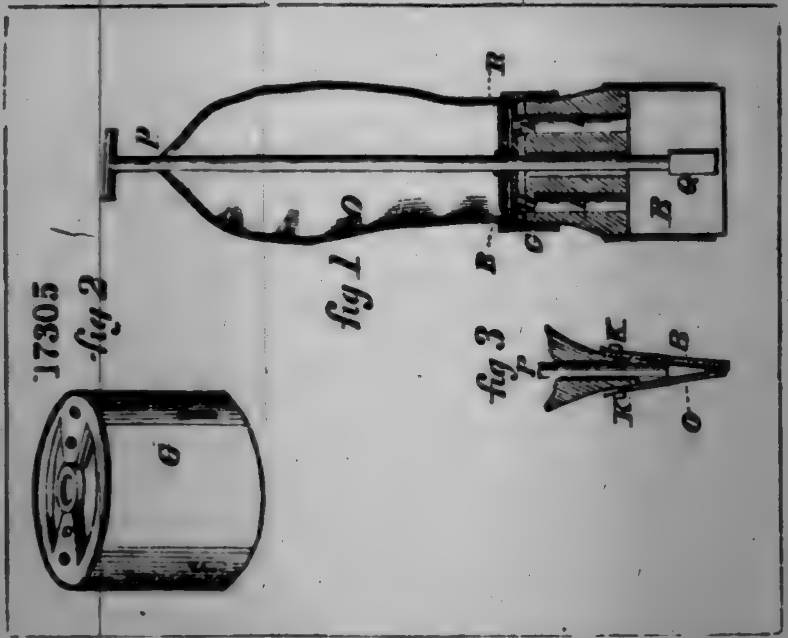

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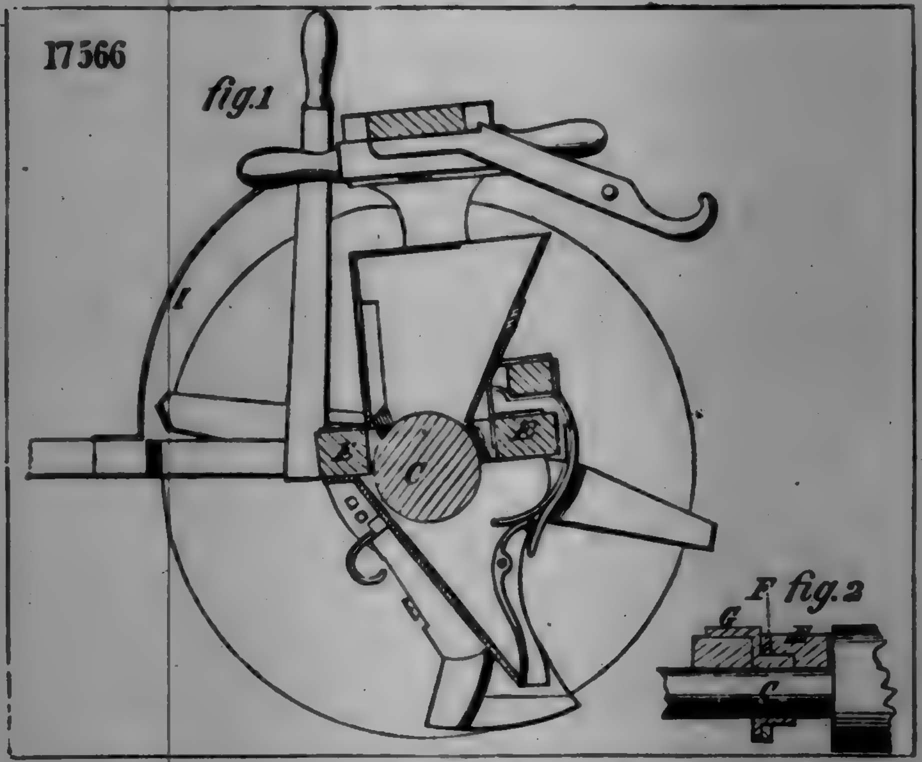

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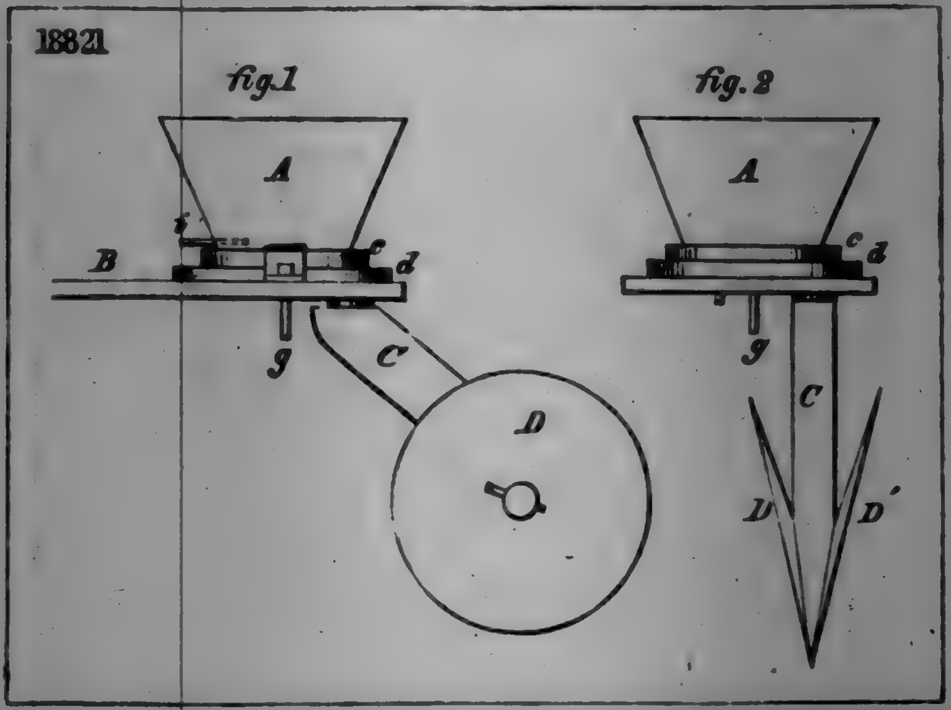

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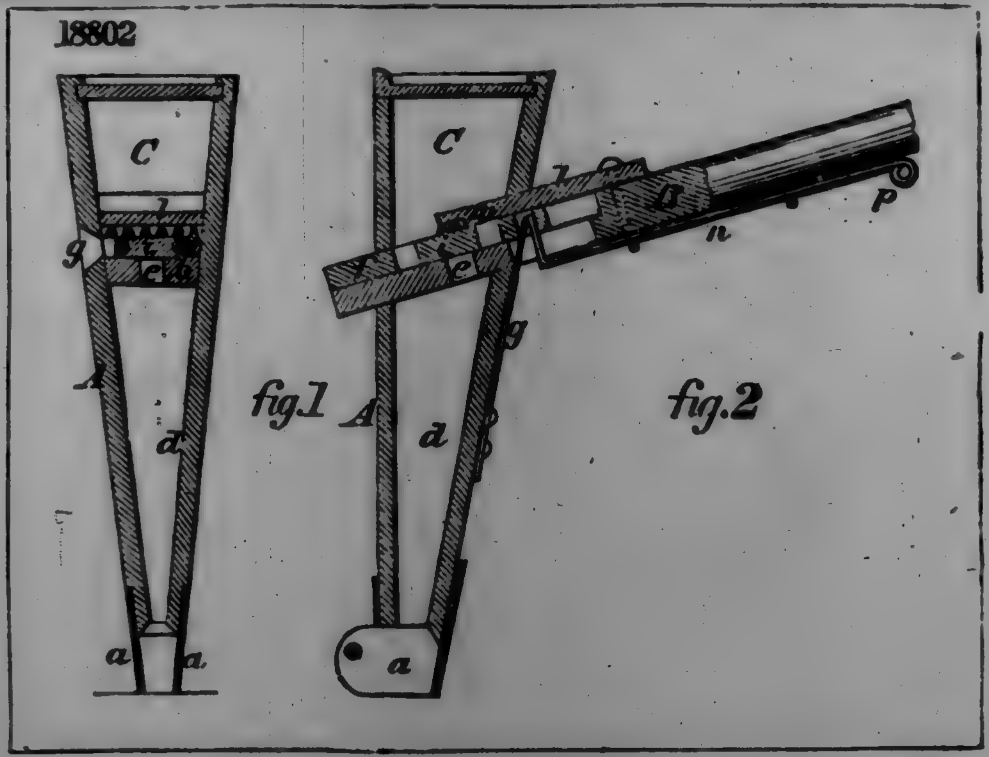

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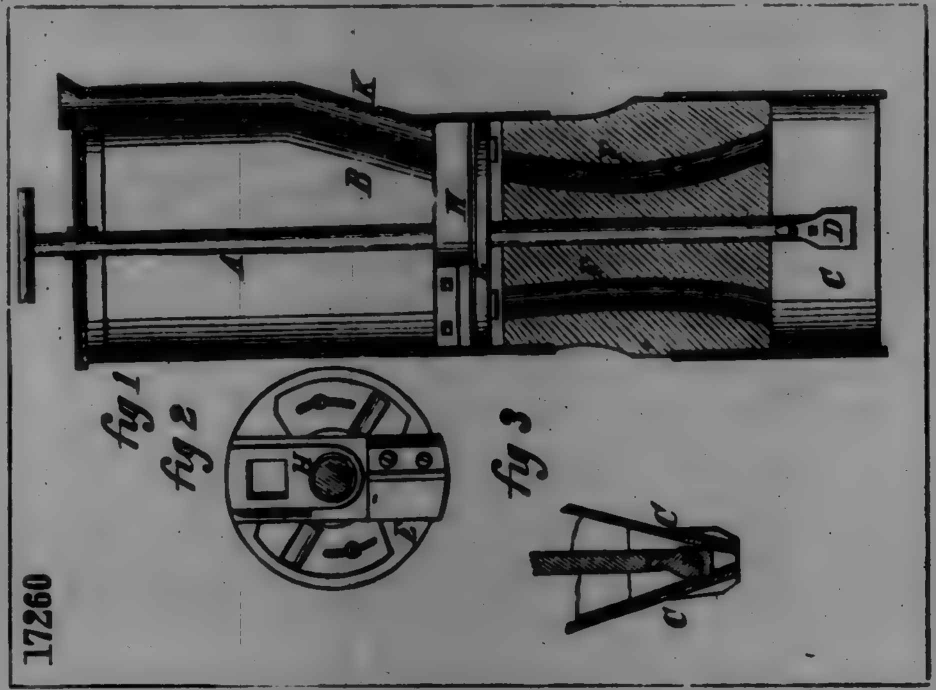

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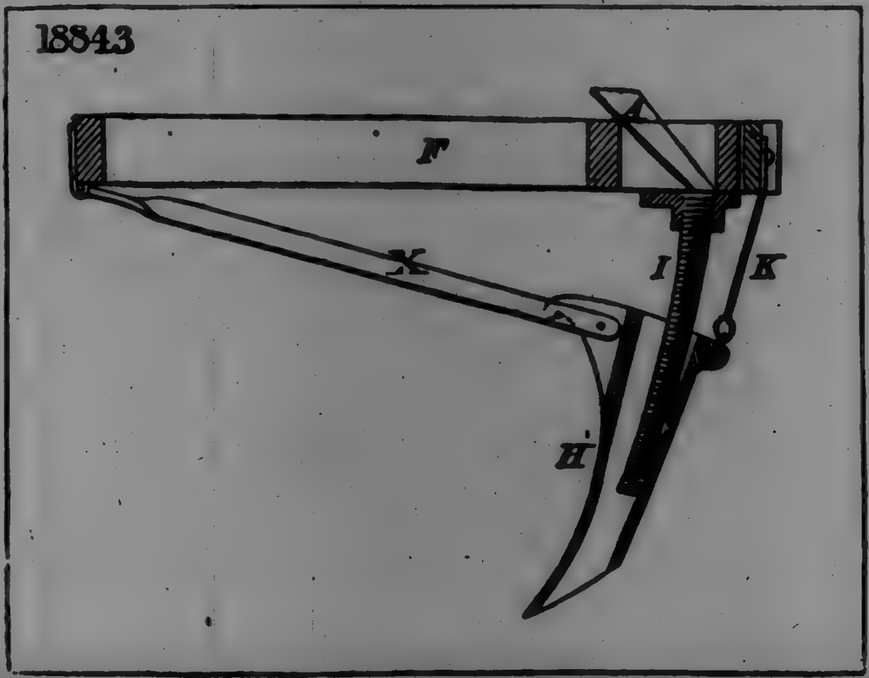

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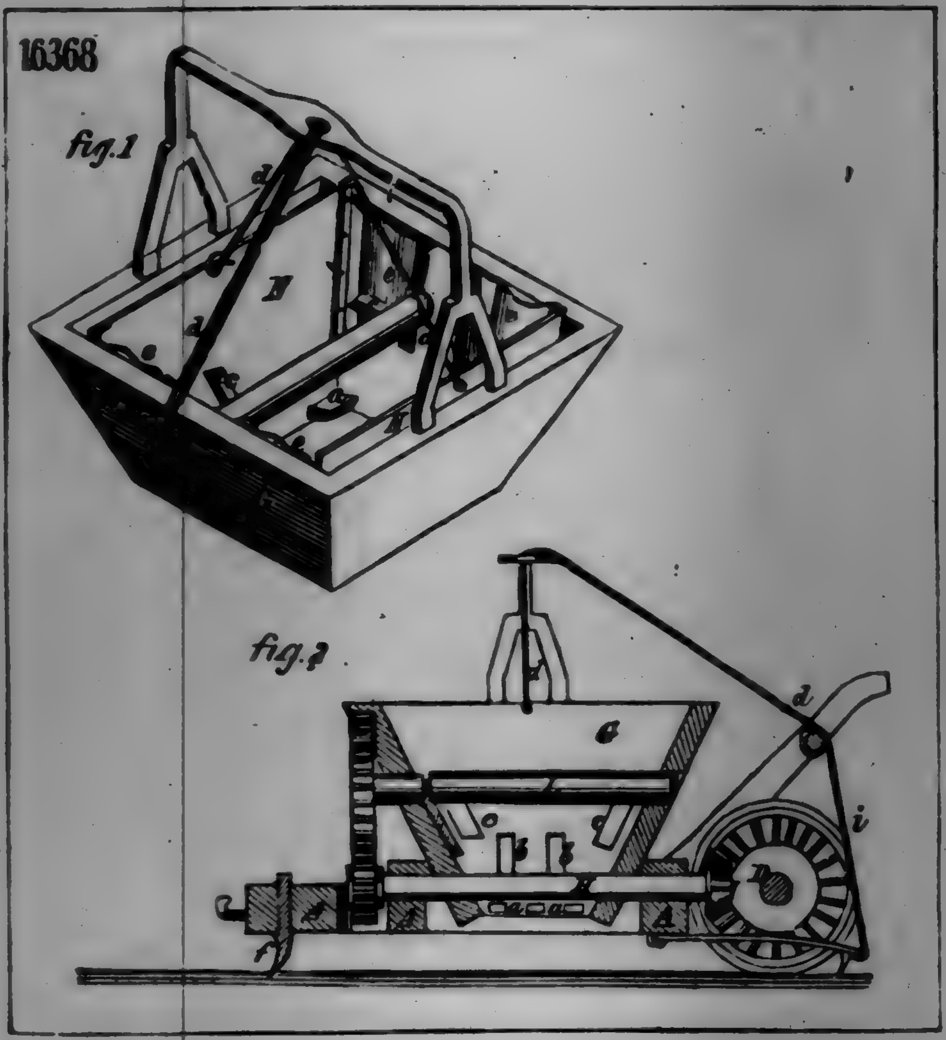

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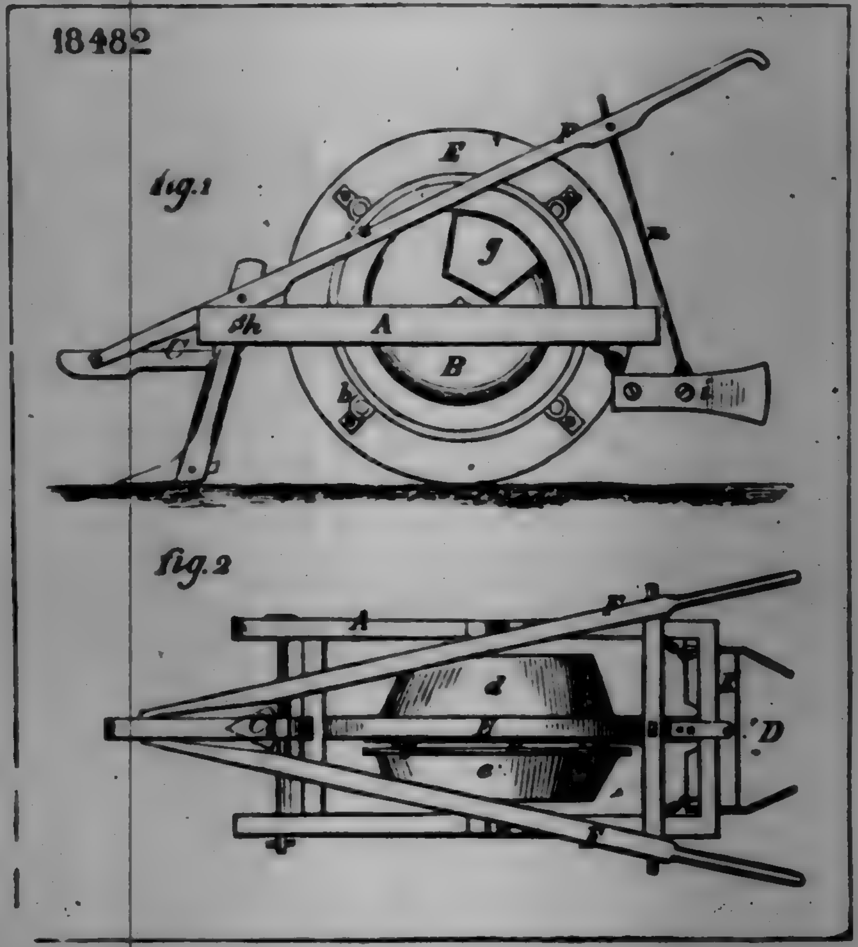

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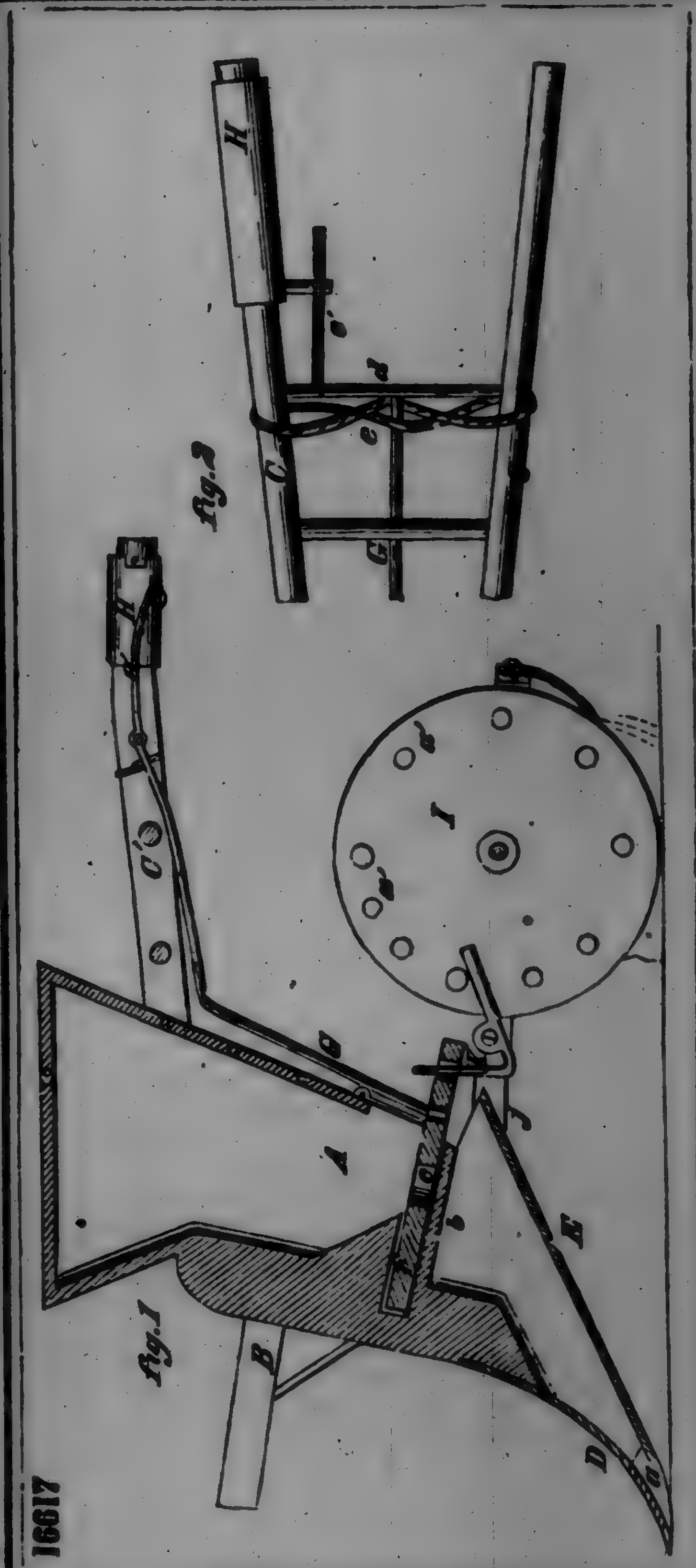

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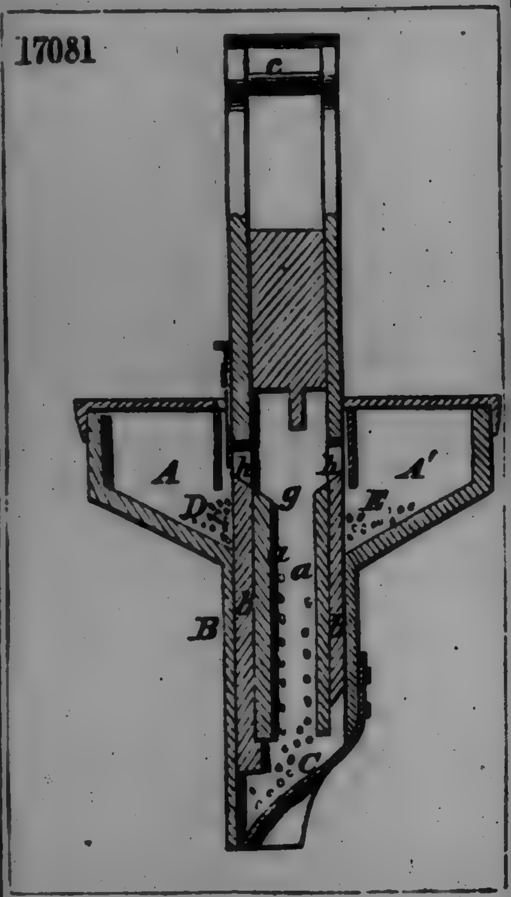

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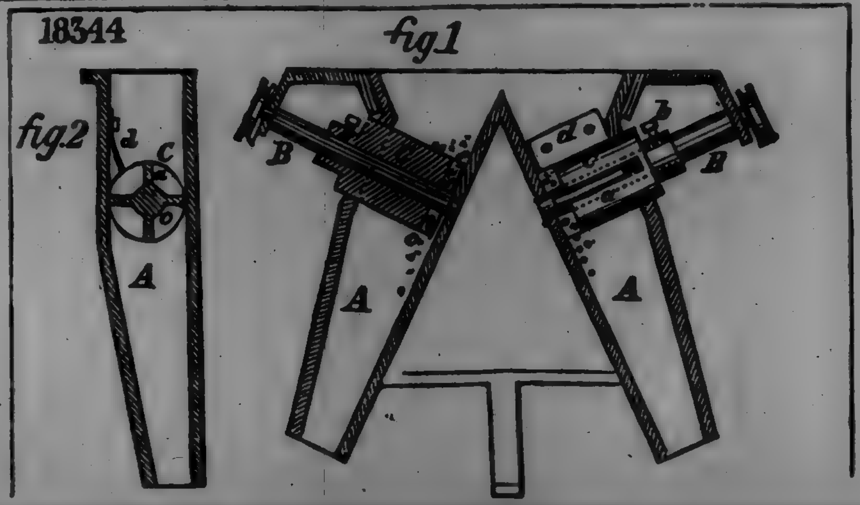

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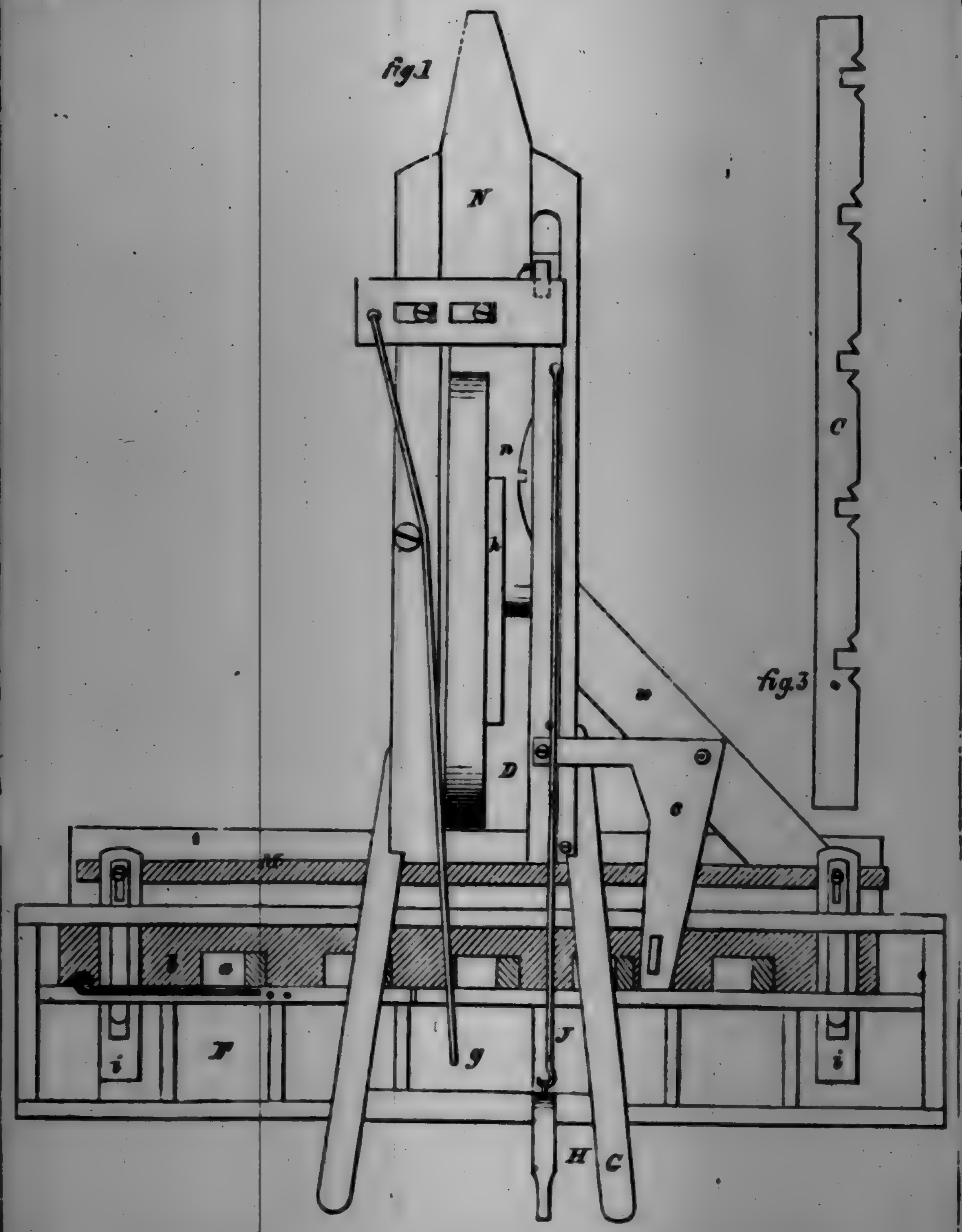

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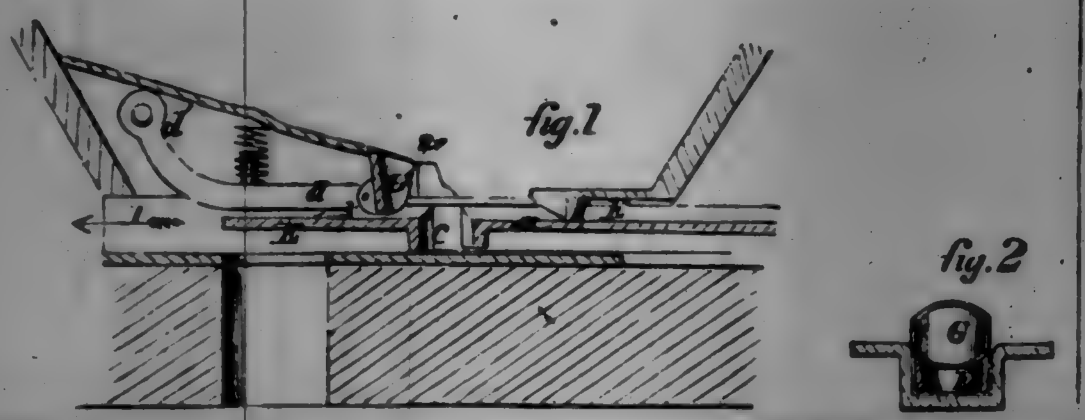

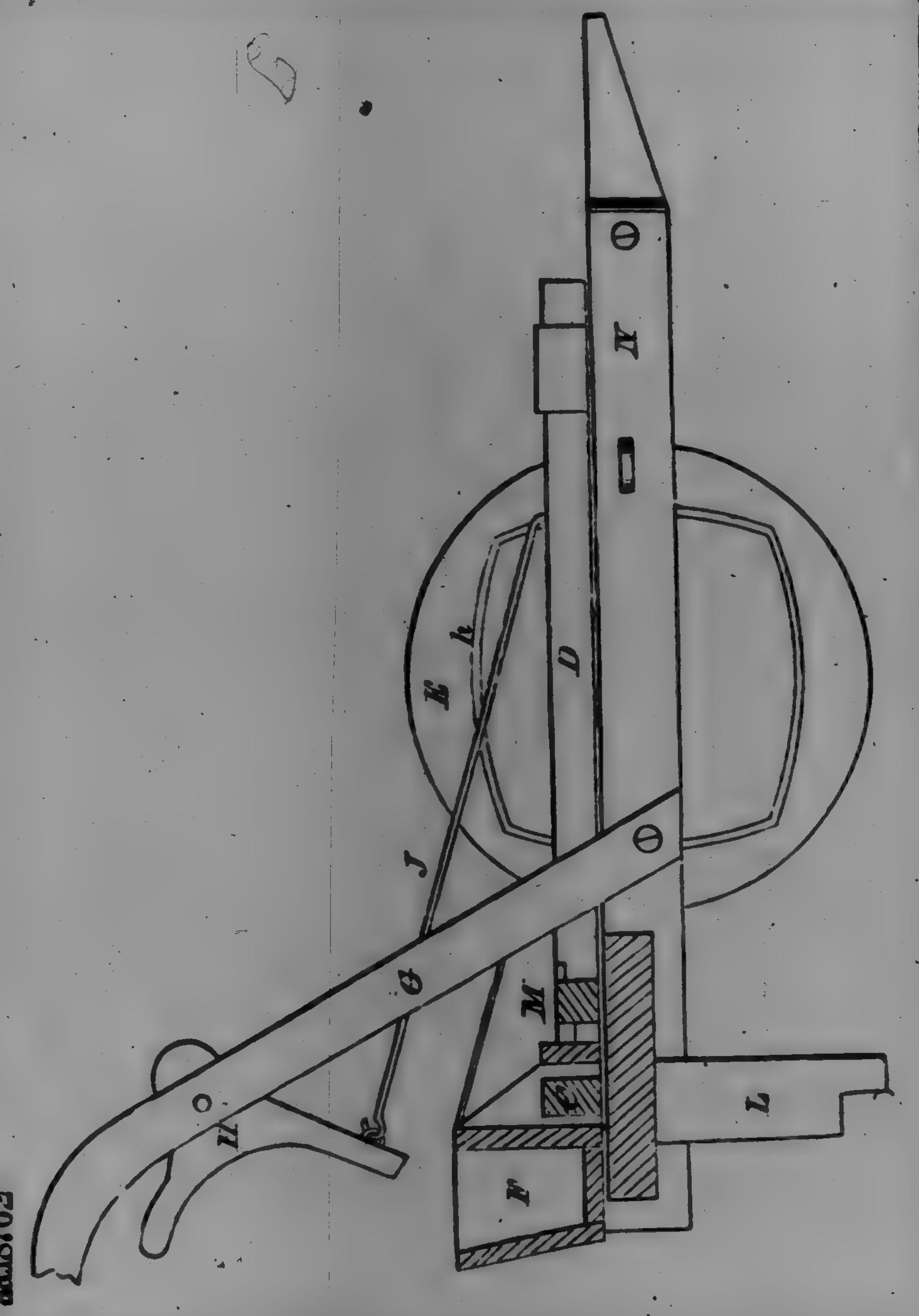

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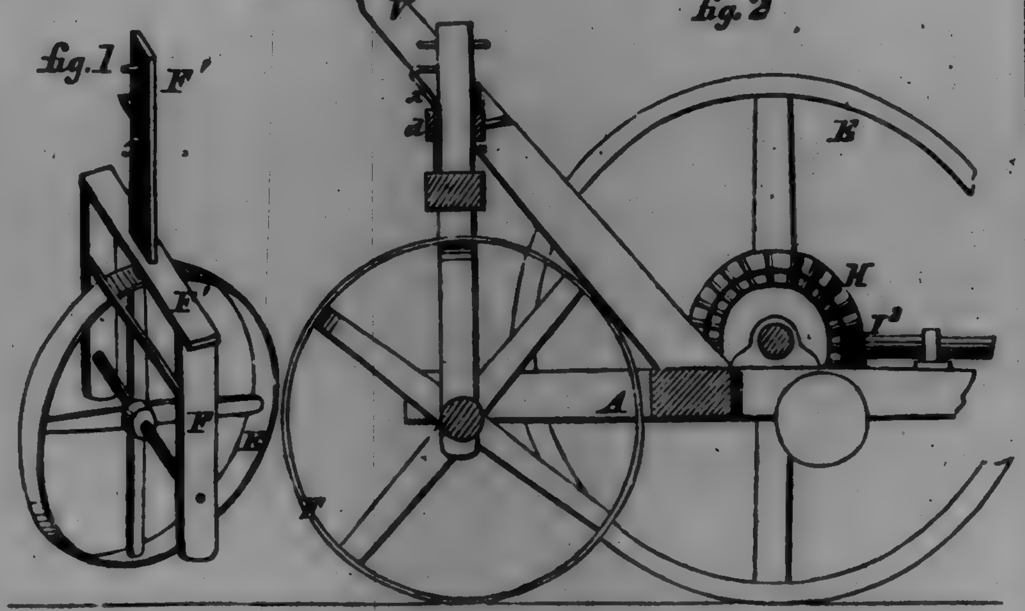

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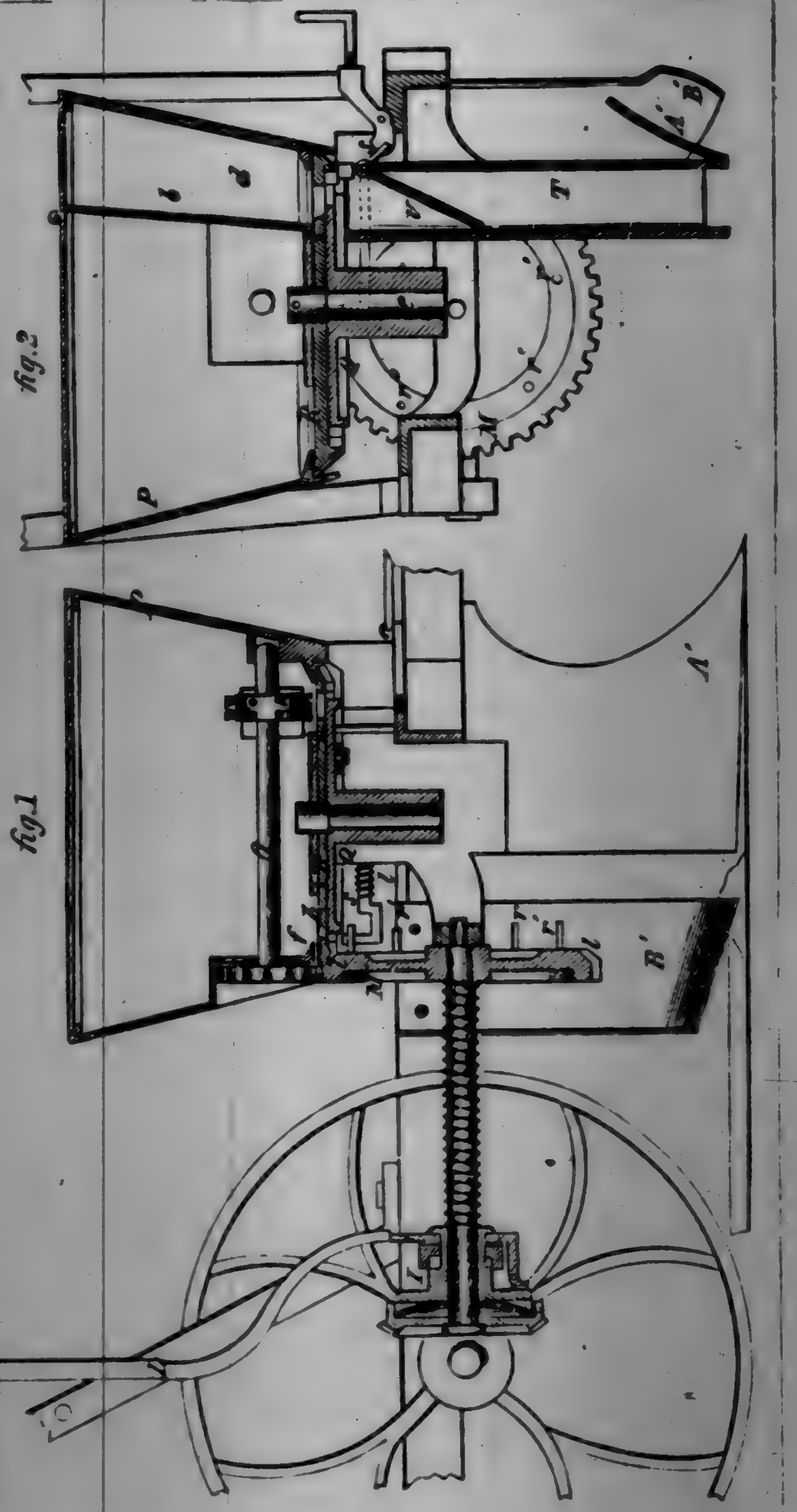

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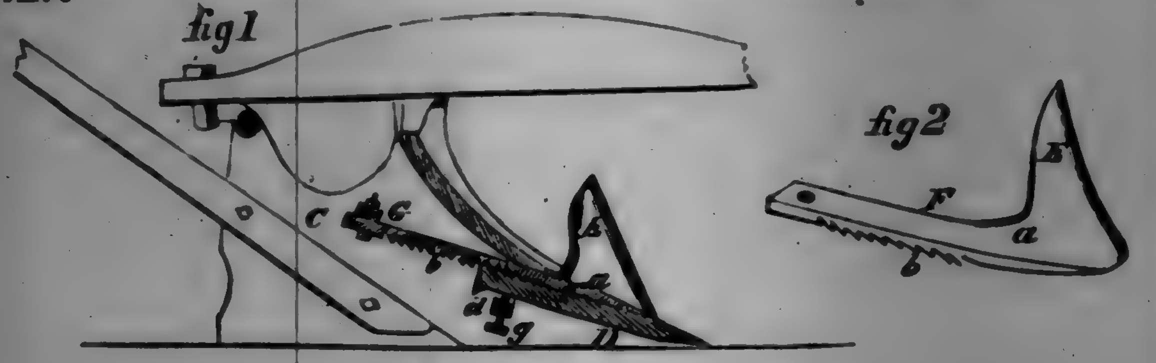

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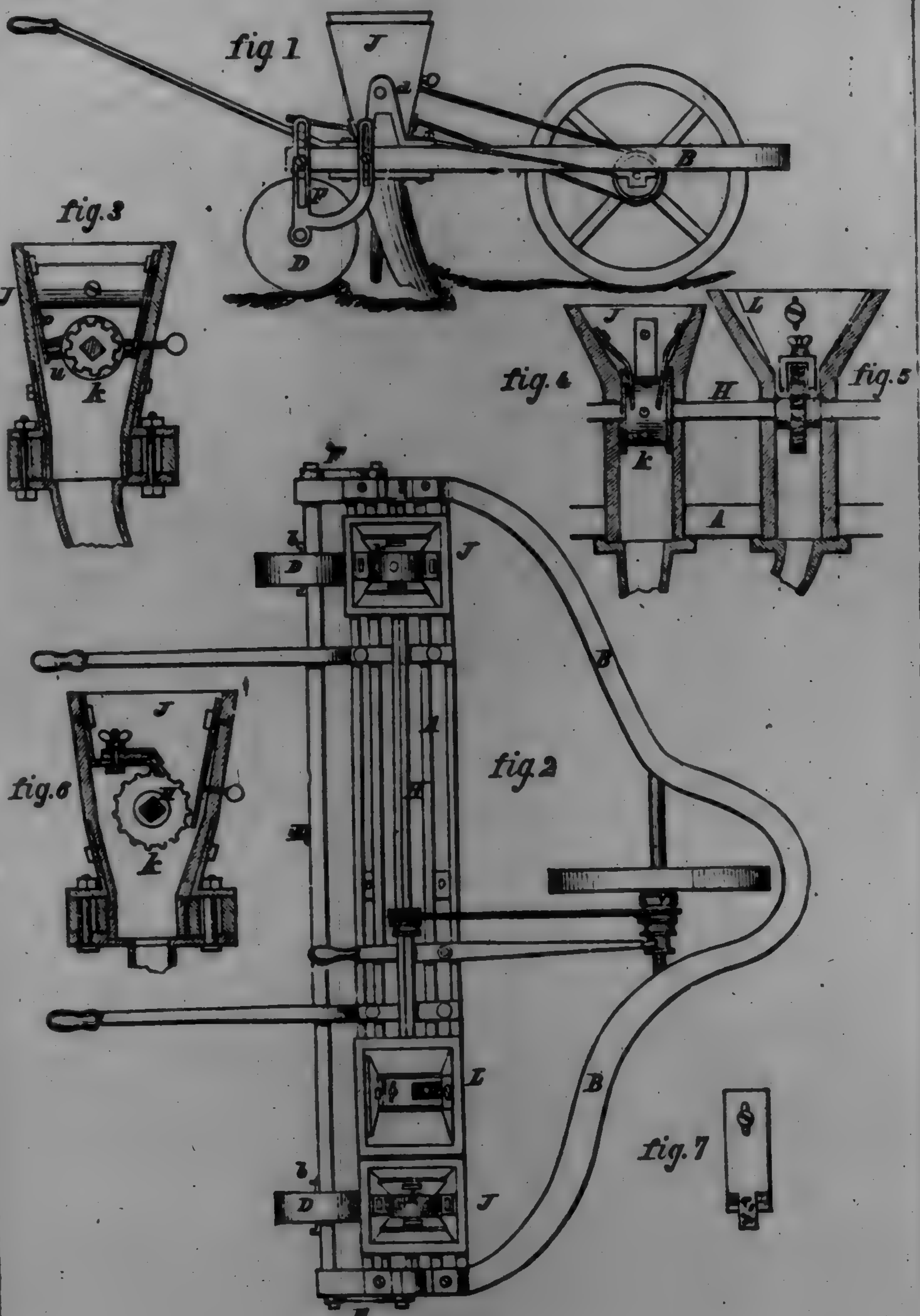

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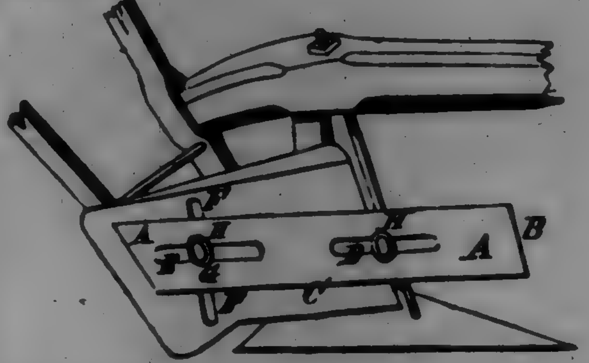

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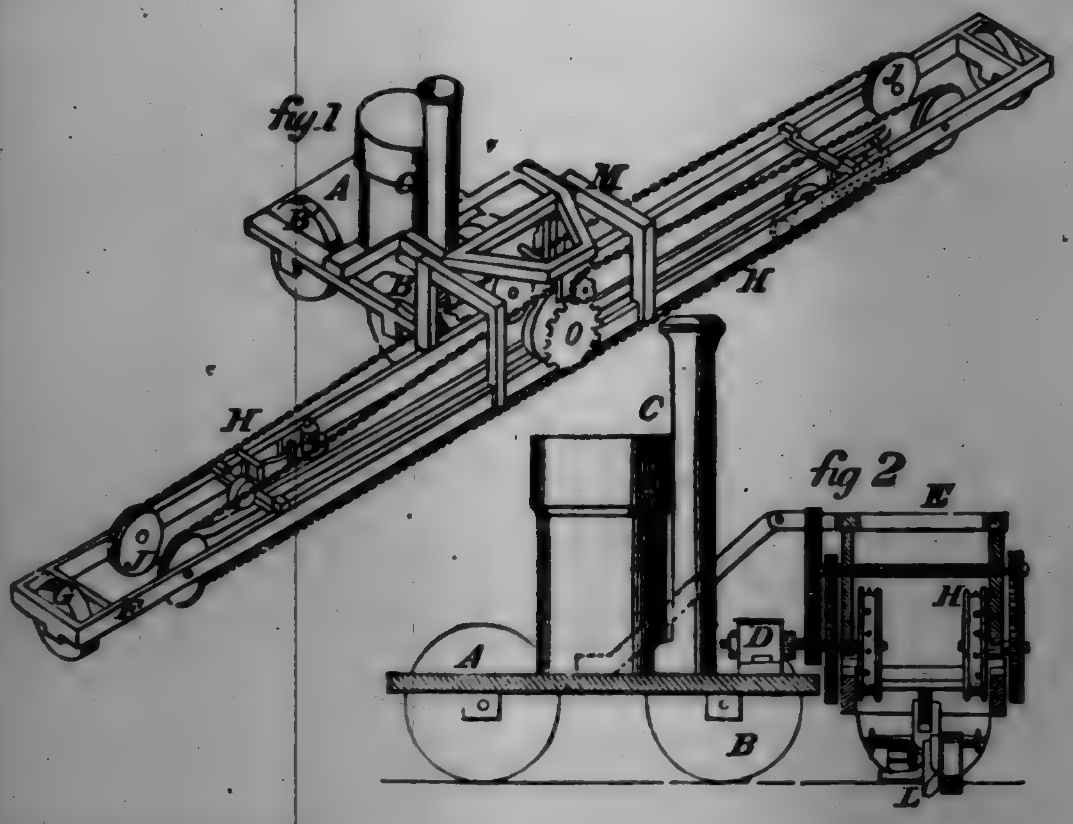

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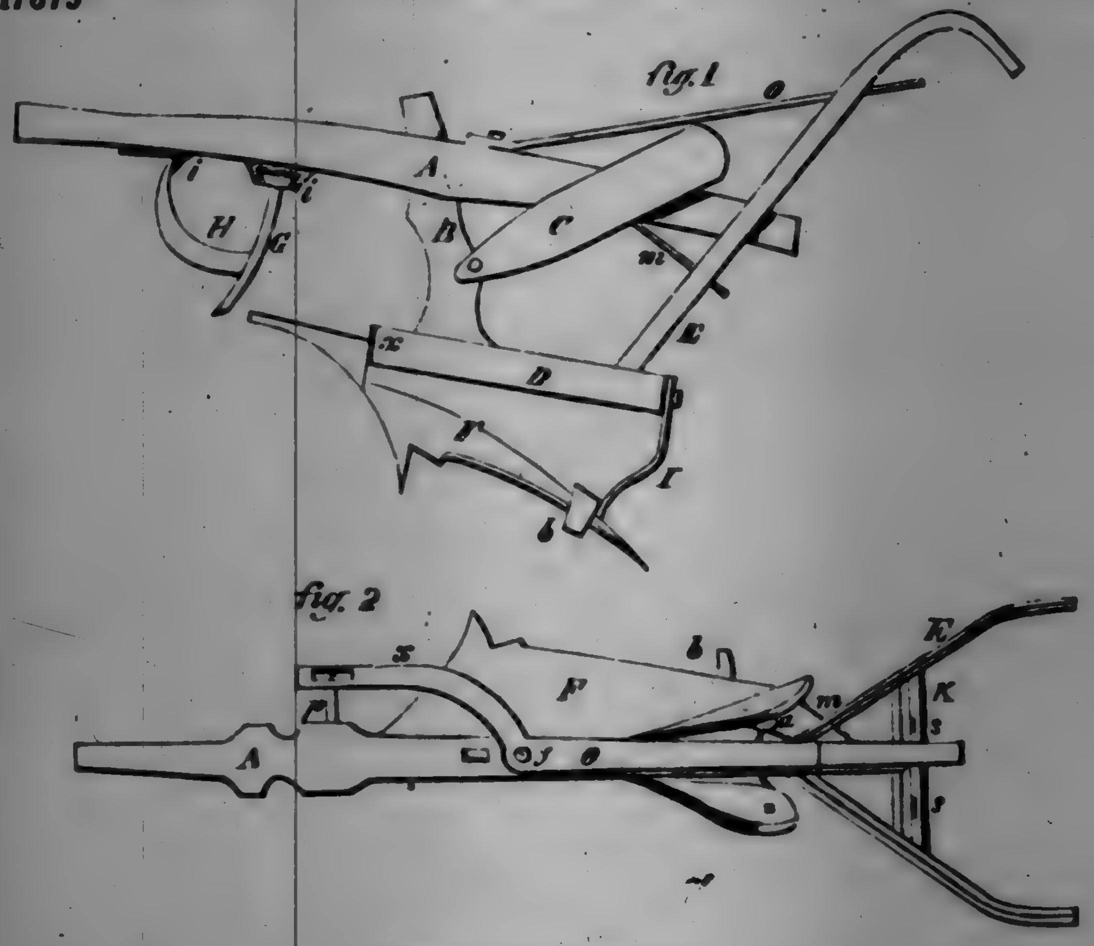

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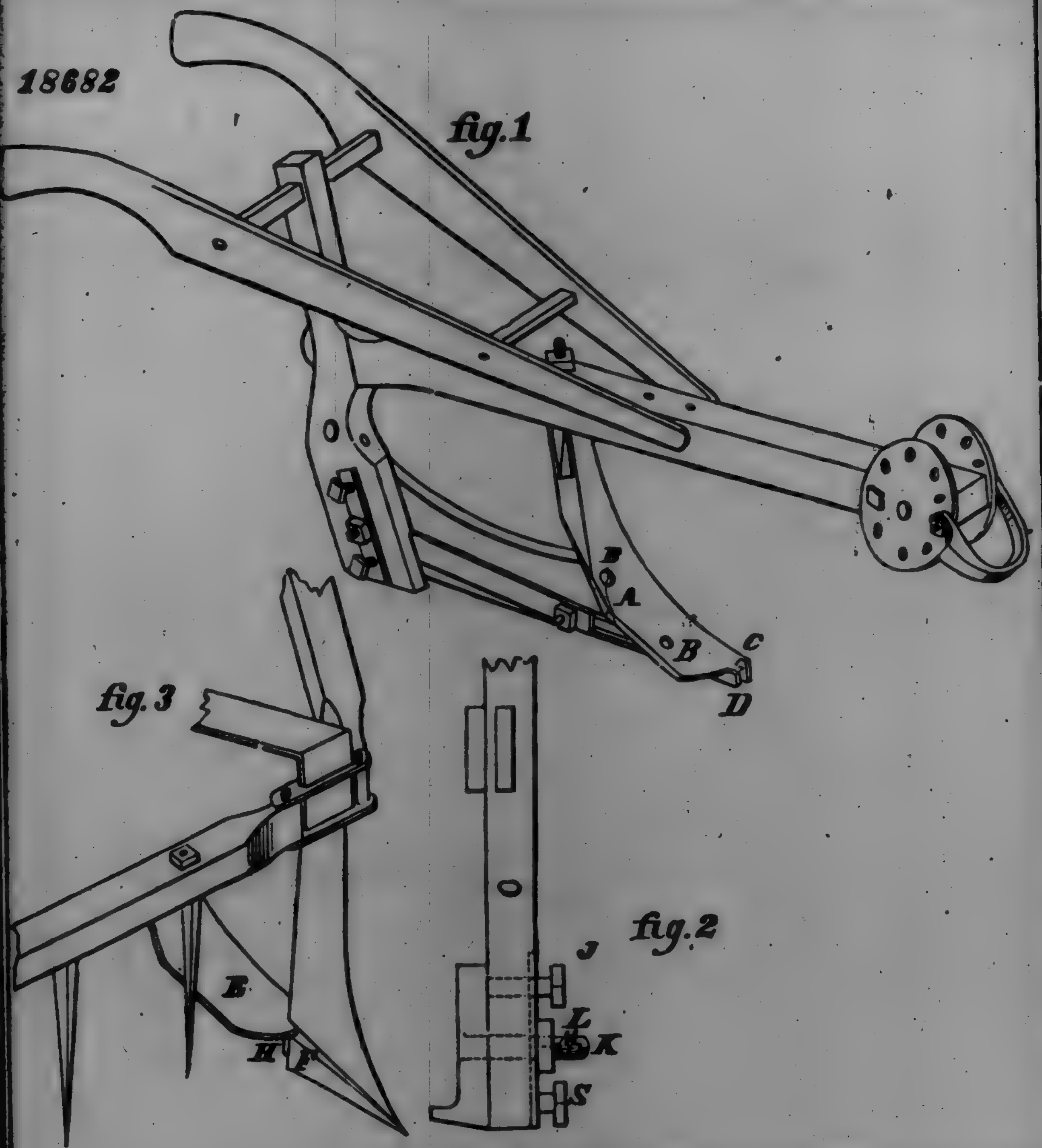

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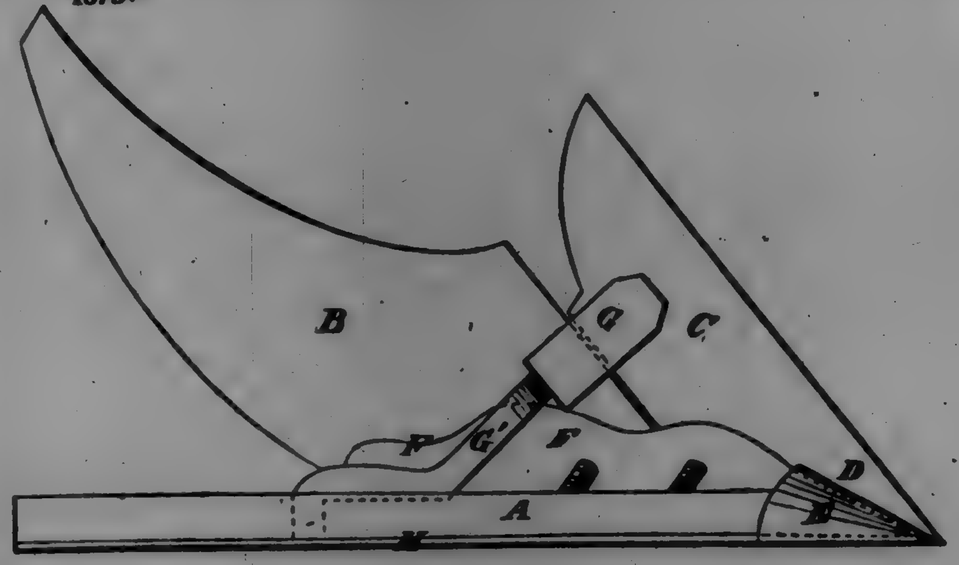

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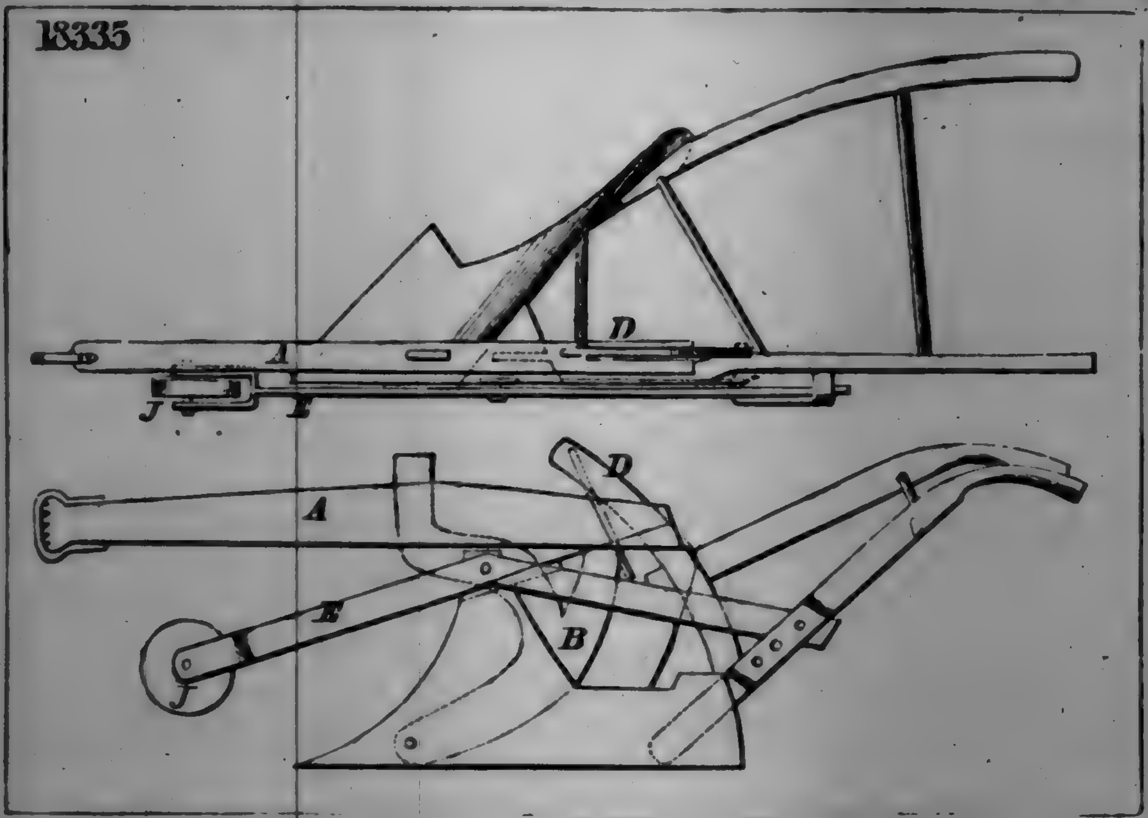

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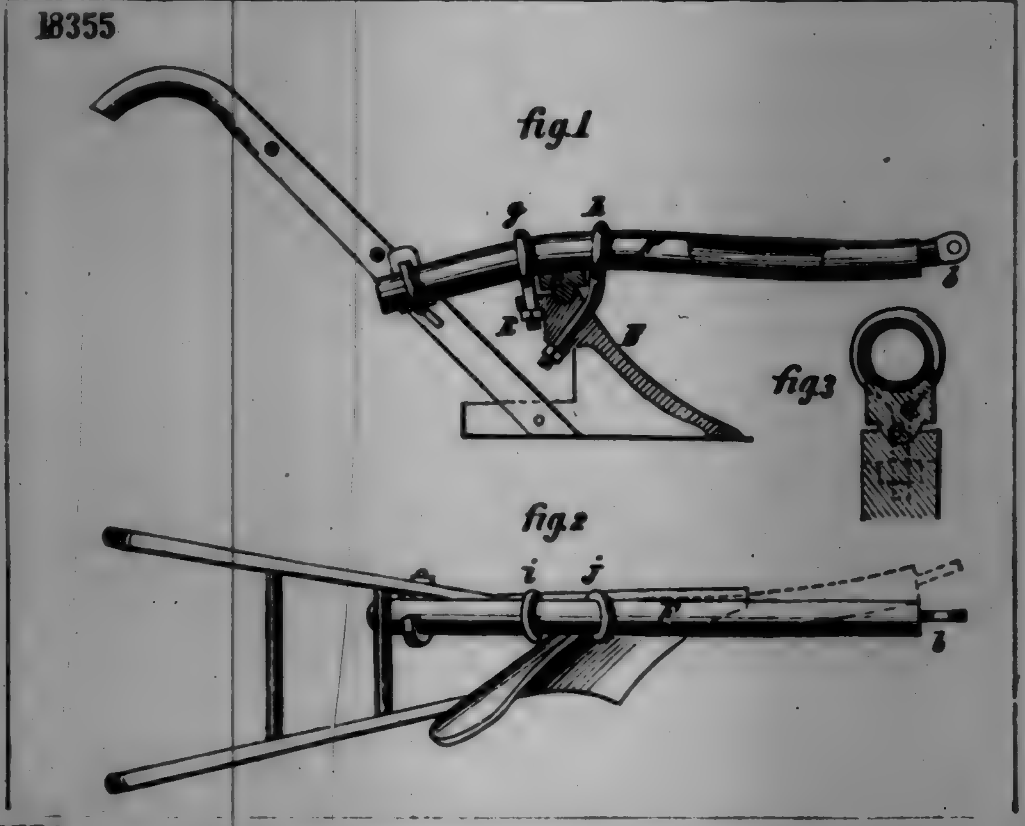

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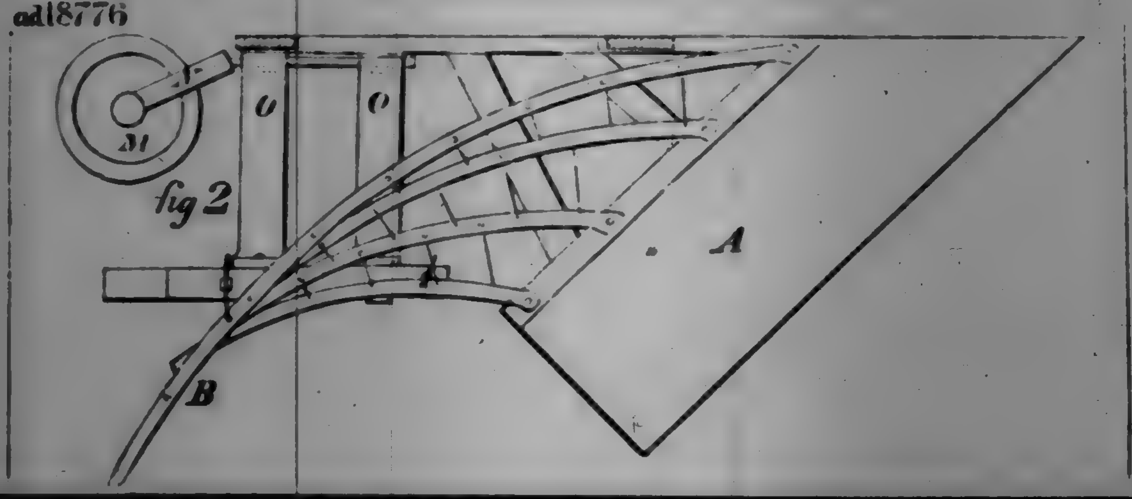

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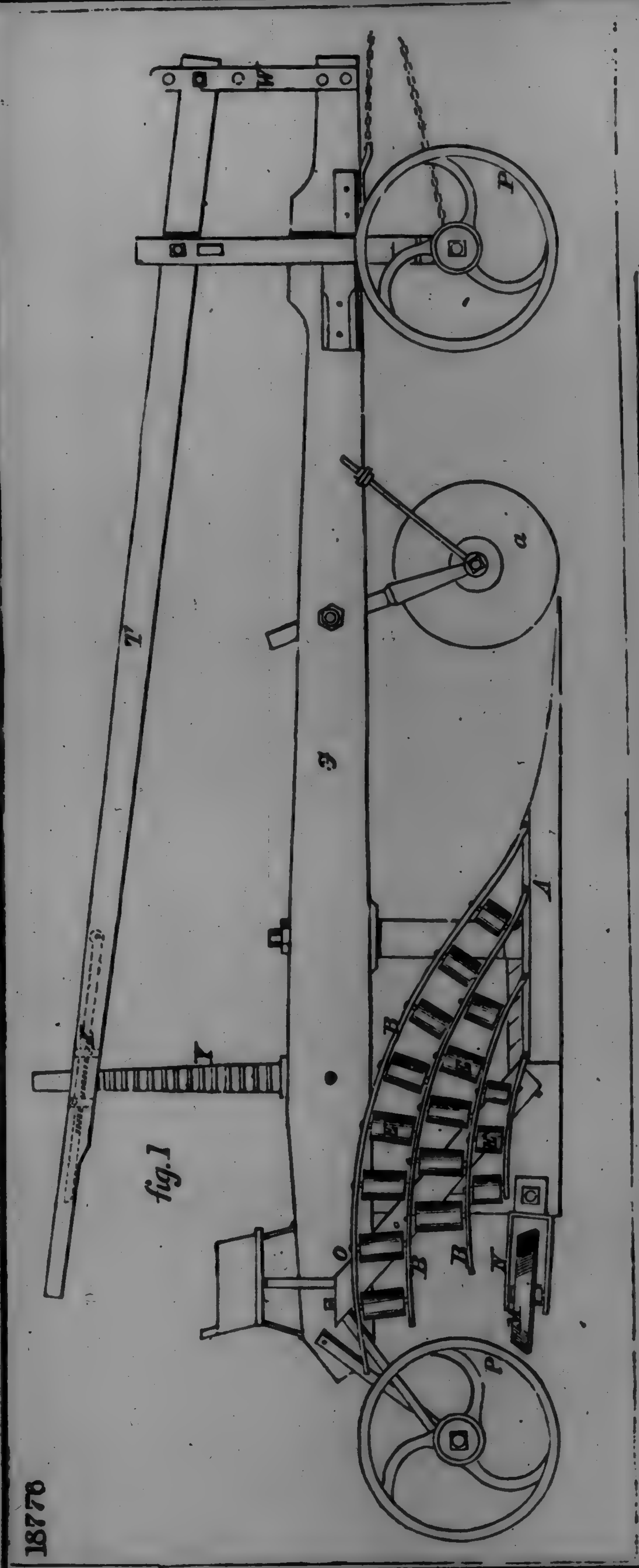

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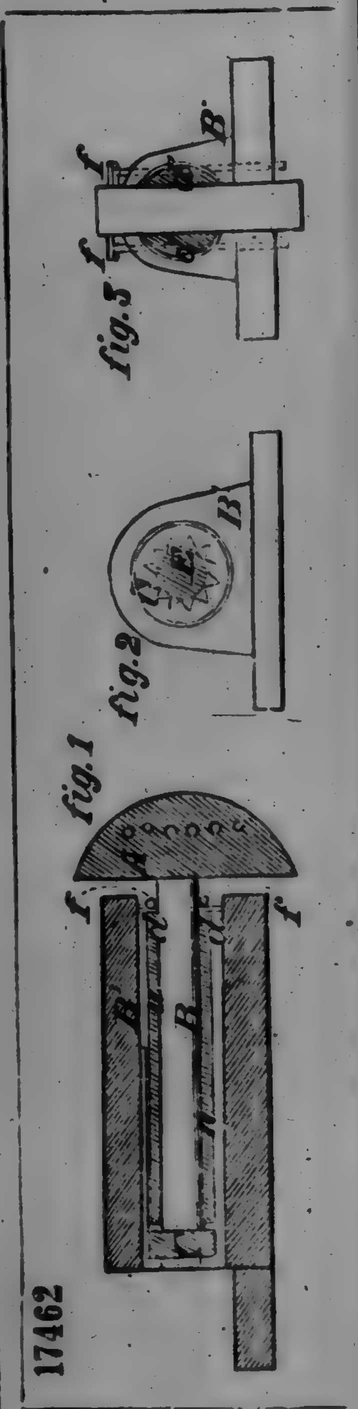

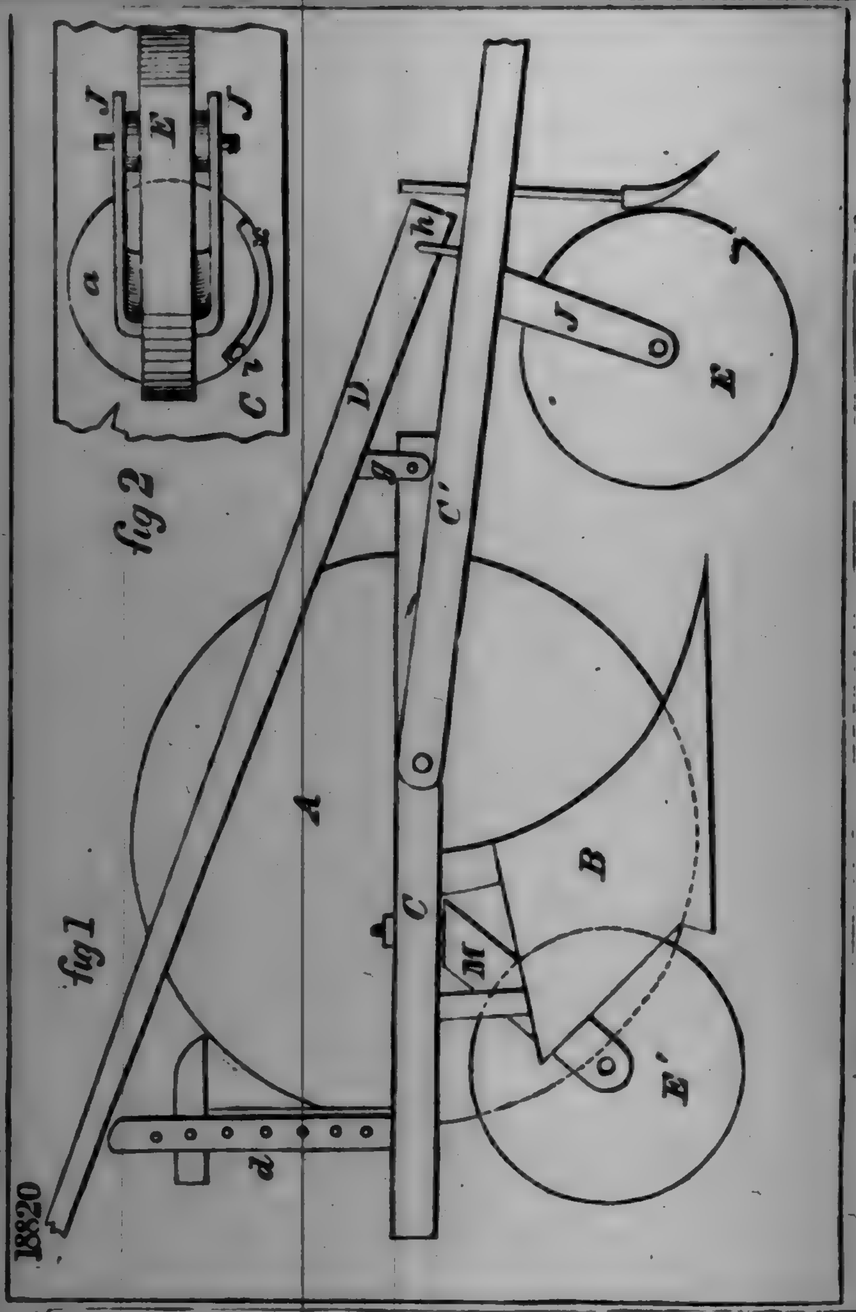
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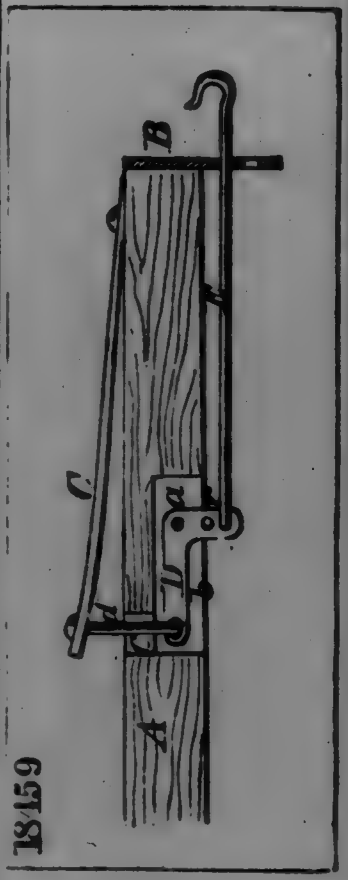
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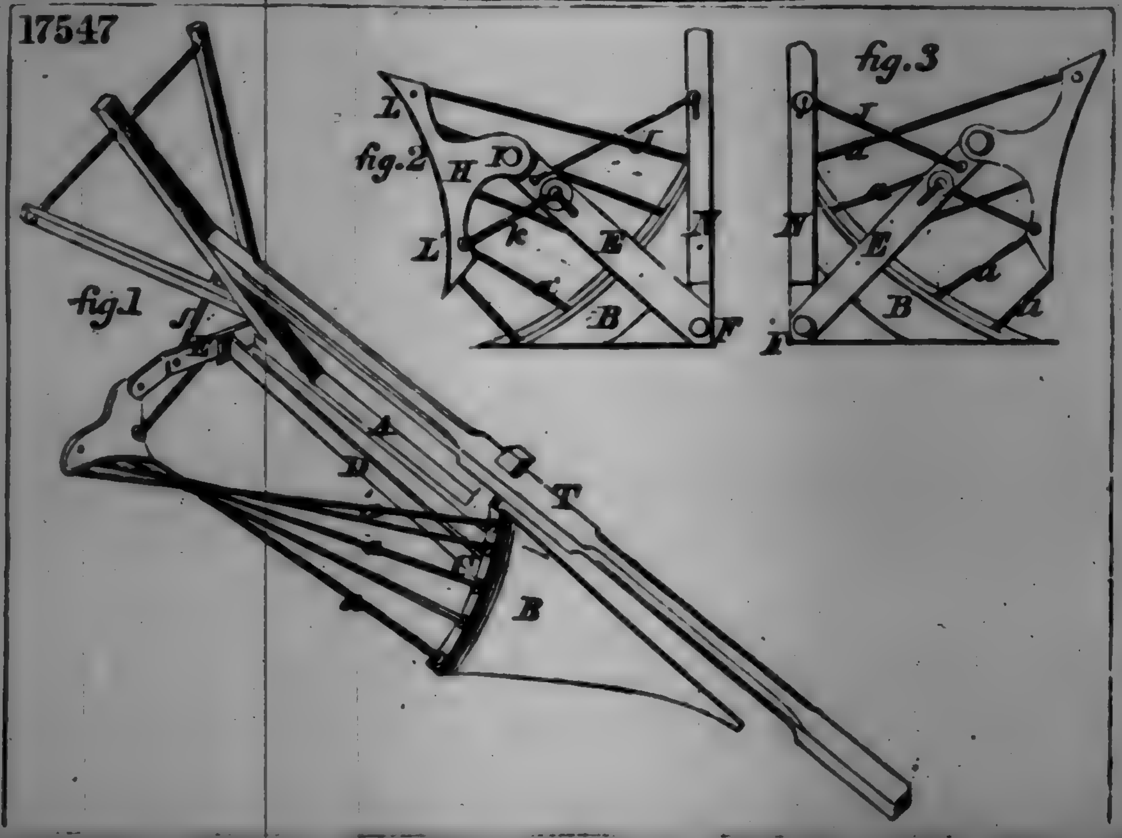
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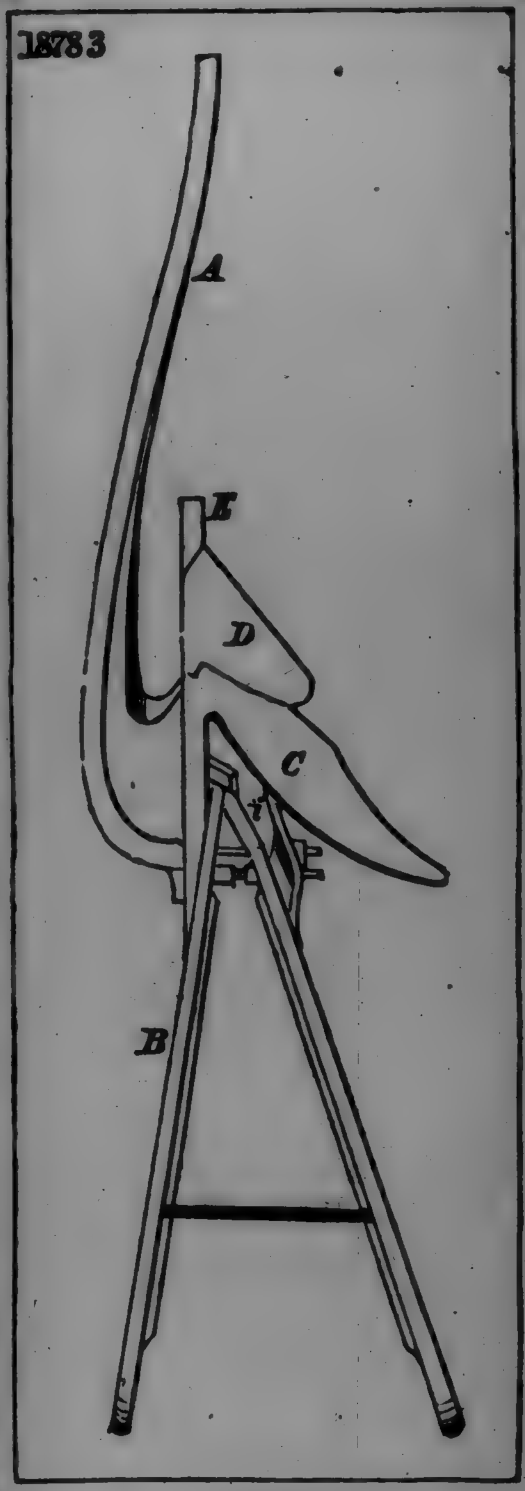
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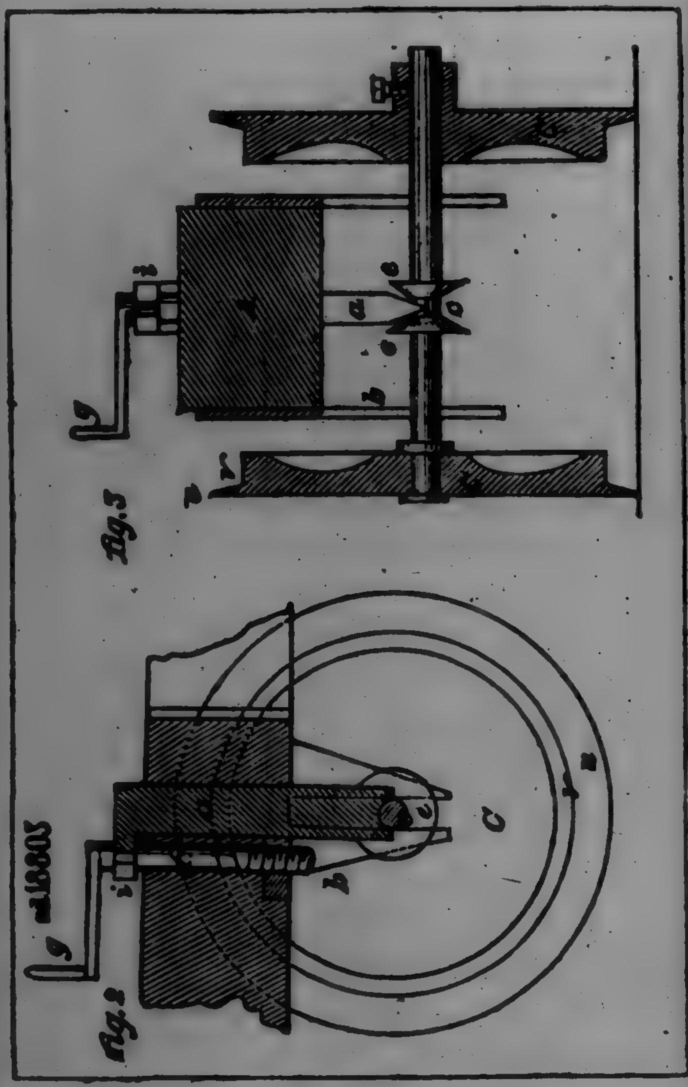
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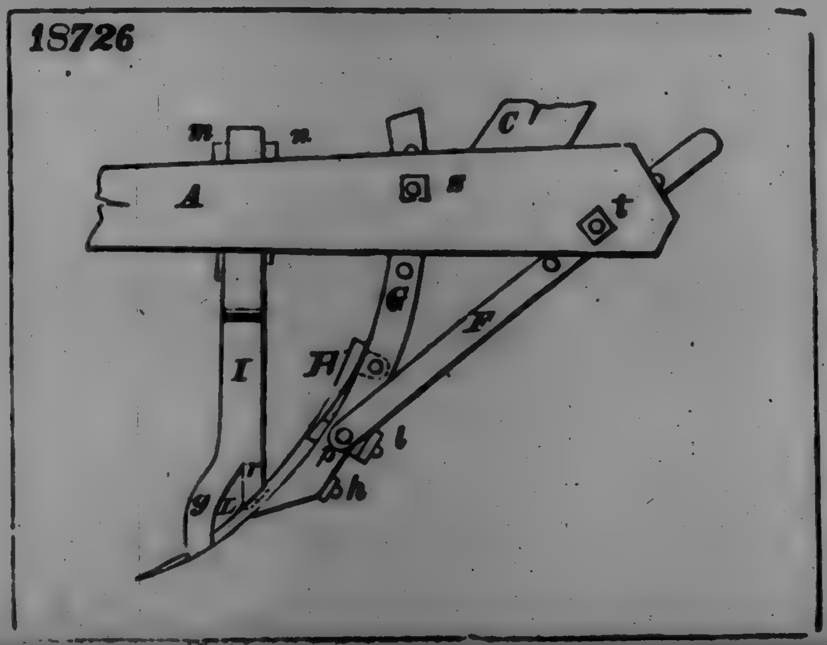
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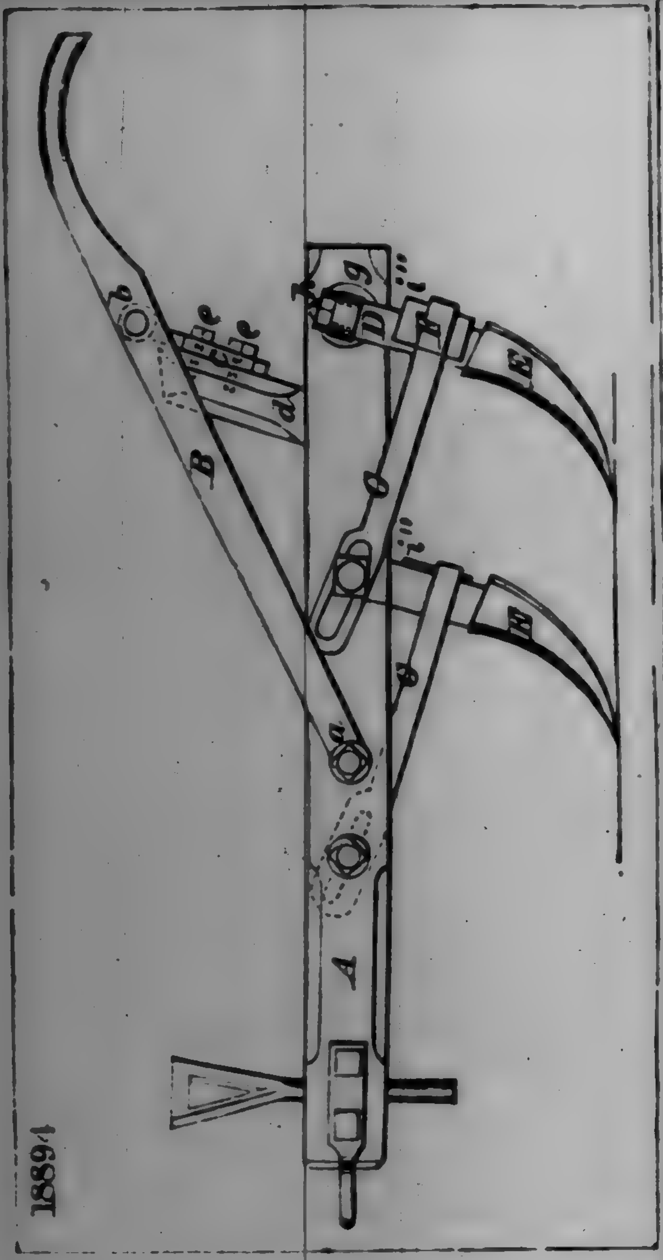

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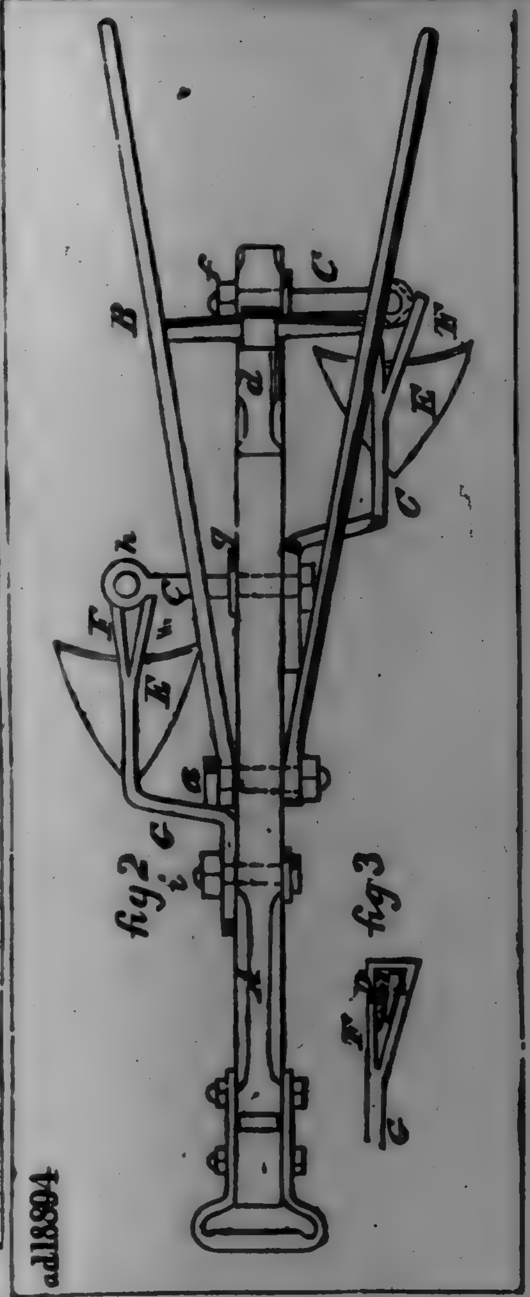

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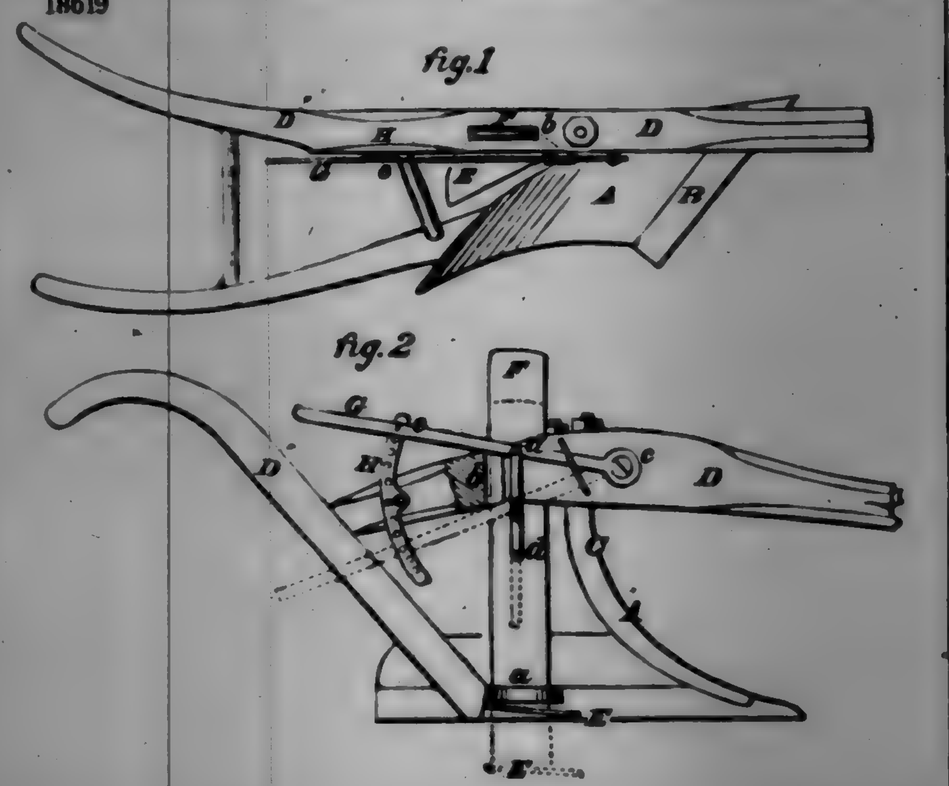

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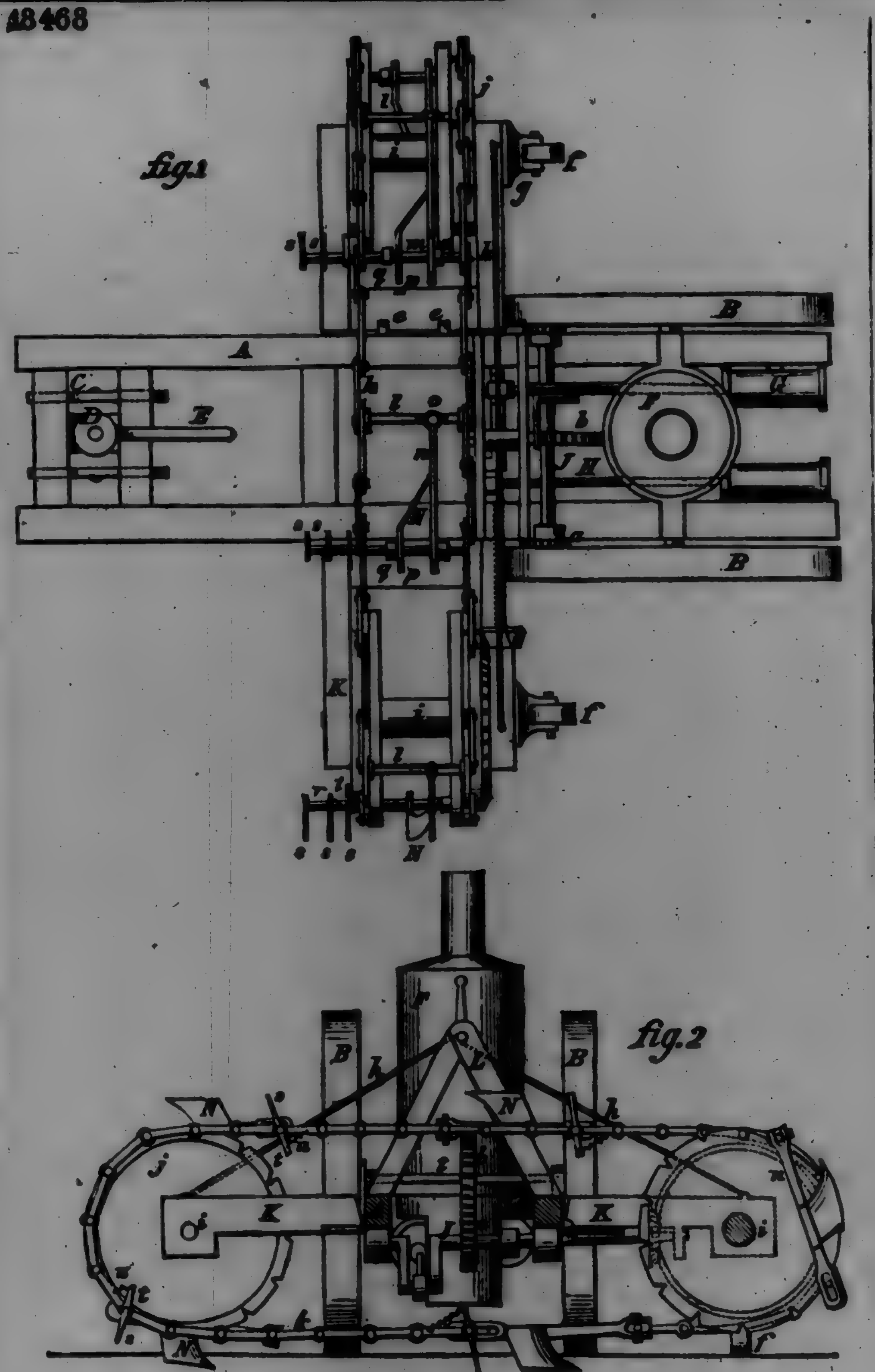

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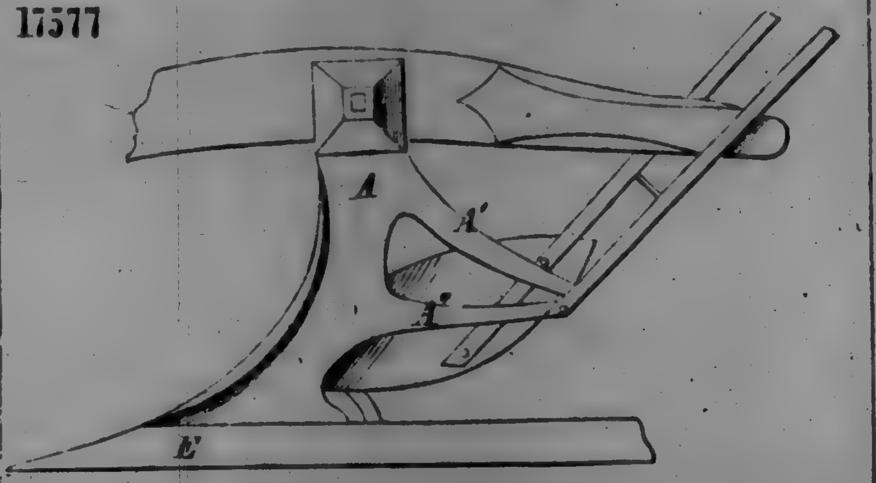

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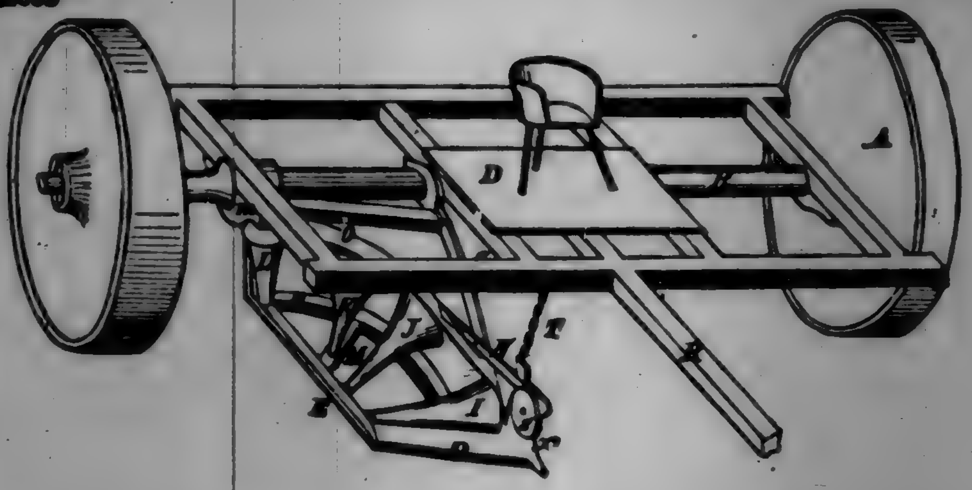

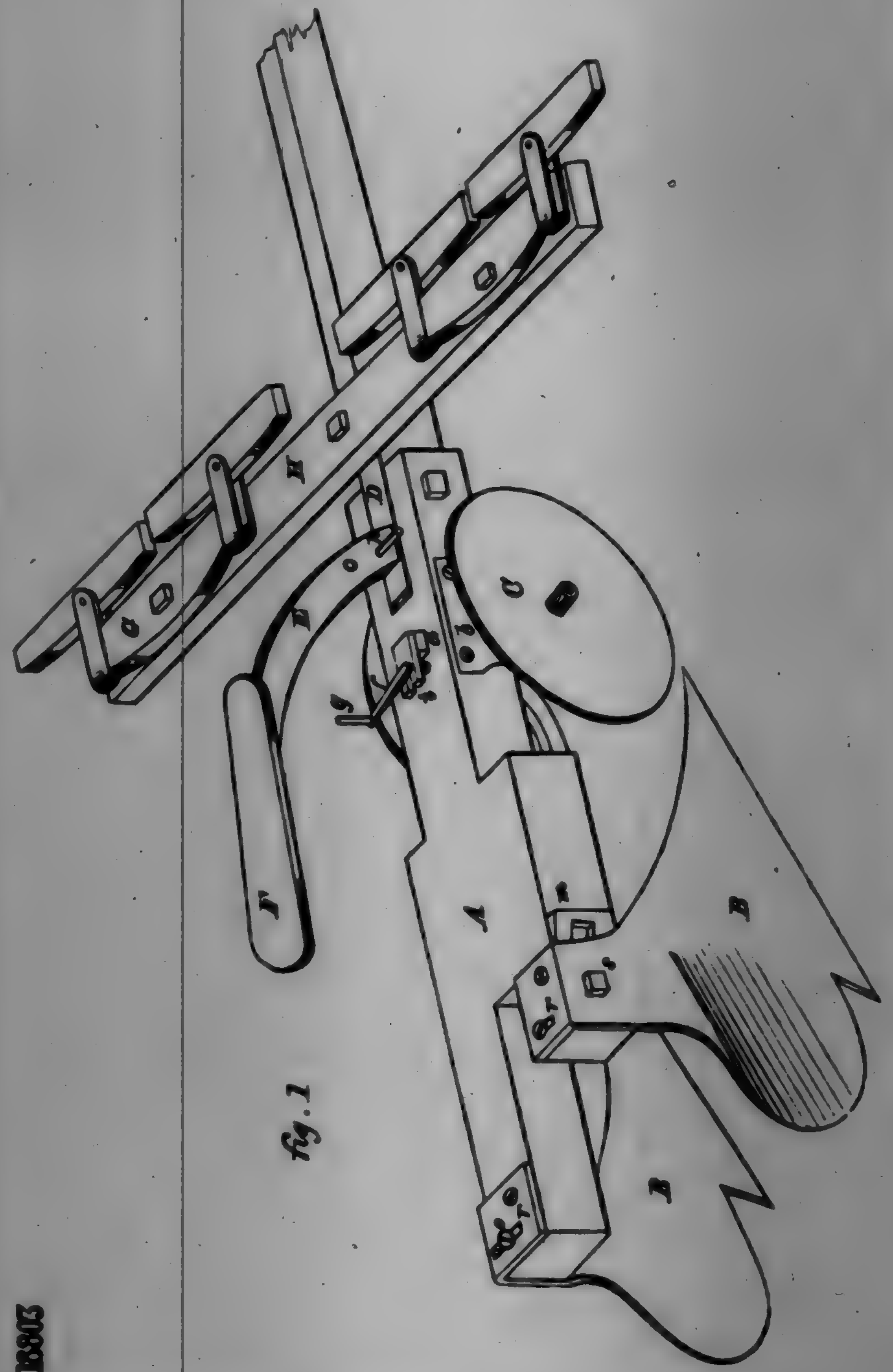

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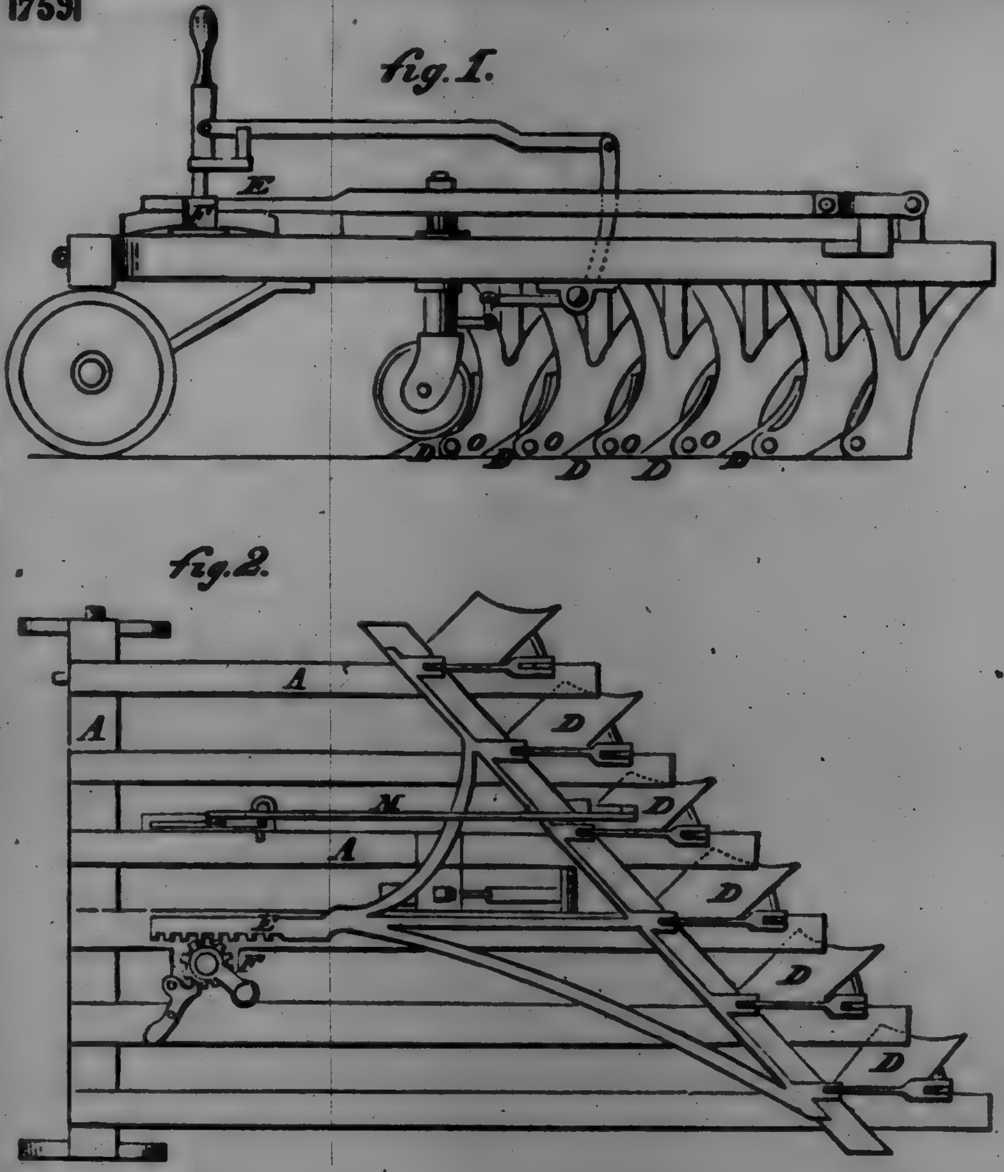

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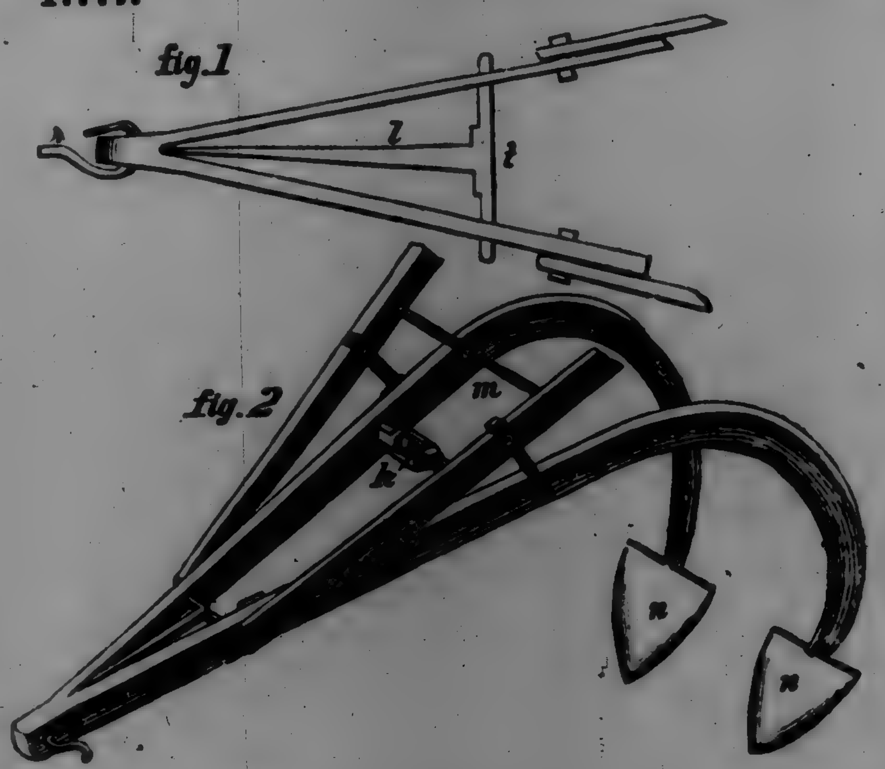

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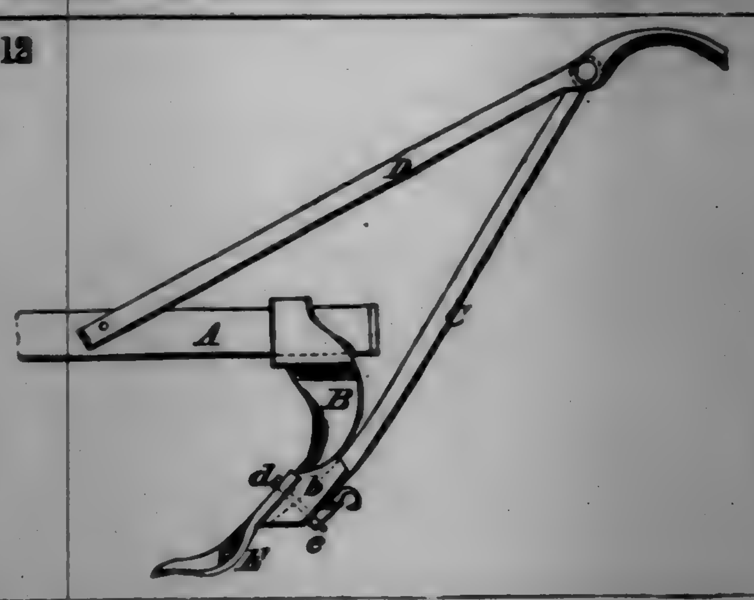

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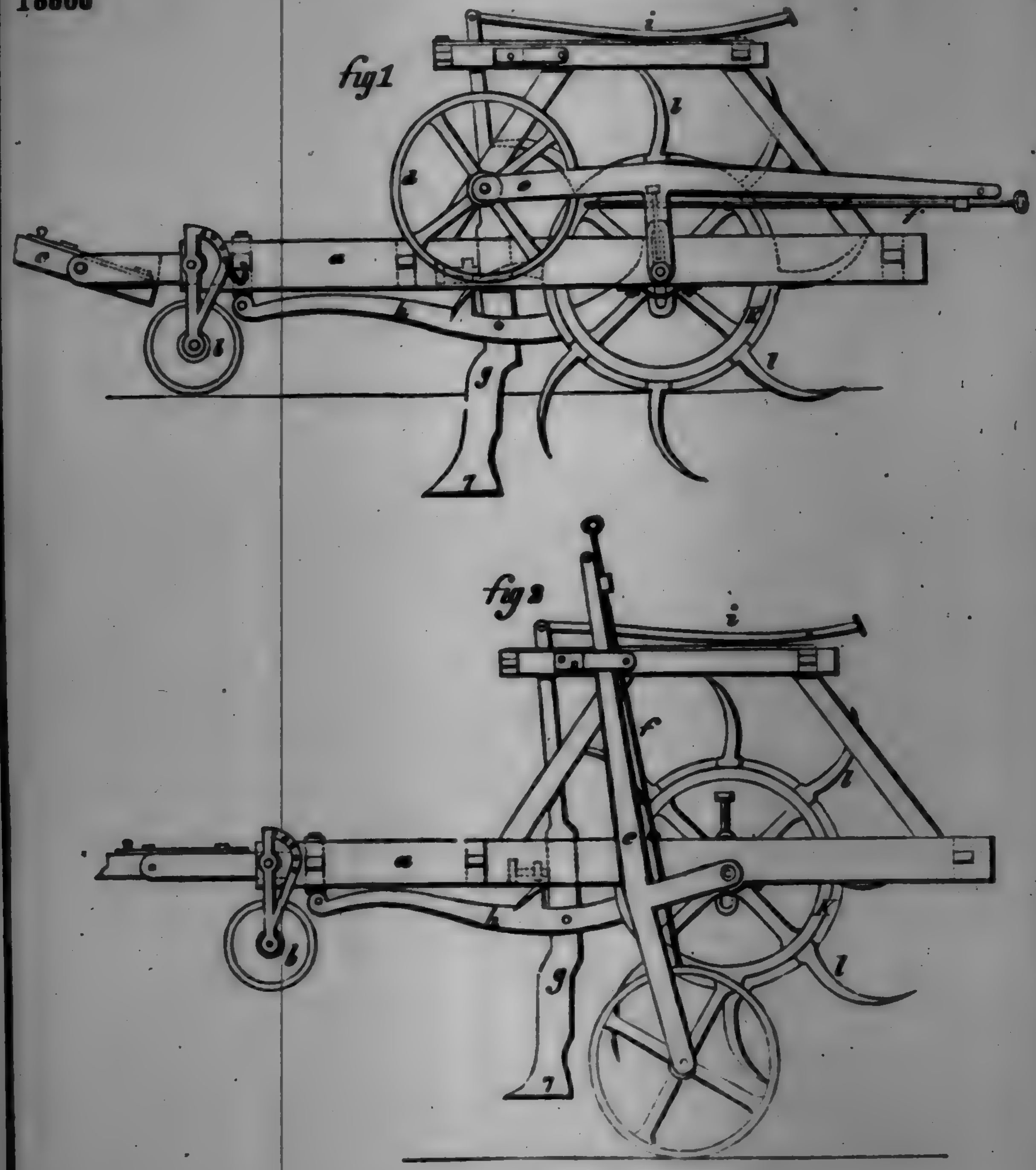

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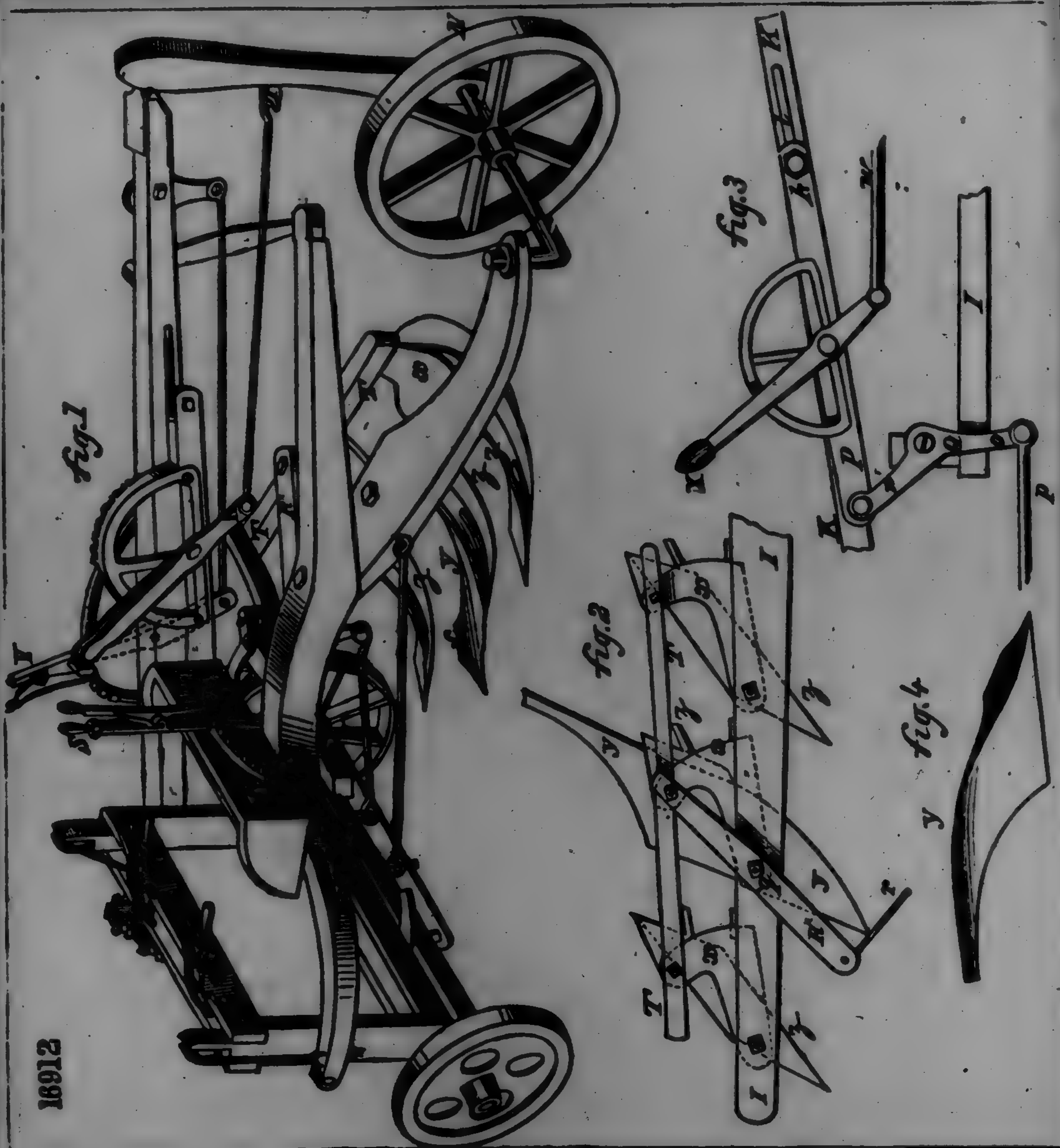

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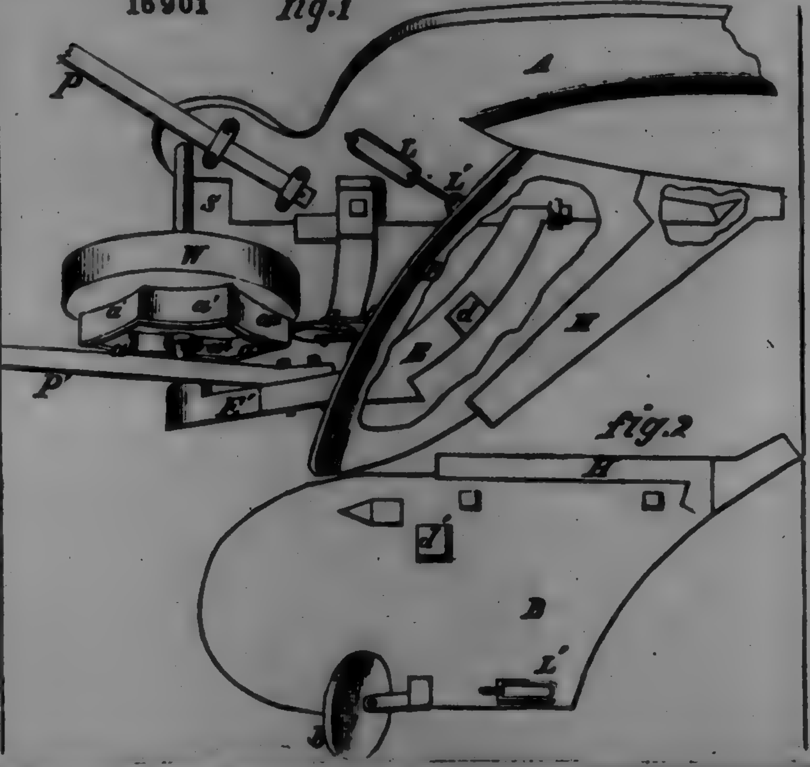

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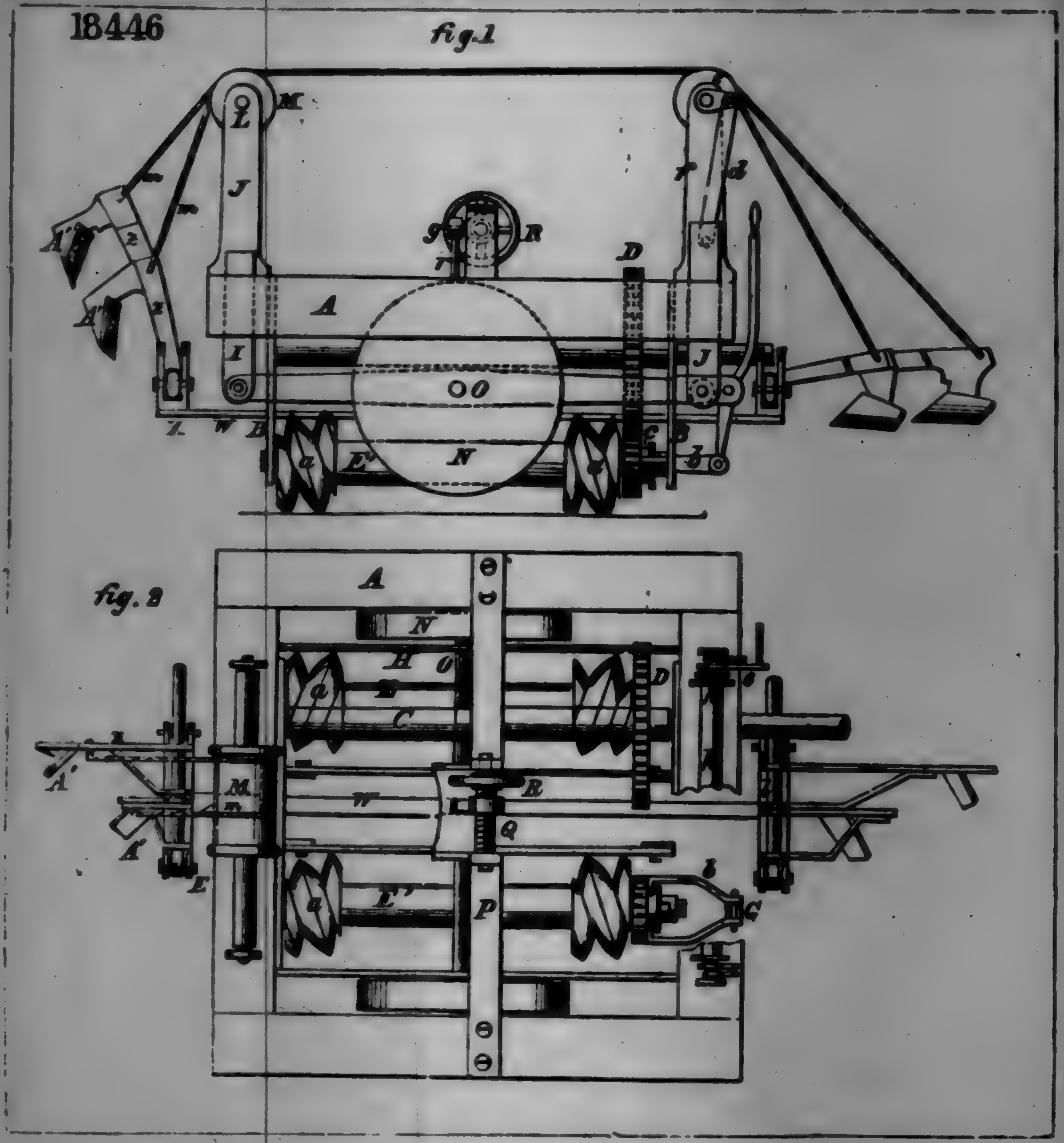

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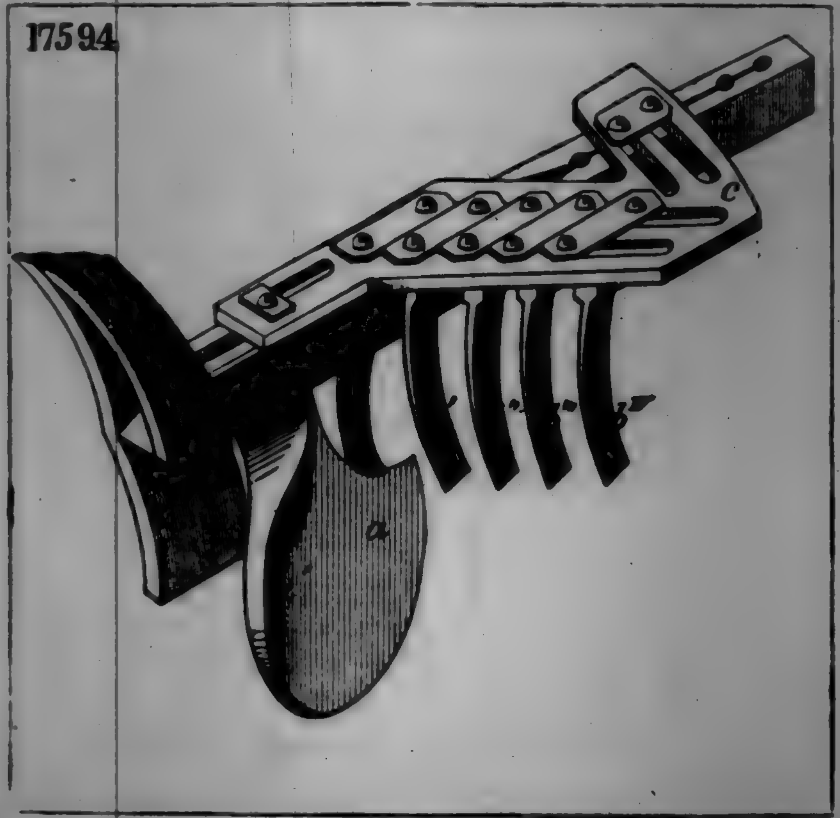

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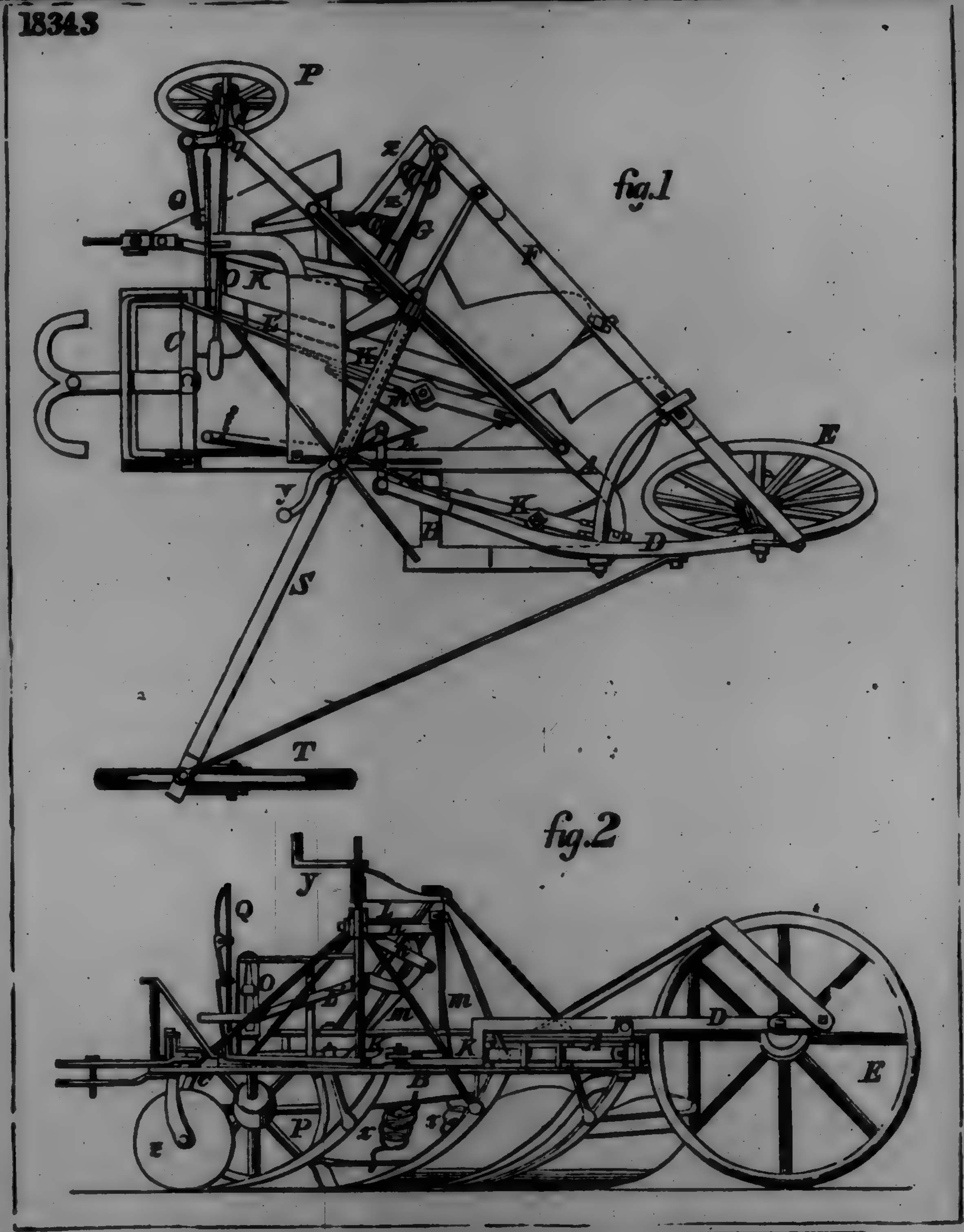

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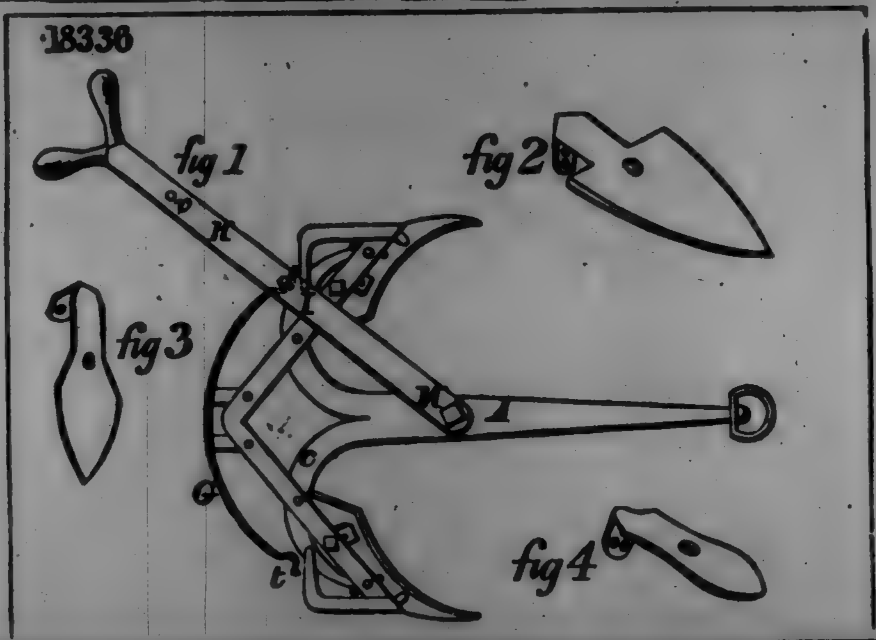

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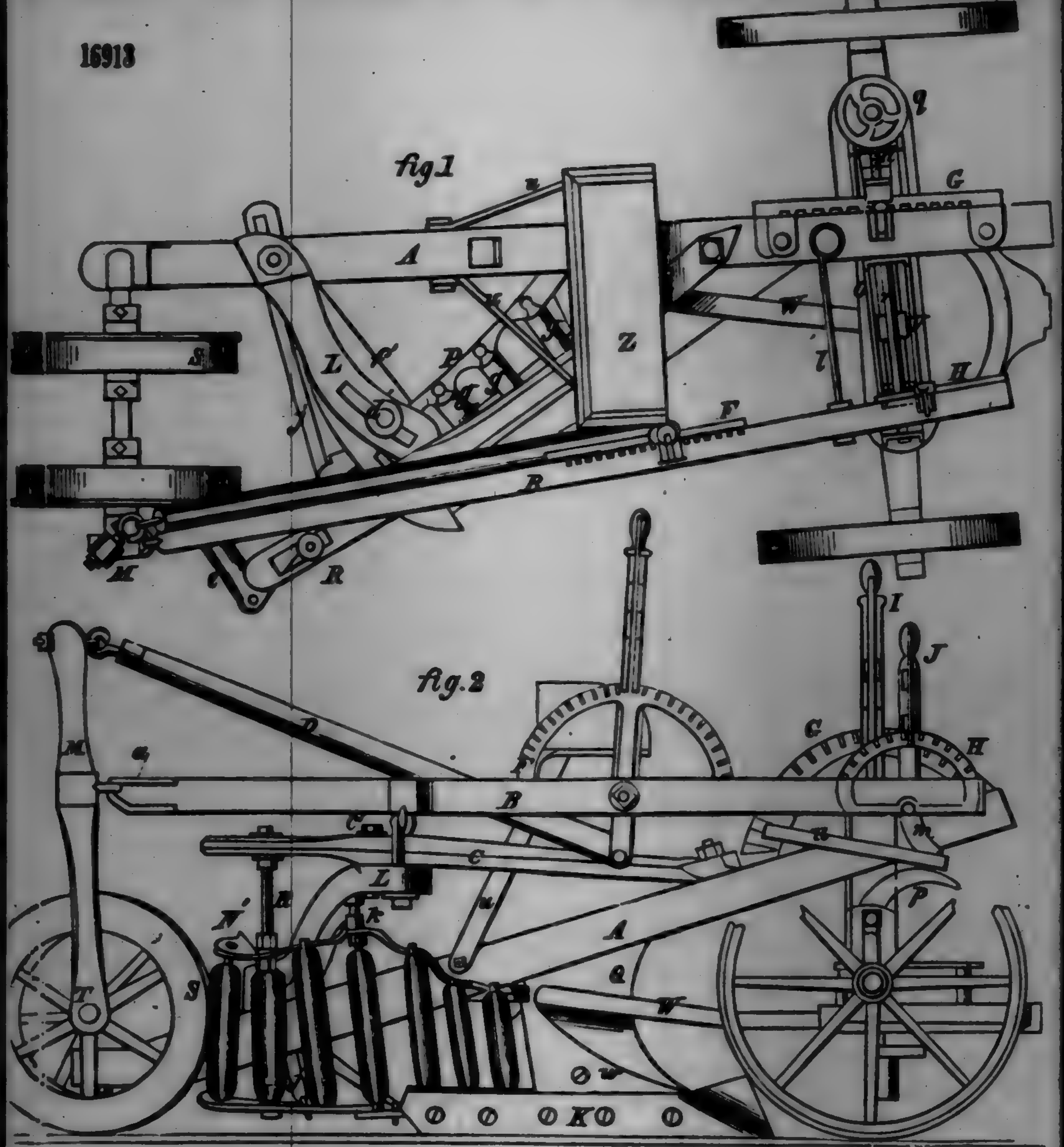

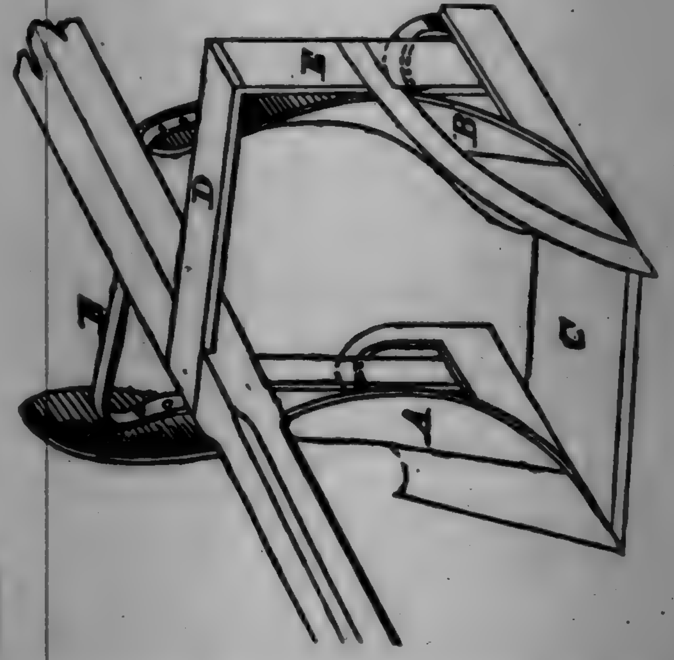

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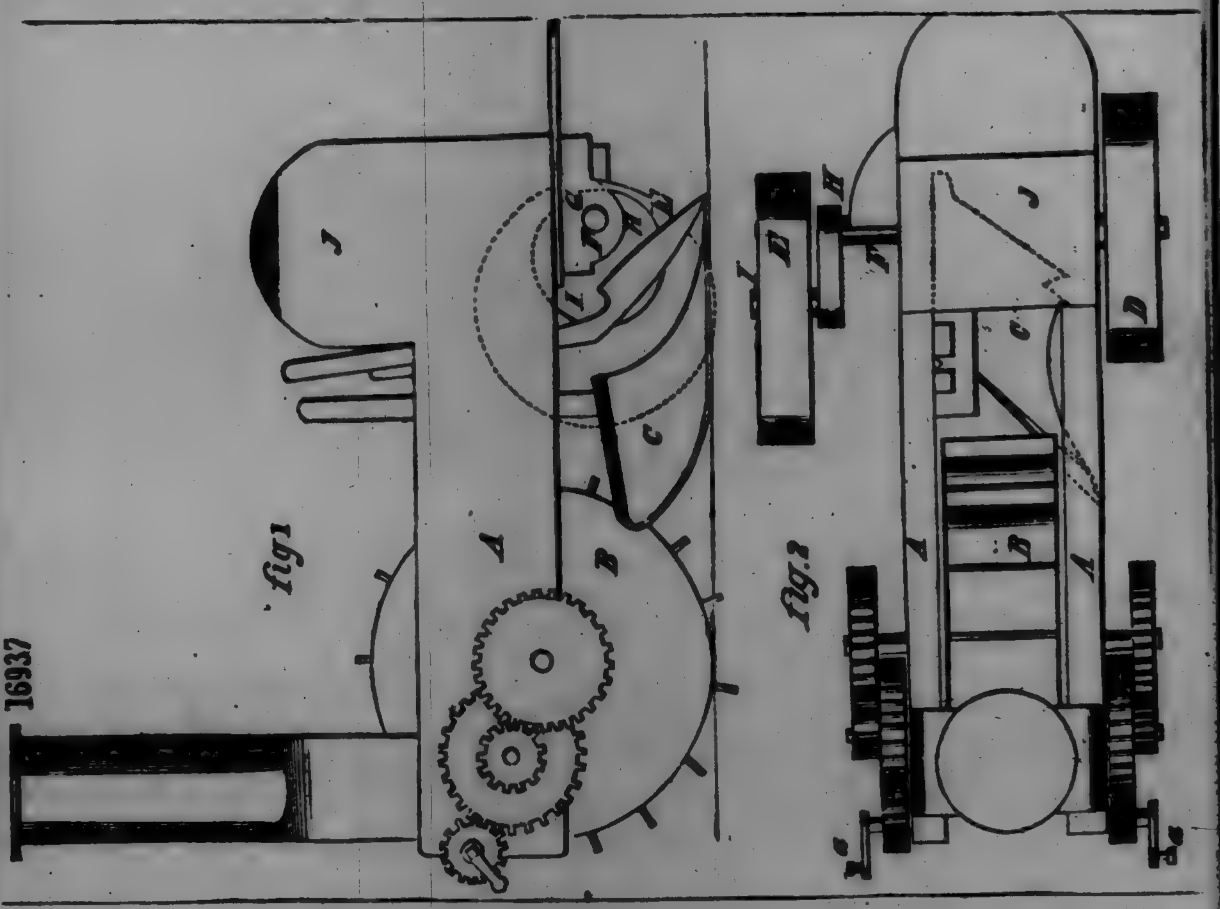

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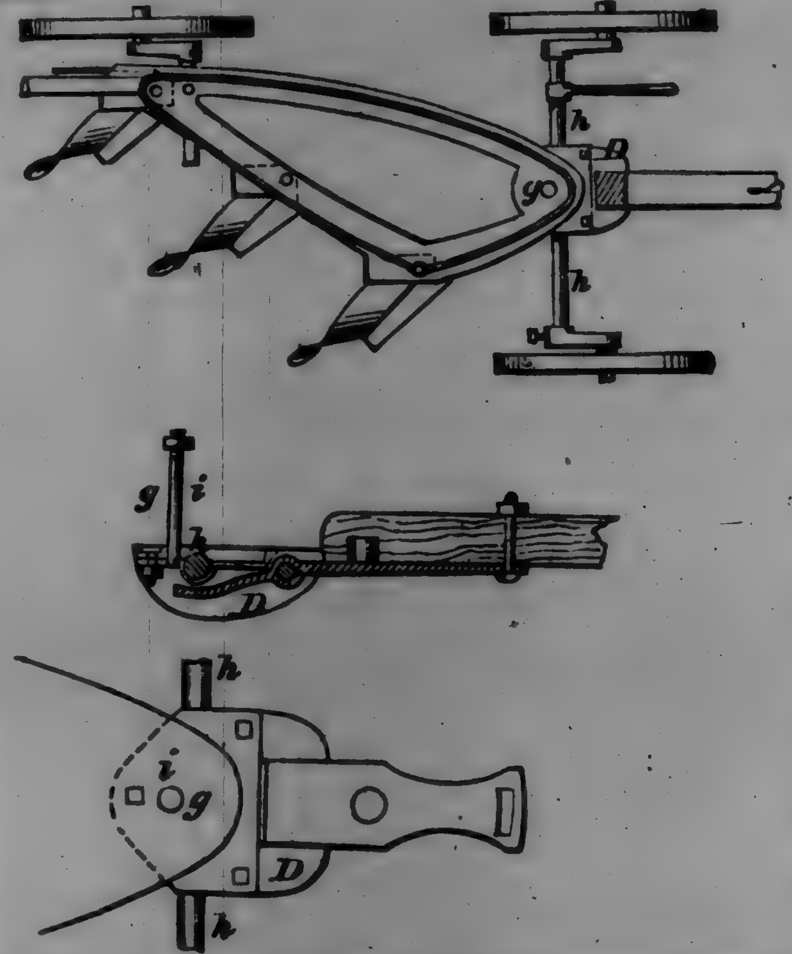

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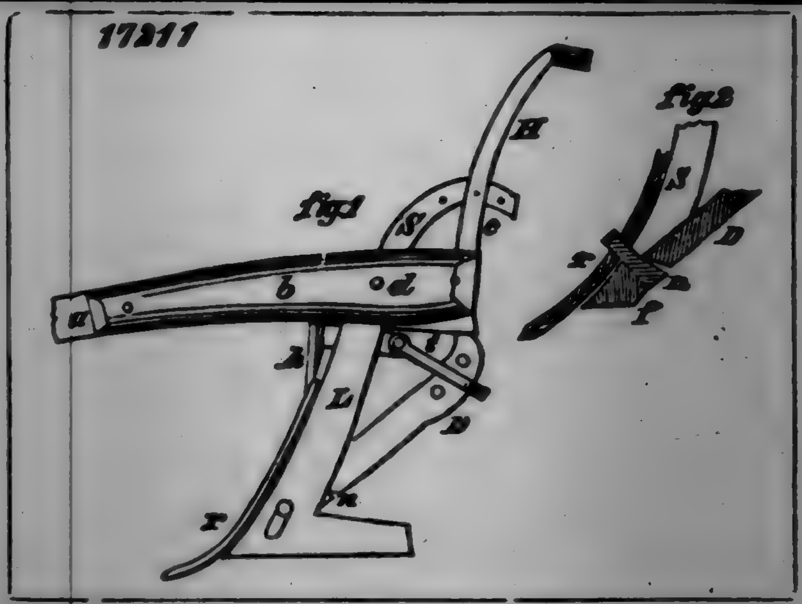

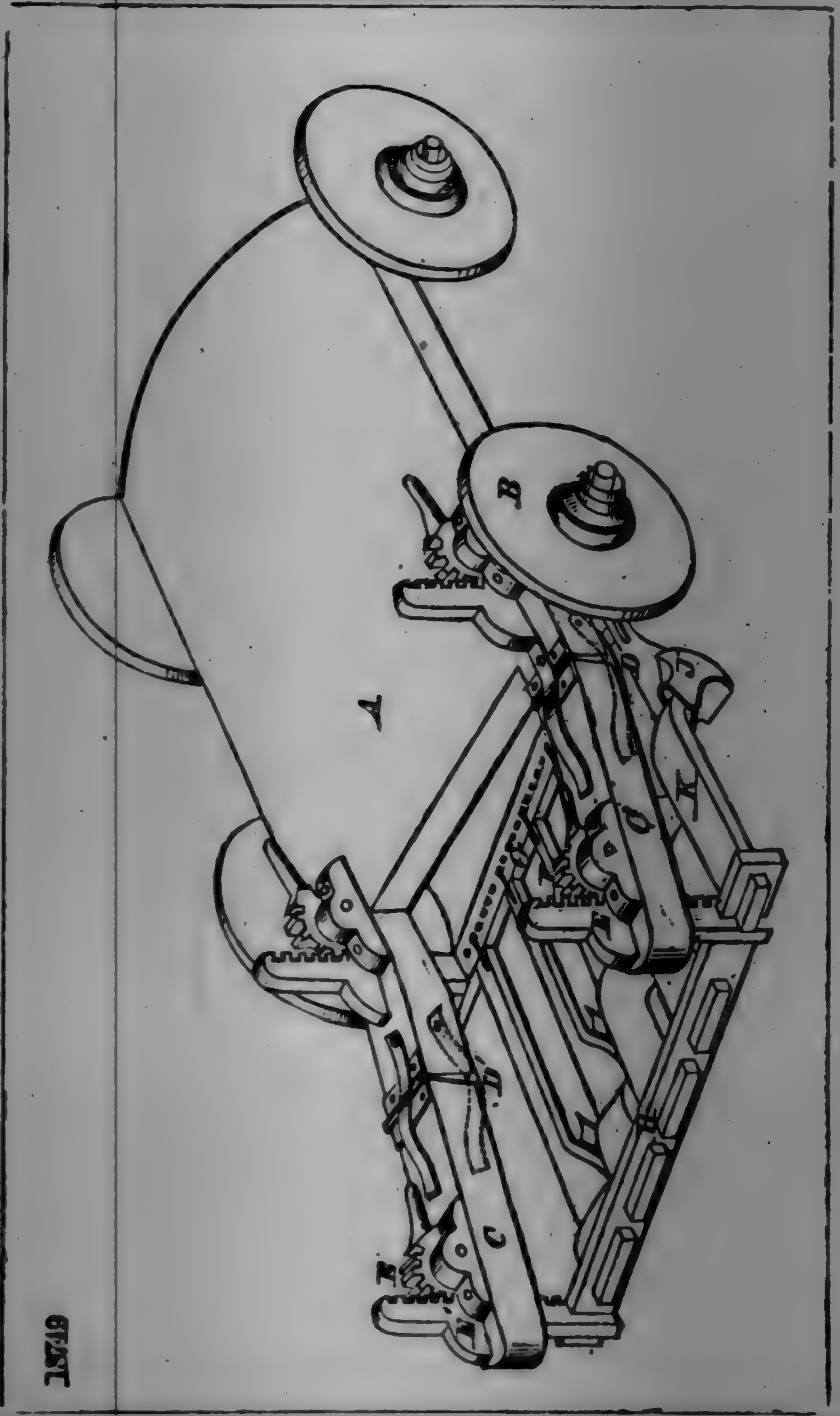

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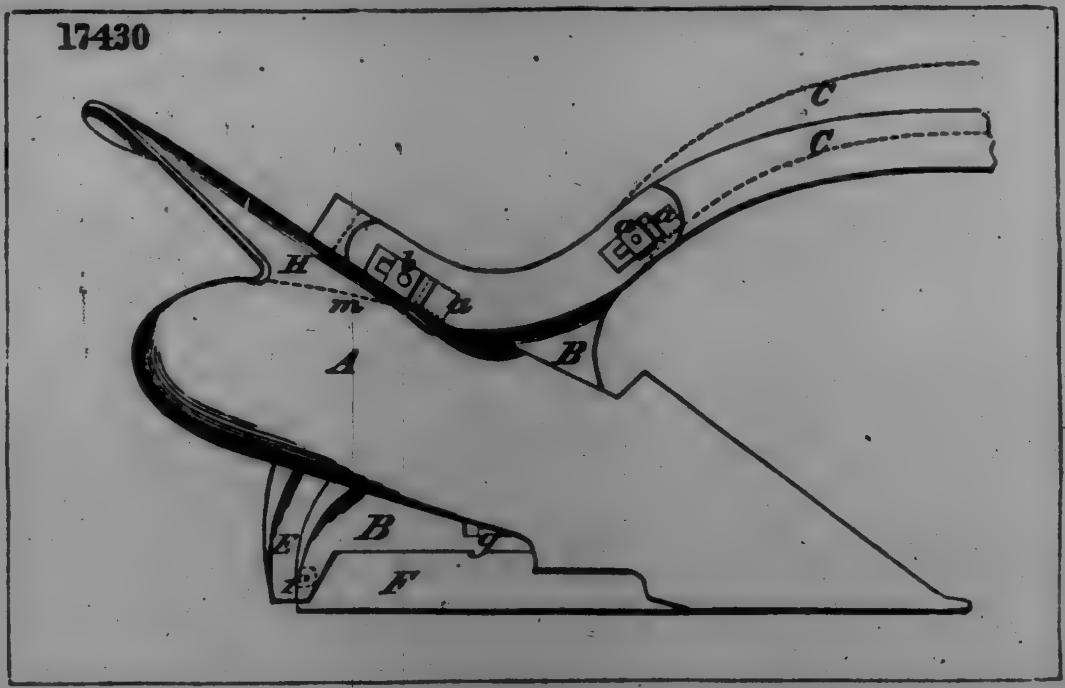

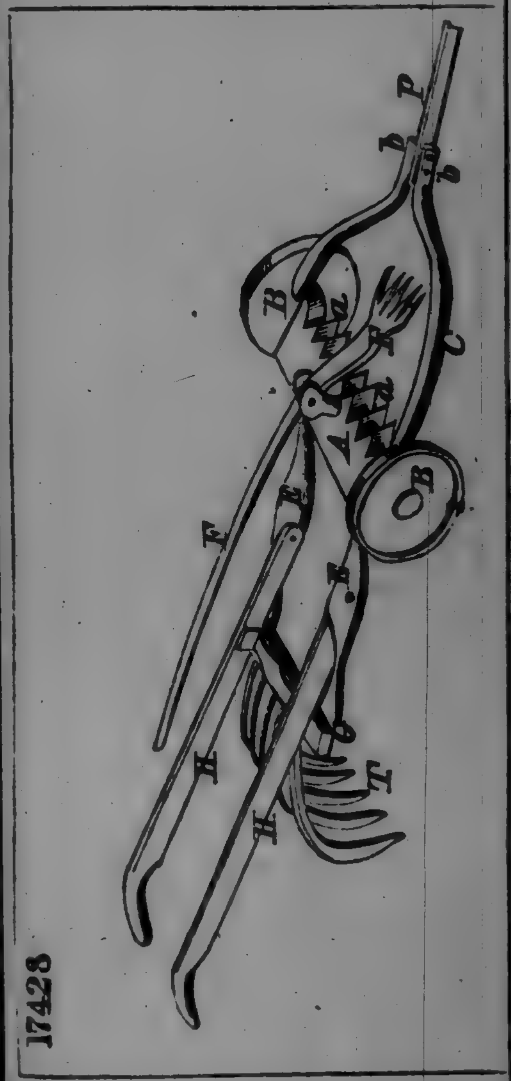

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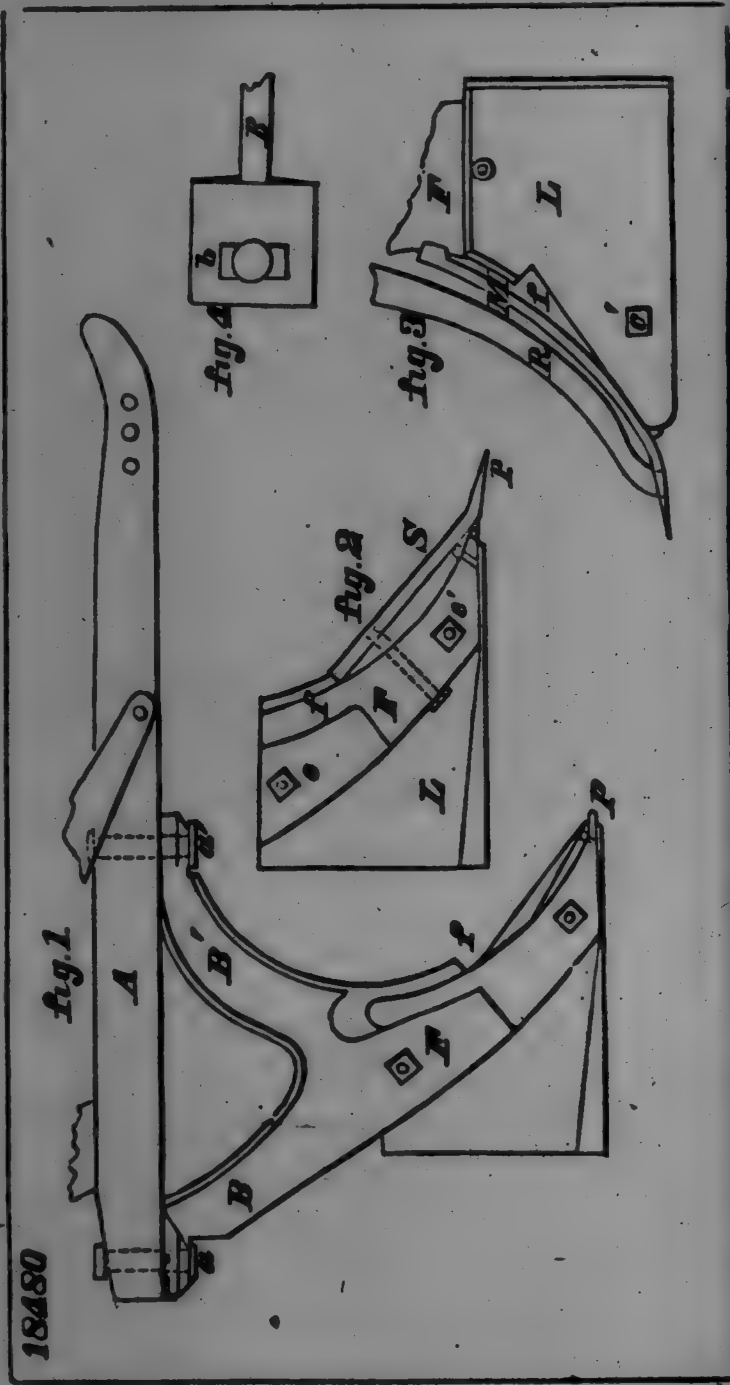

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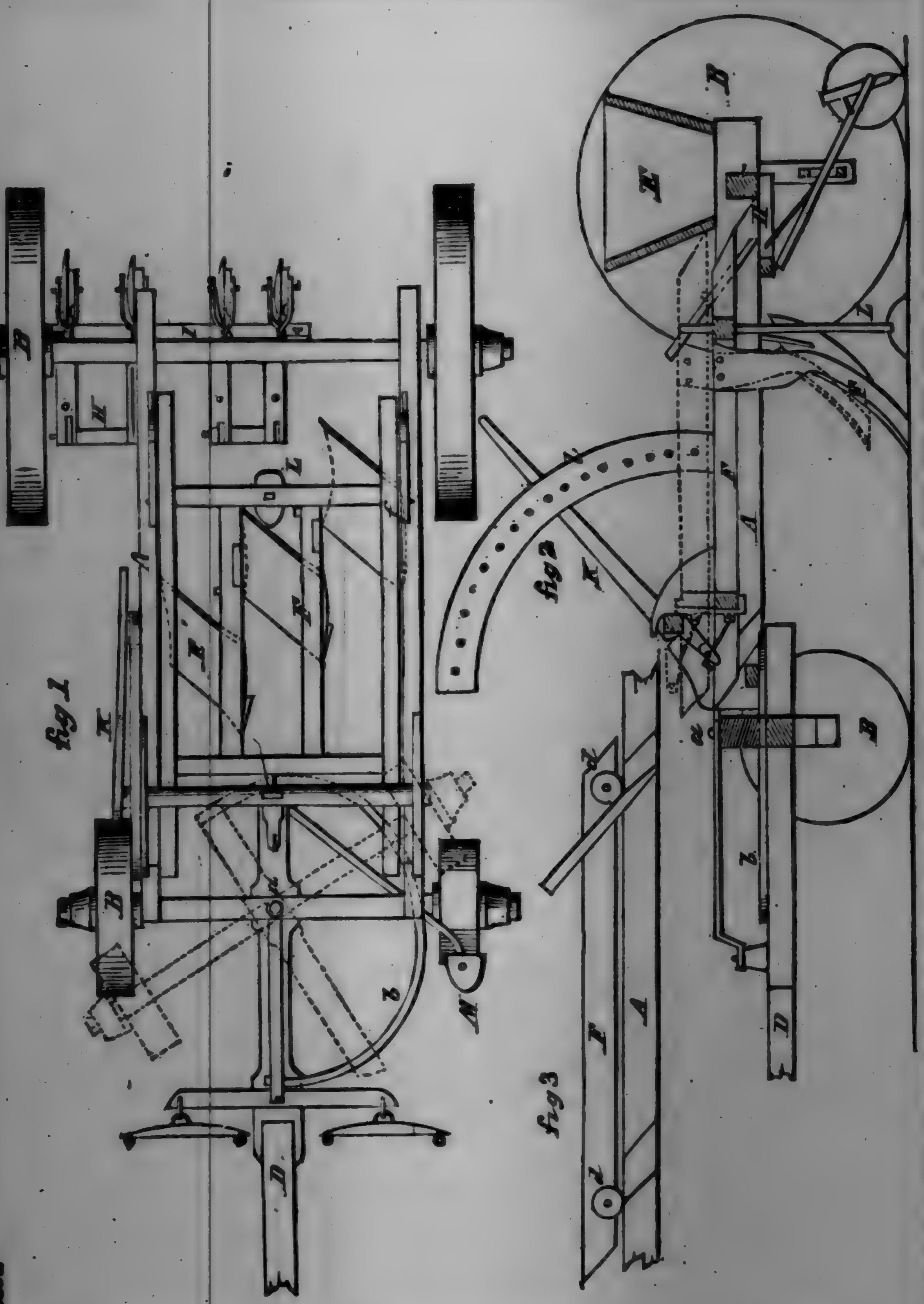

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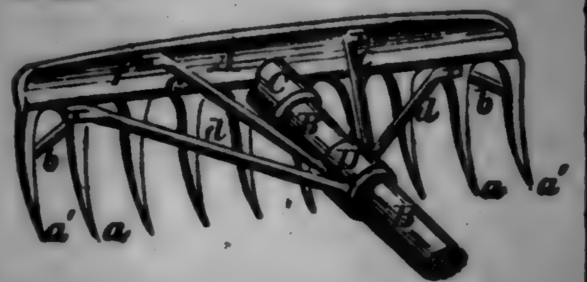

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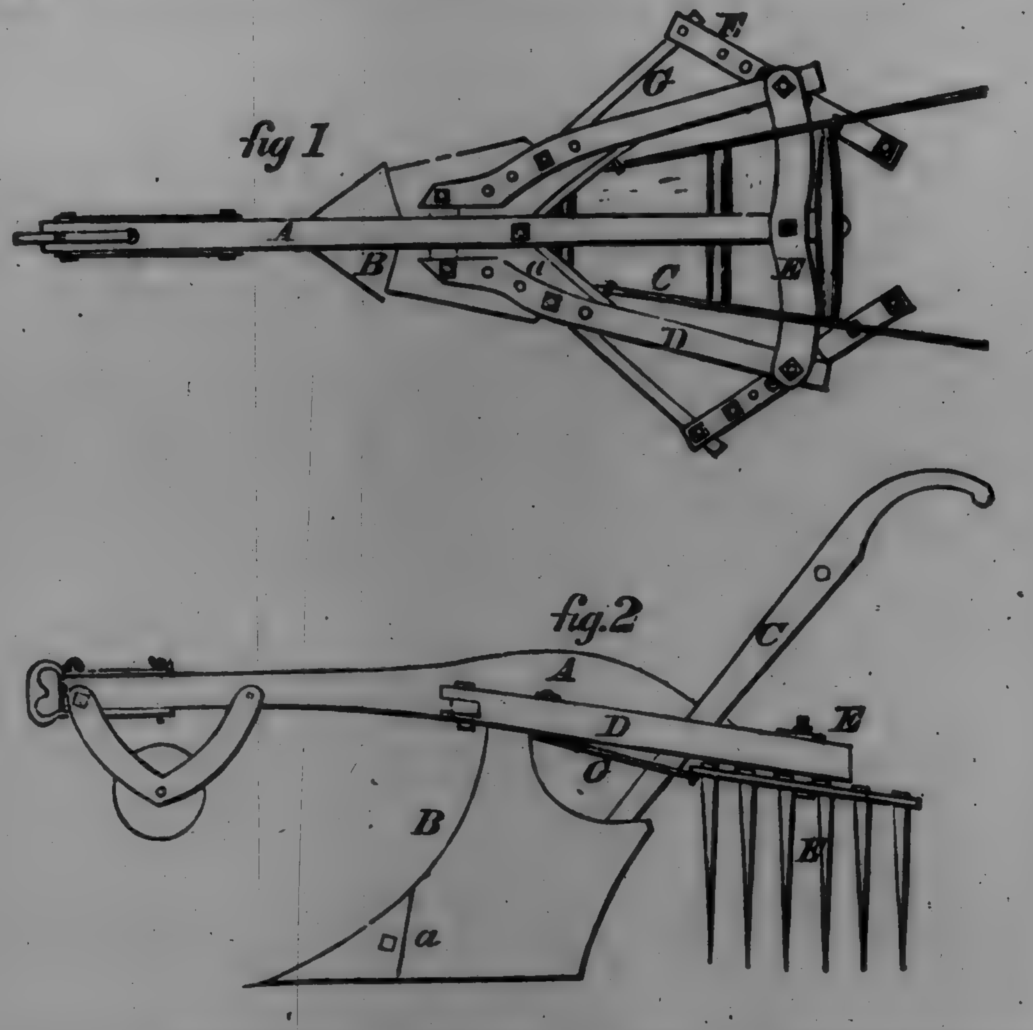

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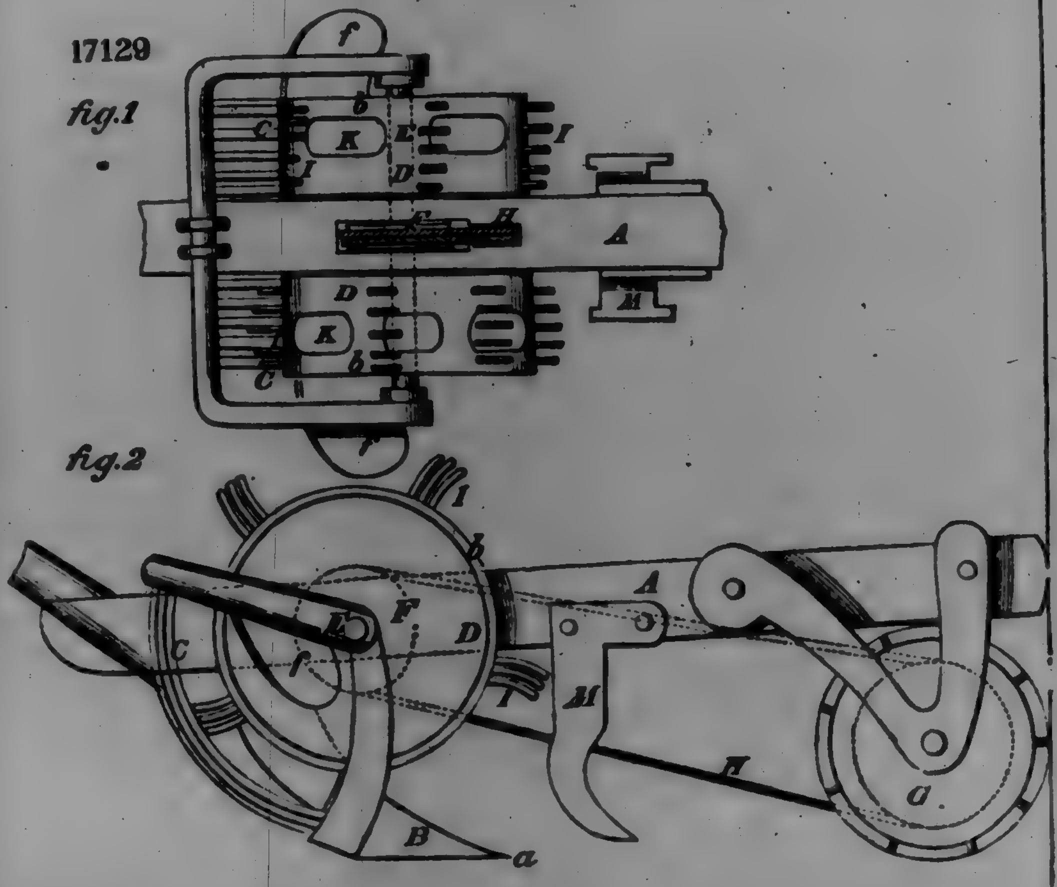

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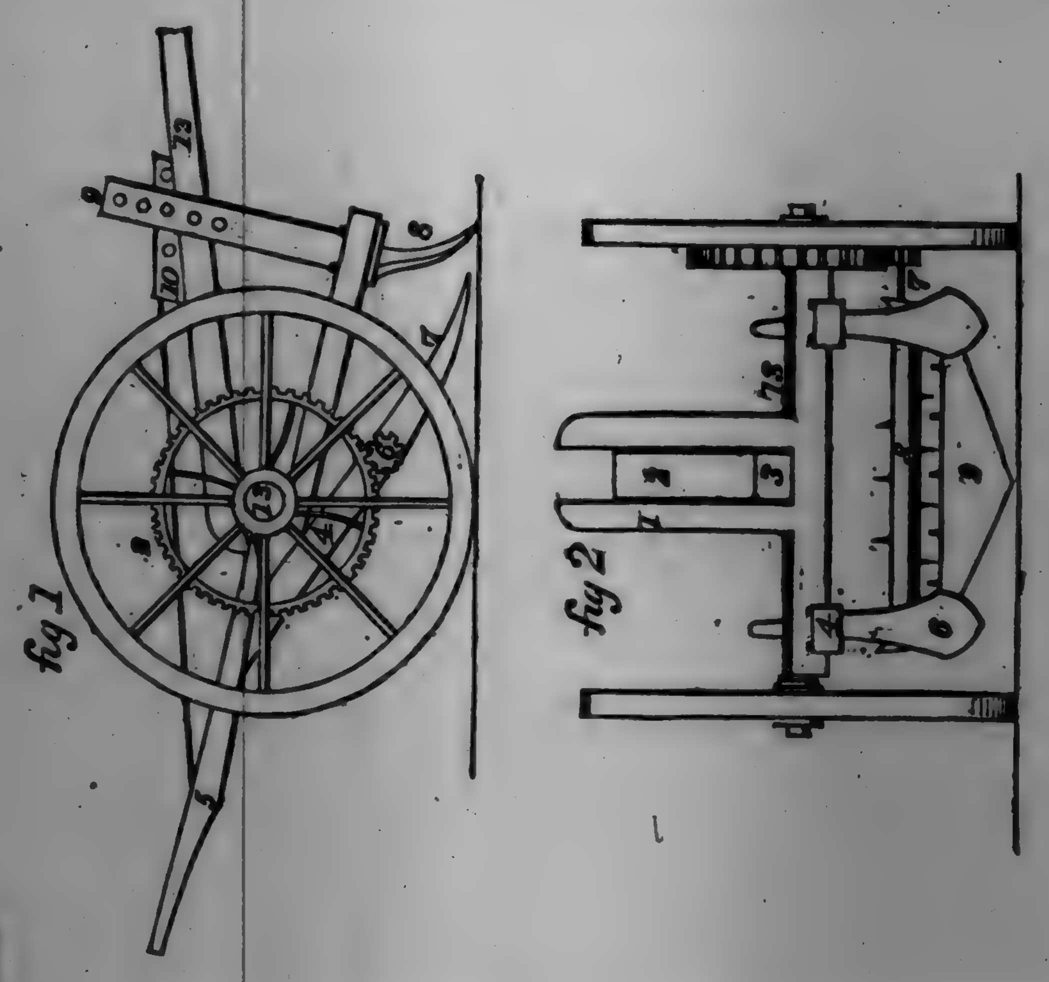

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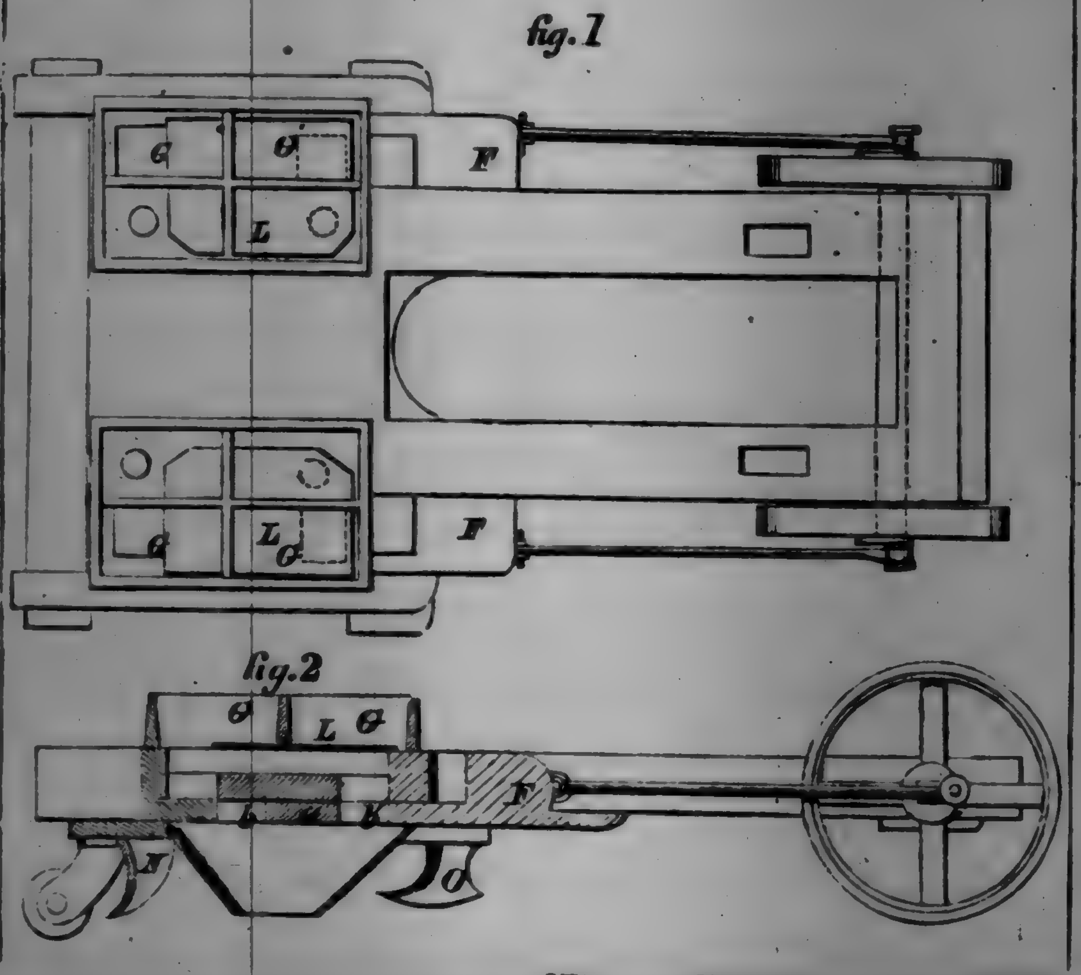

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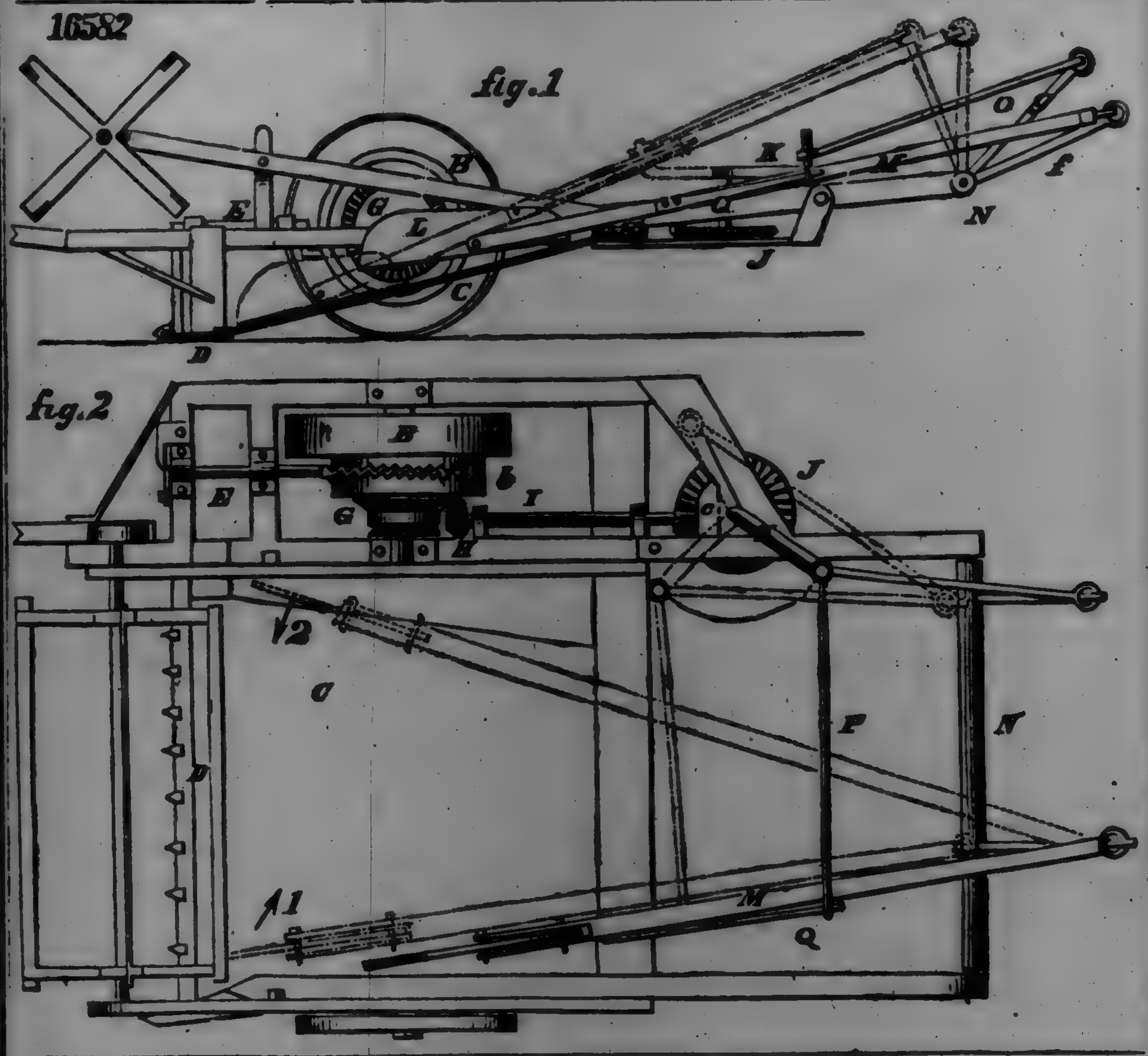

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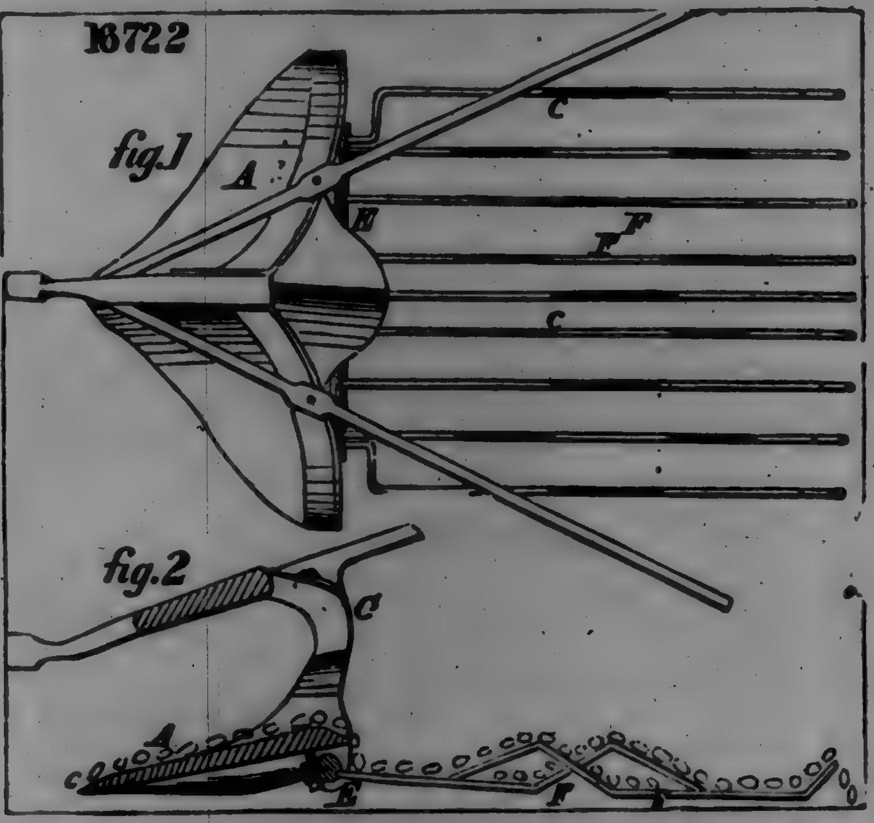

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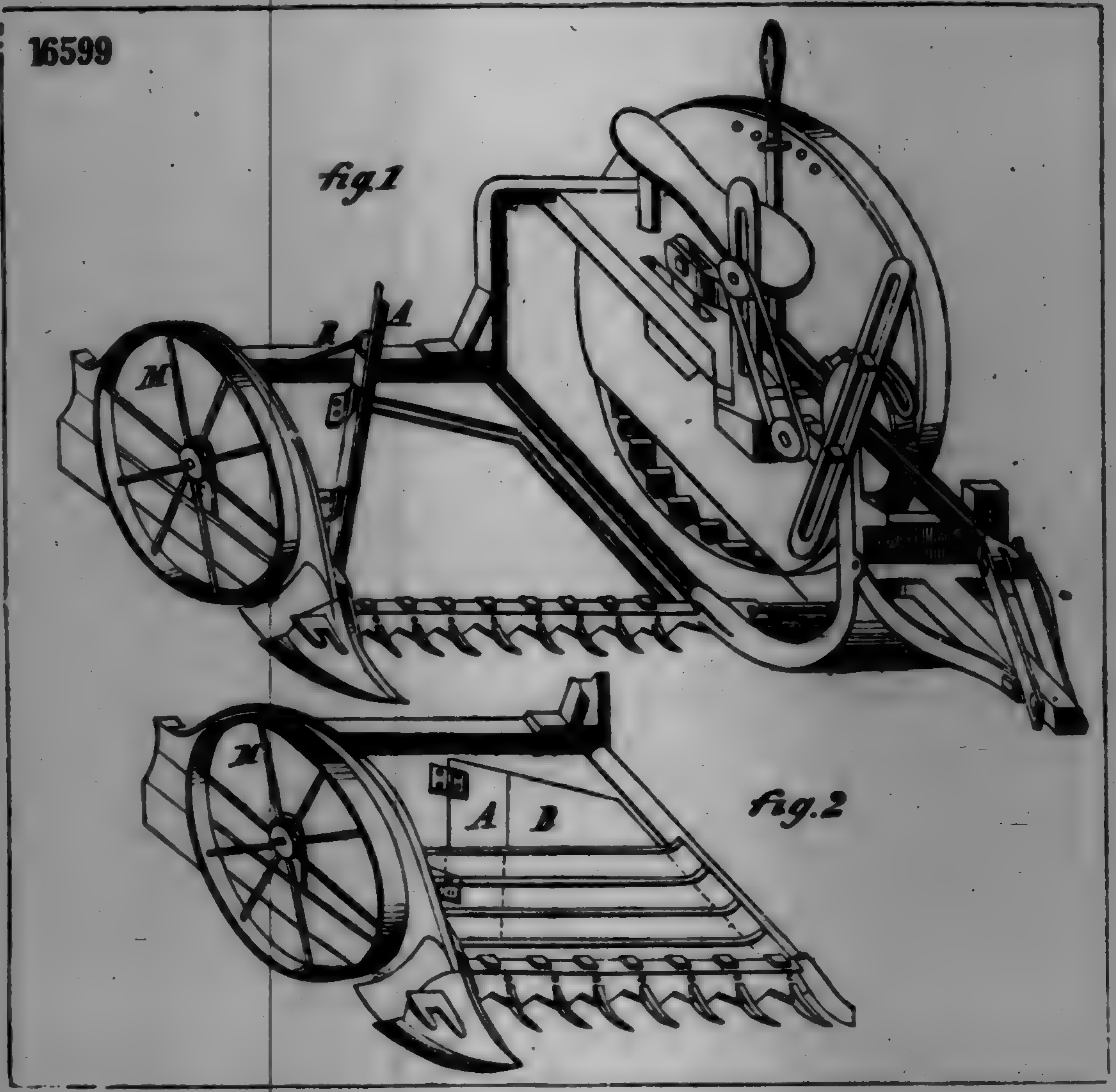

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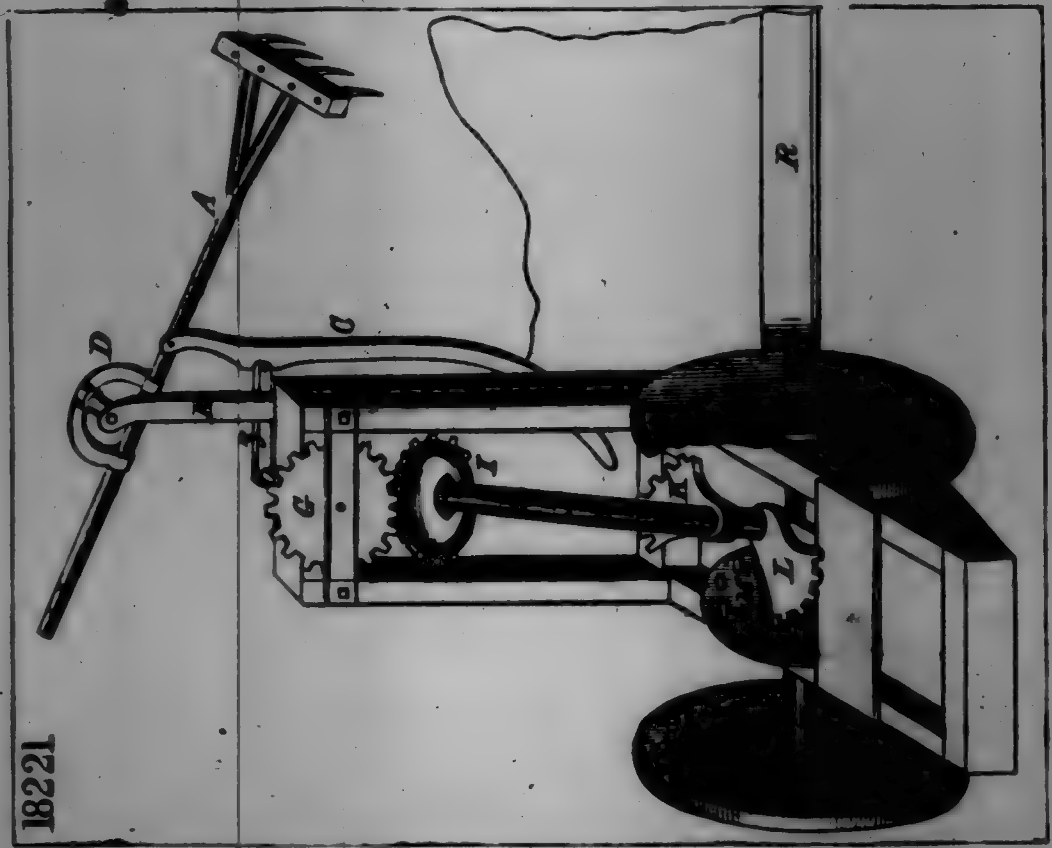

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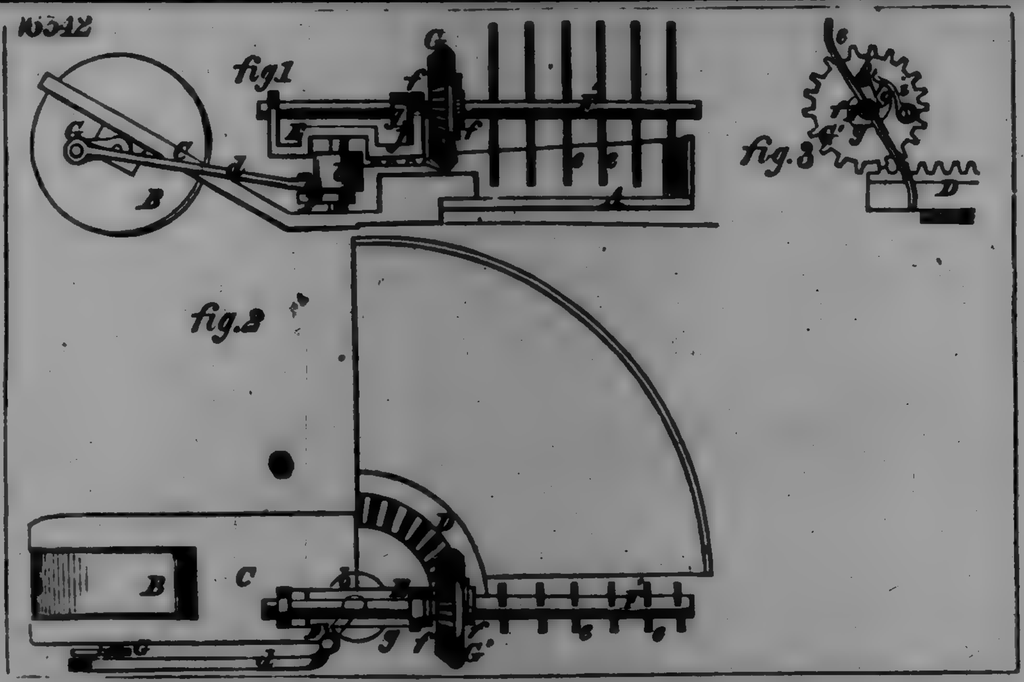

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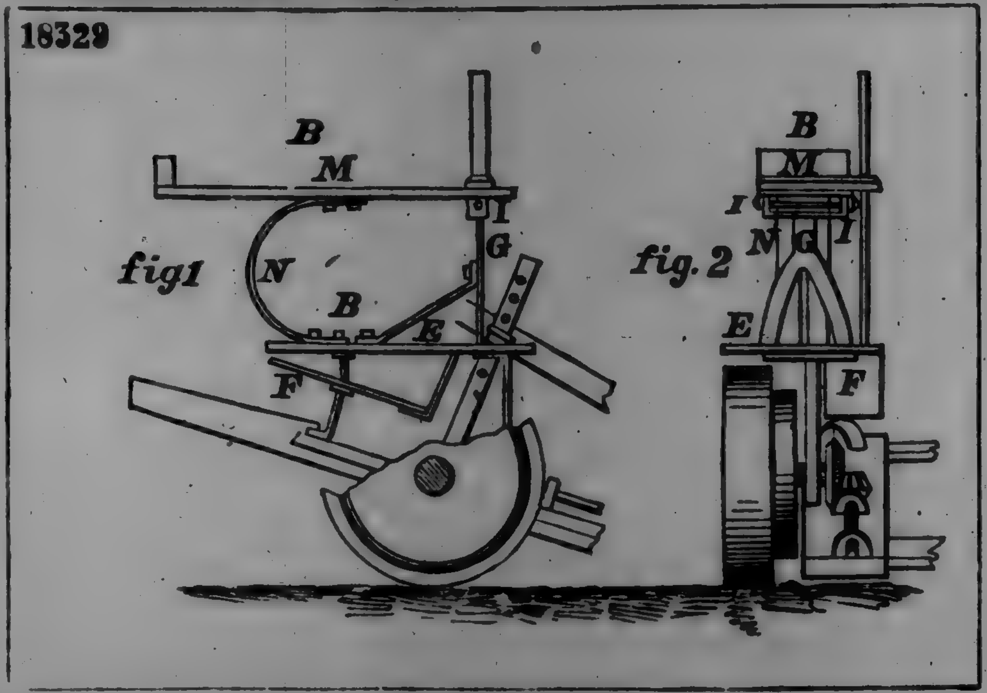

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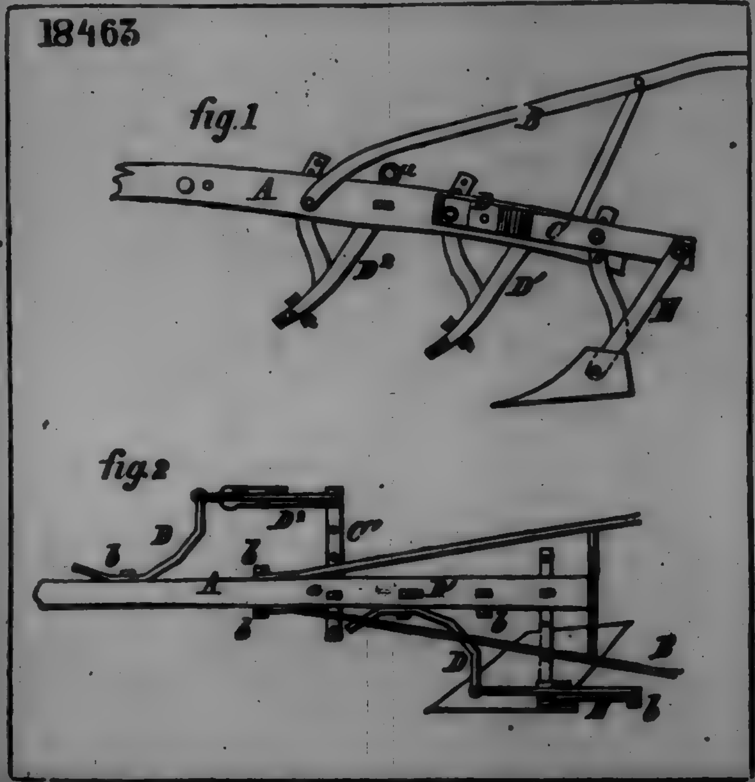

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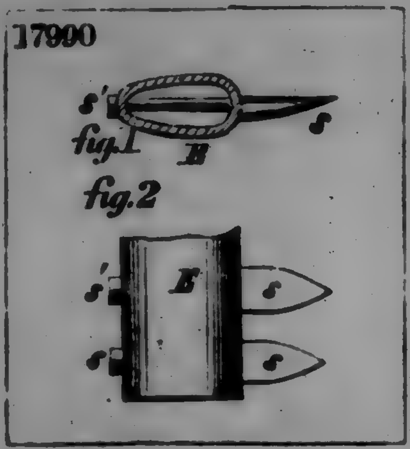

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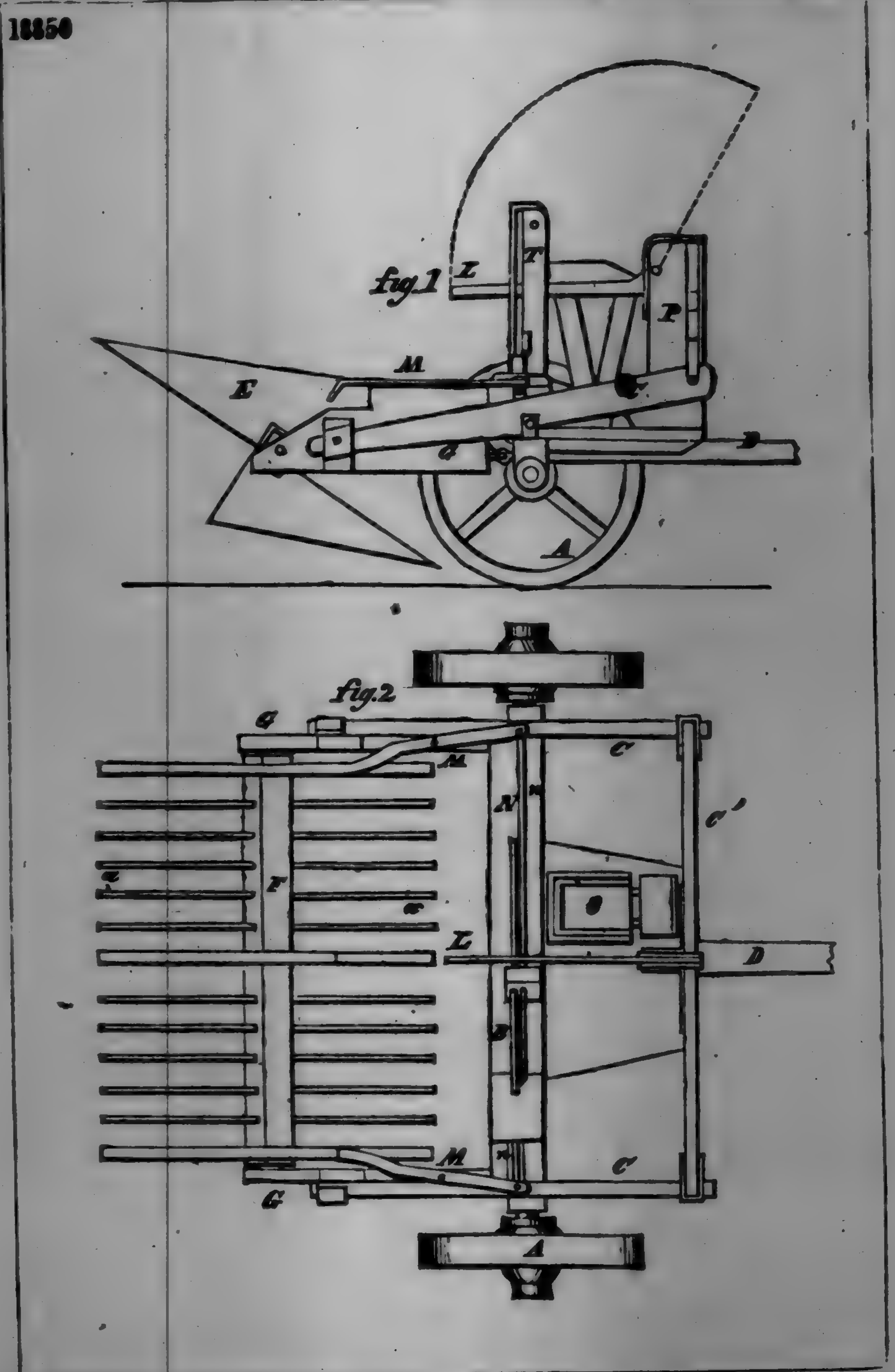

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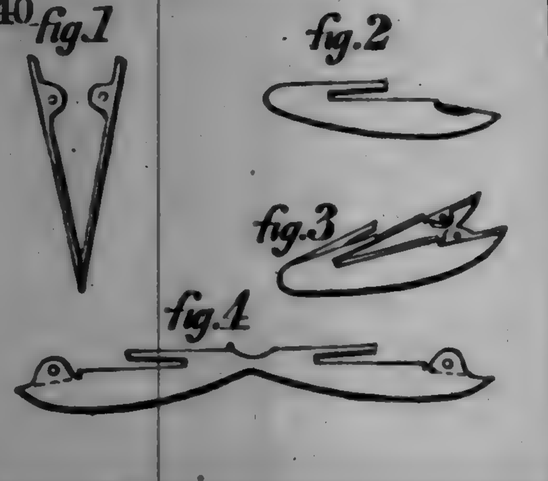

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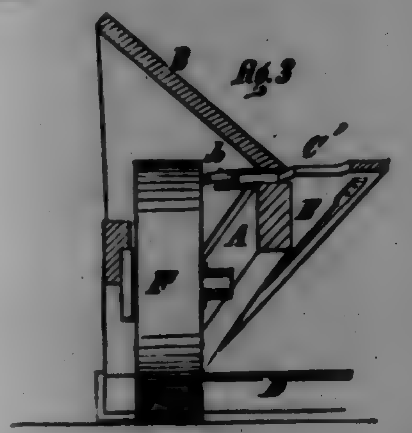

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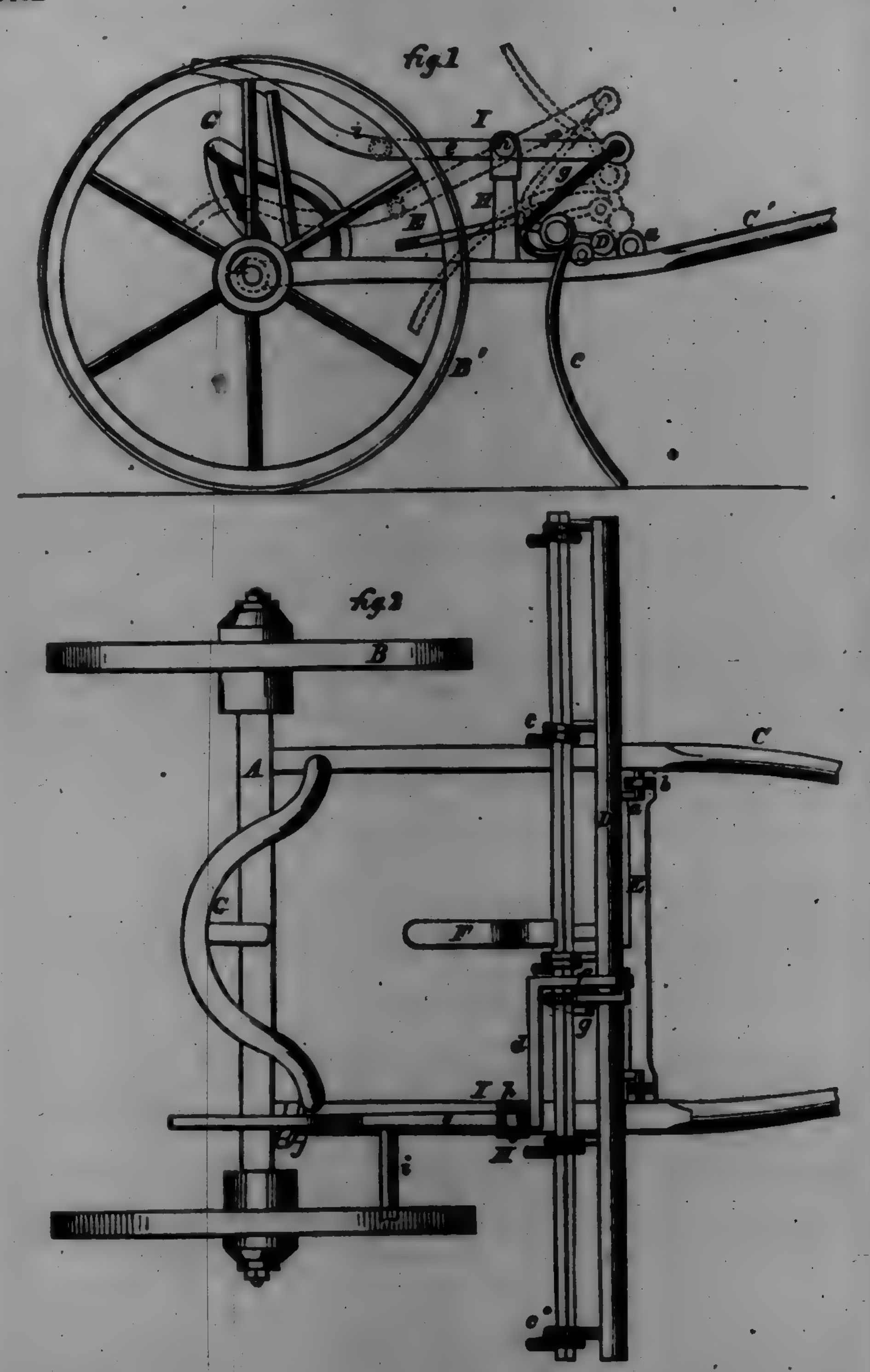

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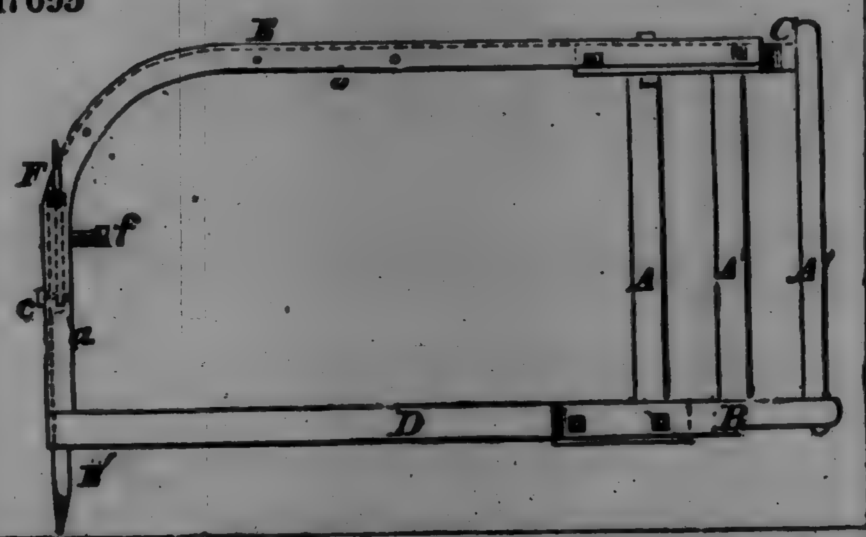

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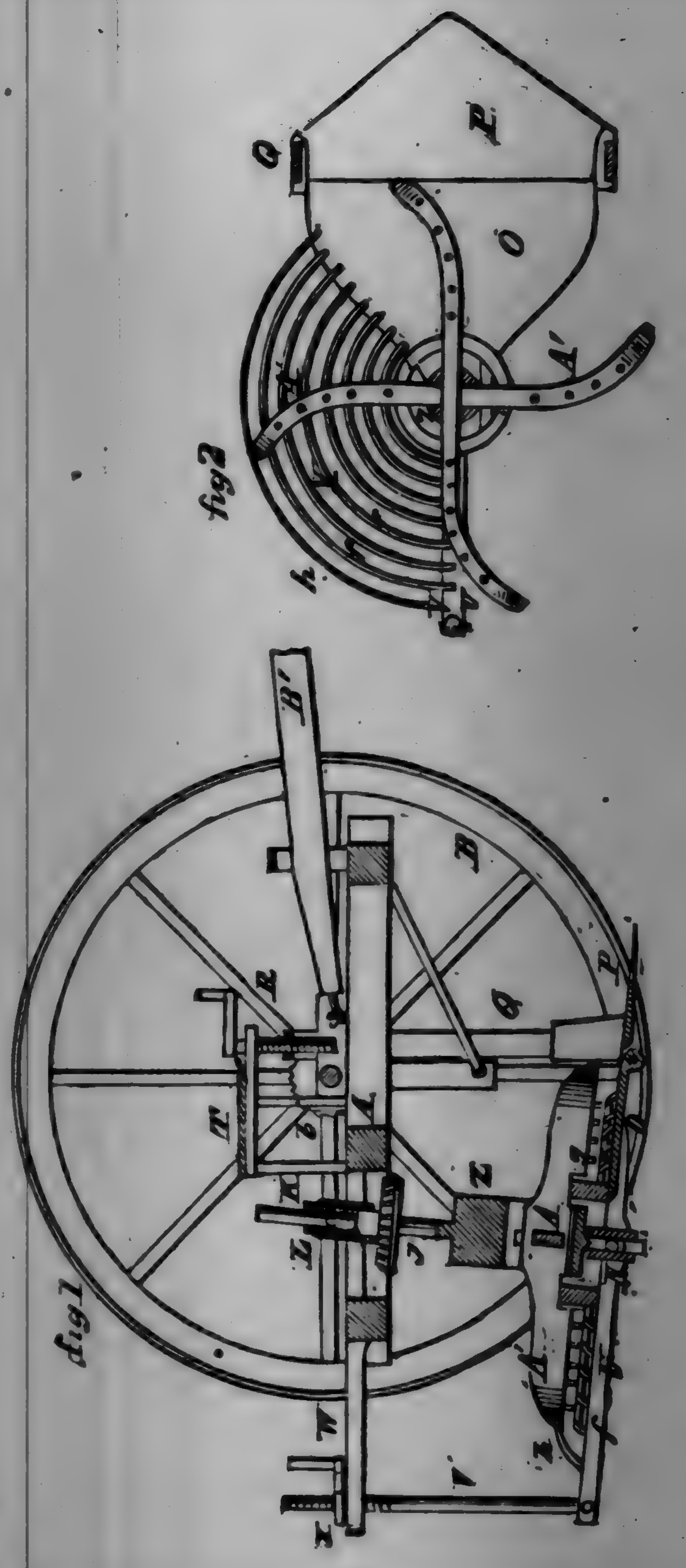

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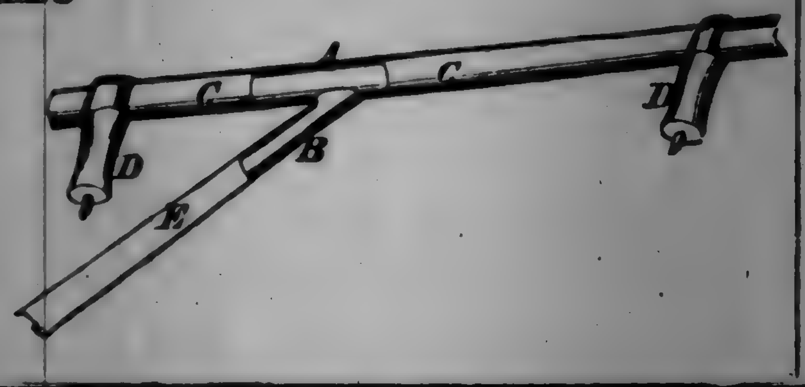

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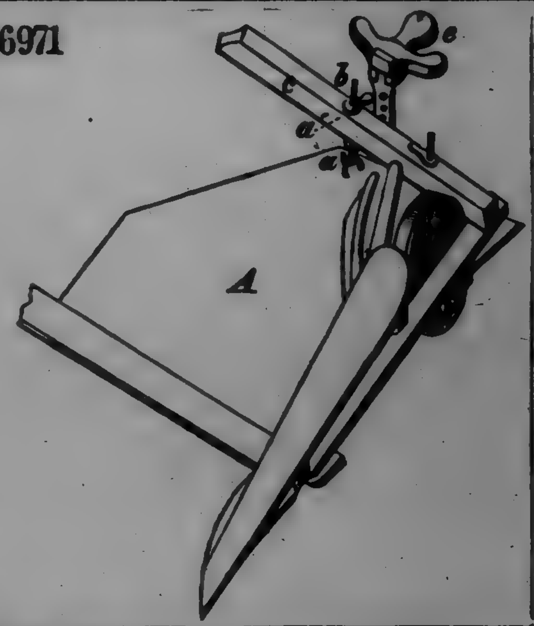

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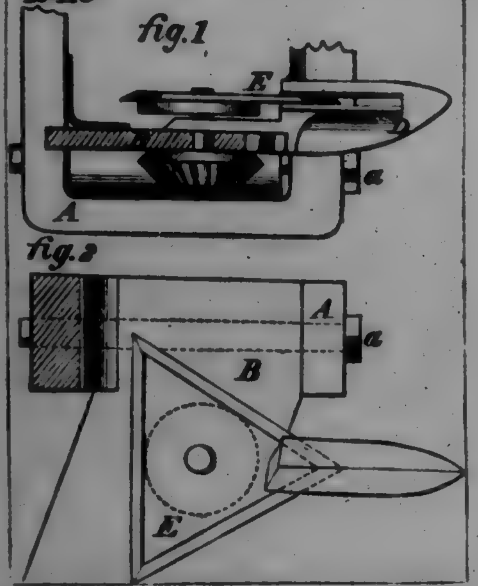

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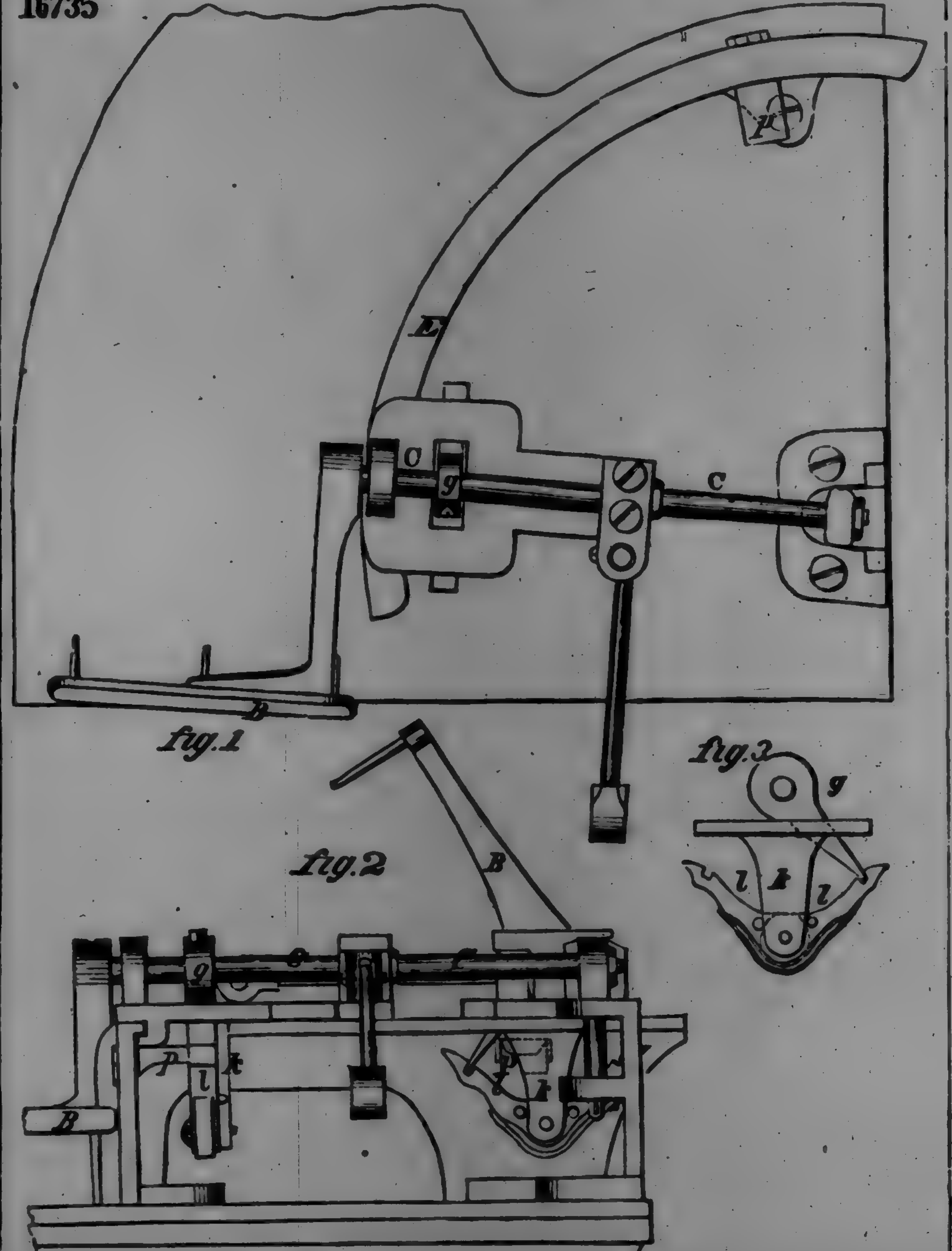

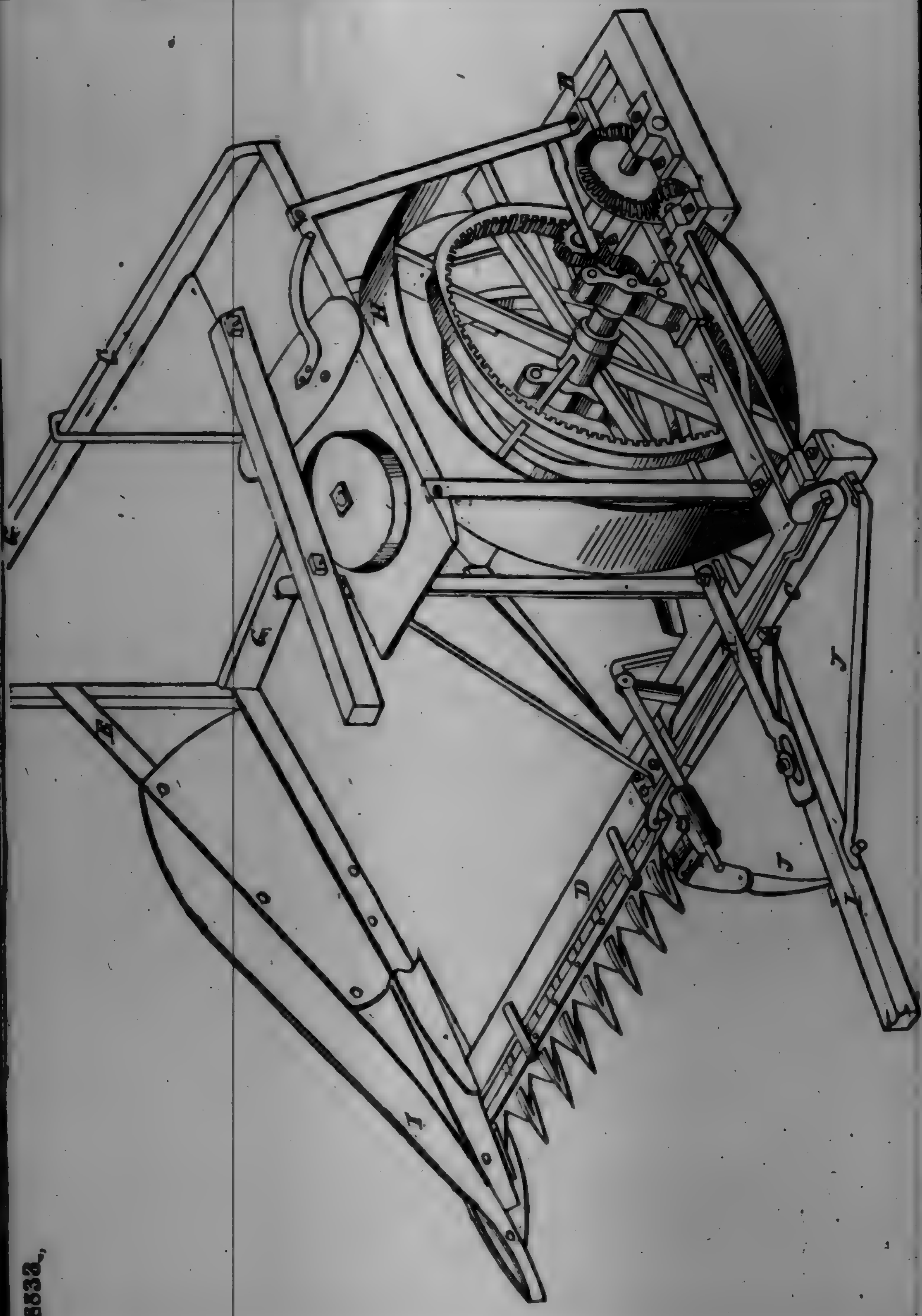

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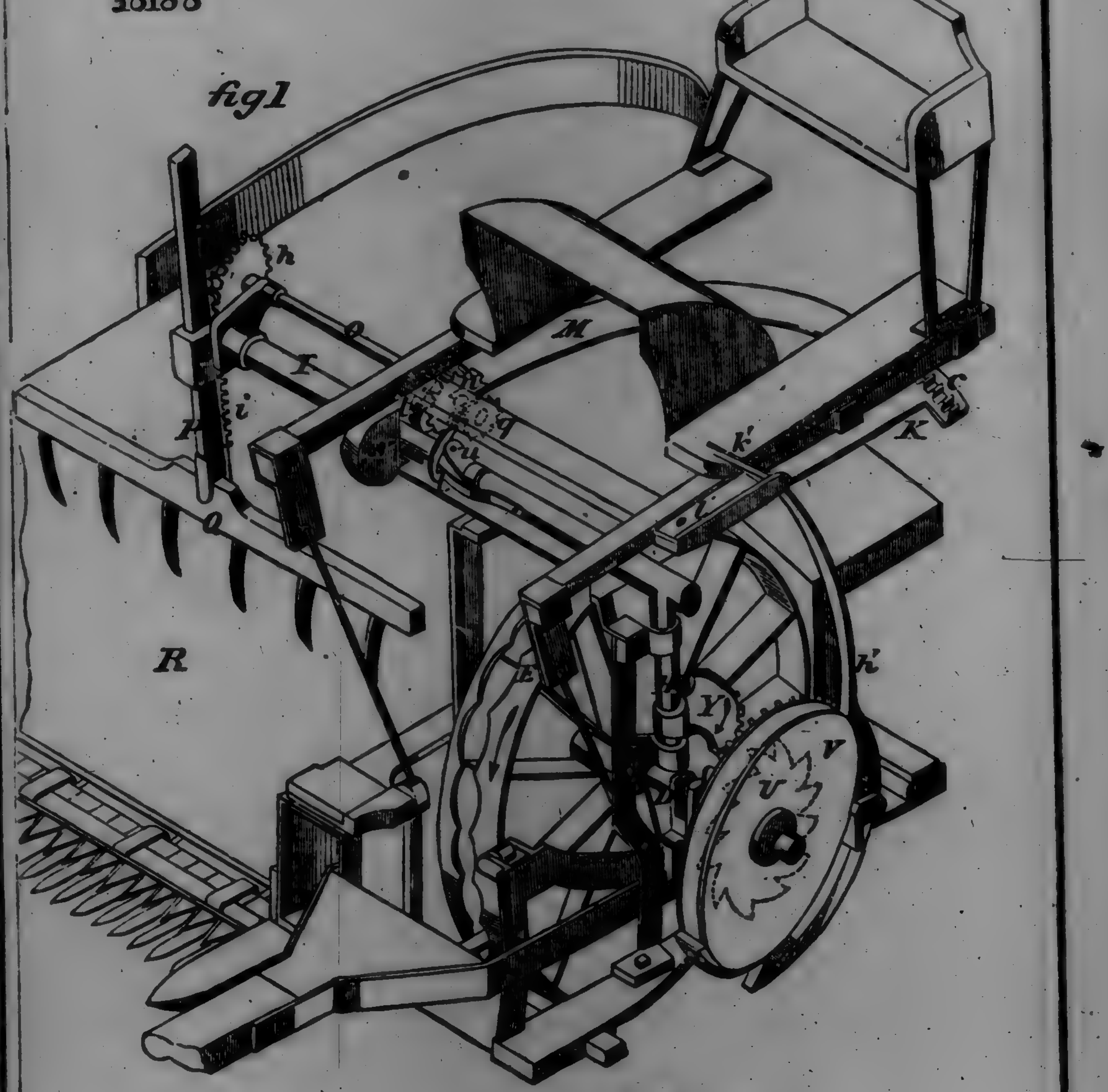

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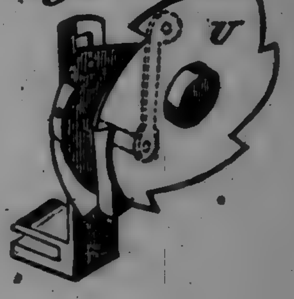

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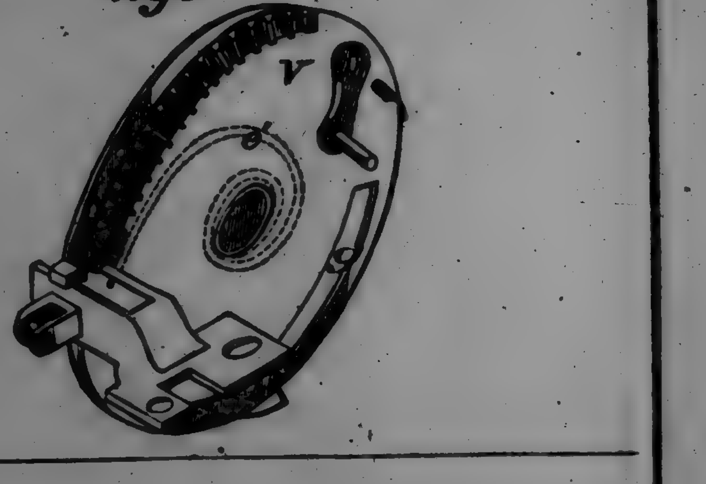

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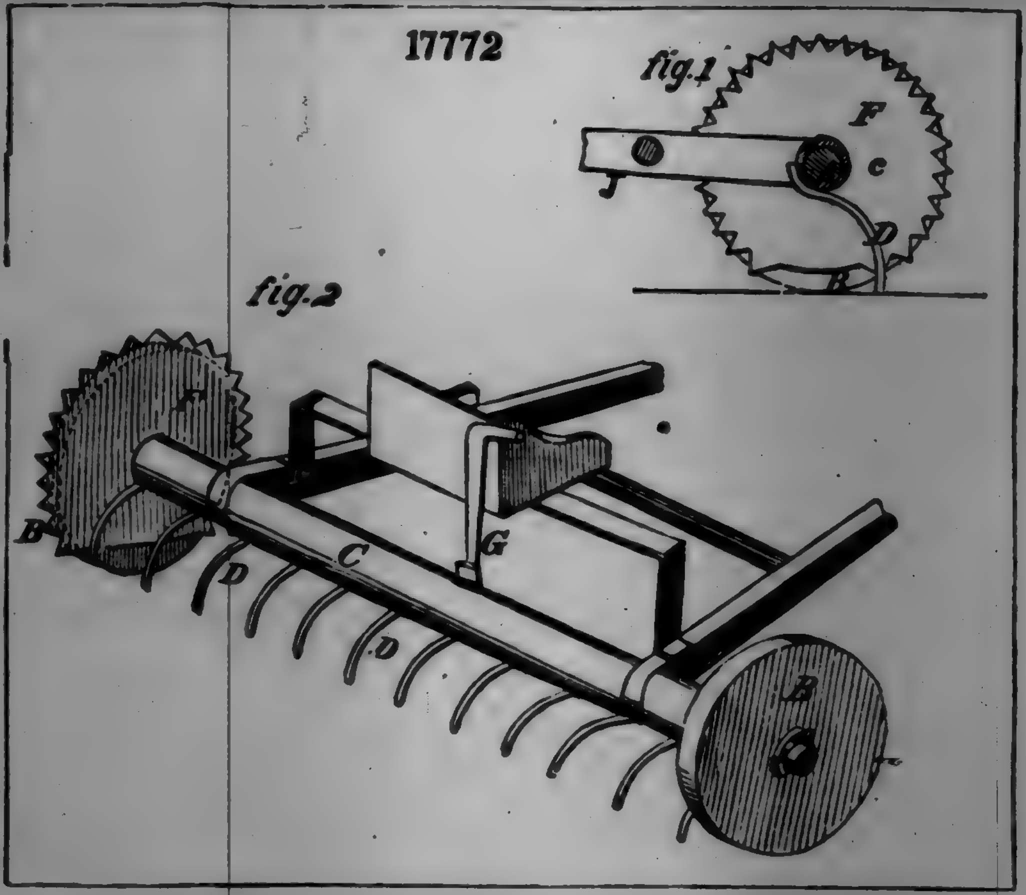

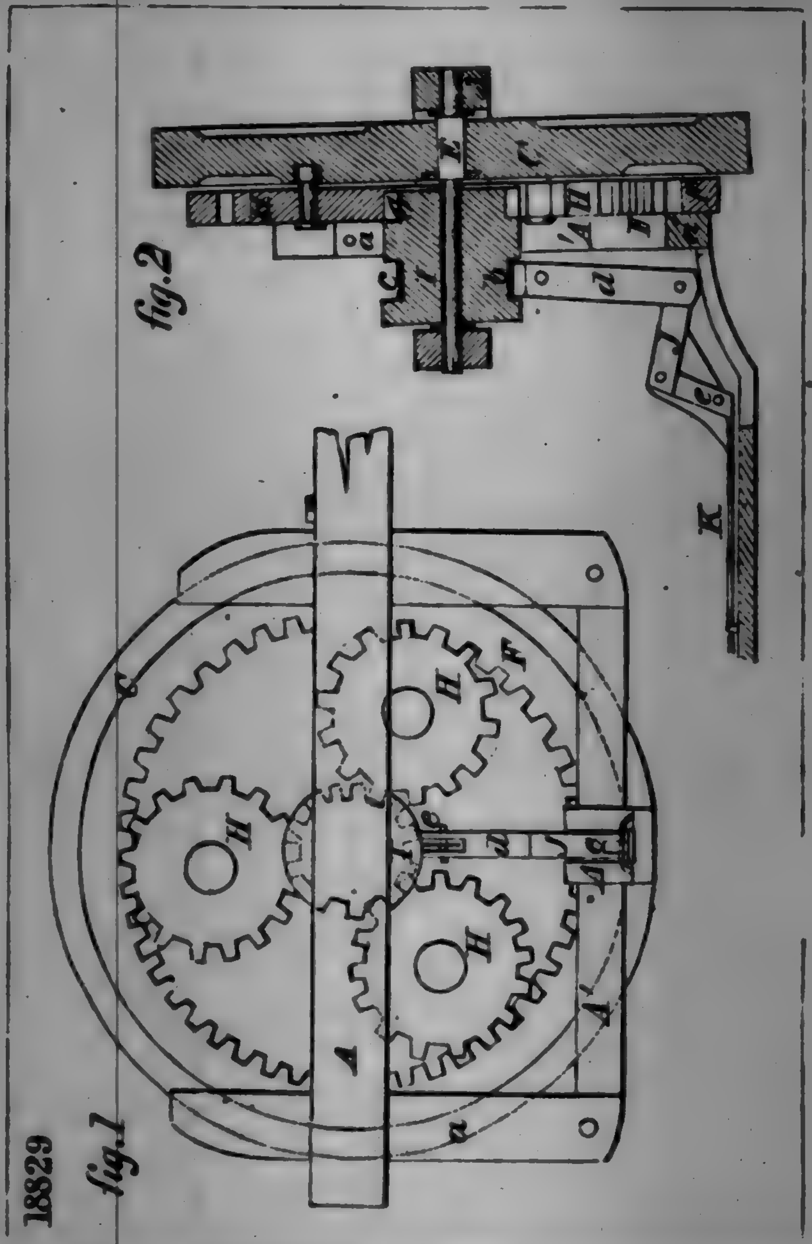

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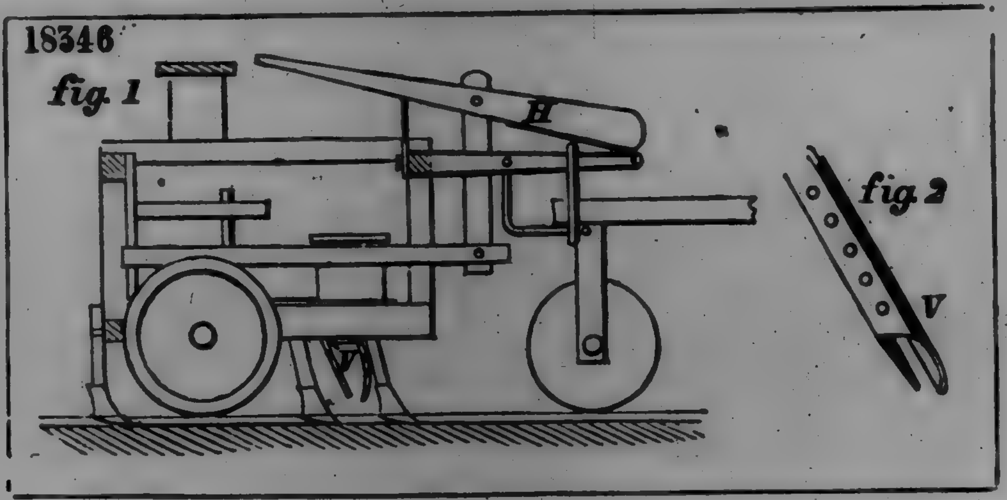

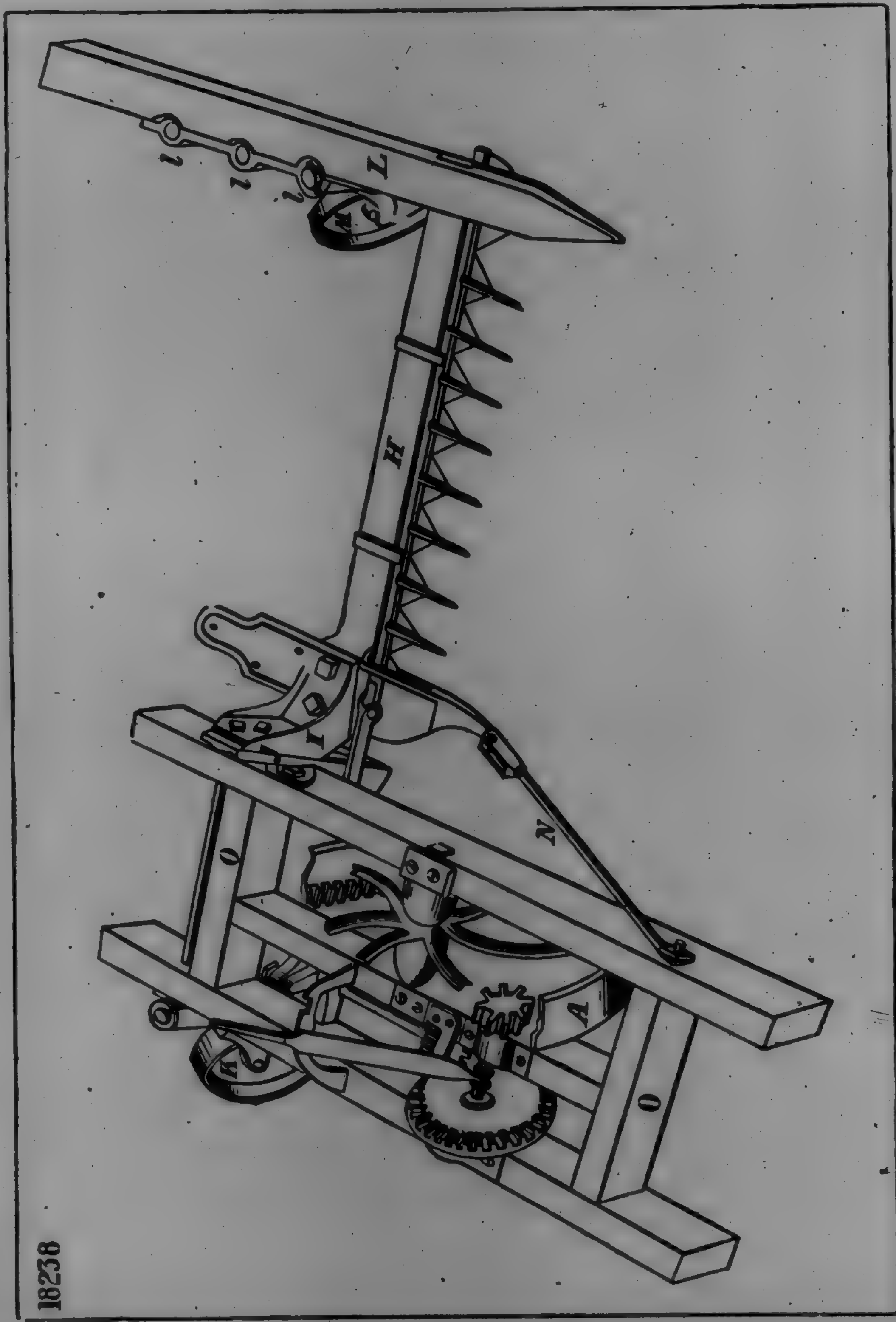

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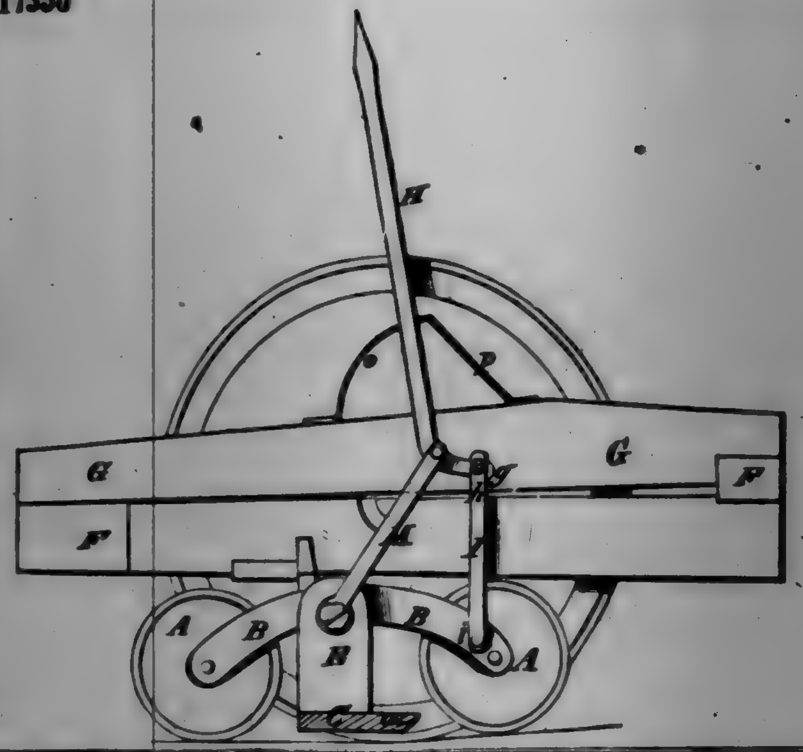

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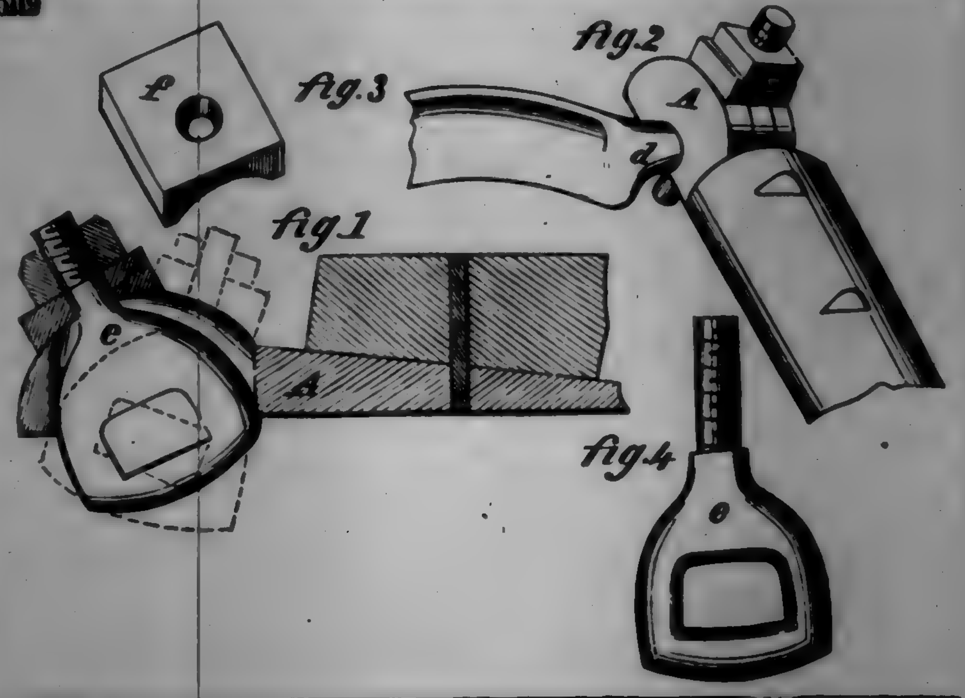

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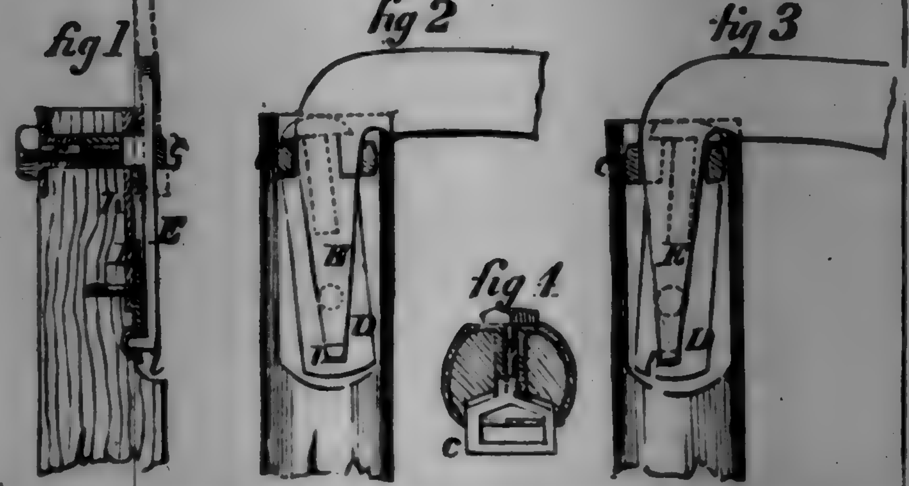

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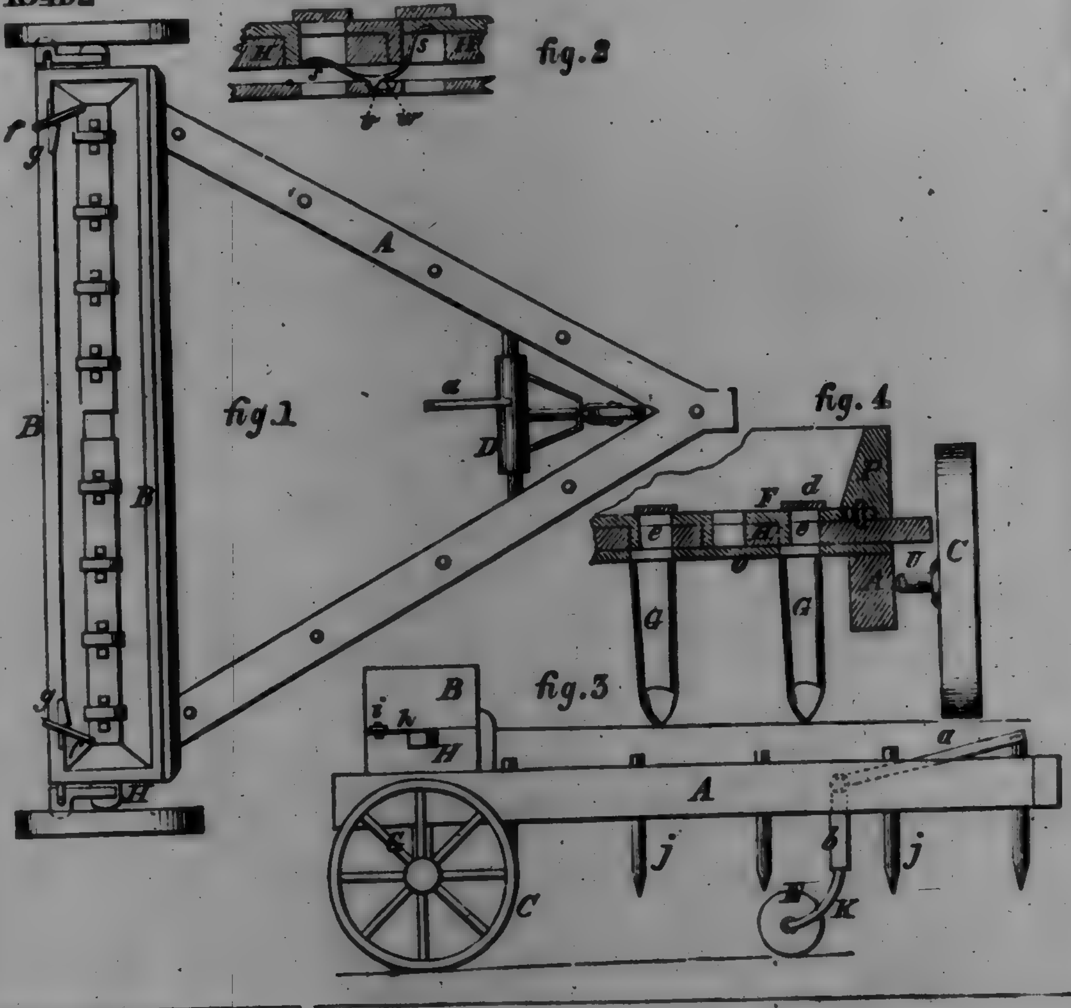

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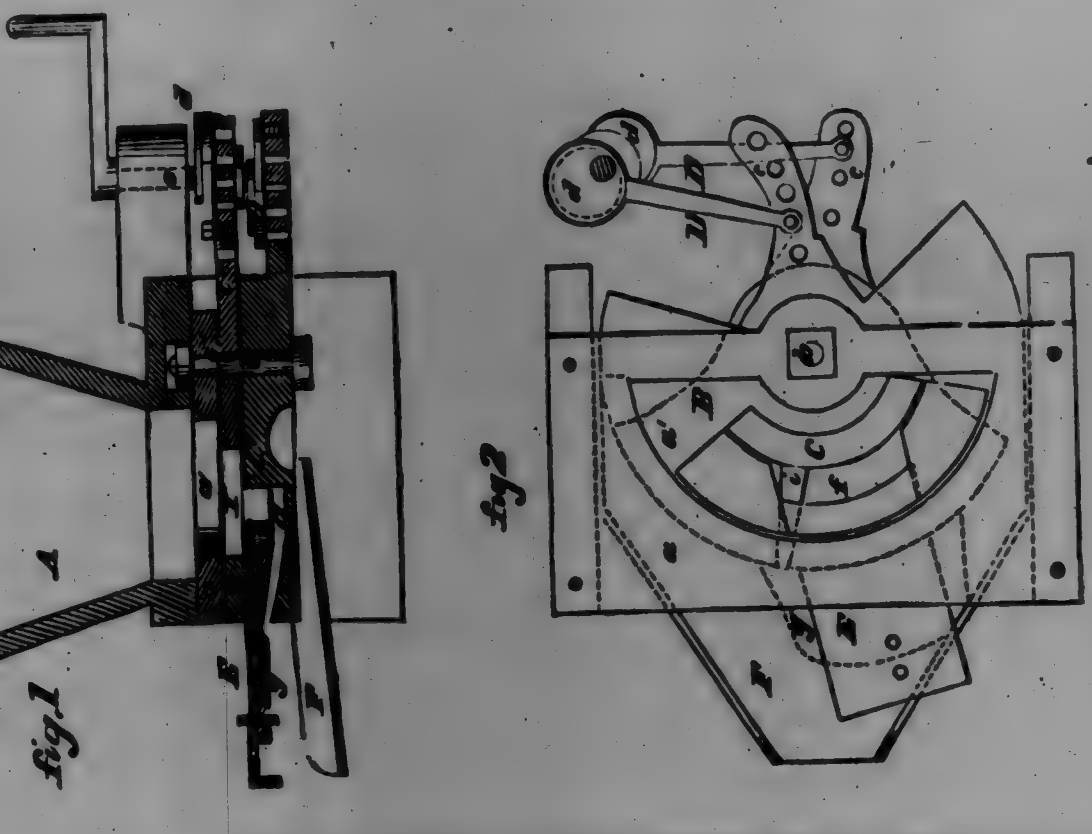

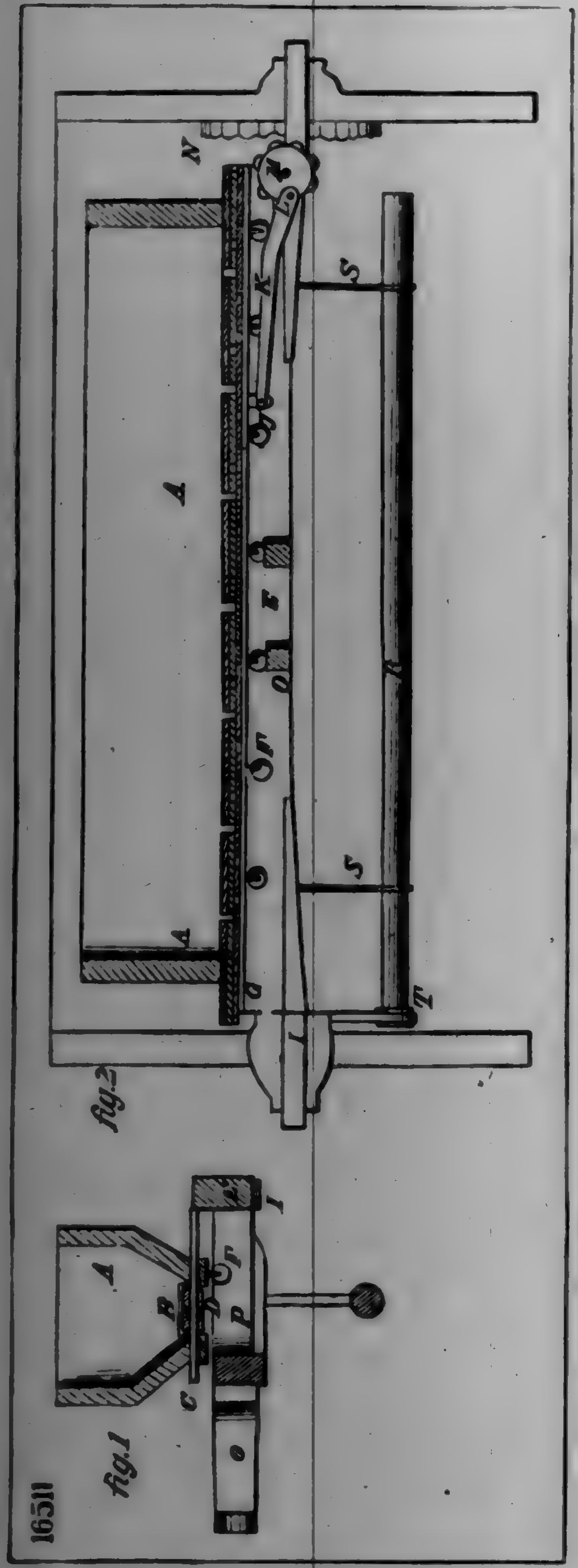

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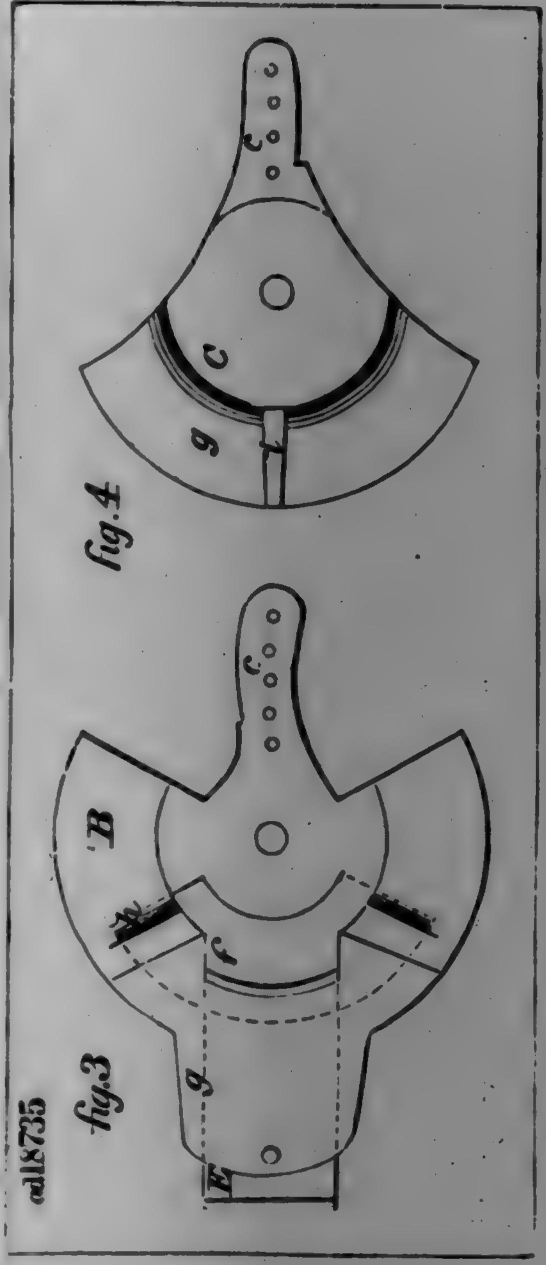

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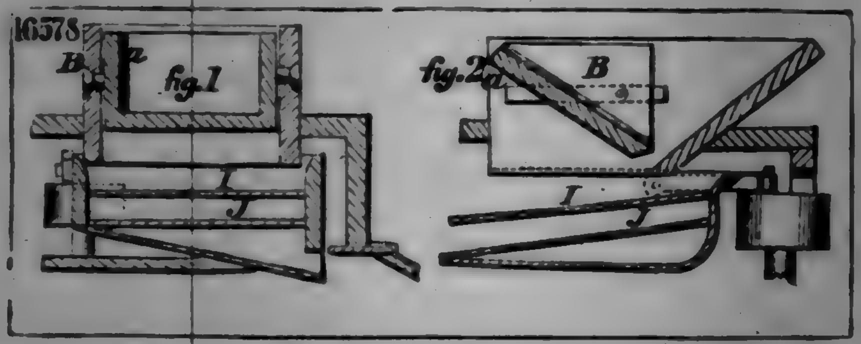

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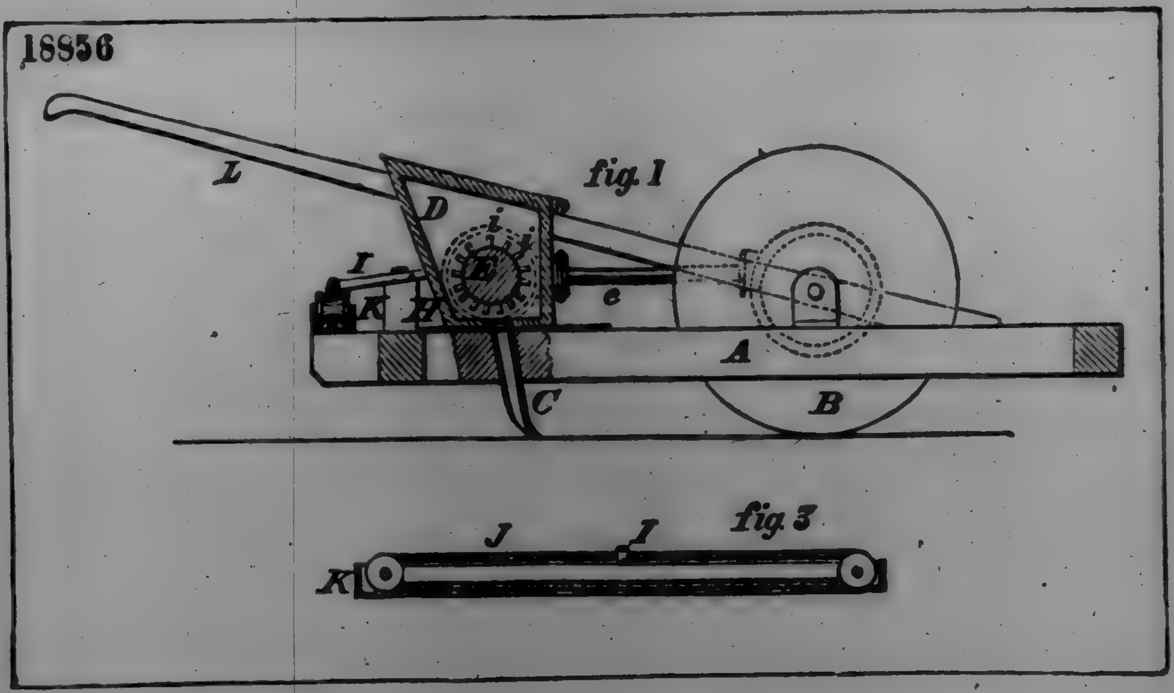

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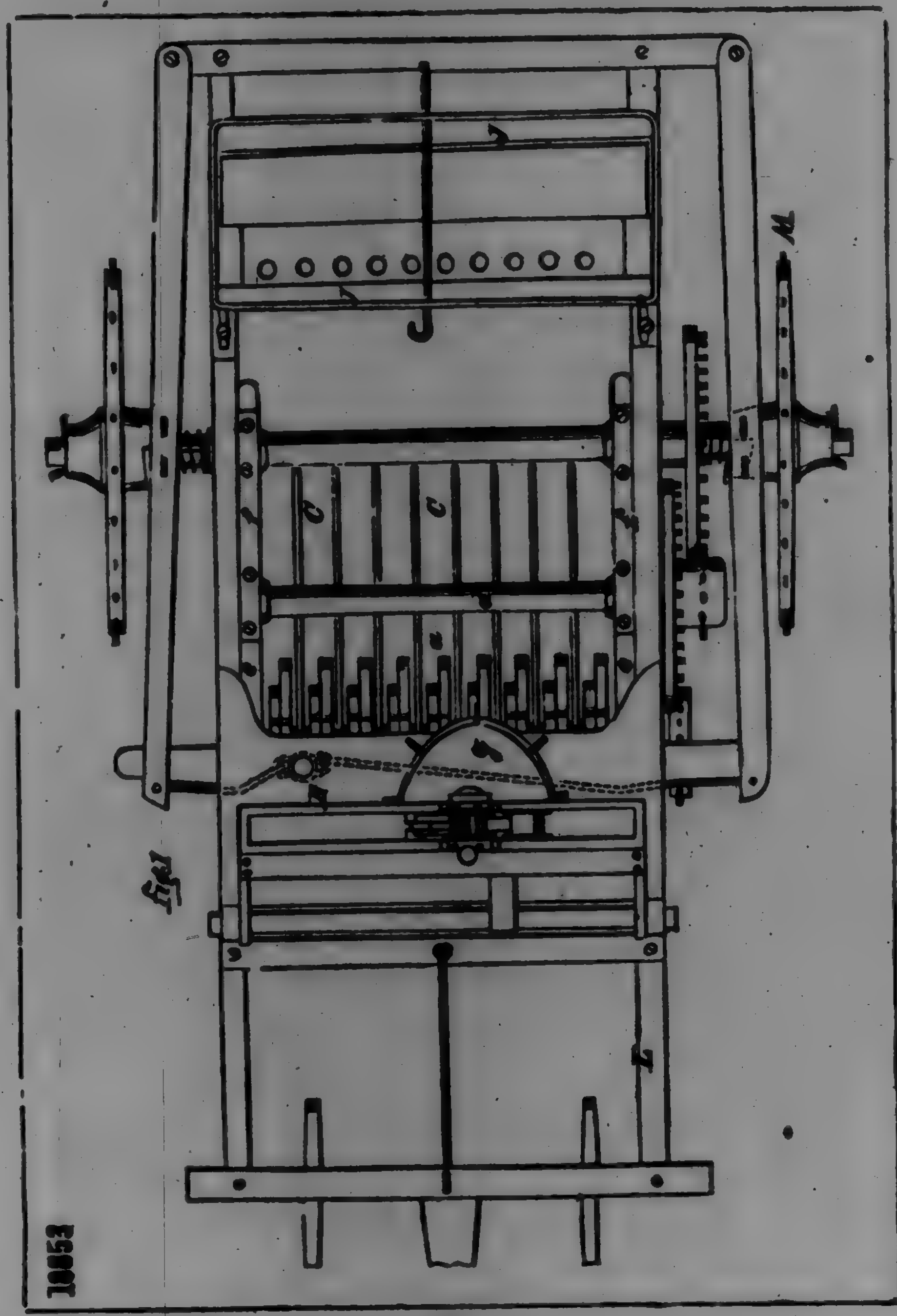

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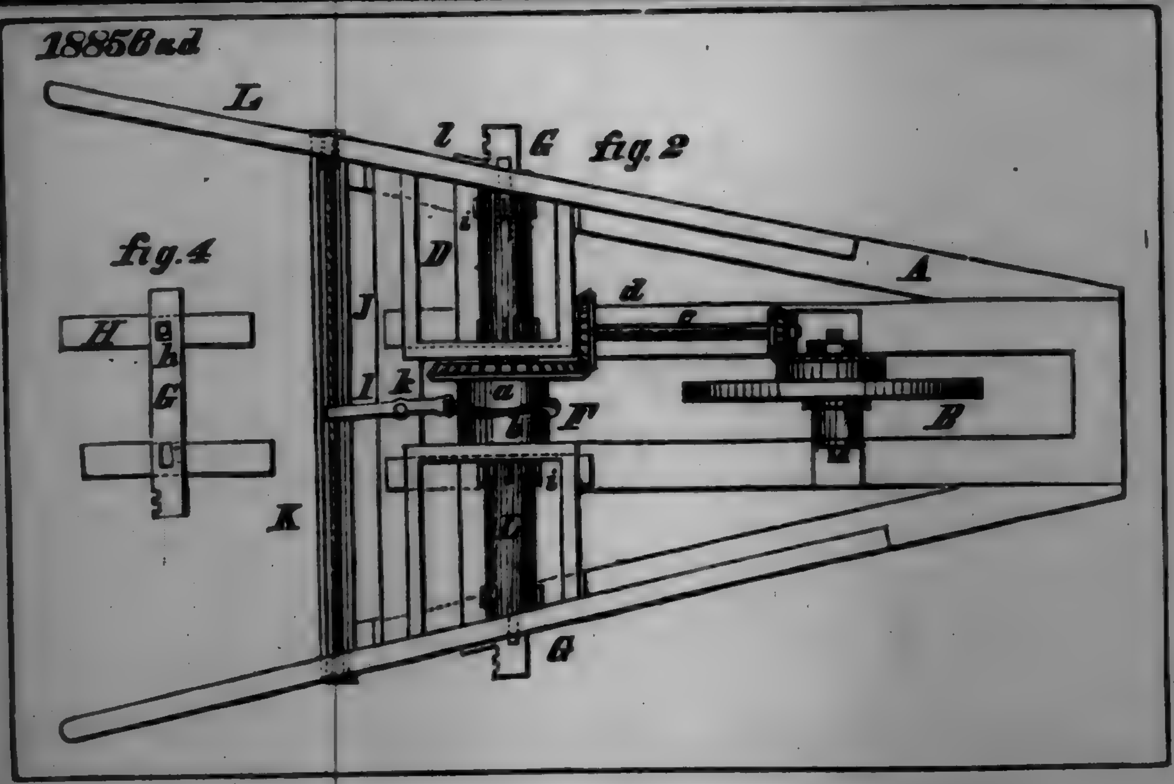

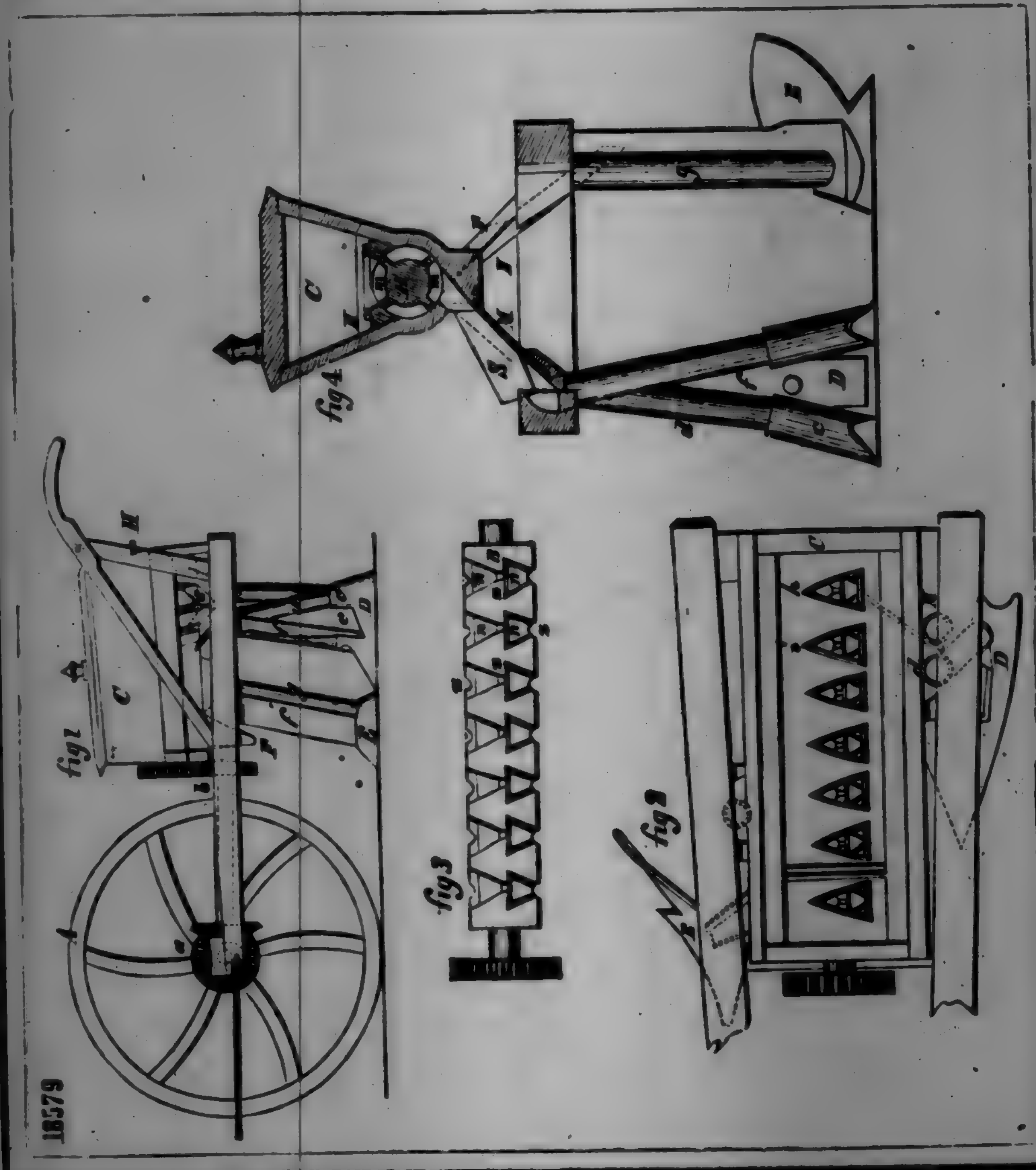

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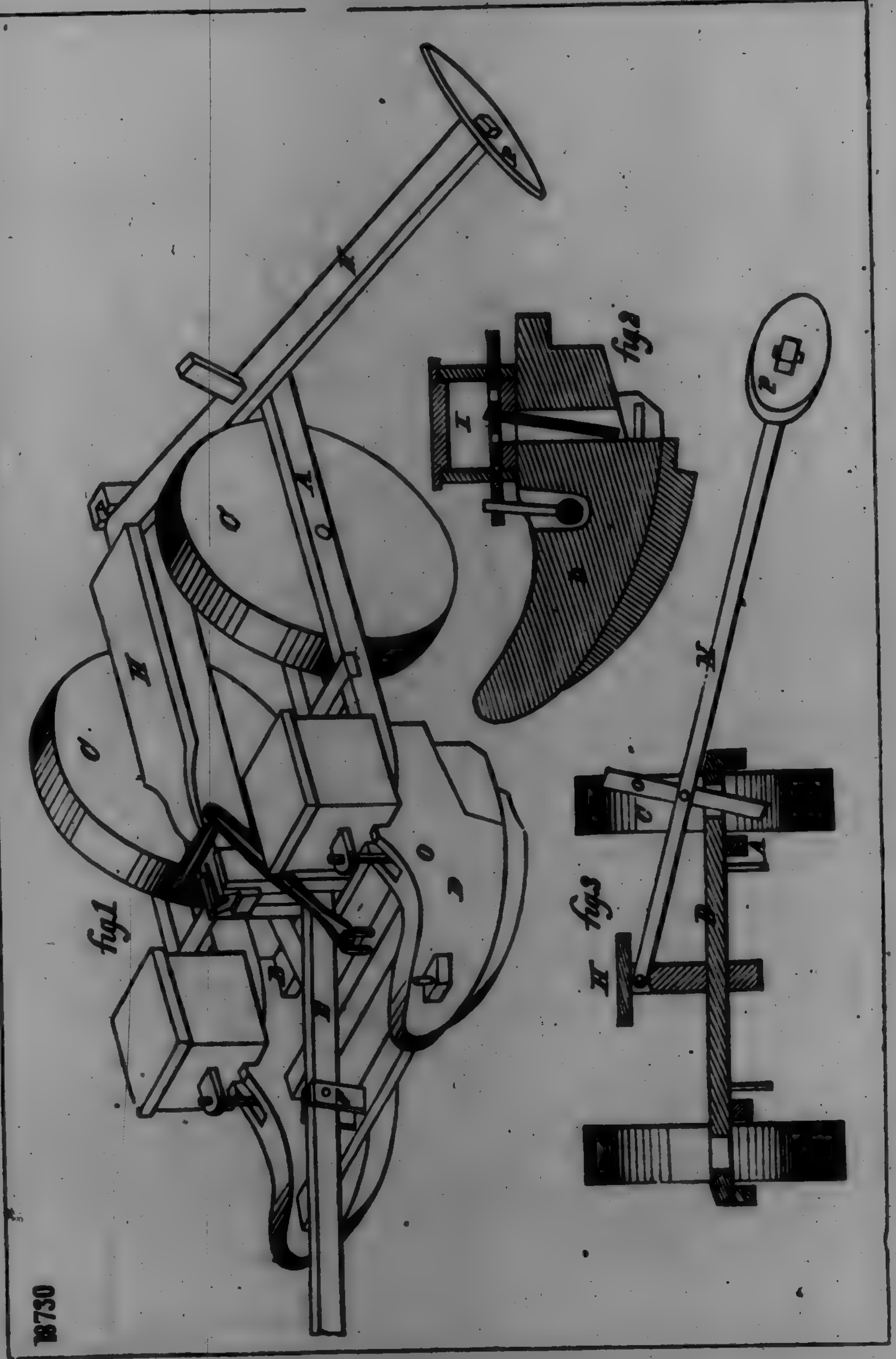

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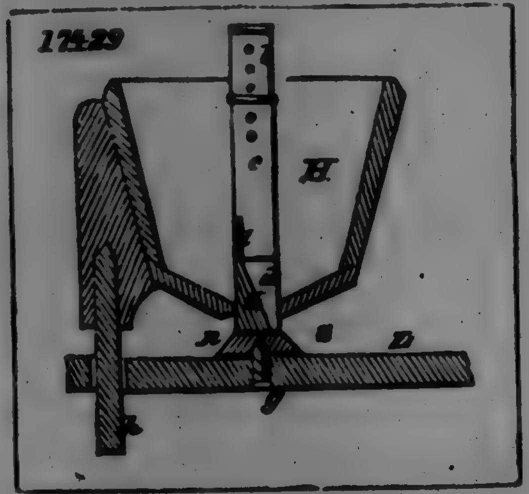

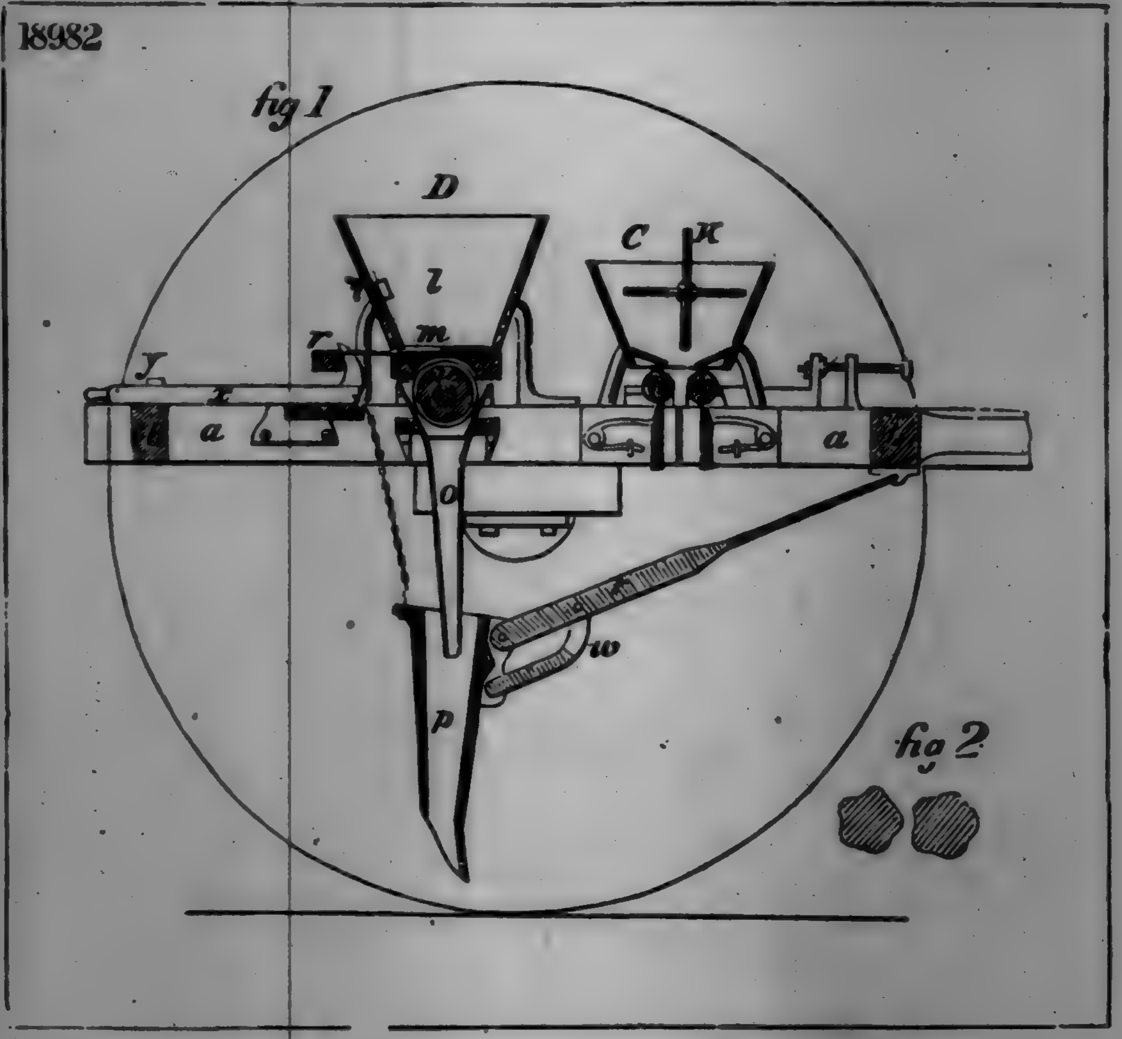
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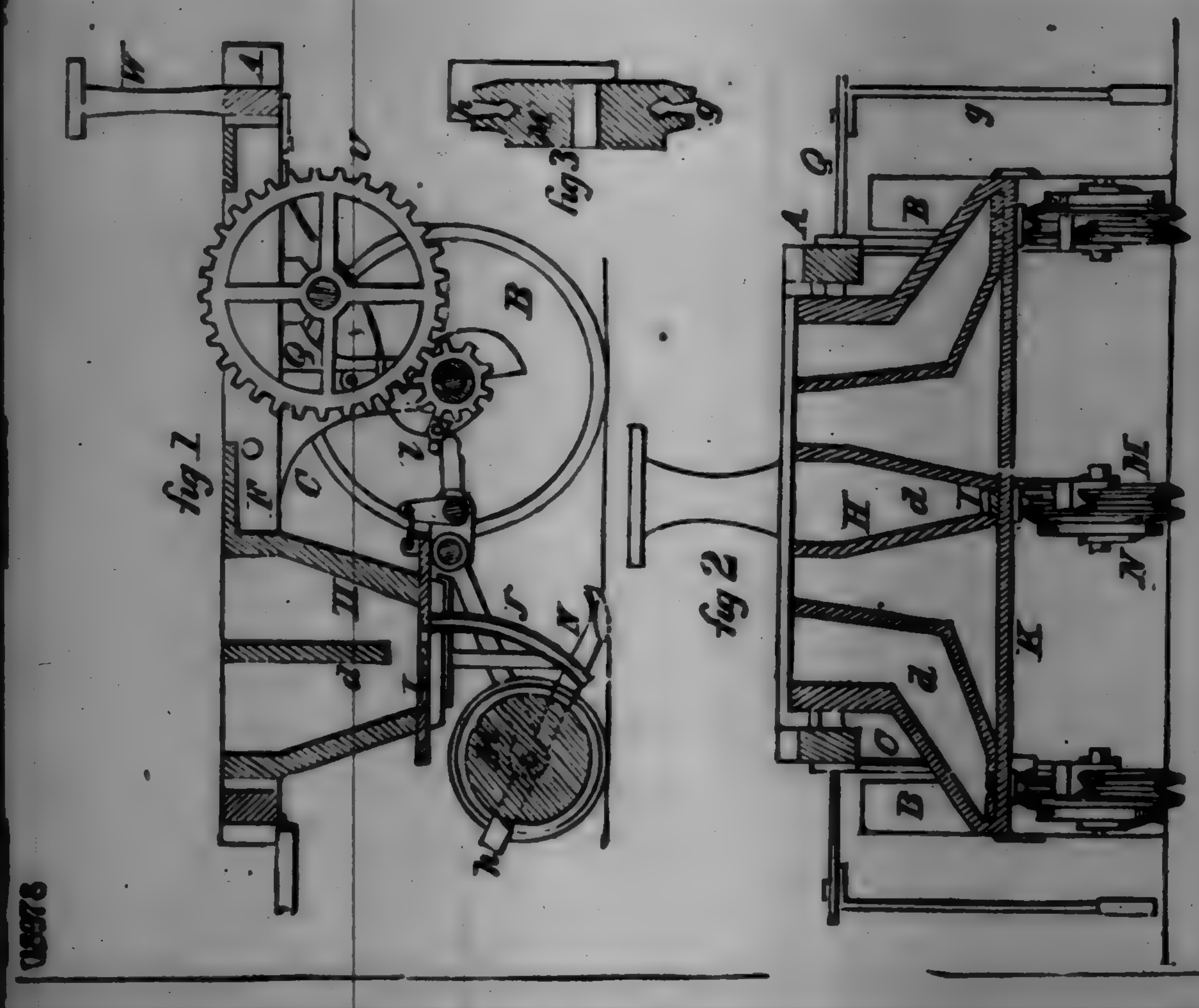
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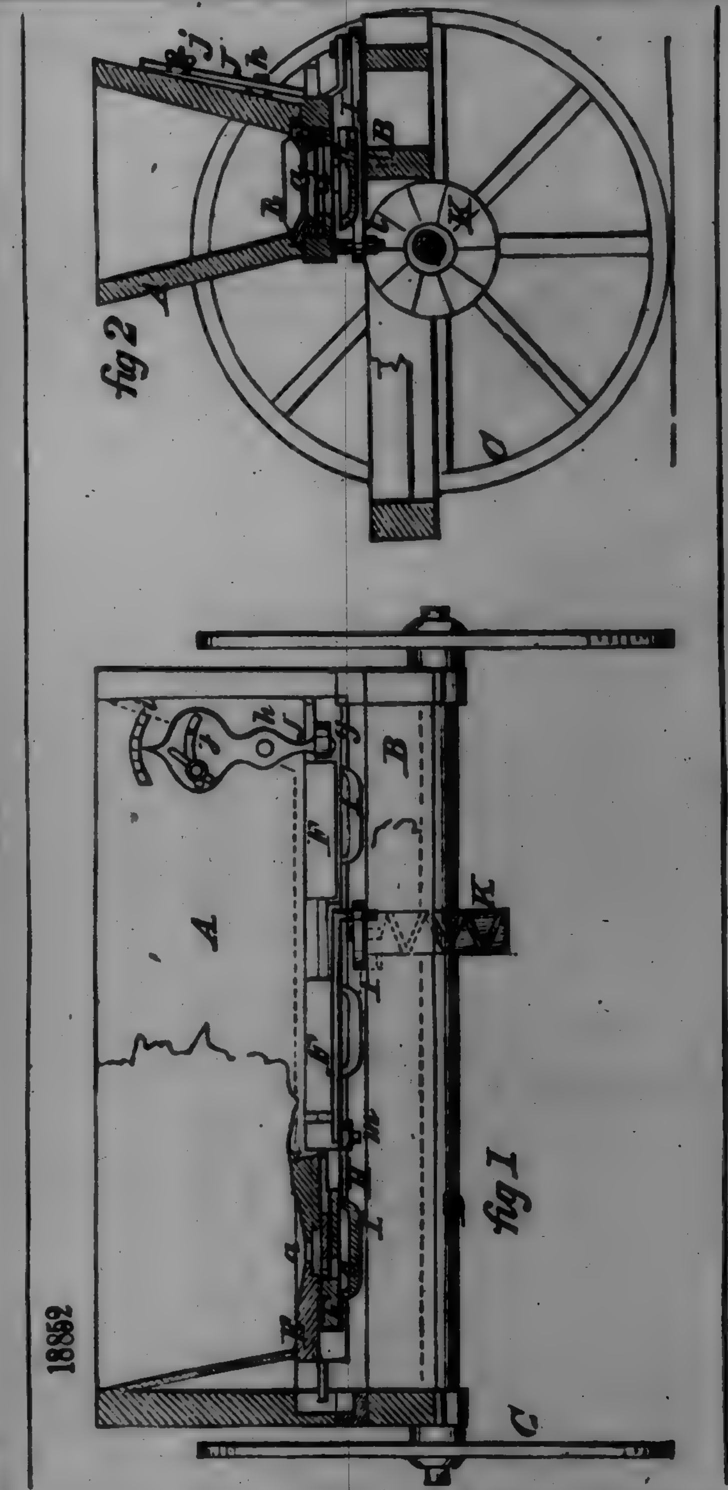
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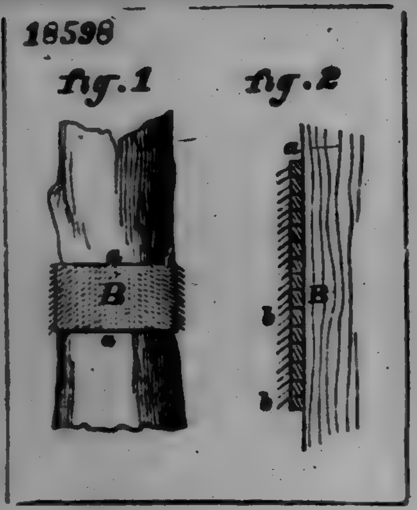
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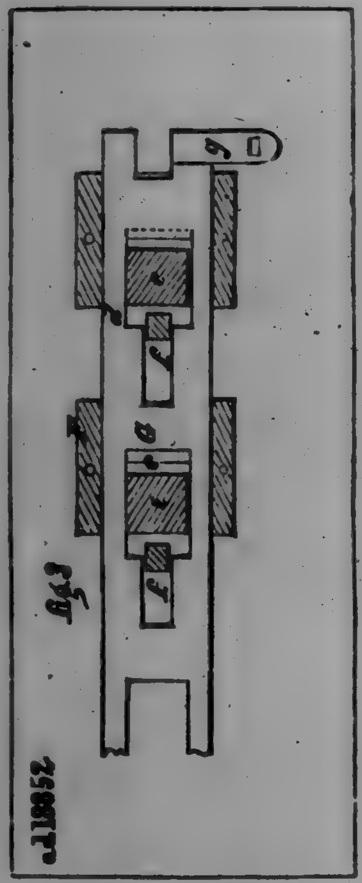
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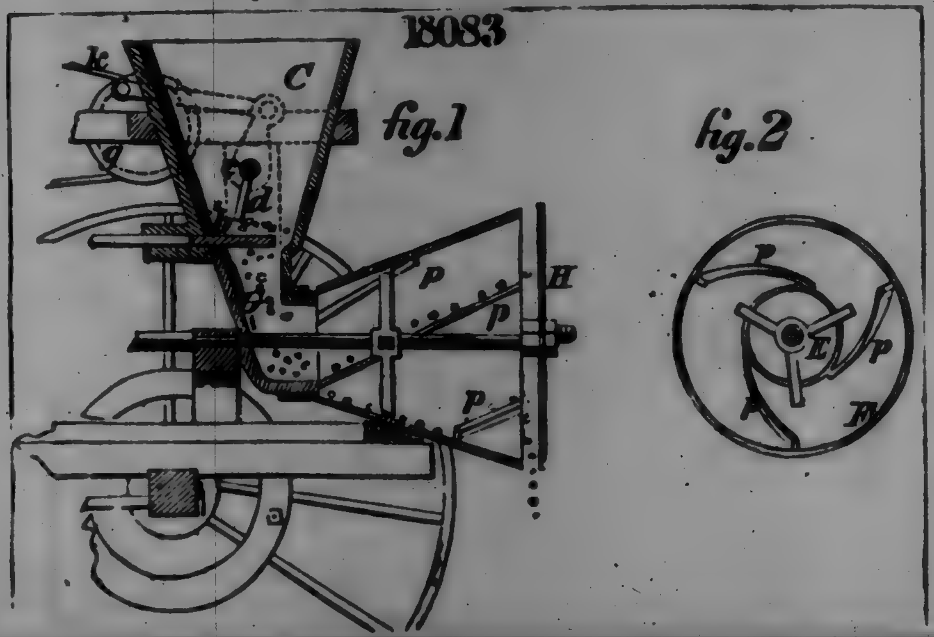
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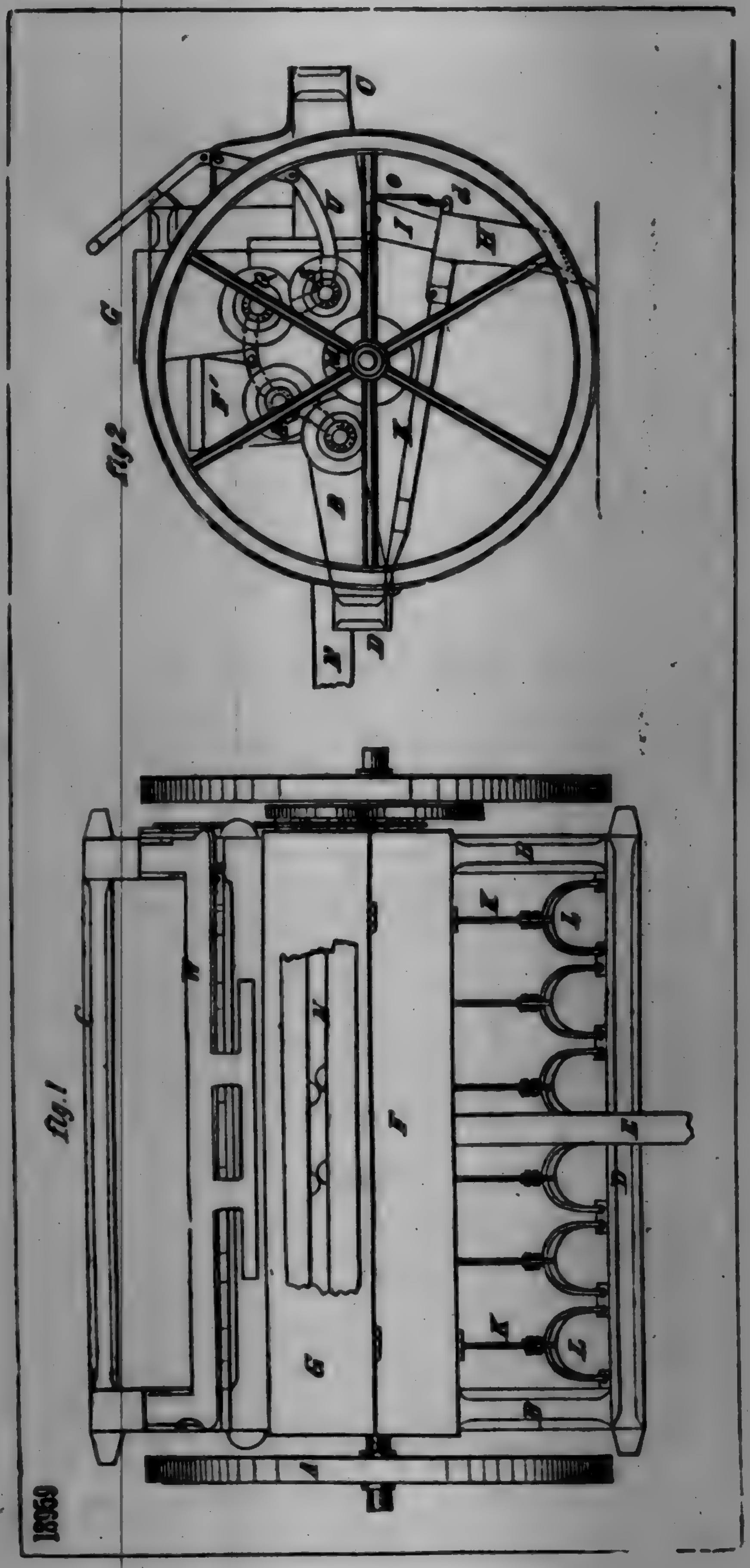
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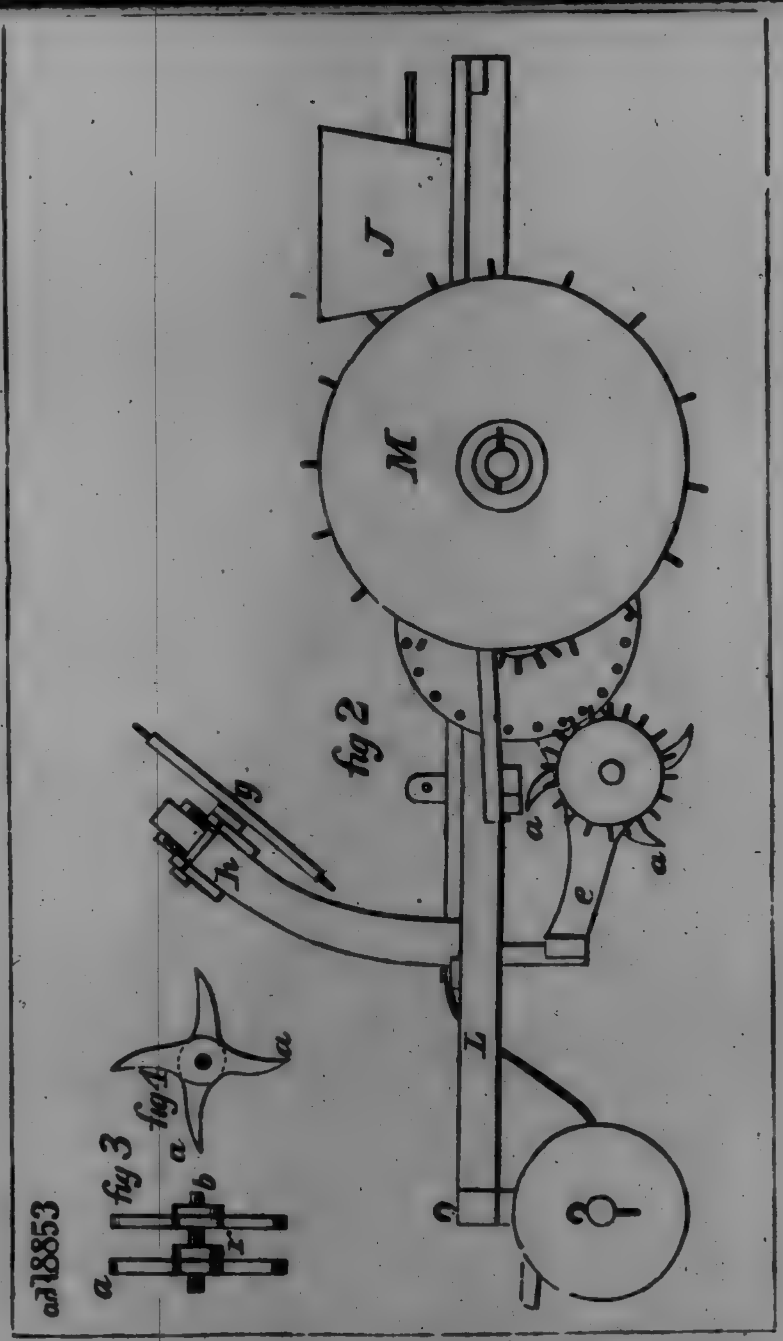
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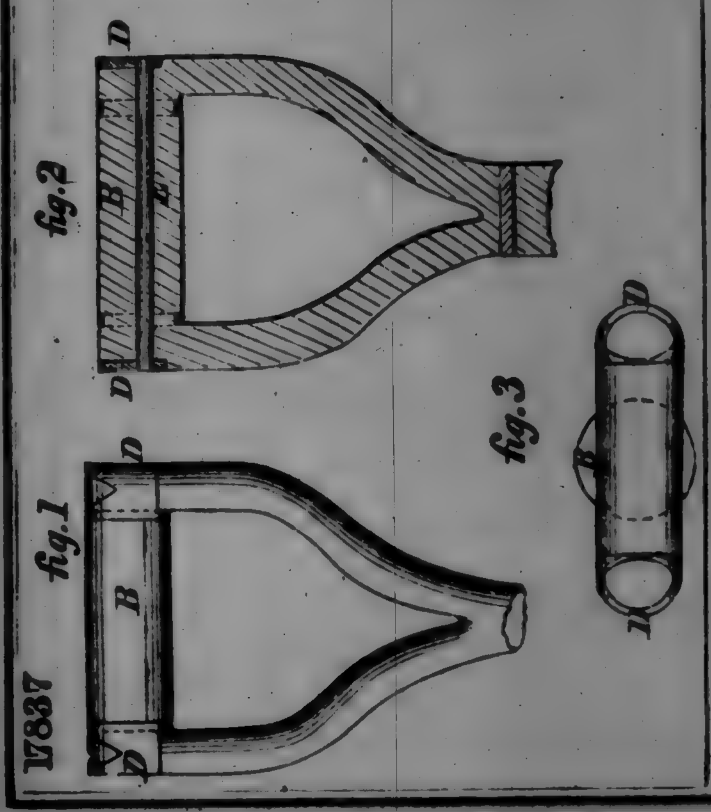
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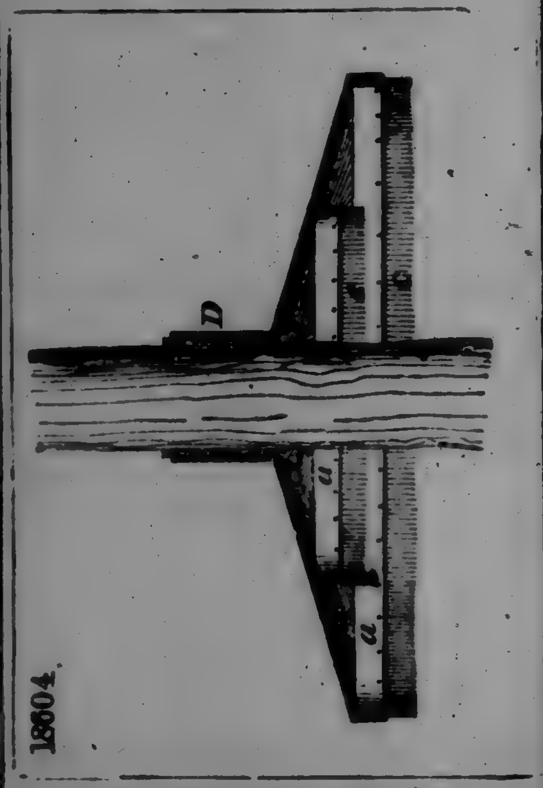
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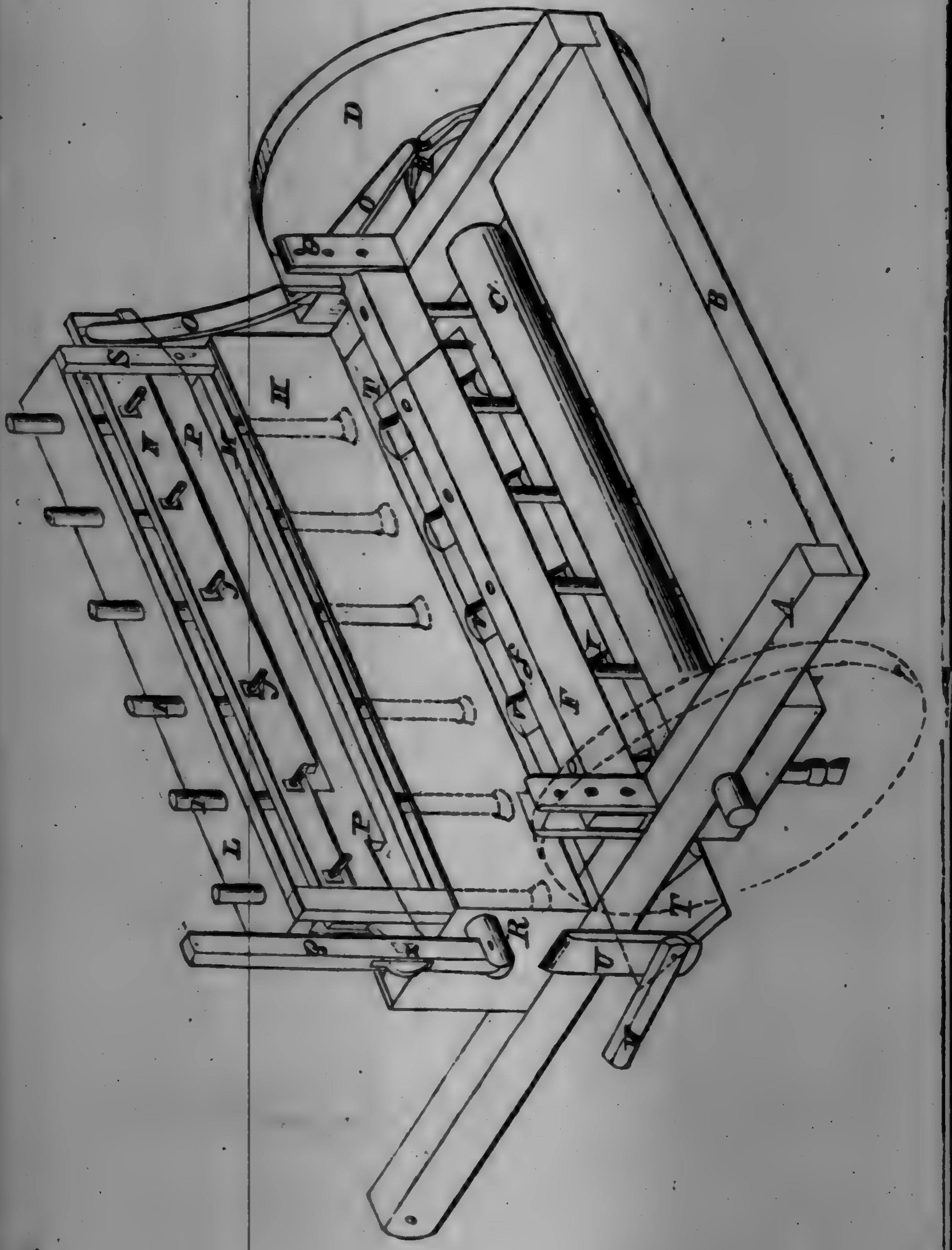

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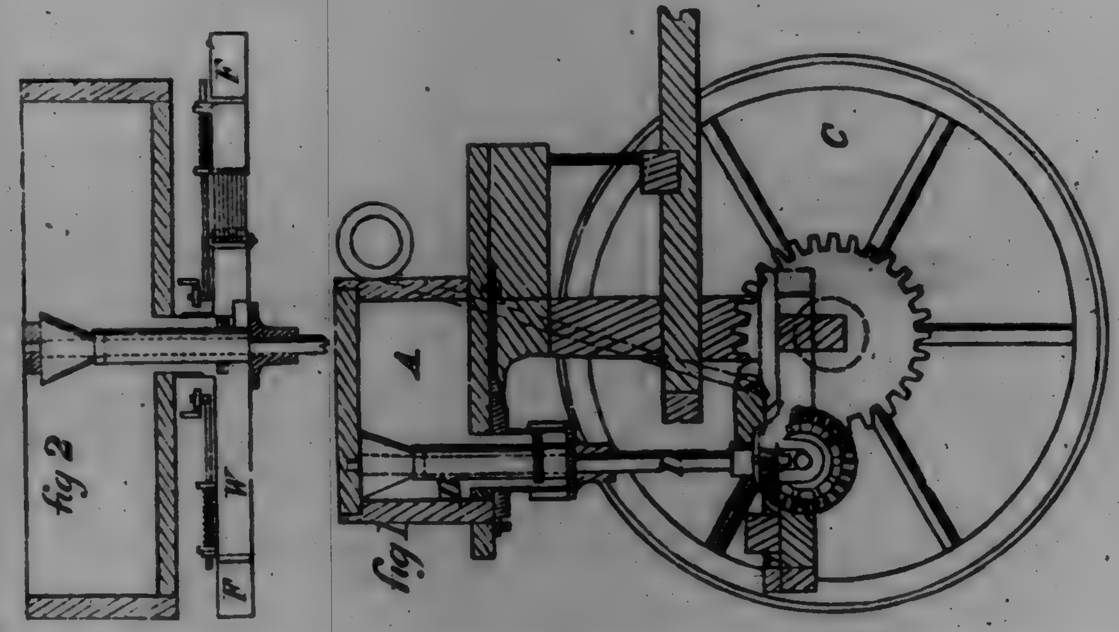

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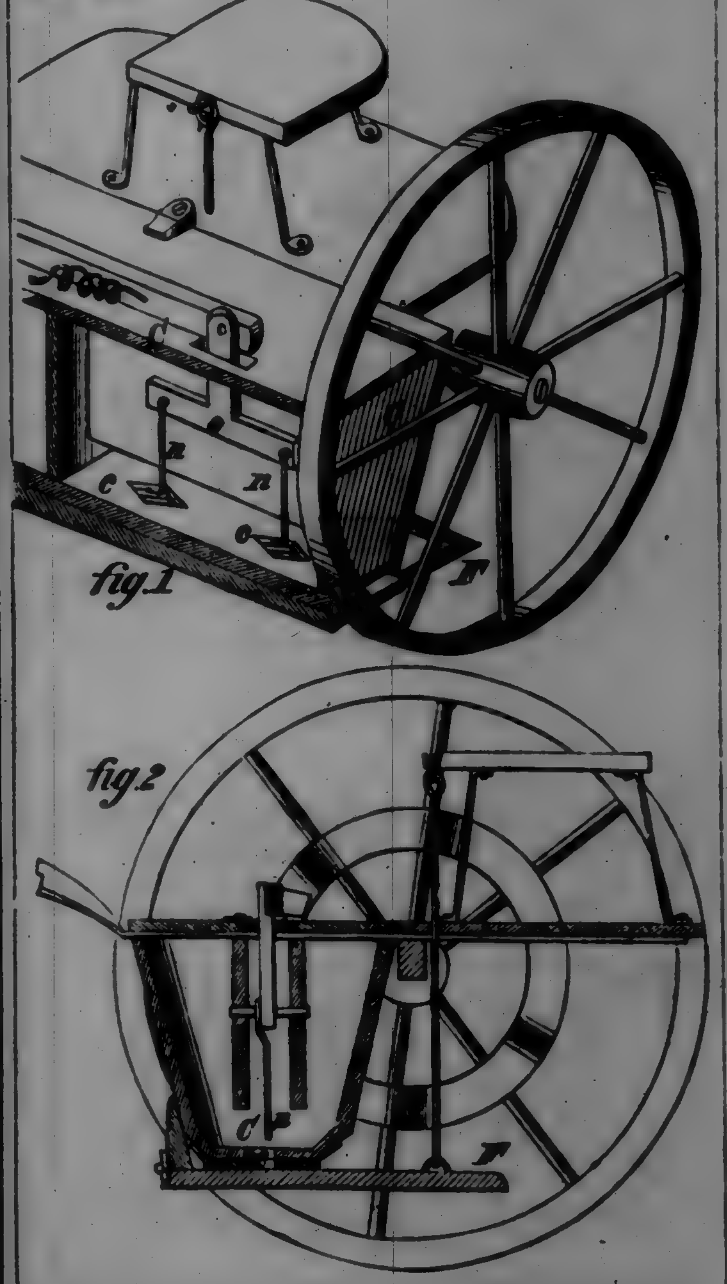

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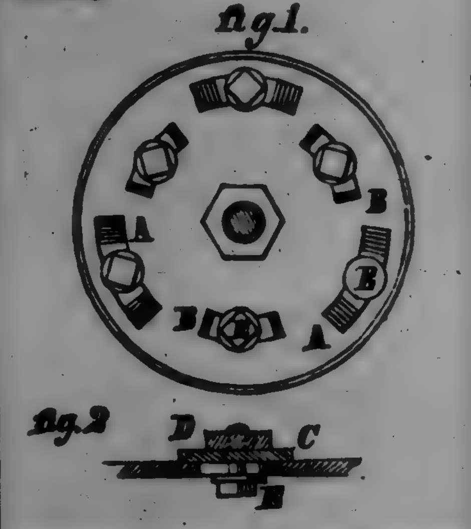

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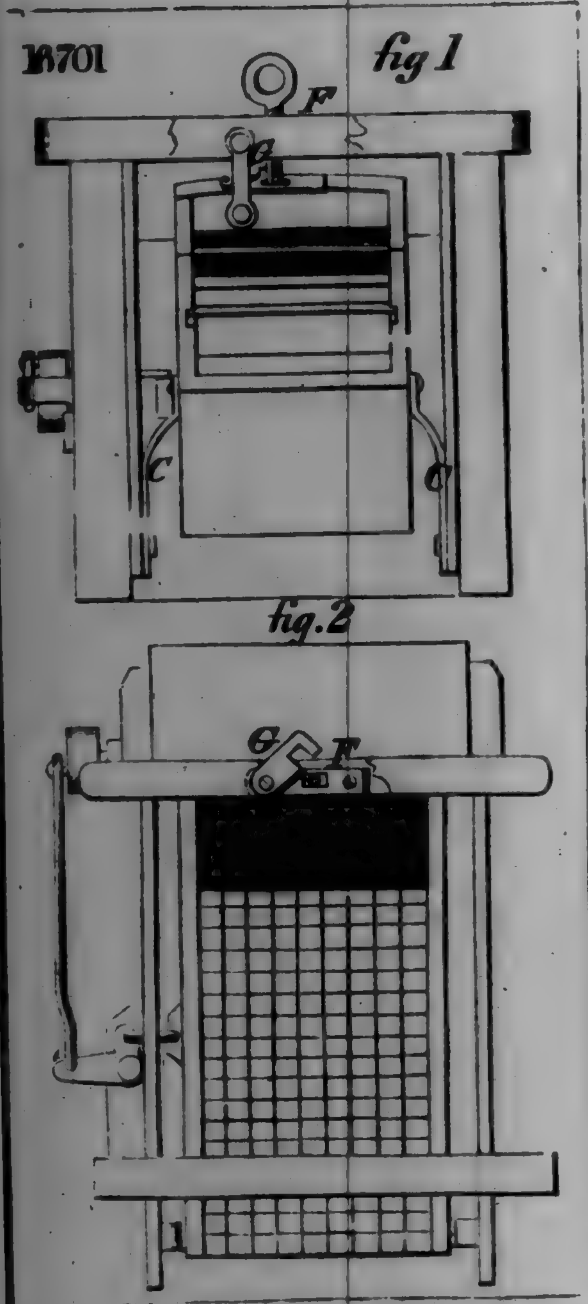

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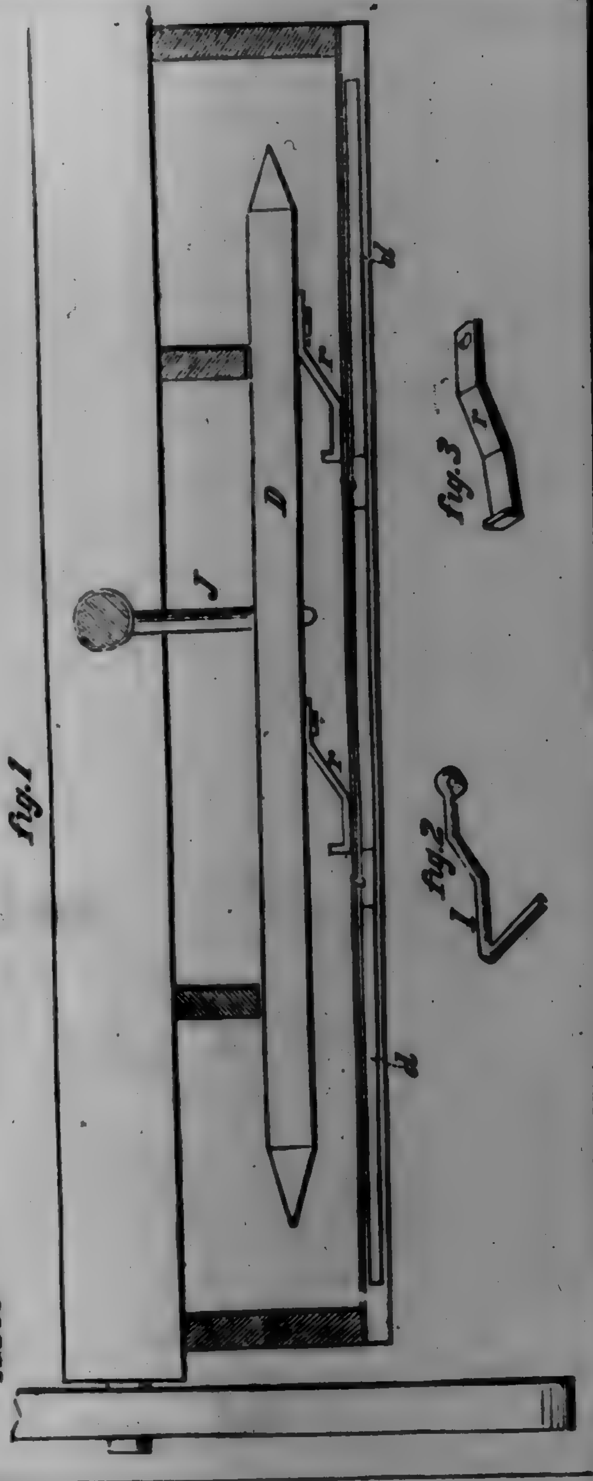

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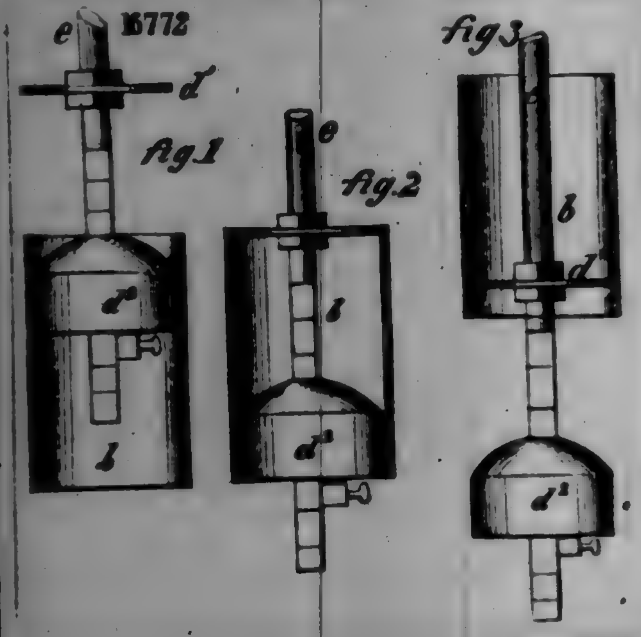

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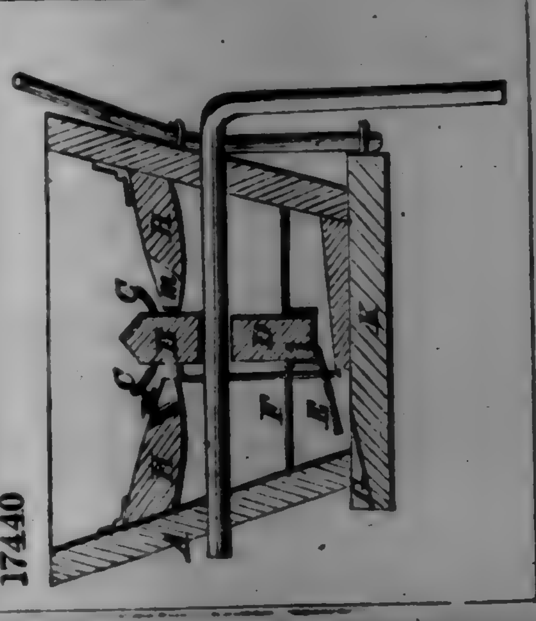

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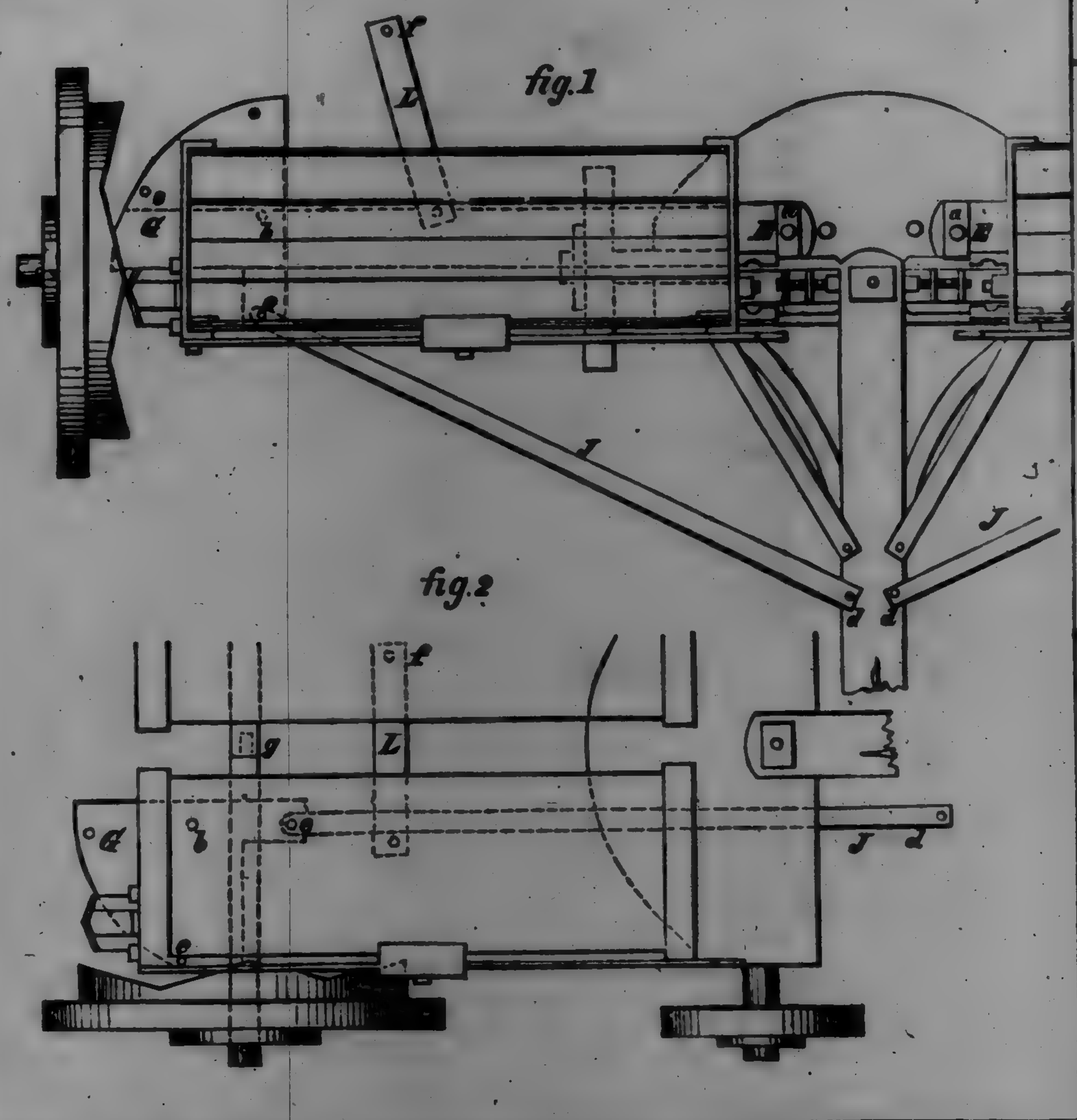

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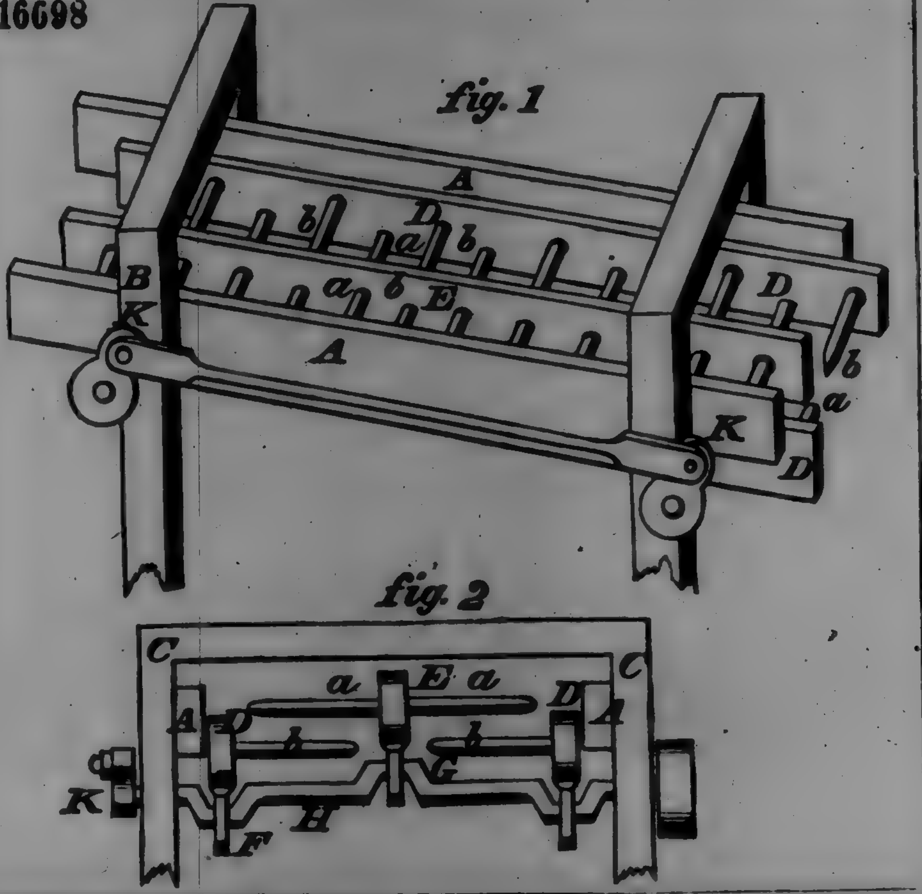

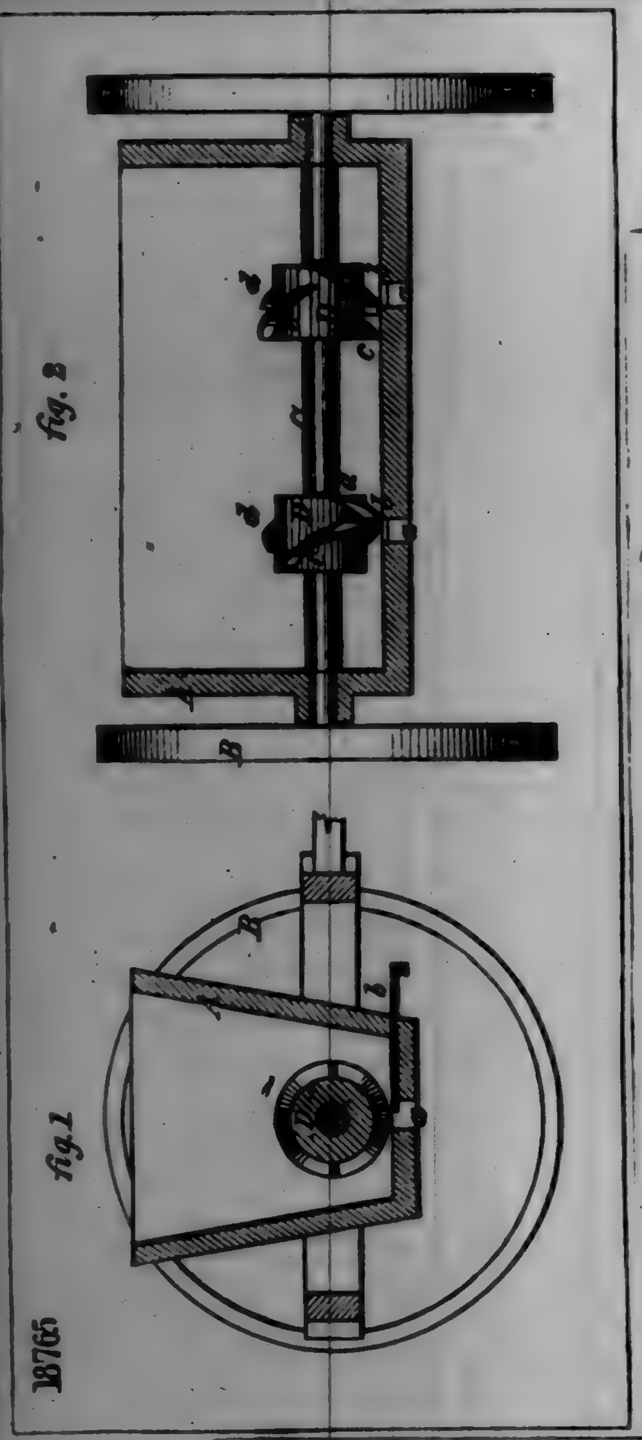
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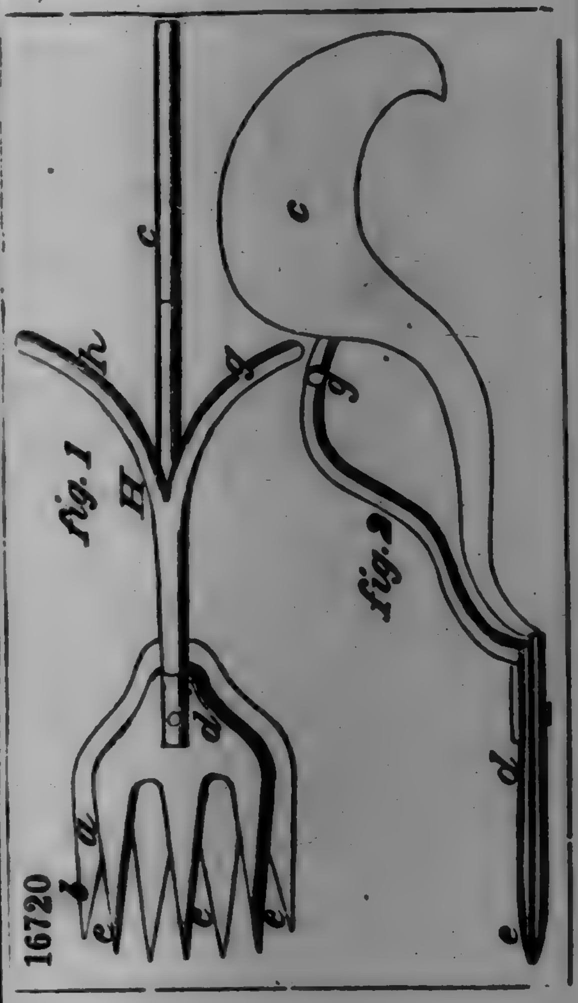
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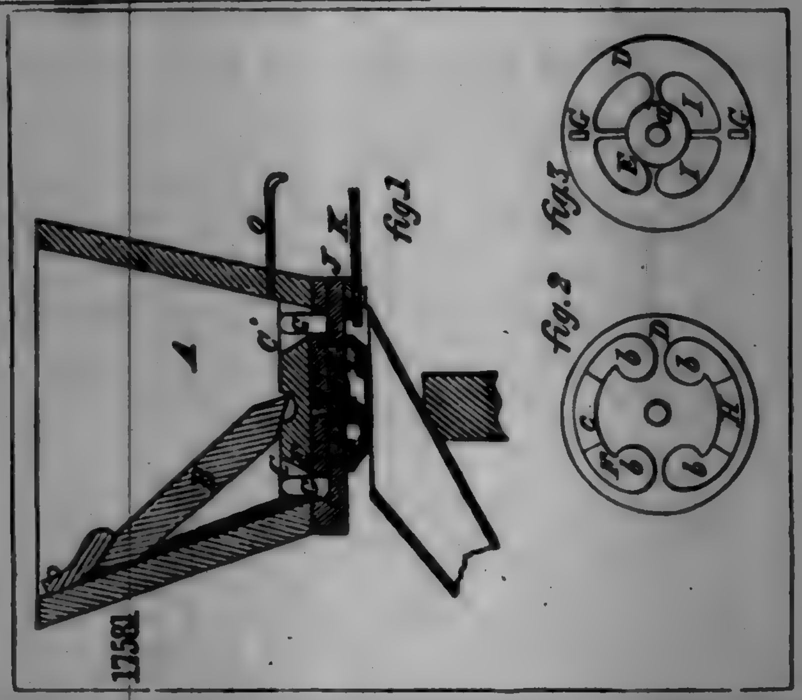
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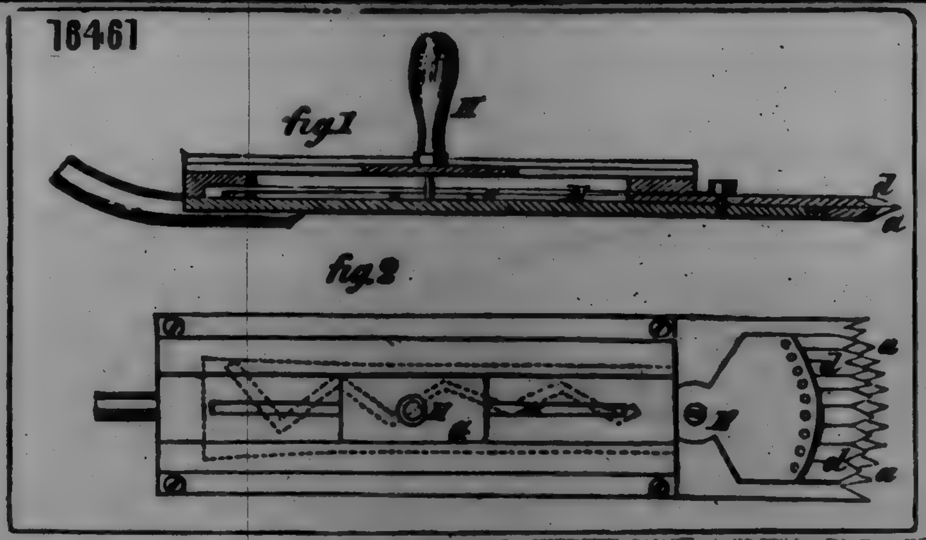
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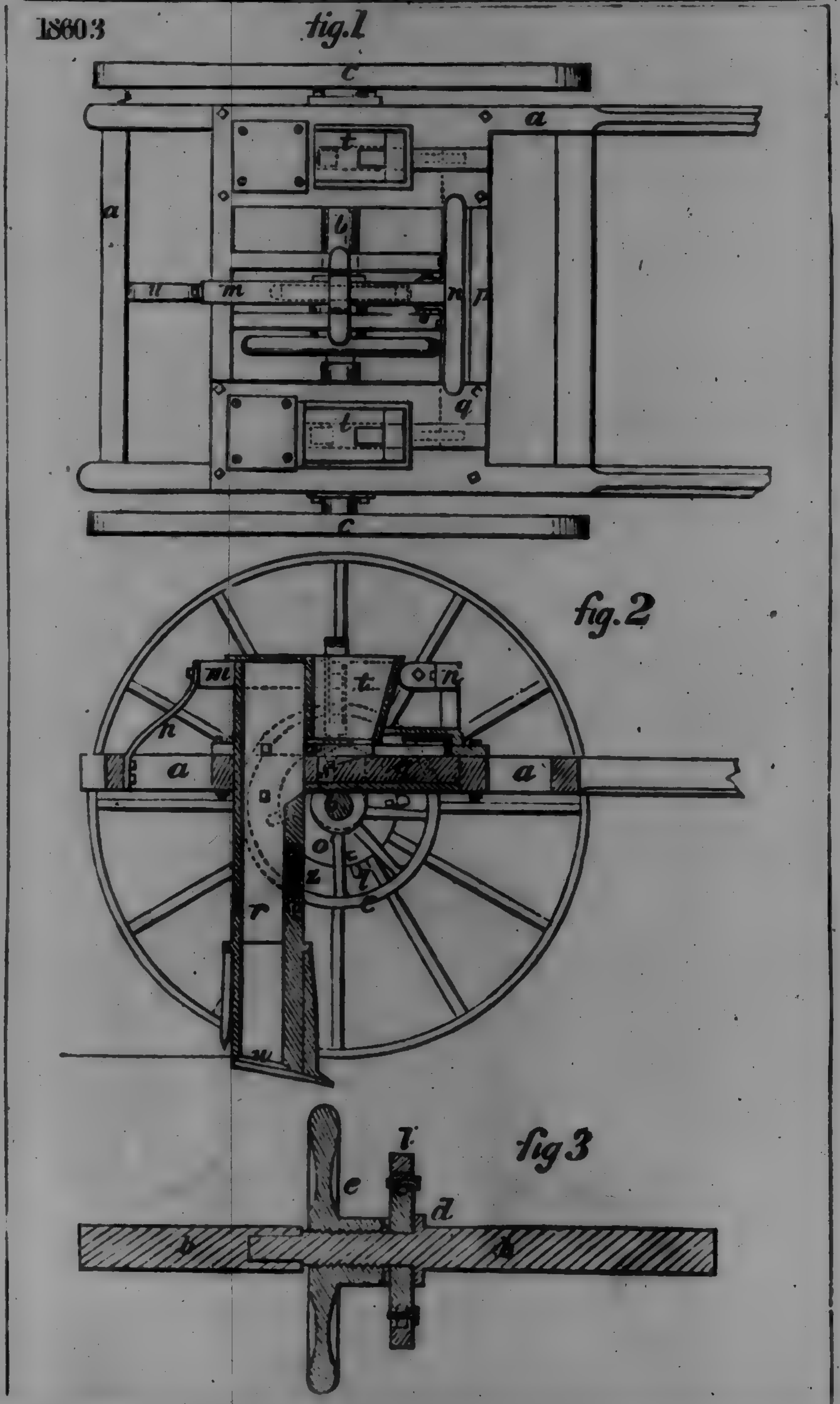
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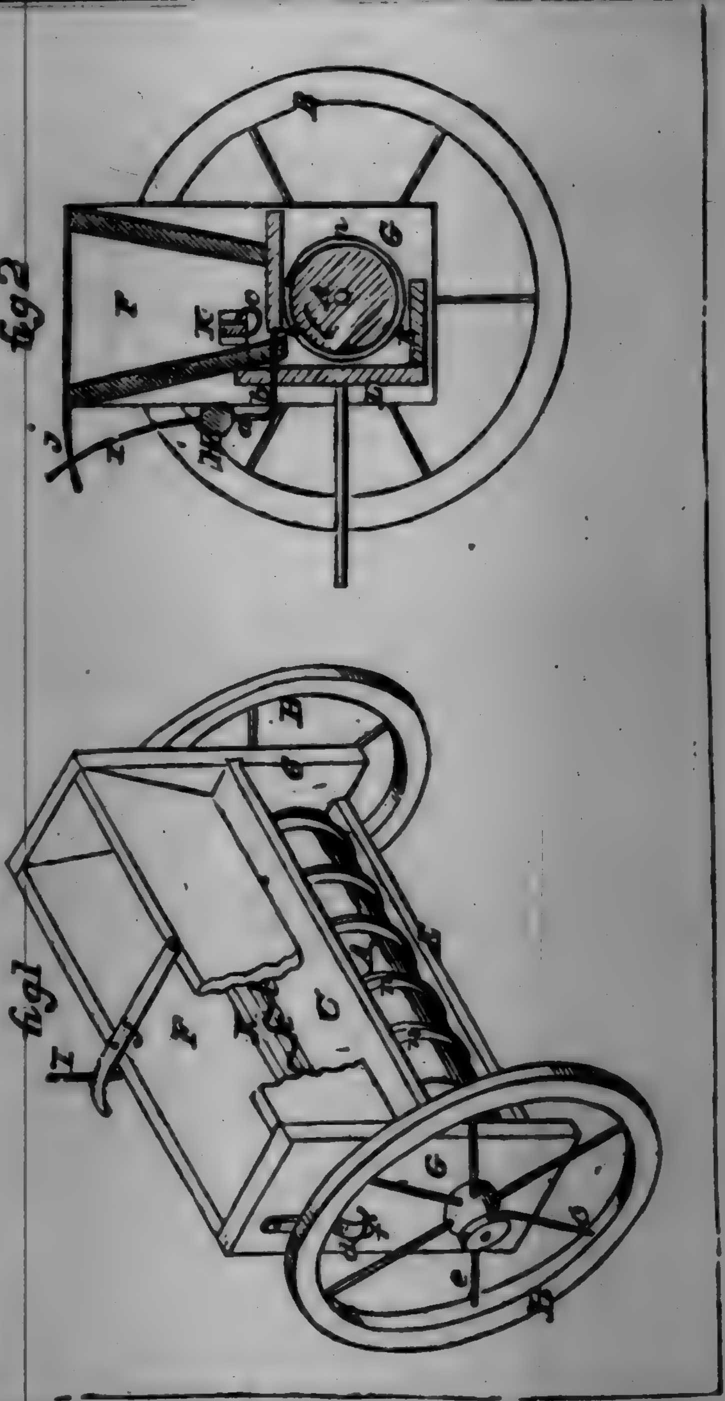

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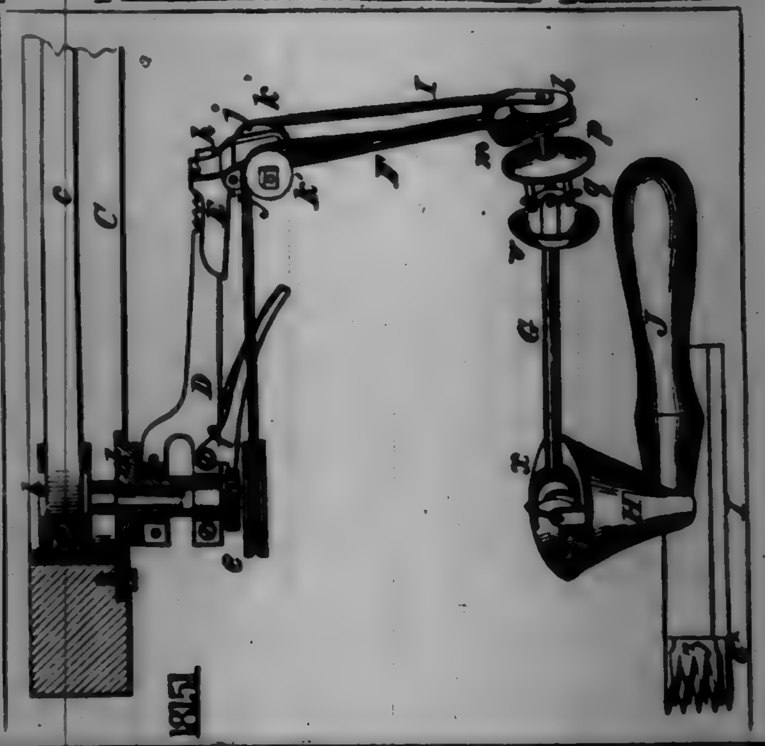

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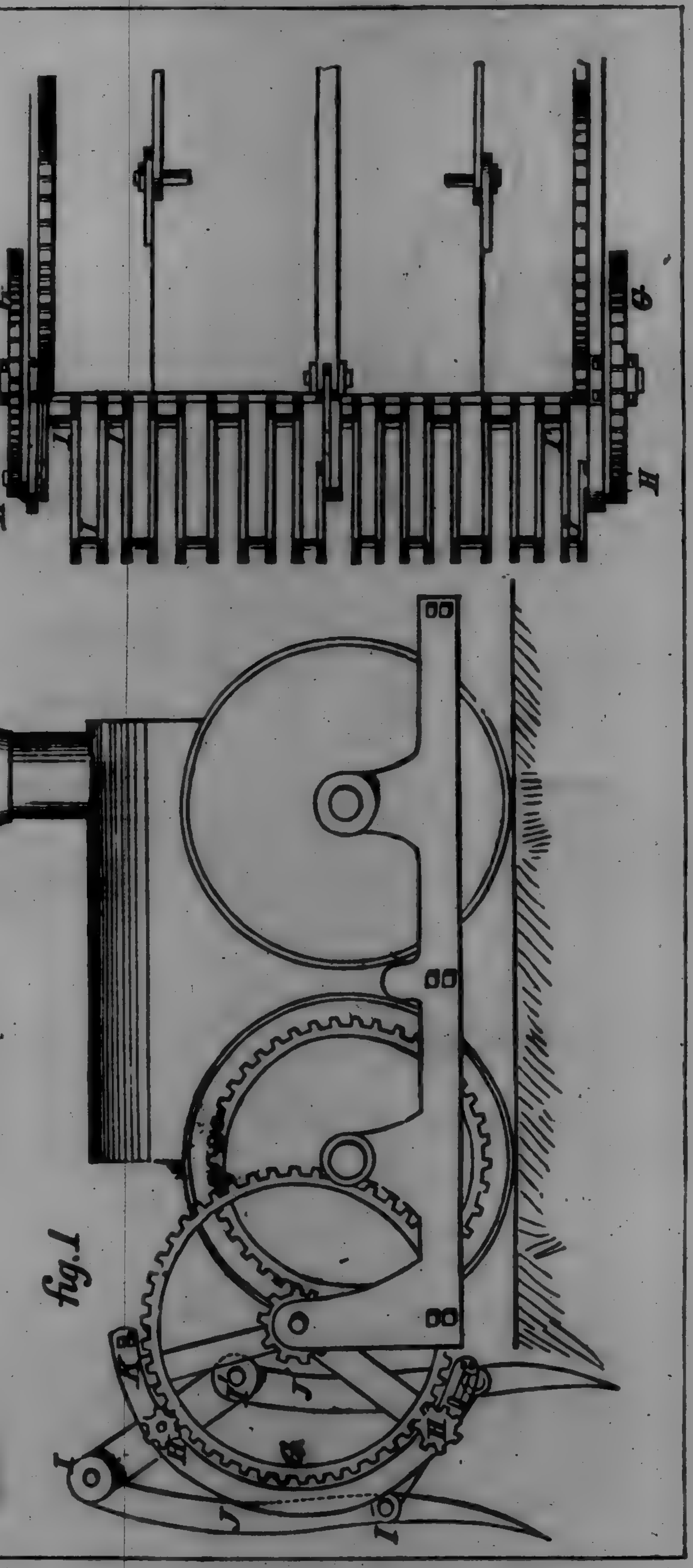

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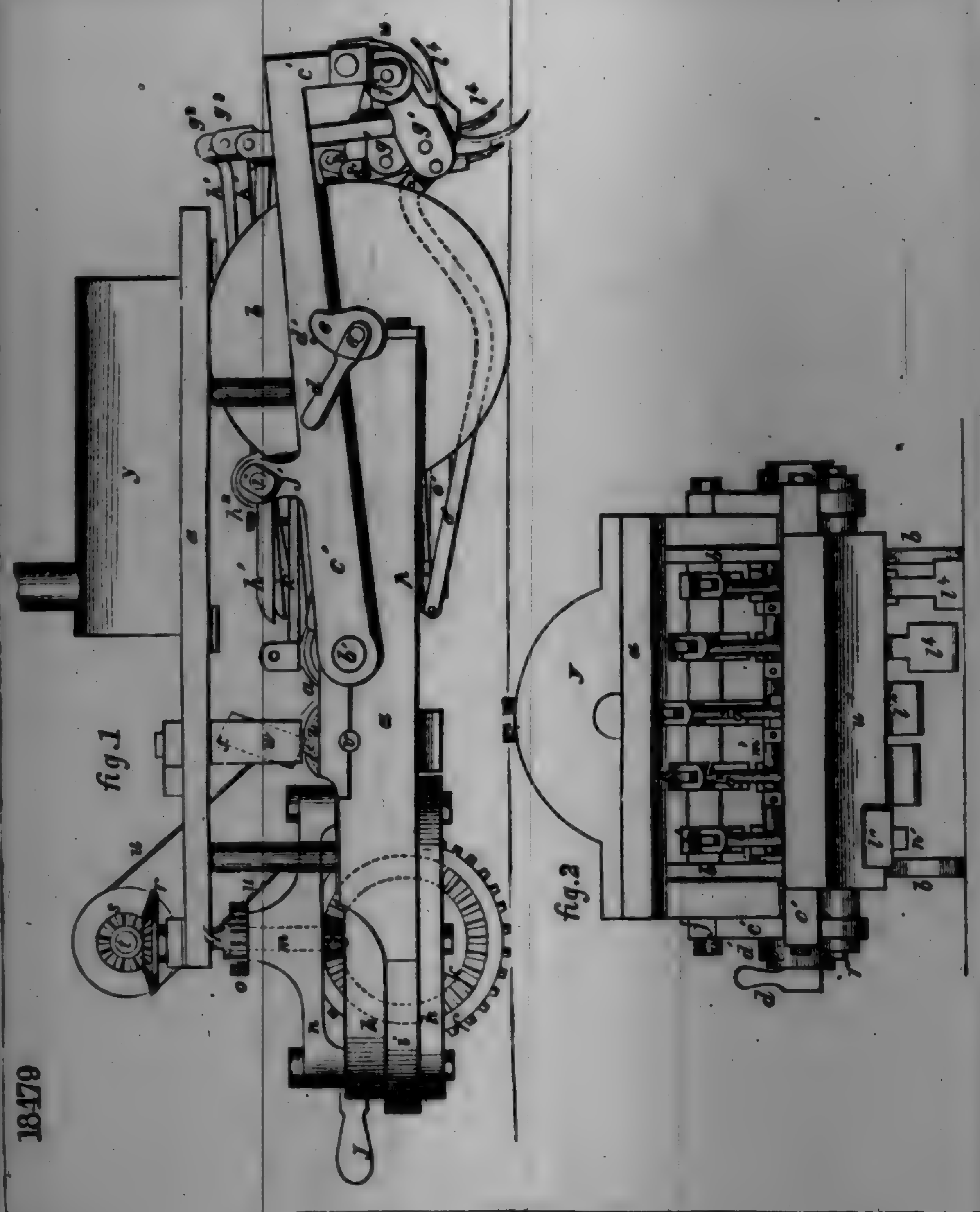

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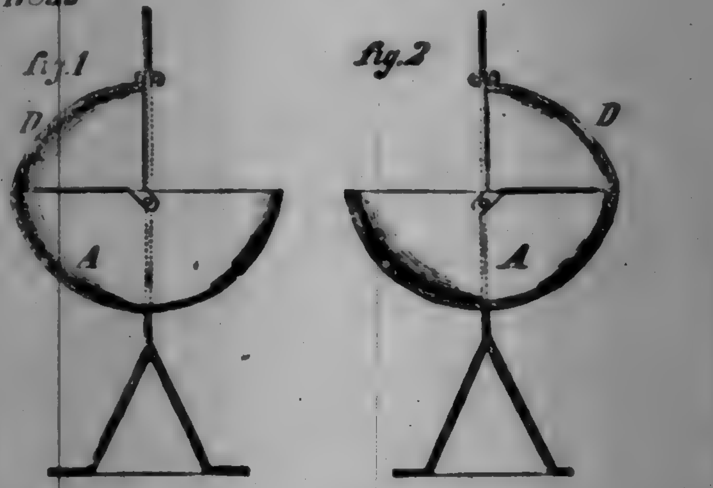

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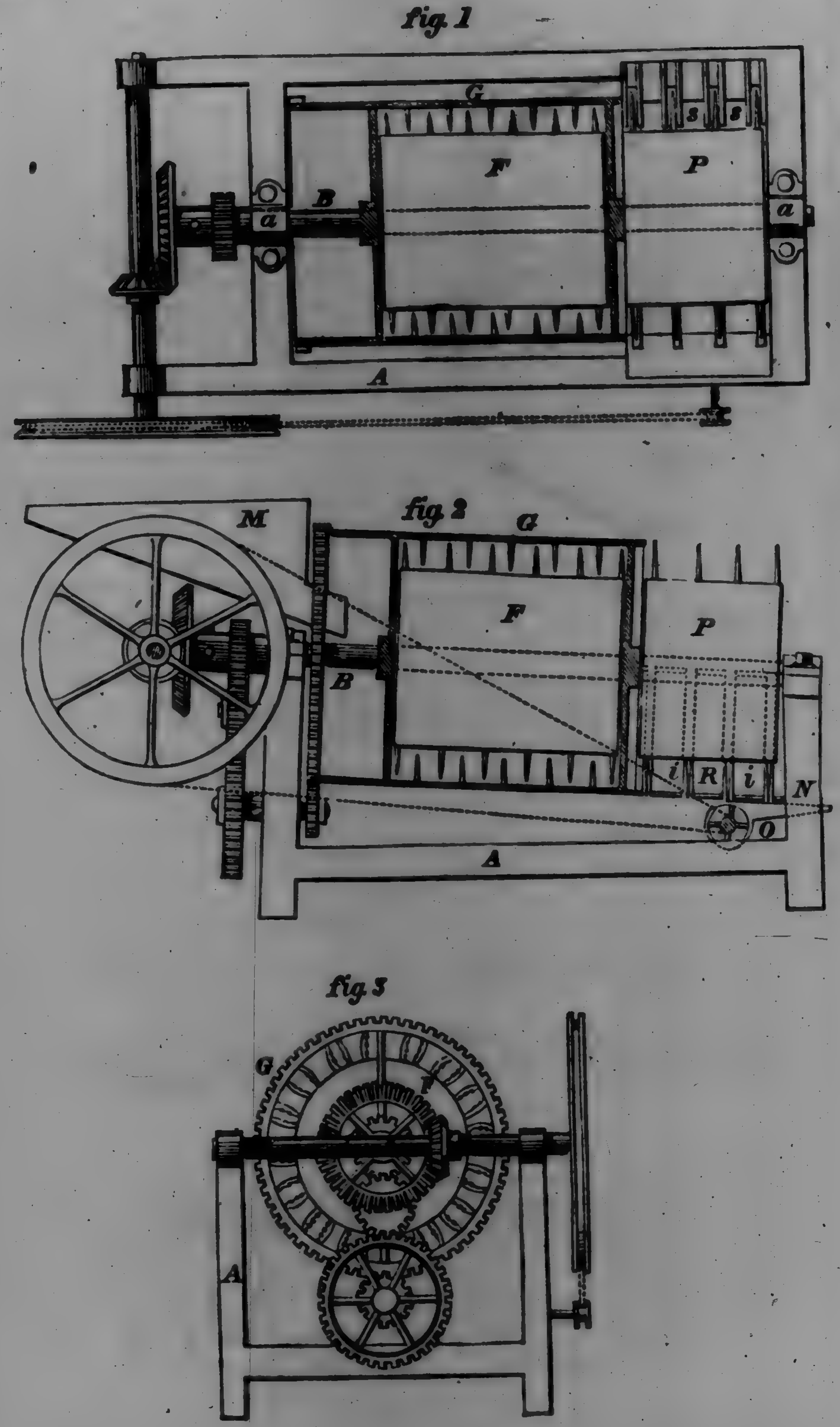

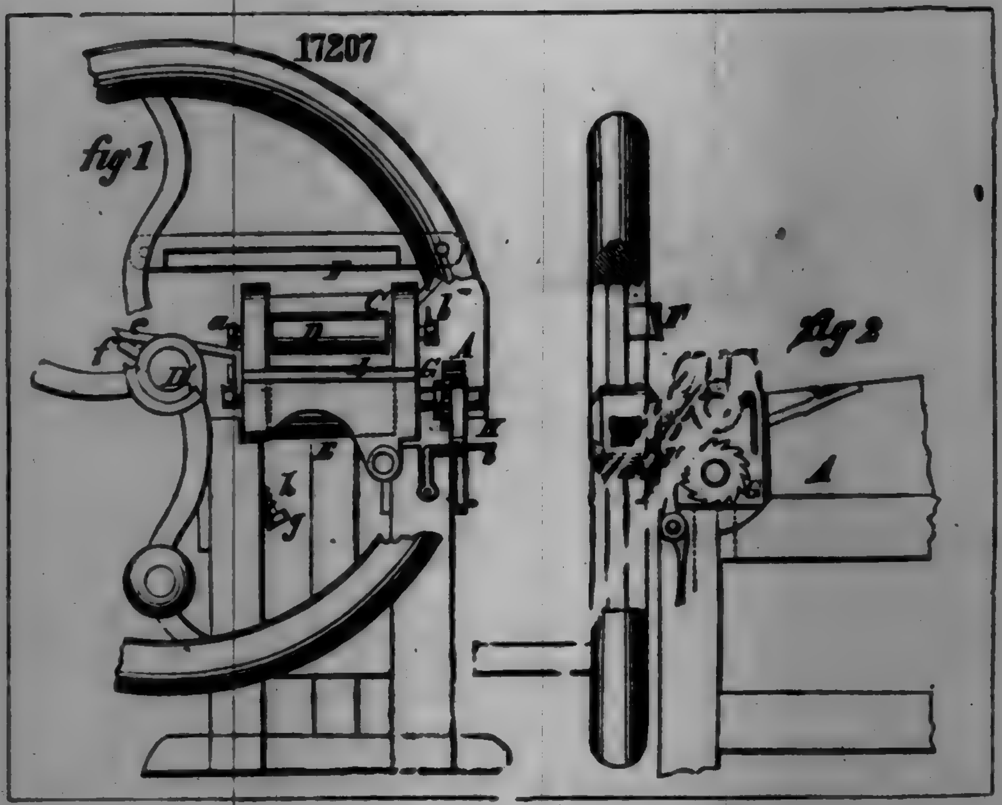
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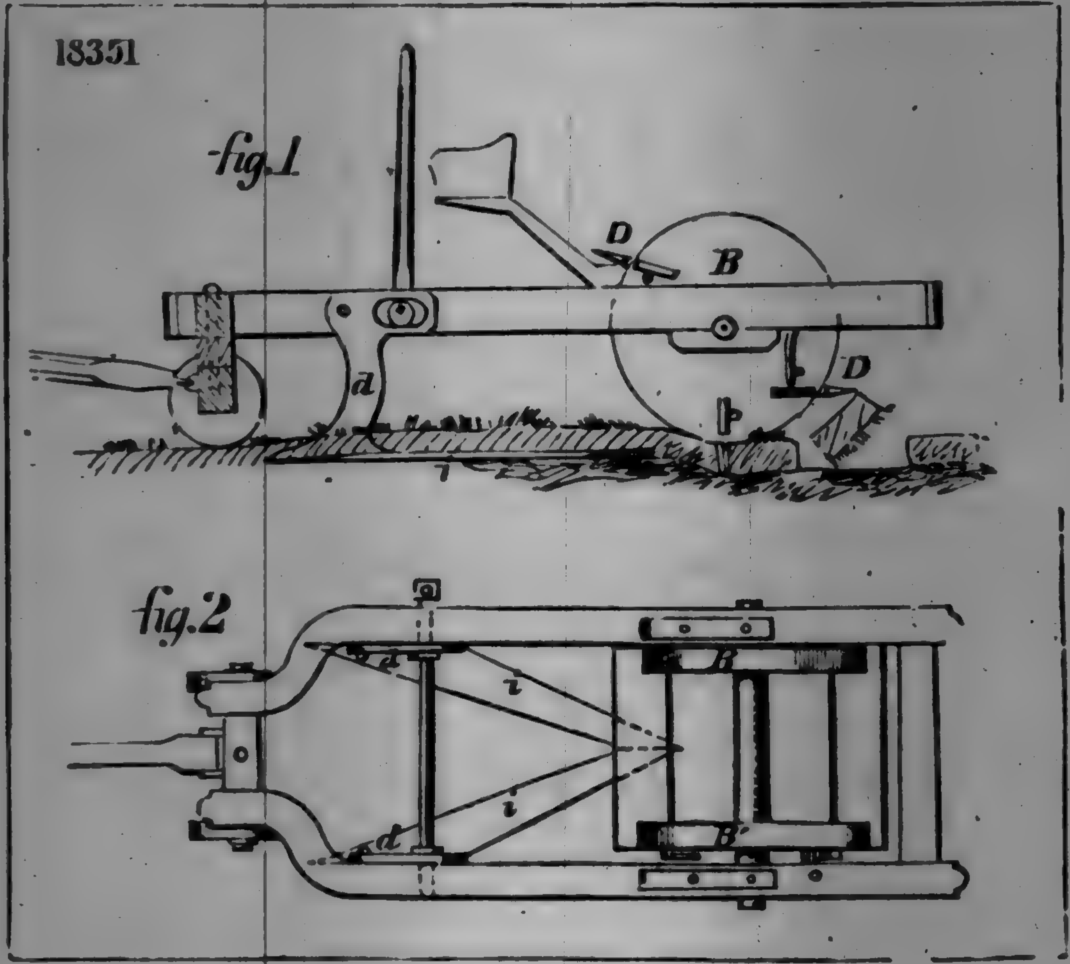
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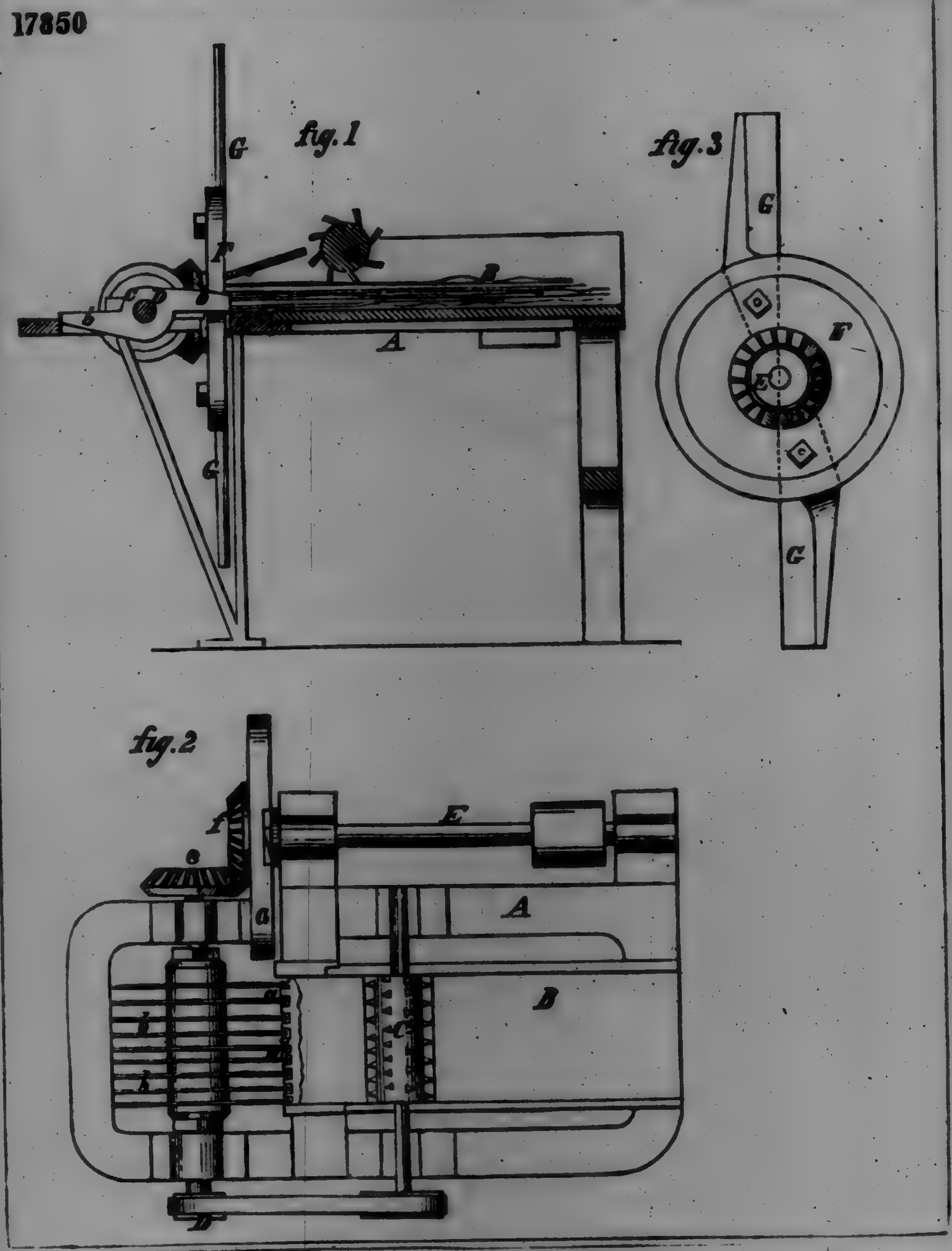
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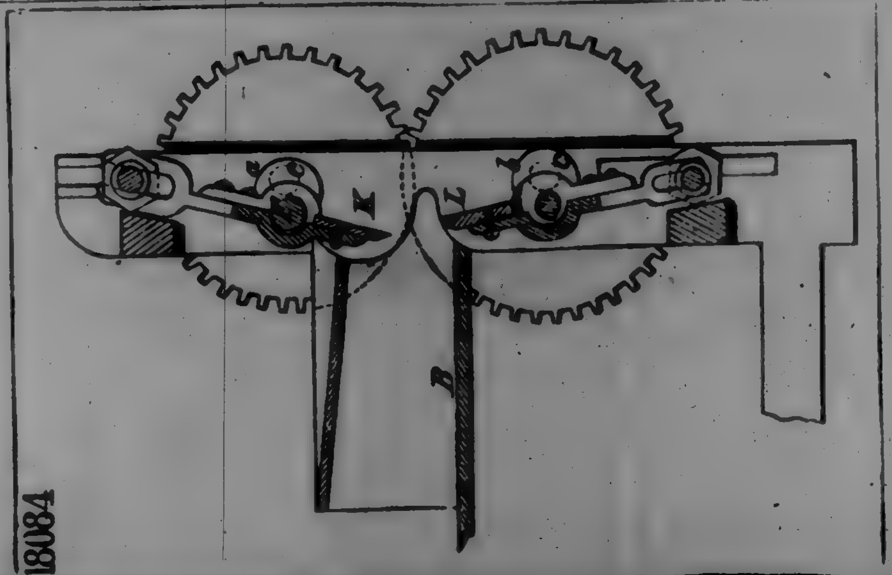
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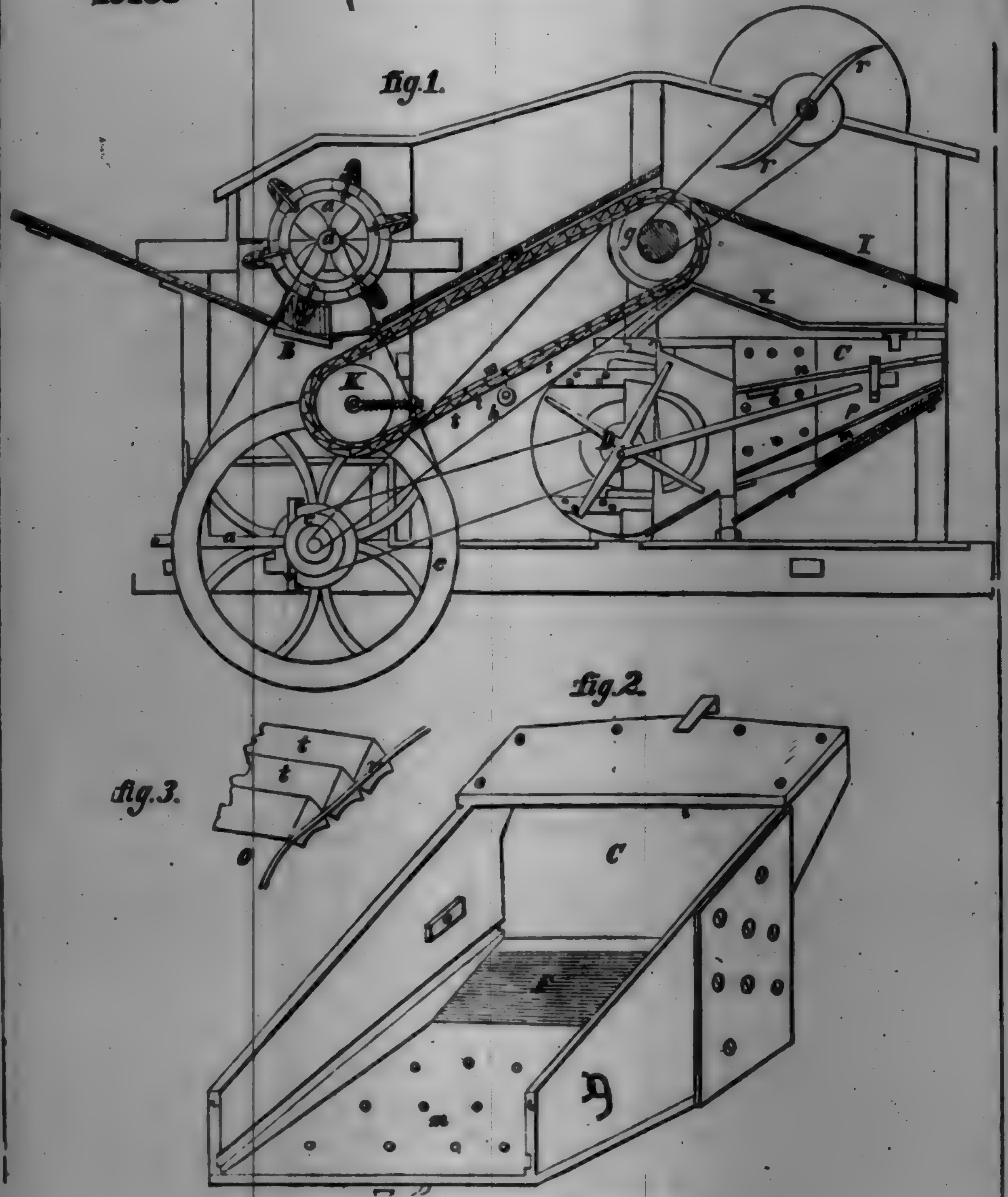

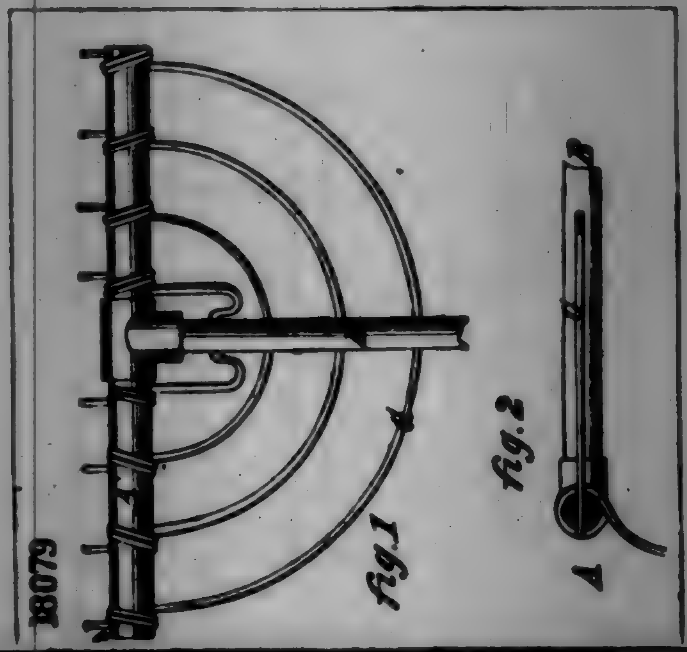

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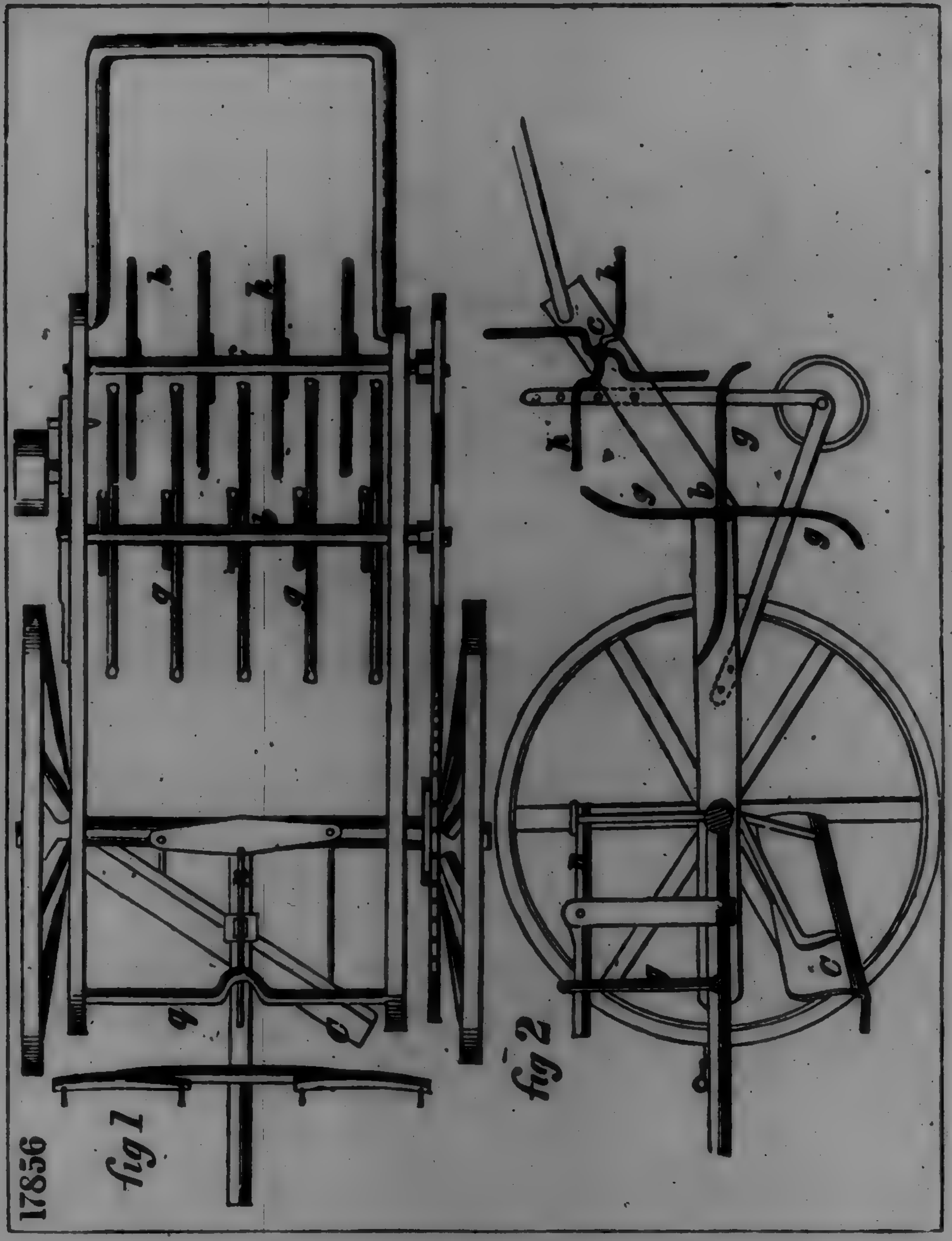

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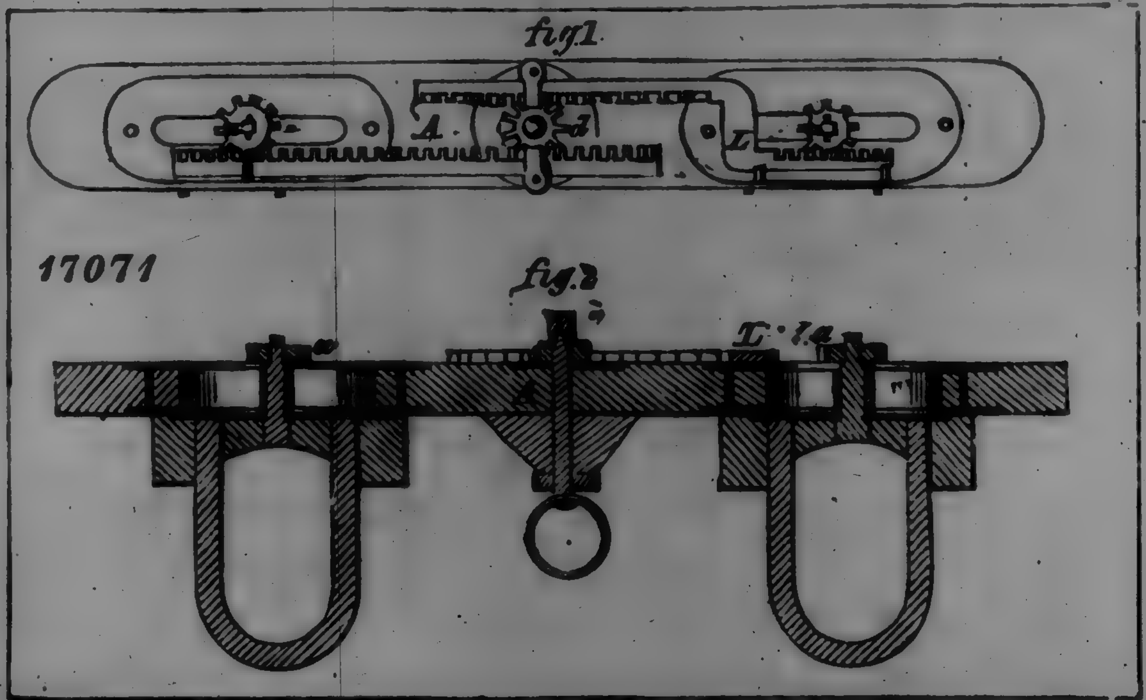

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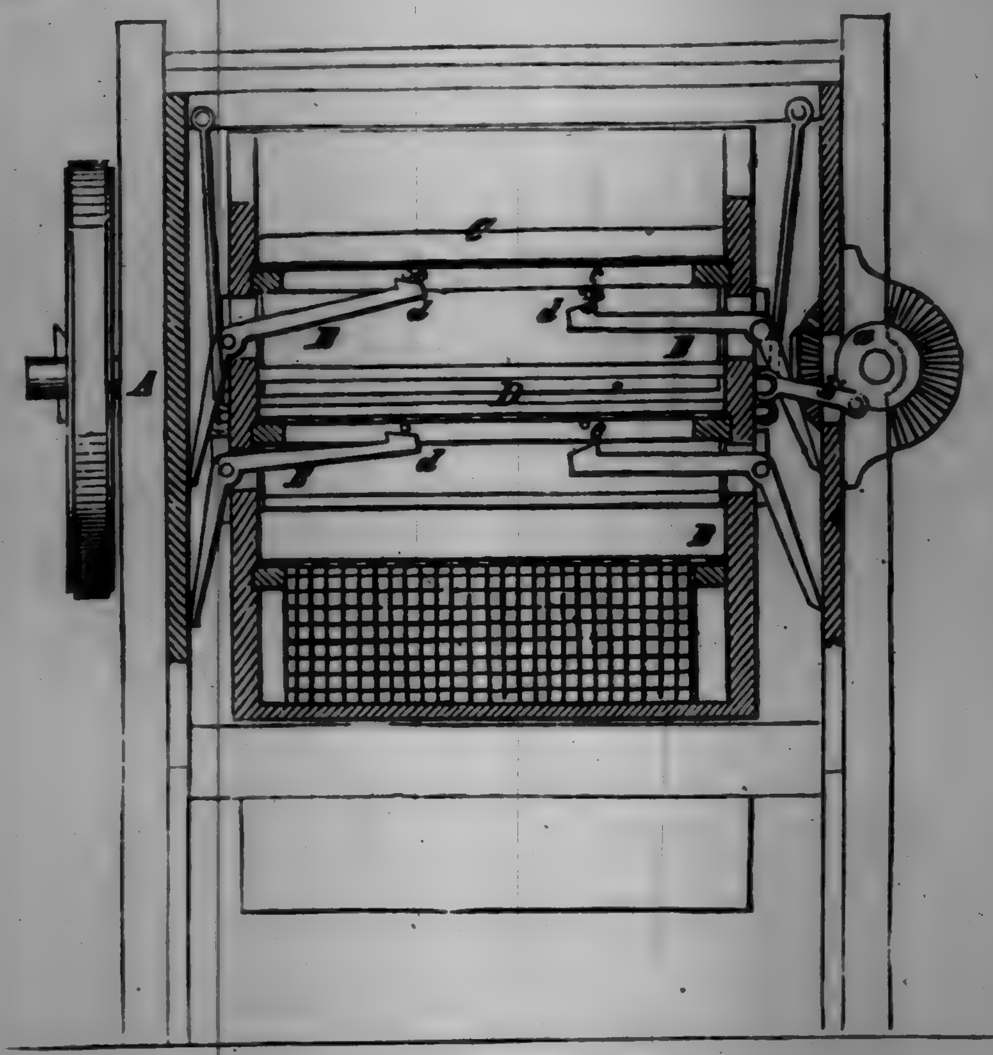

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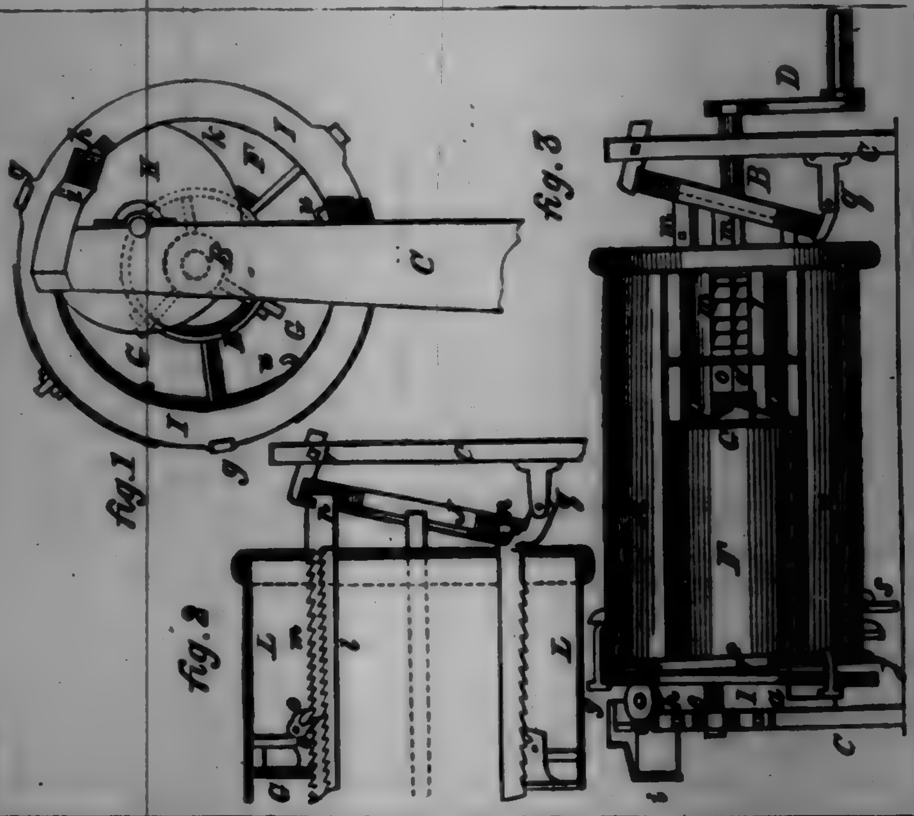

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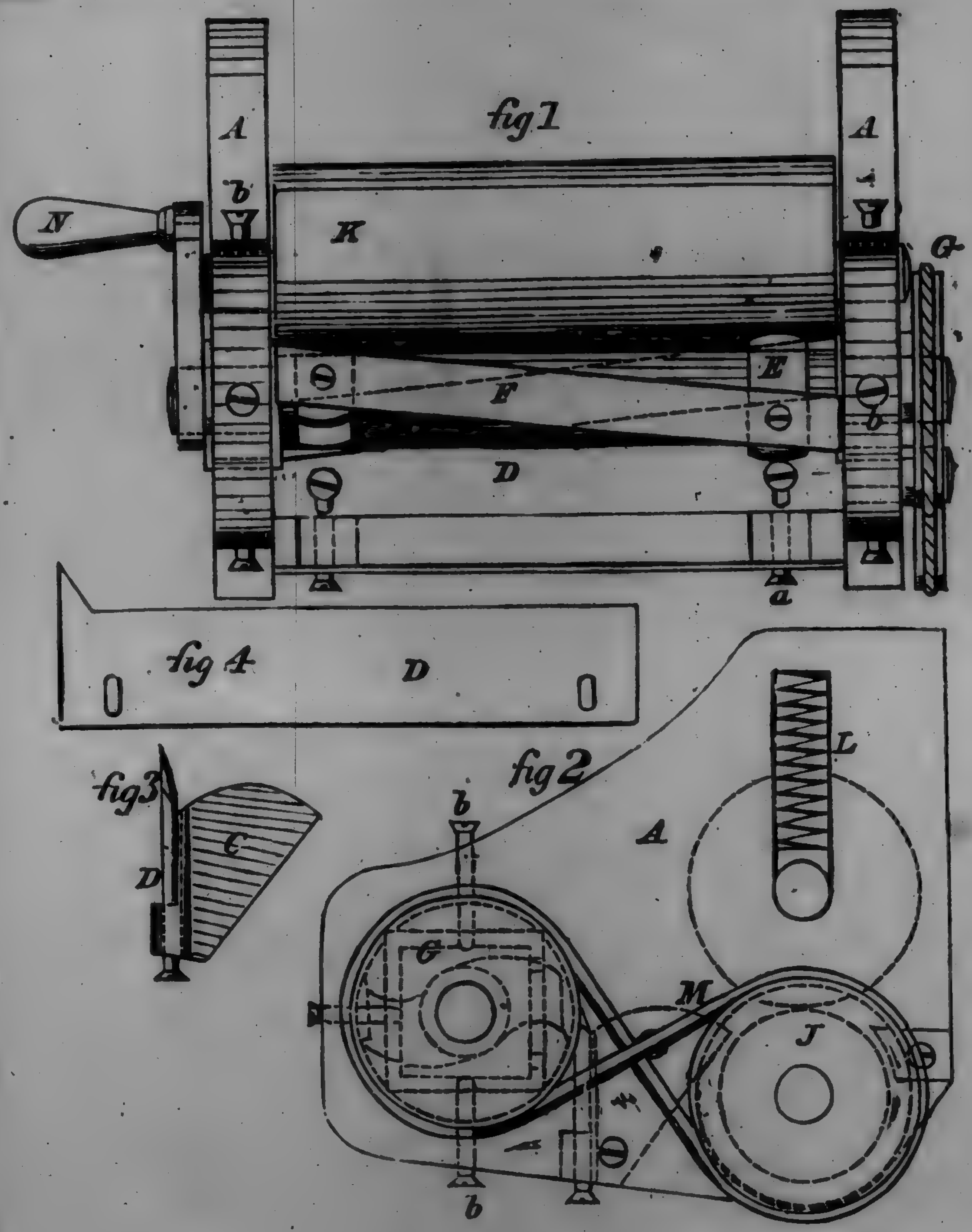

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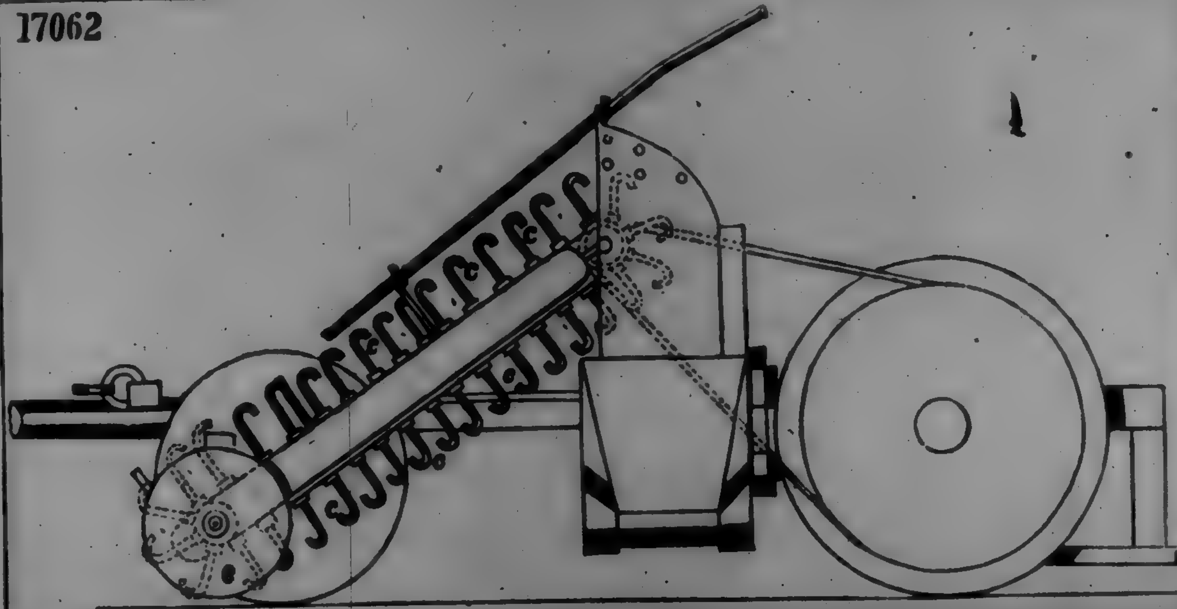

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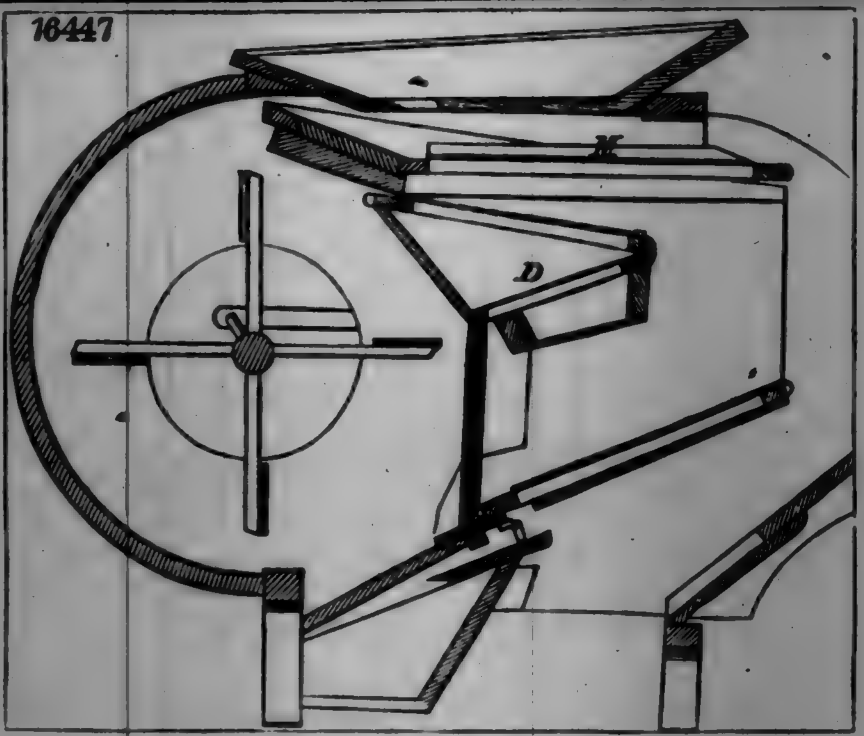

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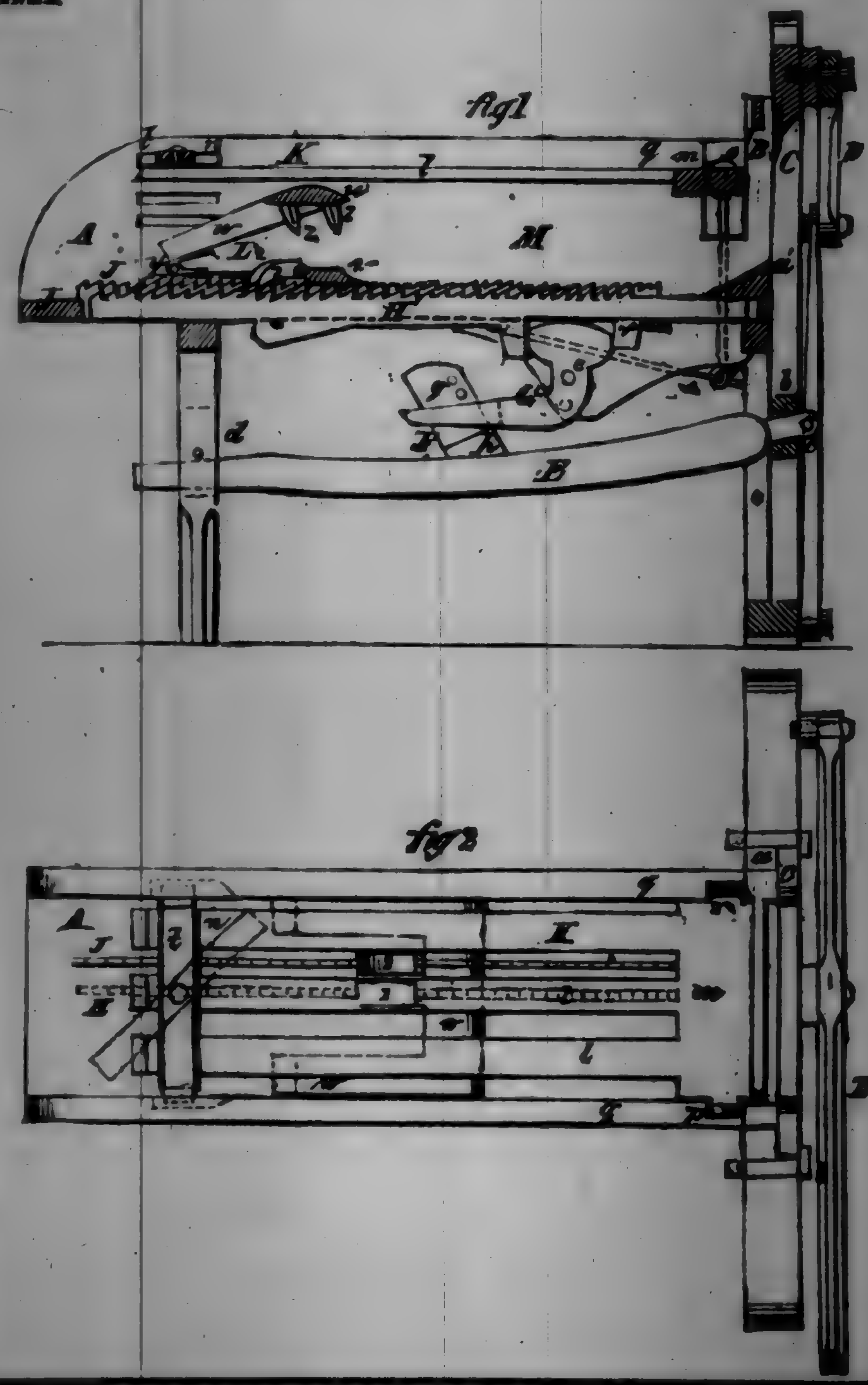

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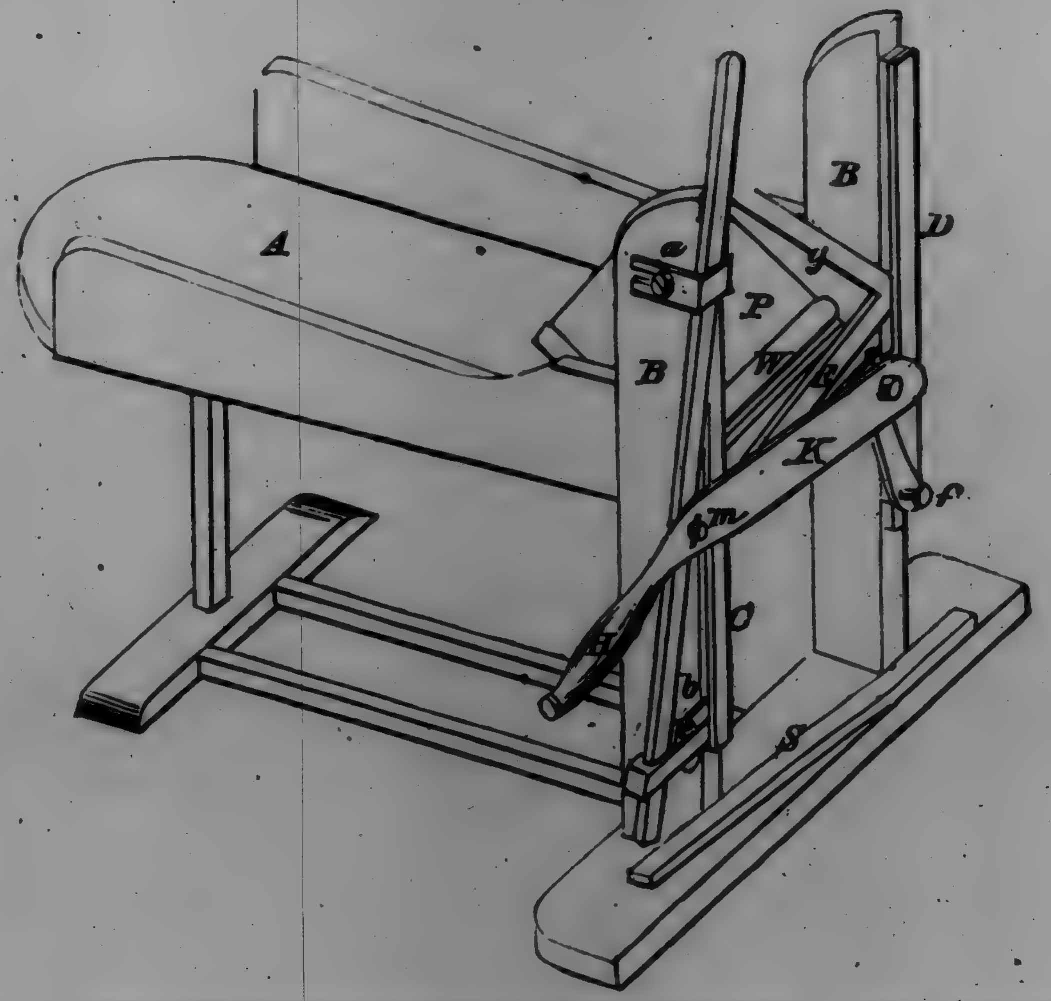

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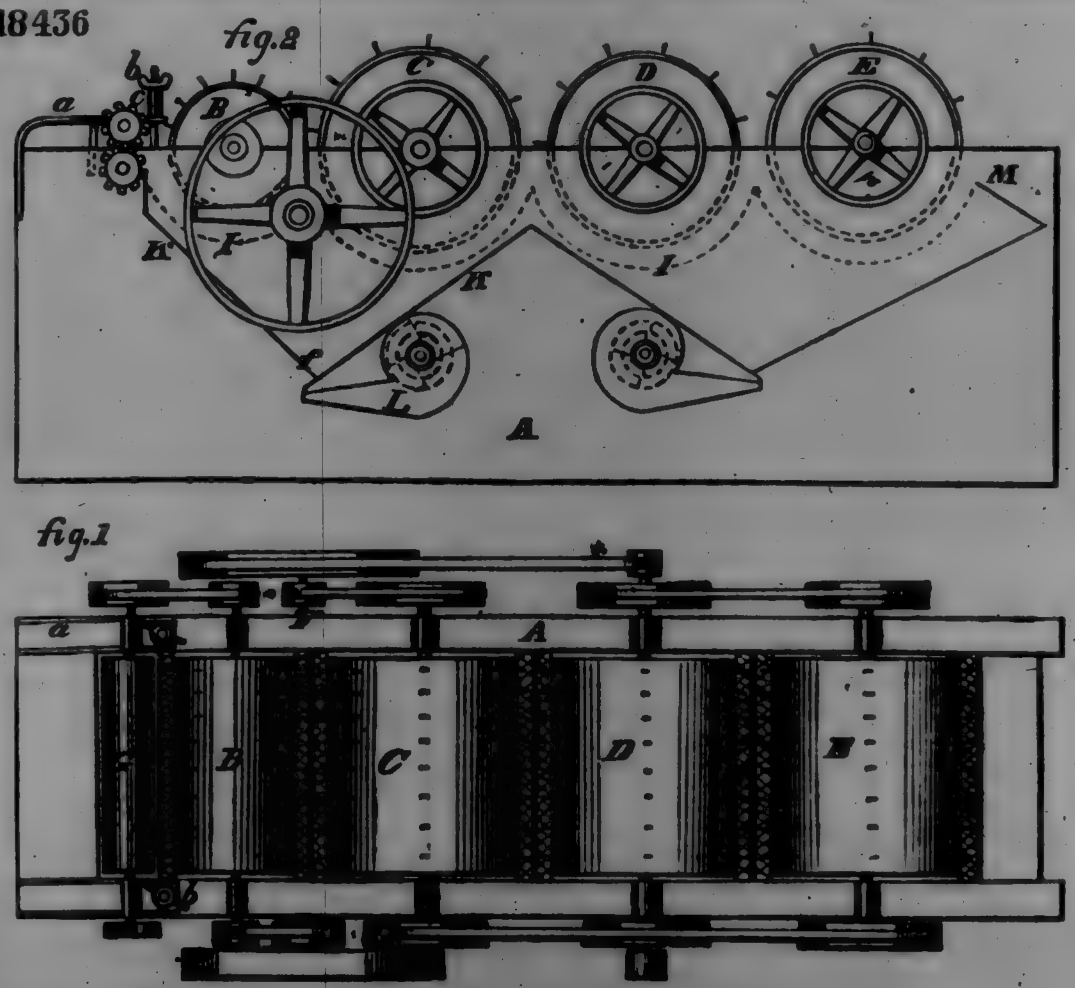

ANNUAL REPORT OF THE COMMISSIONER OF PATENTS

VOL 2 1857

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35th Congress, 1st Session. } SENATE. { Ex. Doc. No. 30.

REPORT

OF THE

COMMISSIONER OF PATENTS

FOR THE YEAR 1857.

U. S. Patent office

ARTS AND MANUFACTURES,

IN THREE VOLUMES.

VOLUME III.

WASHINGTON
WILLIAM A. HARRIS PRINTER.
1858.

IN THE SENATE OF THE UNITED STATES.

March 10, 1858.

Resolved, That there be printed, in addition to the usual number, ten thousand copies of the Annual Report of the Commissioner of Patents on Arts and Manufactures, for the year 1857, eight thousand of which for the use of the Senate, and two thousand for the Interior Department for the purposes of official distribution; and that the Secretary of the Interior be, and he is hereby, directed to cause the Annual Report of the Commissioner of Patents on Mechanics, hereafter to be made to the Senate, to be prepared and submitted in such manner as that the plates and drawings necessary to illustrate each subject shall be inserted, so as to comprise the entire report in one volume, not to exceed eight hundred pages.

Attest:

ASBURY DICKINS, *Secretary.*

By W. HICKEY, *Chief Clerk.*

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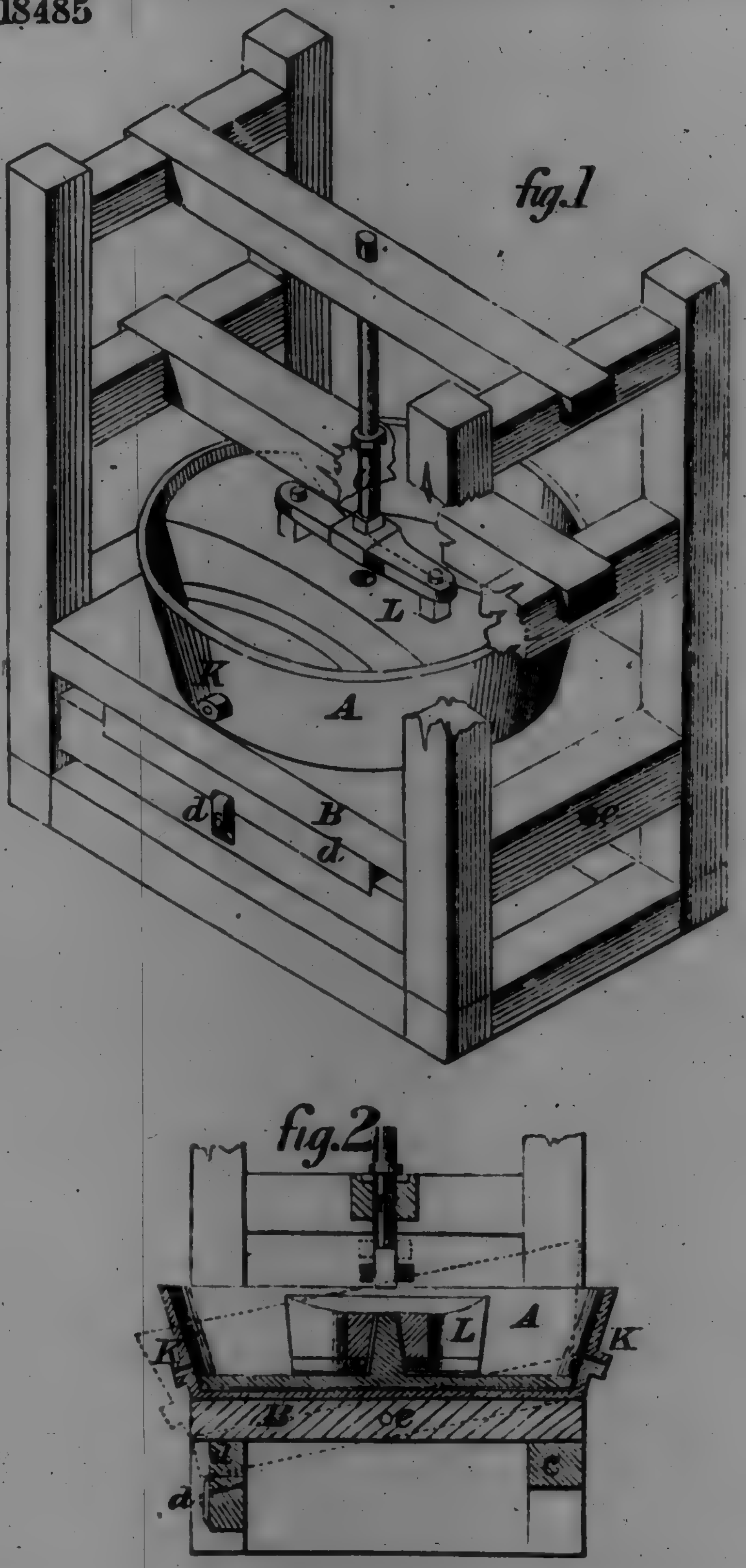

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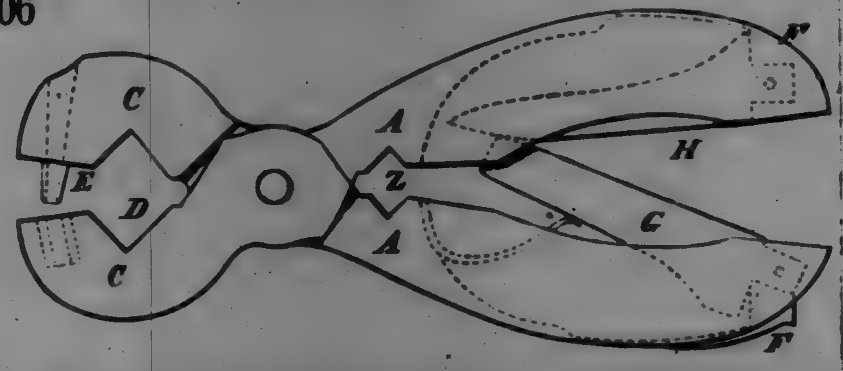

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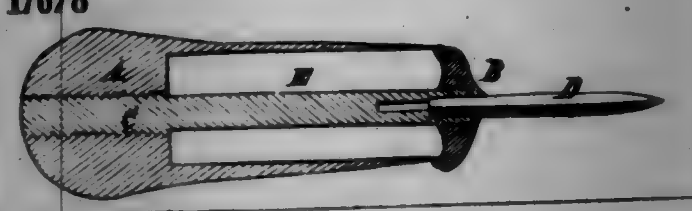

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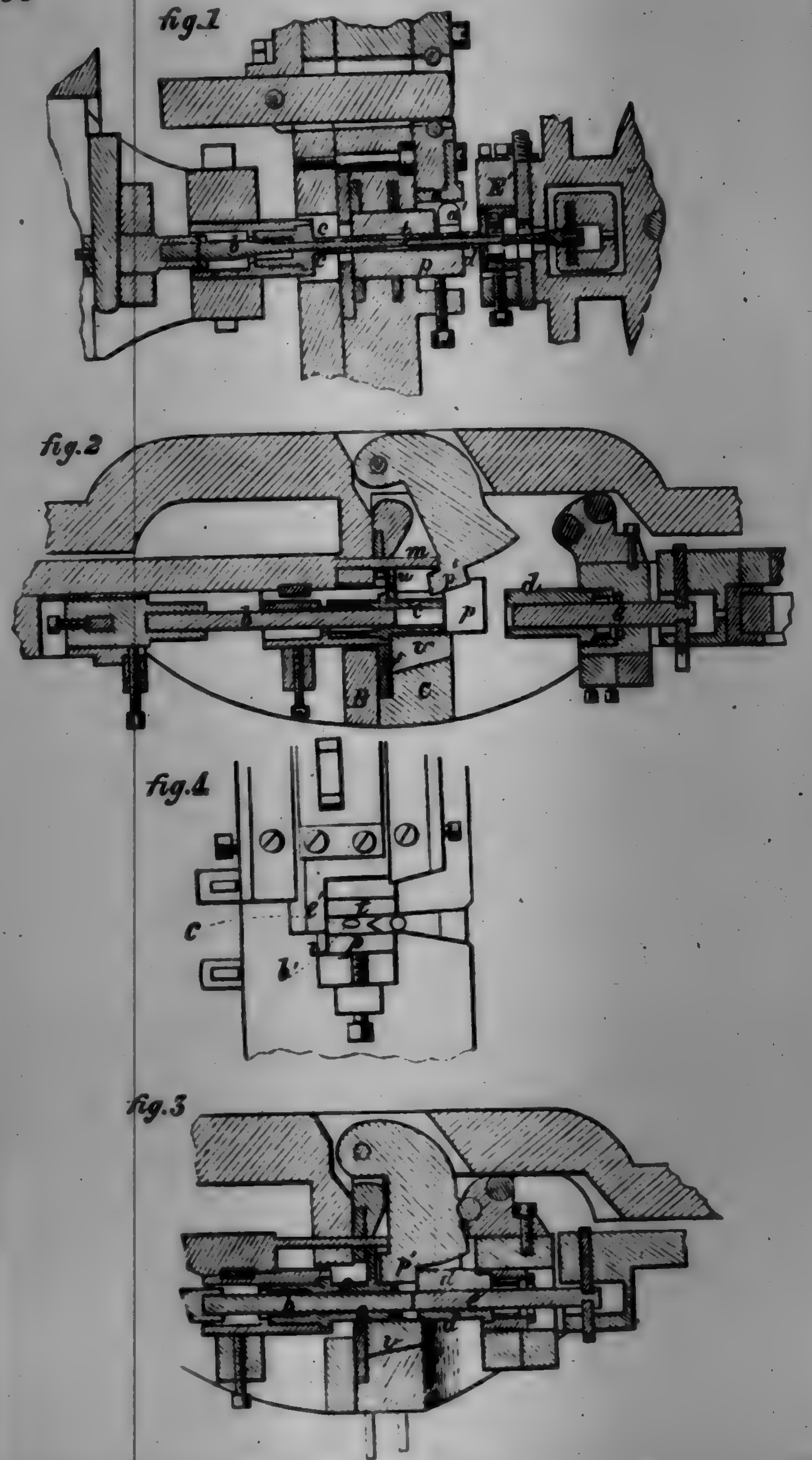

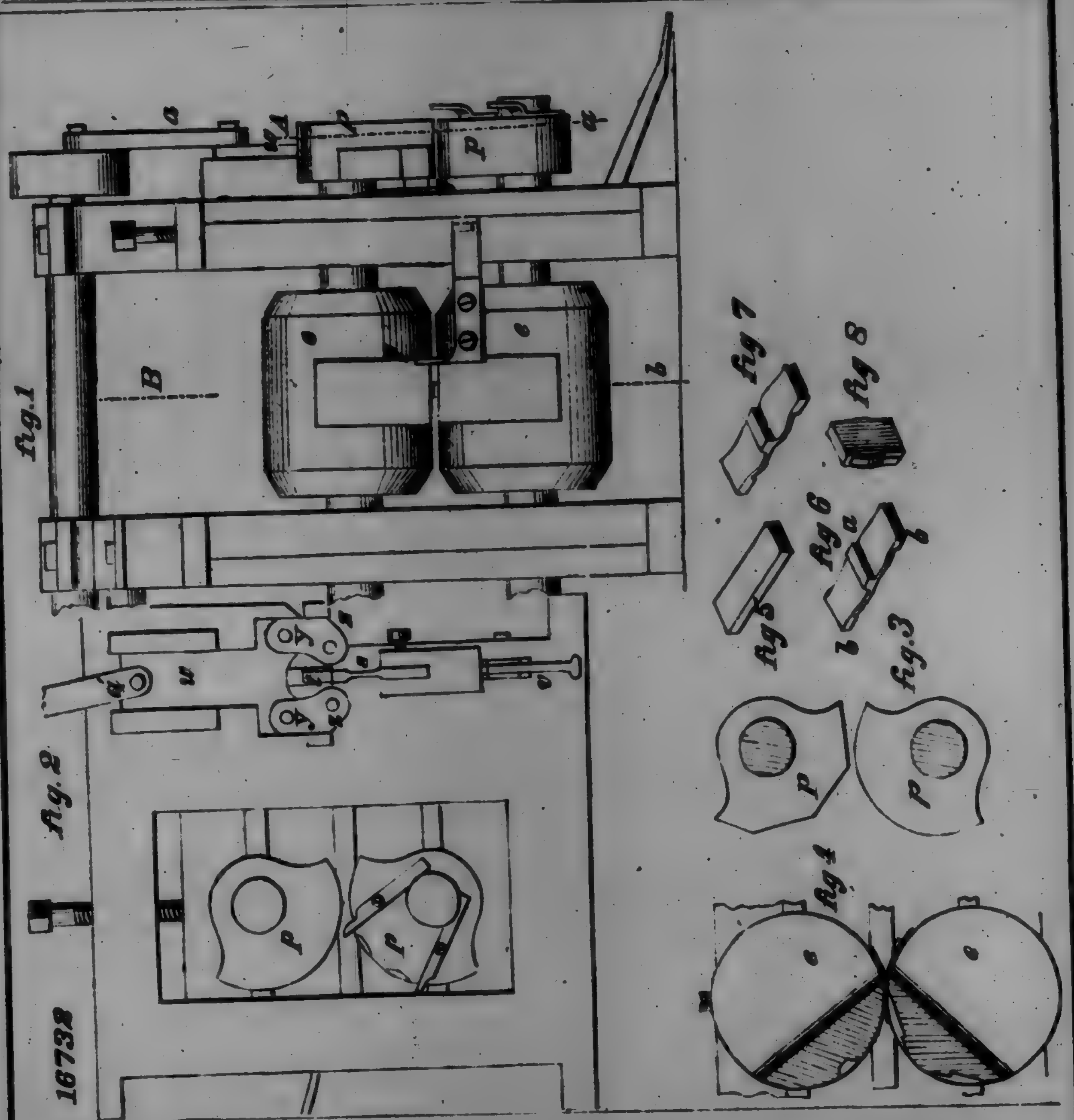

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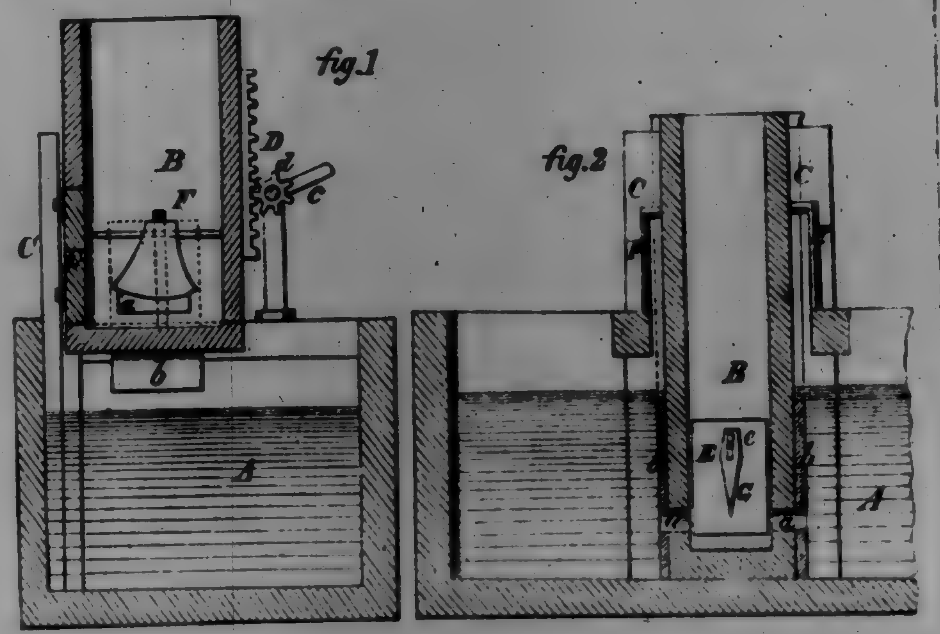

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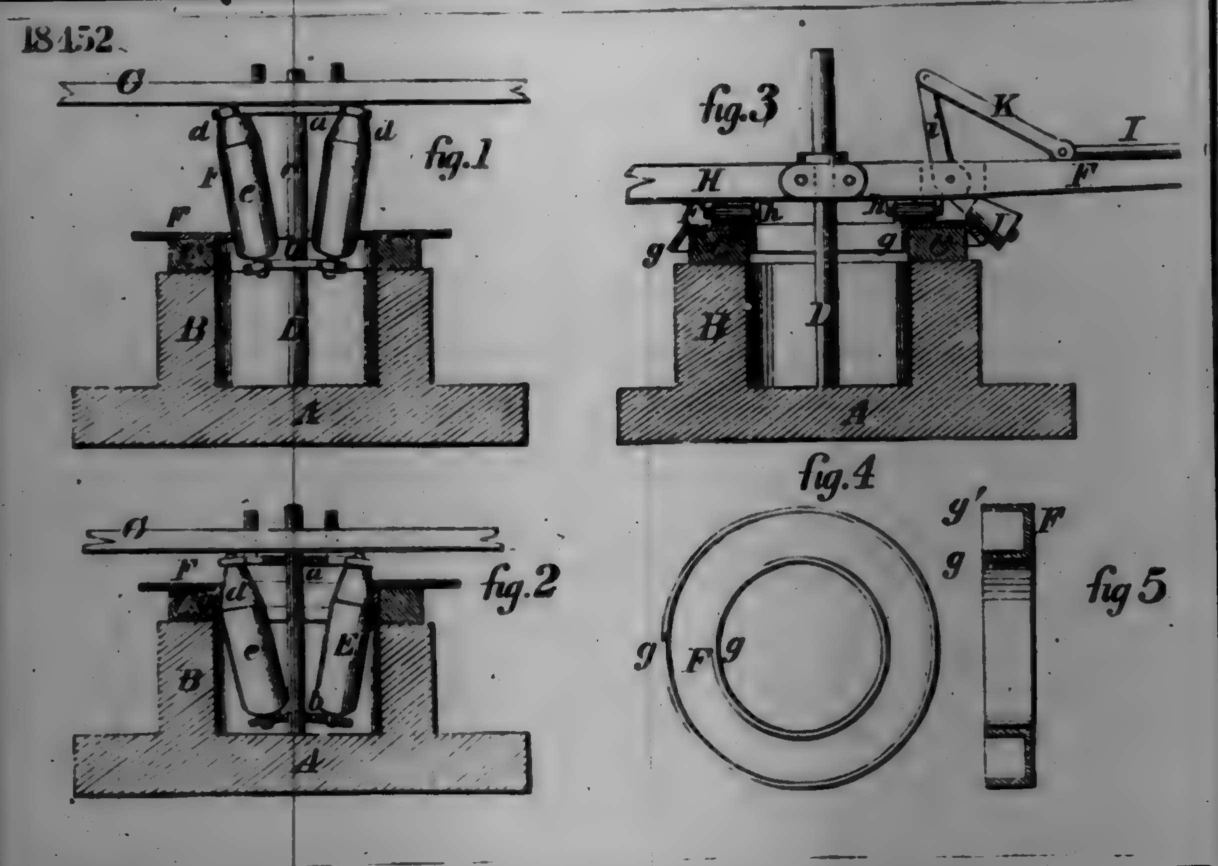

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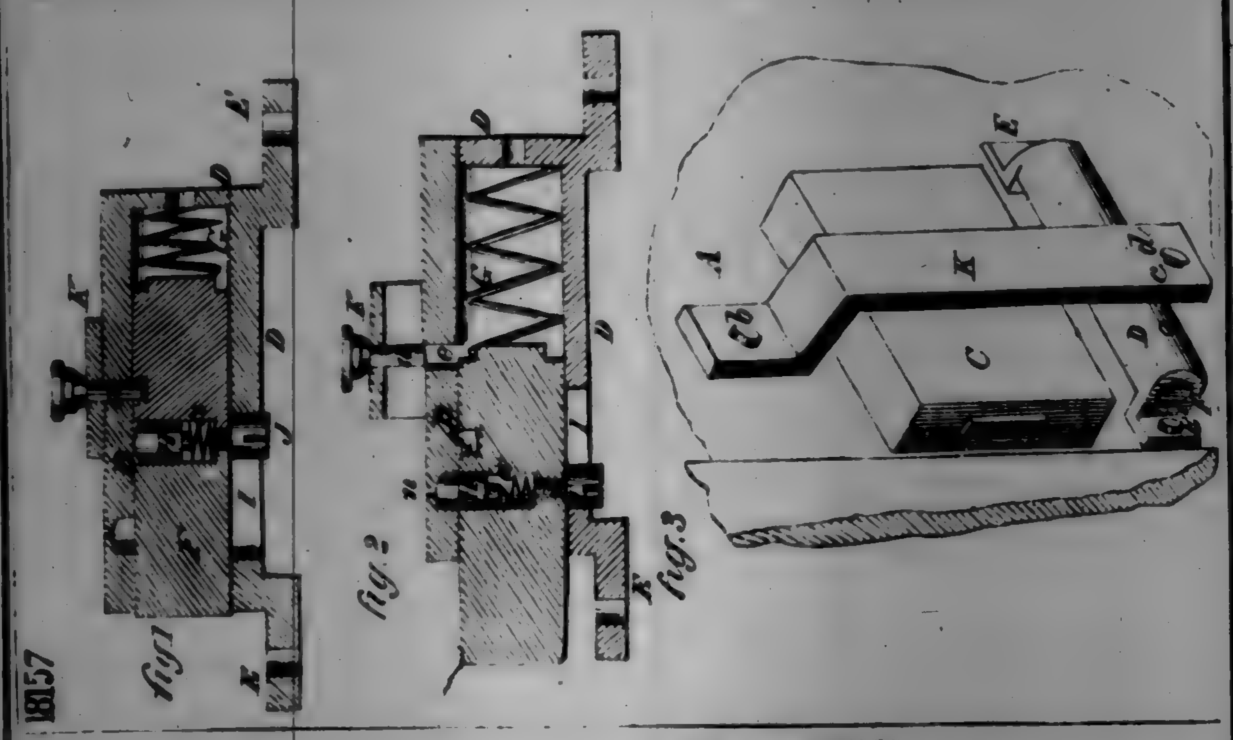

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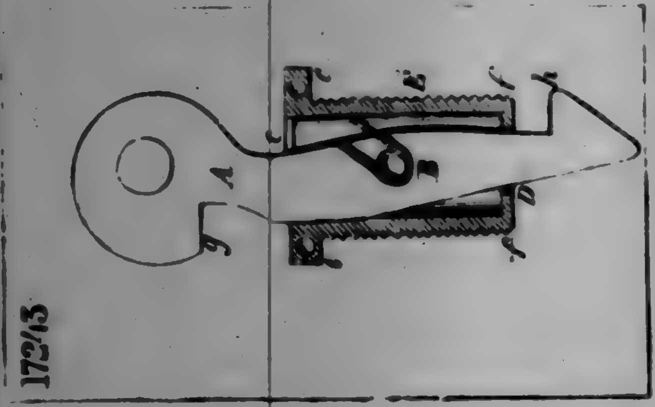

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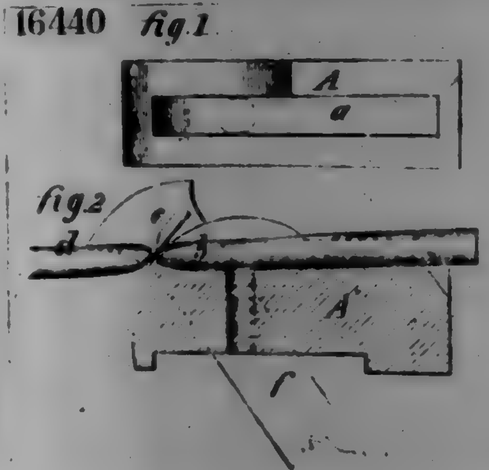

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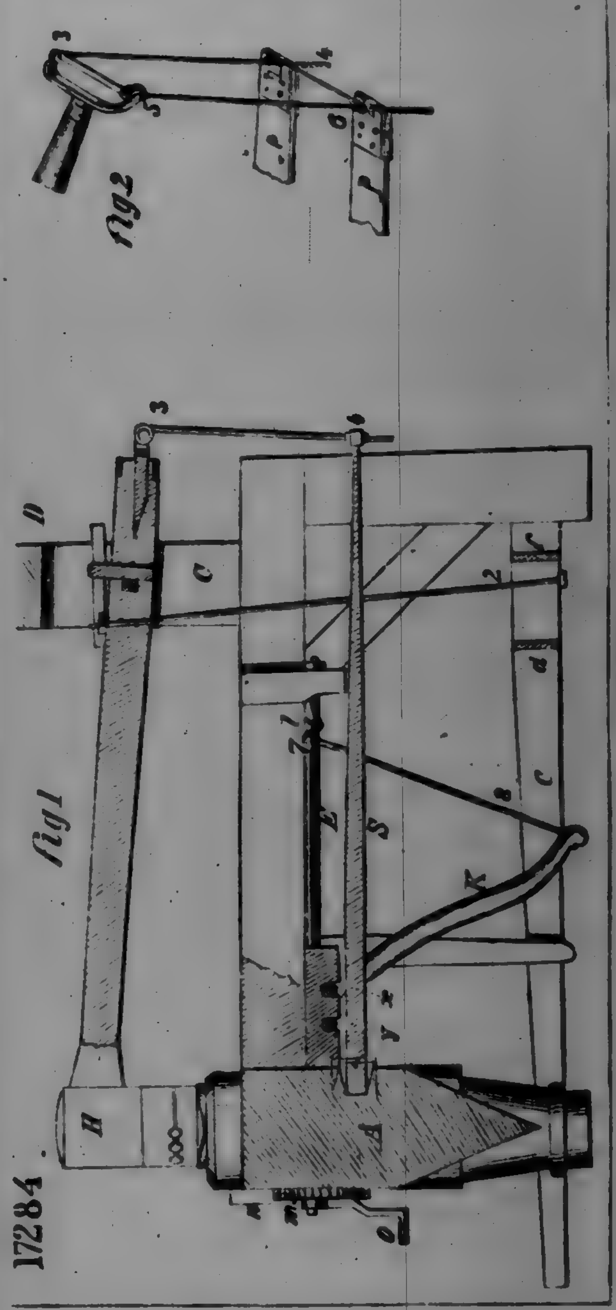

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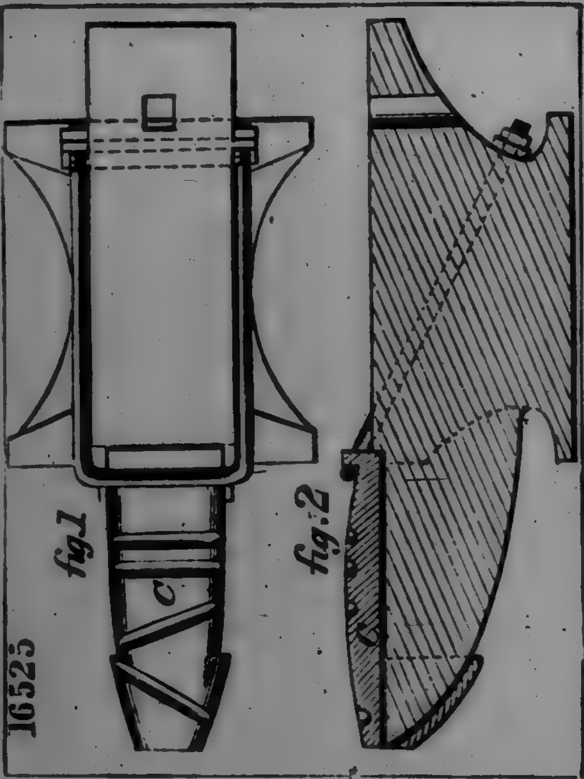

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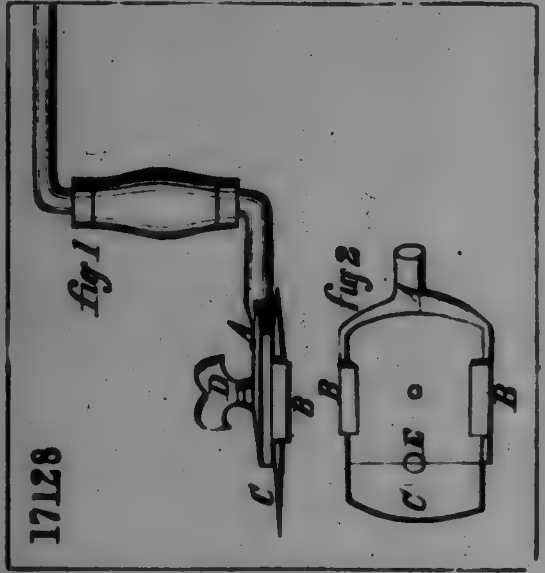

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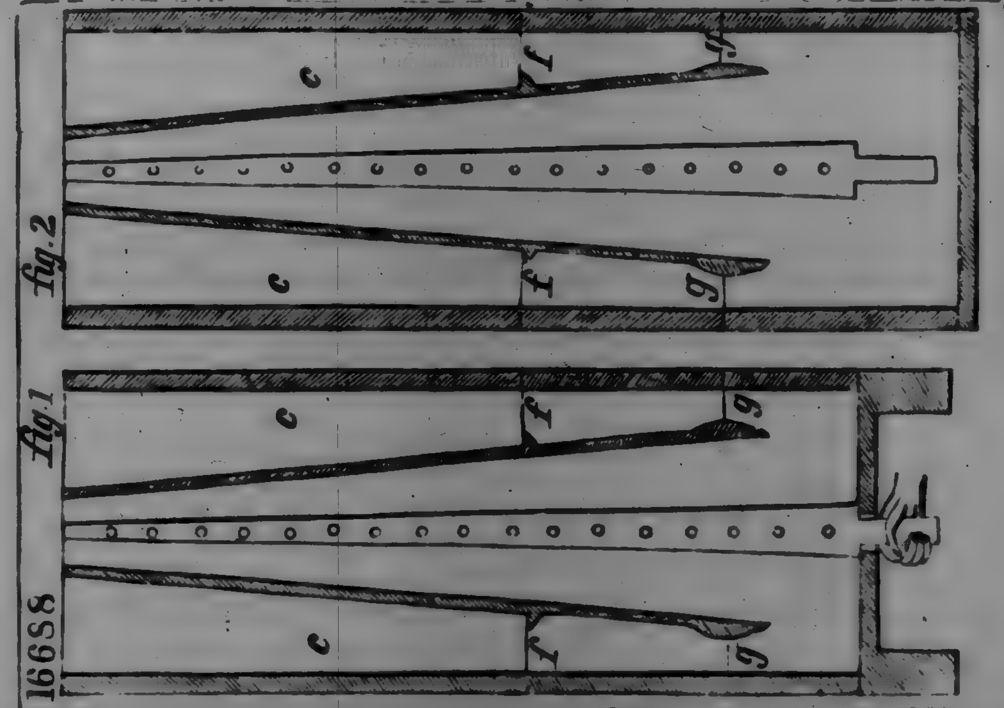

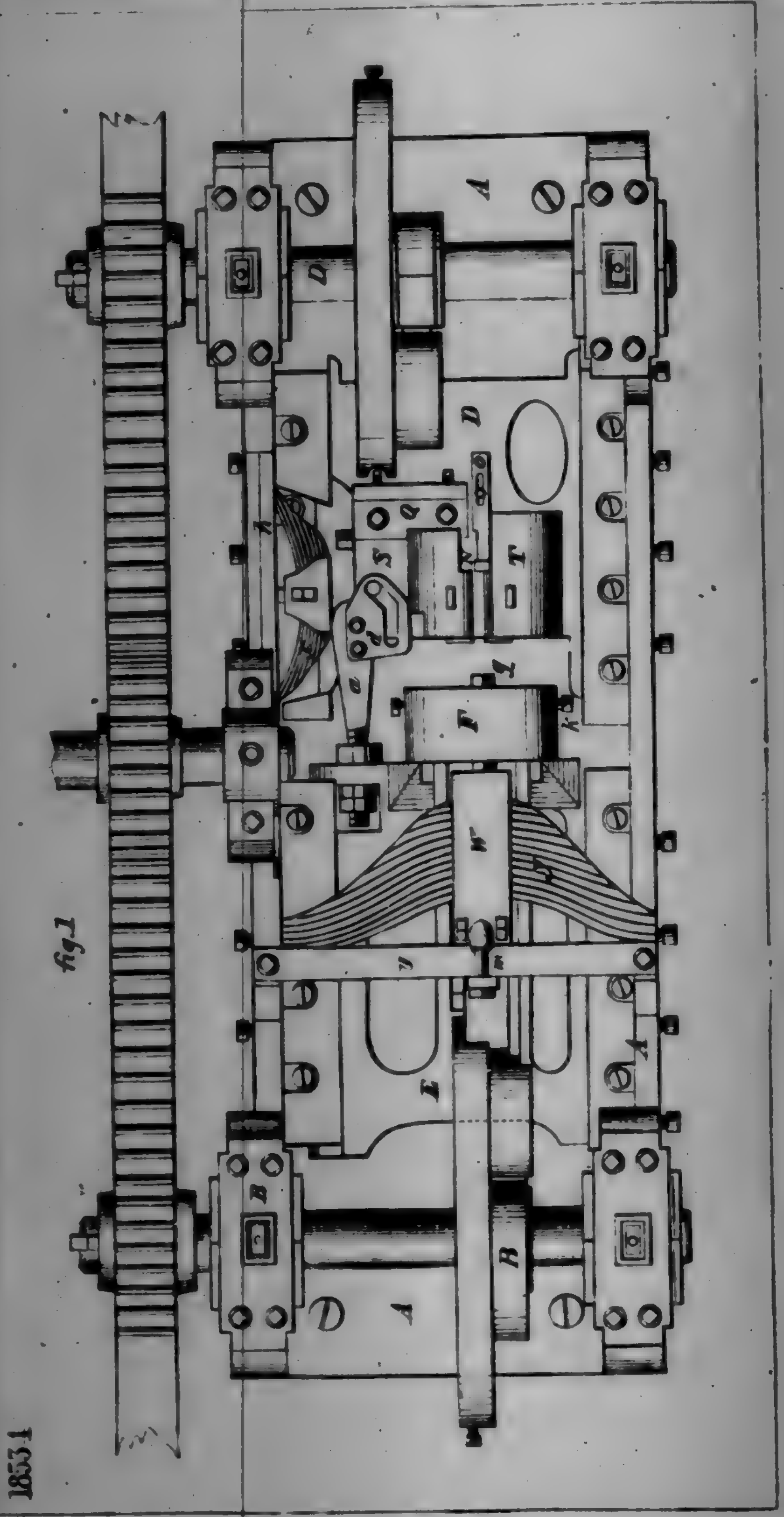
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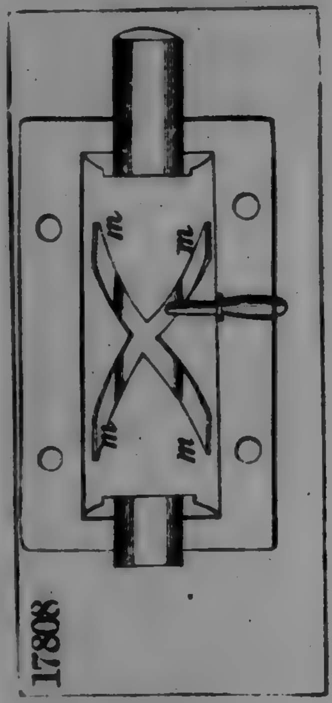
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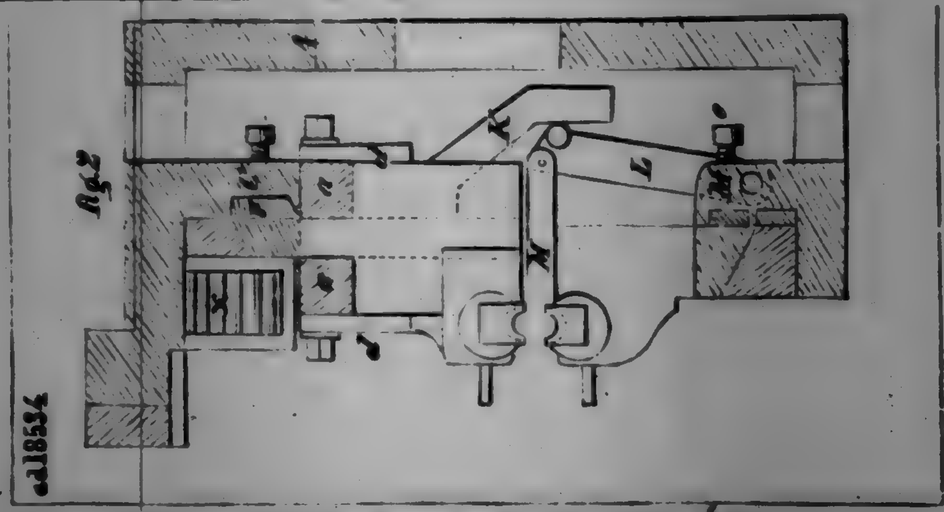
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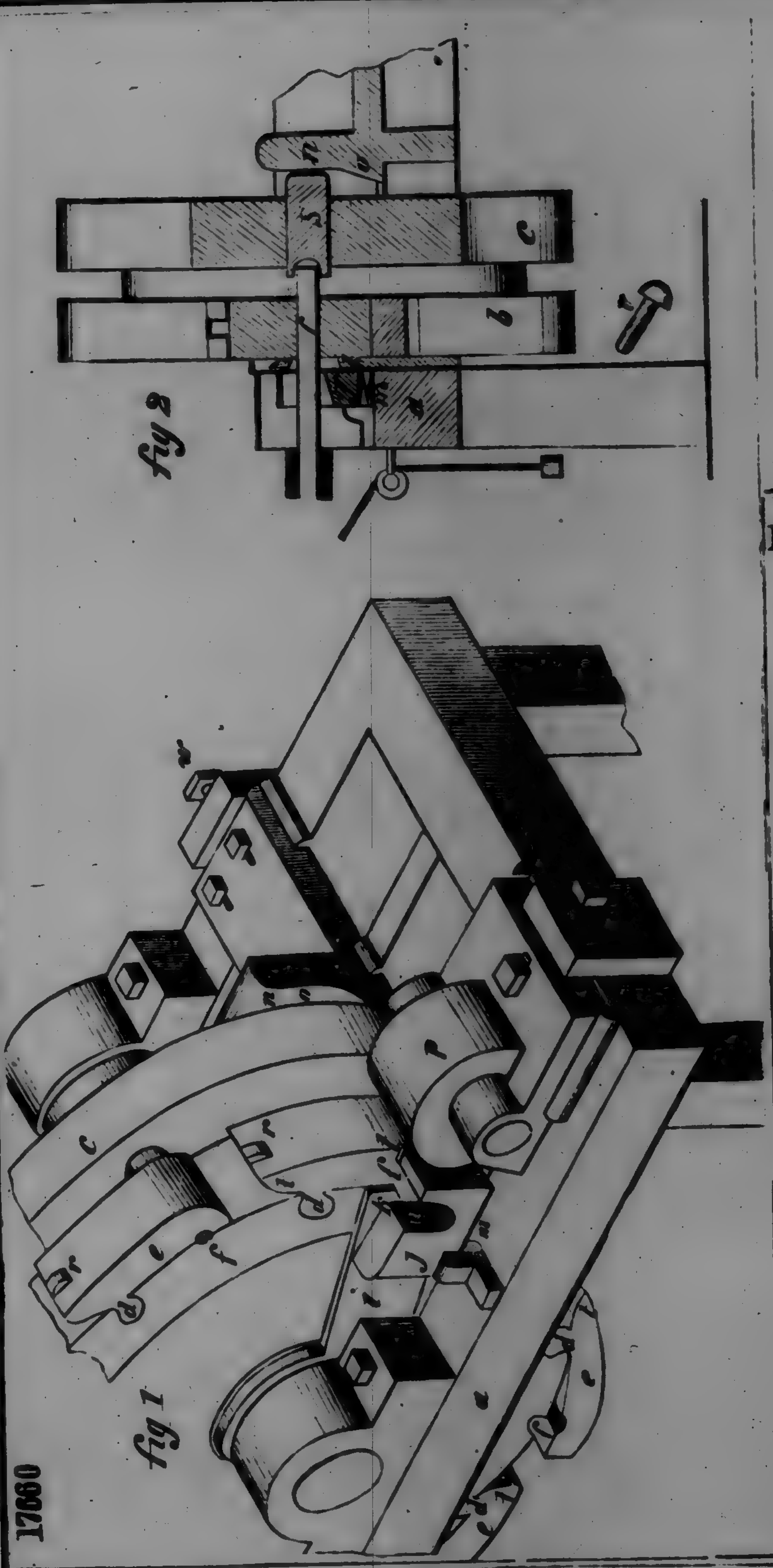
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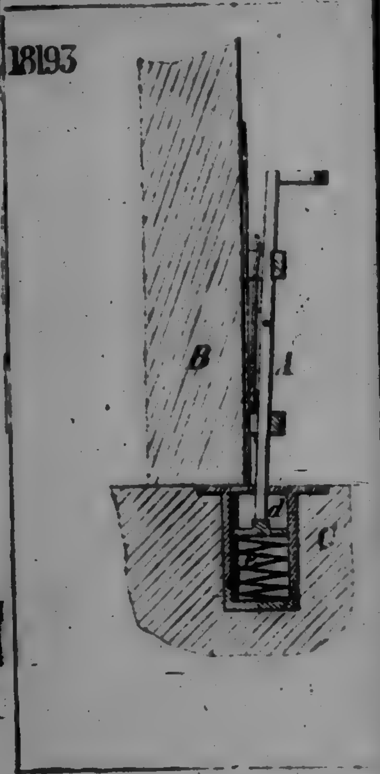
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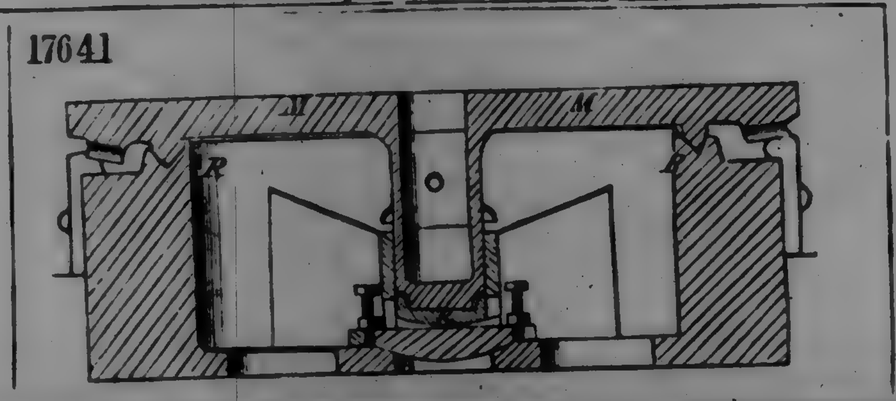
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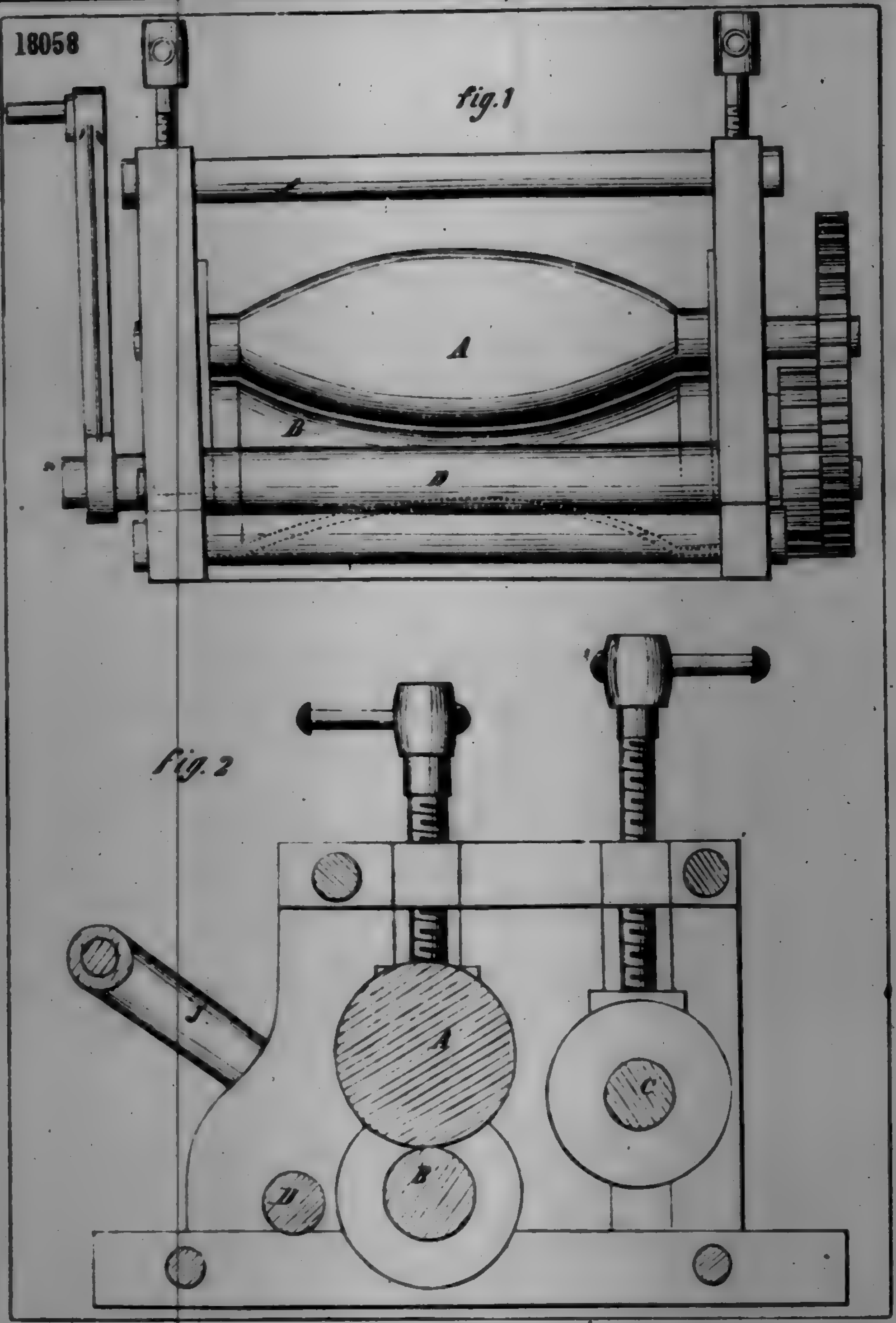

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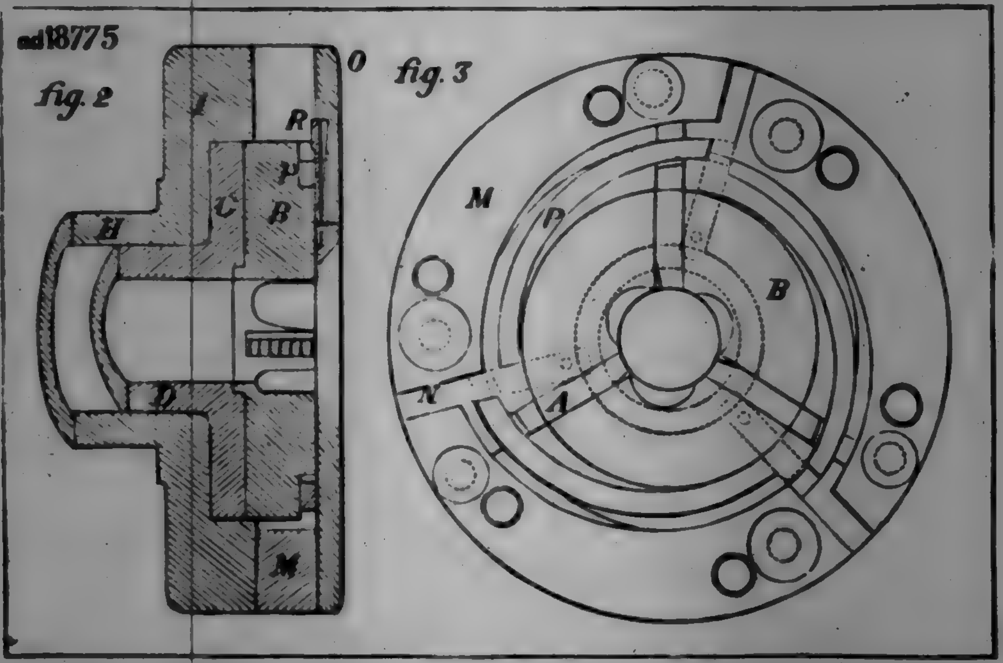

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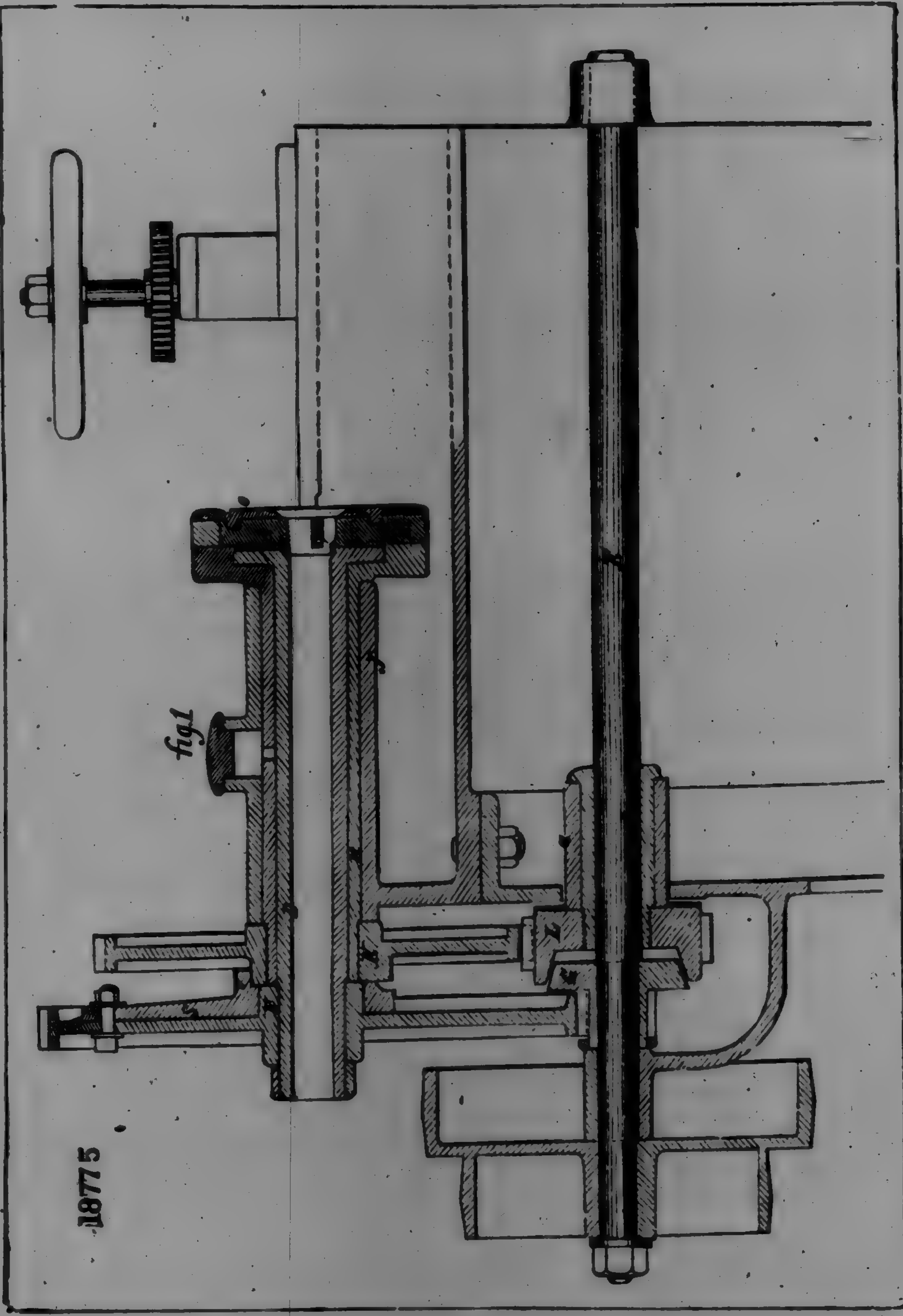

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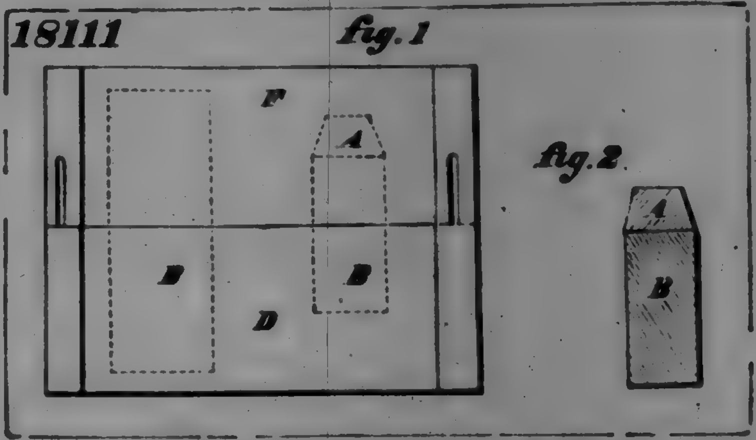

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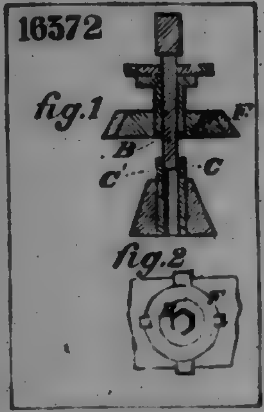

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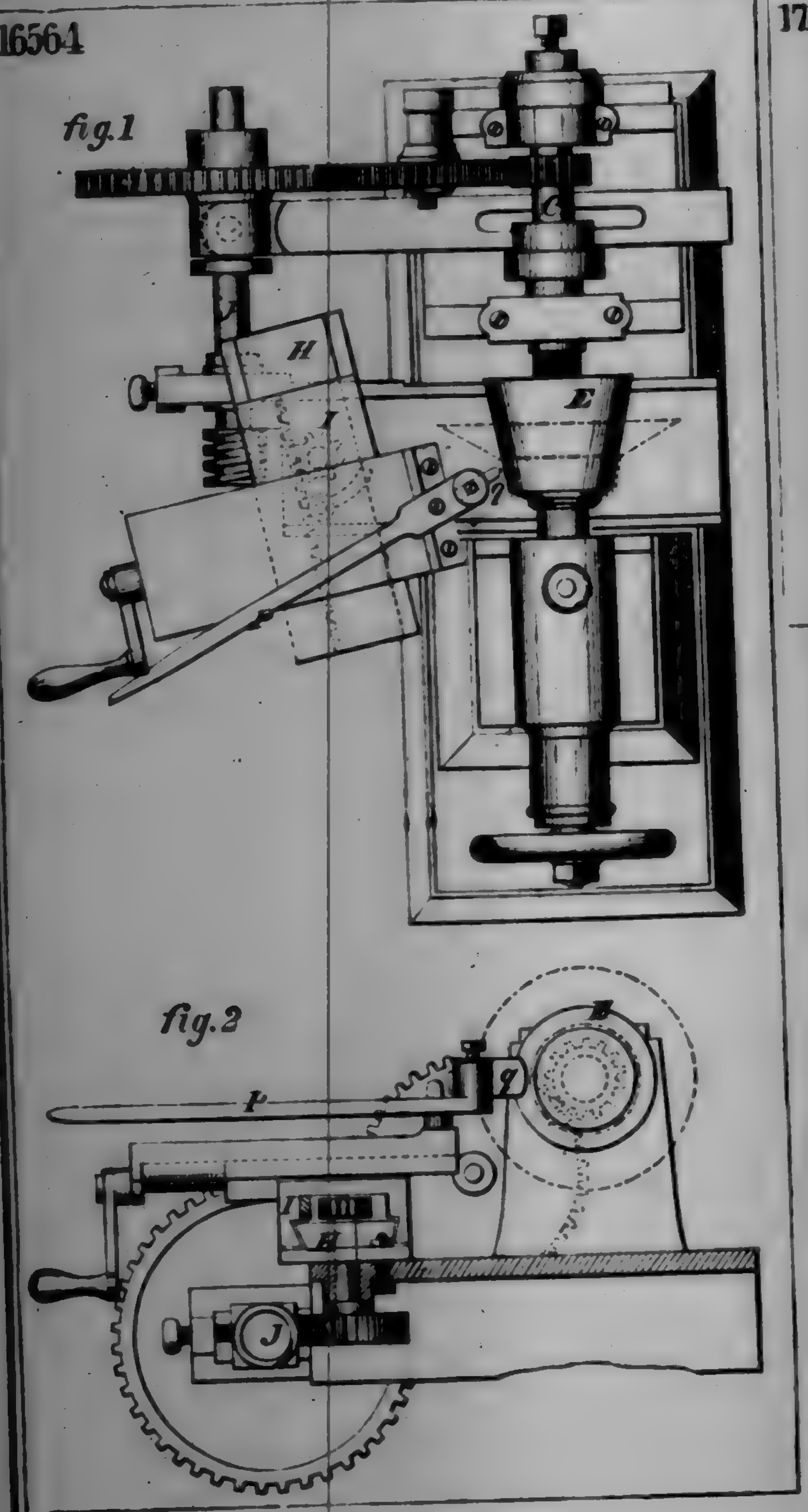

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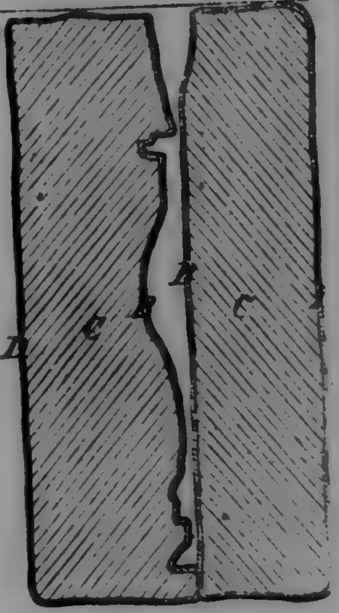

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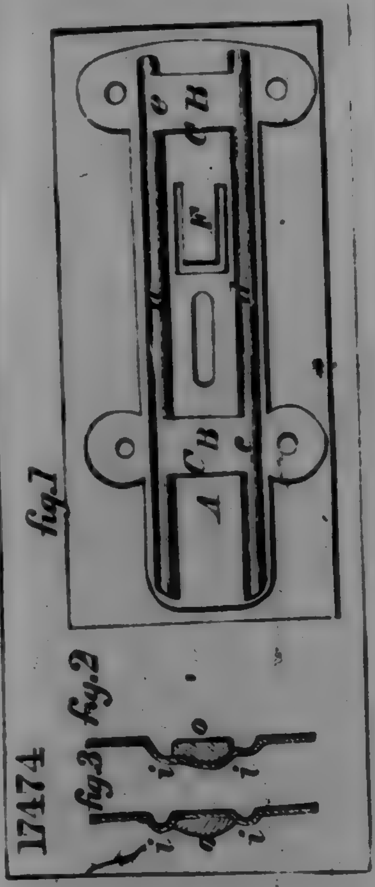

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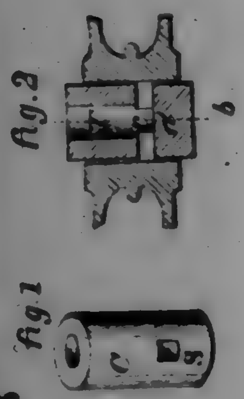

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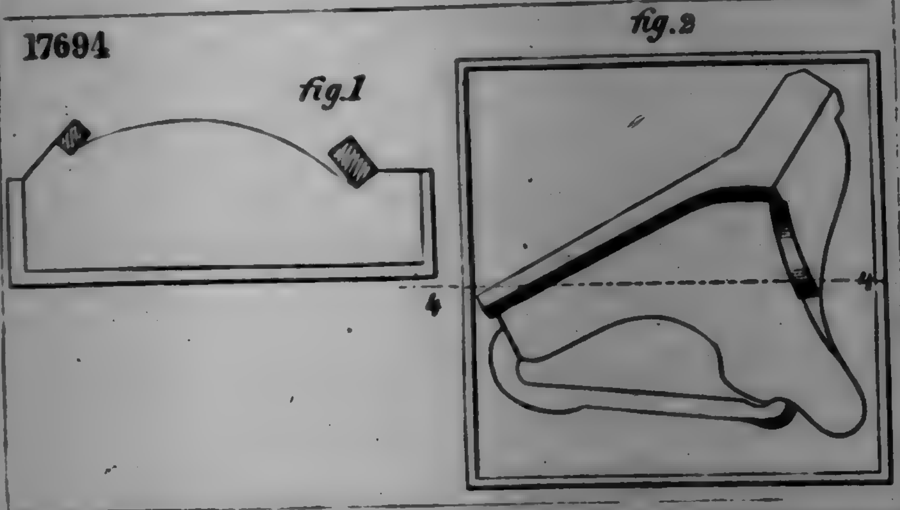

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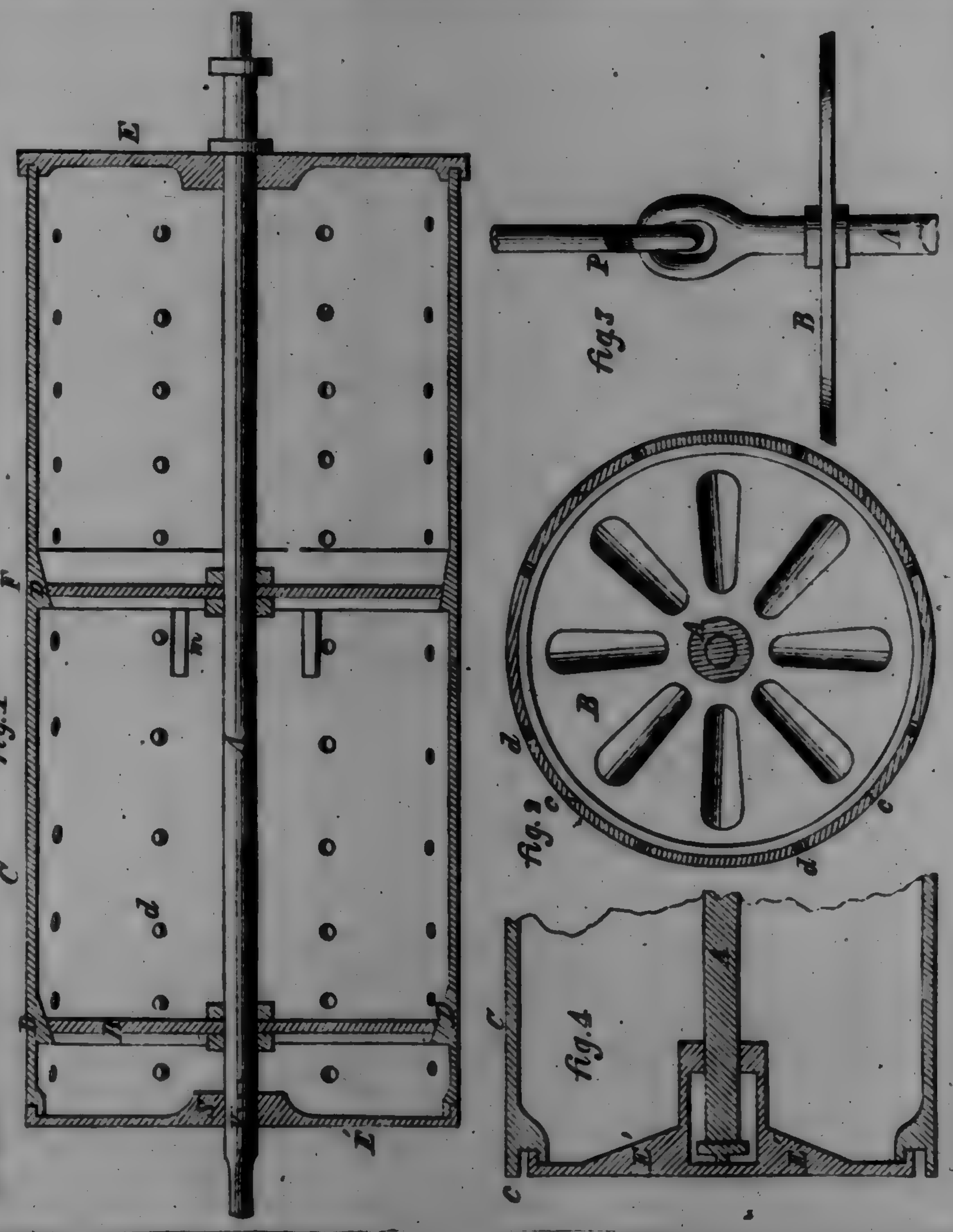

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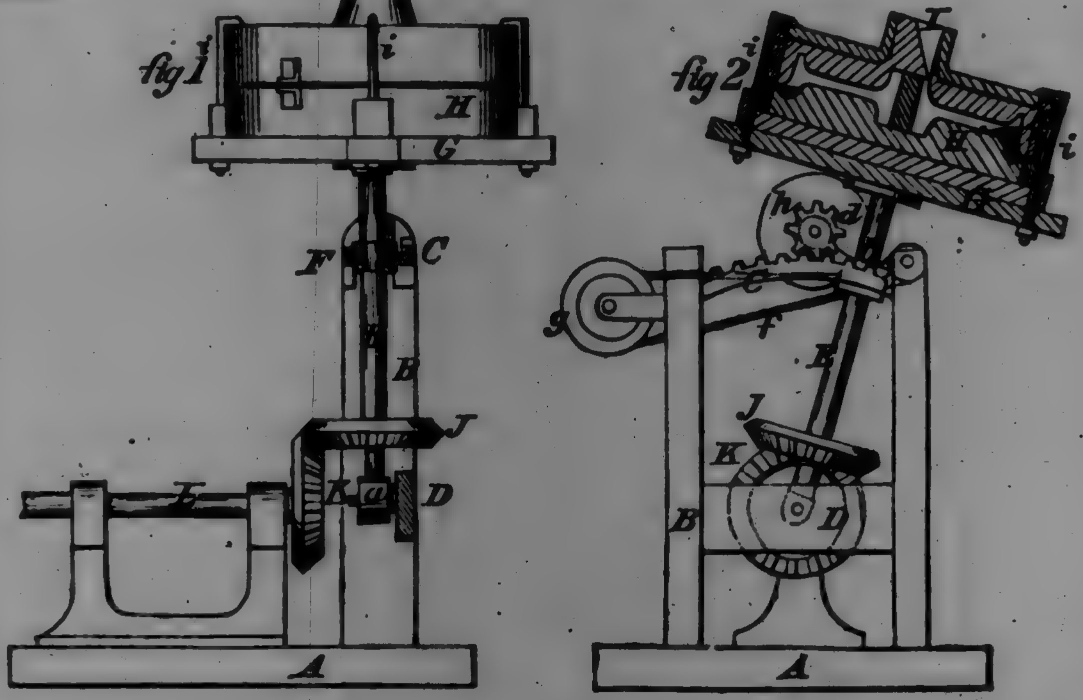

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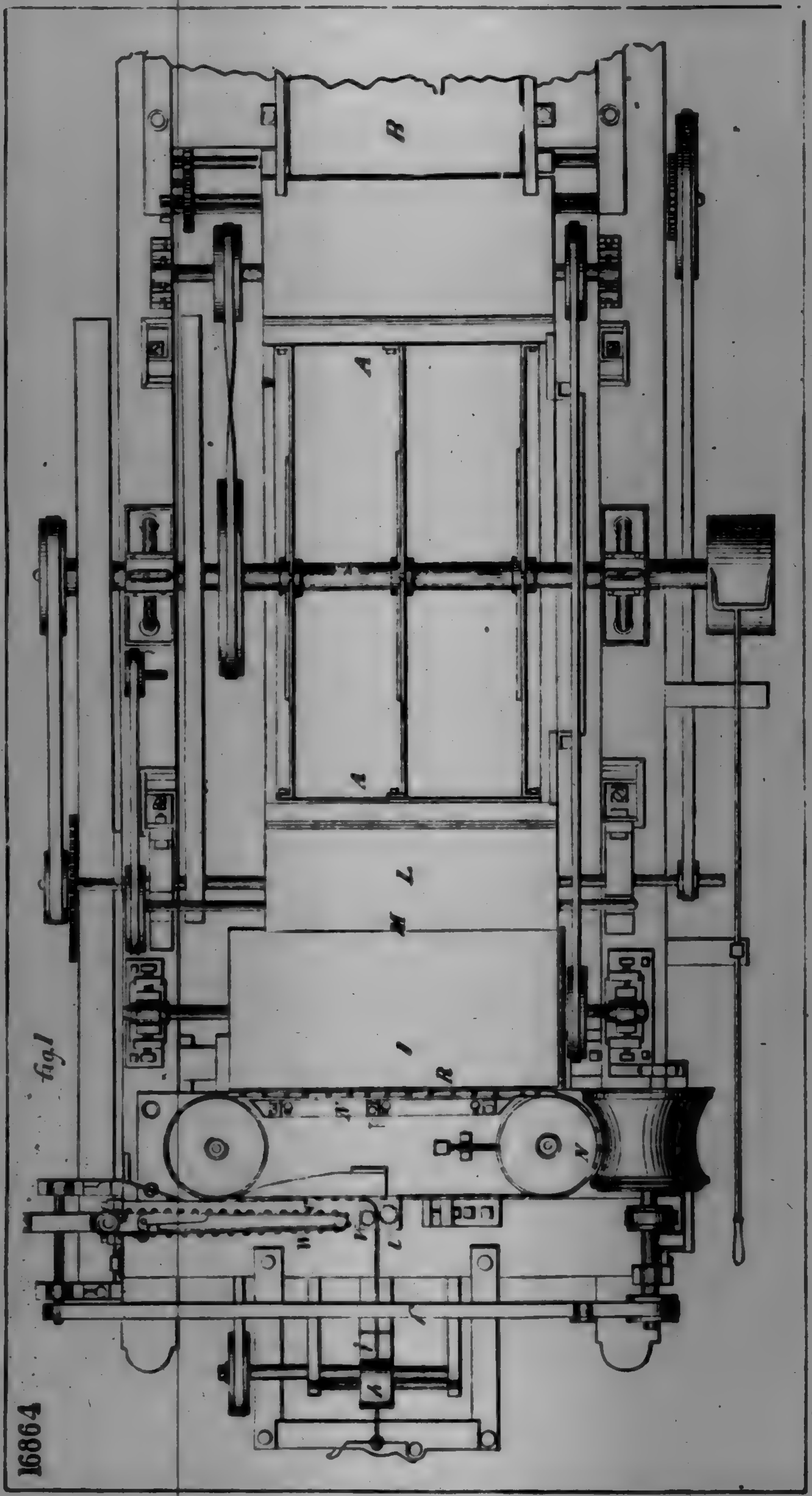

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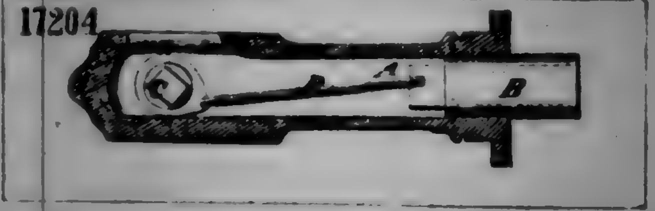

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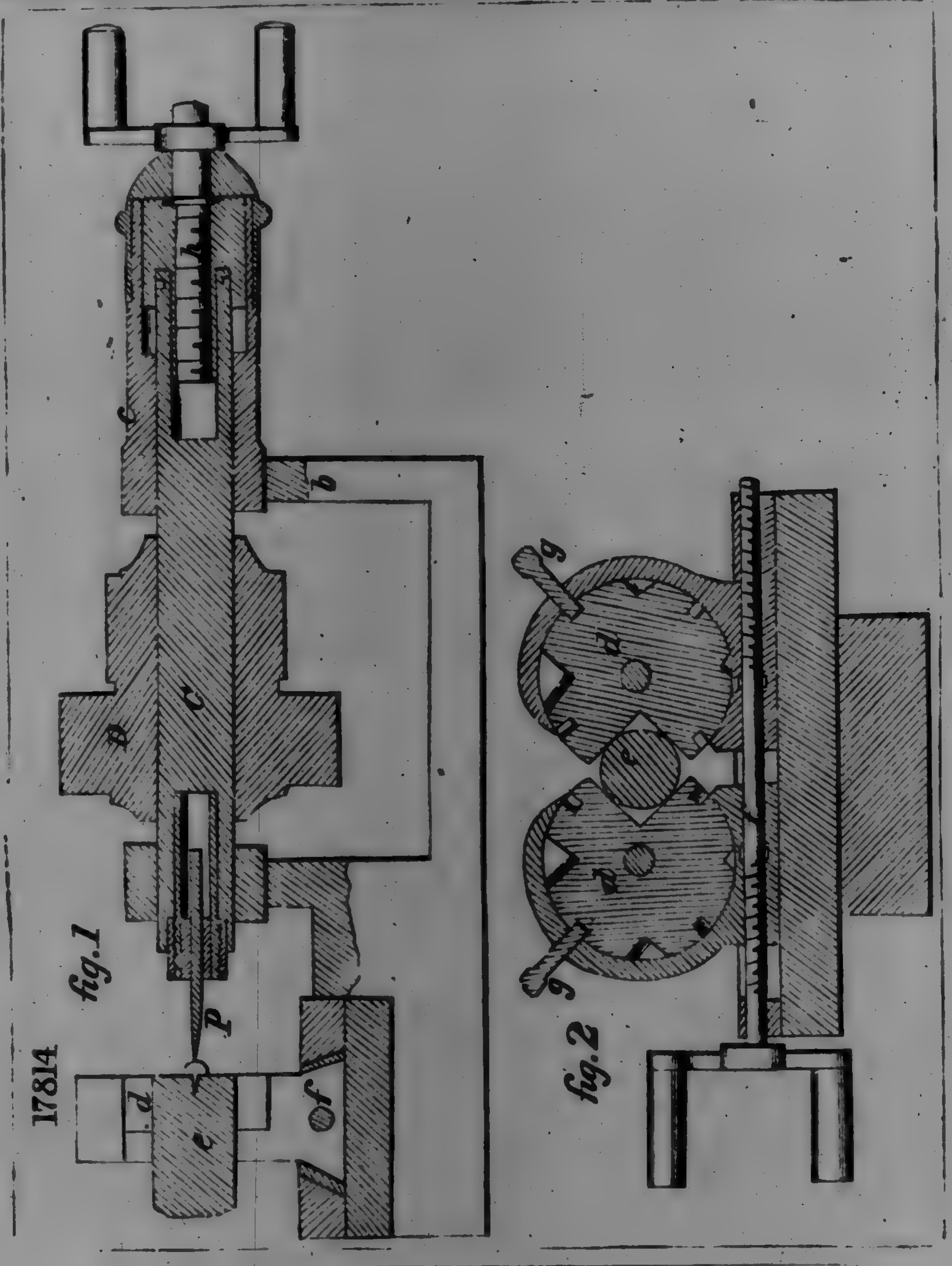

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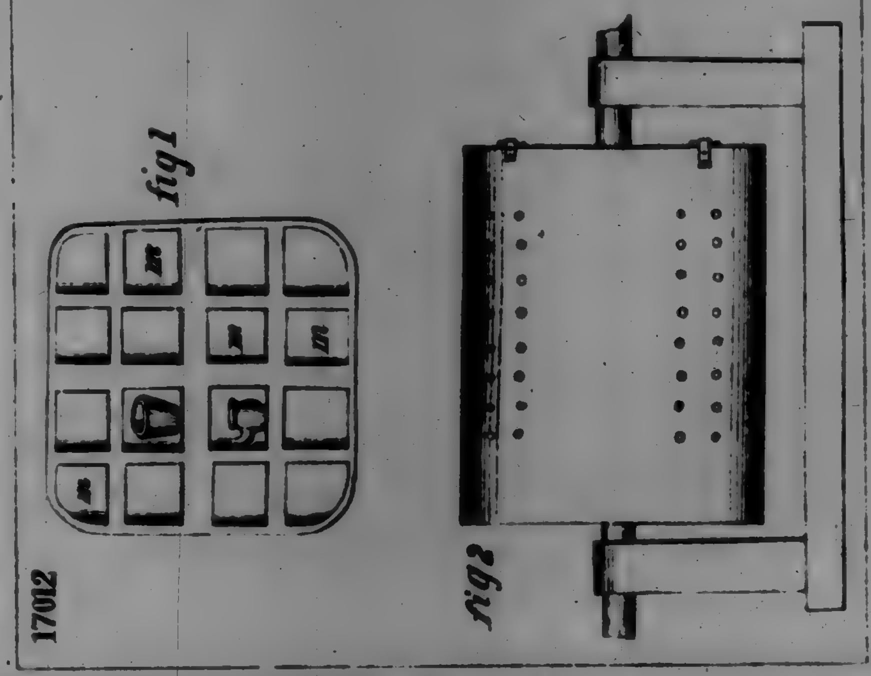

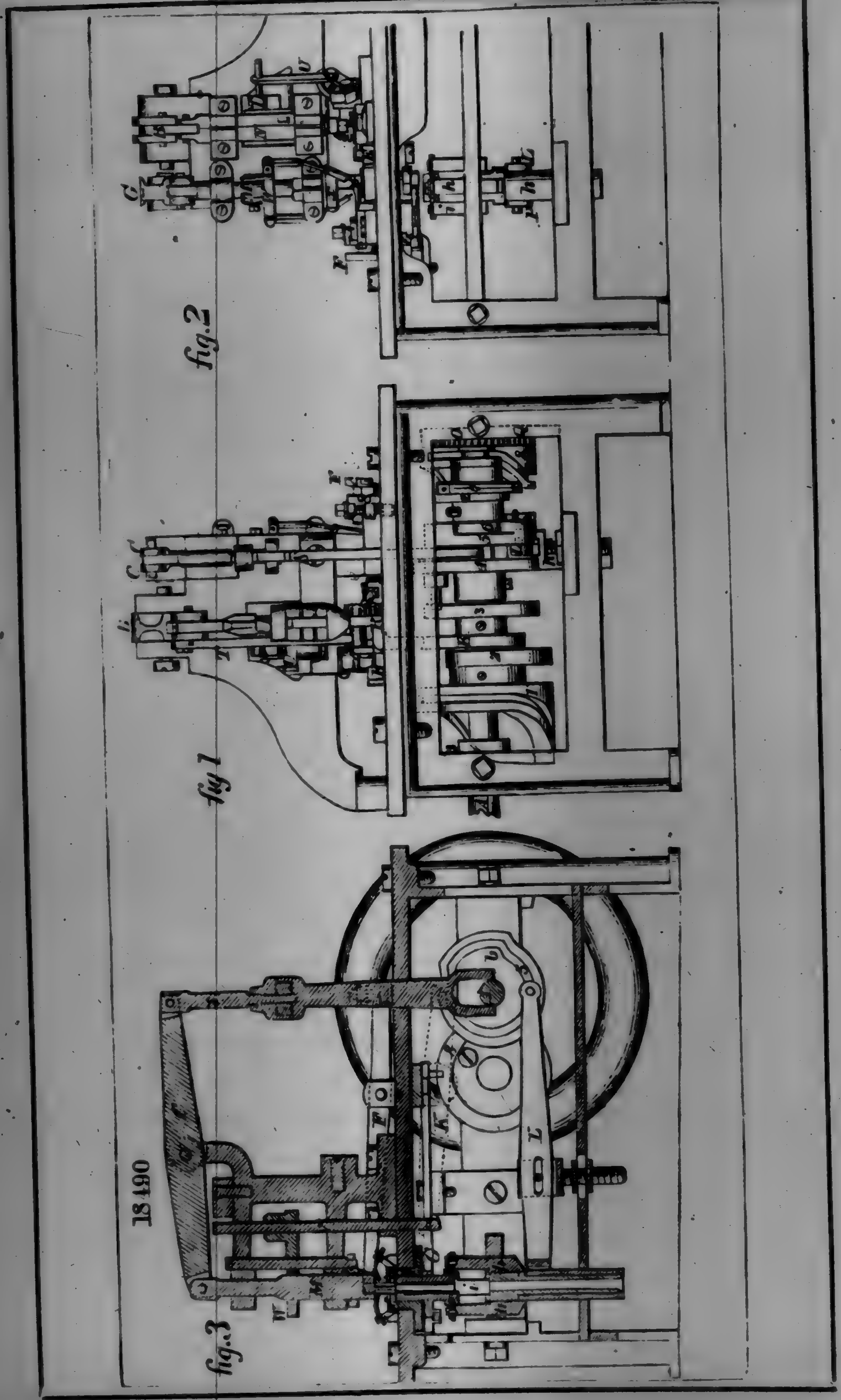
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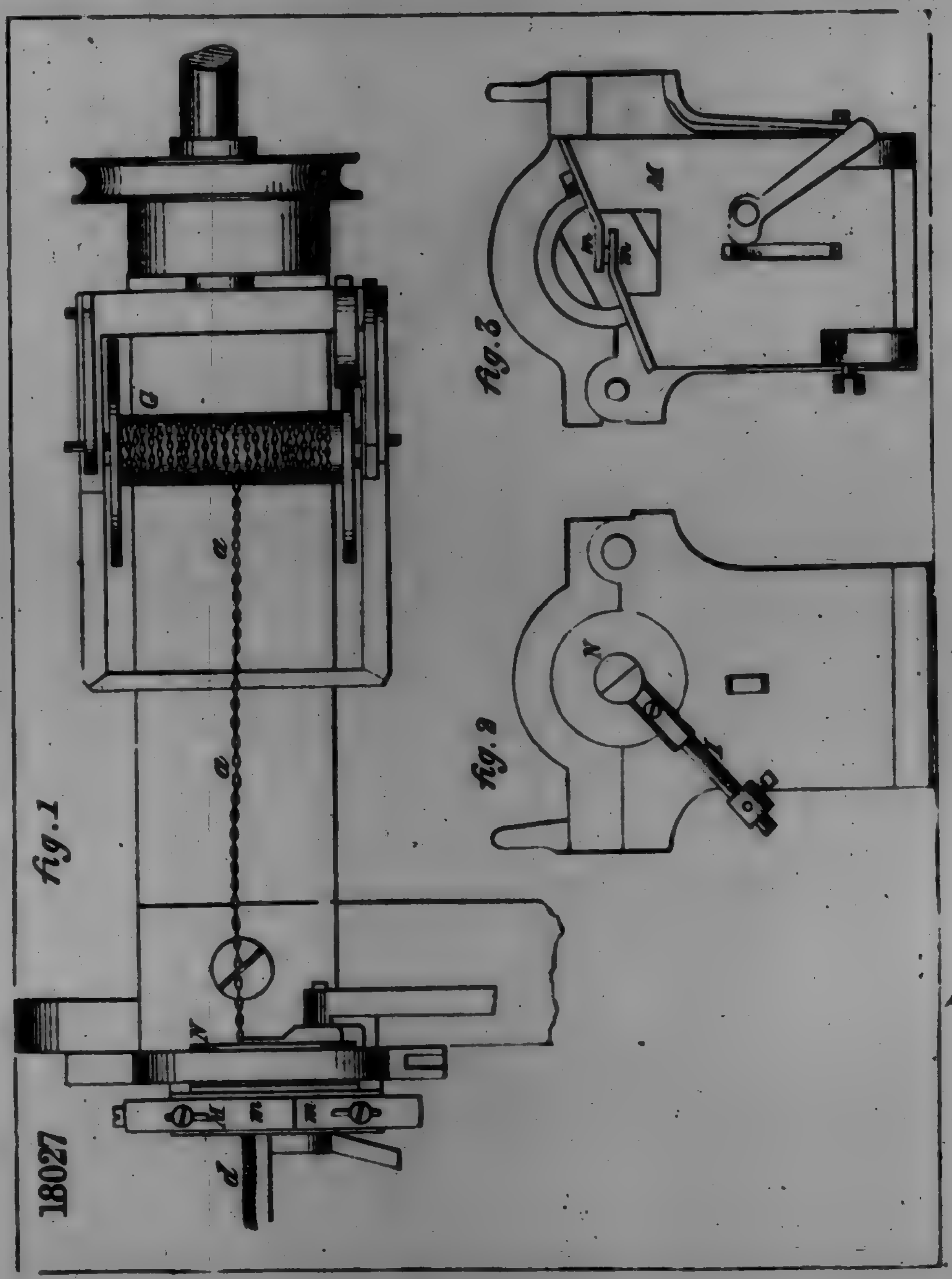
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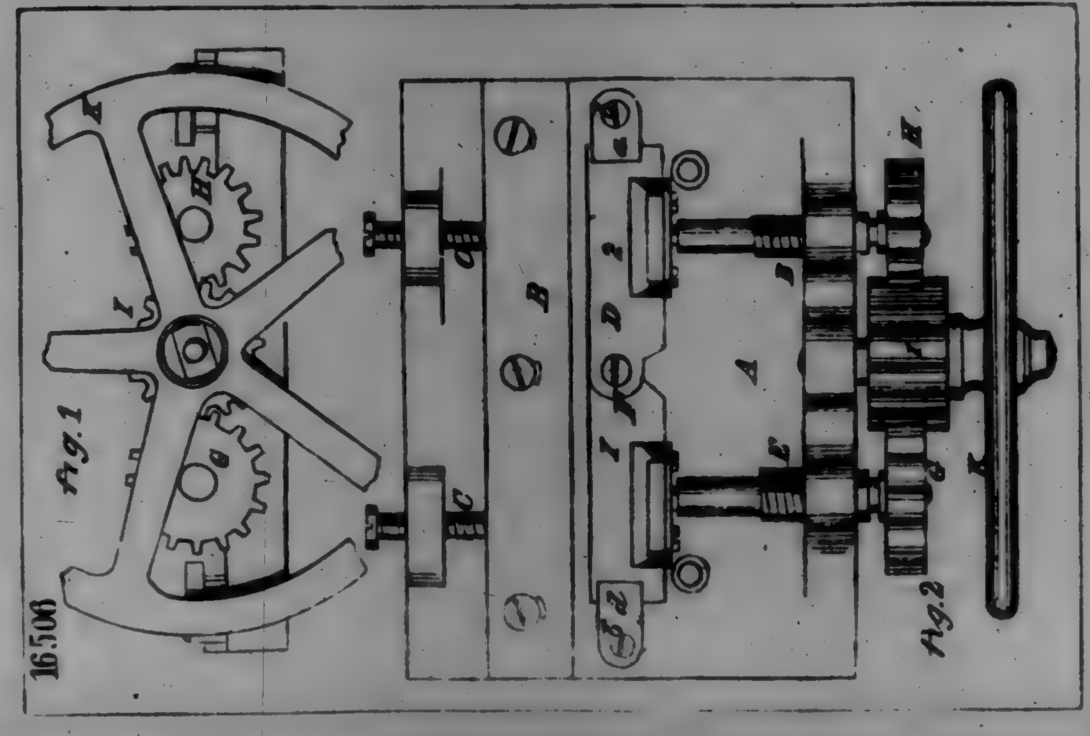
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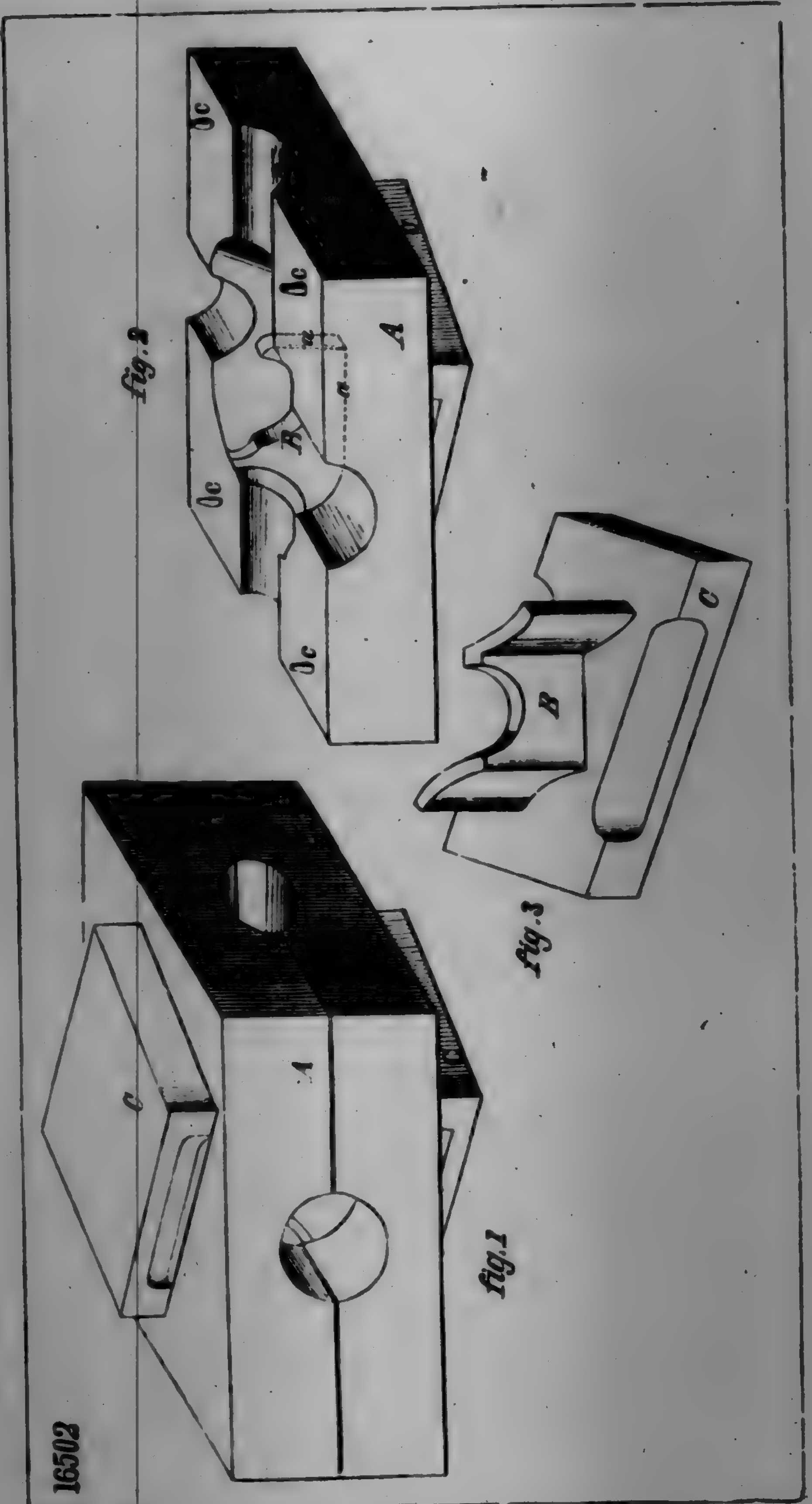
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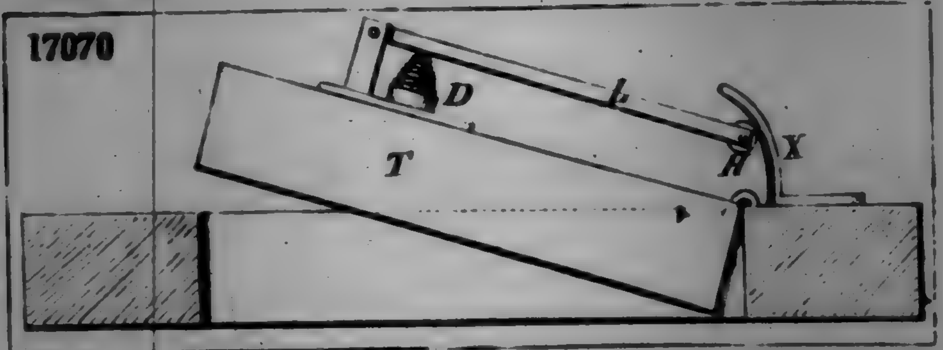
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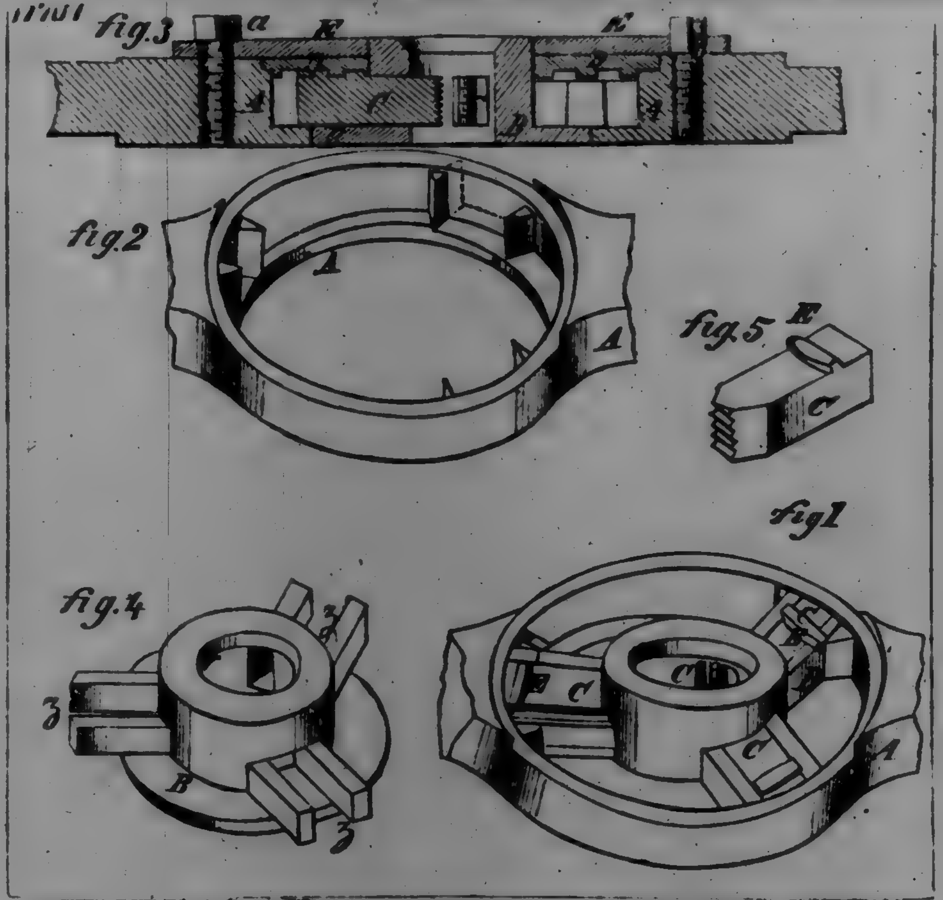
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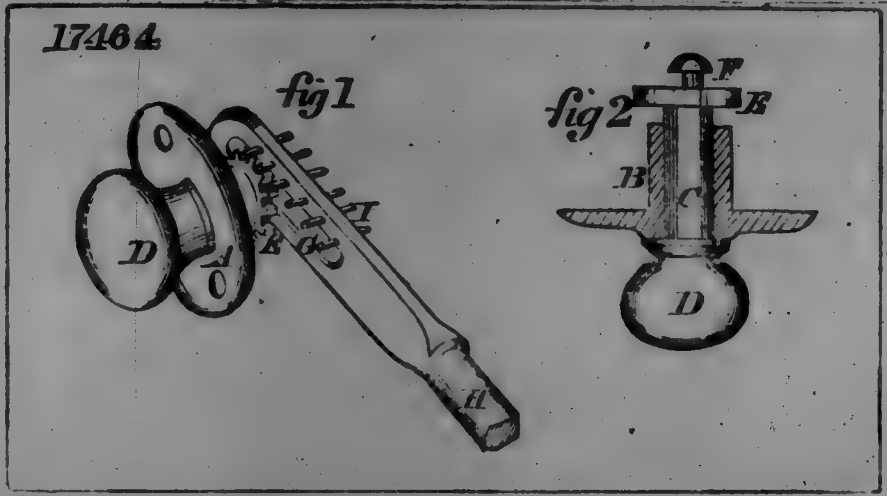
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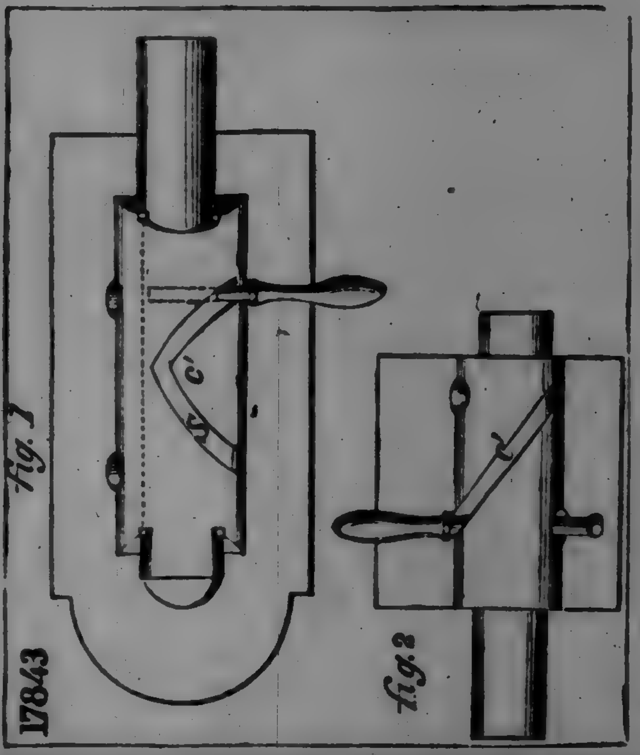
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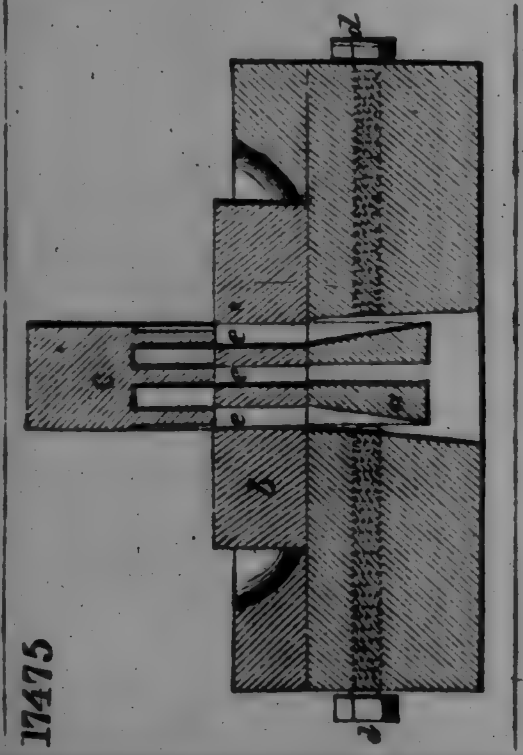
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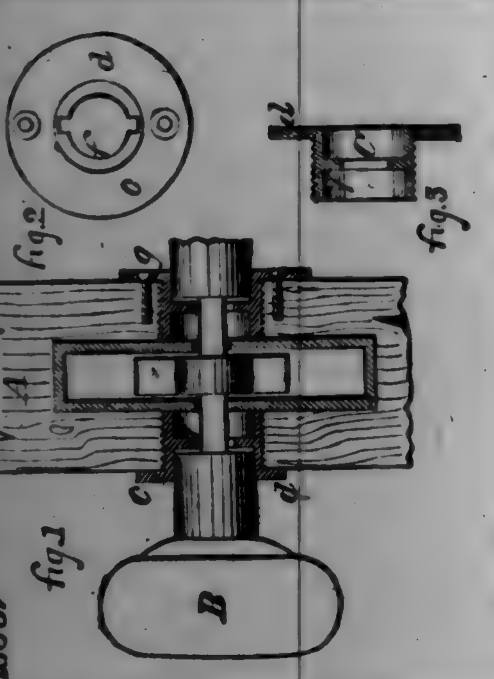

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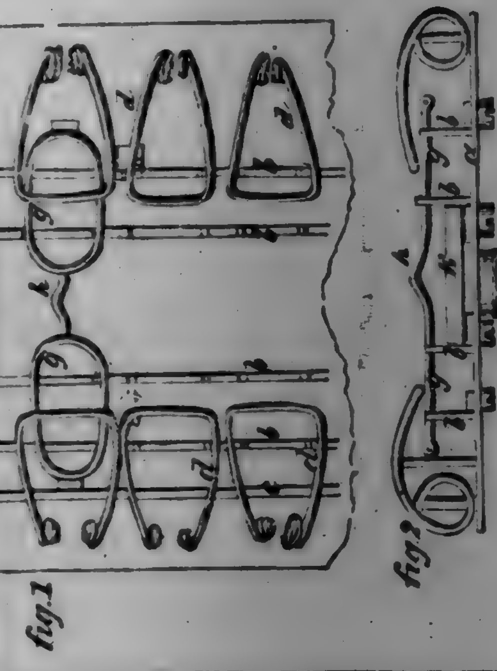

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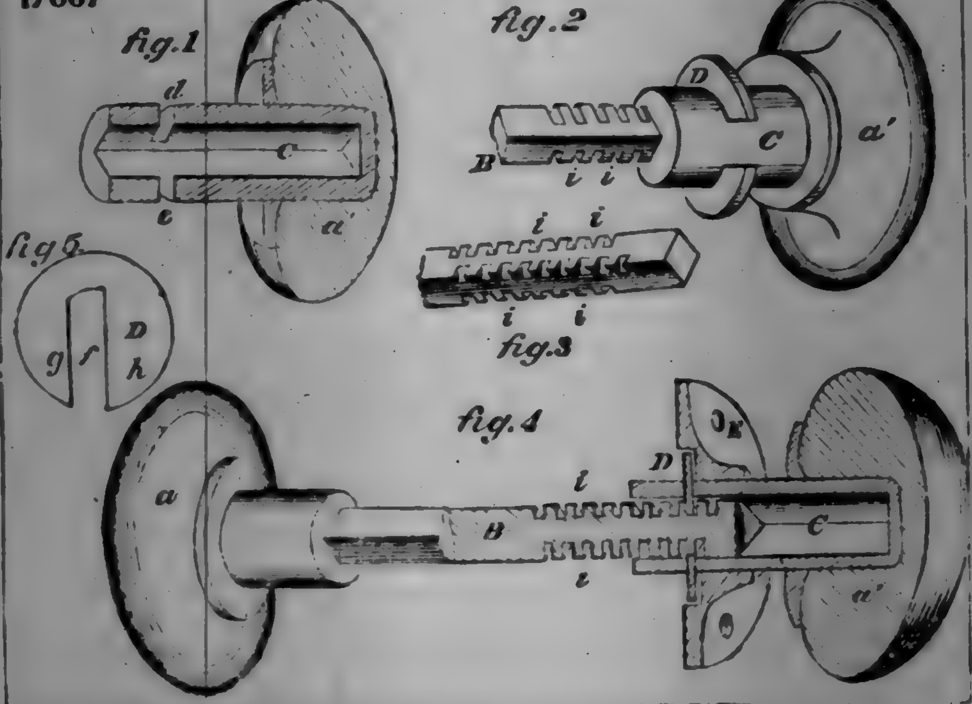

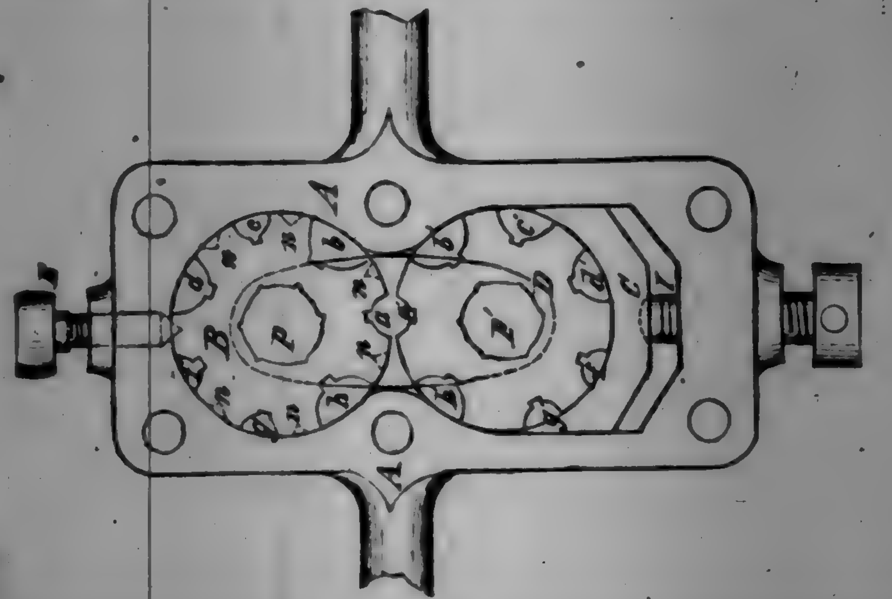

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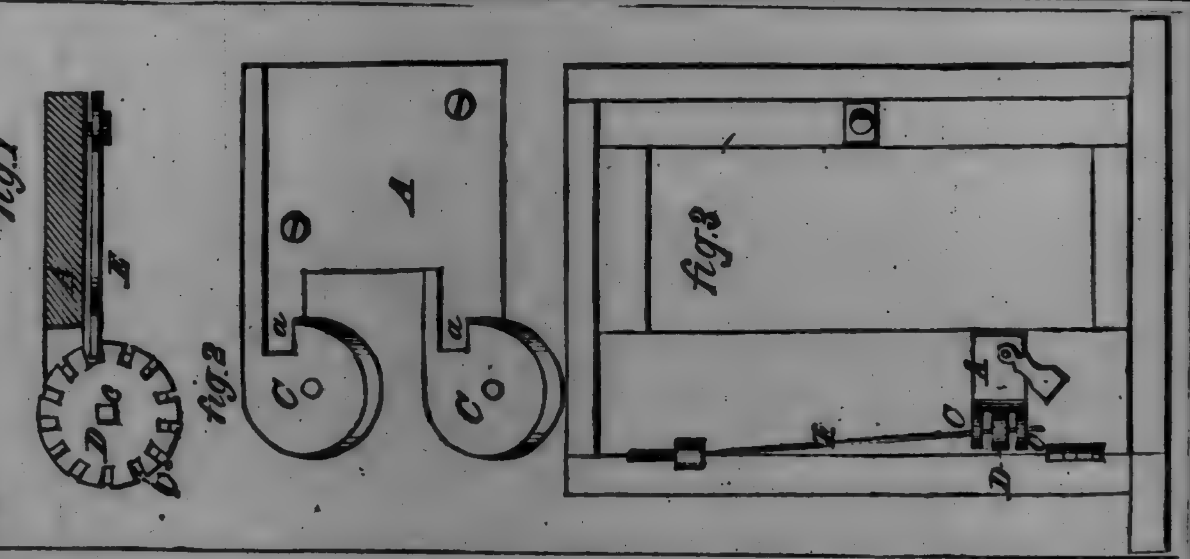

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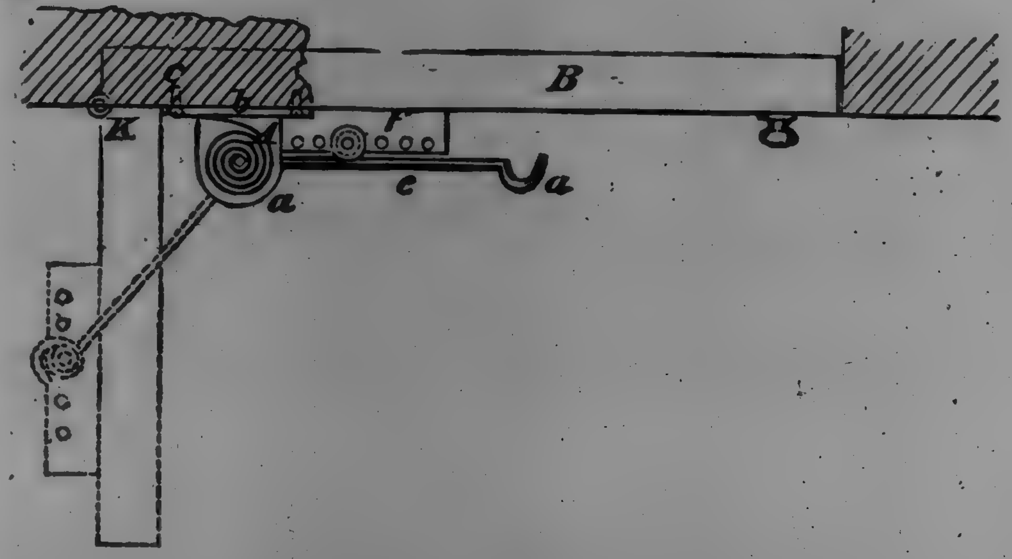

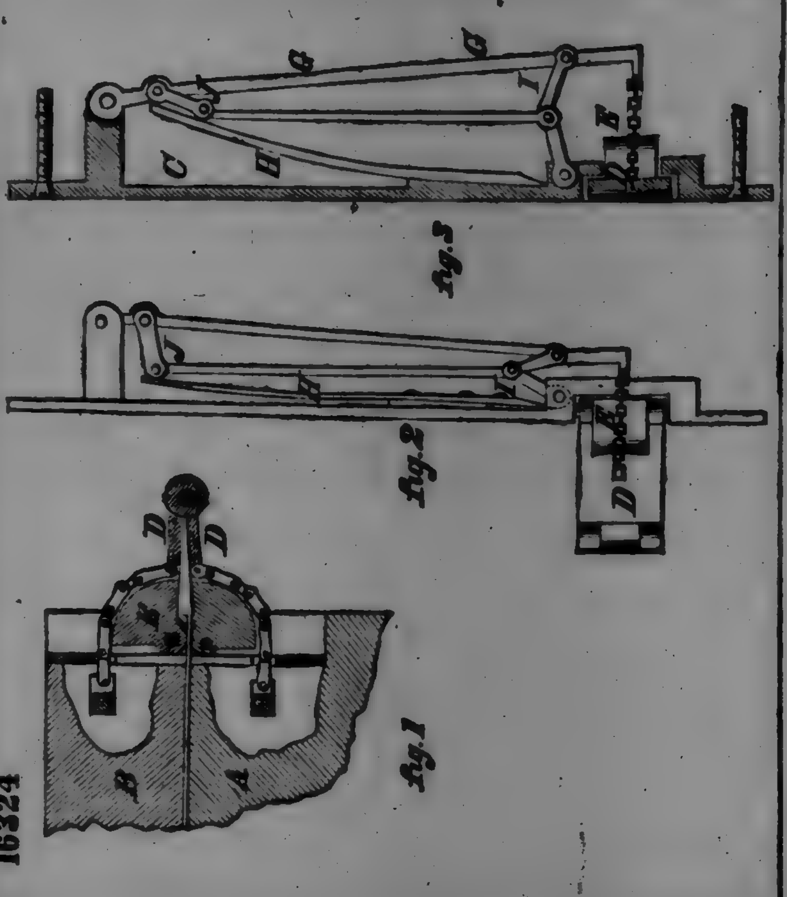

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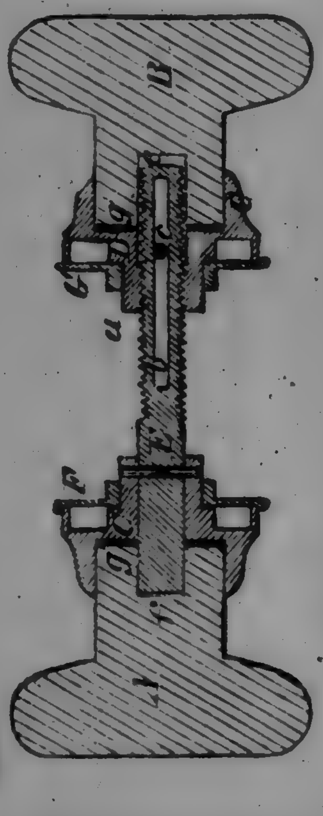

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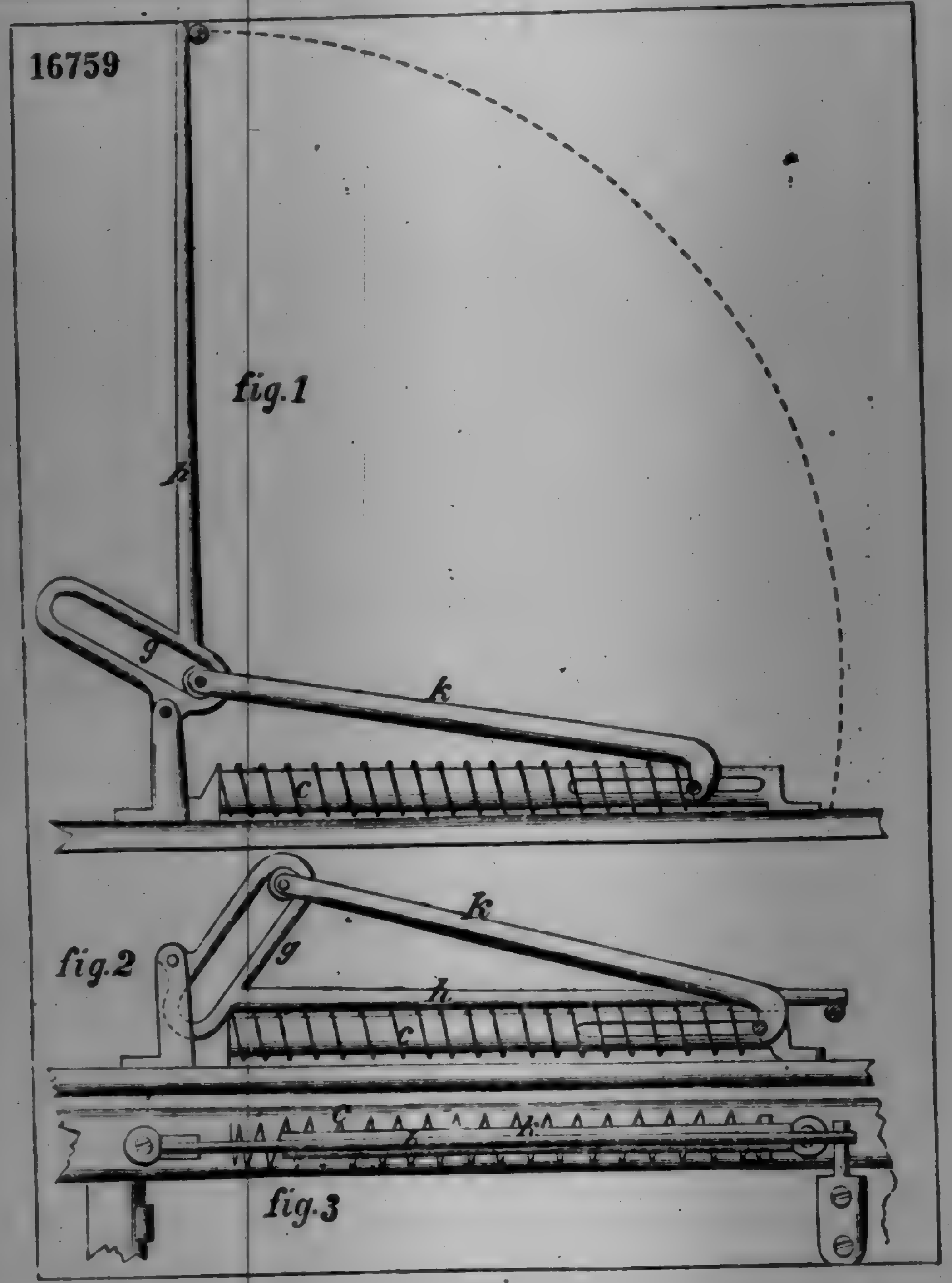

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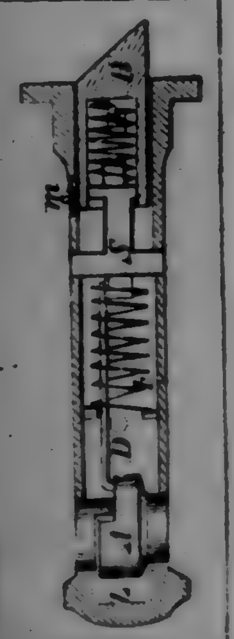

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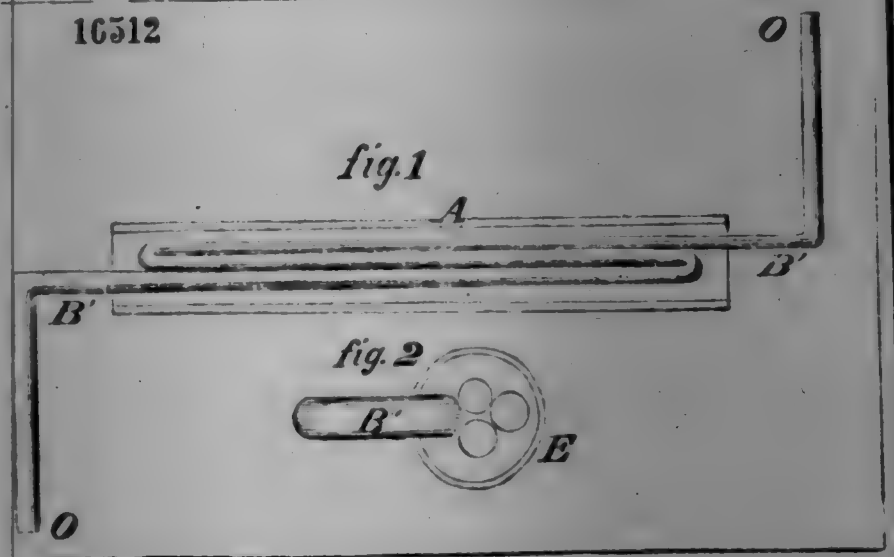

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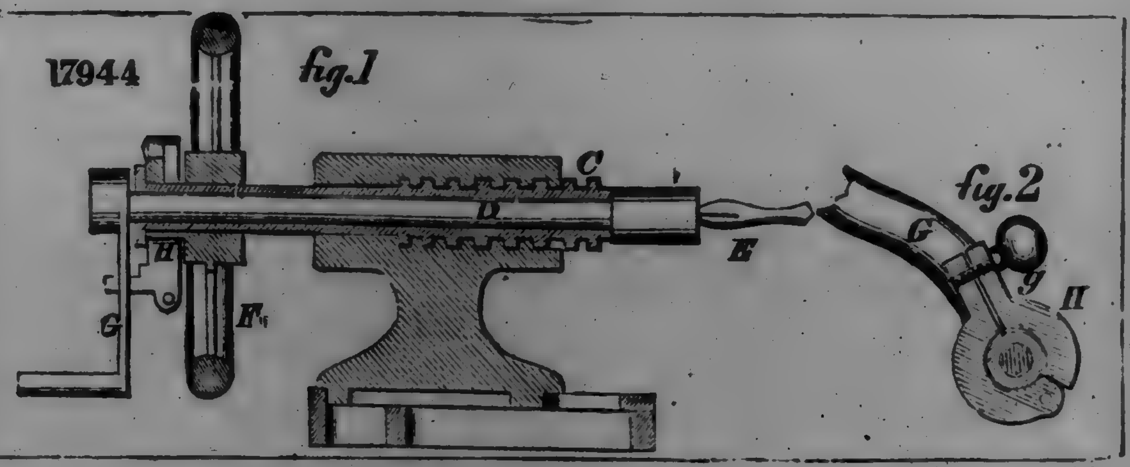

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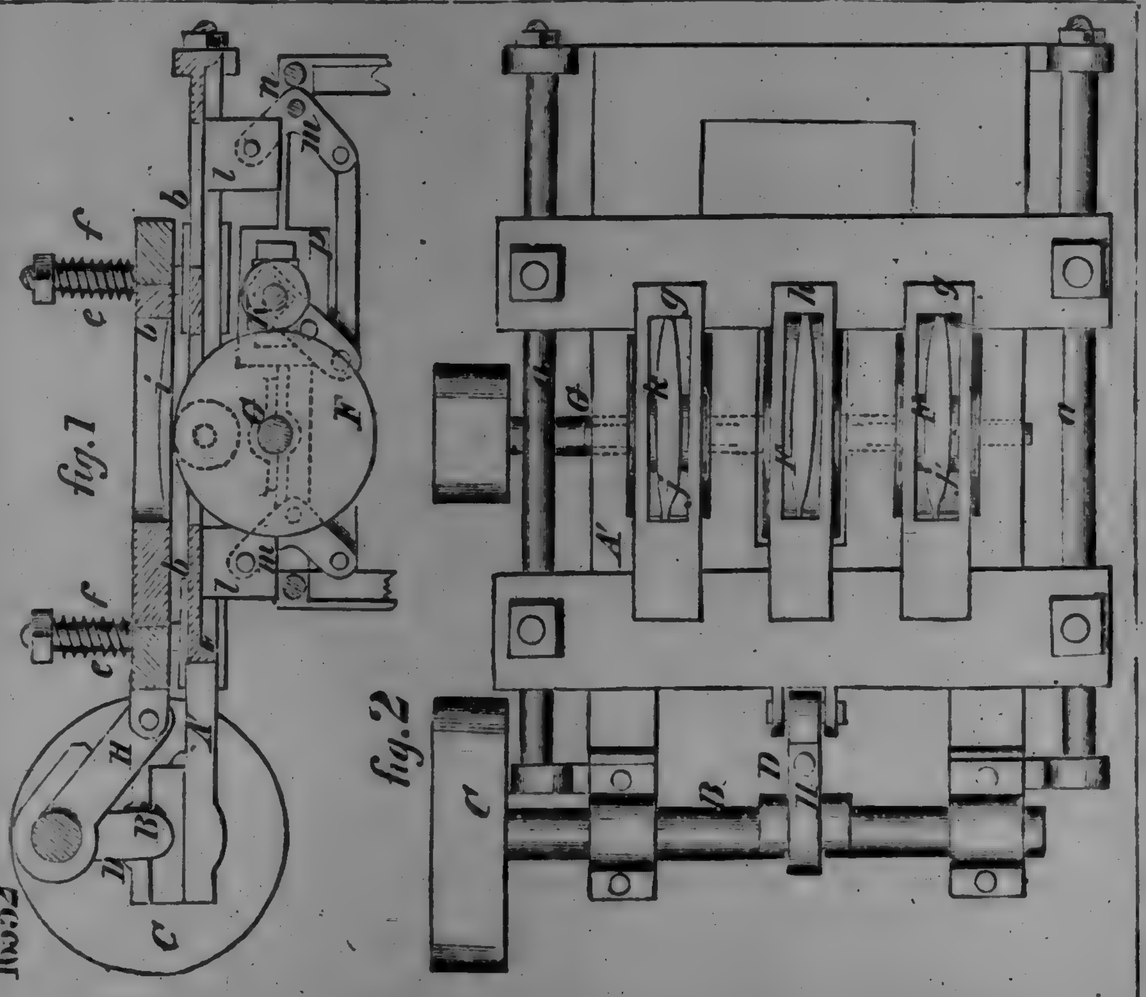

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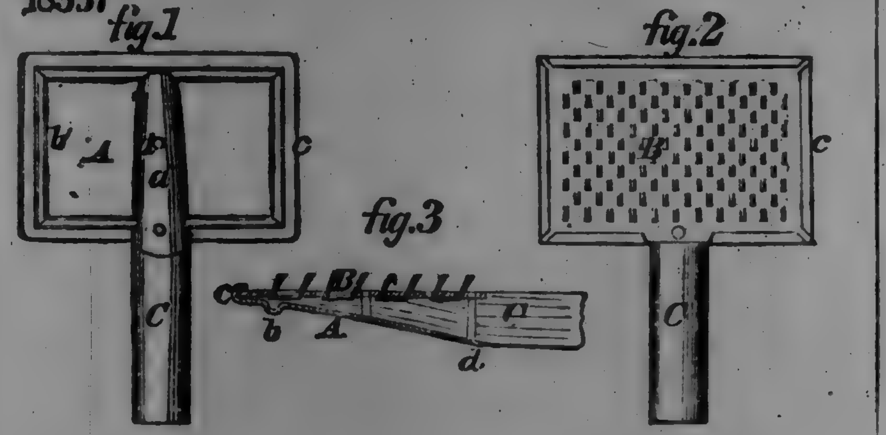

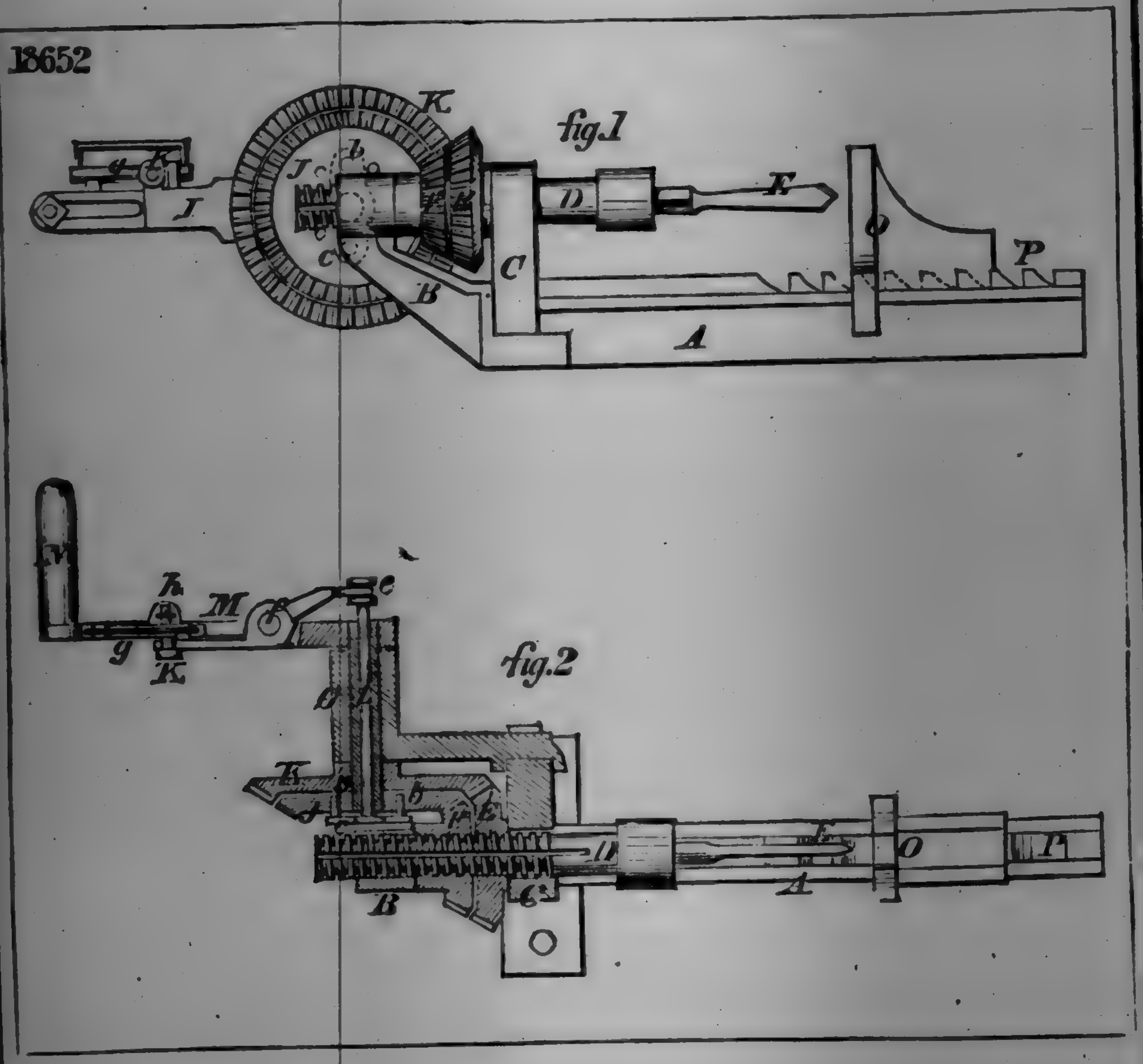
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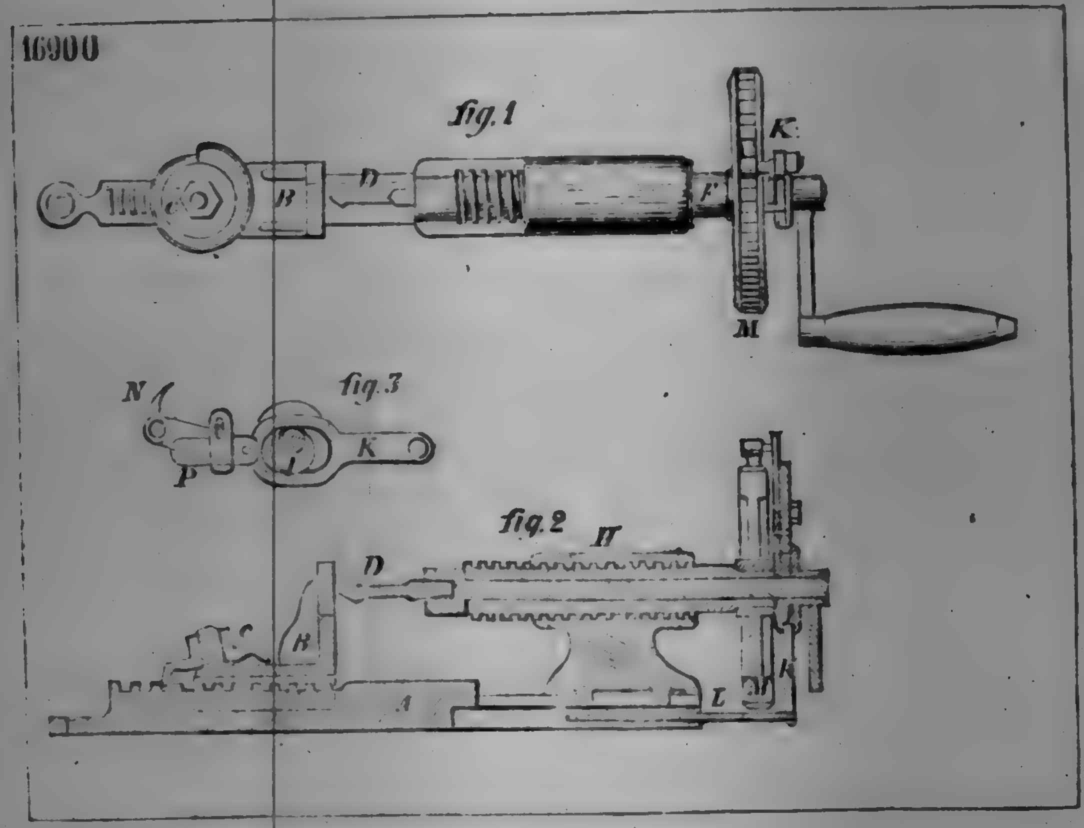
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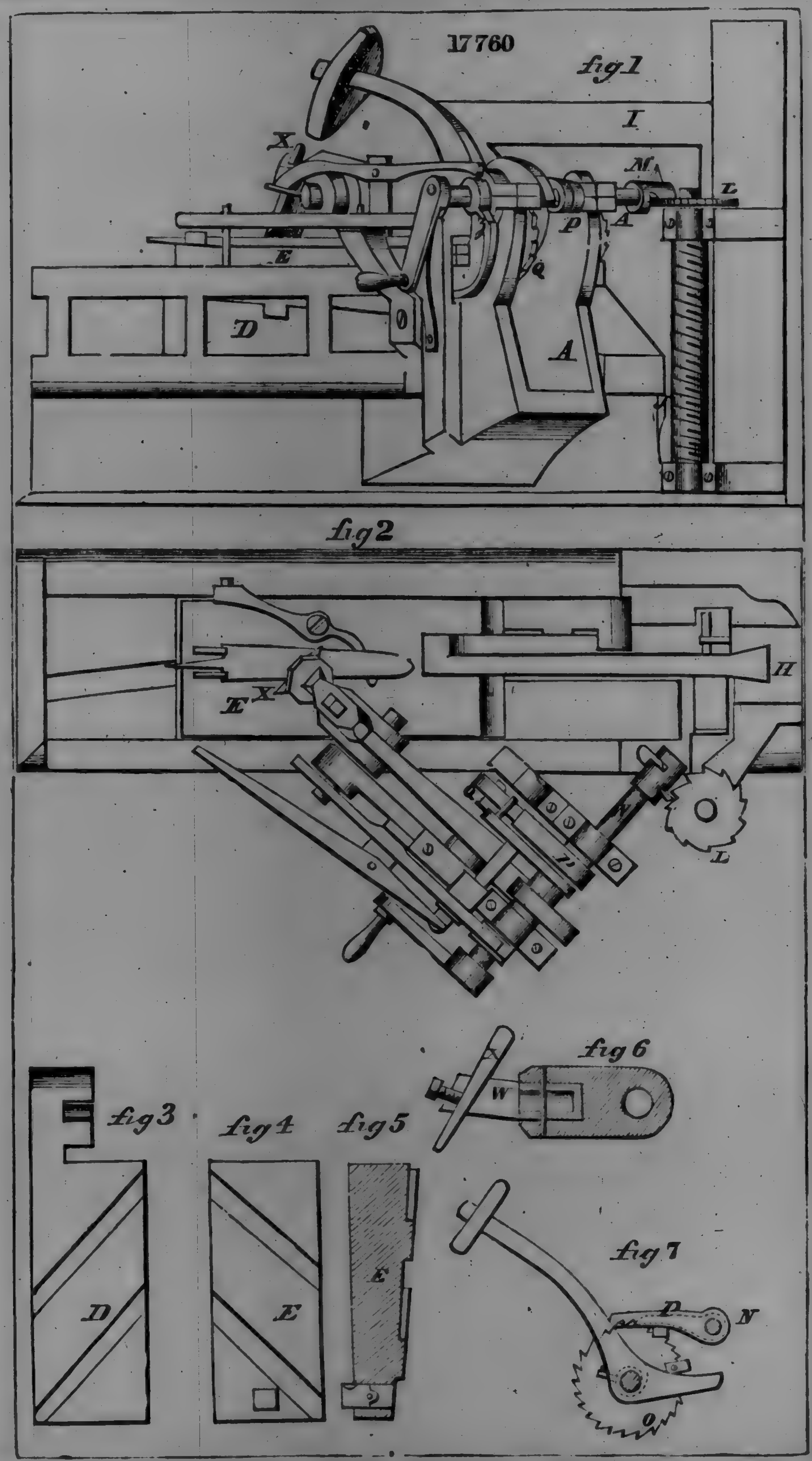
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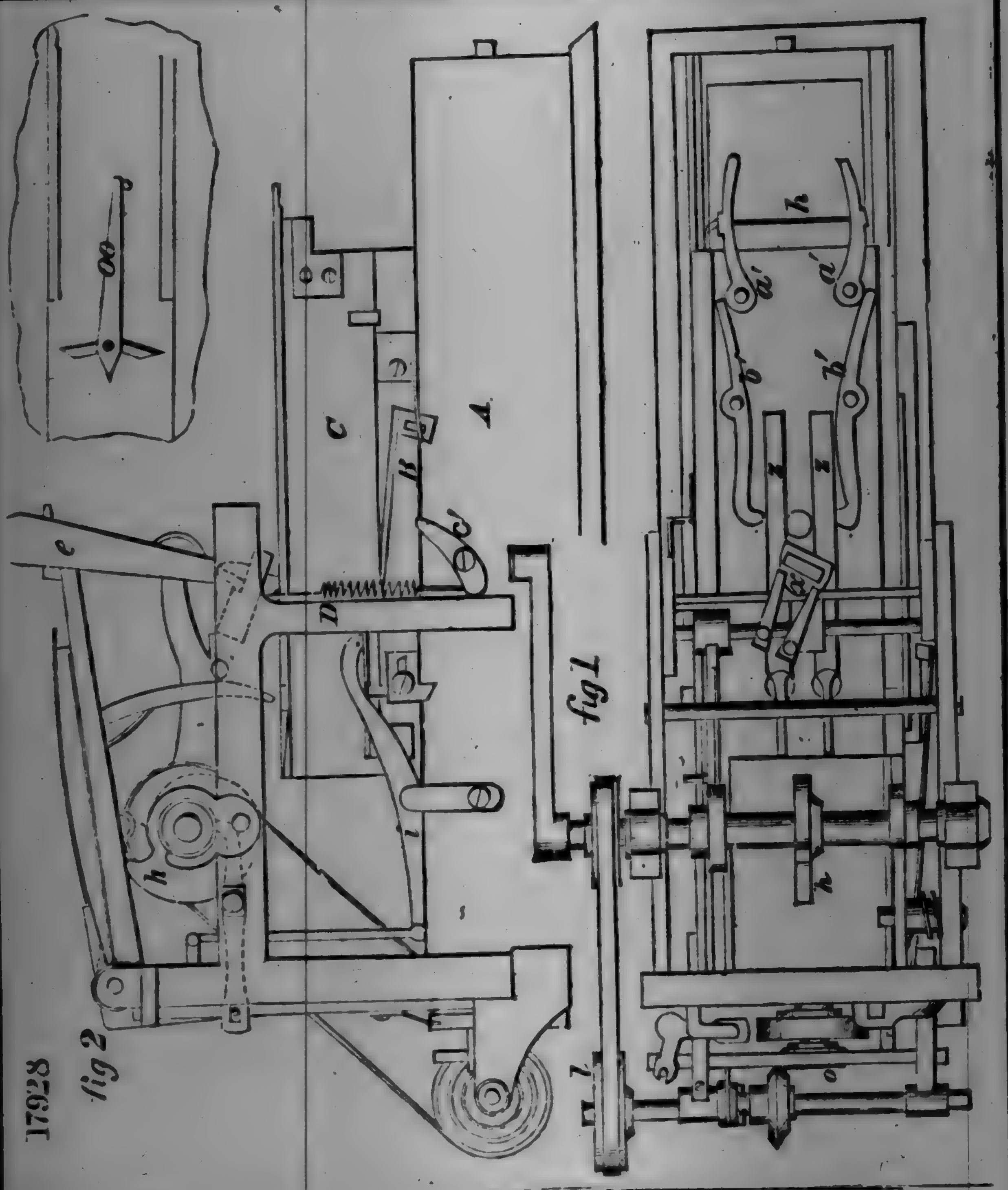

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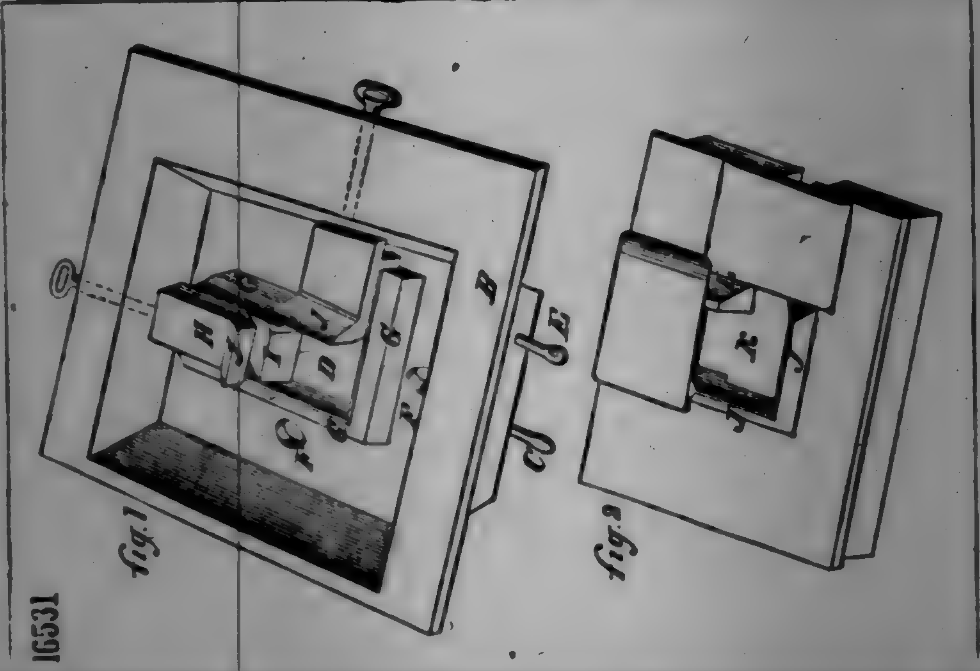

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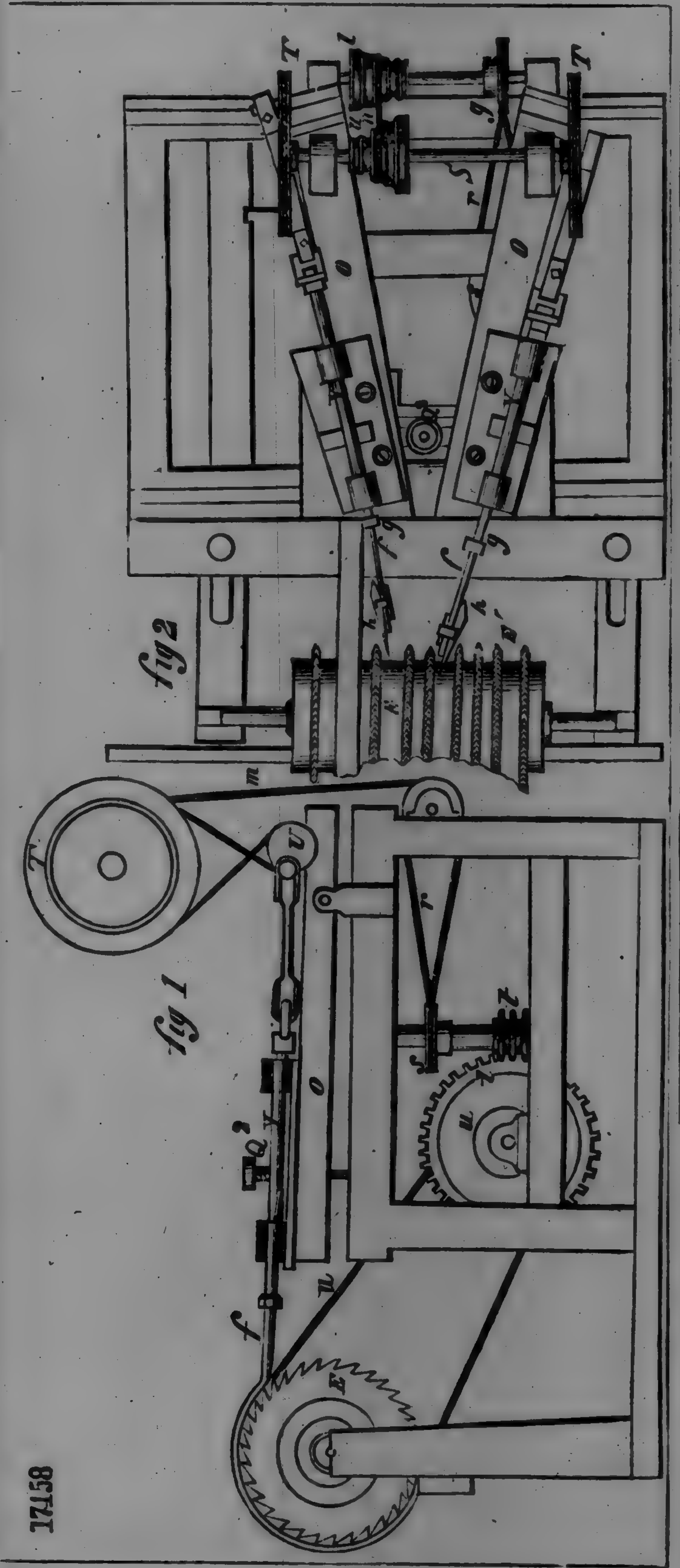

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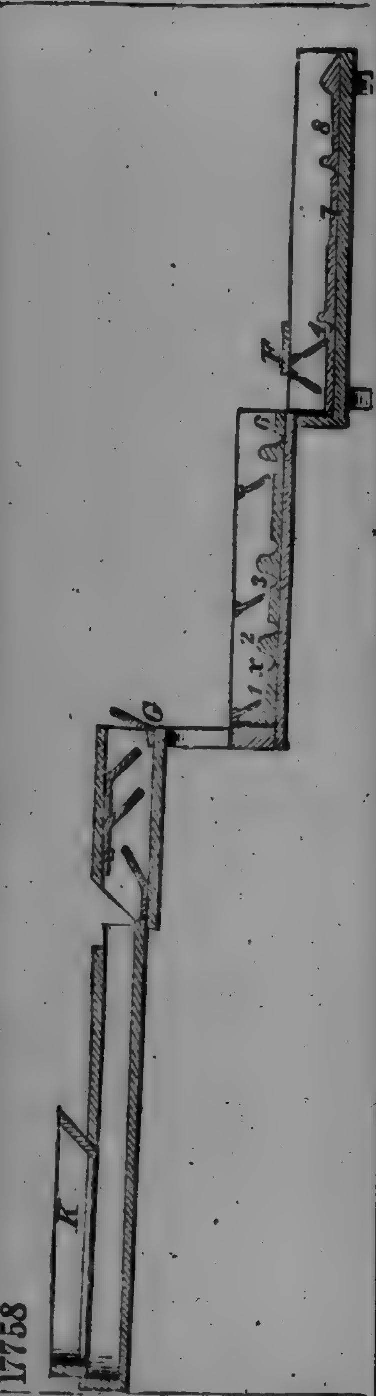

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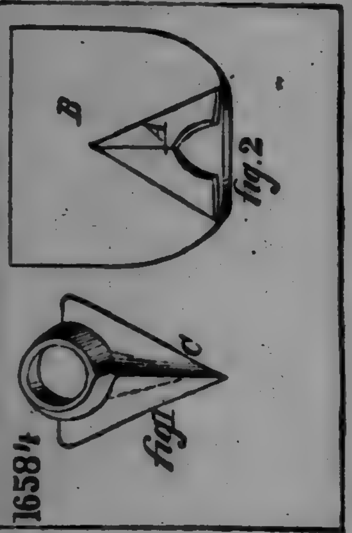

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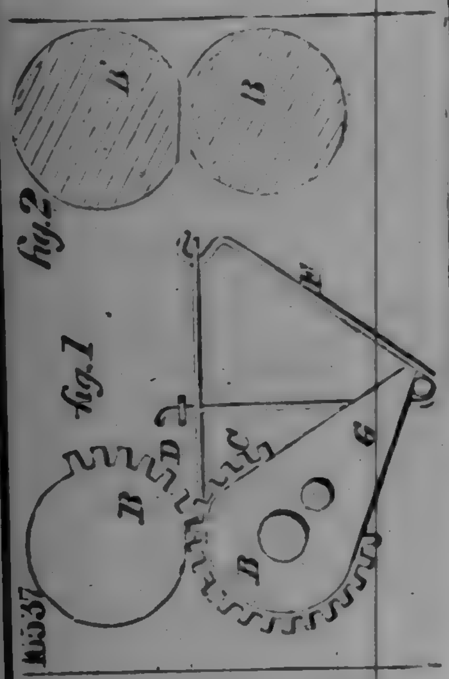

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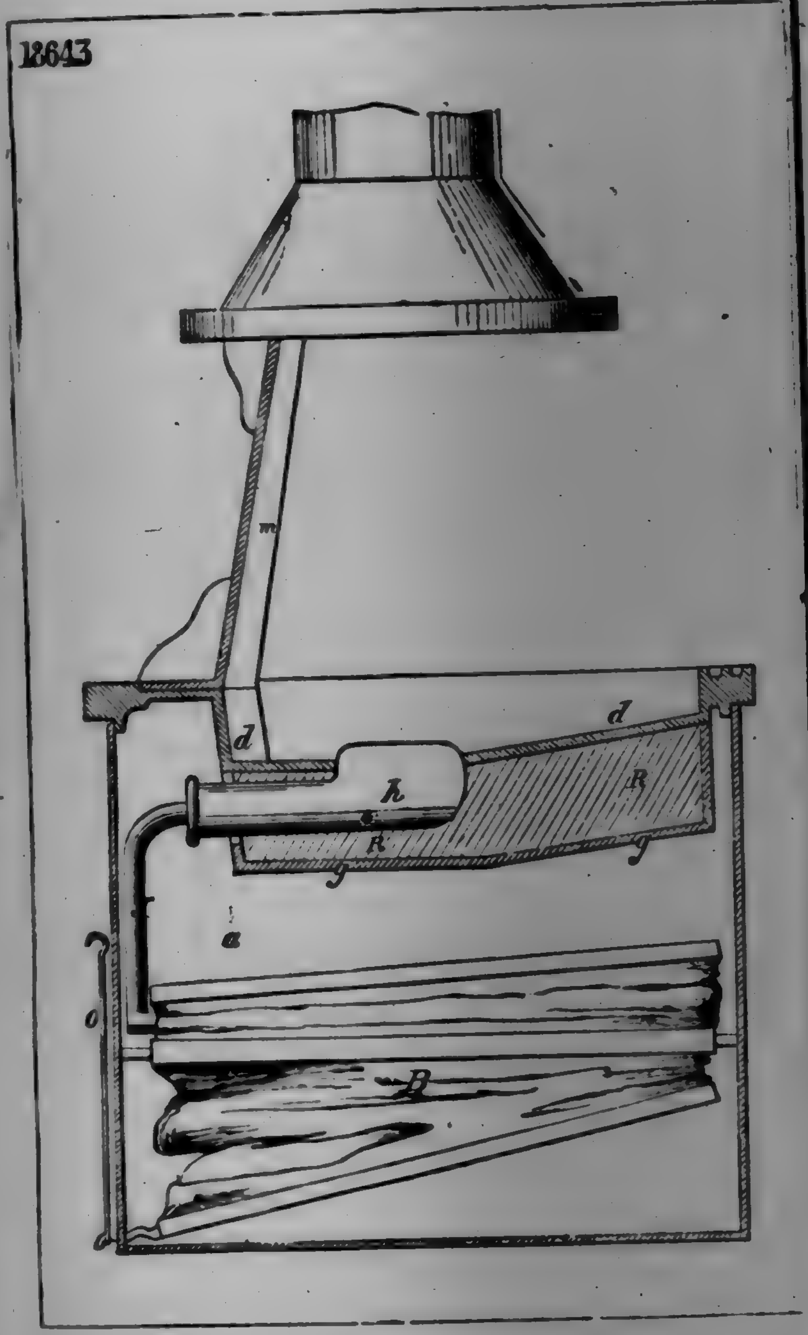

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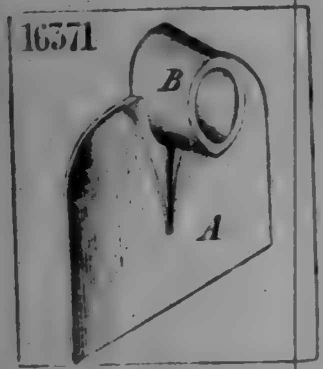

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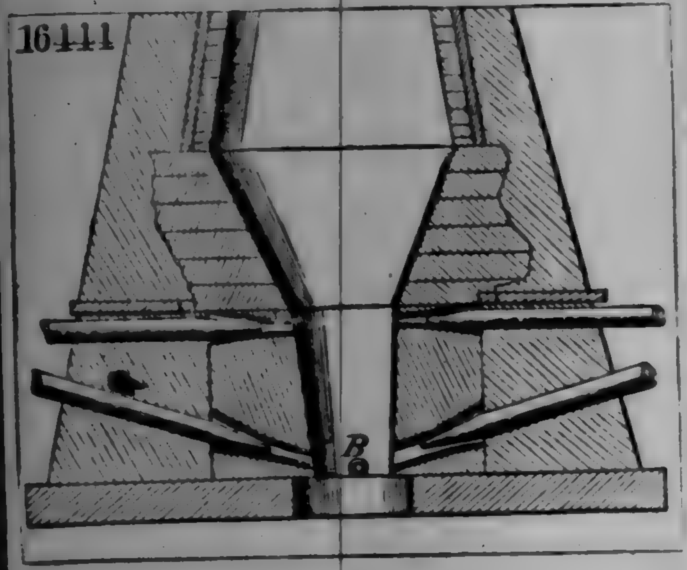

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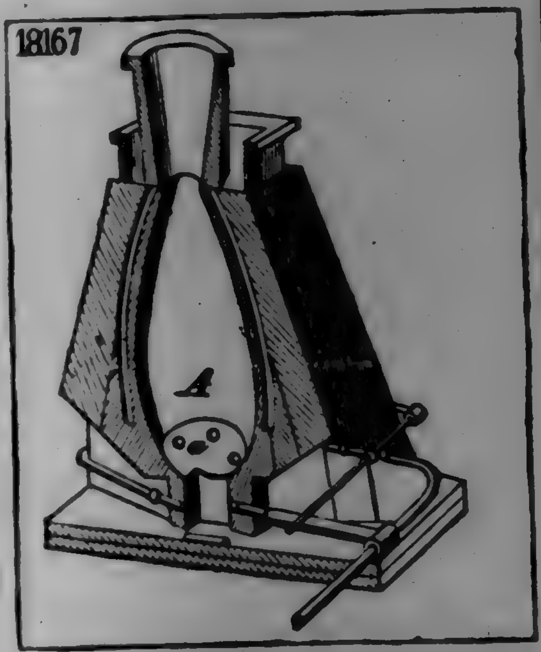

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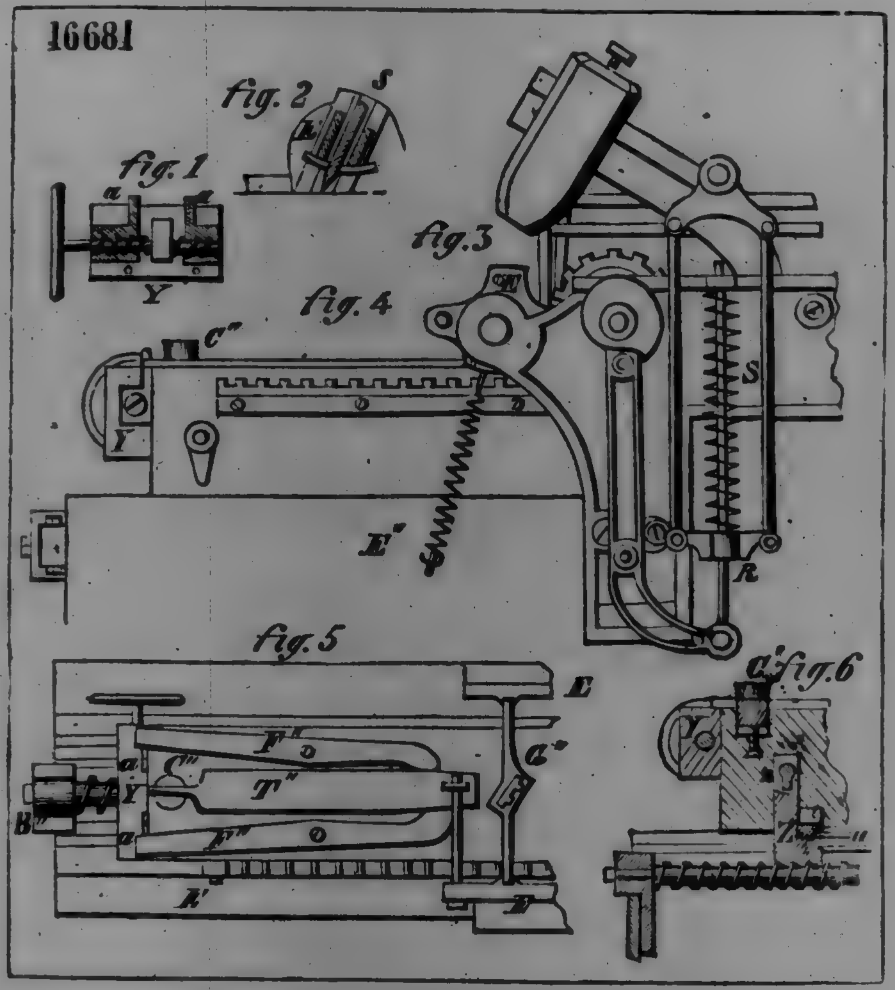

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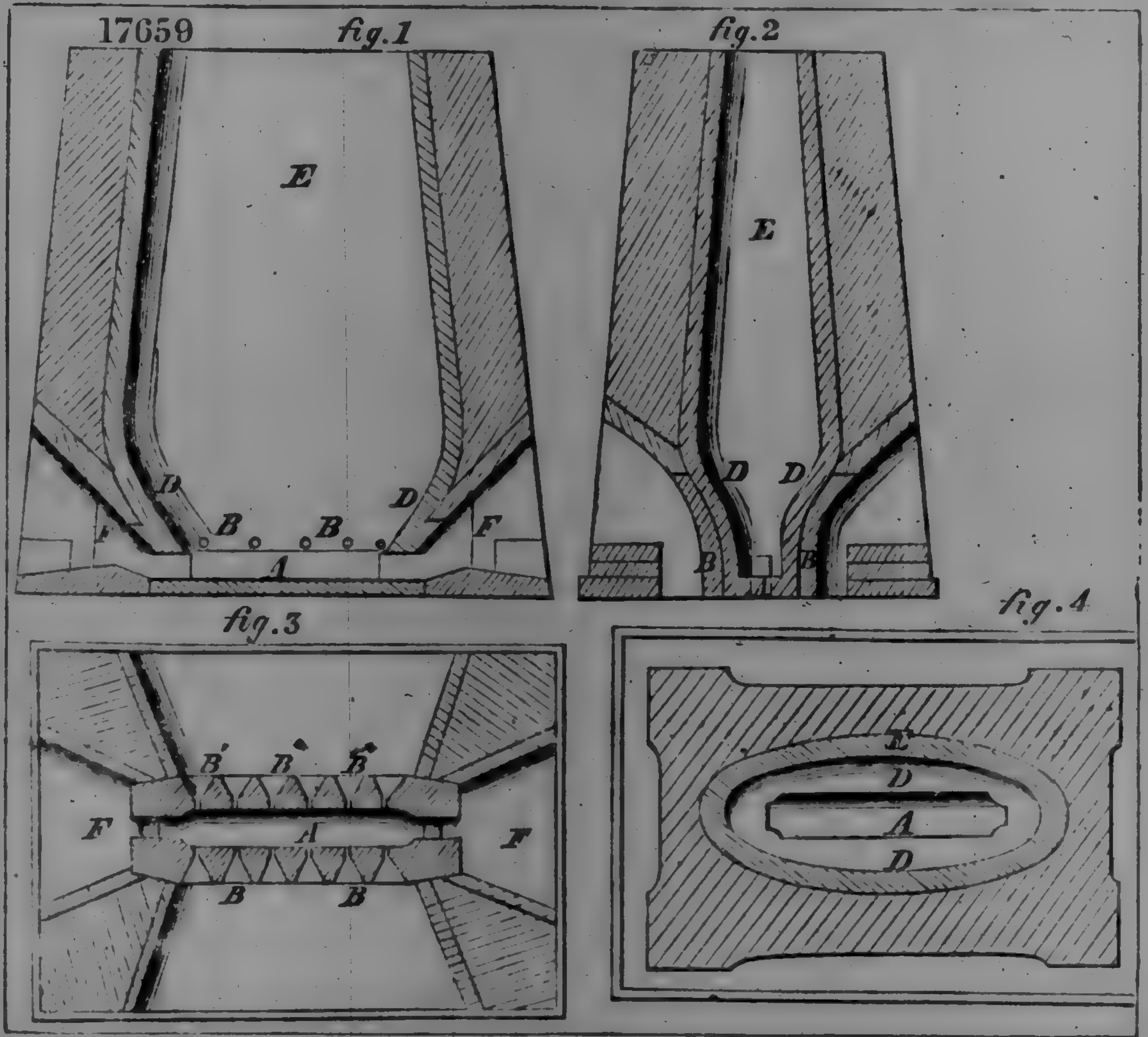

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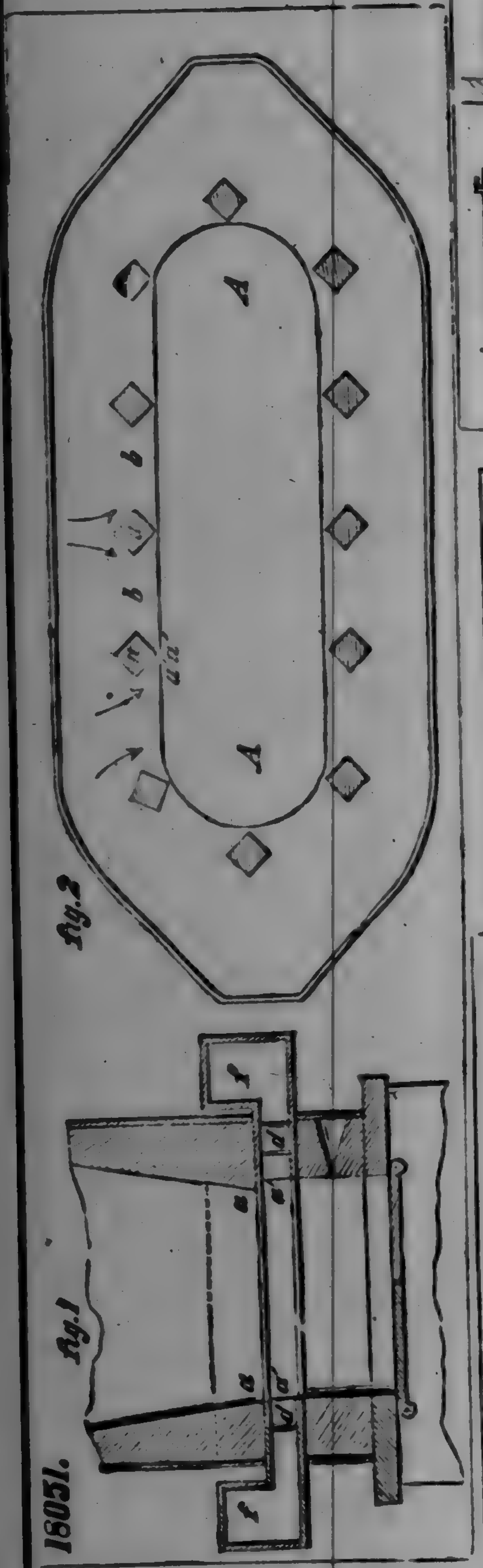

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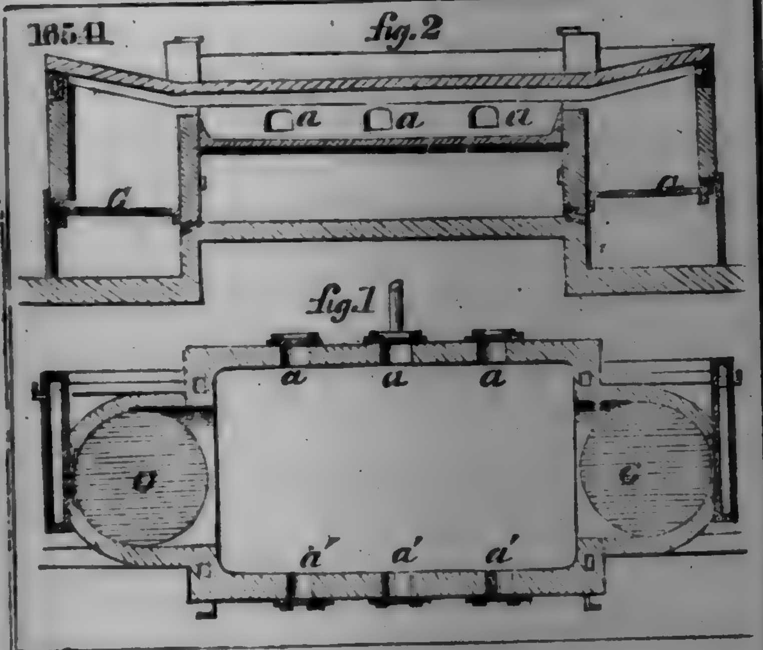

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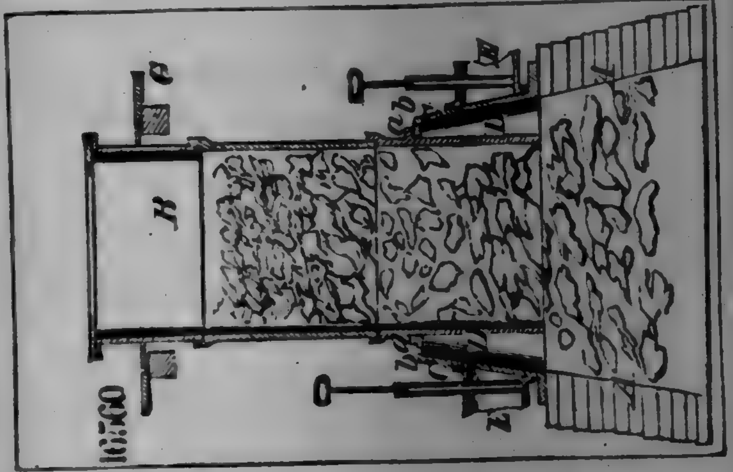

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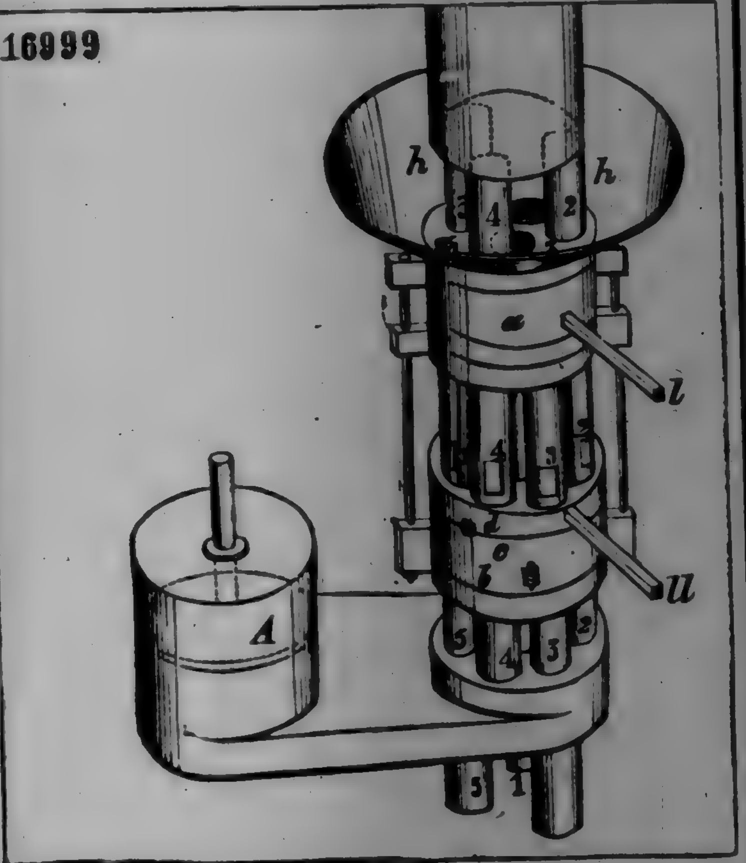

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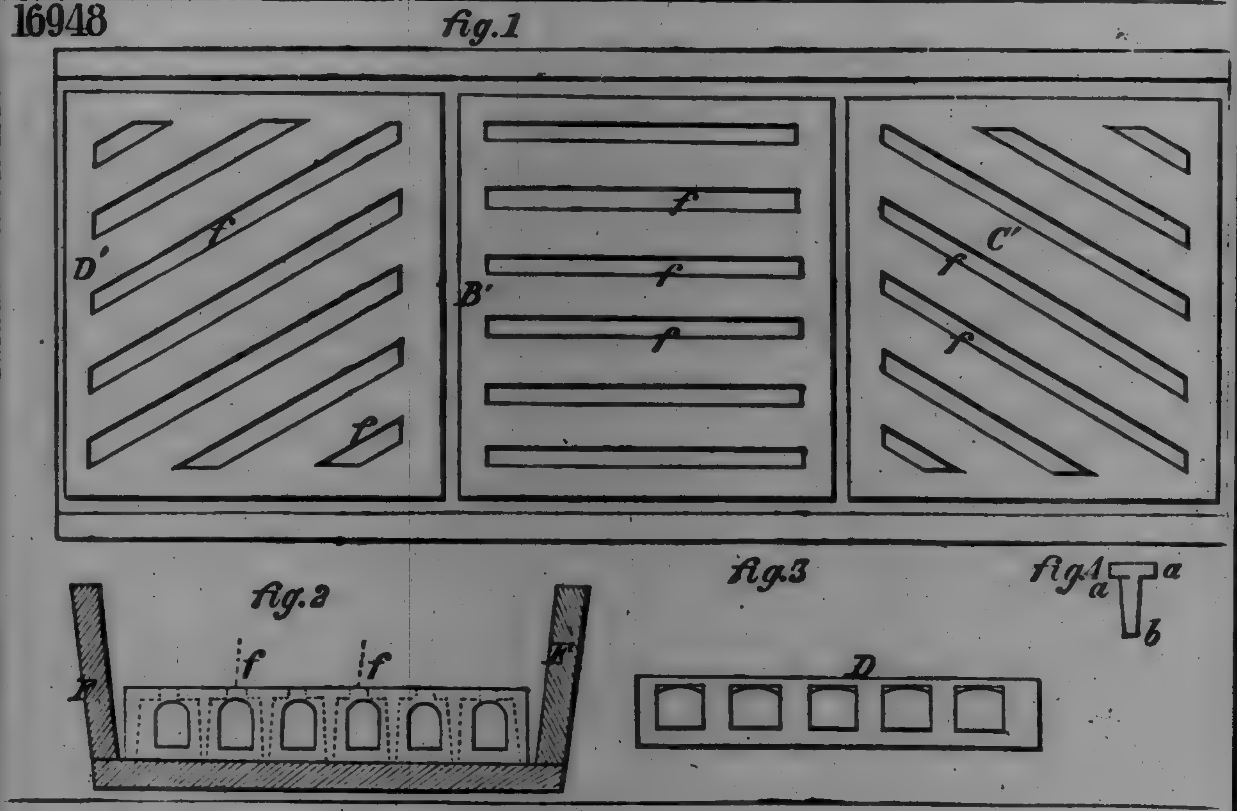

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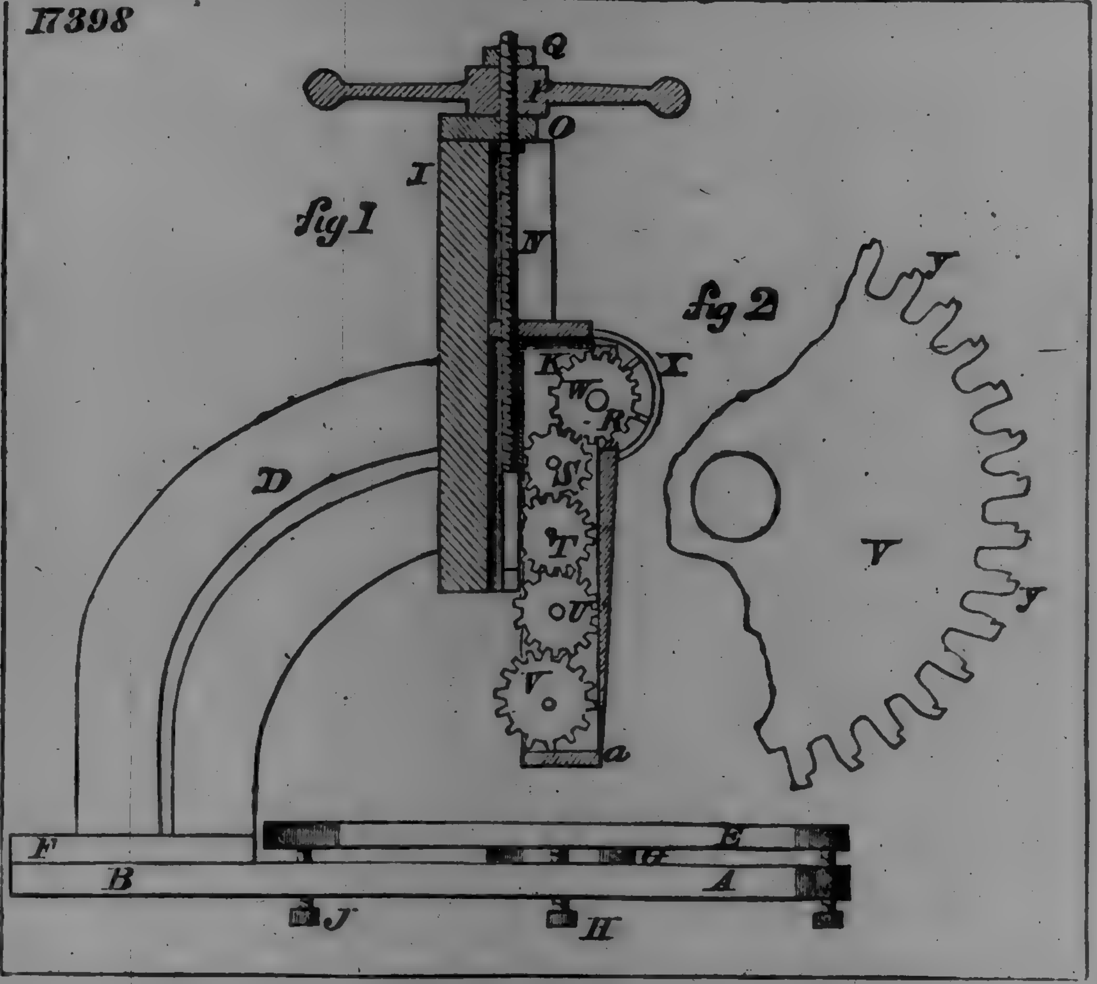

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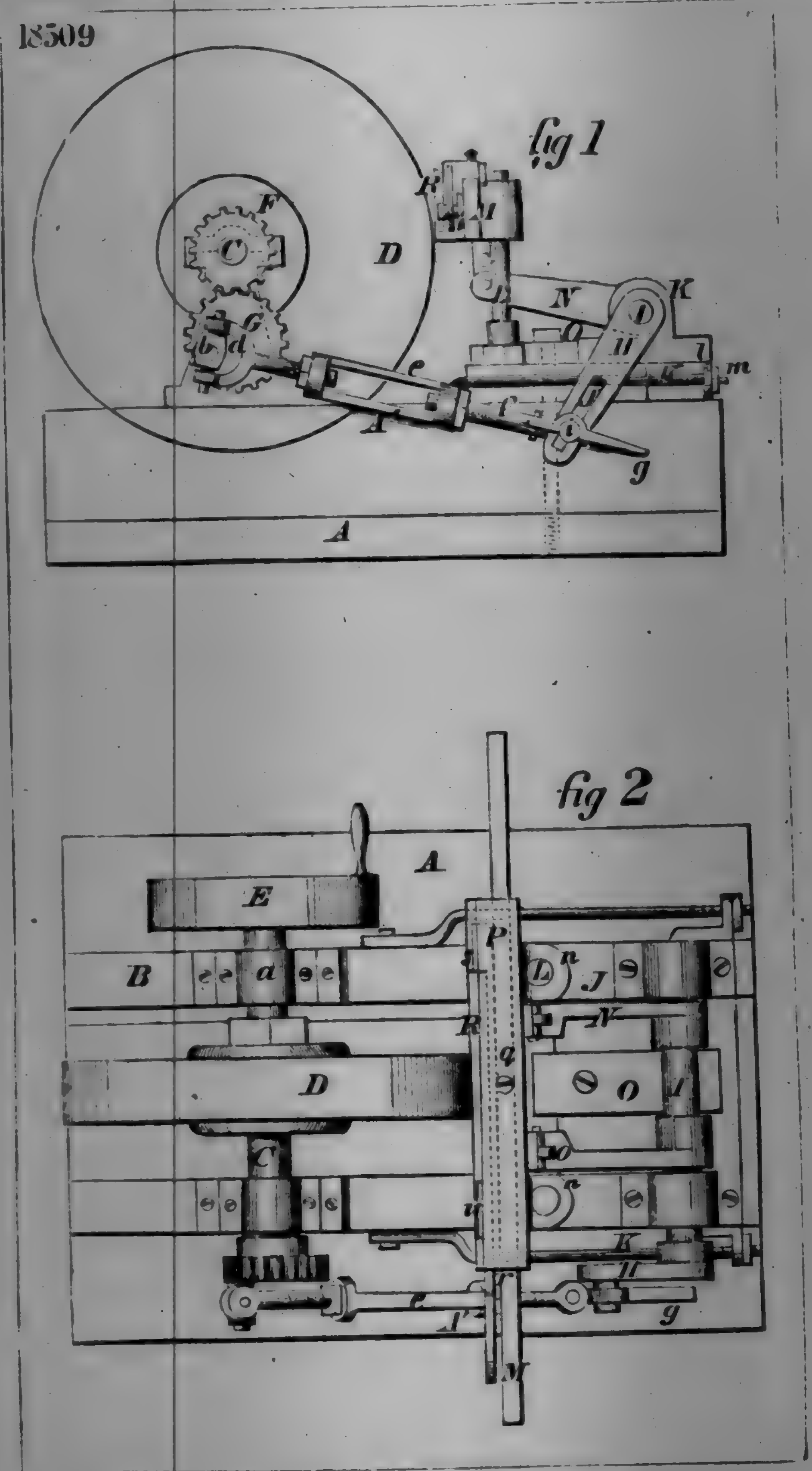

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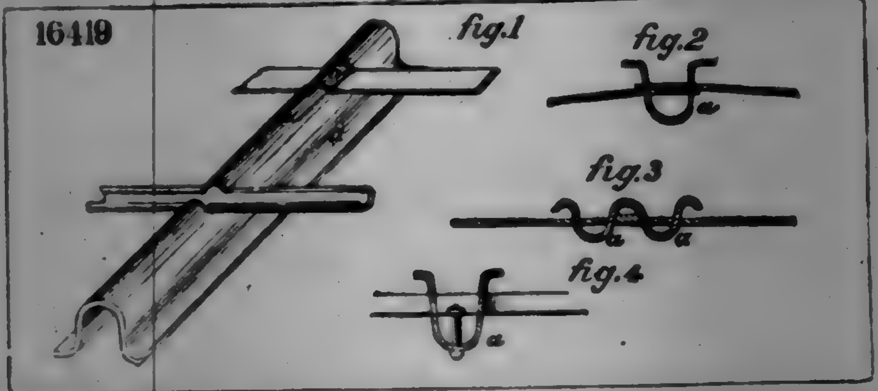

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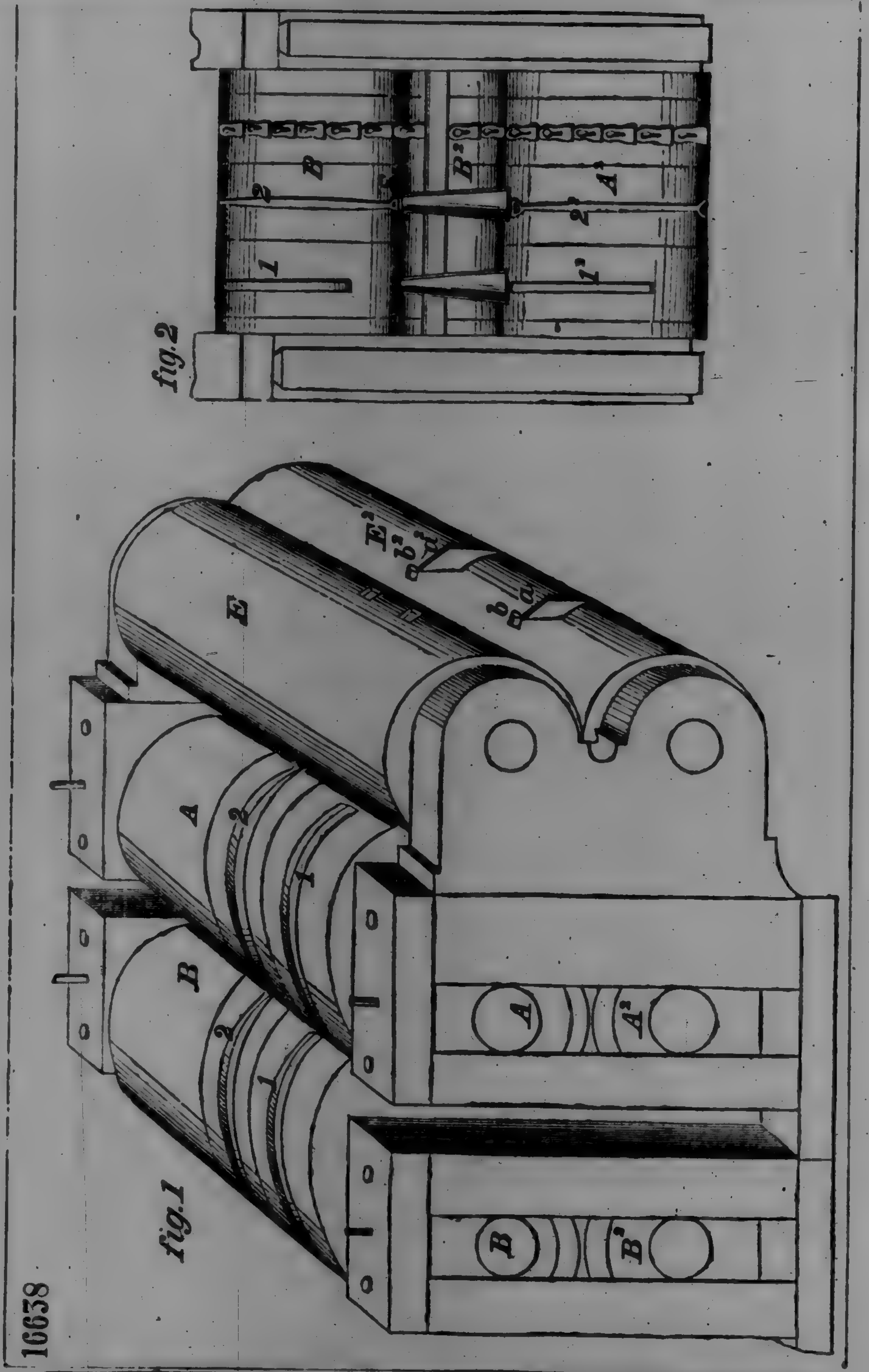

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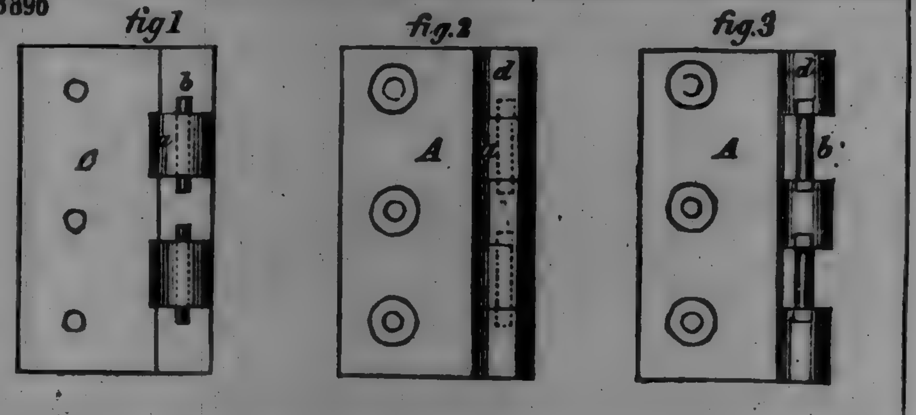

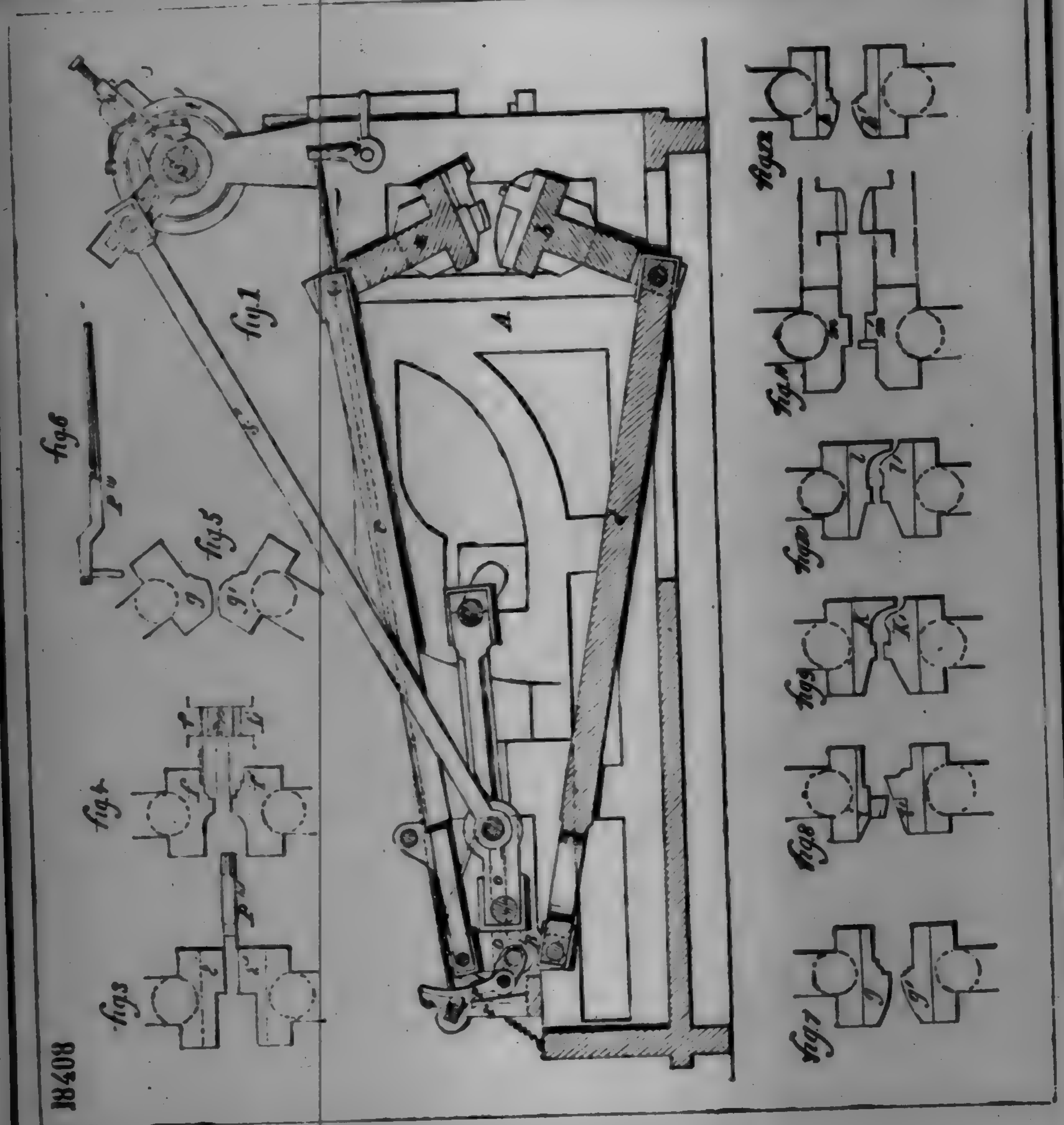

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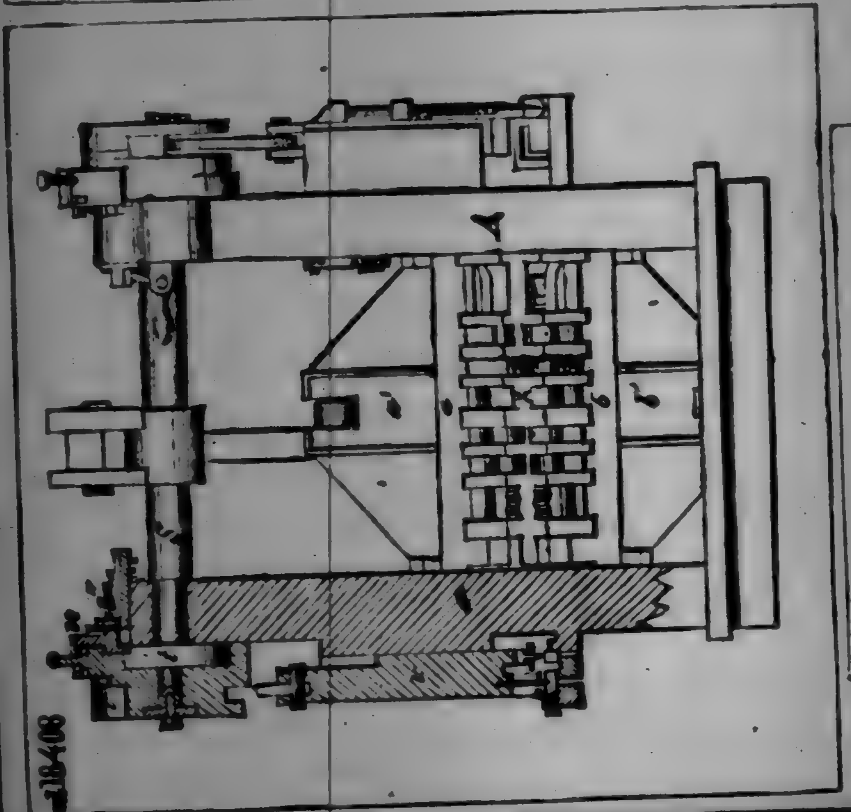

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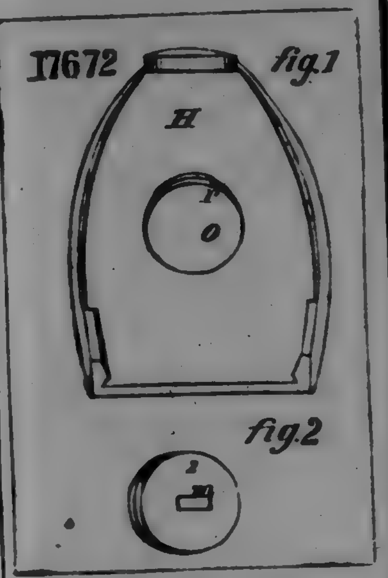

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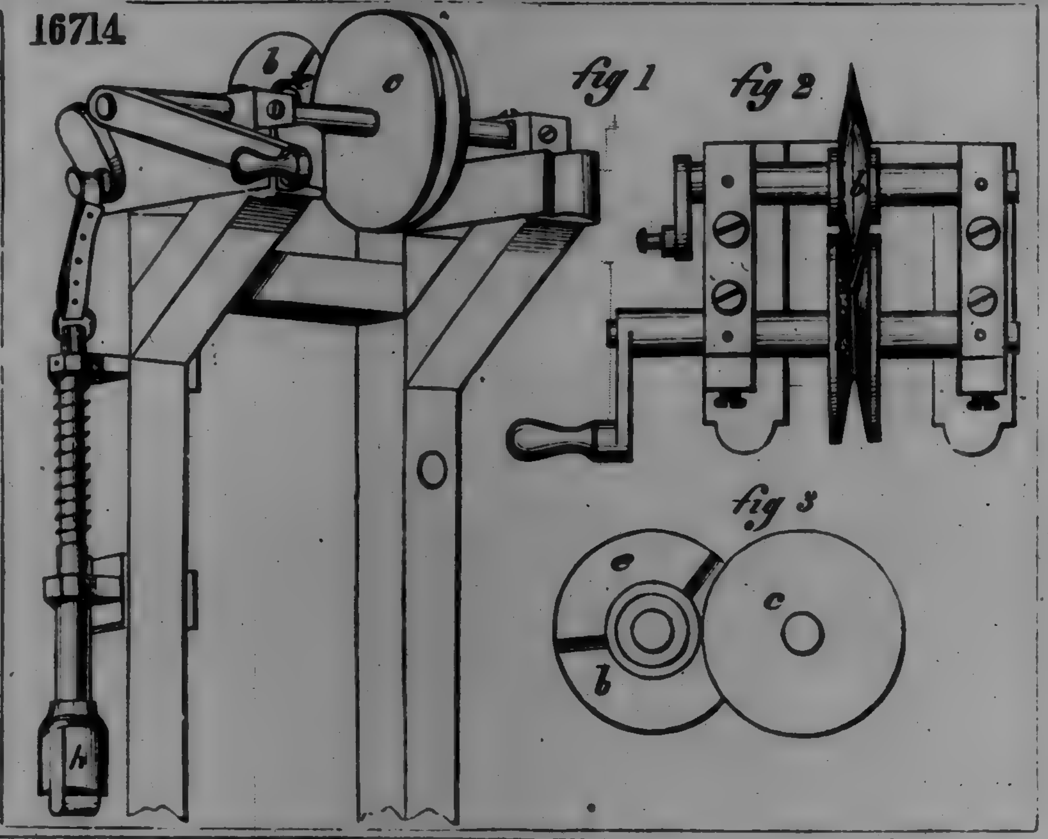

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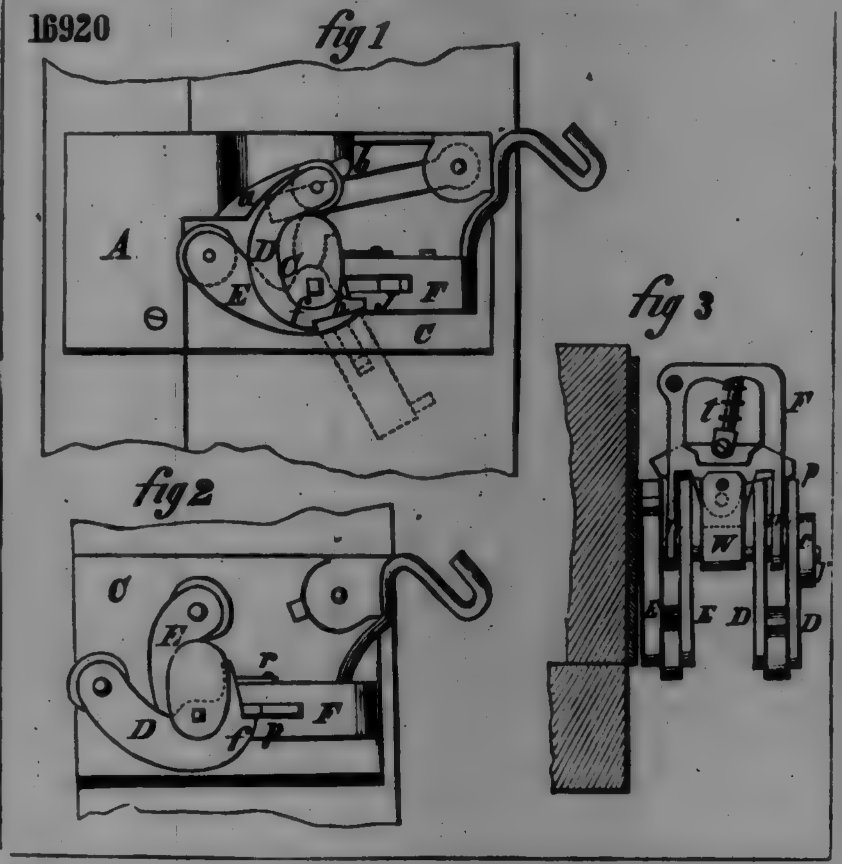

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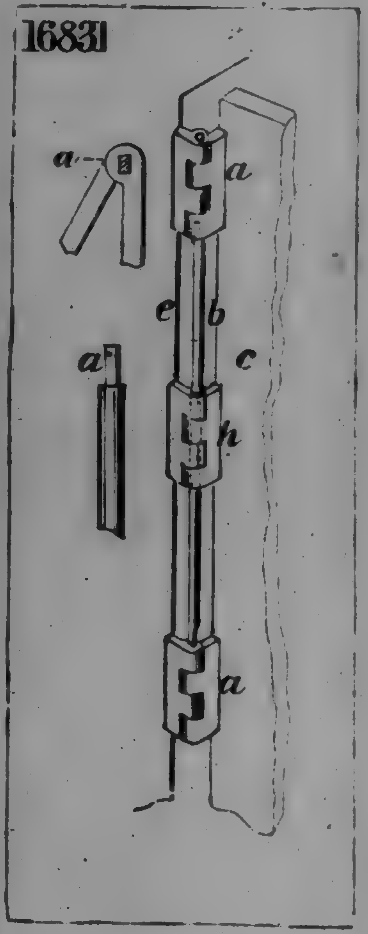

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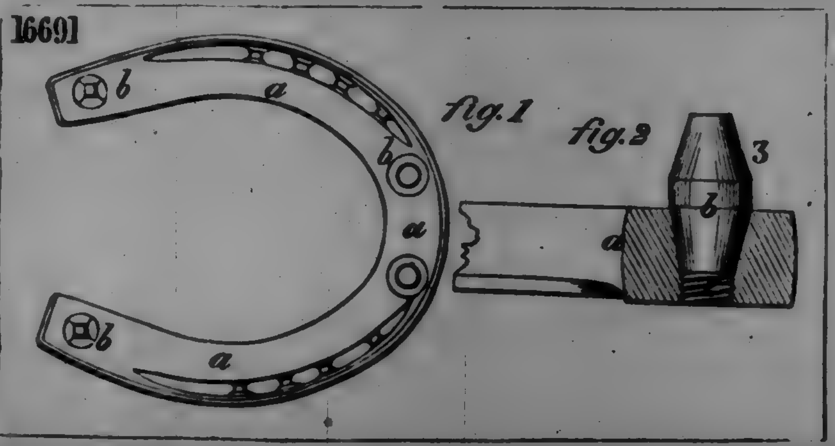

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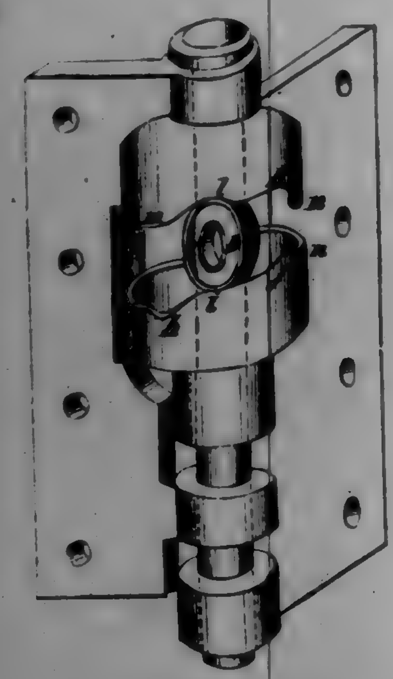

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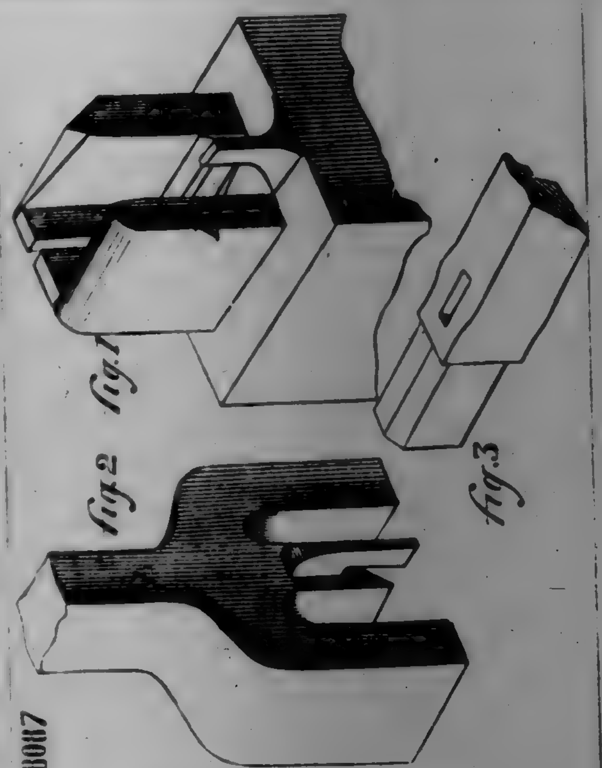

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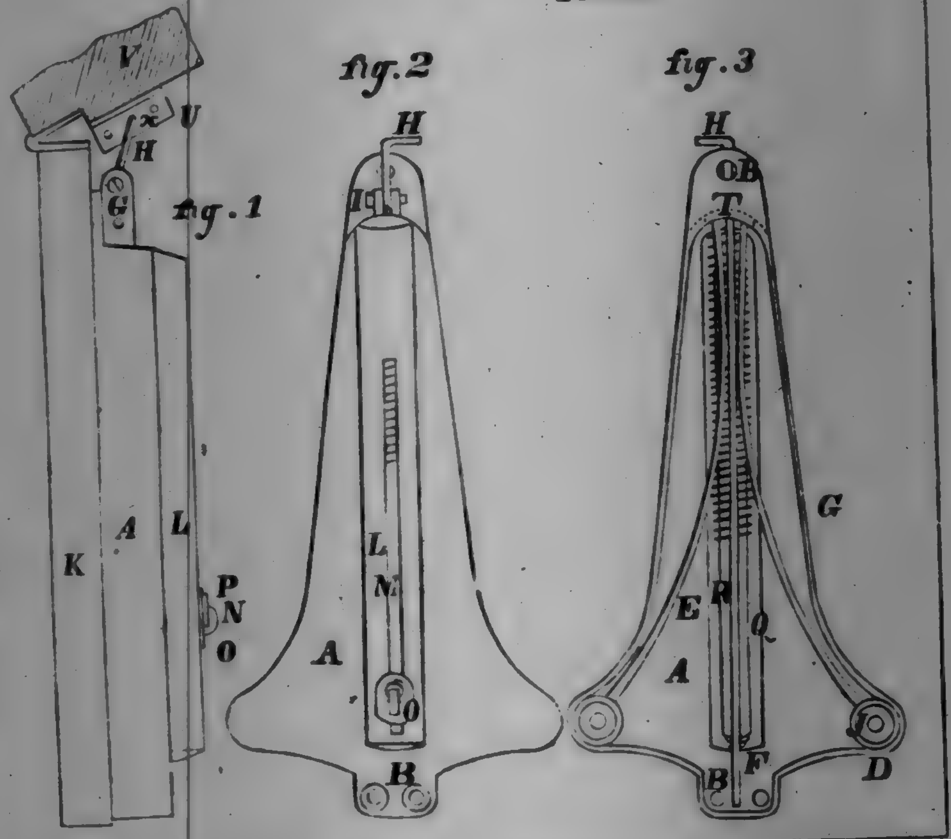

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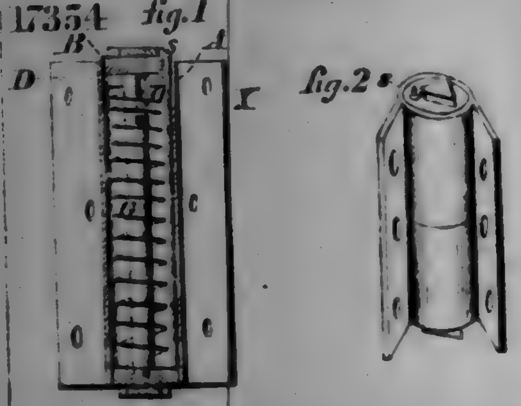

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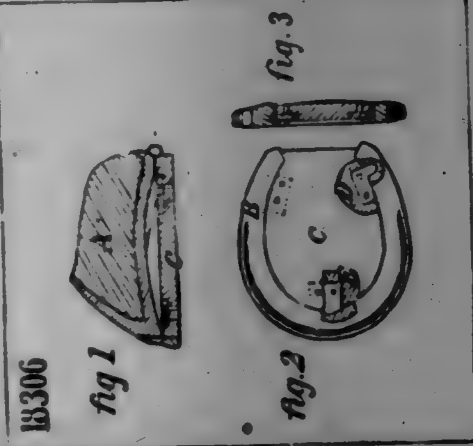

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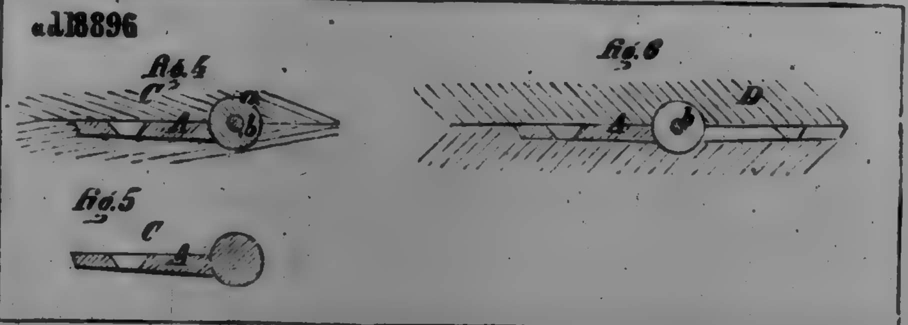

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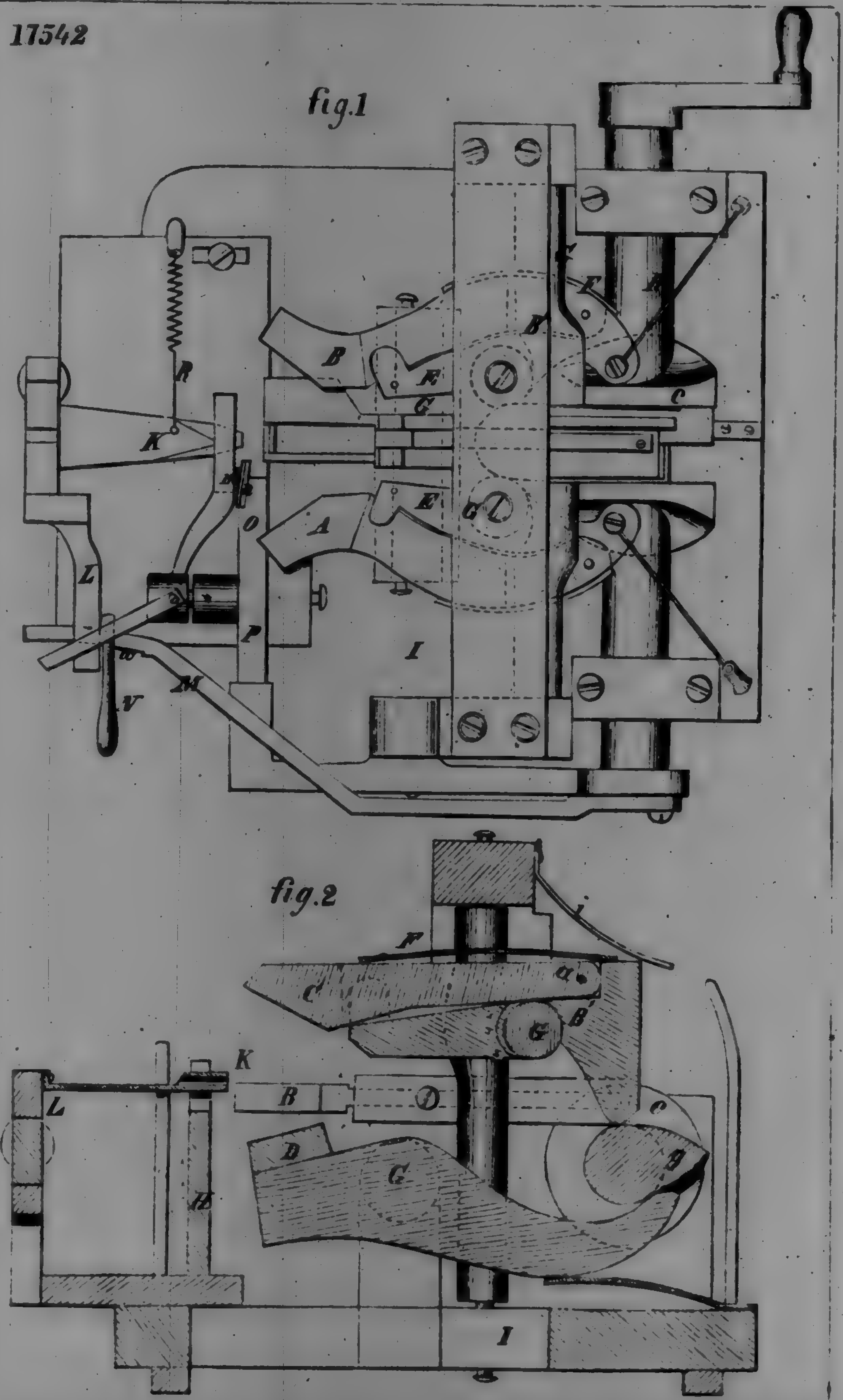

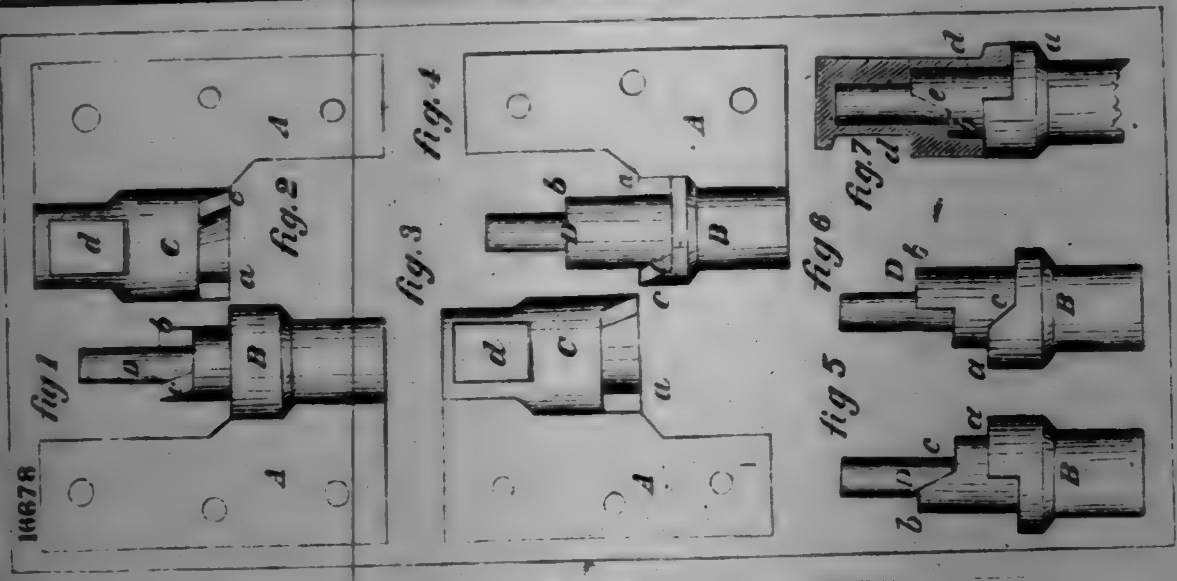
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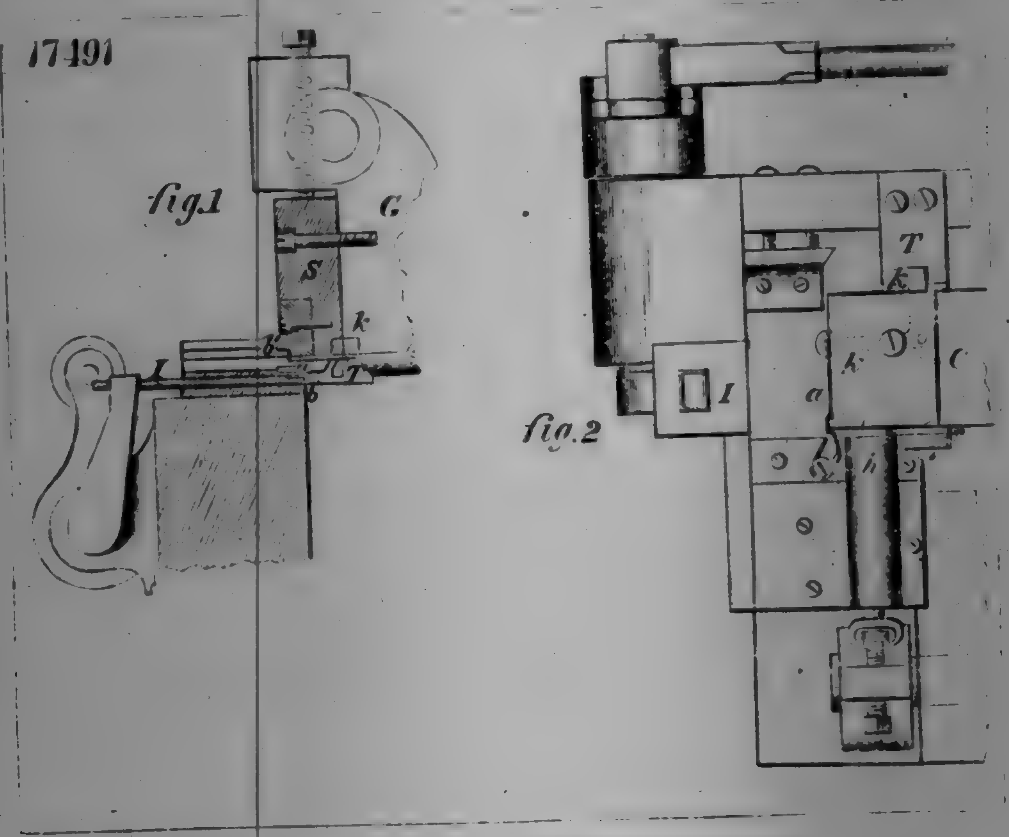
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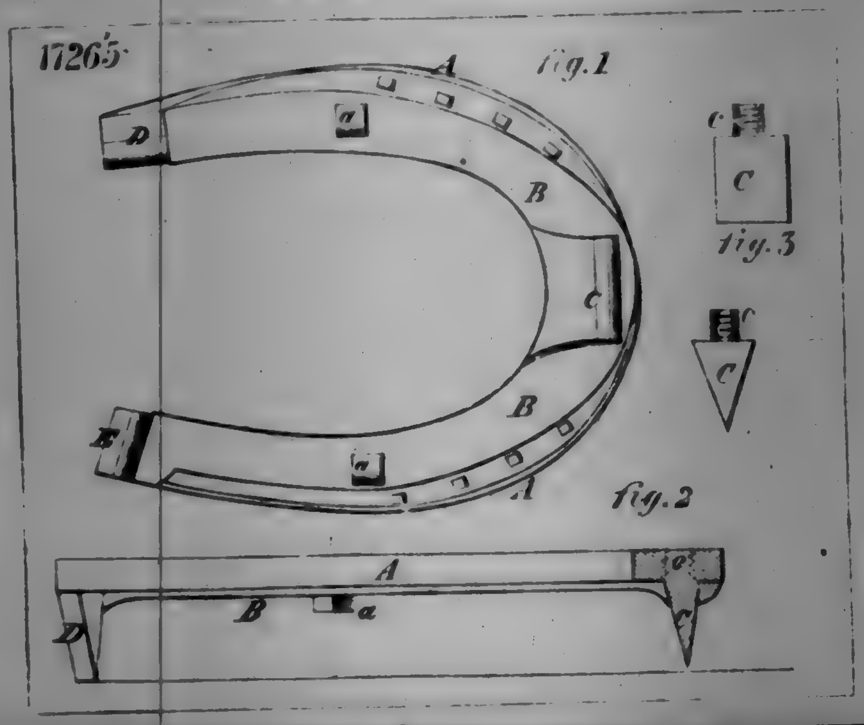
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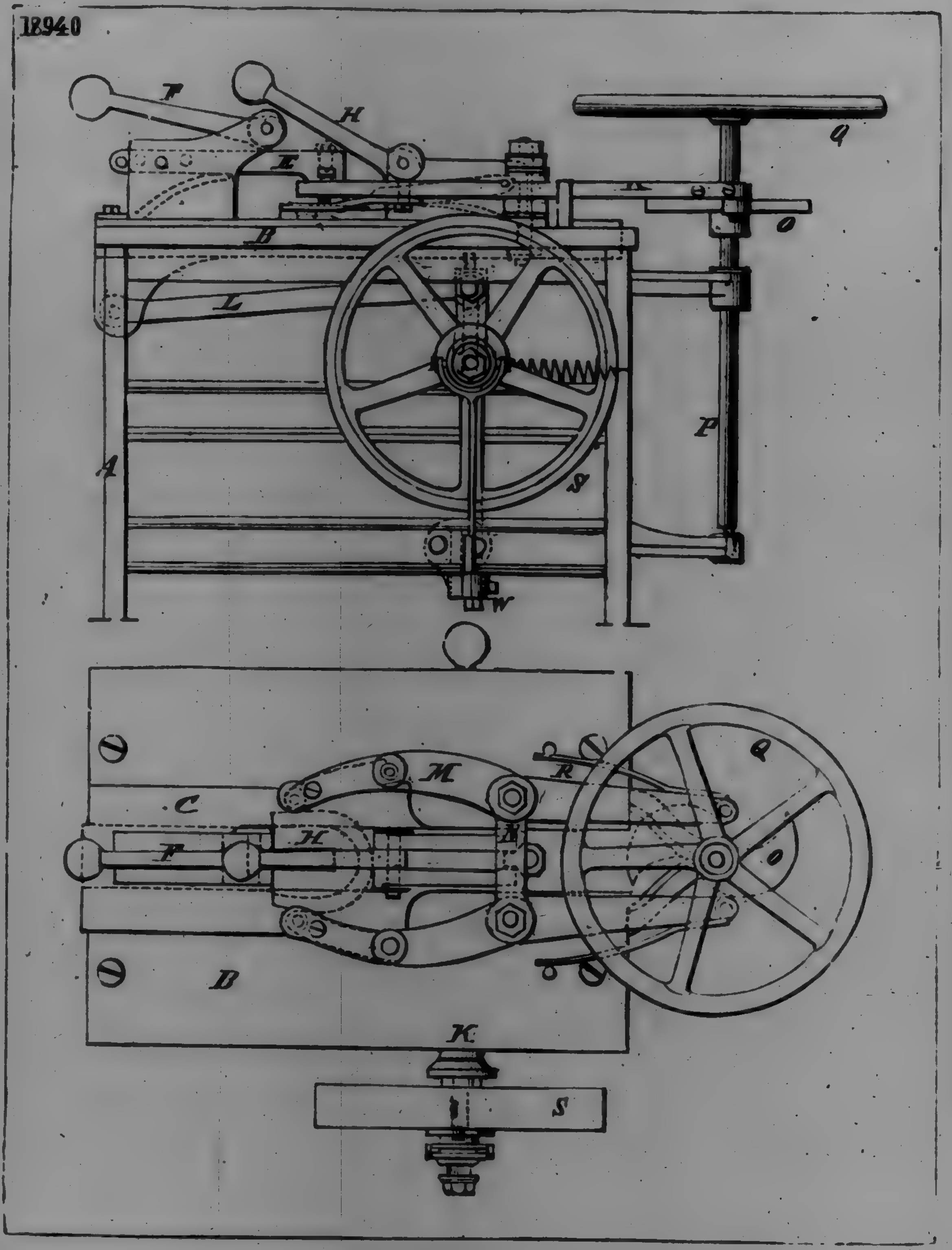
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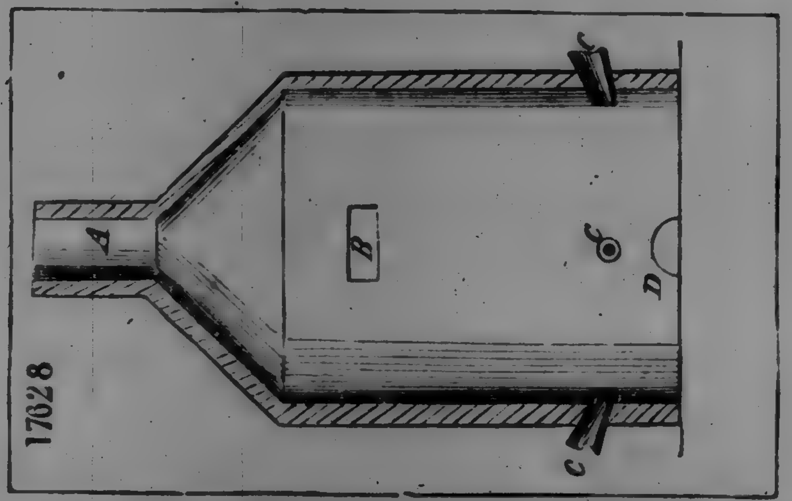
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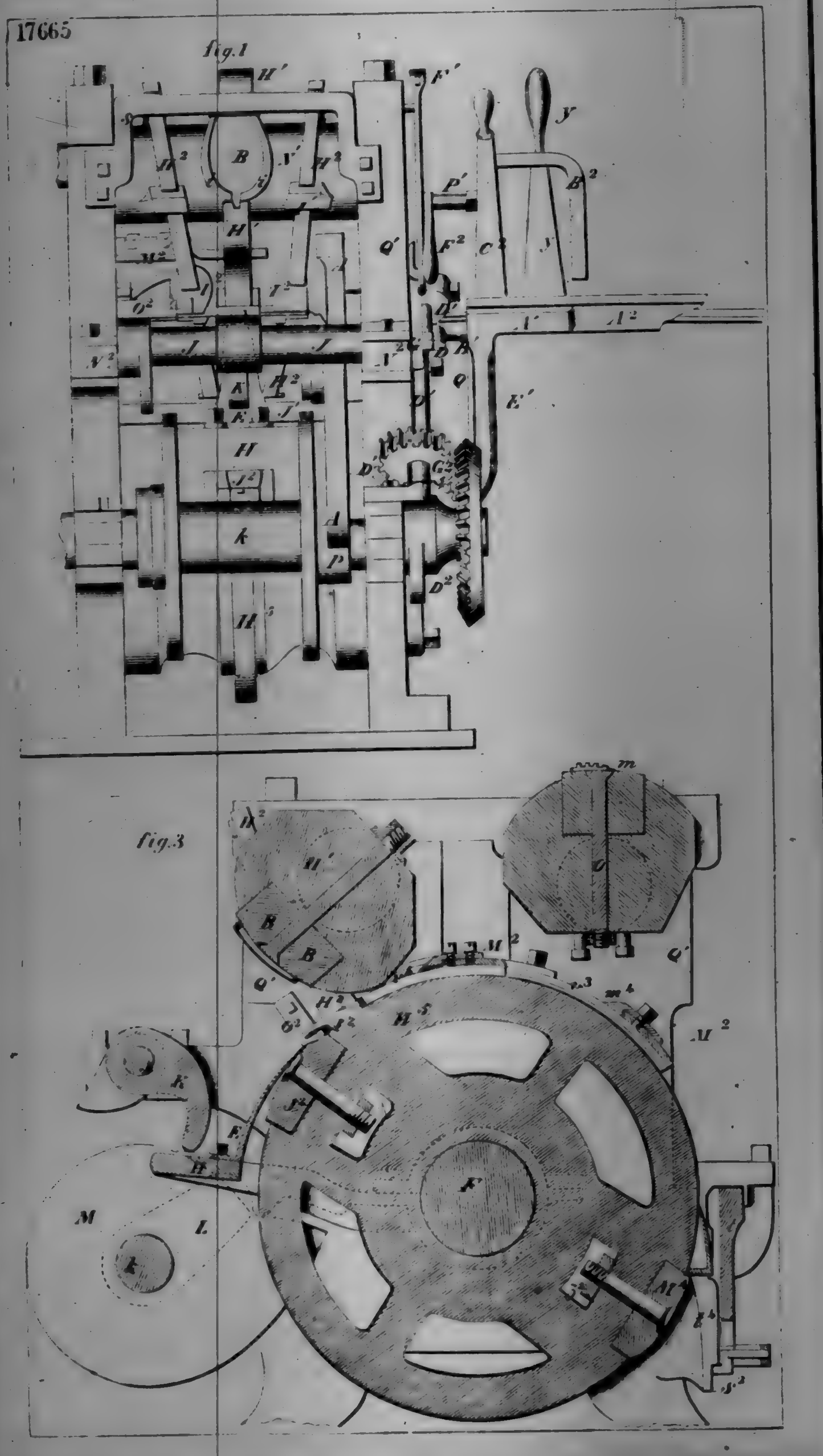

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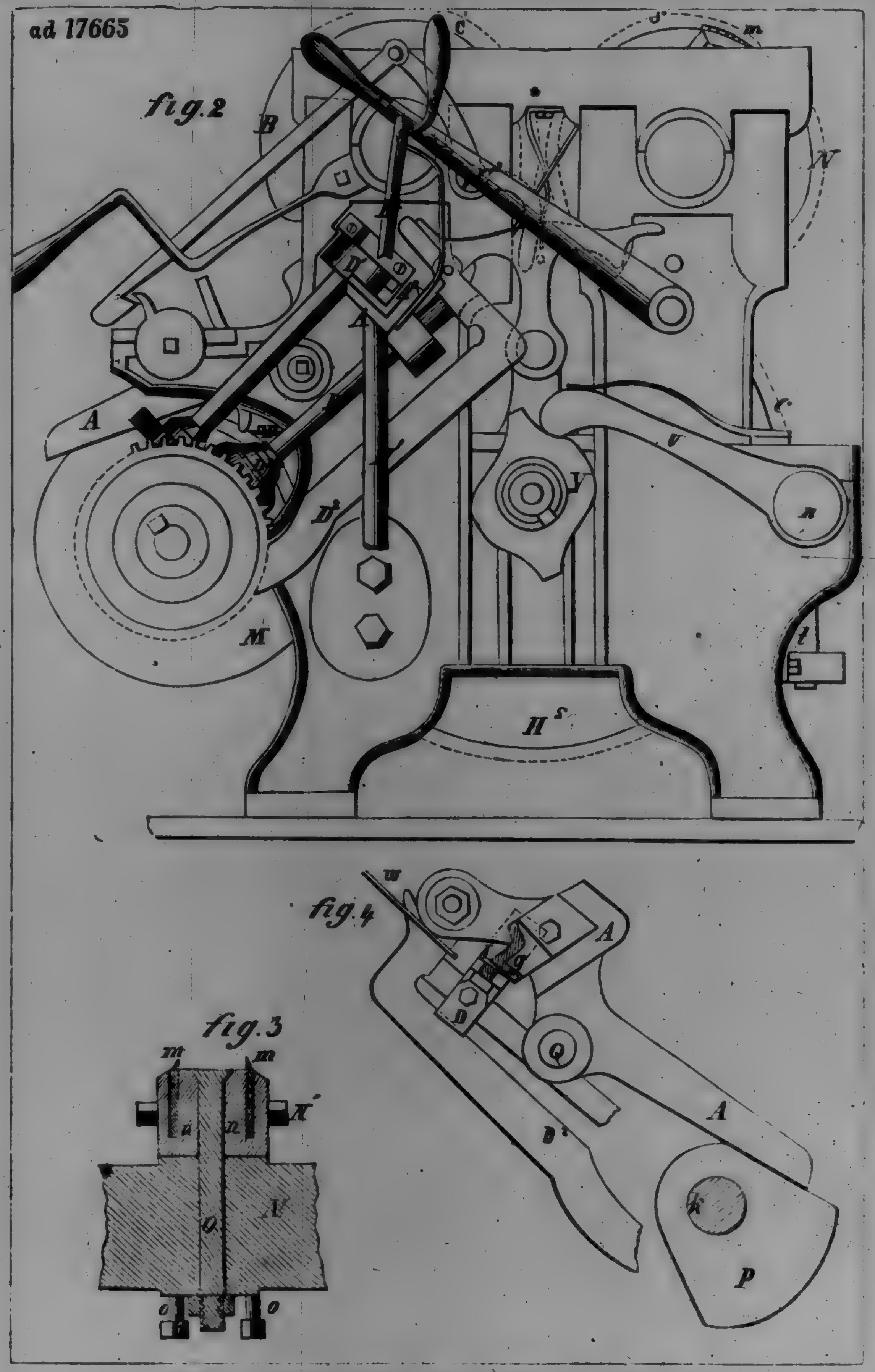

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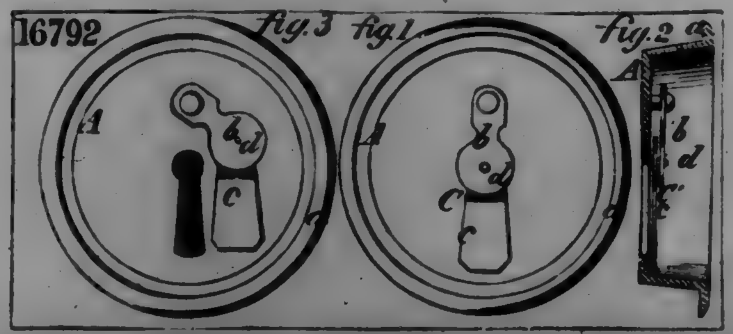

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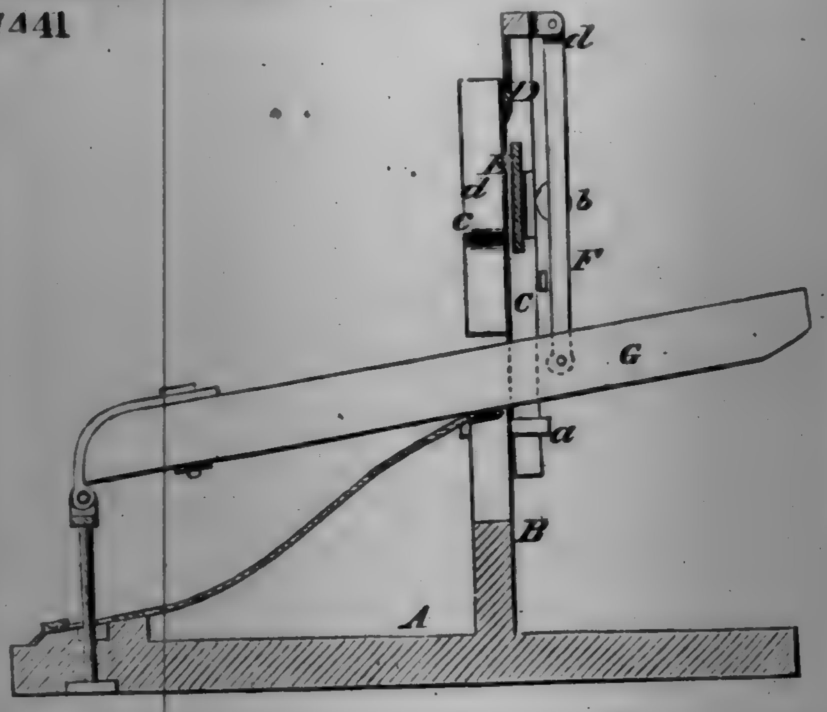

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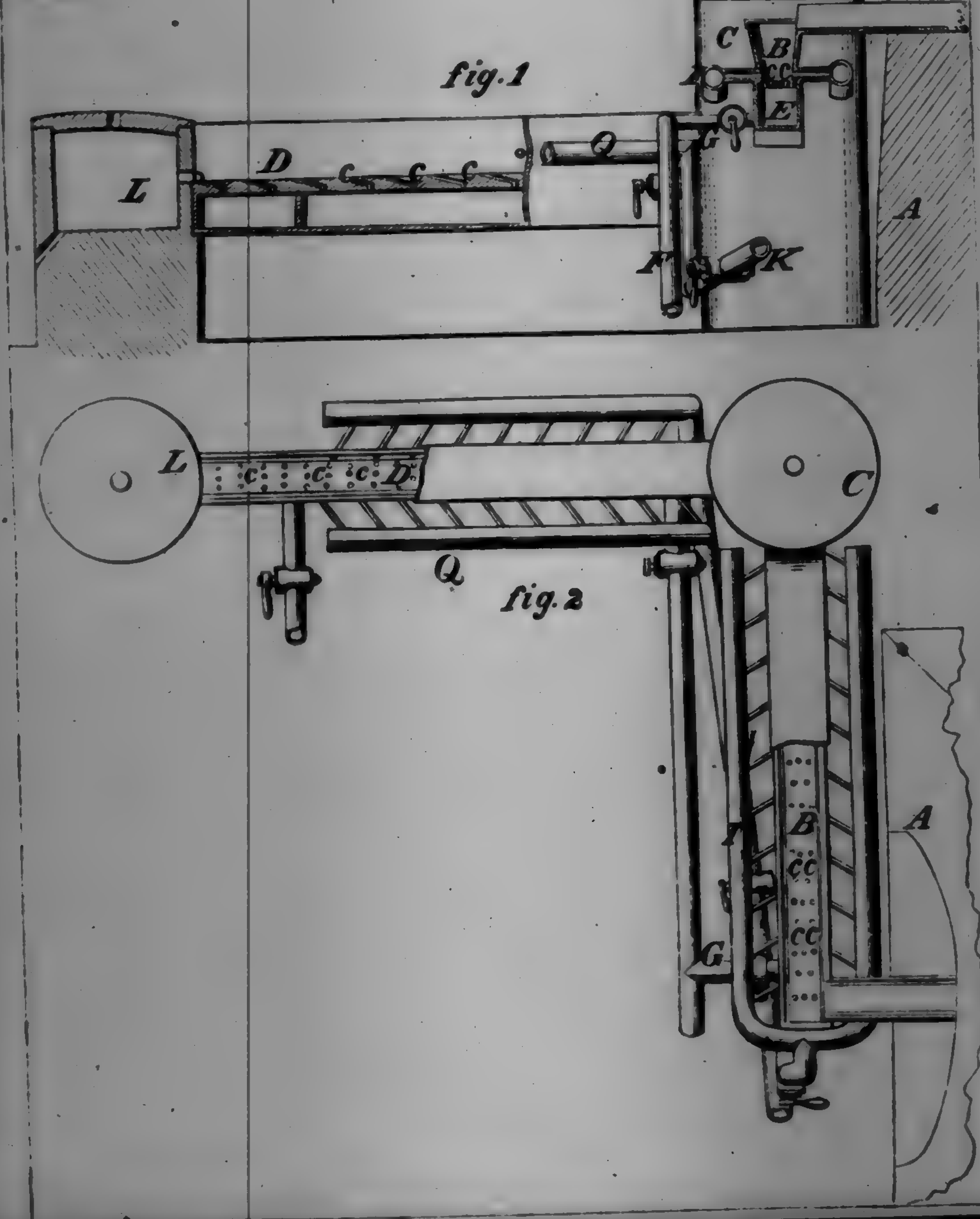

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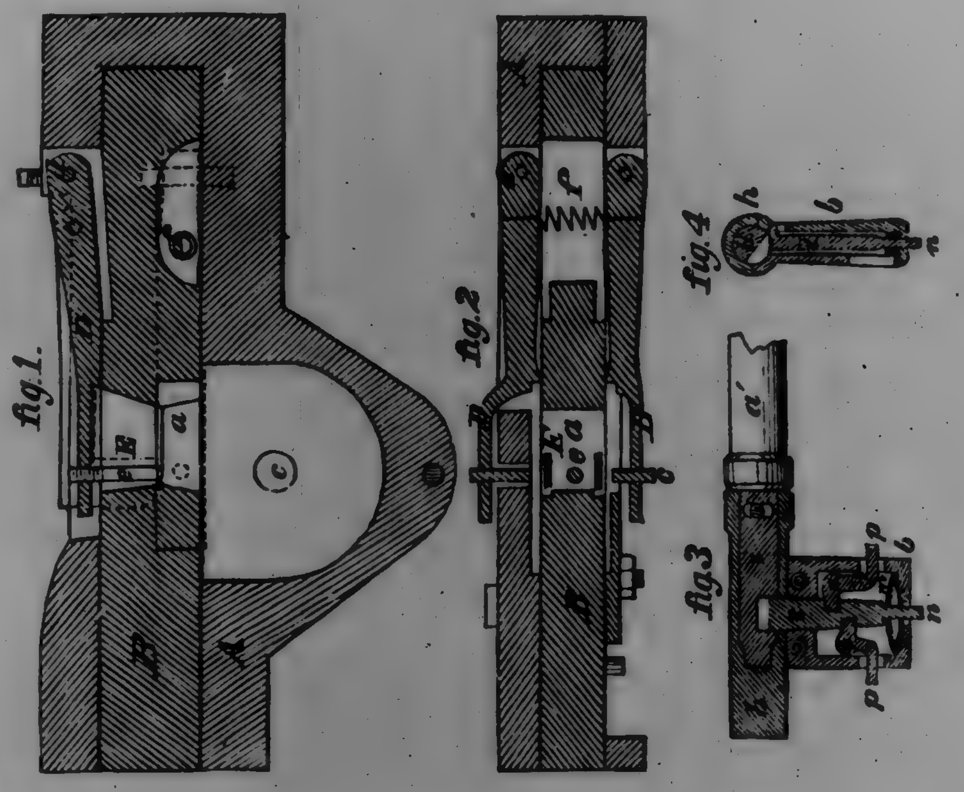

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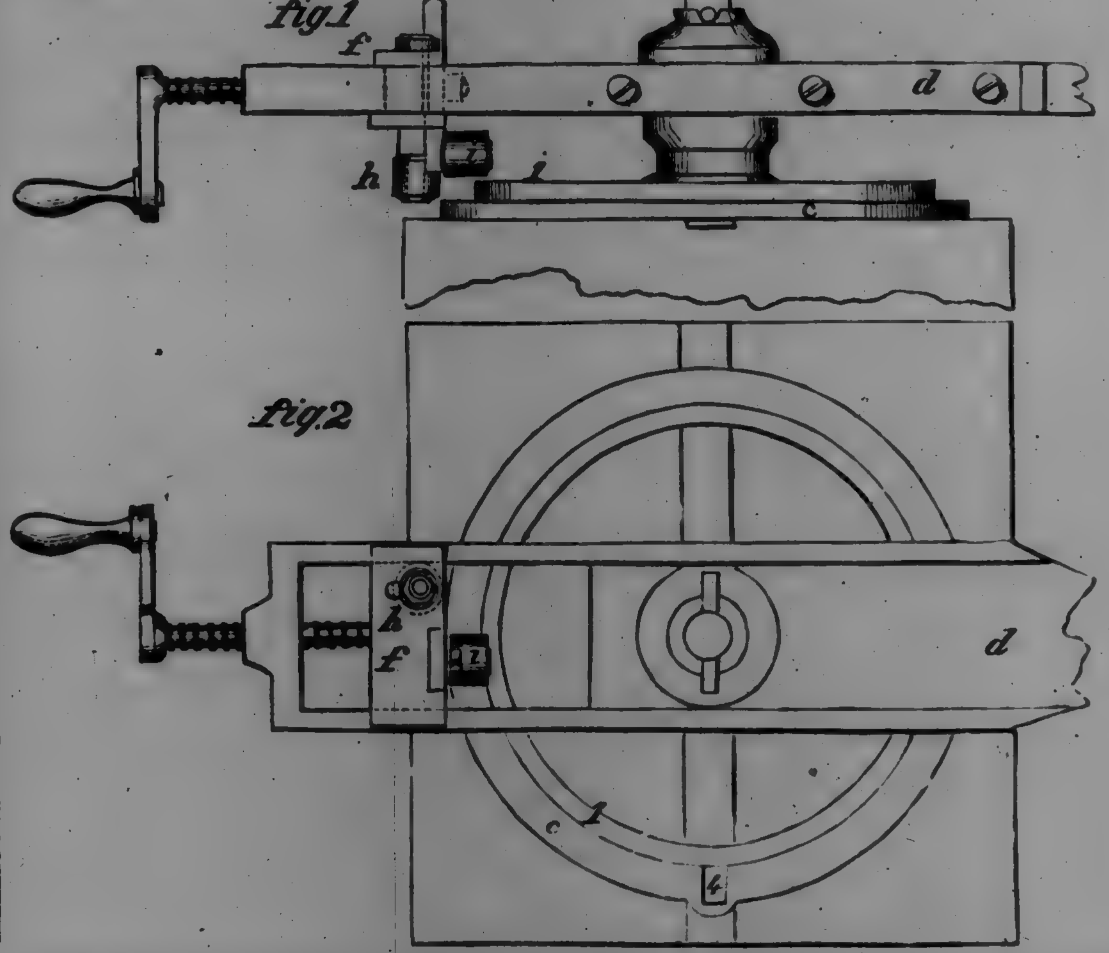

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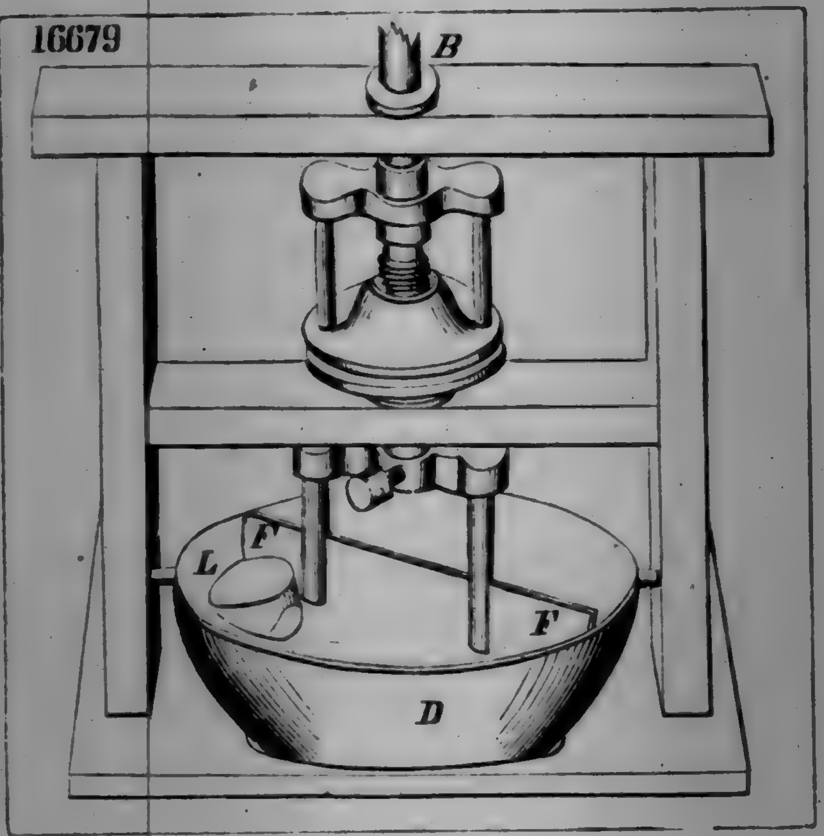

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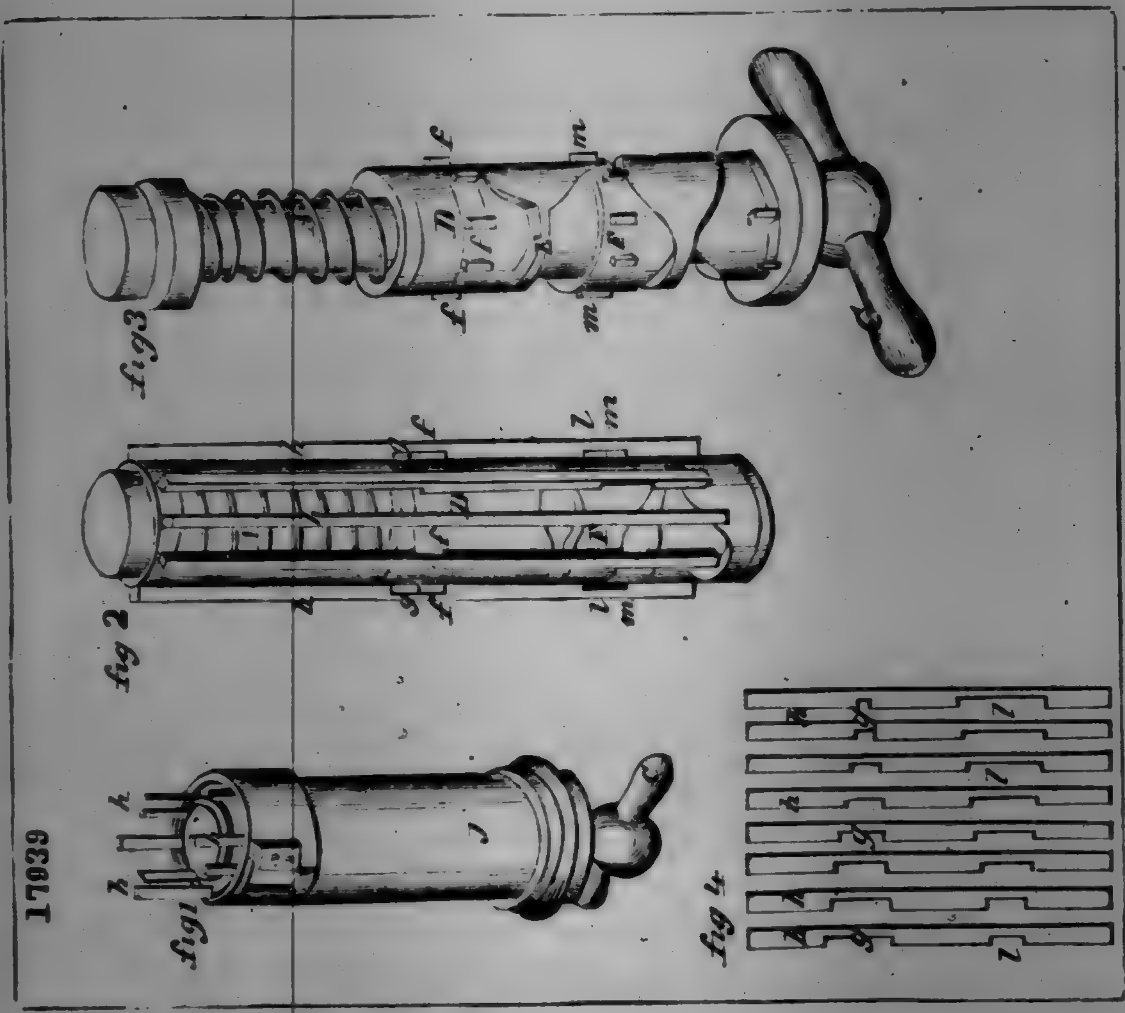

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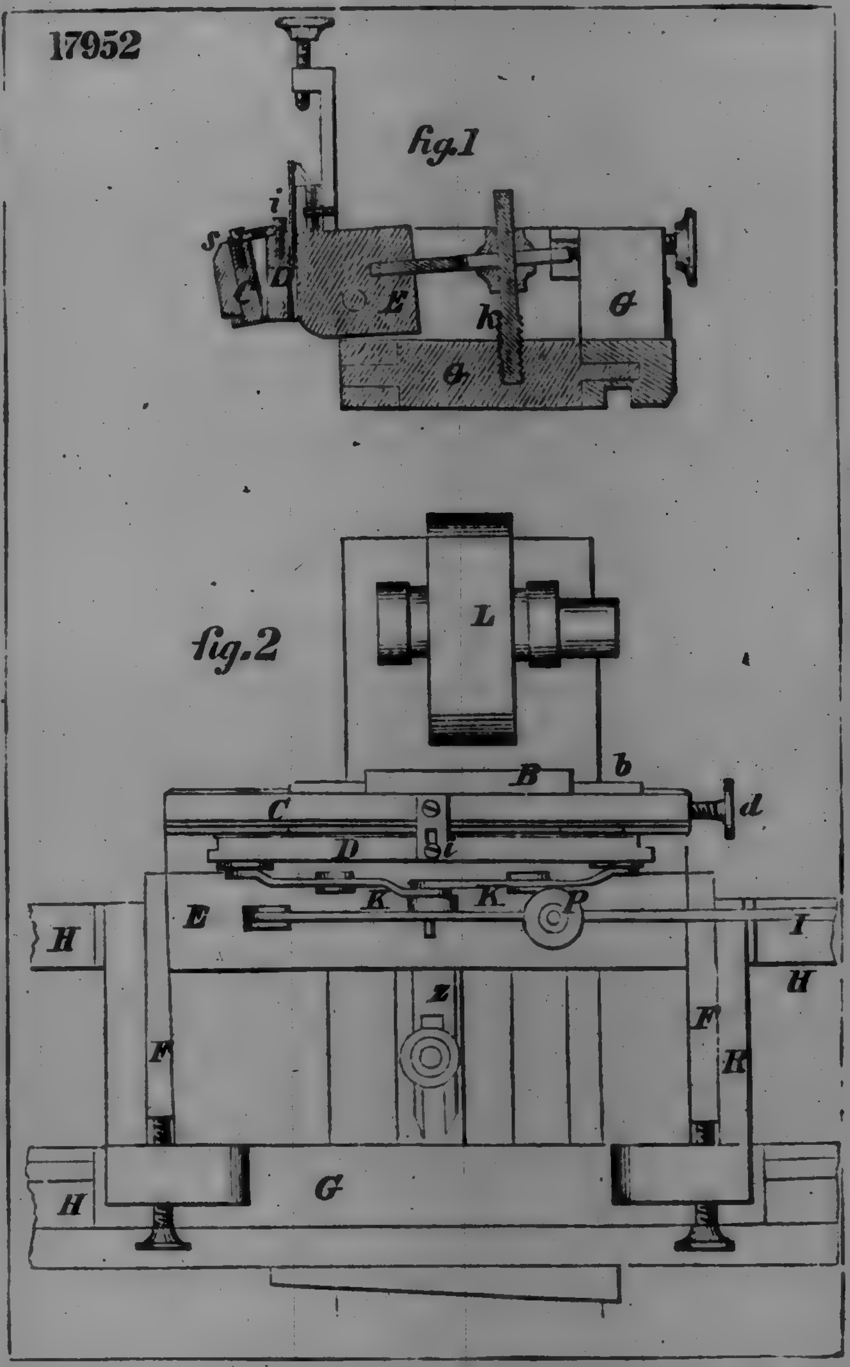

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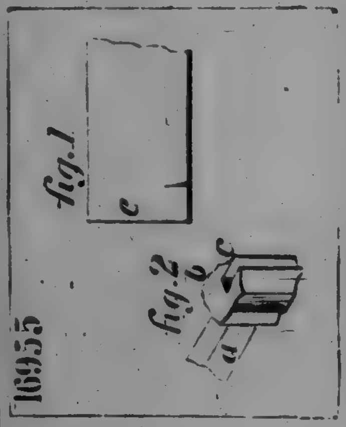

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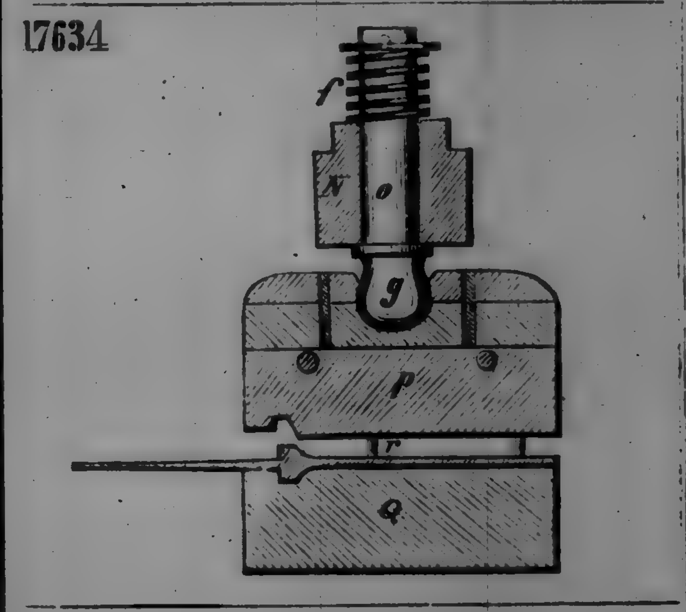

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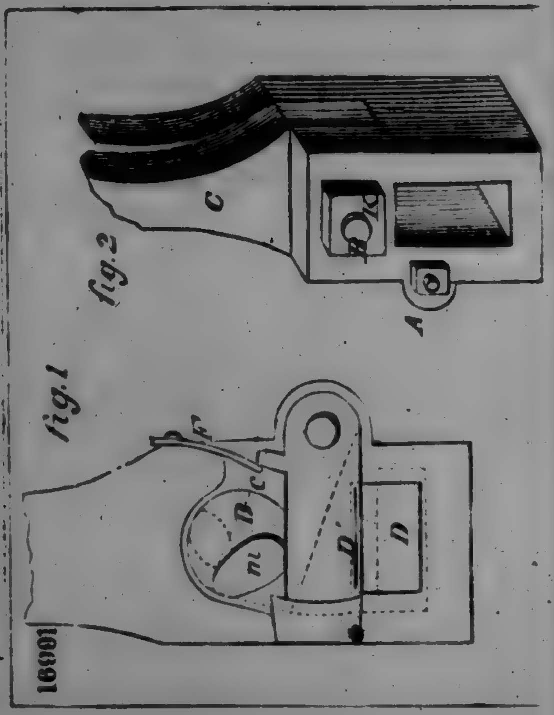

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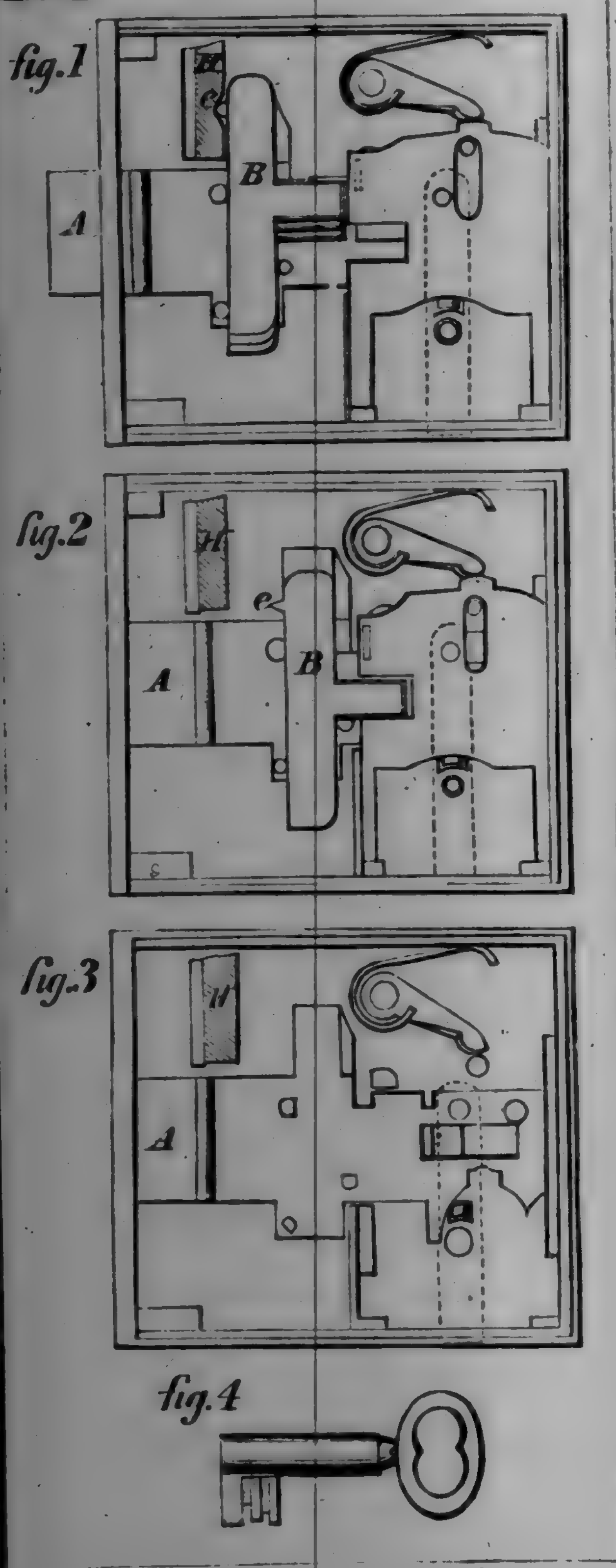

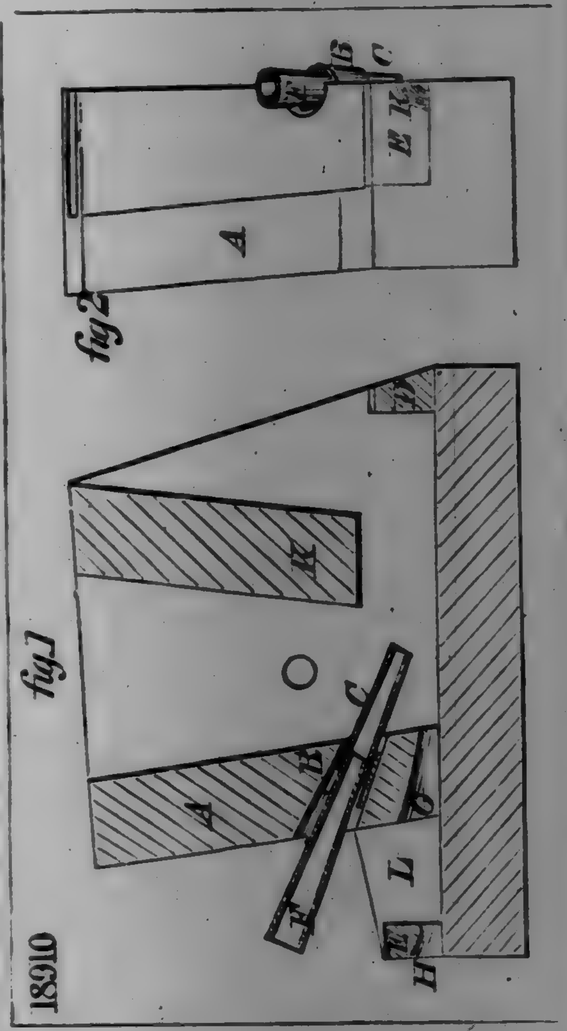

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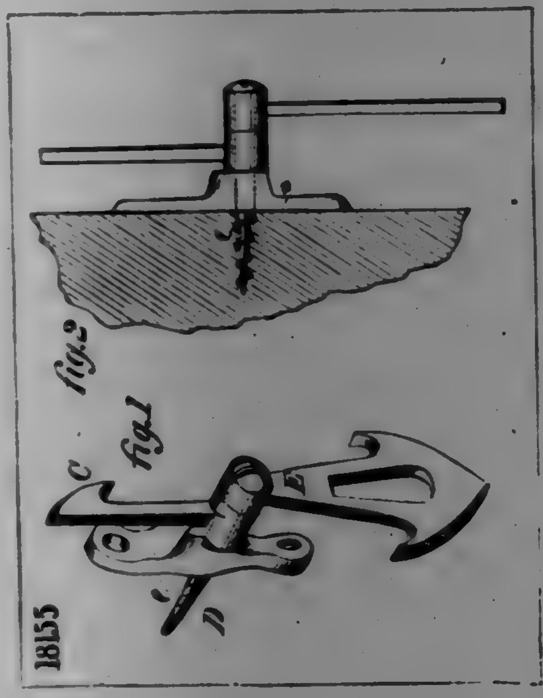

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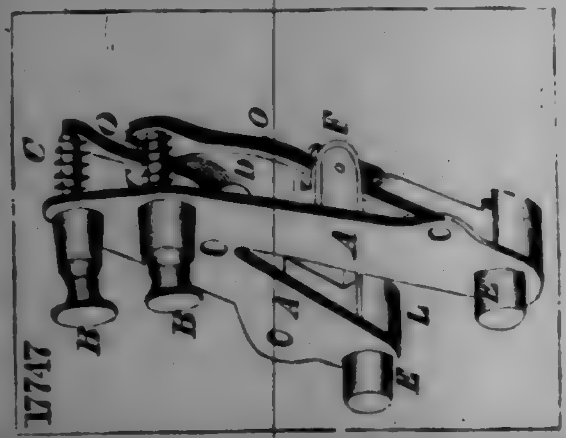

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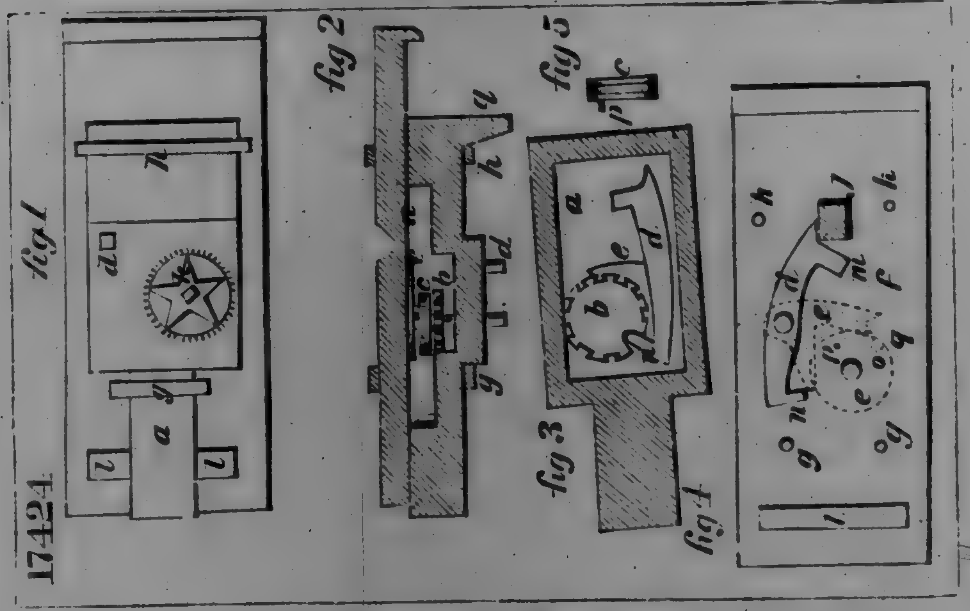

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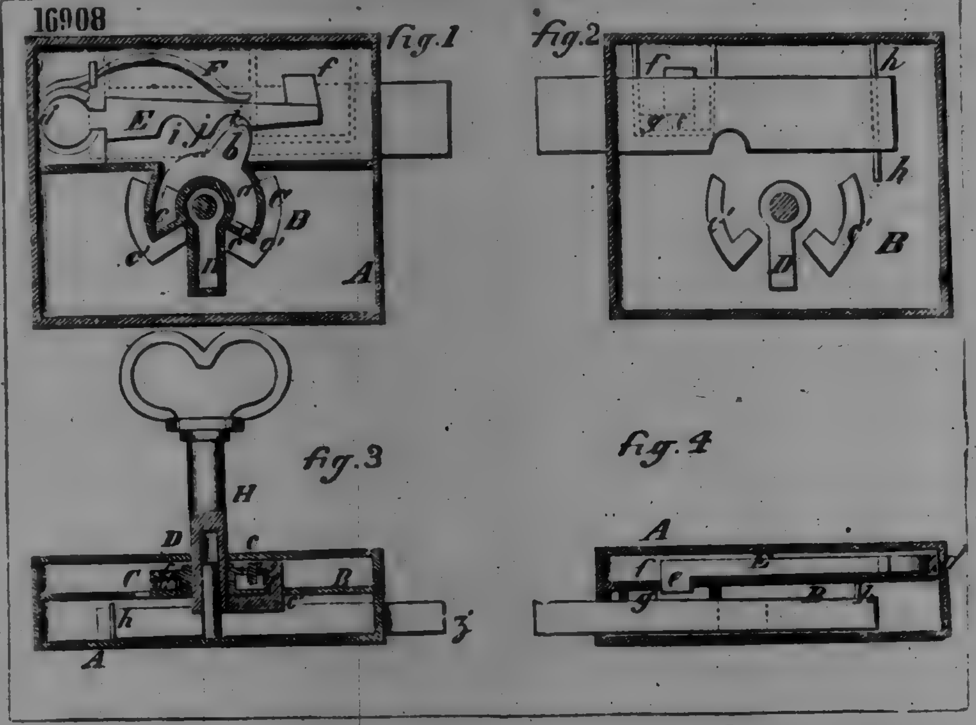

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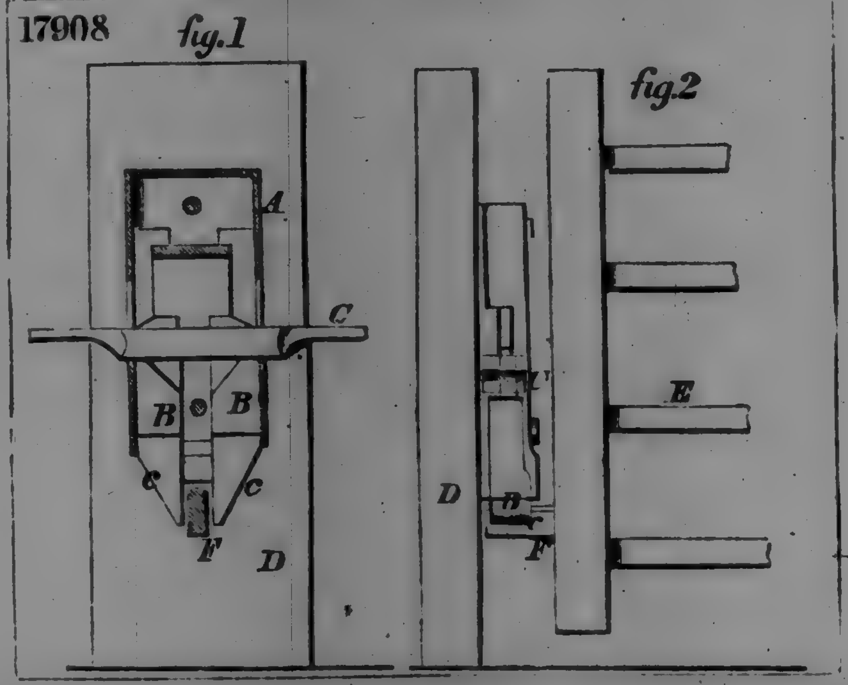

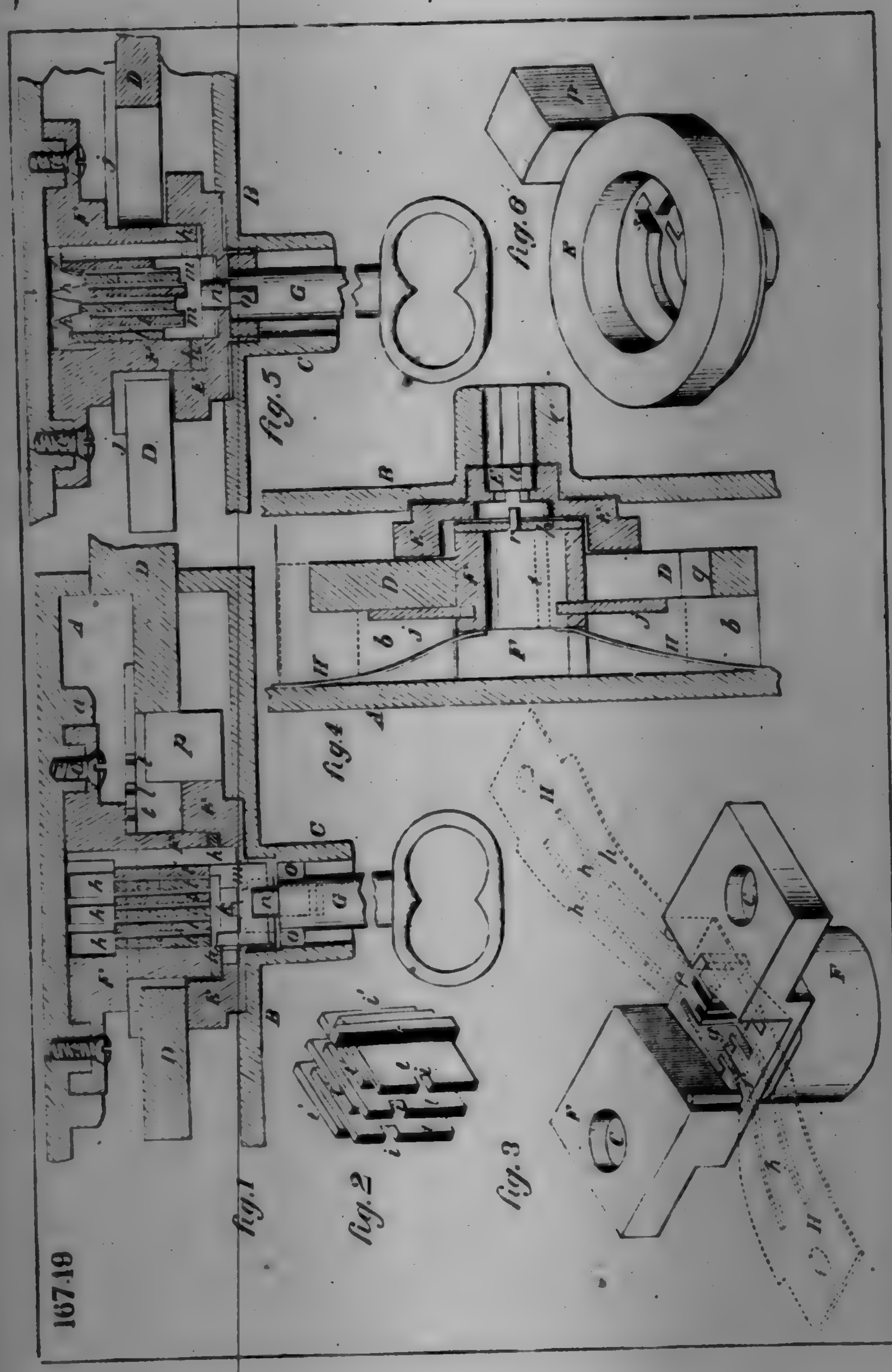
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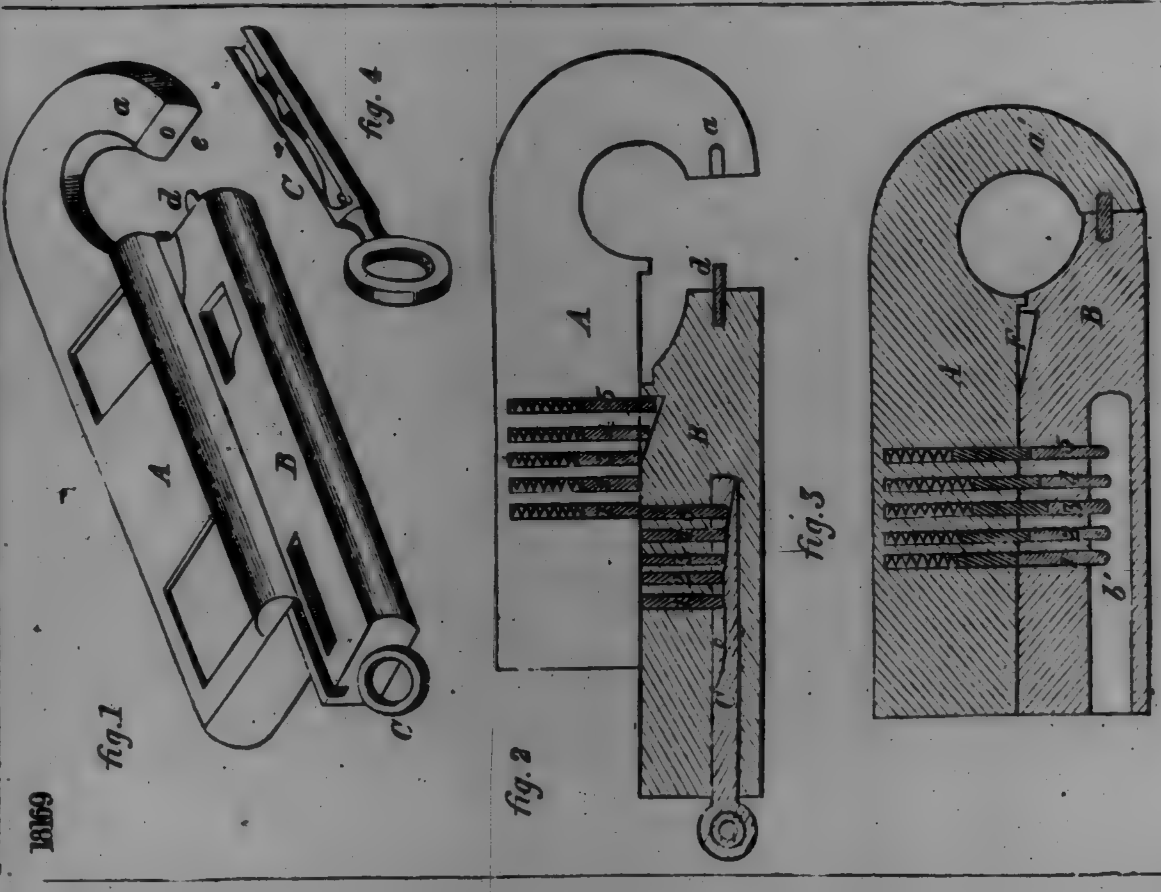
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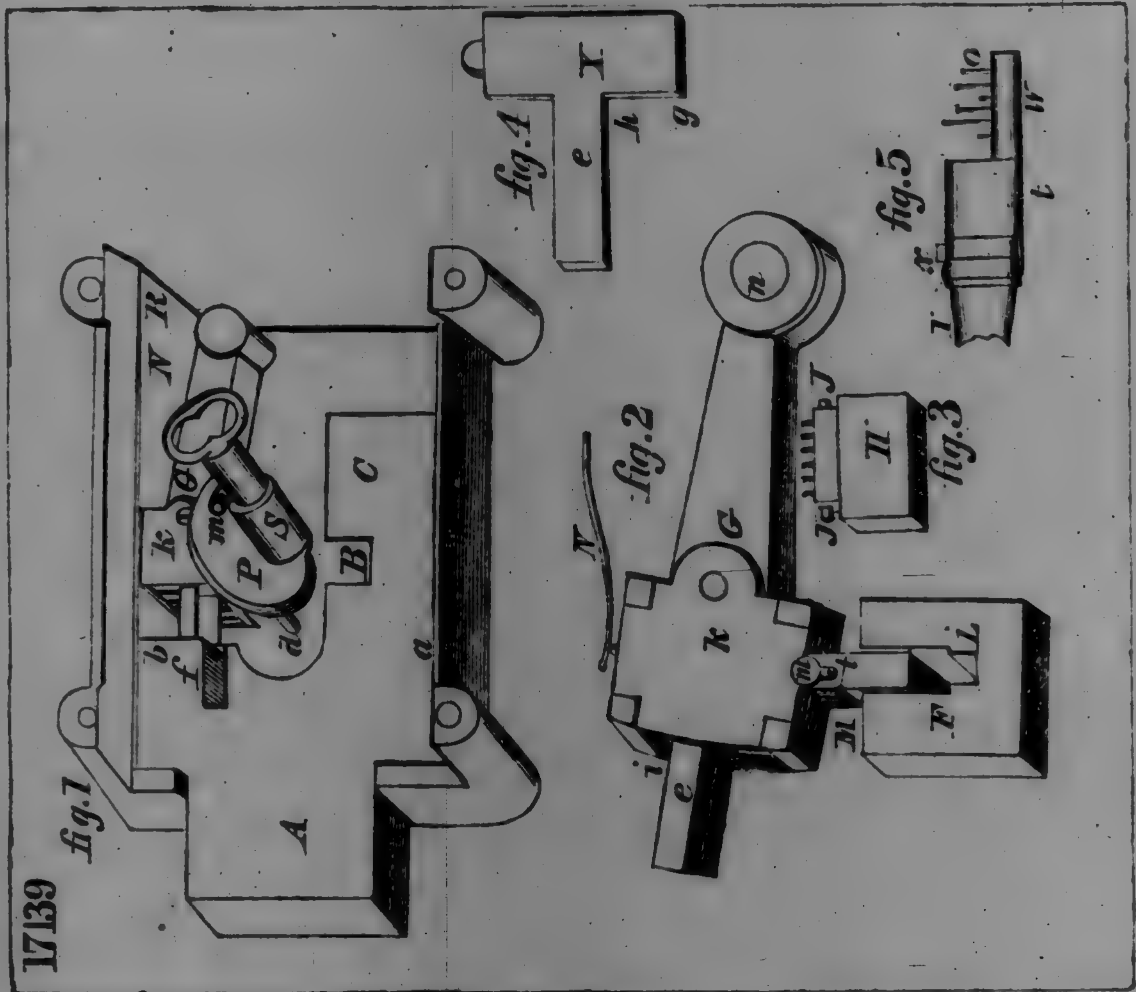
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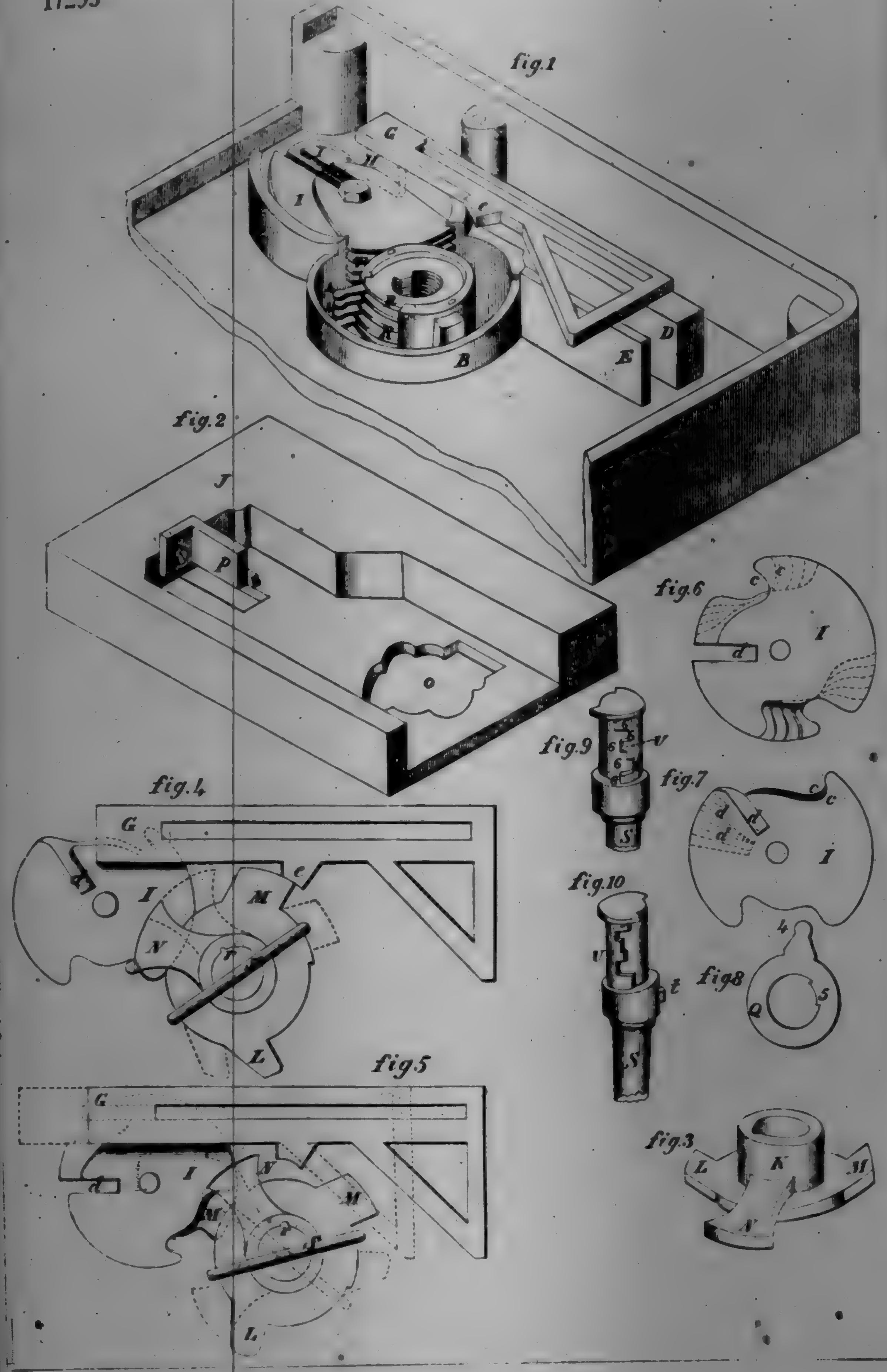

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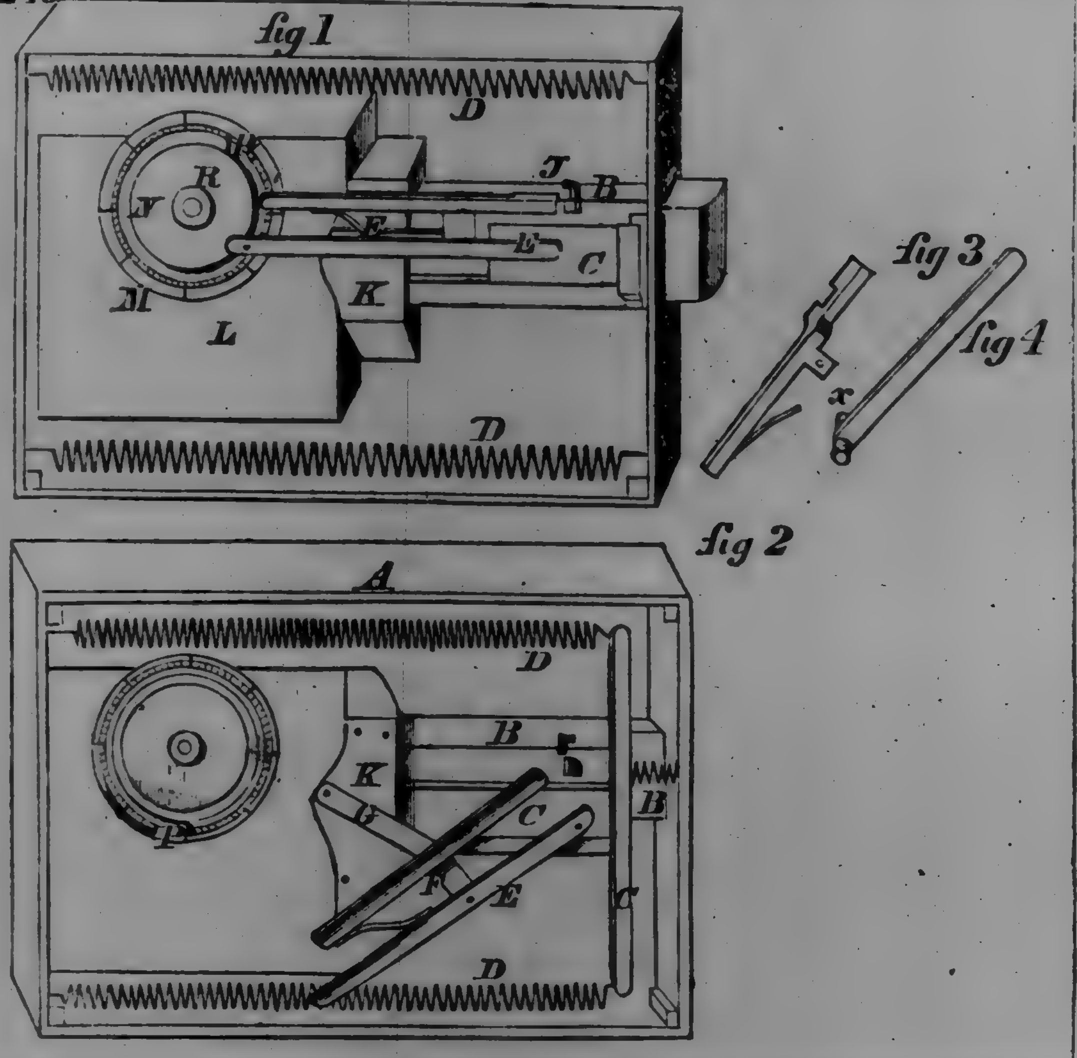

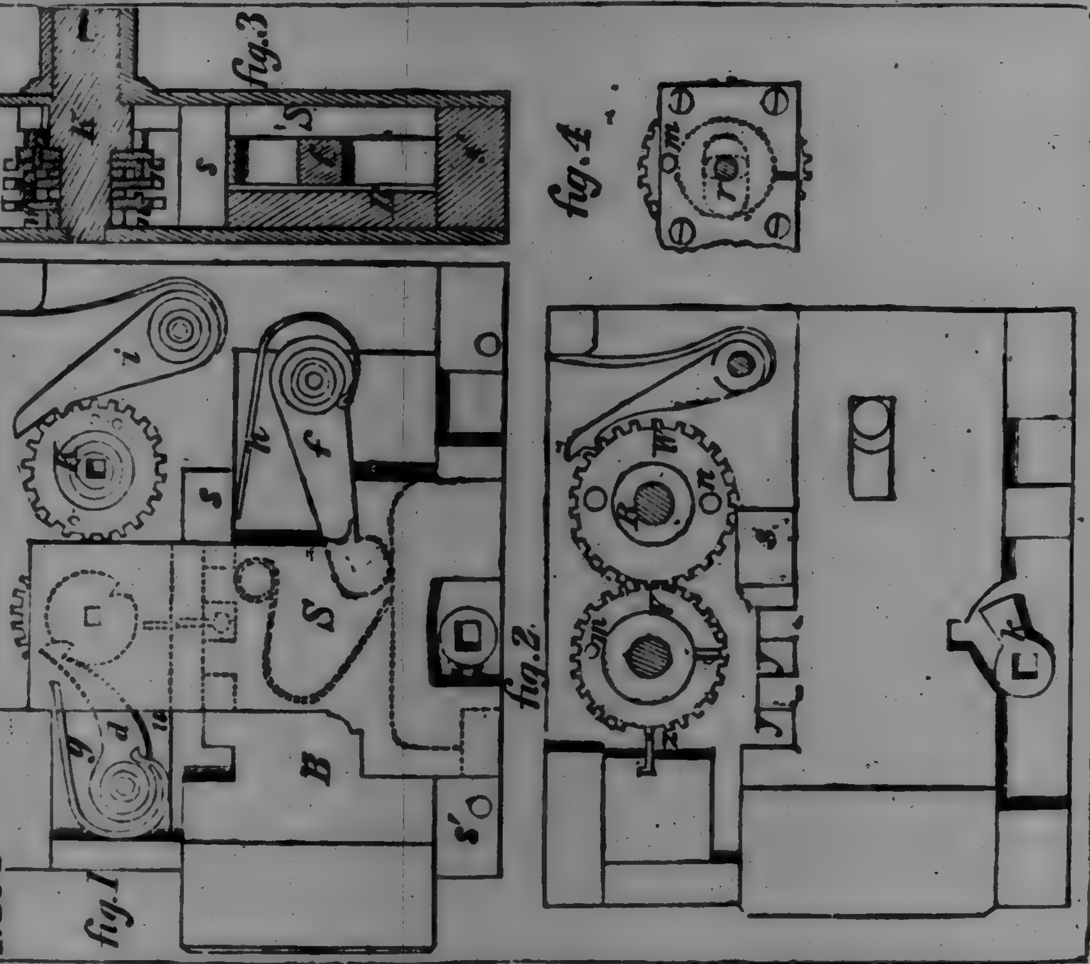

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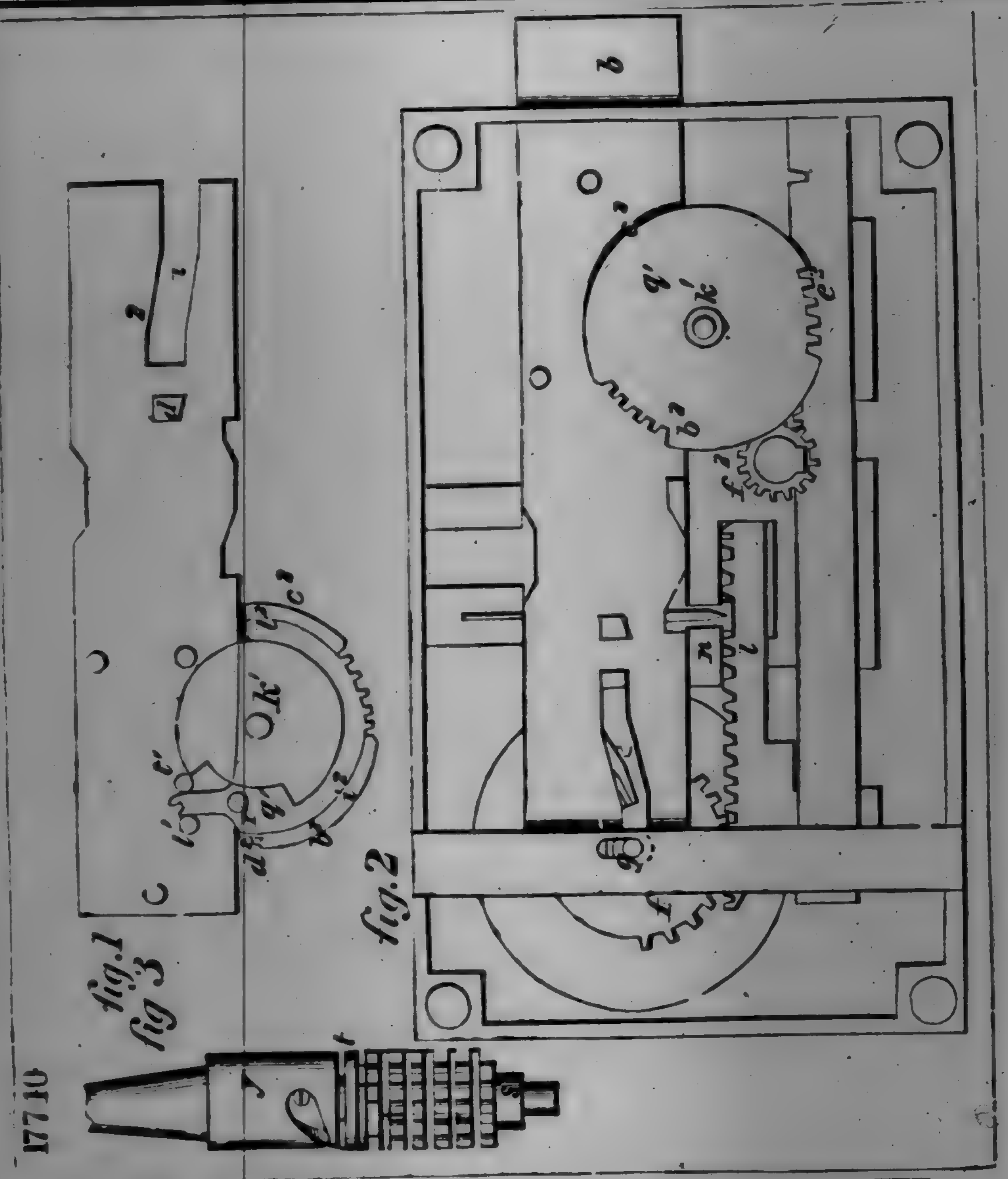
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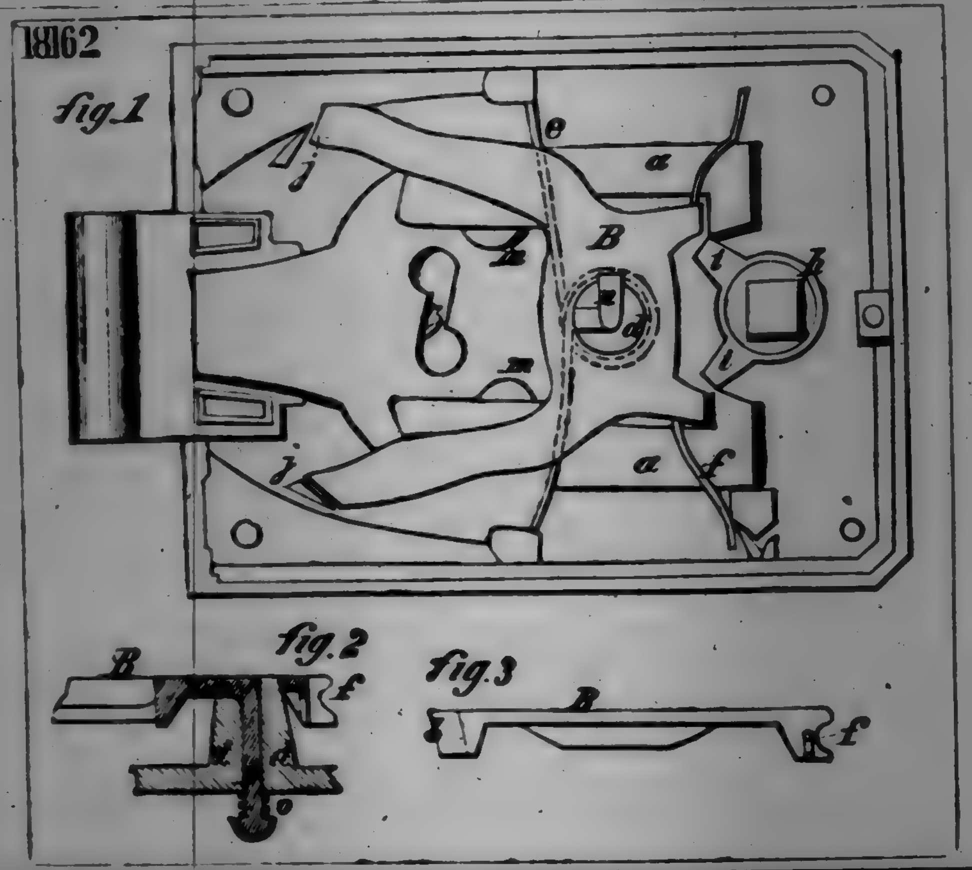
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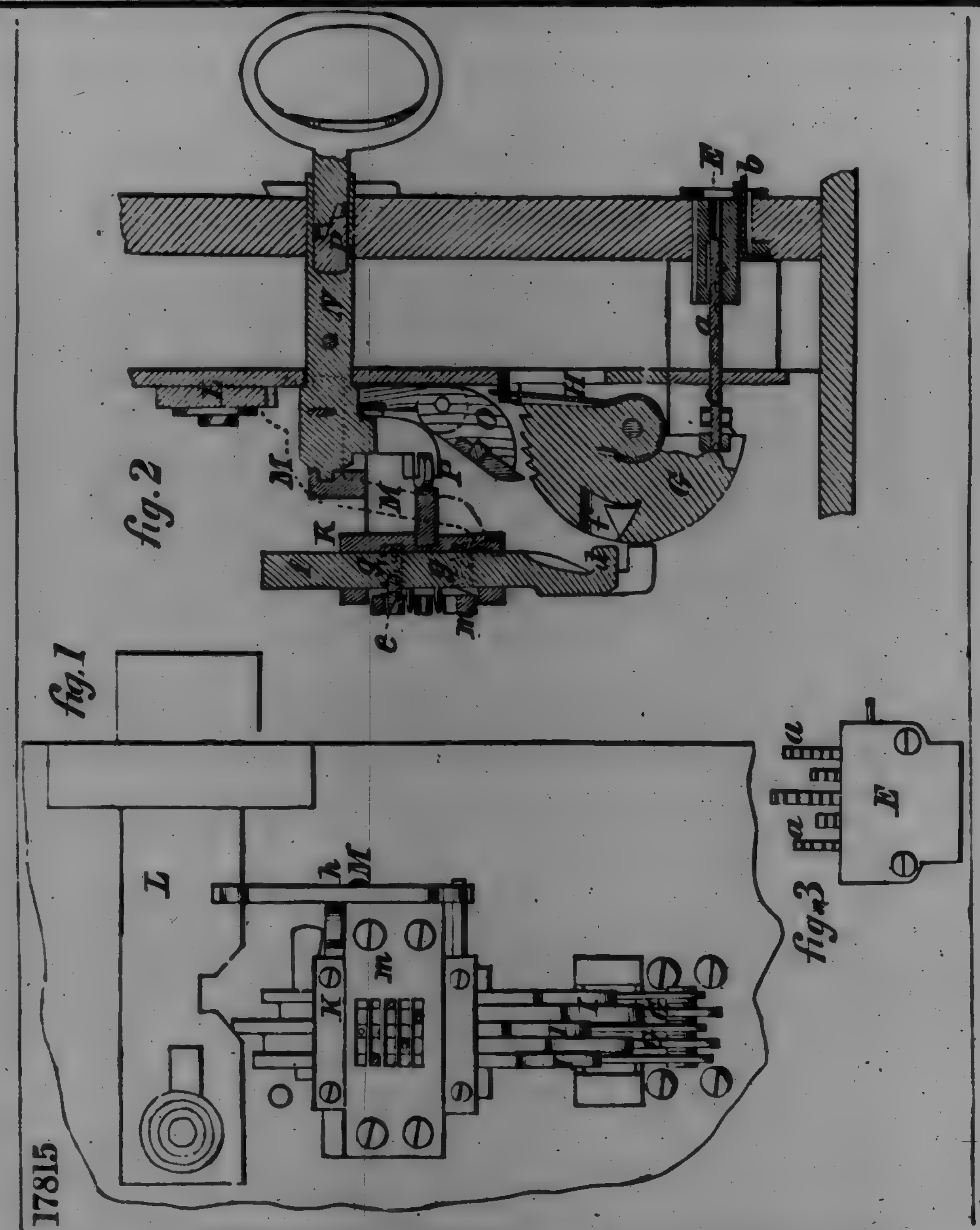
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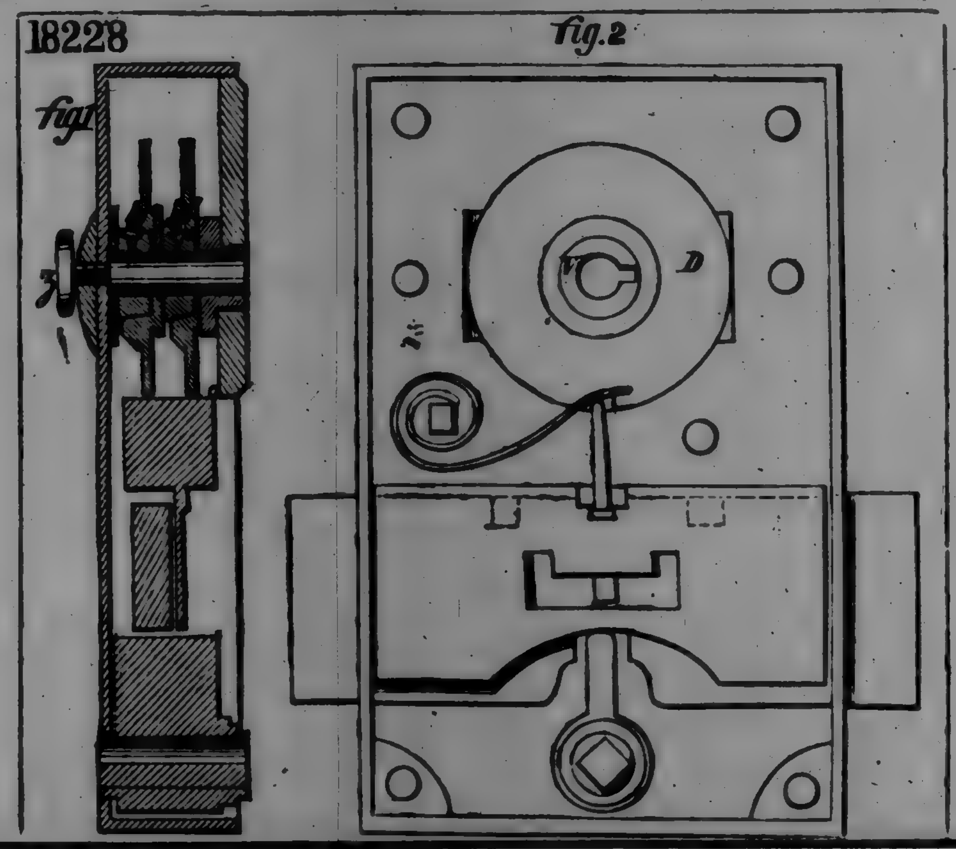
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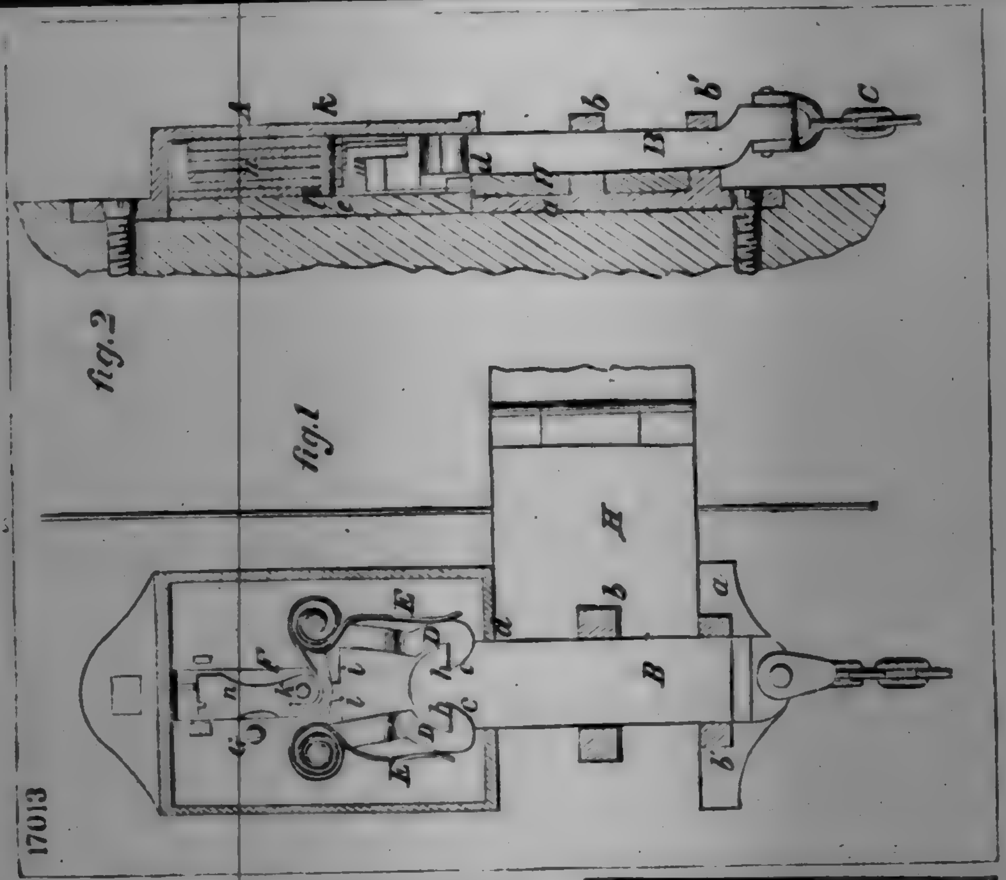

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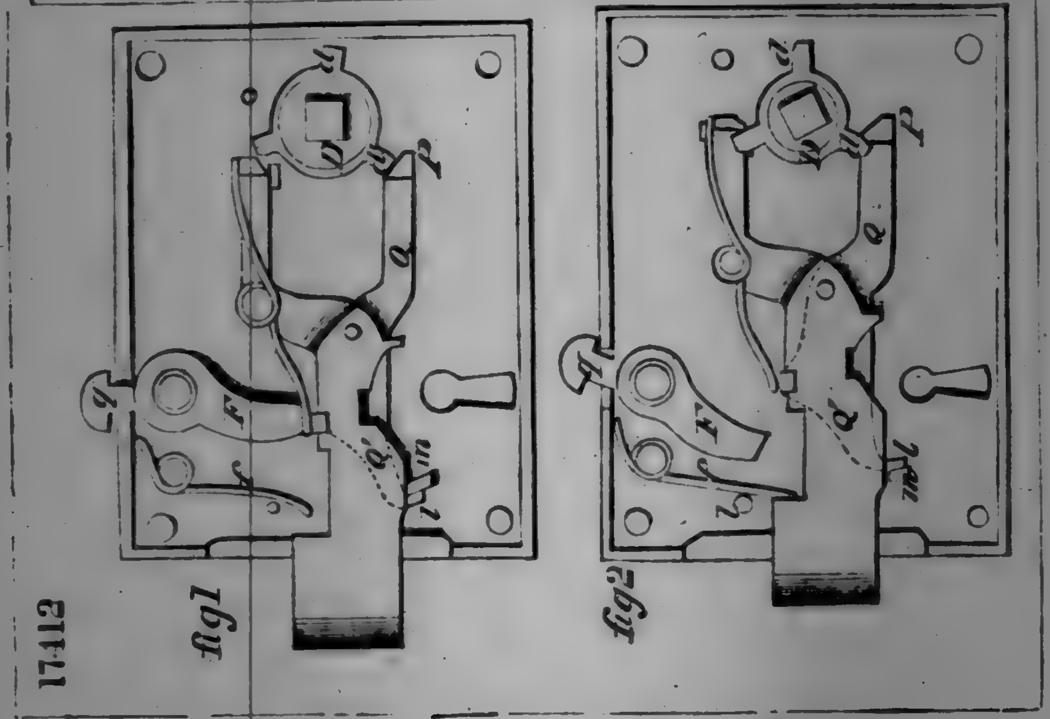

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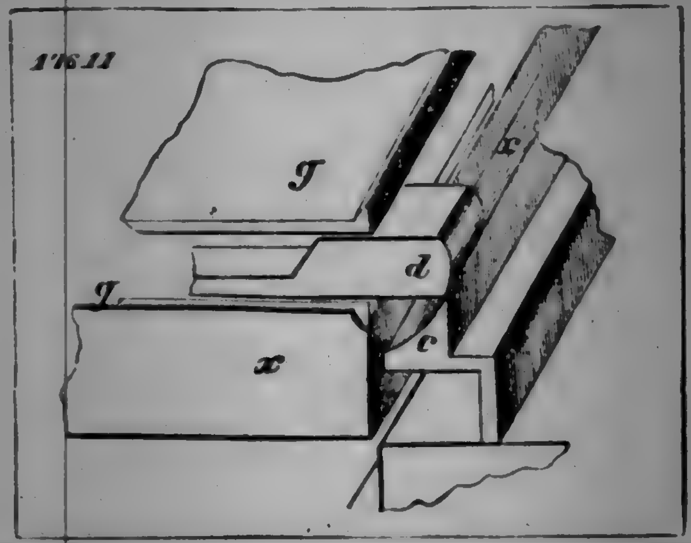

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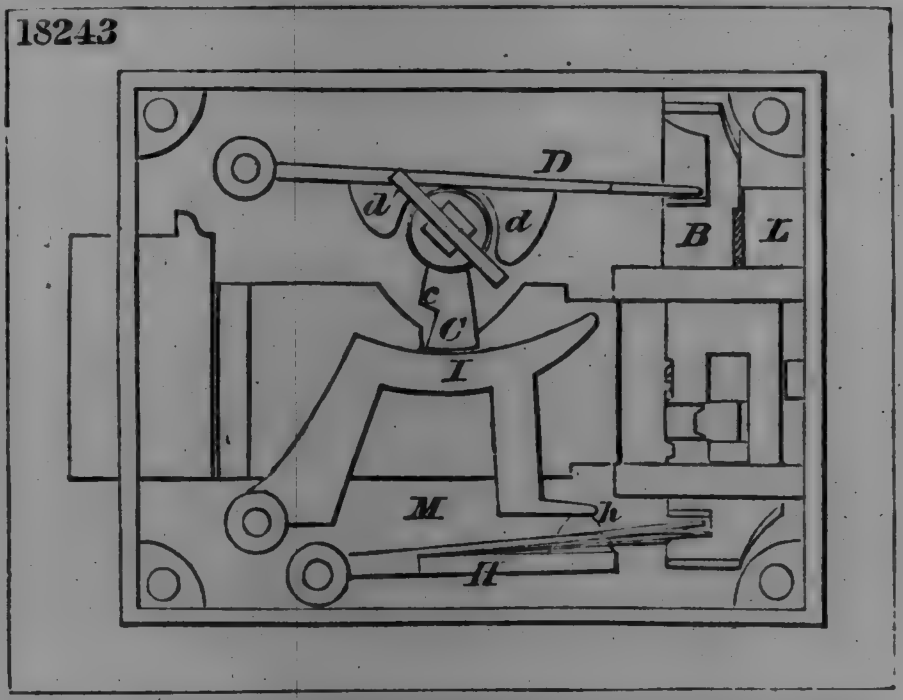

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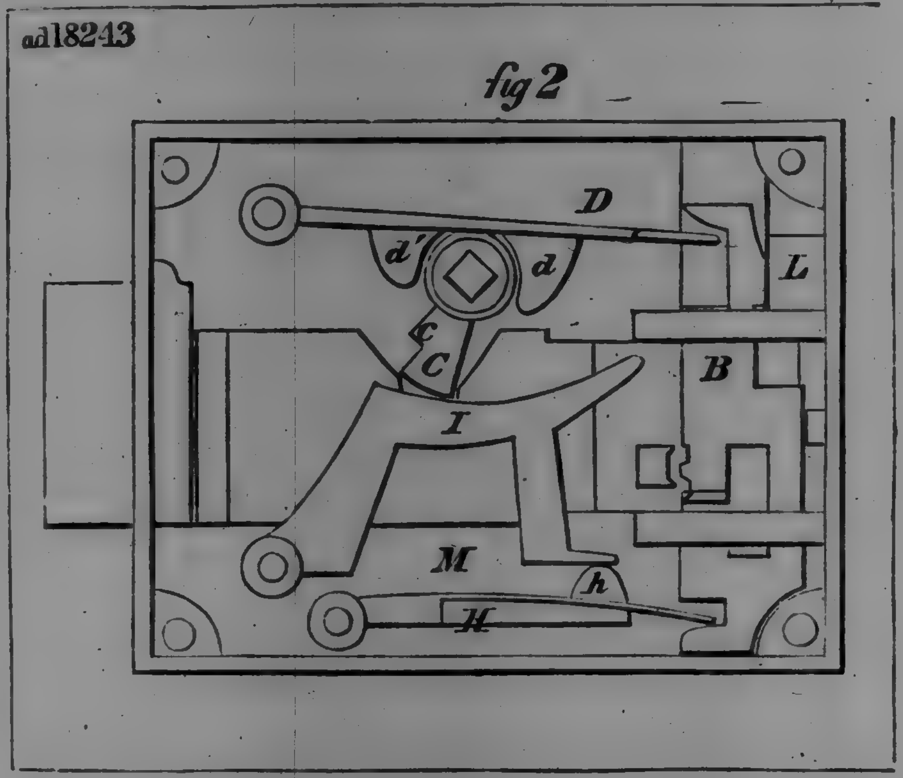

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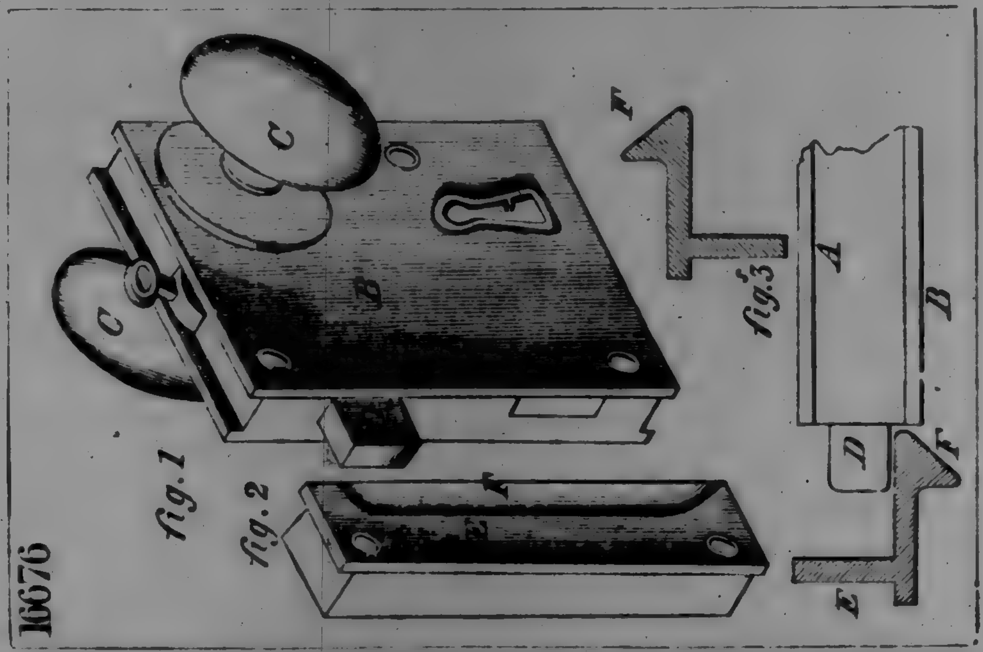

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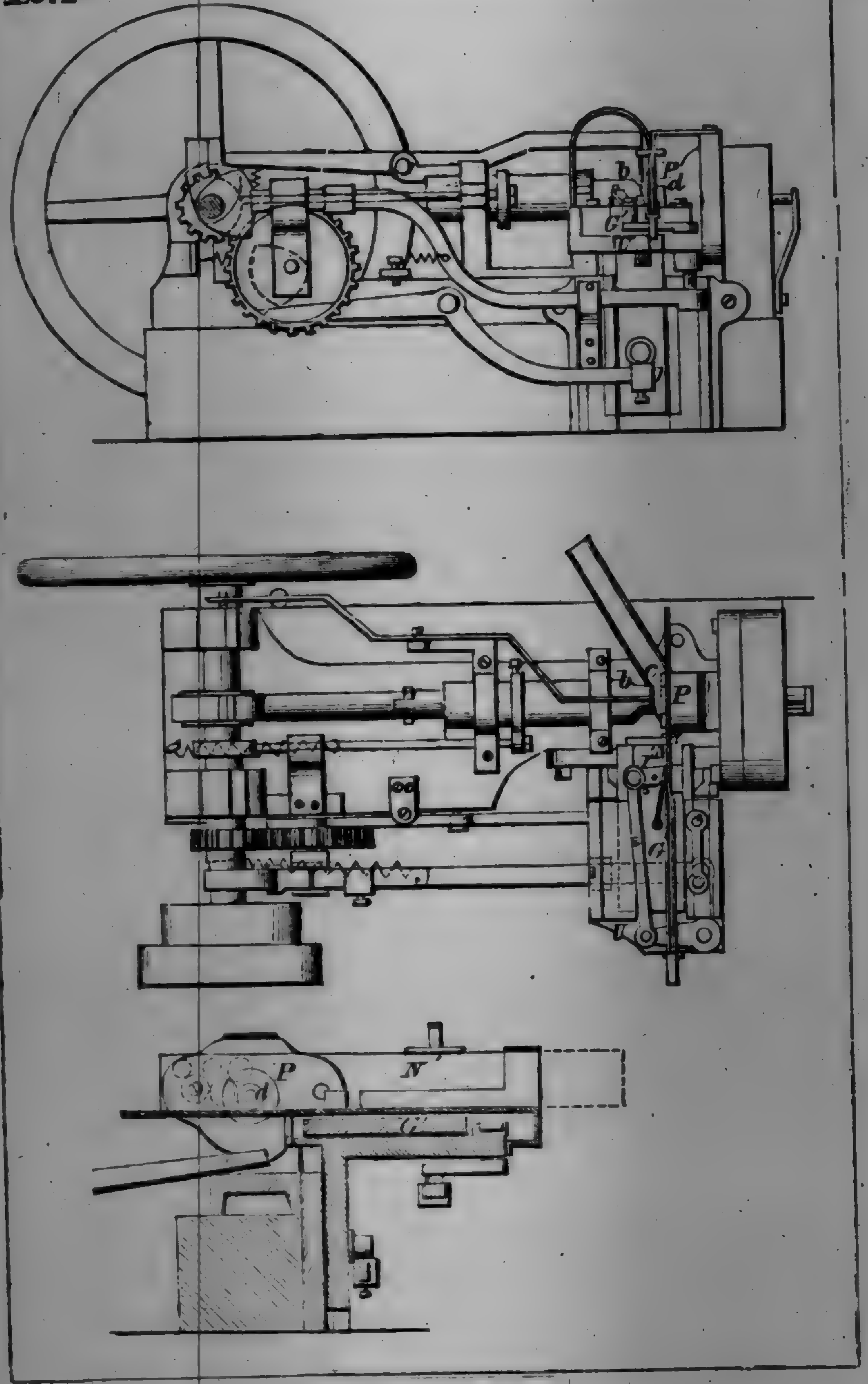

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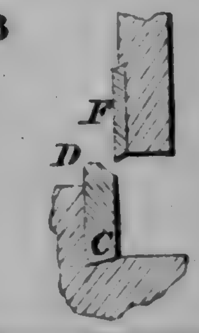

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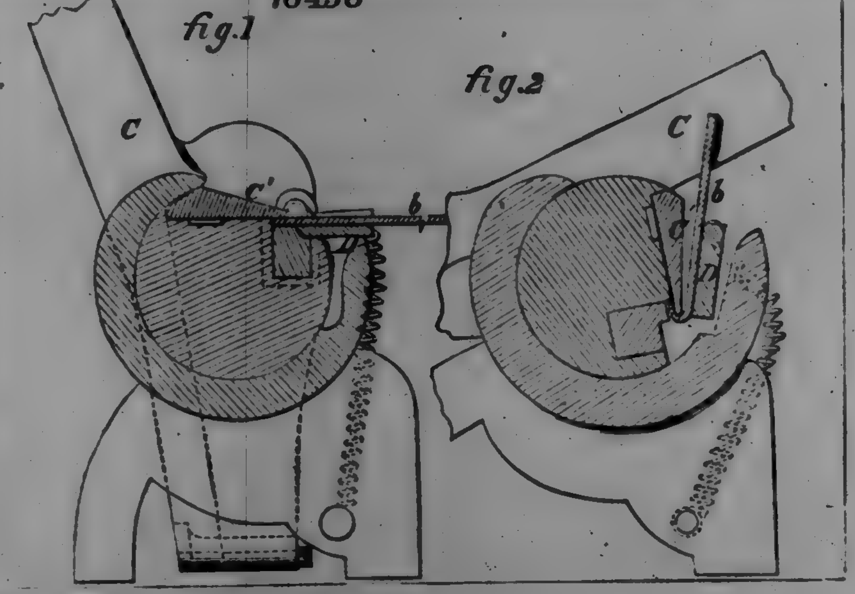

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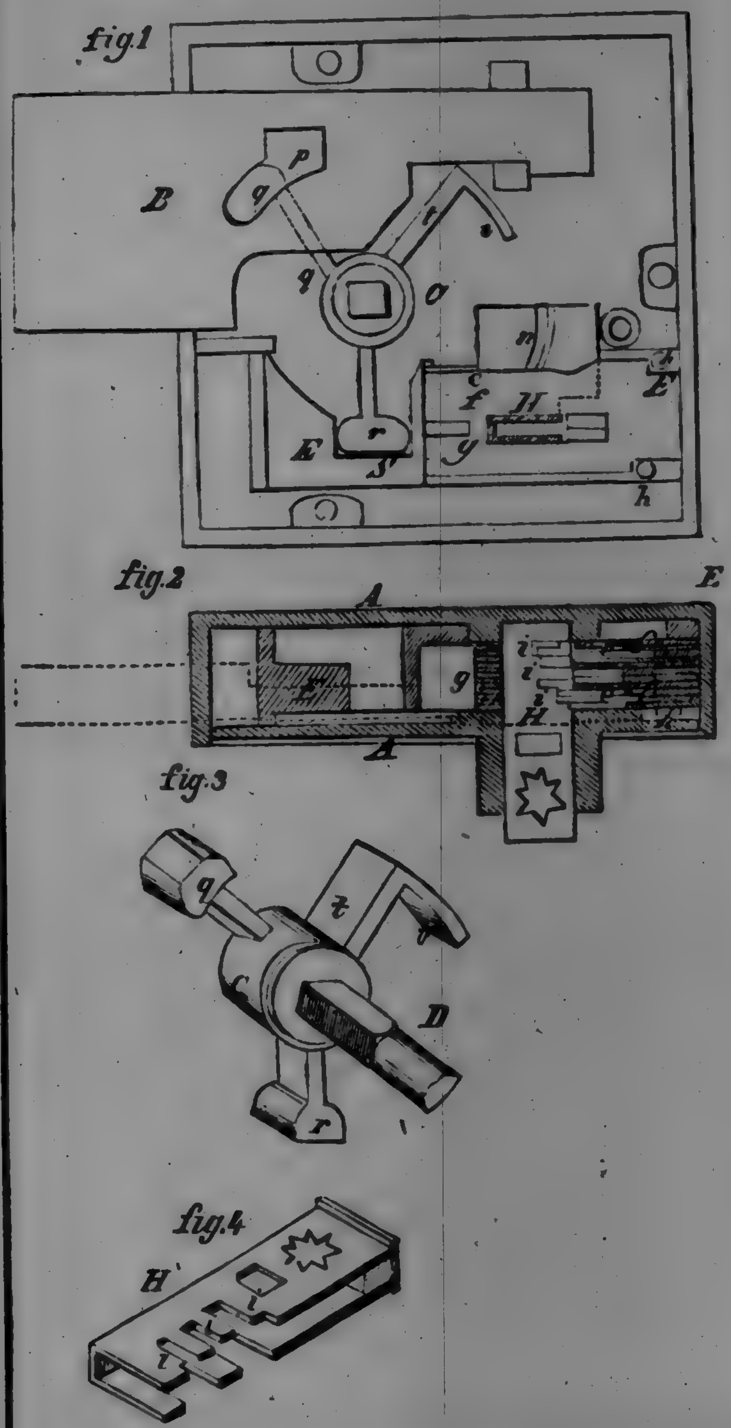

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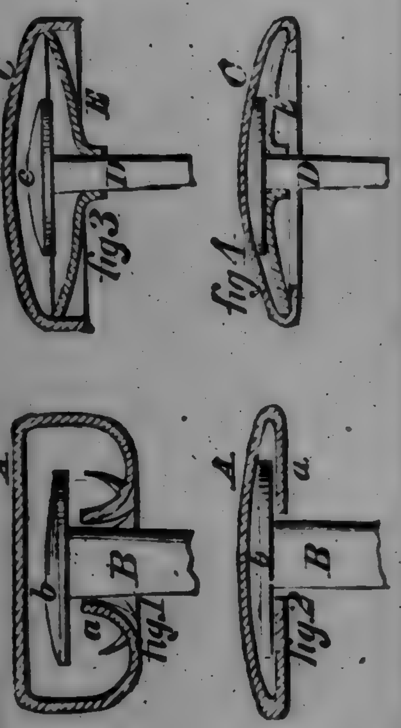

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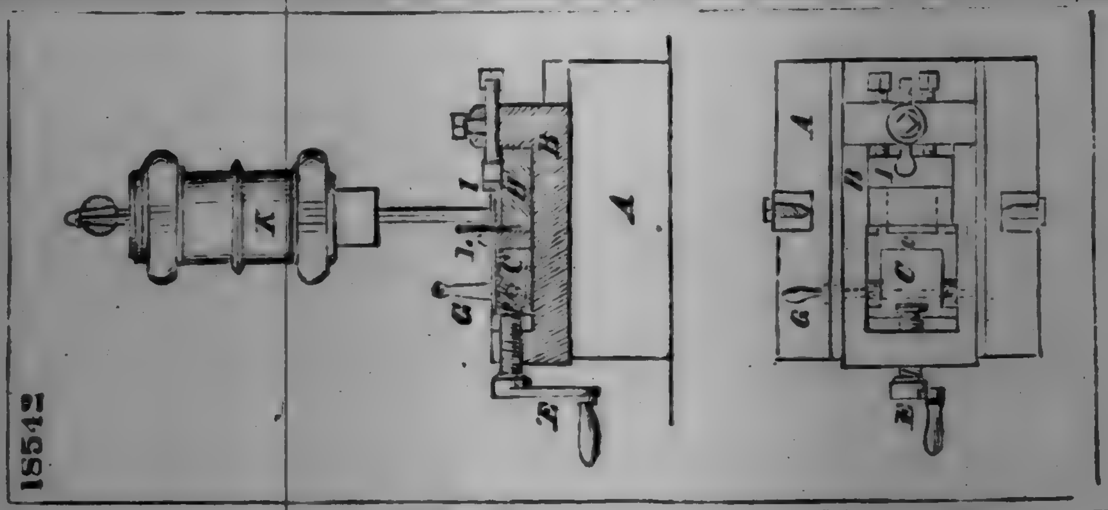

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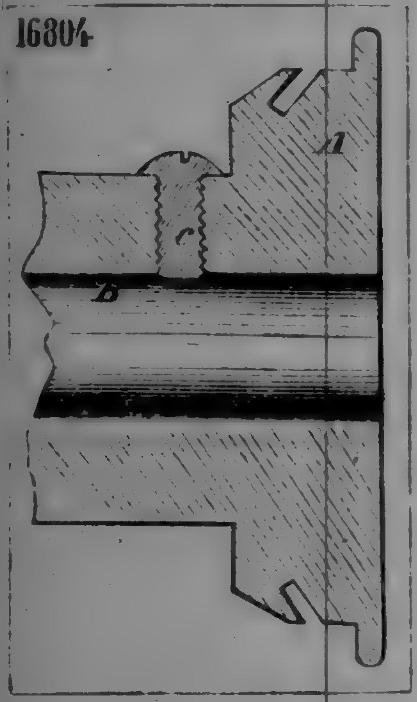

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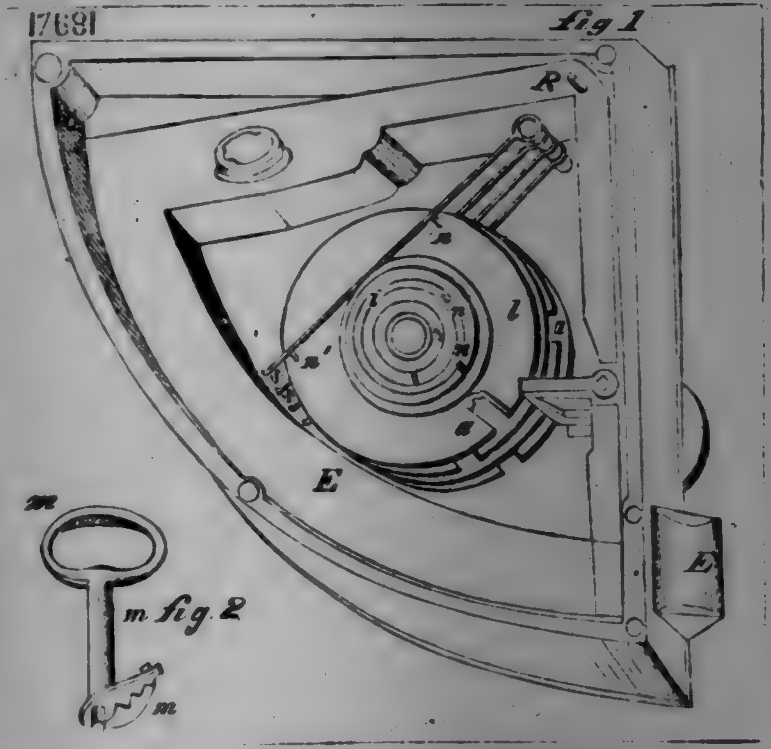

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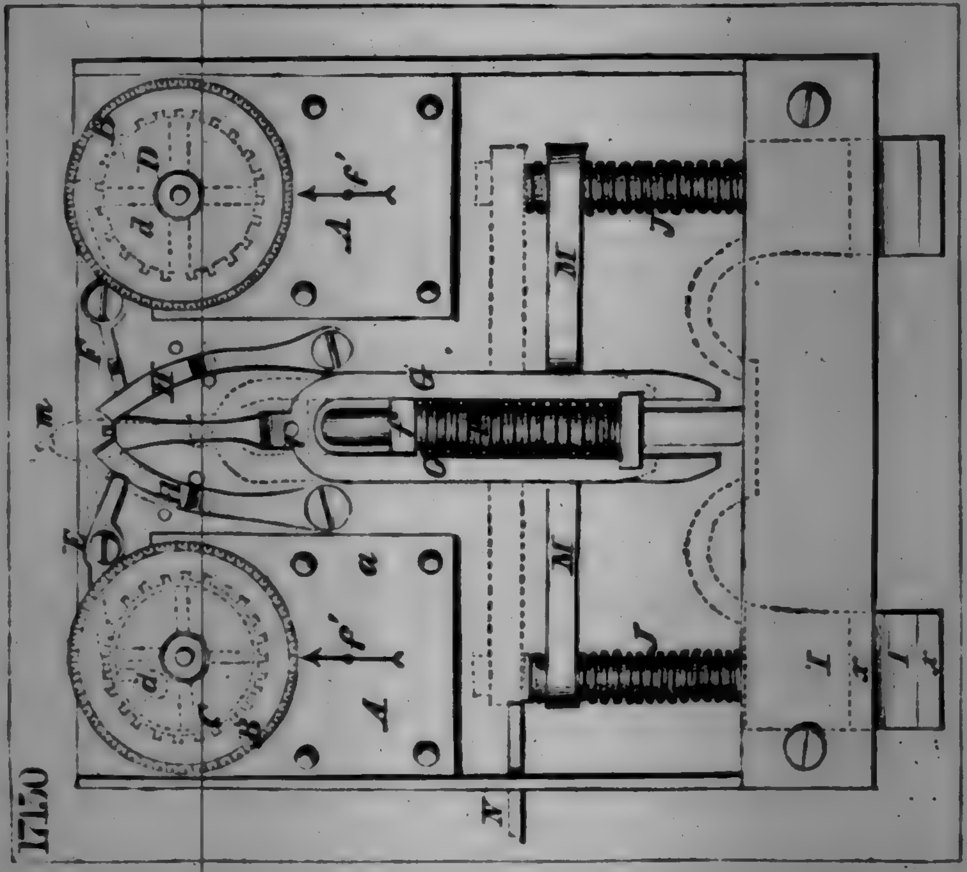

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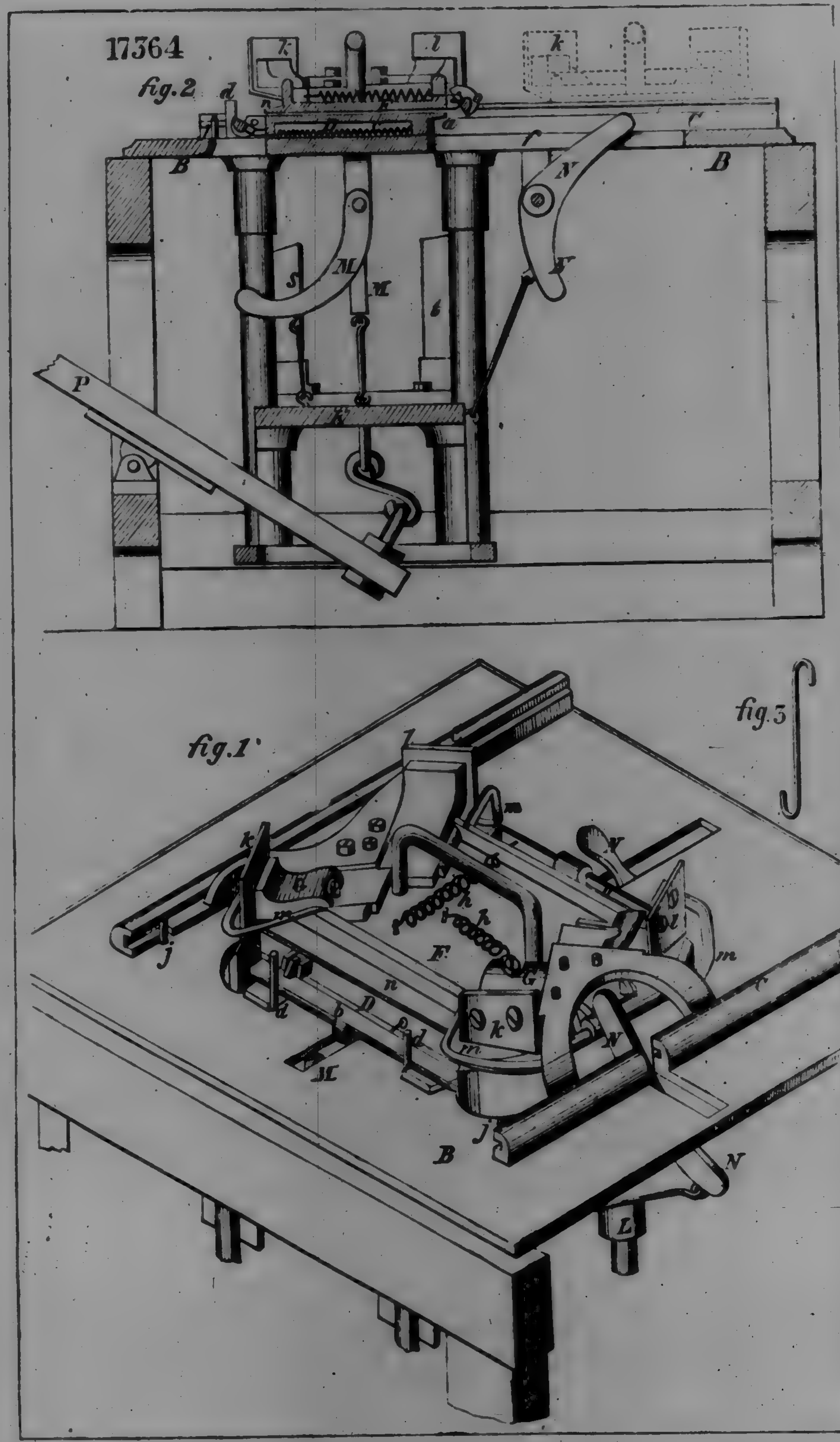

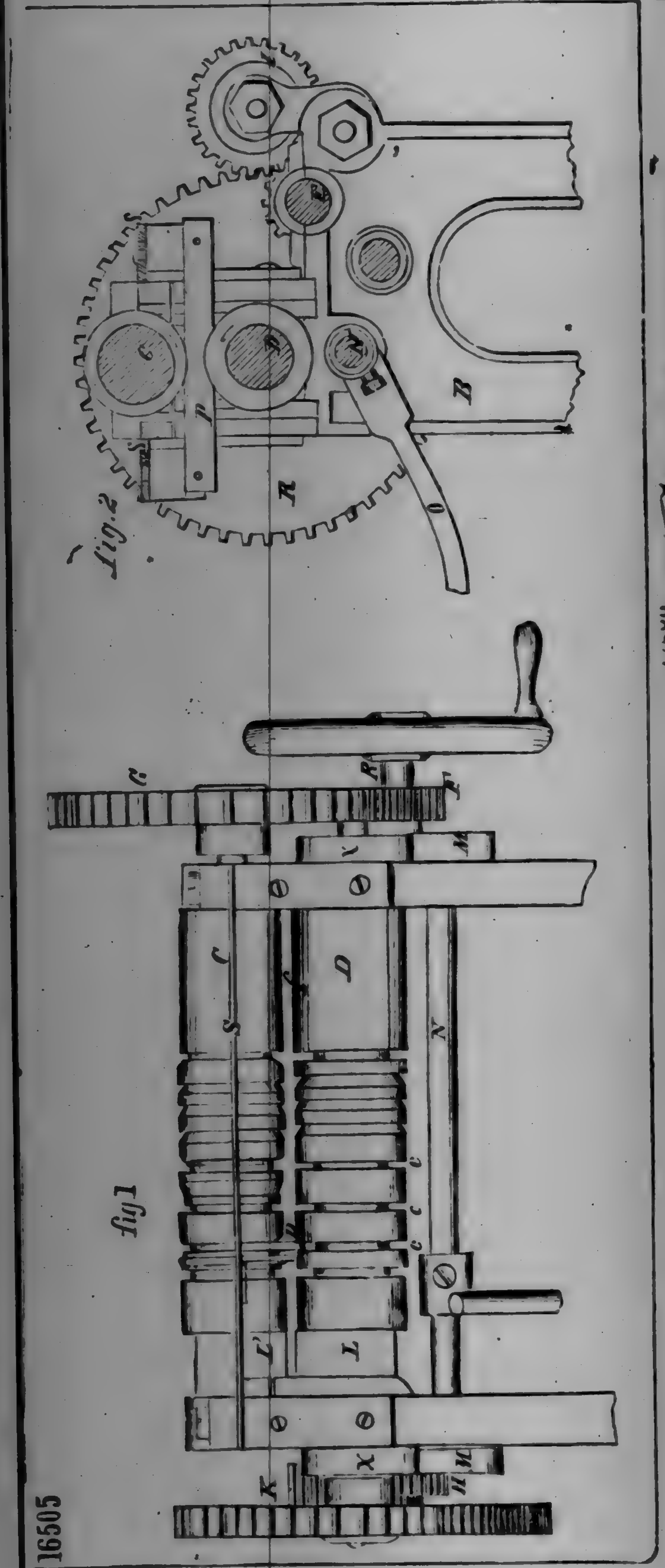

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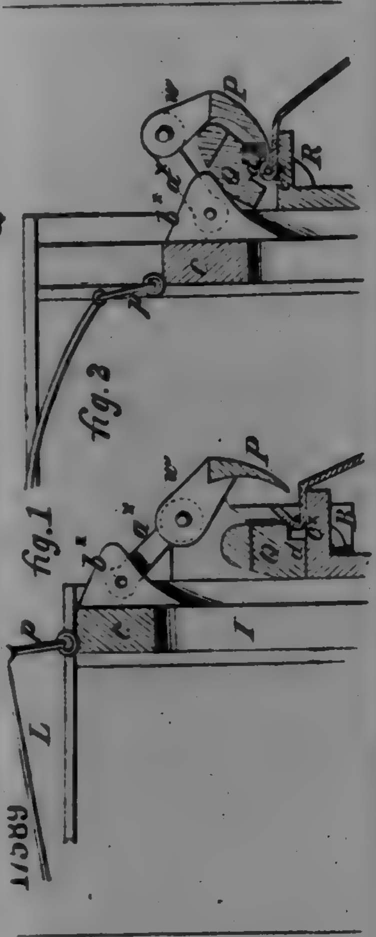

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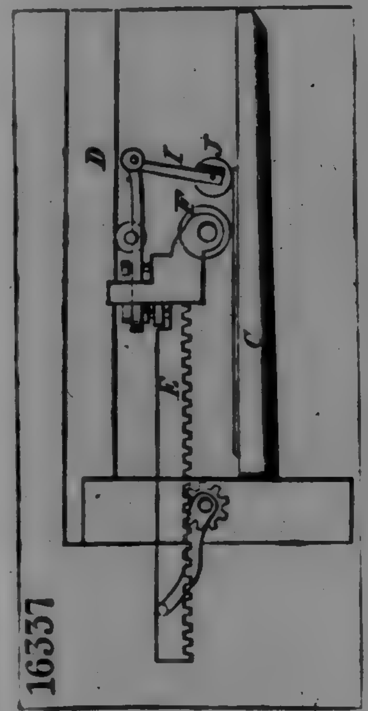

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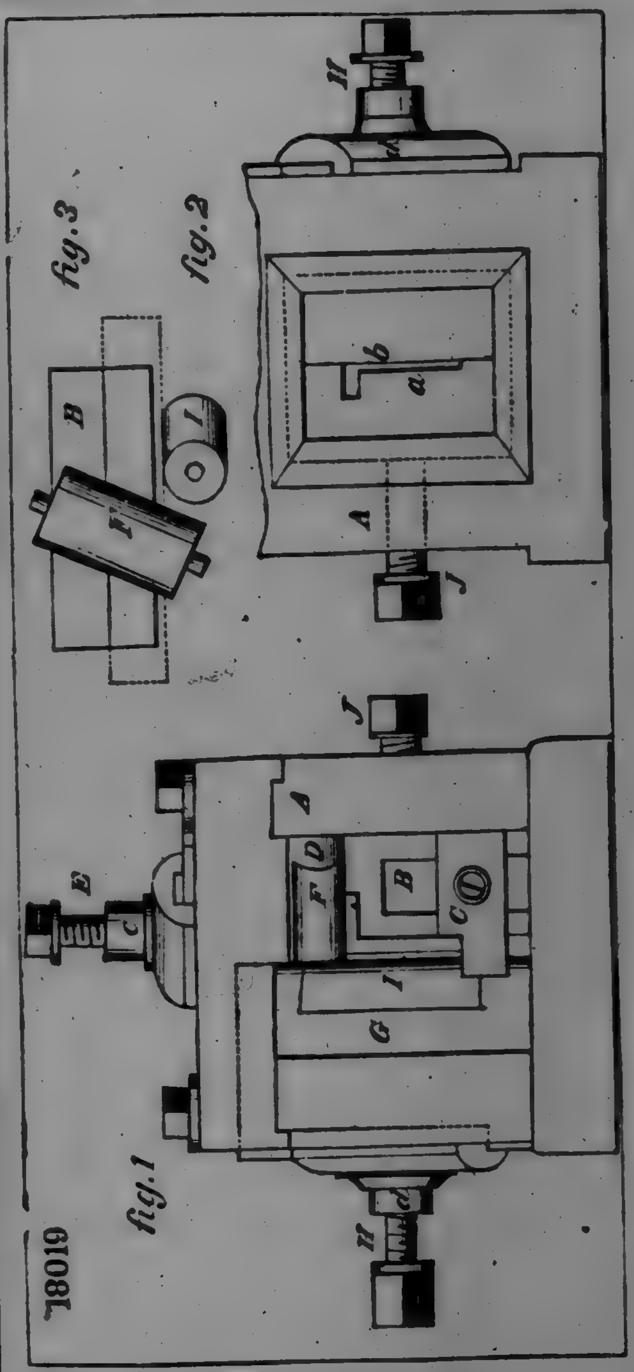

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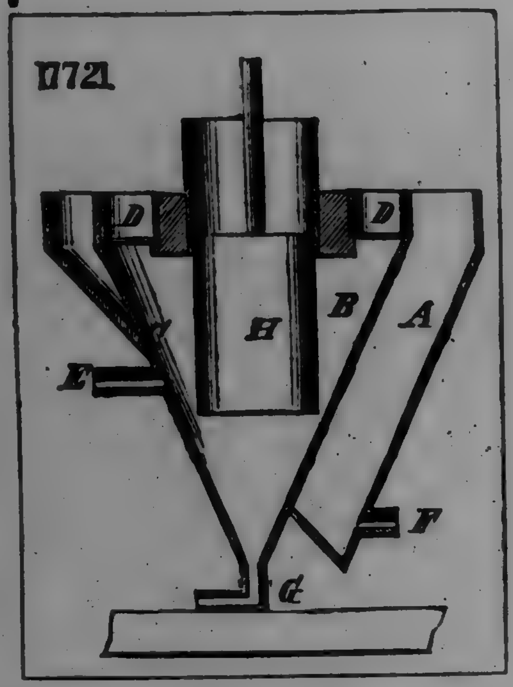

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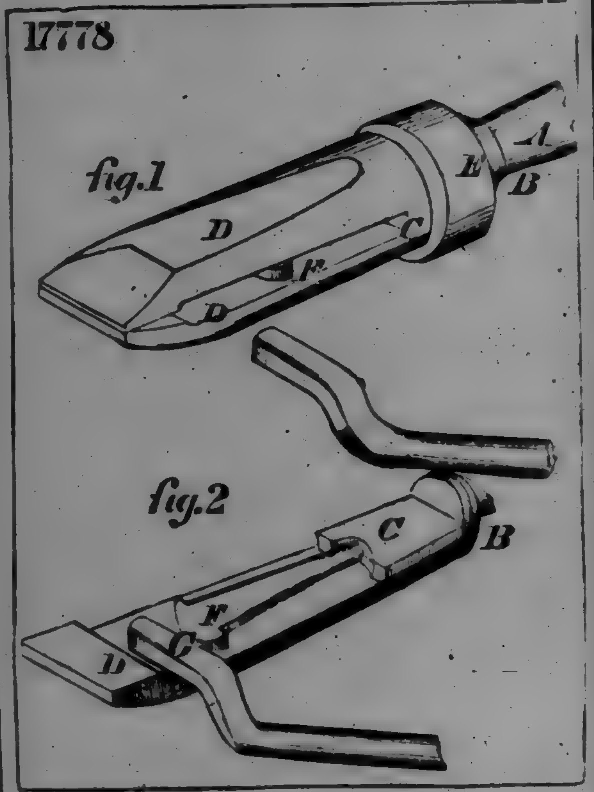

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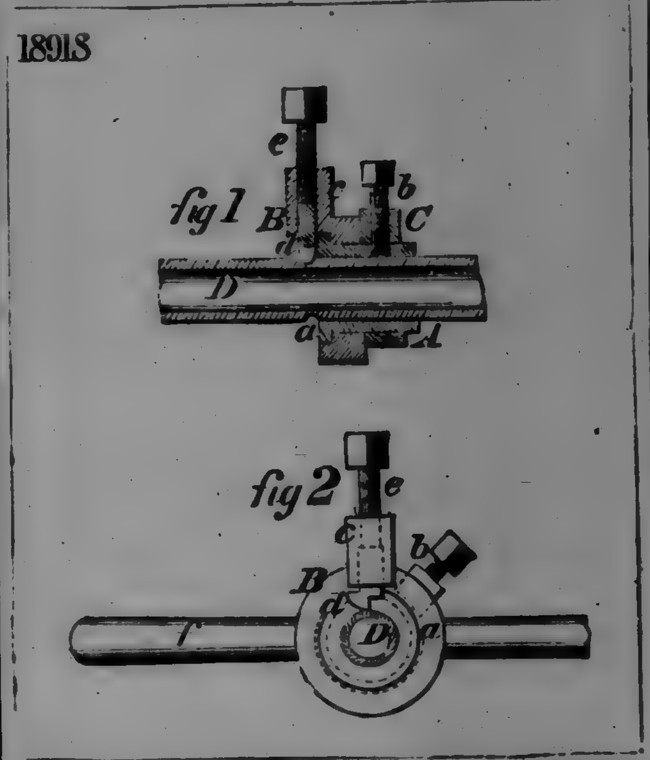

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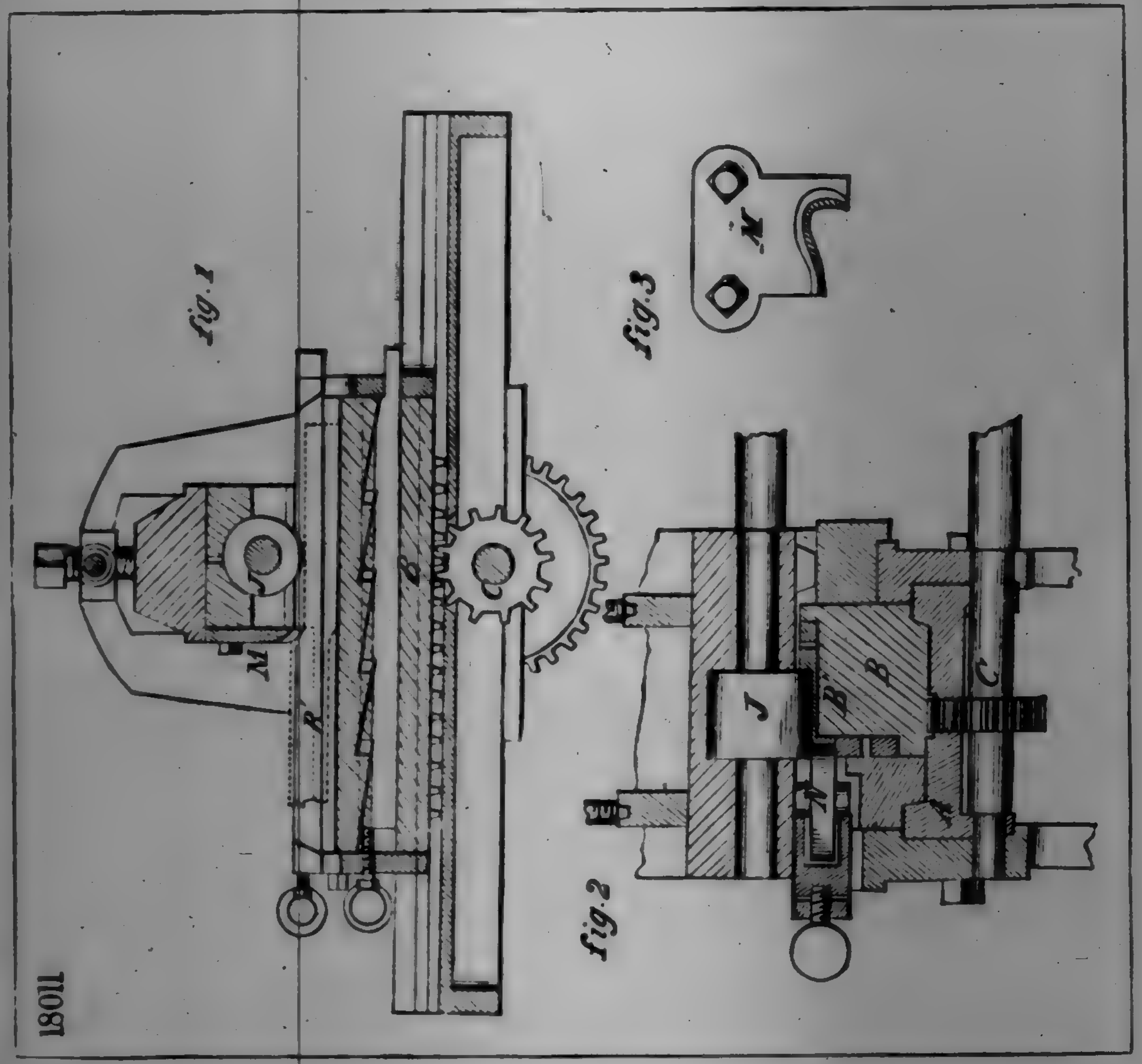
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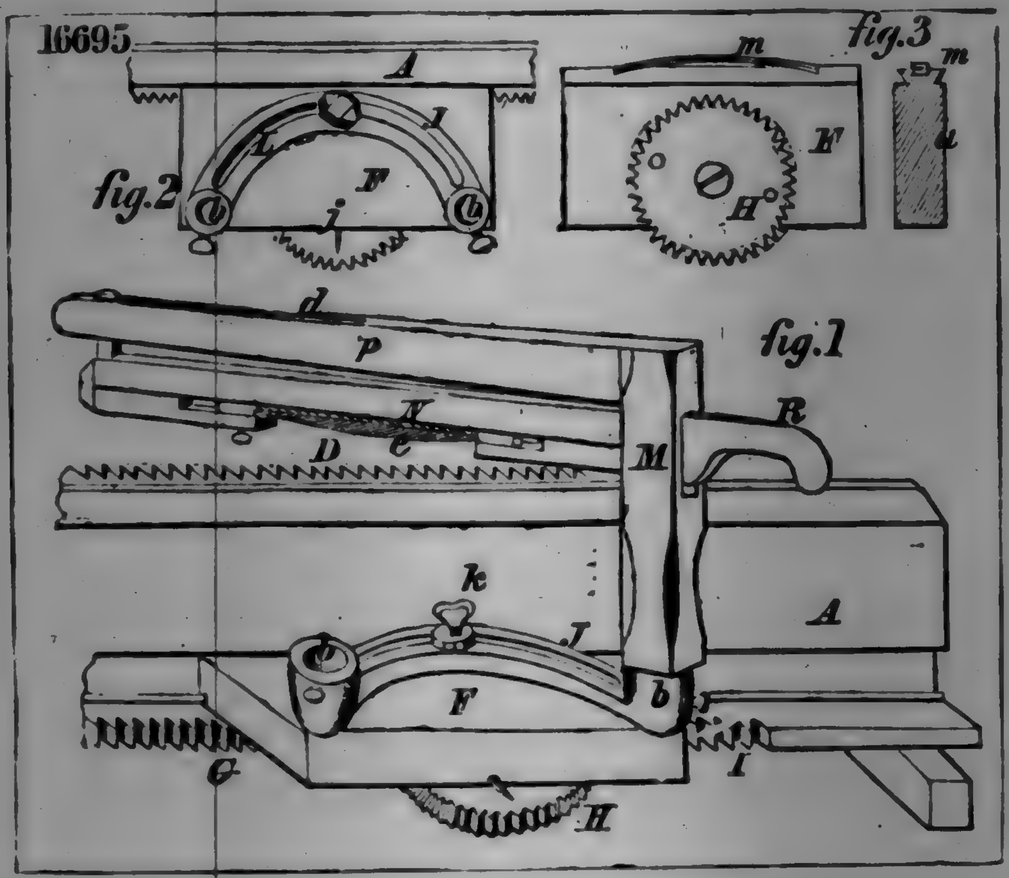
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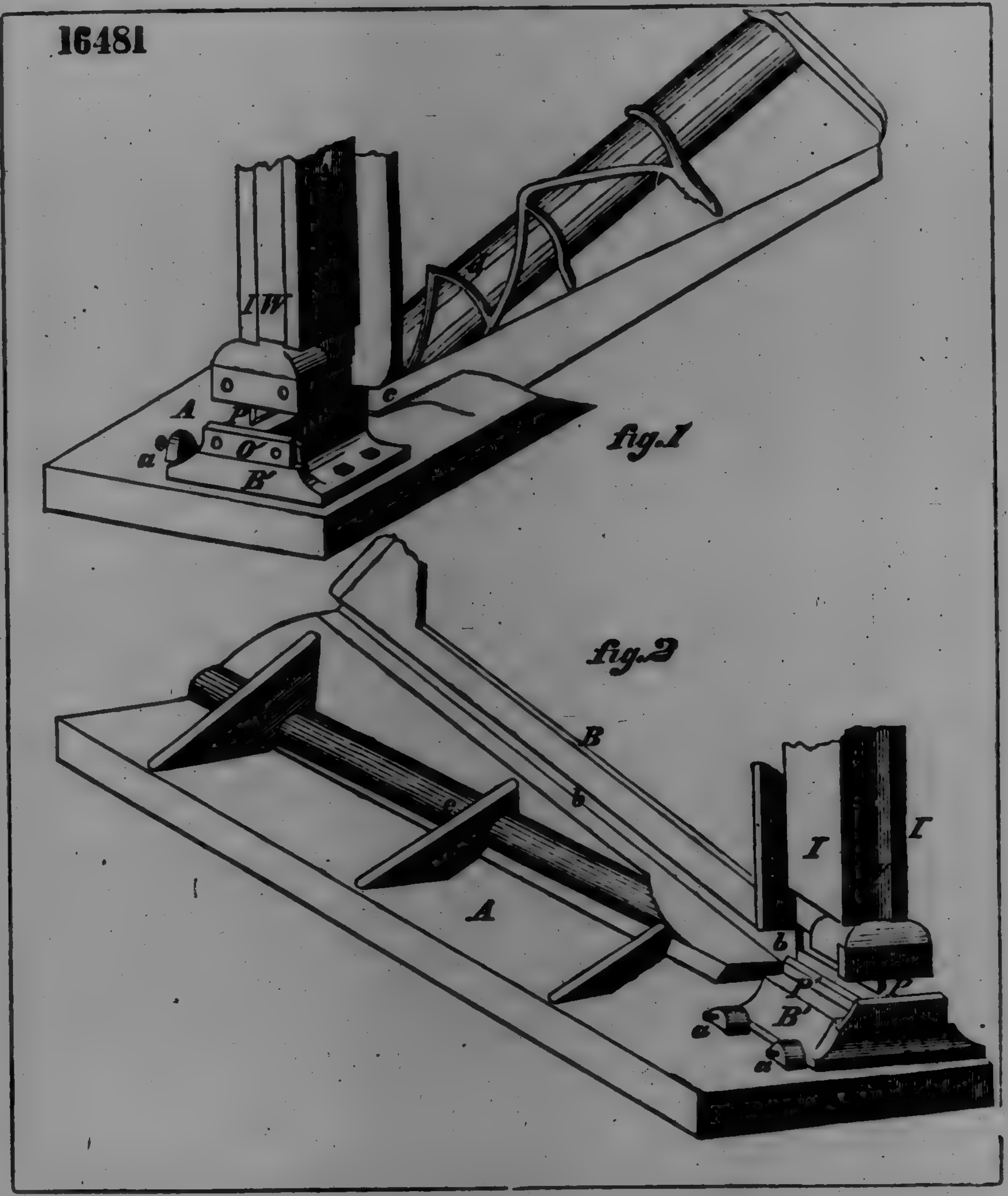
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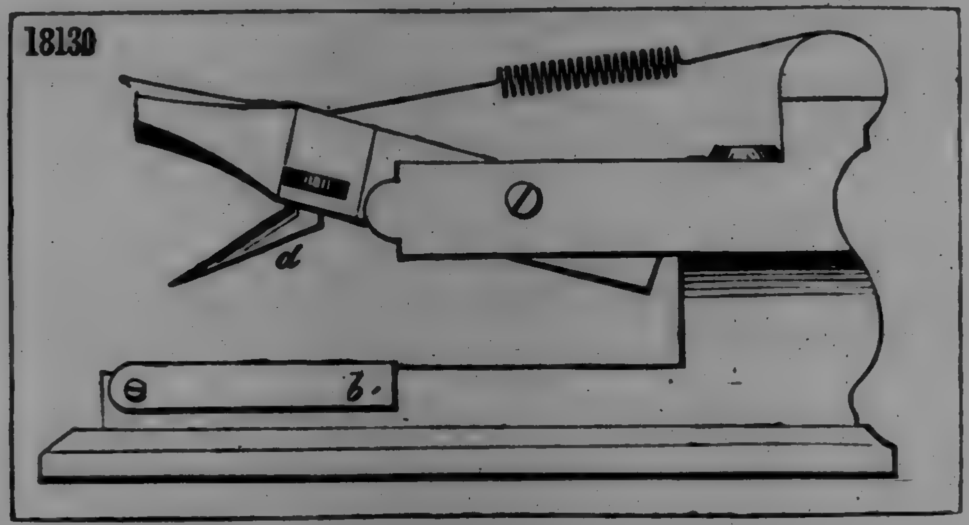
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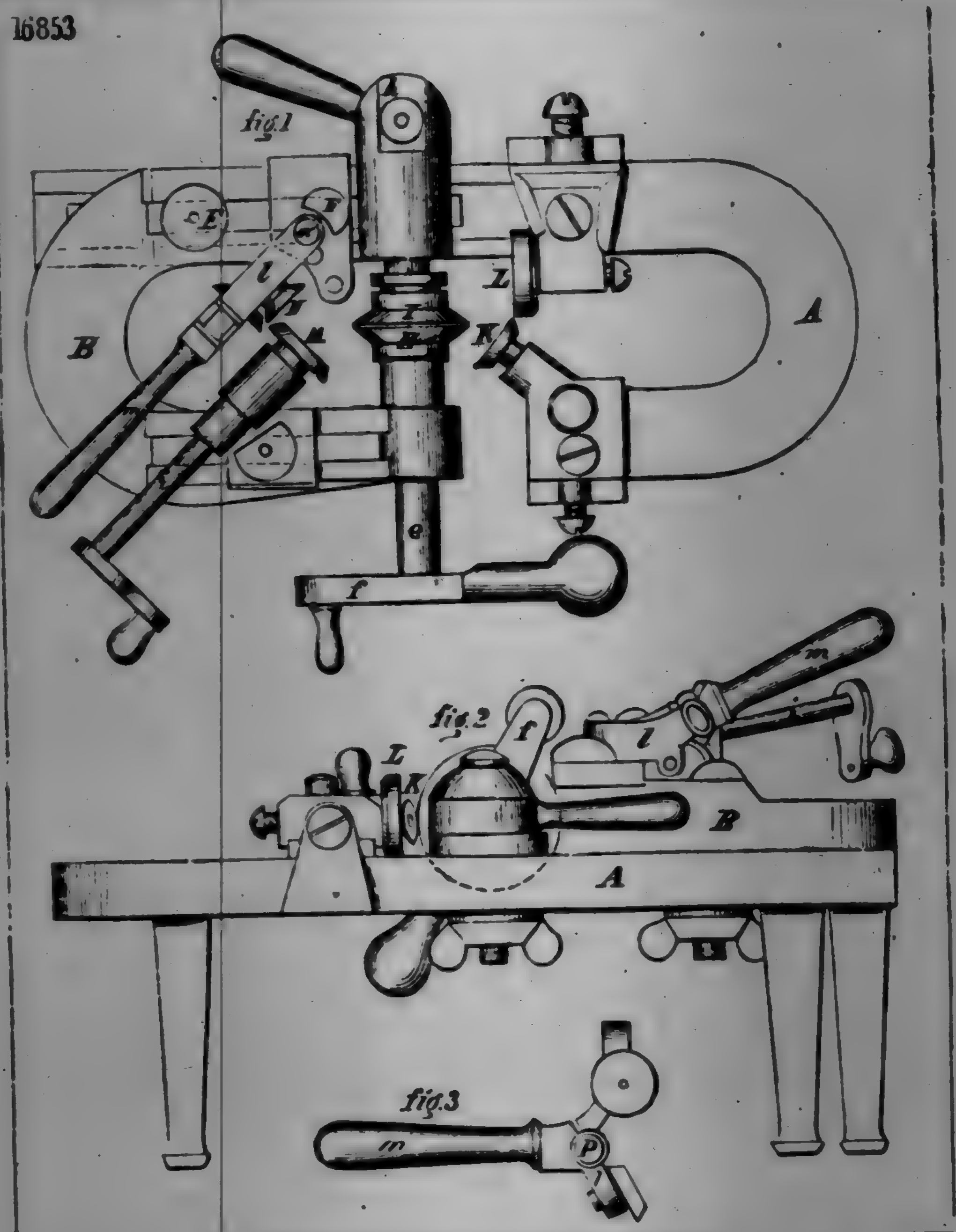

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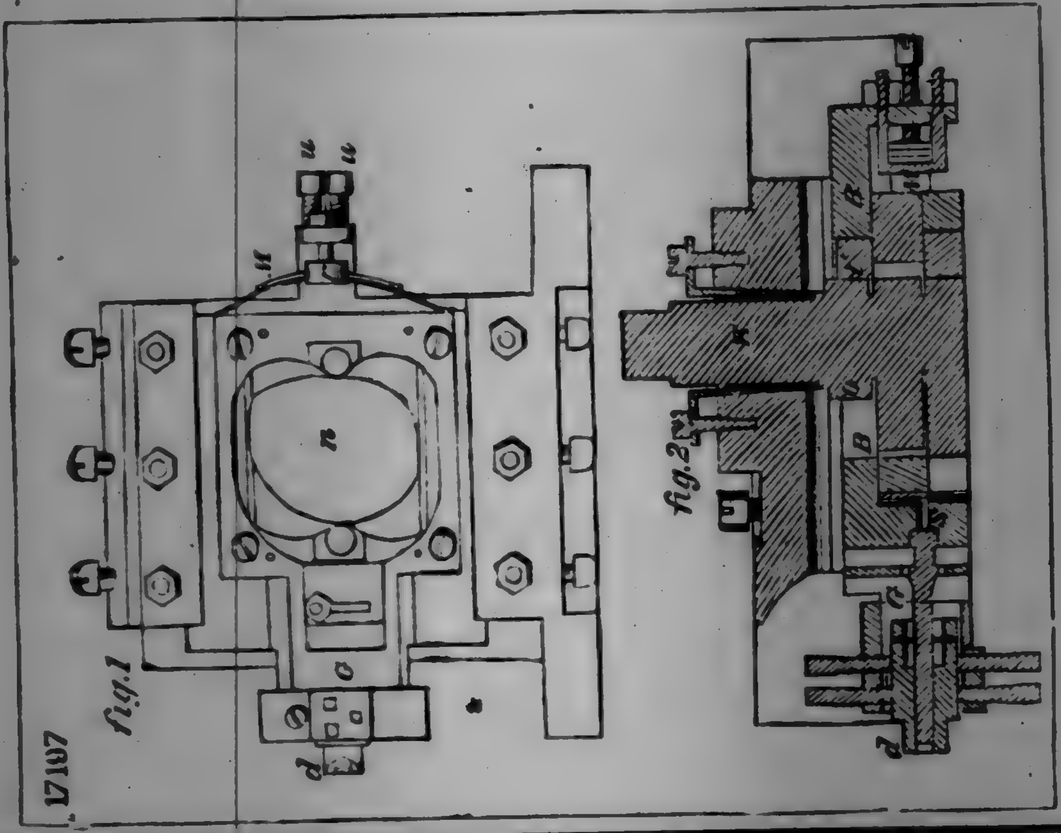

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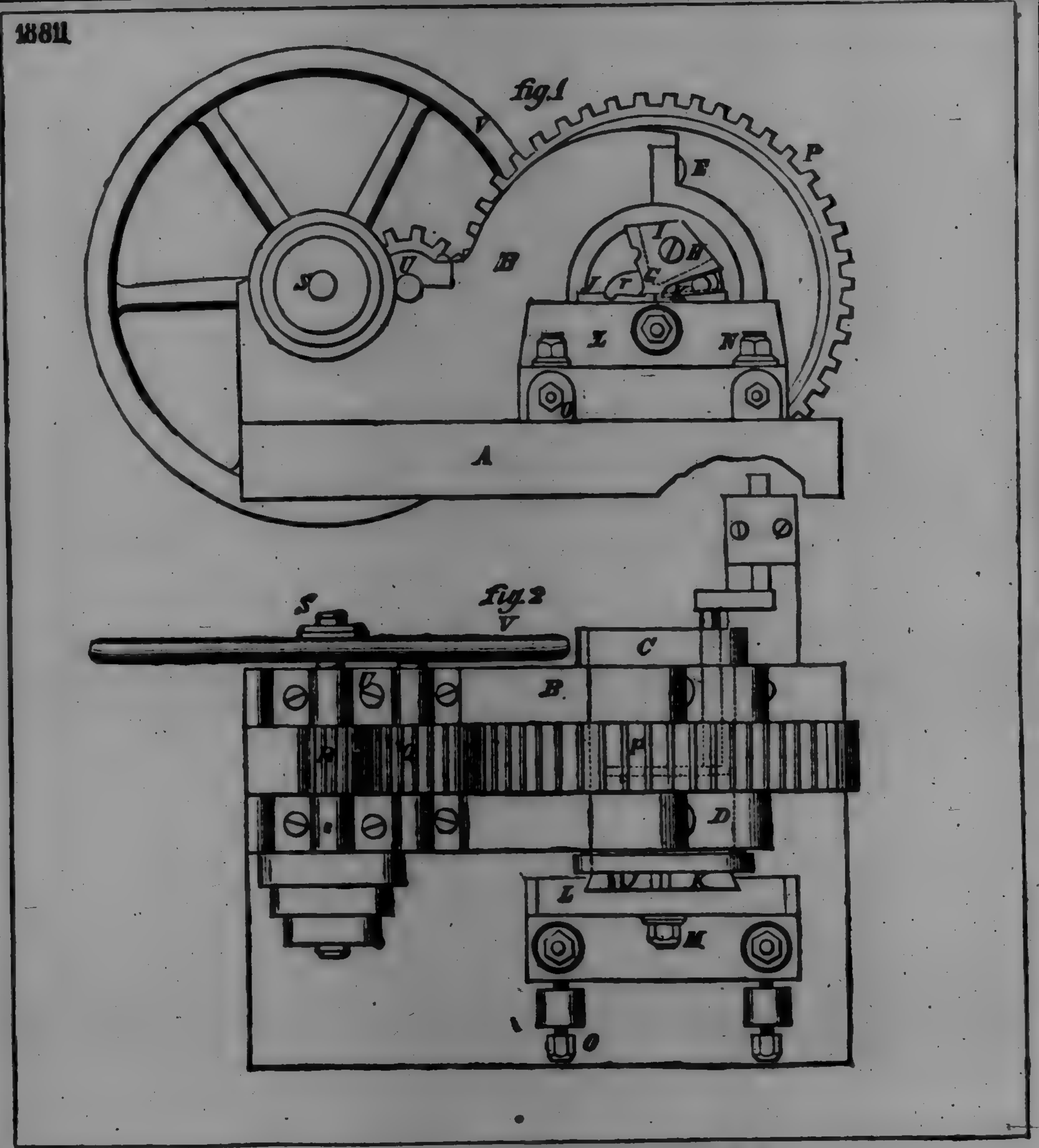

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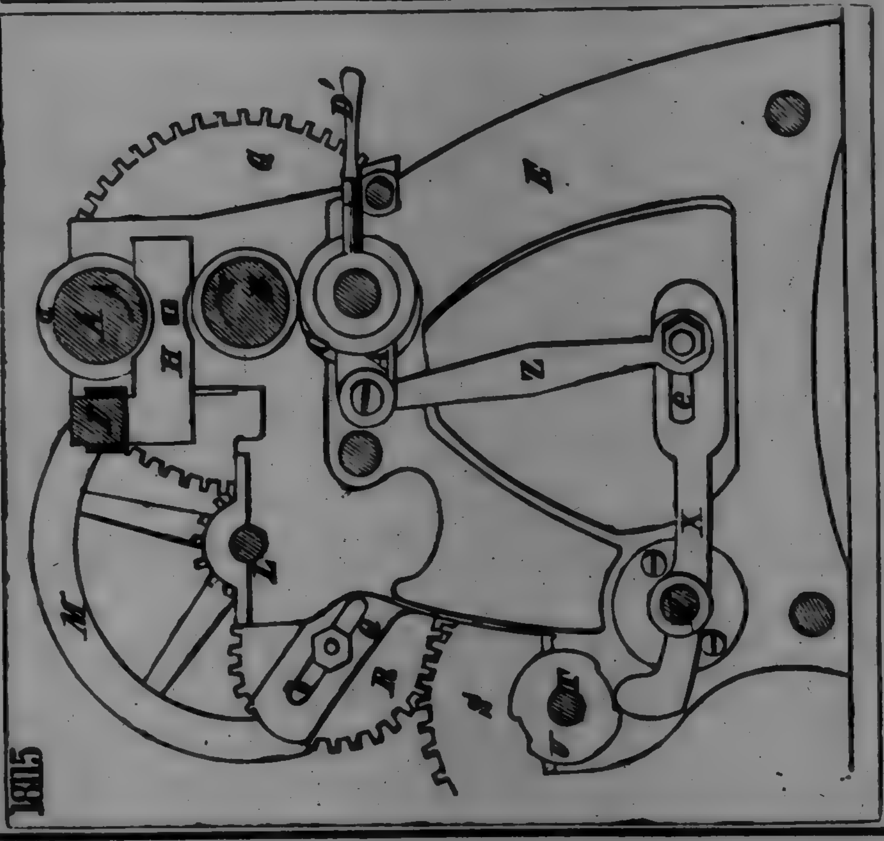

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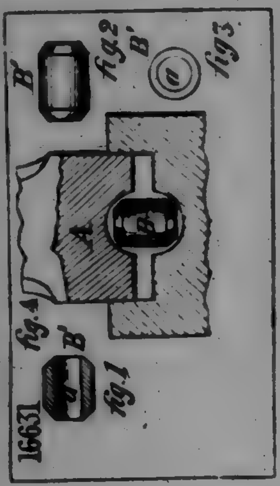

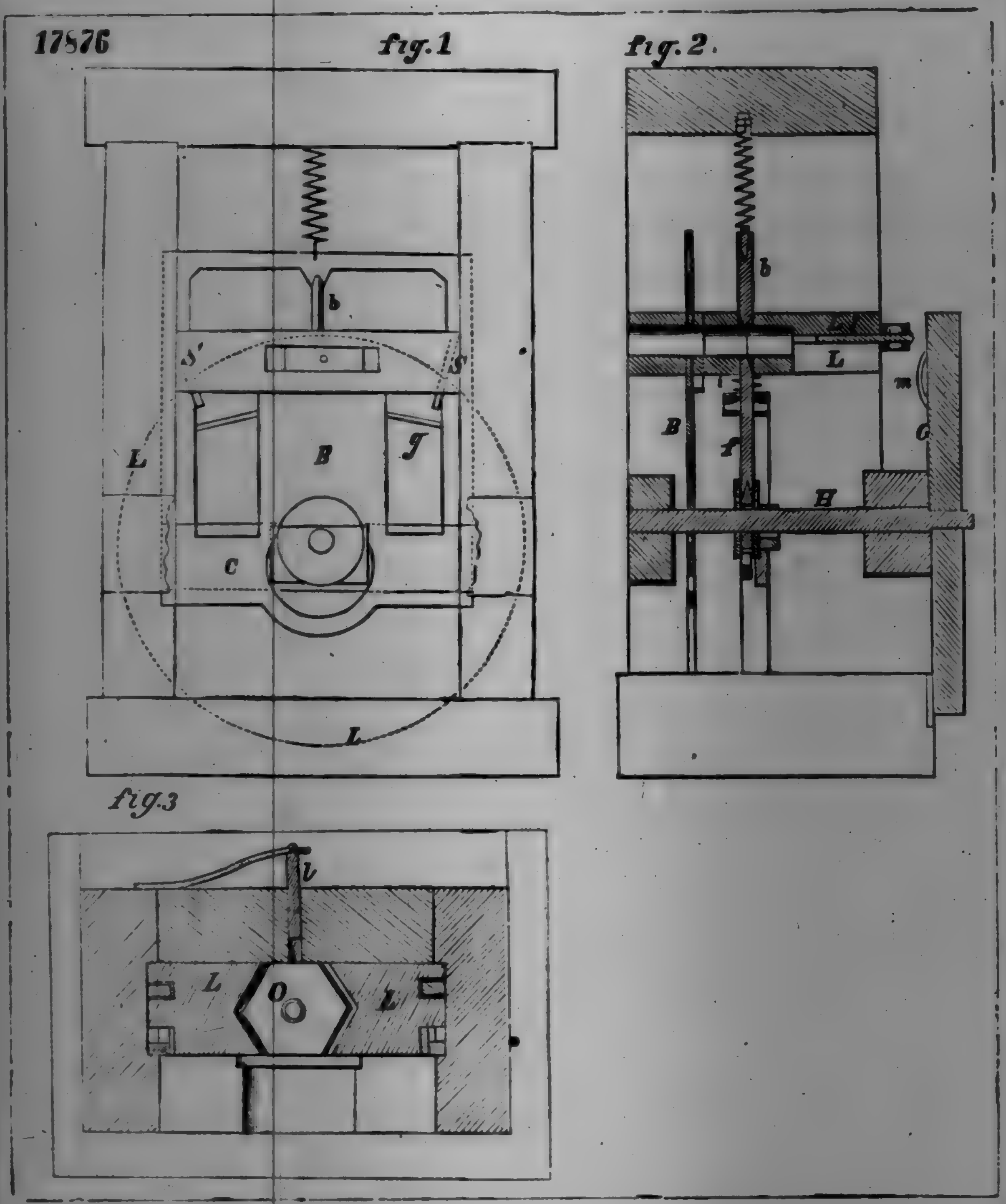
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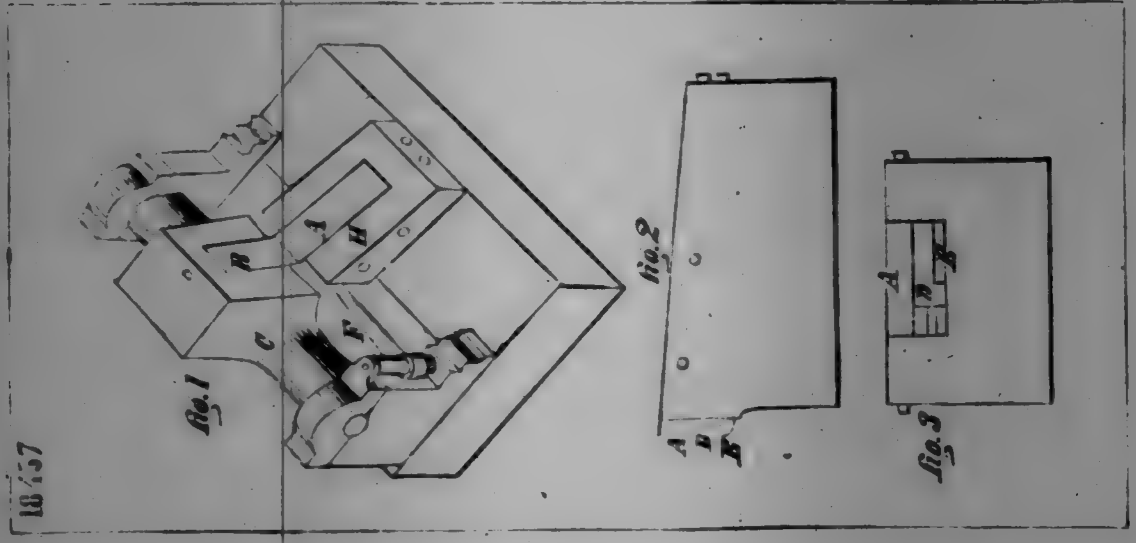
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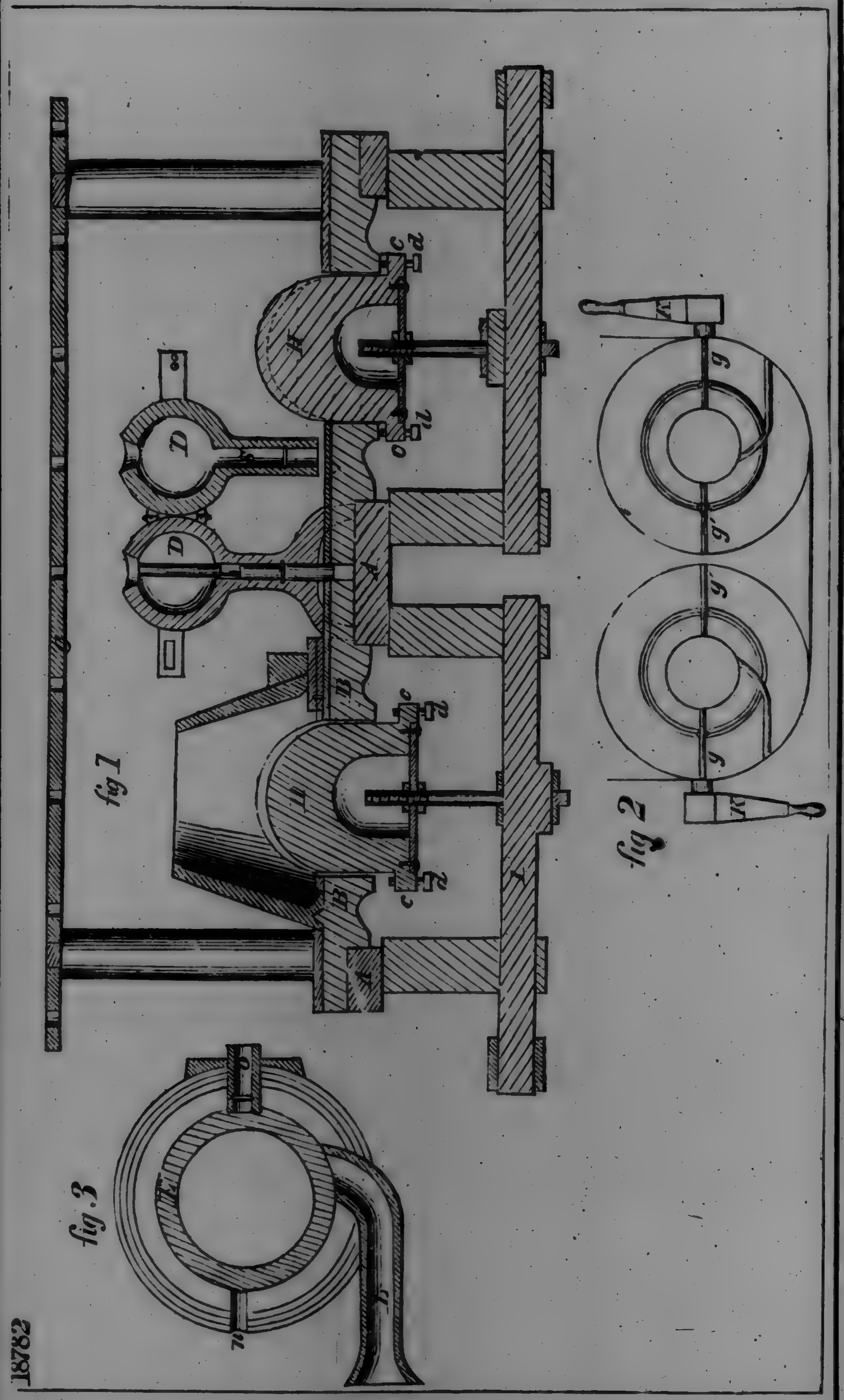
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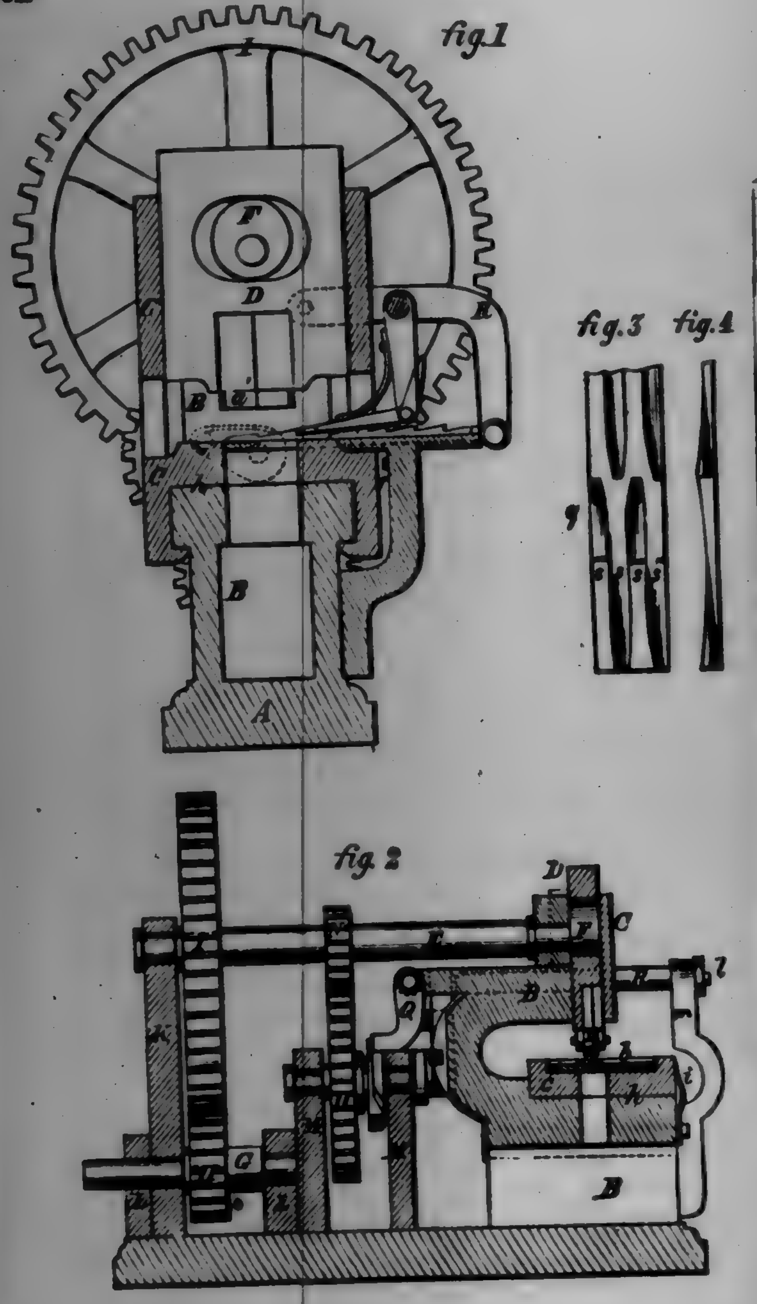

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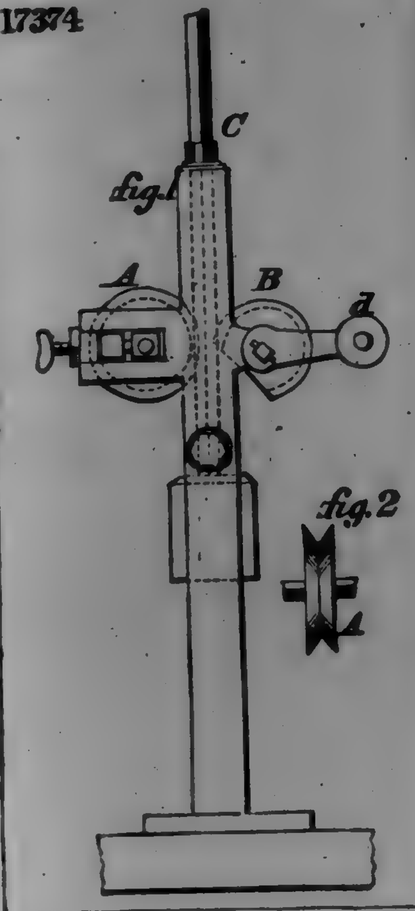

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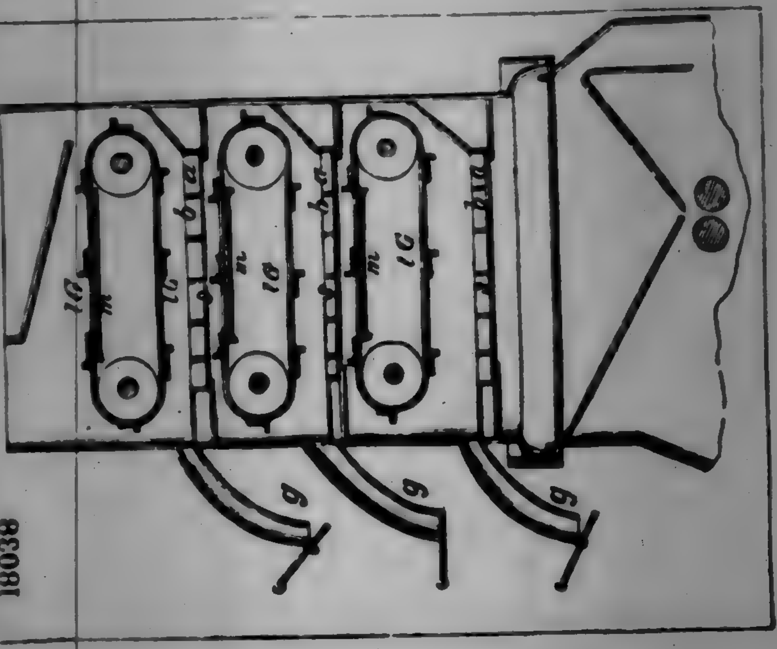

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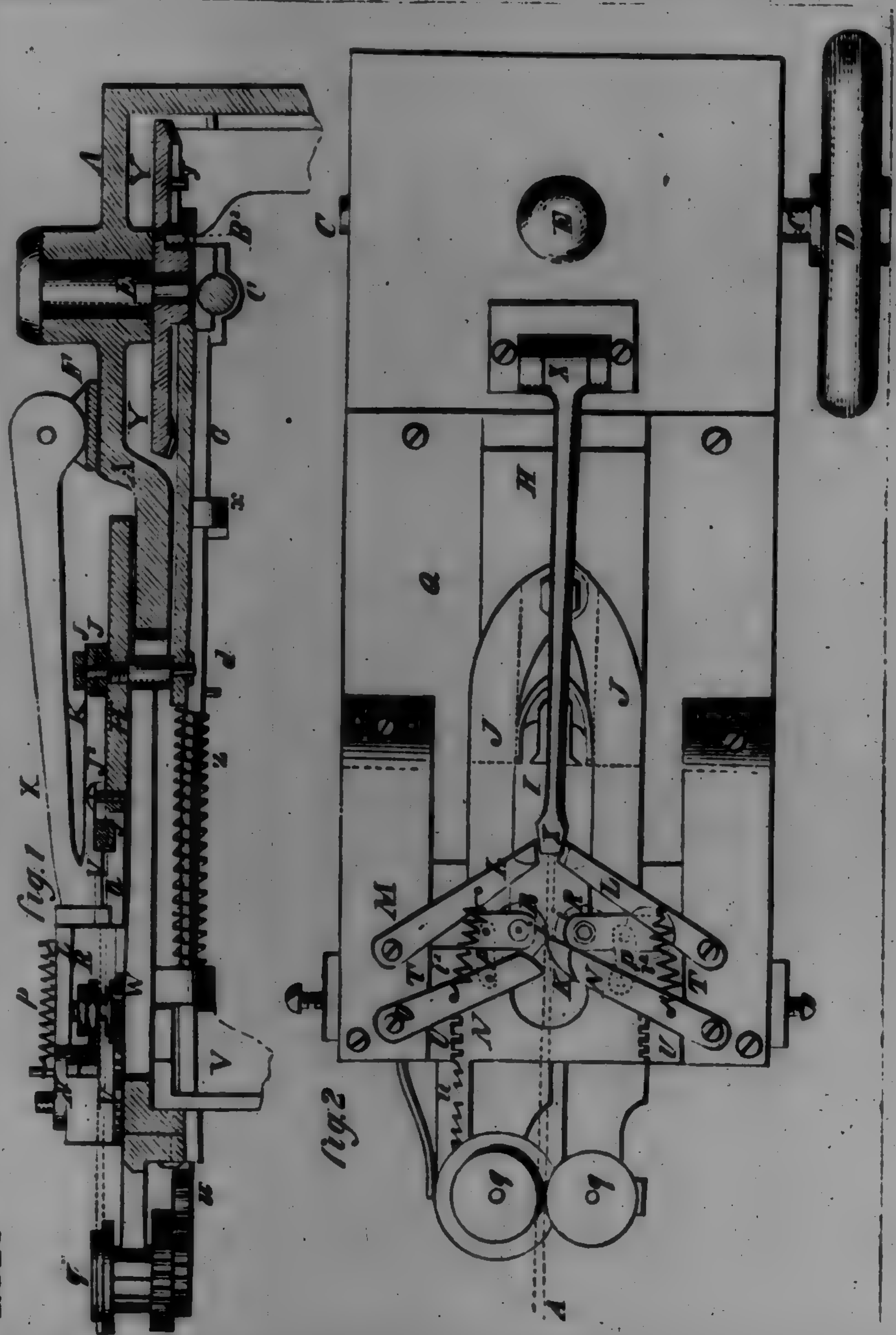

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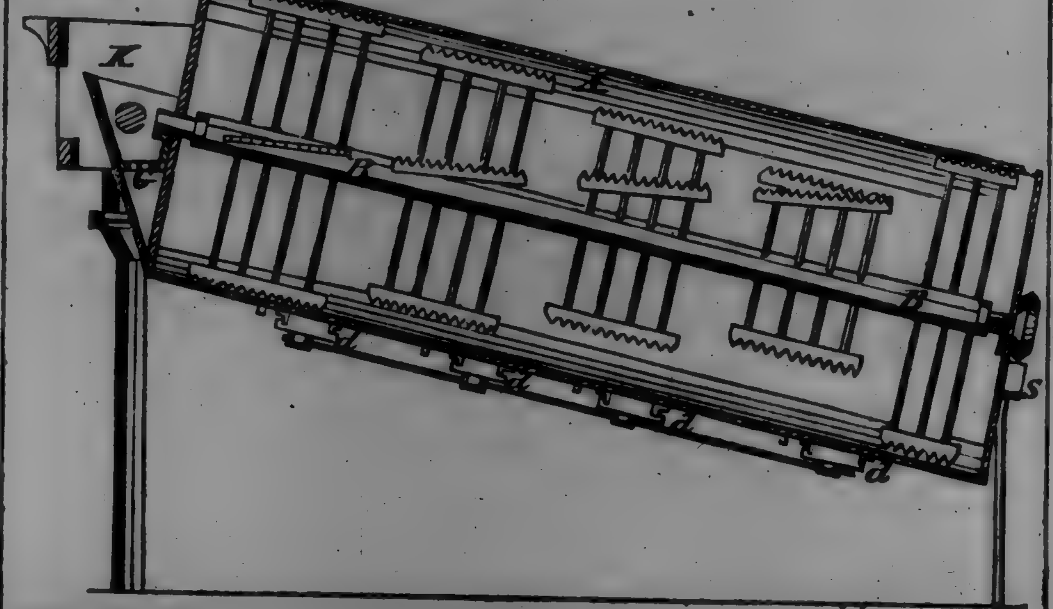

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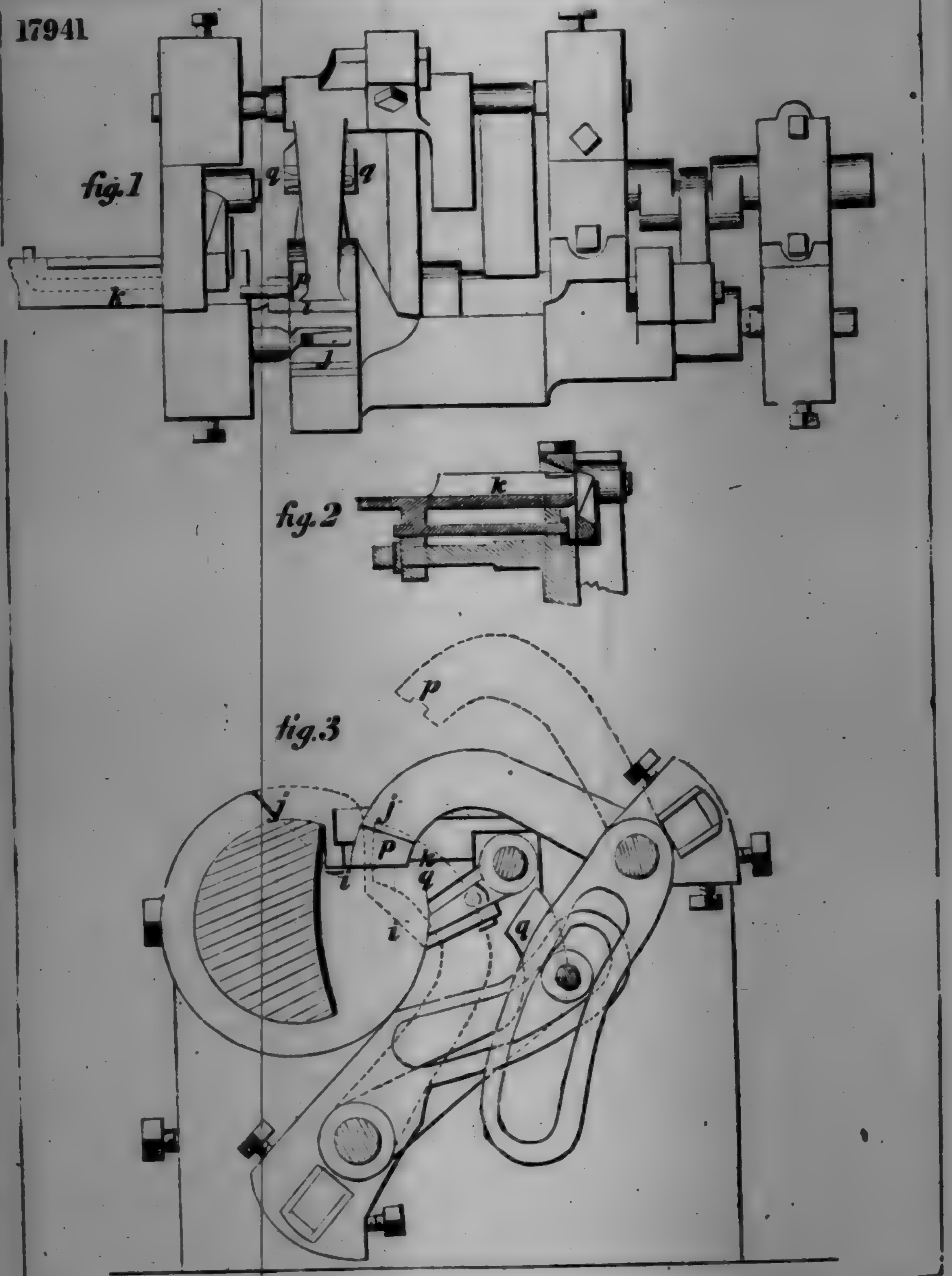

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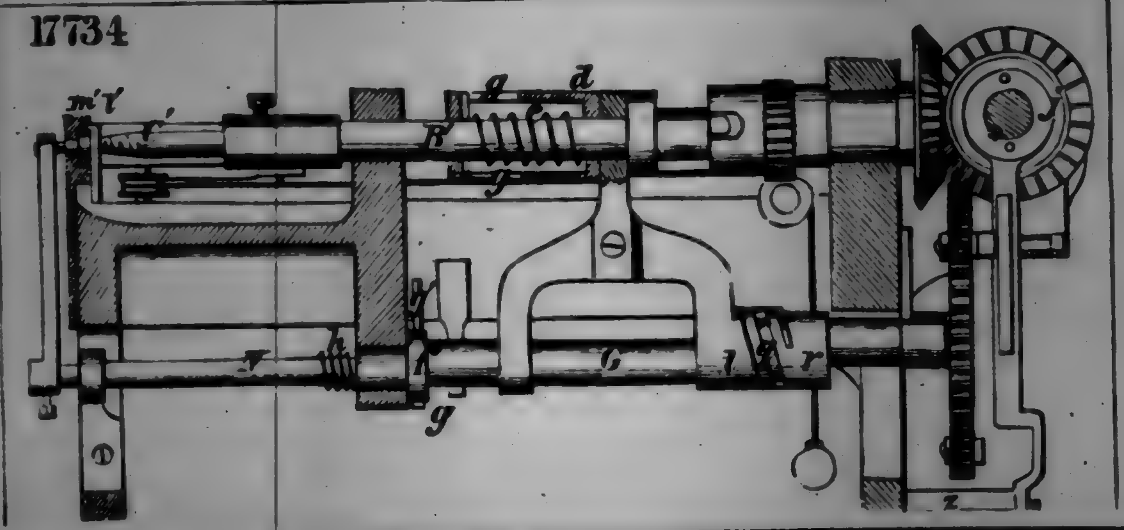

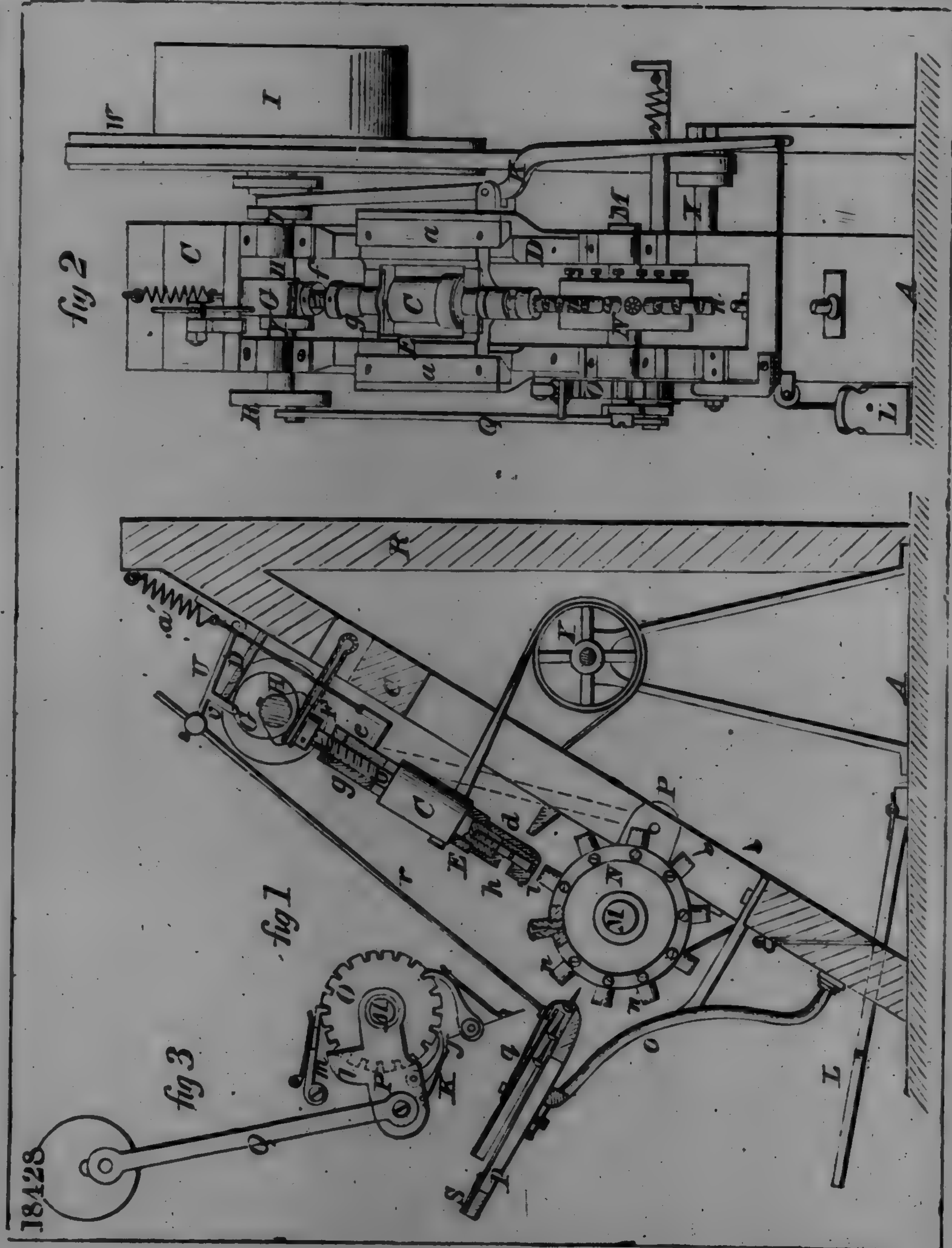

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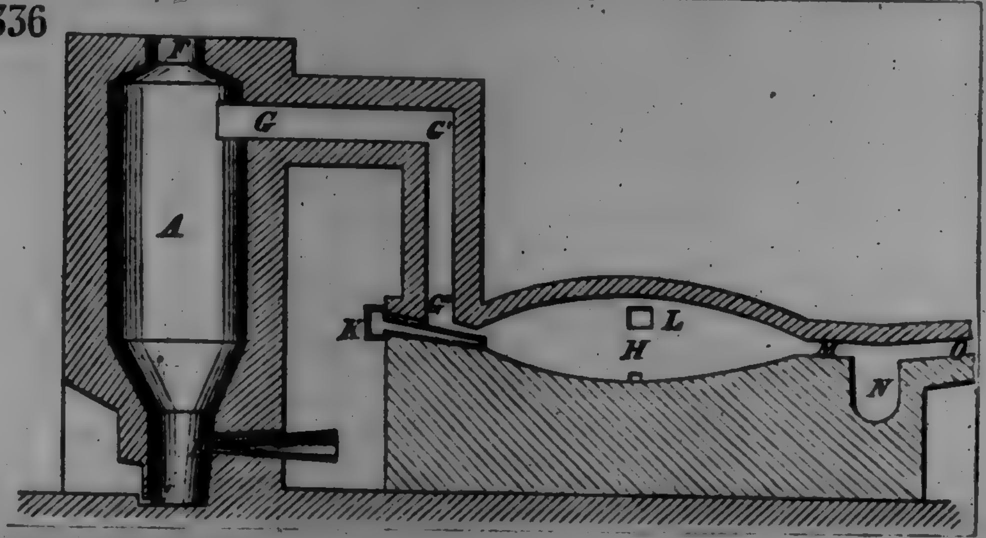

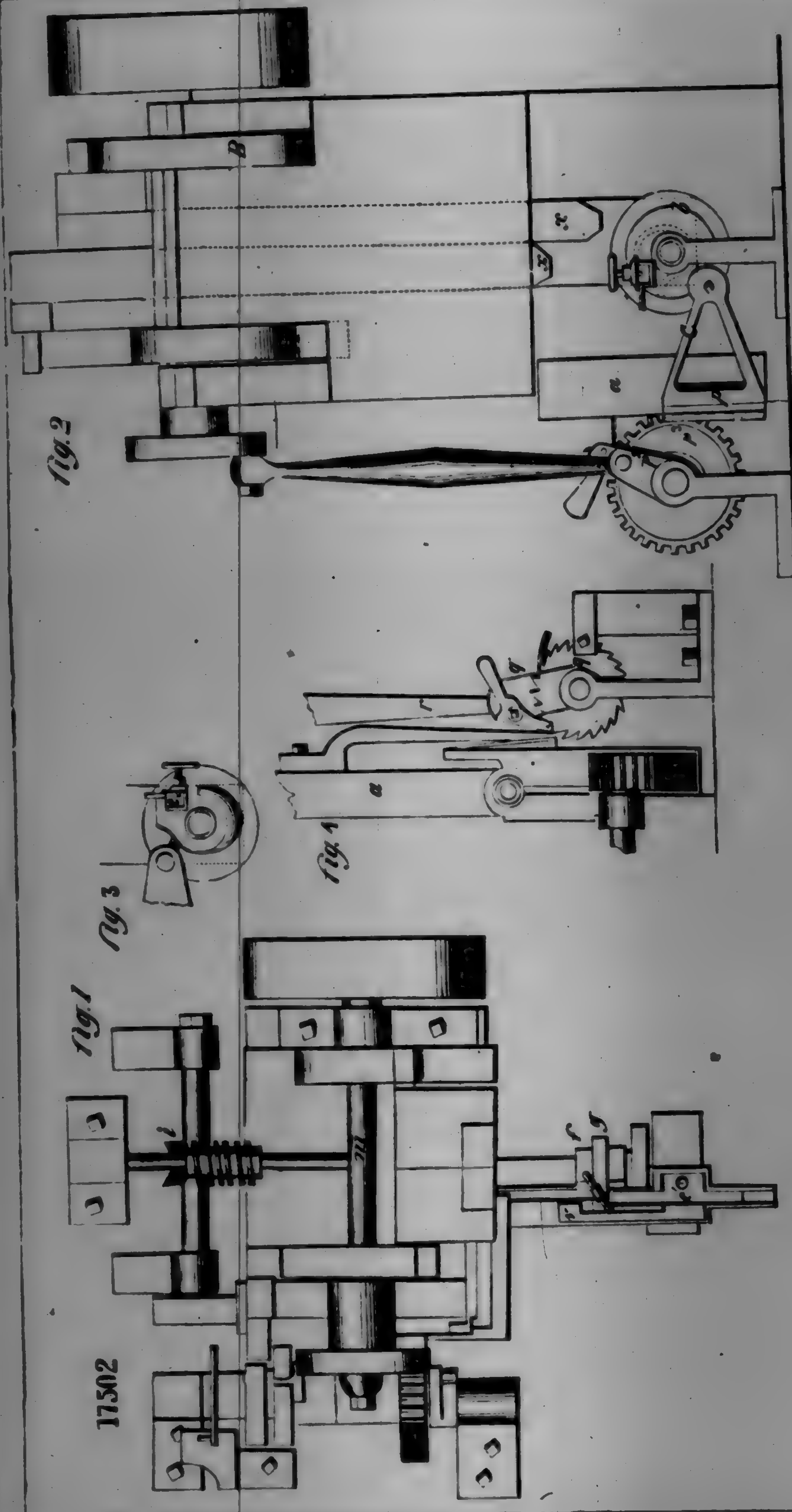
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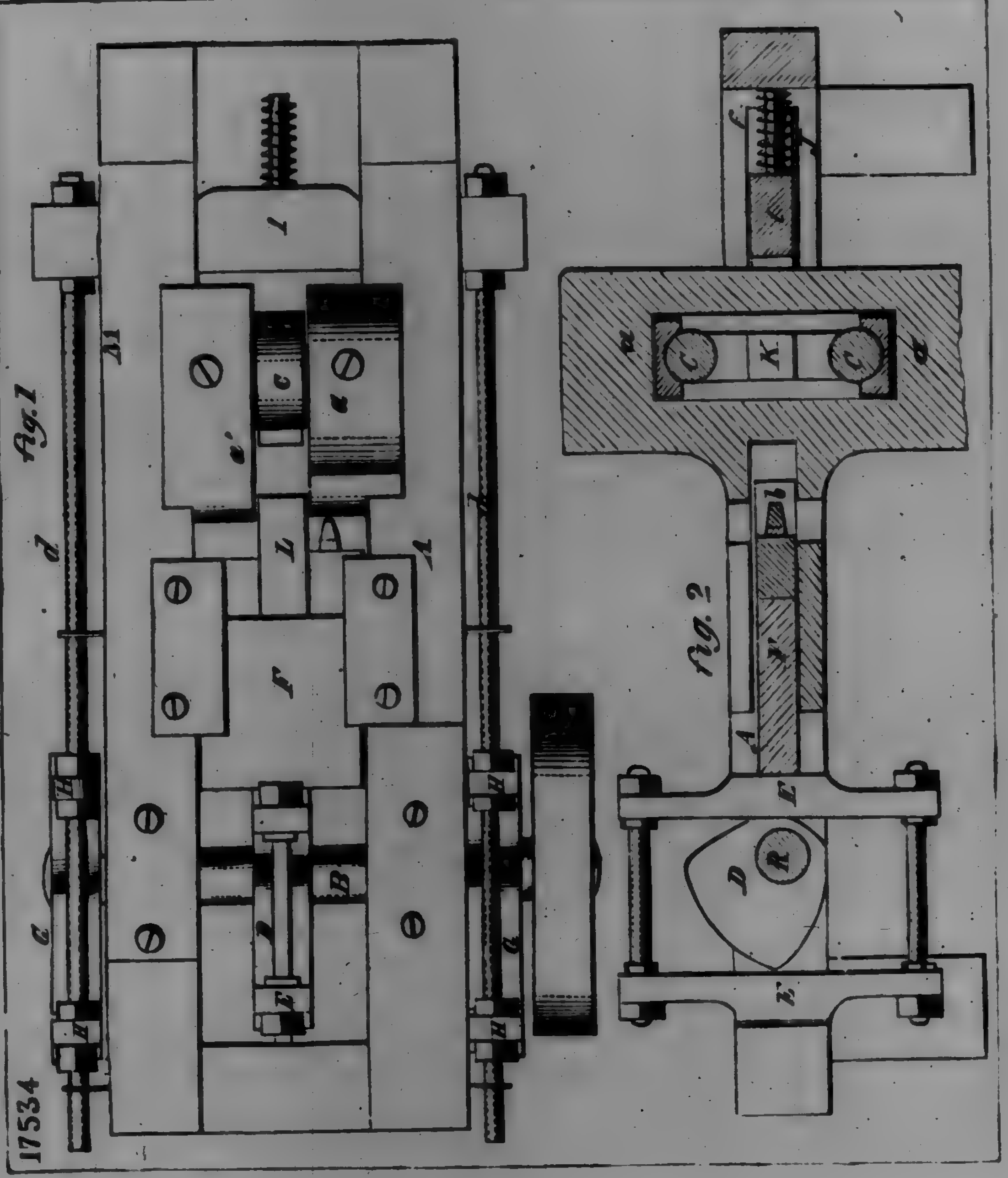
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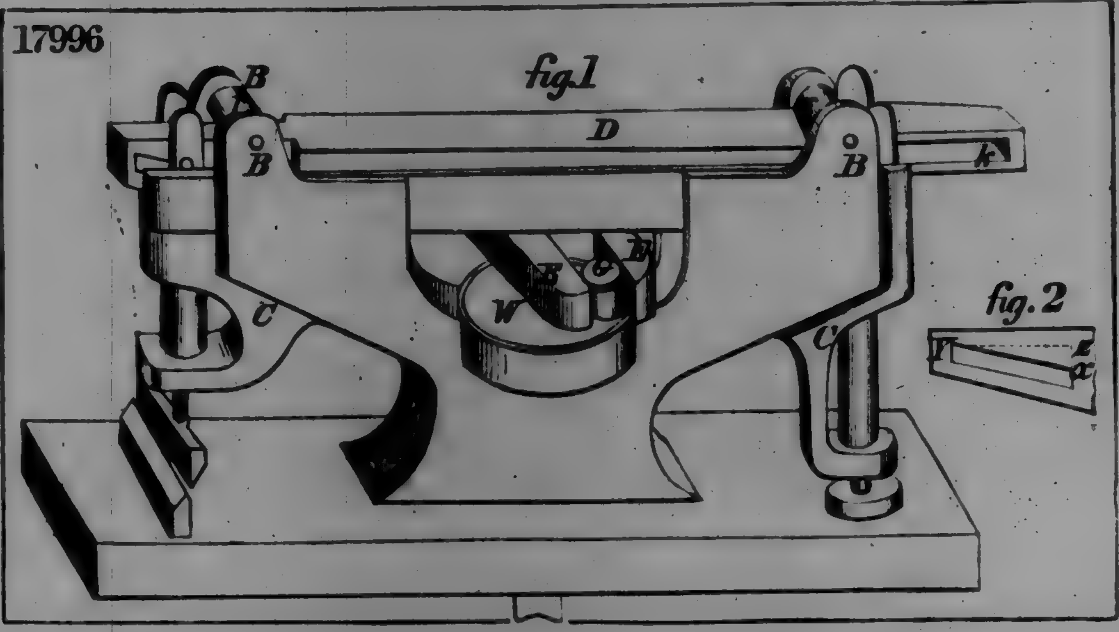
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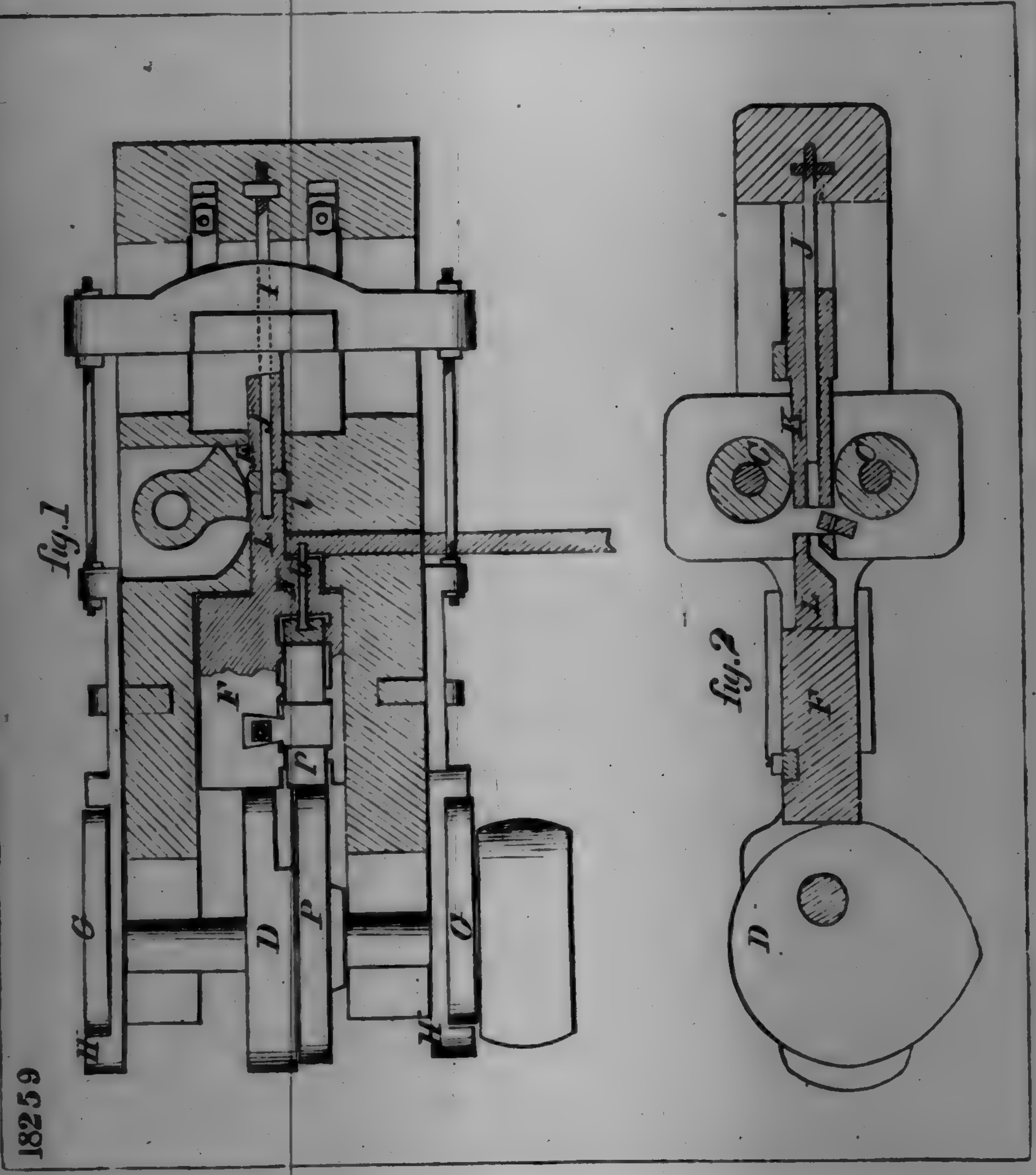

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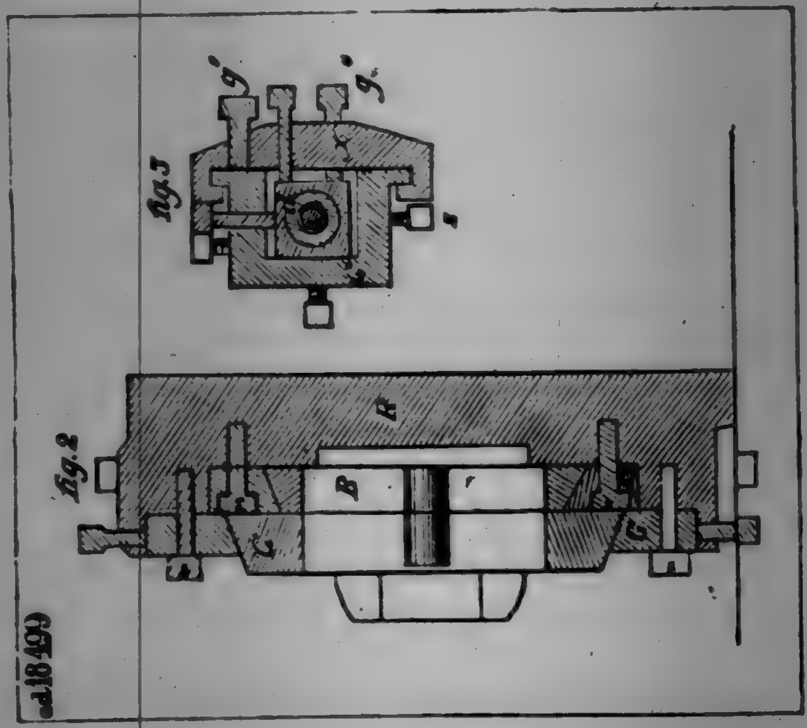

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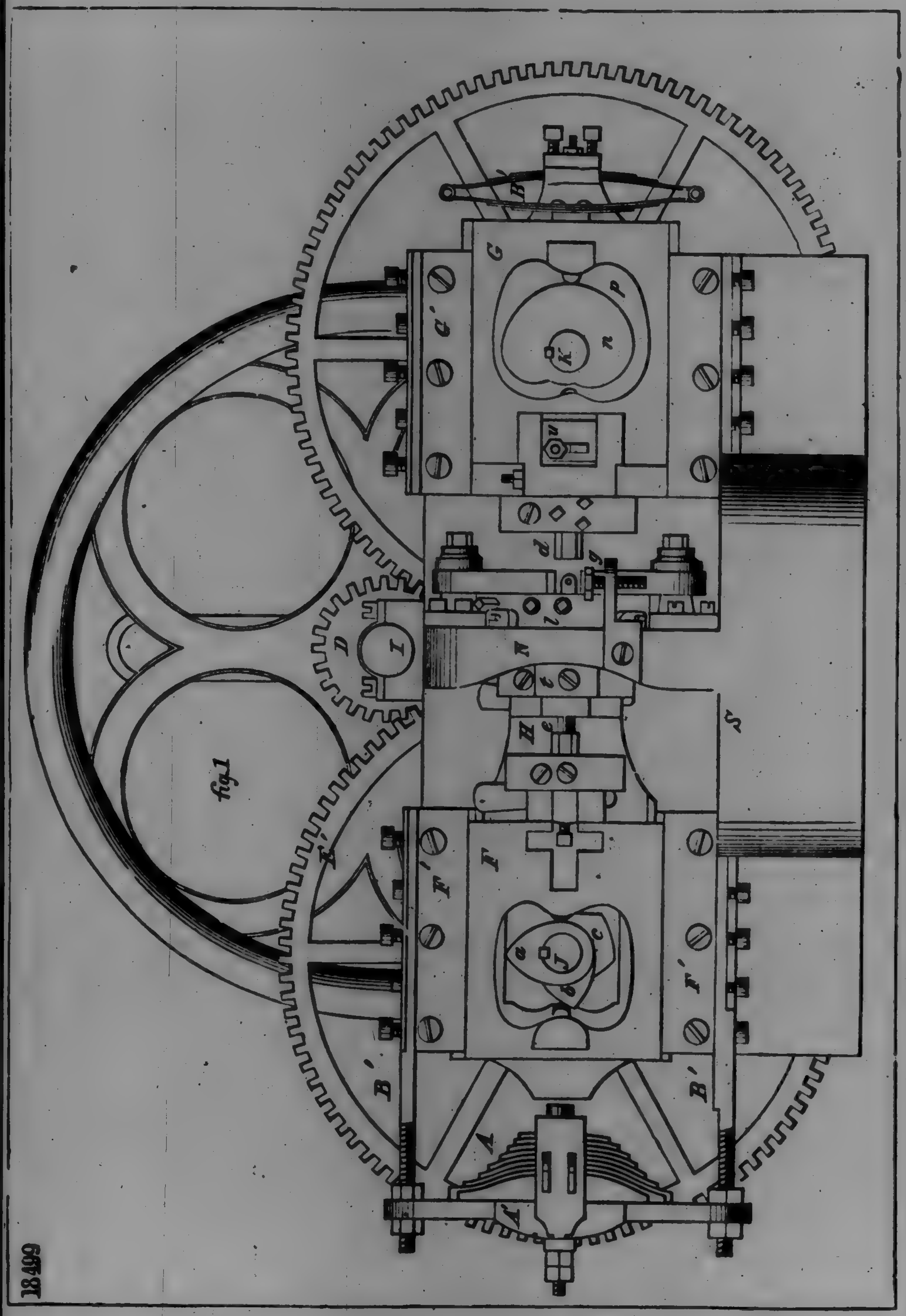

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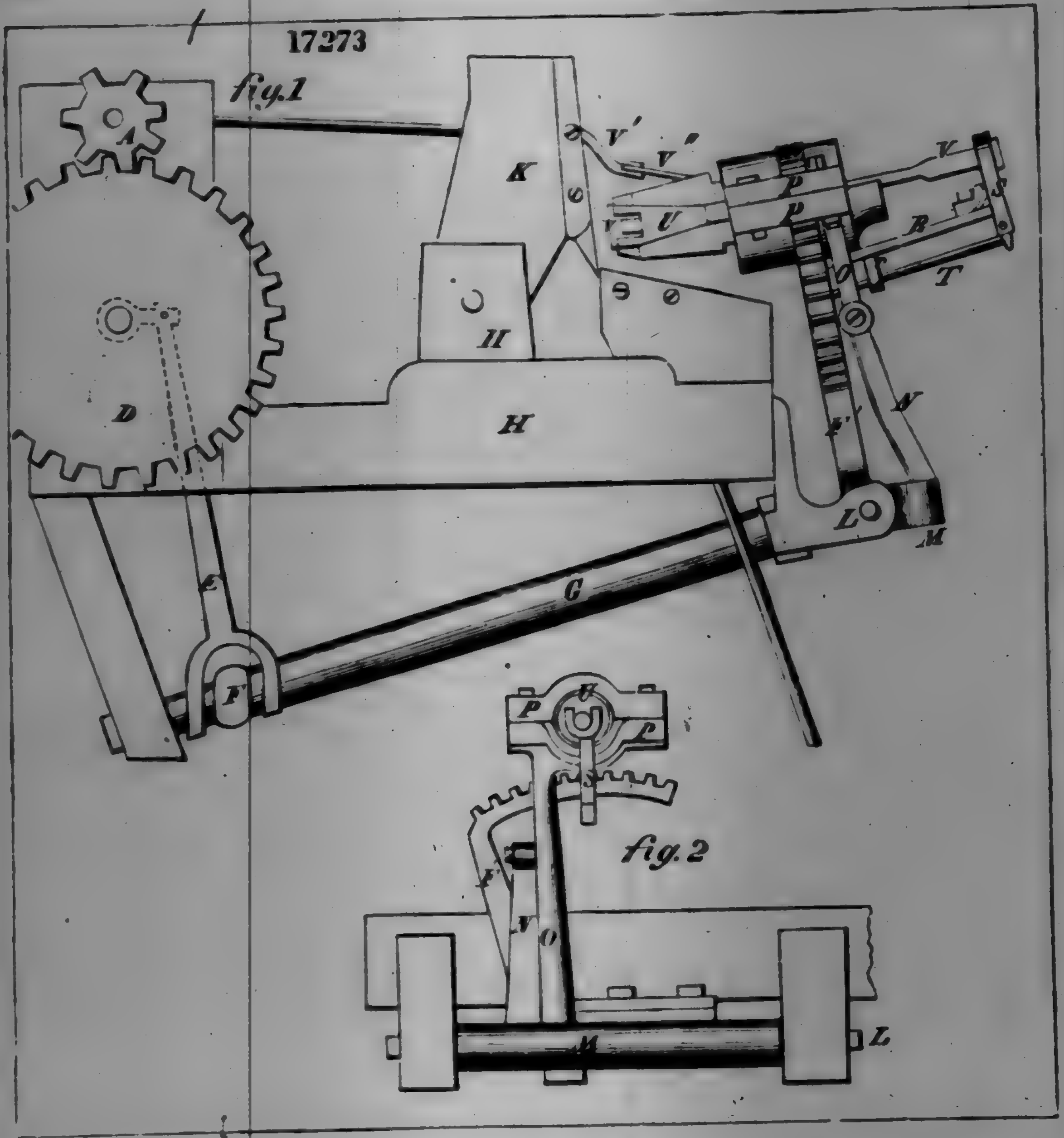

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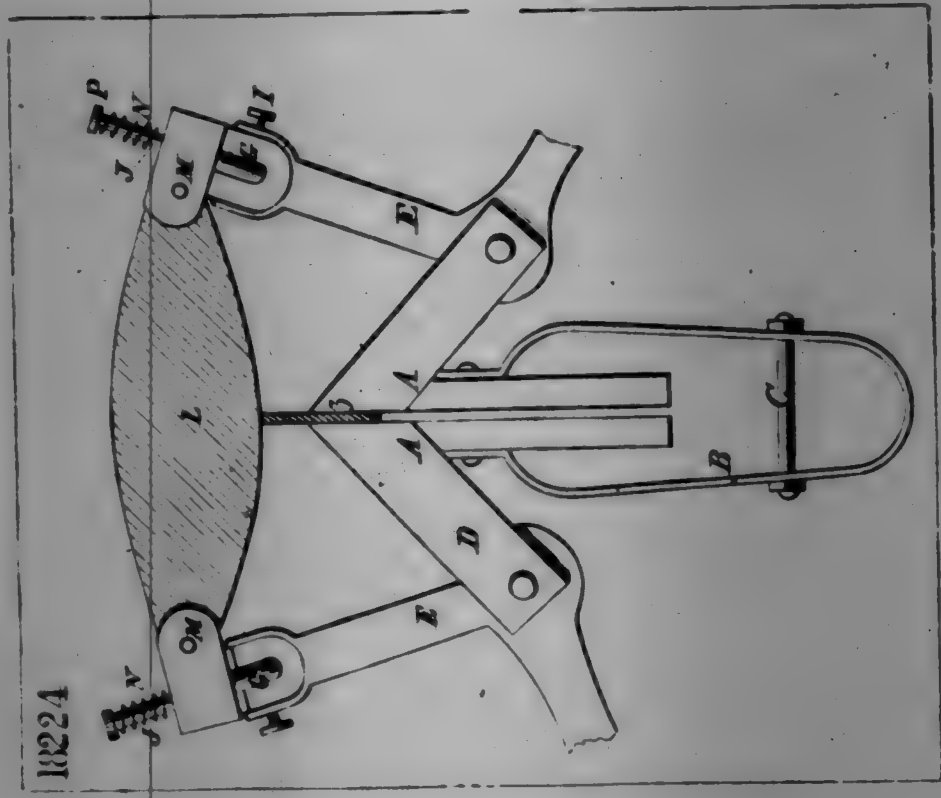

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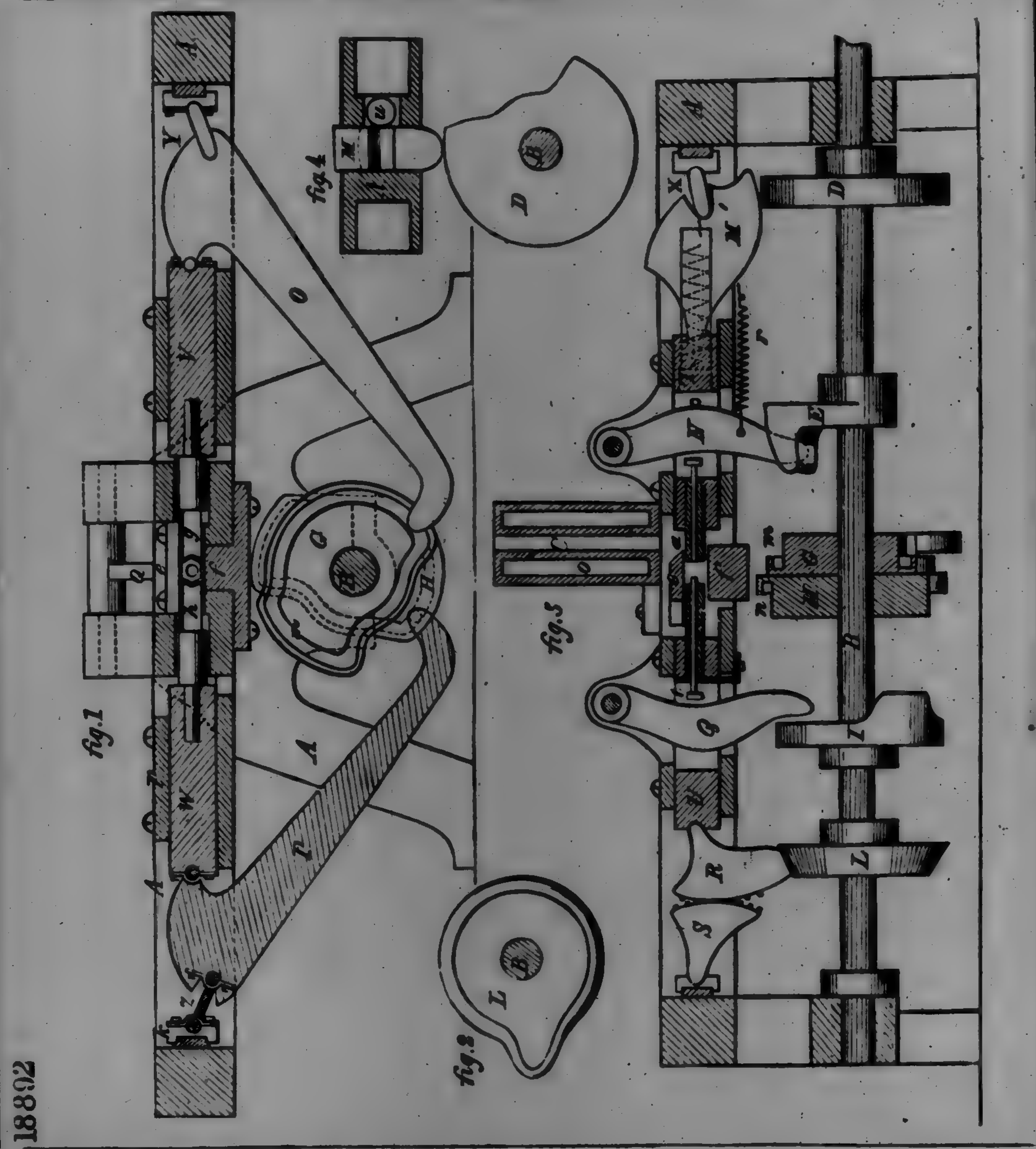

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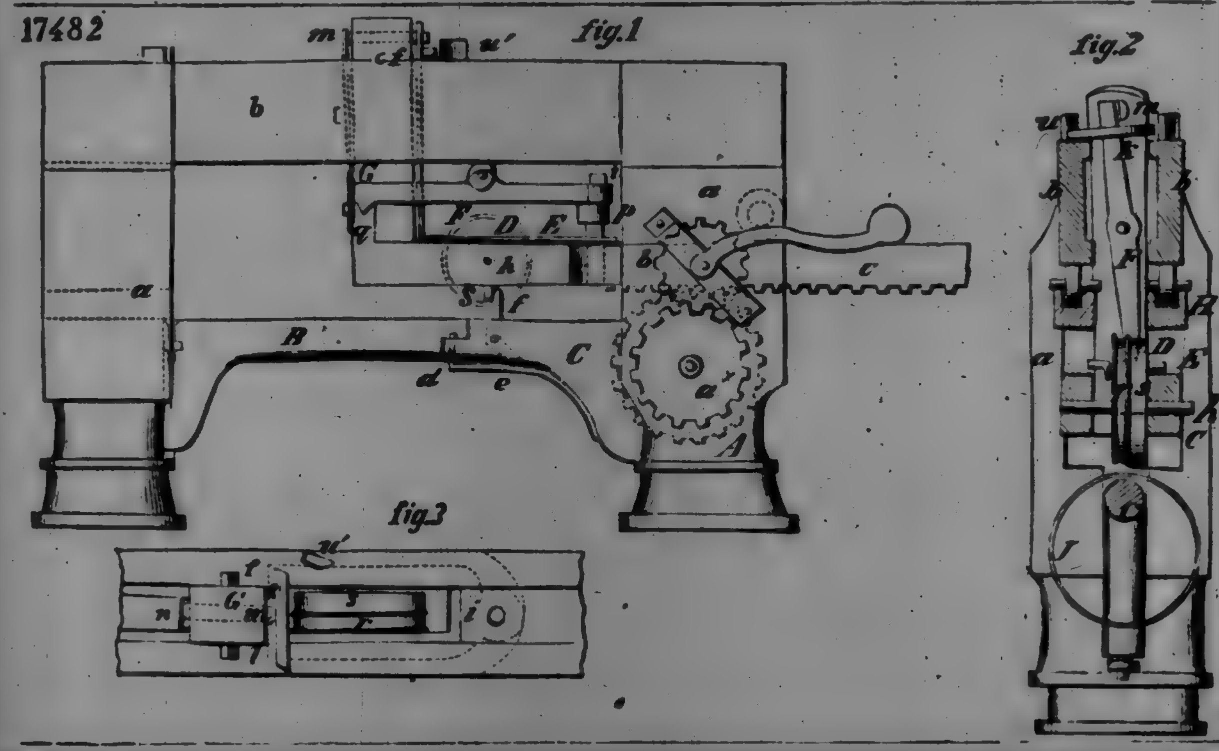

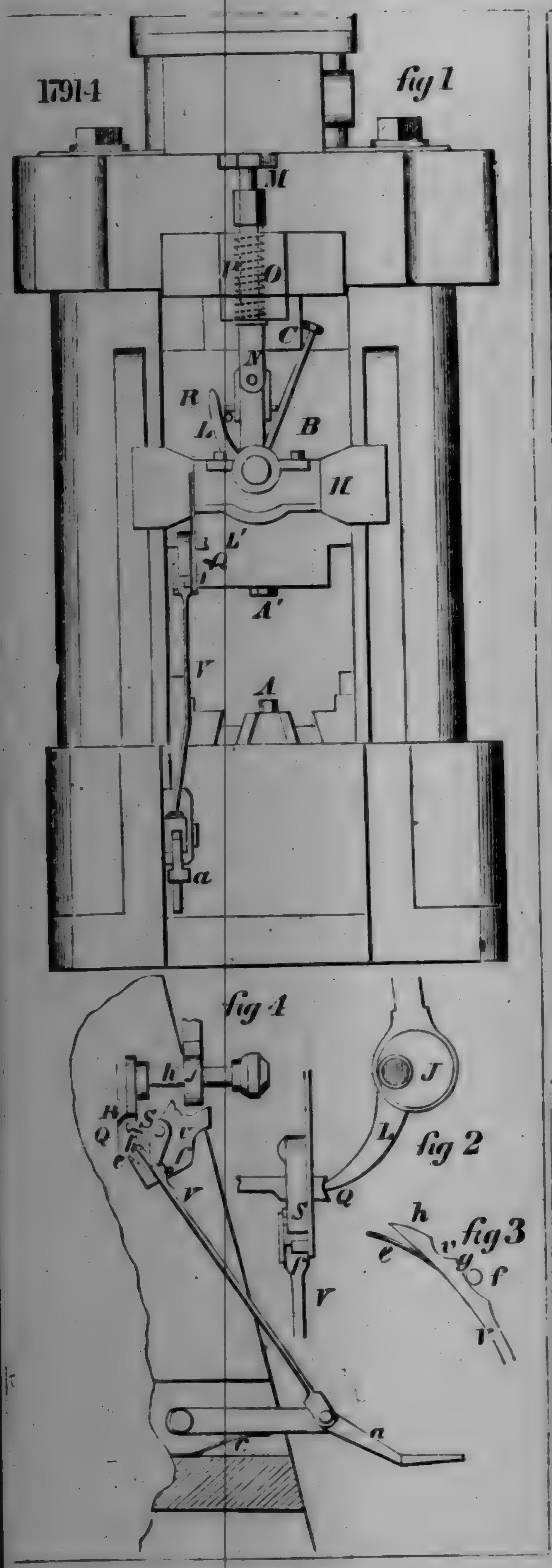
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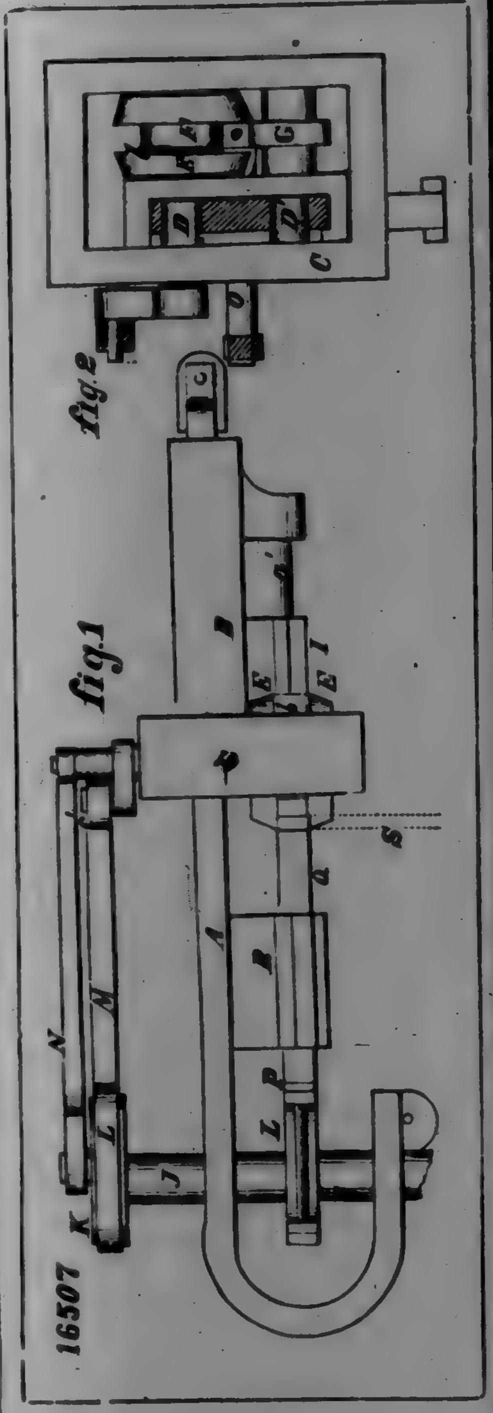
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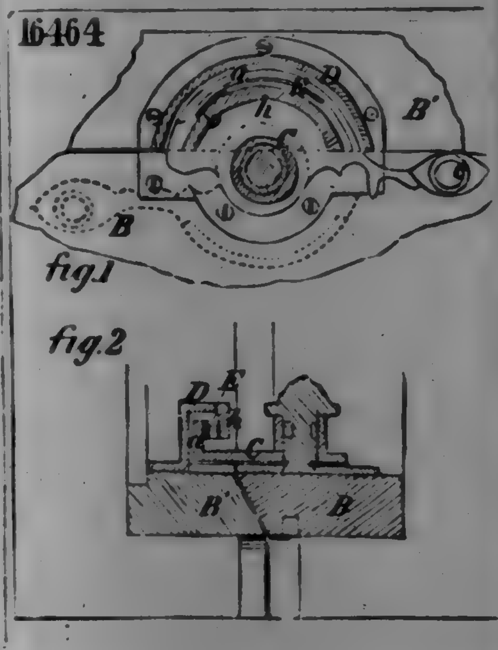
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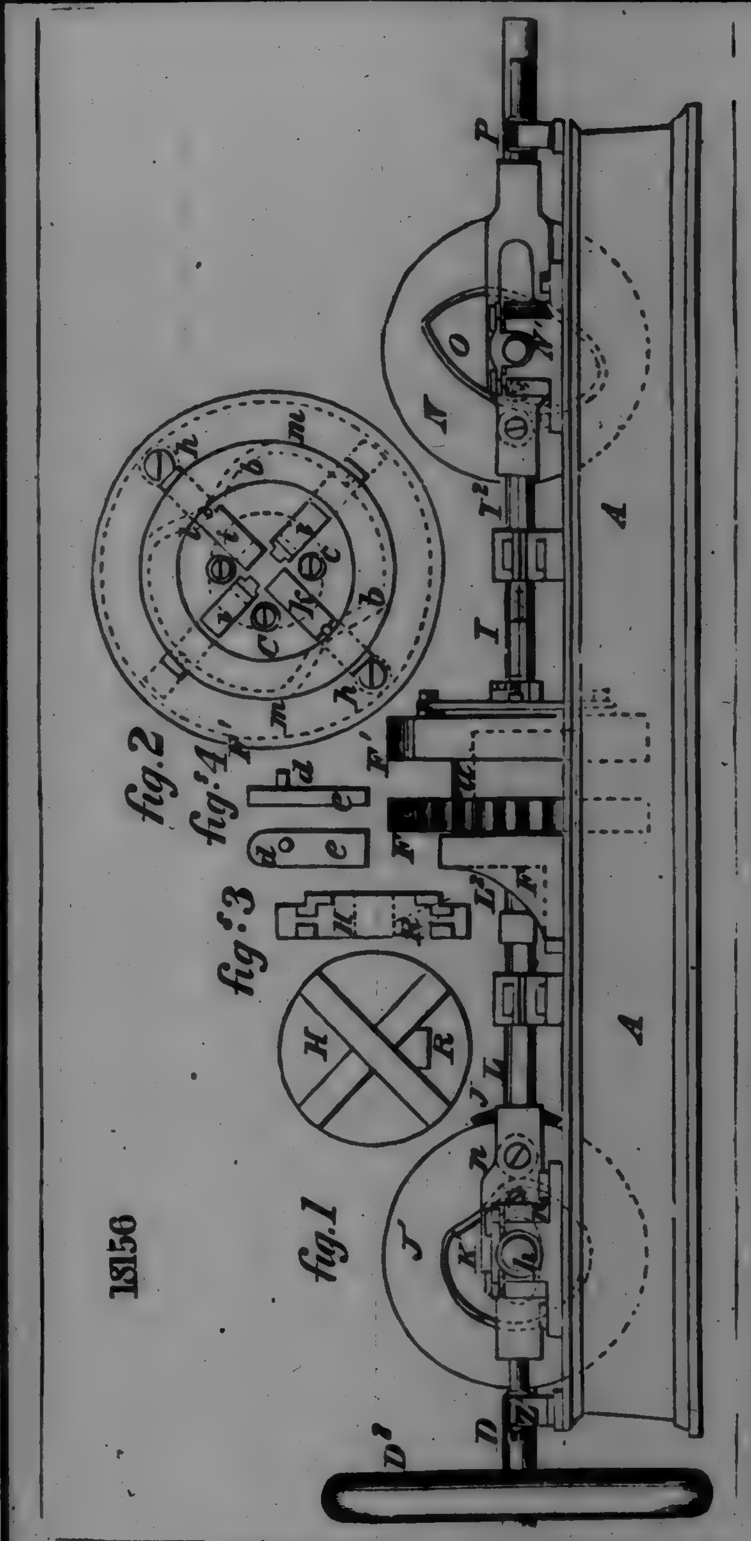
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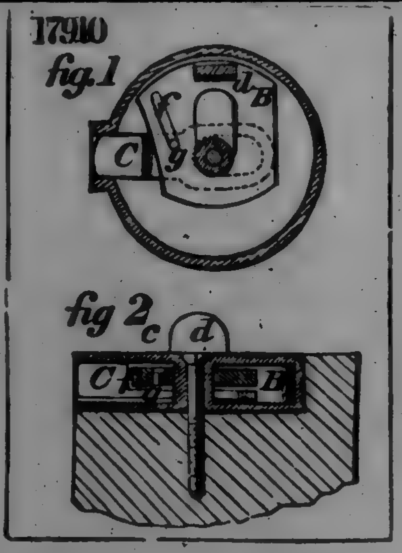
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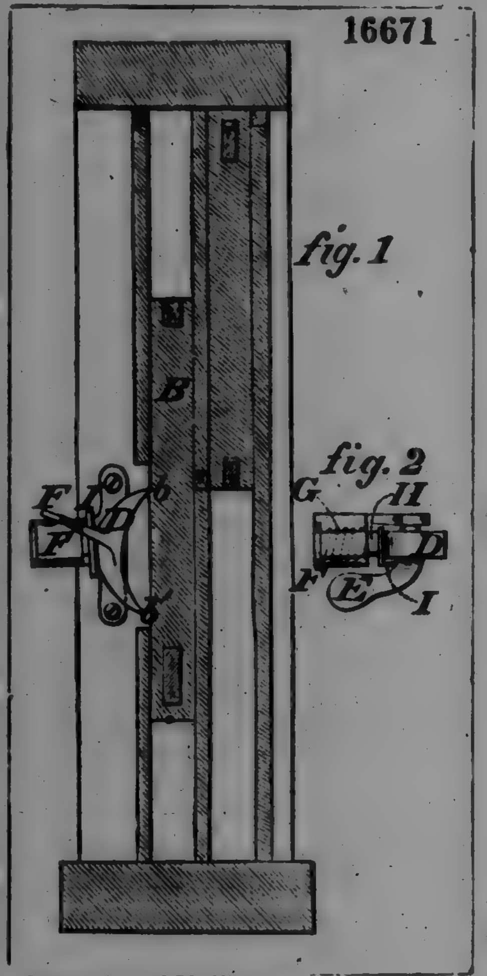
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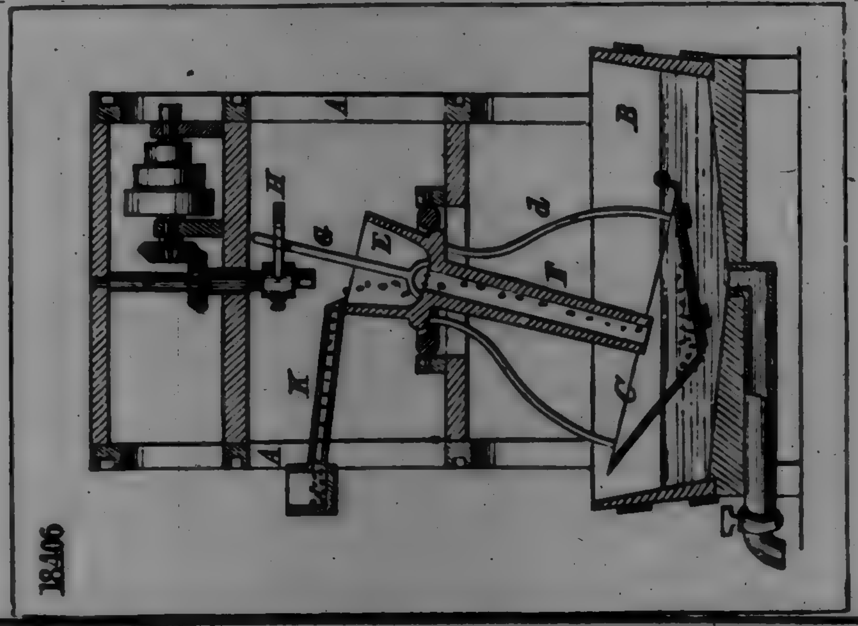
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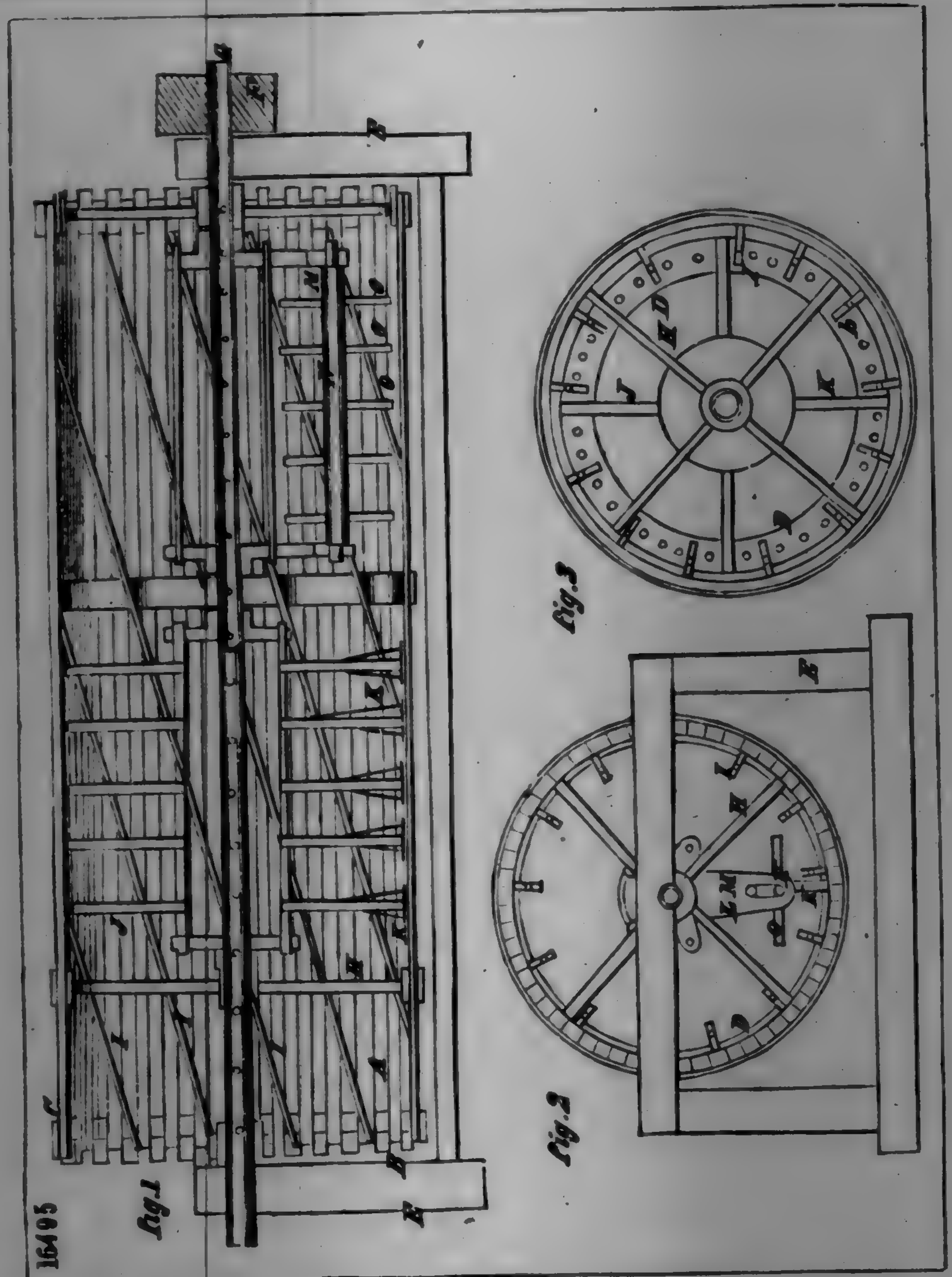
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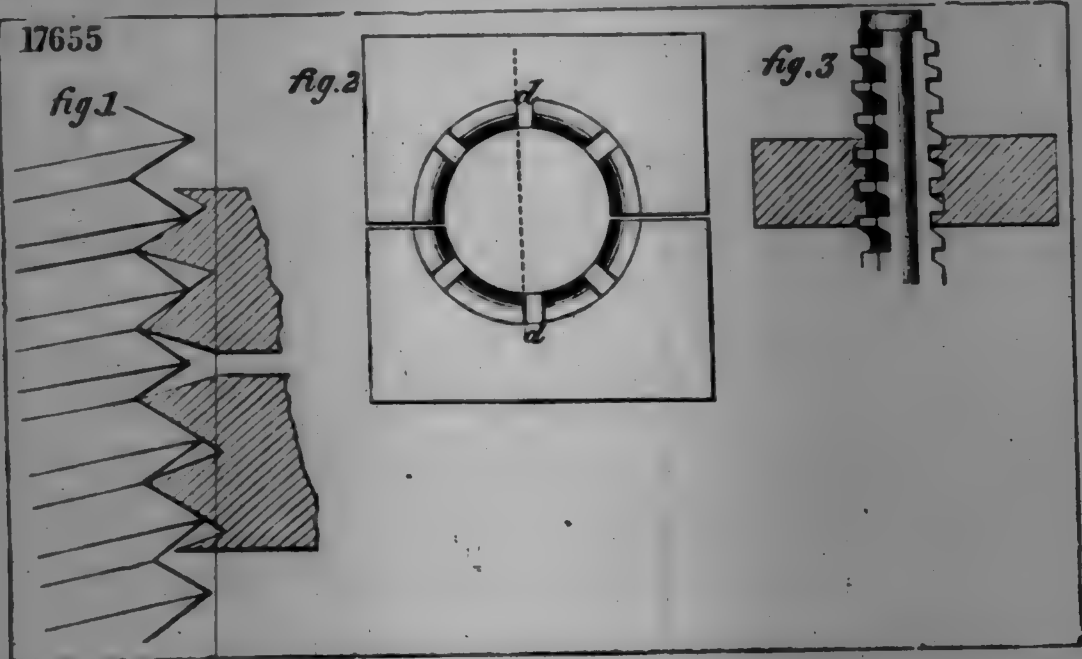
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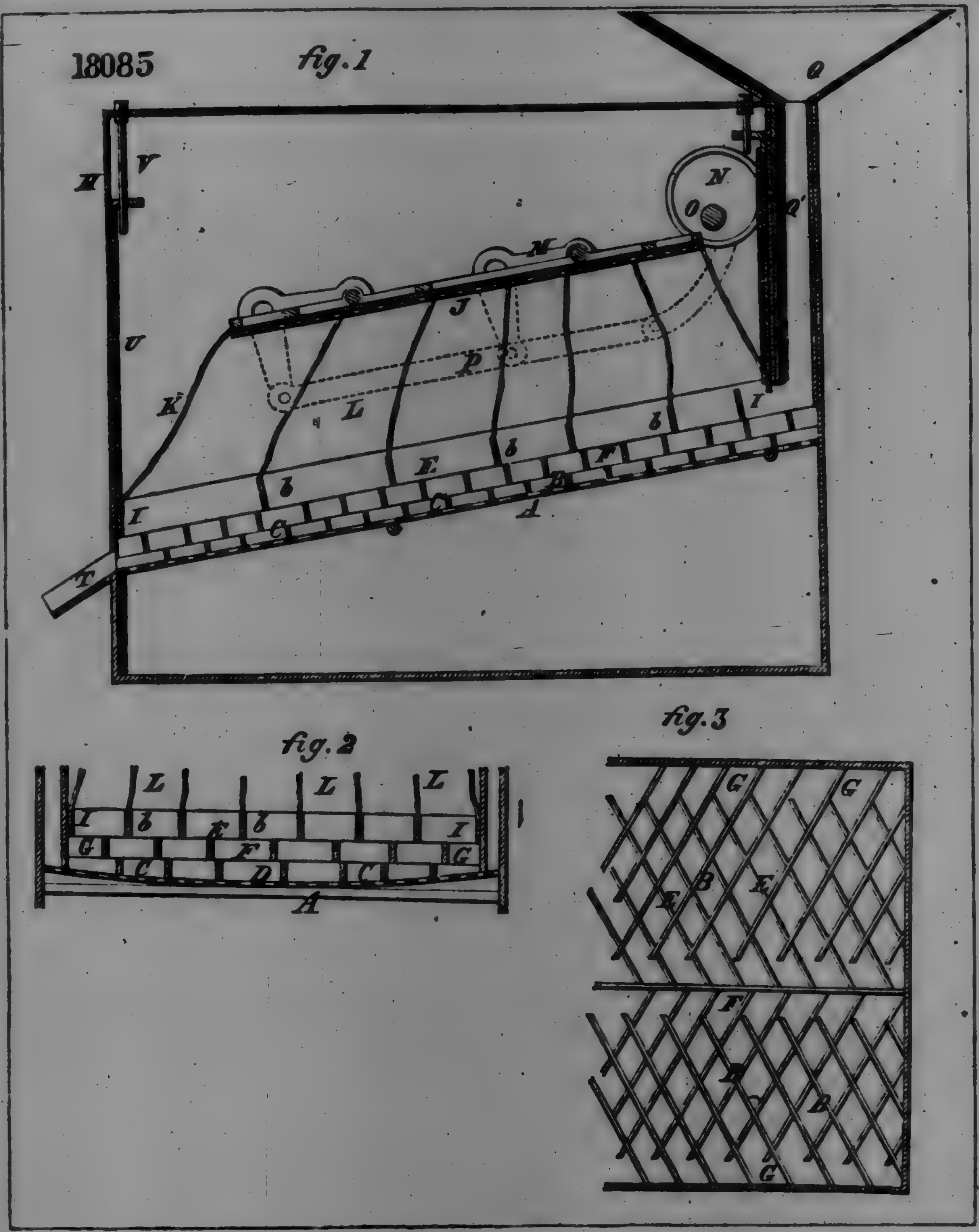
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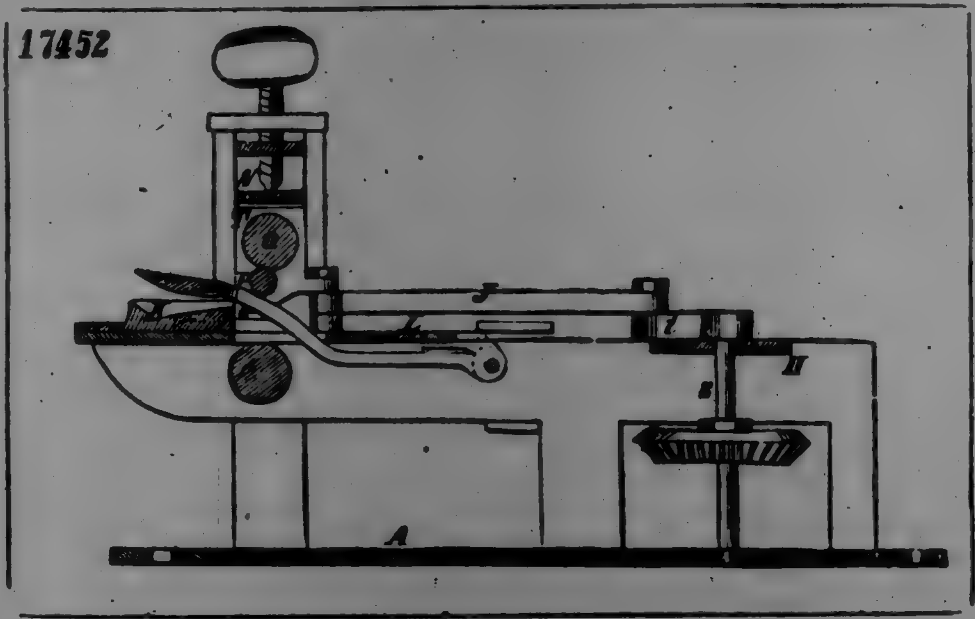
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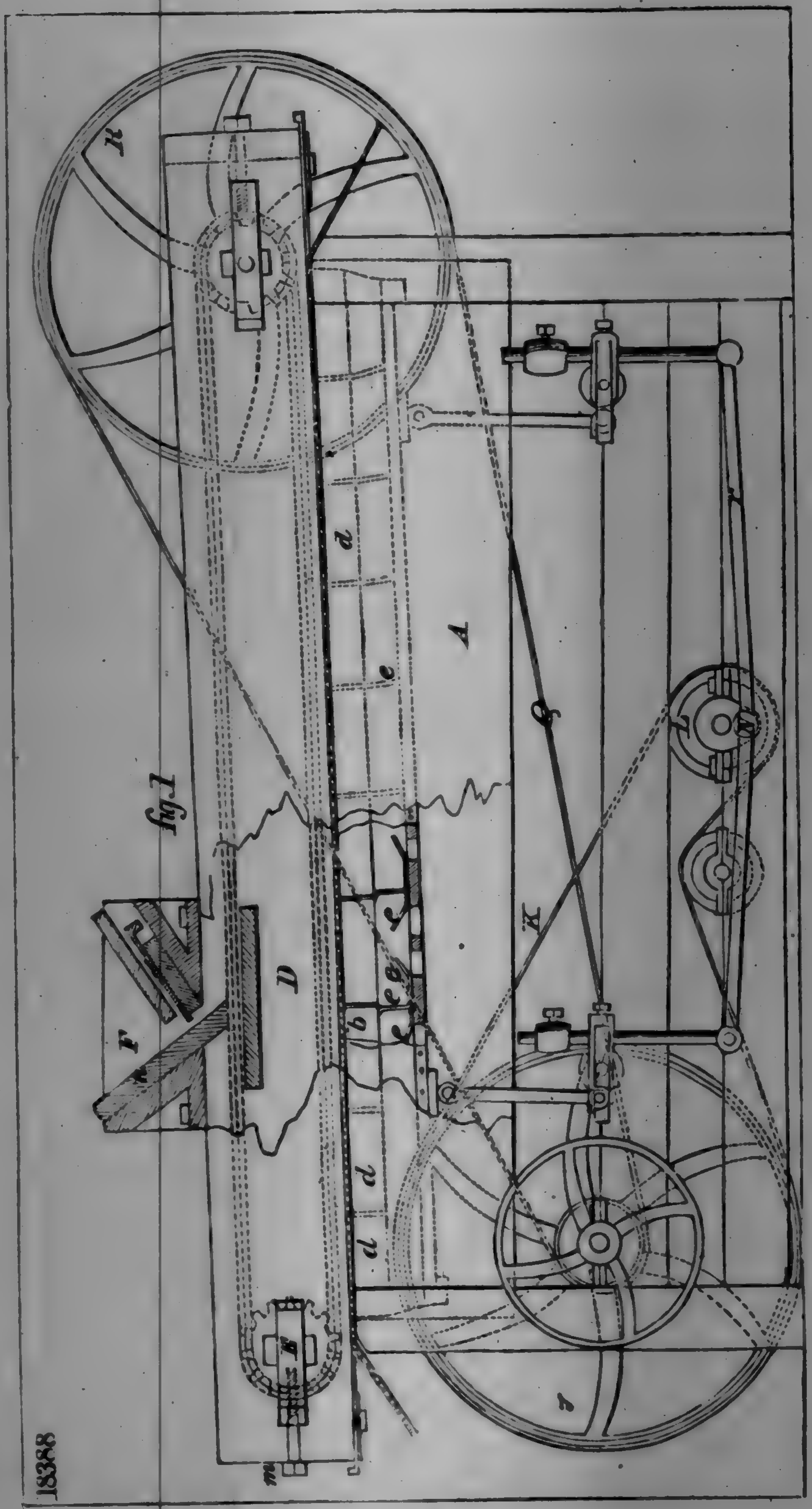
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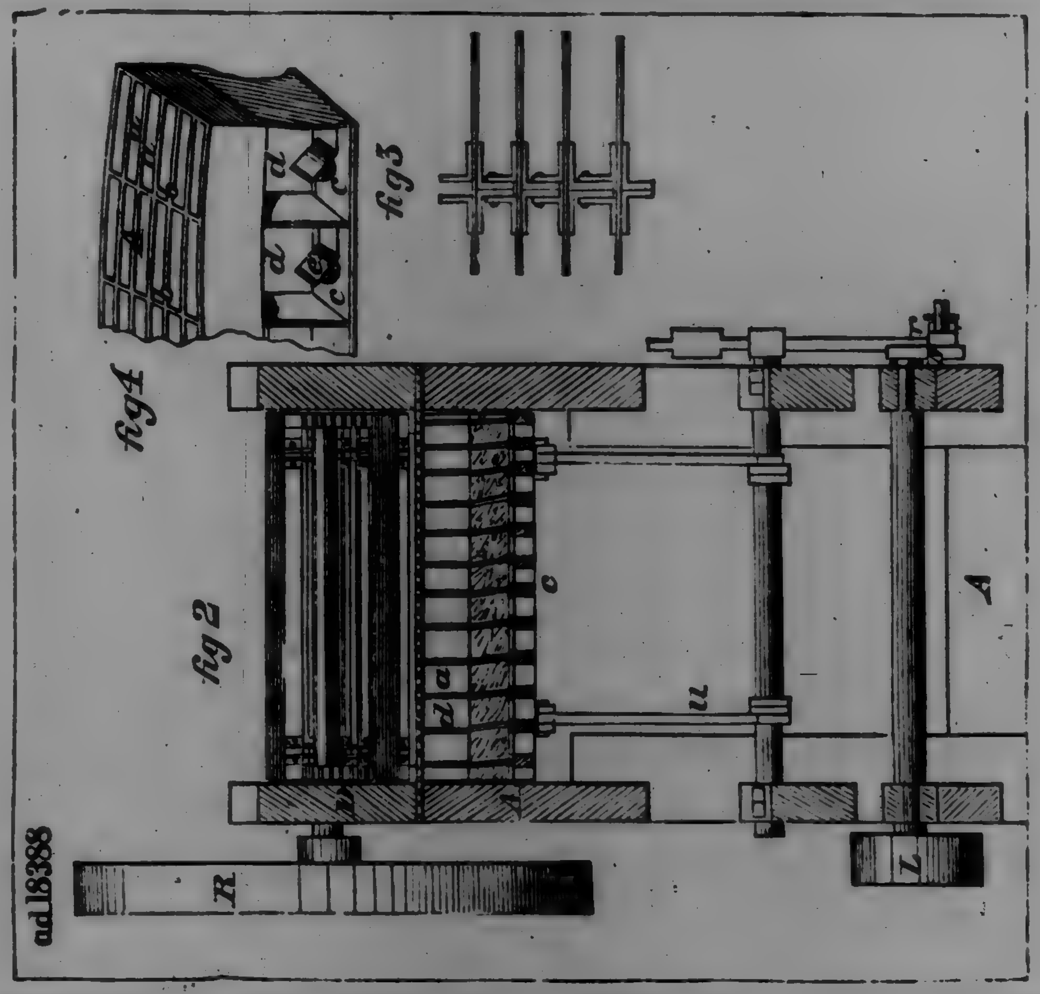
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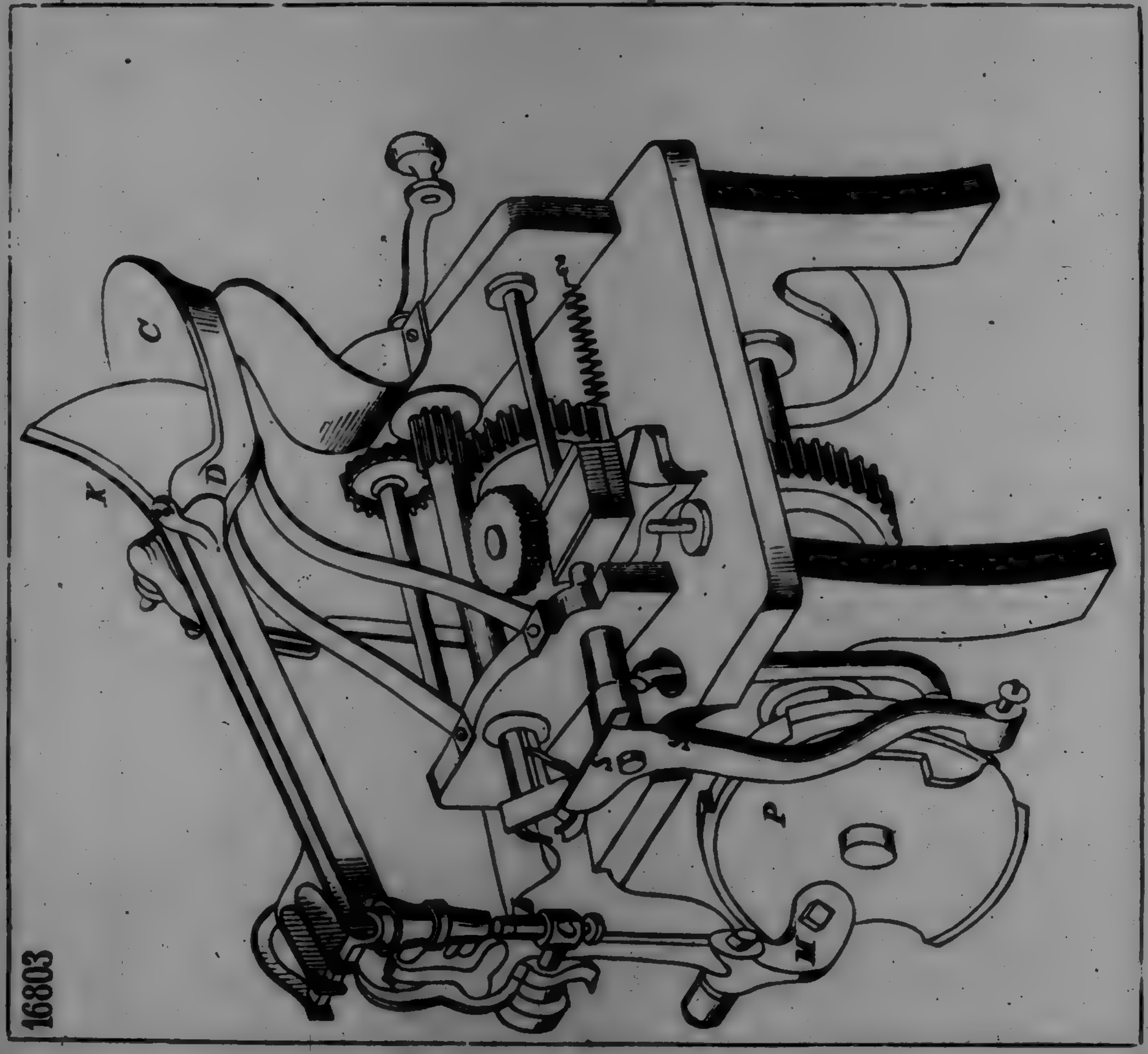
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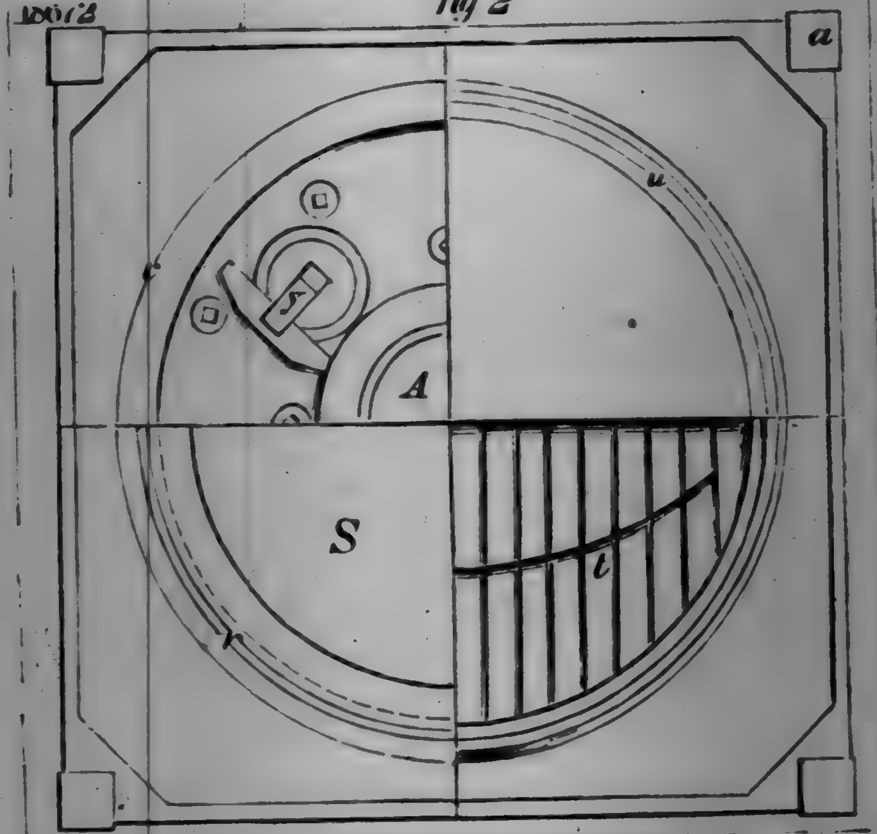

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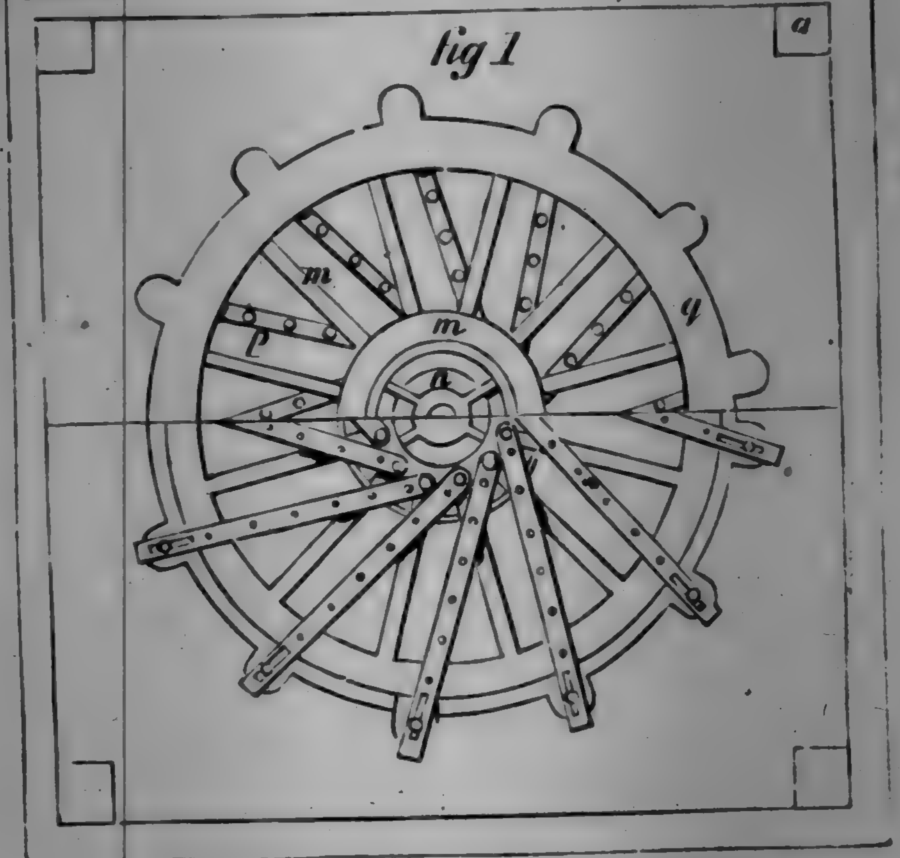
fig 1



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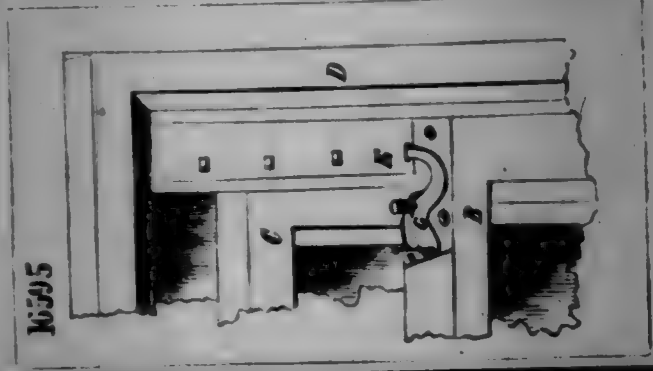

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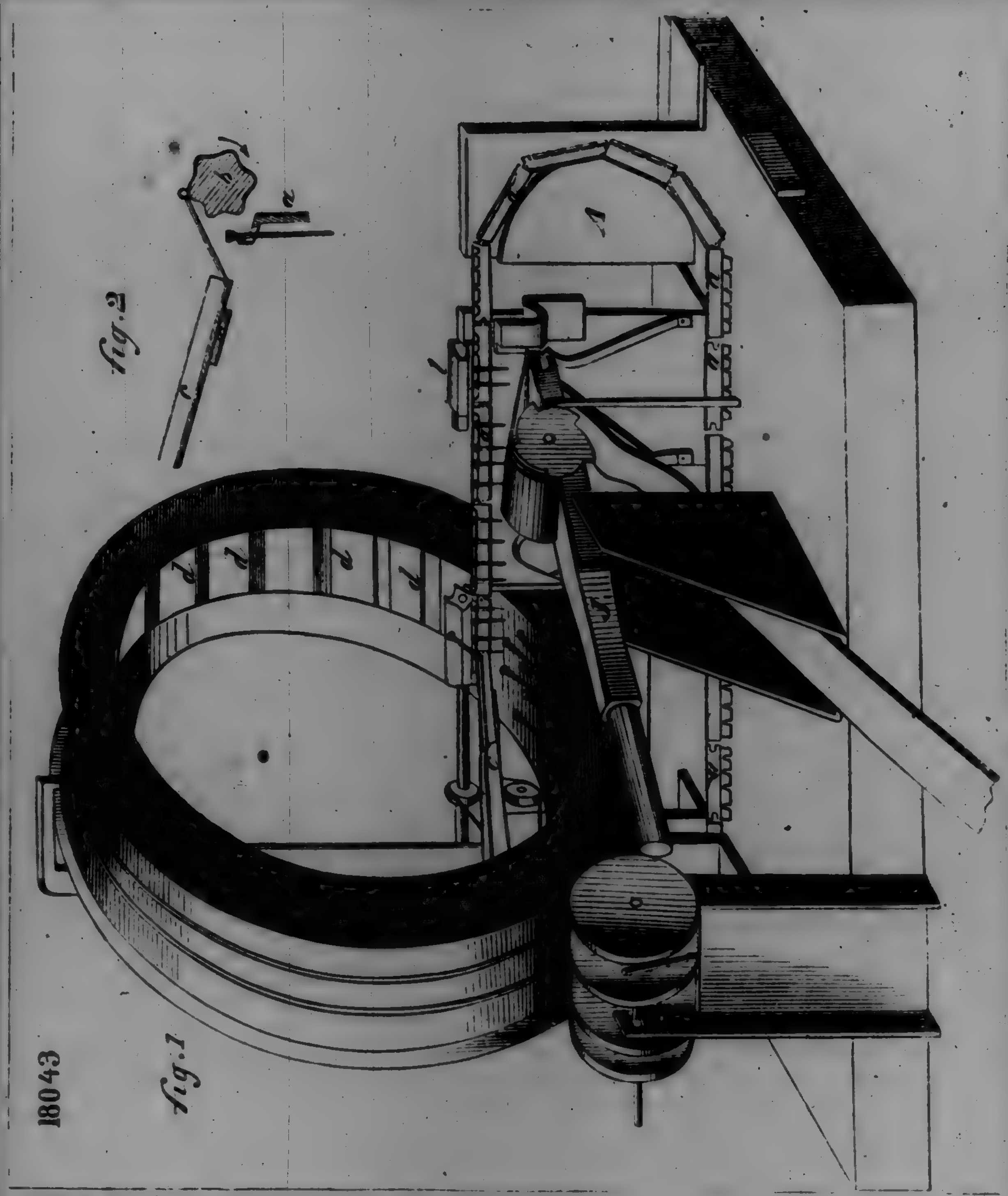

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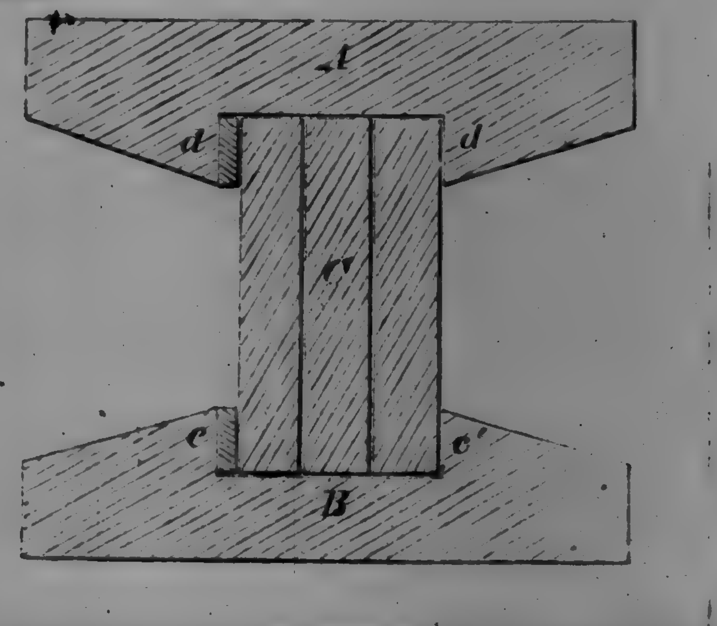

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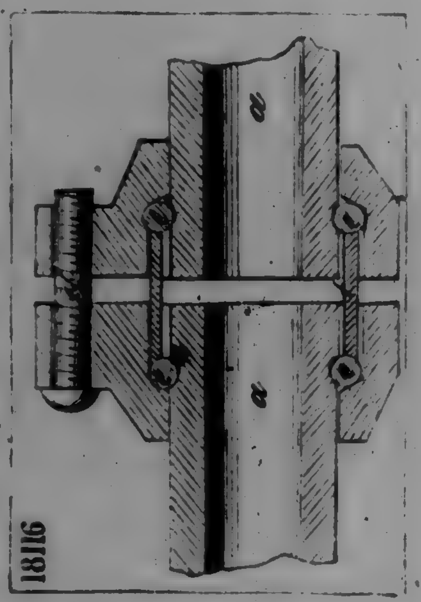

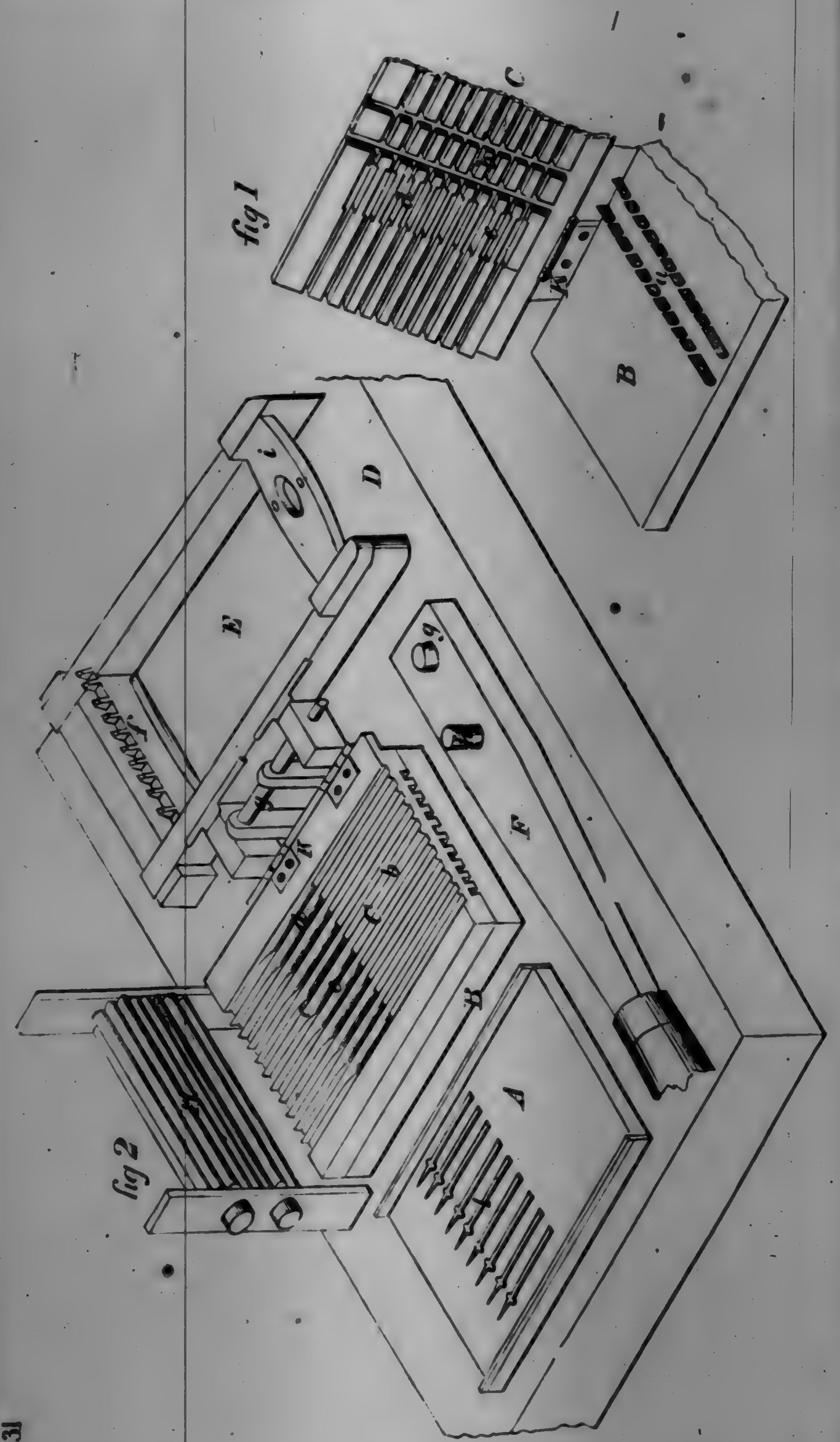

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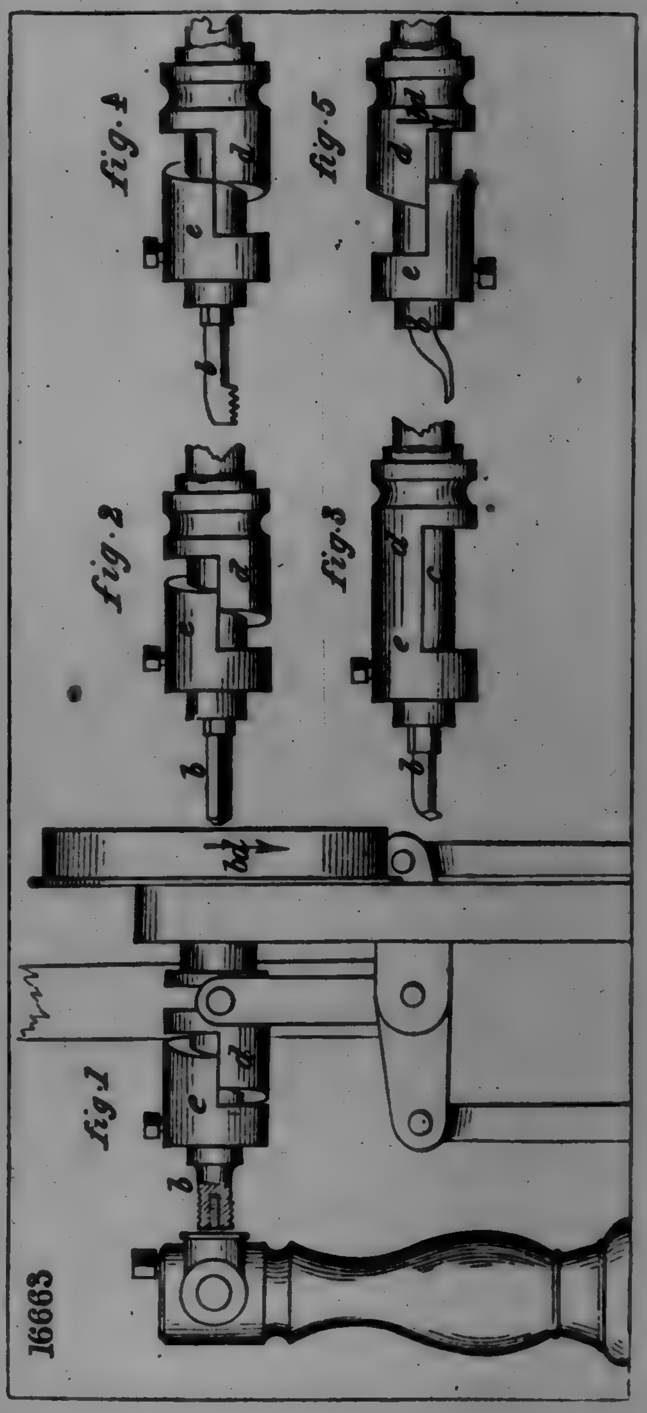

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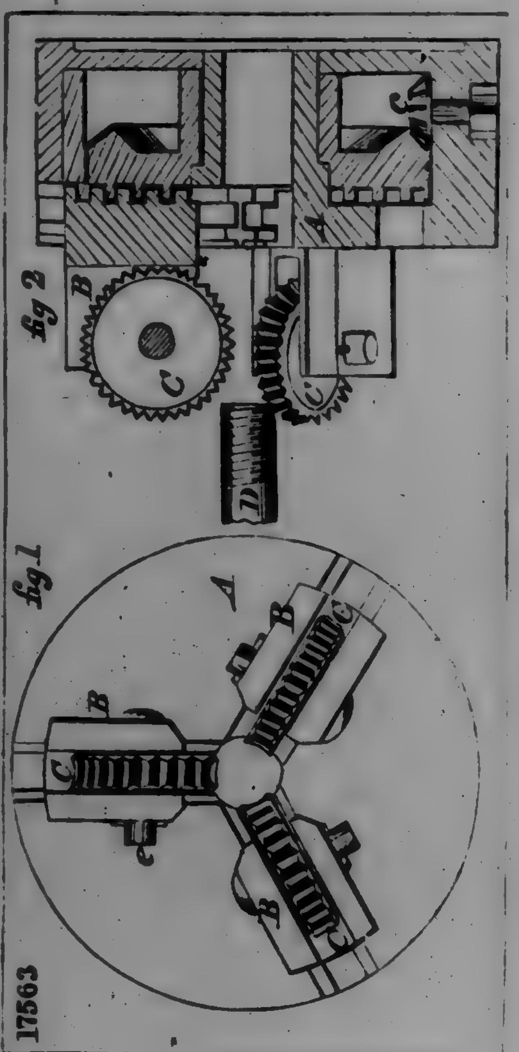

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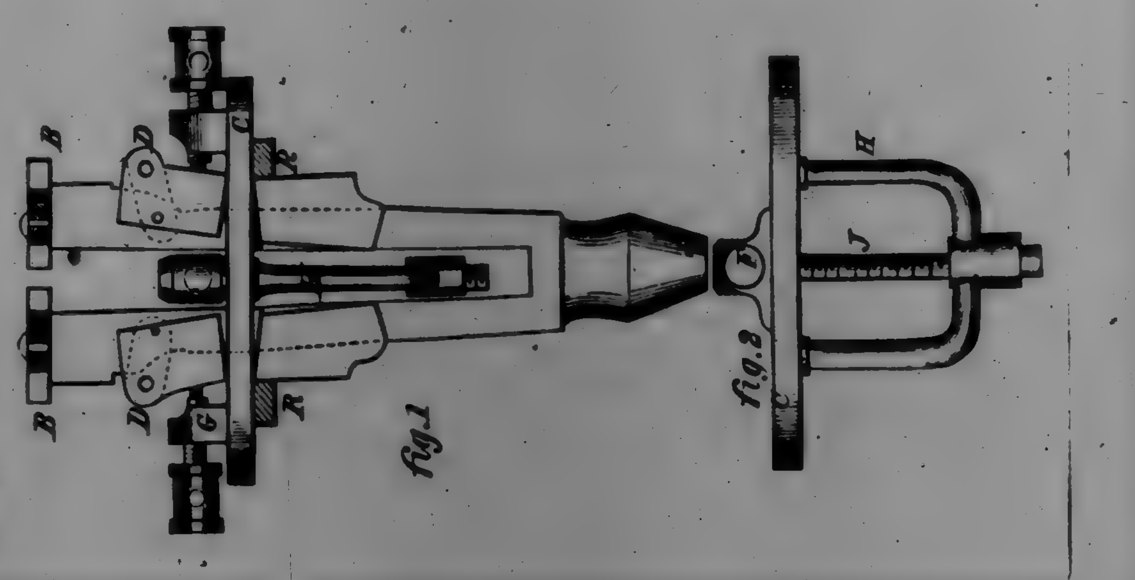

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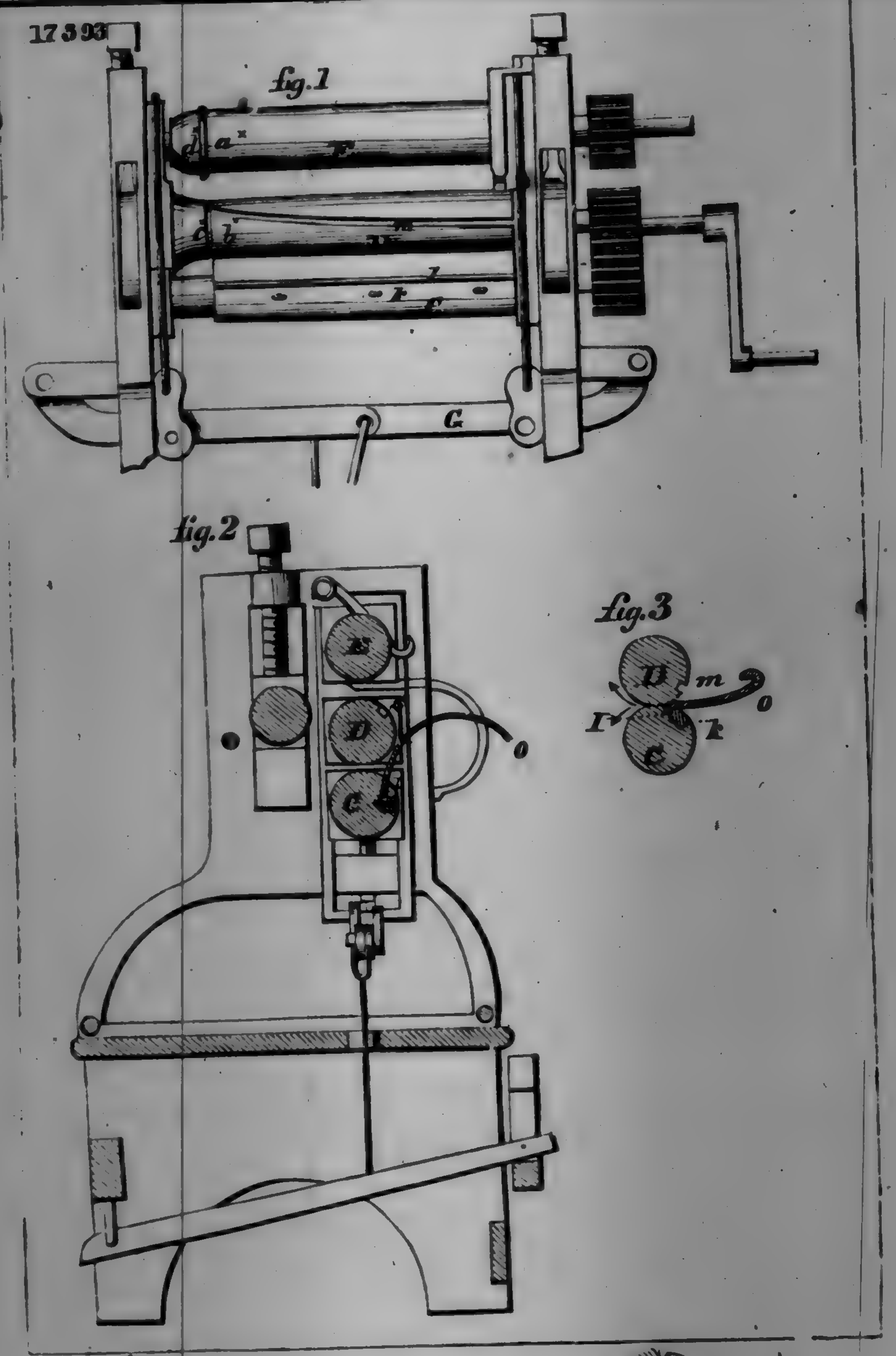
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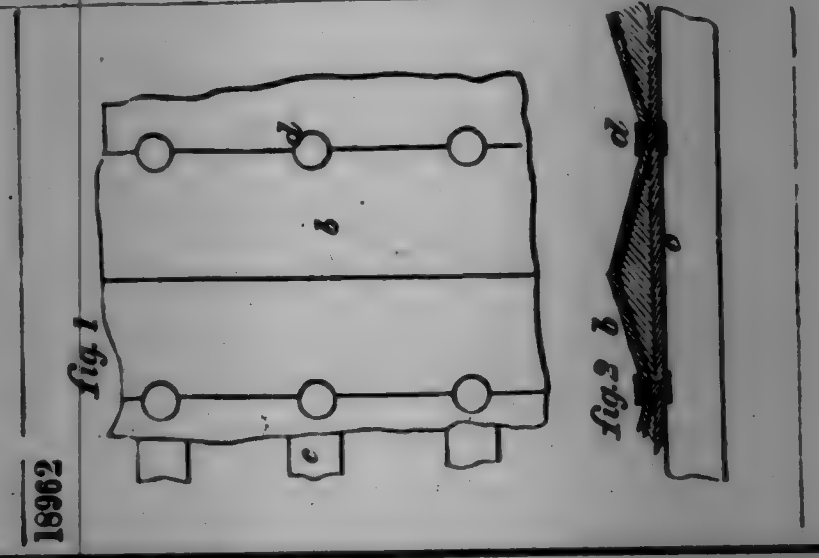
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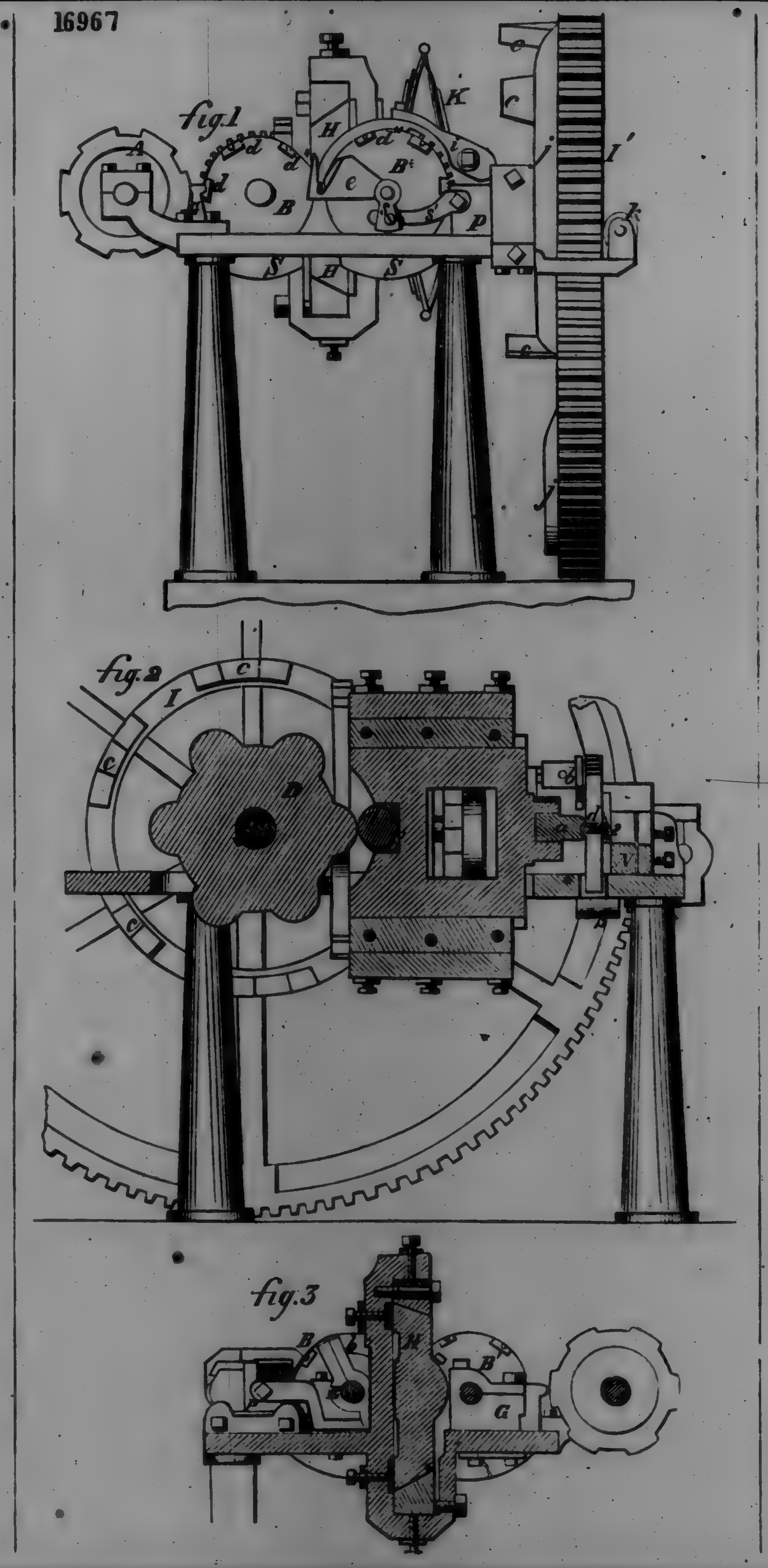
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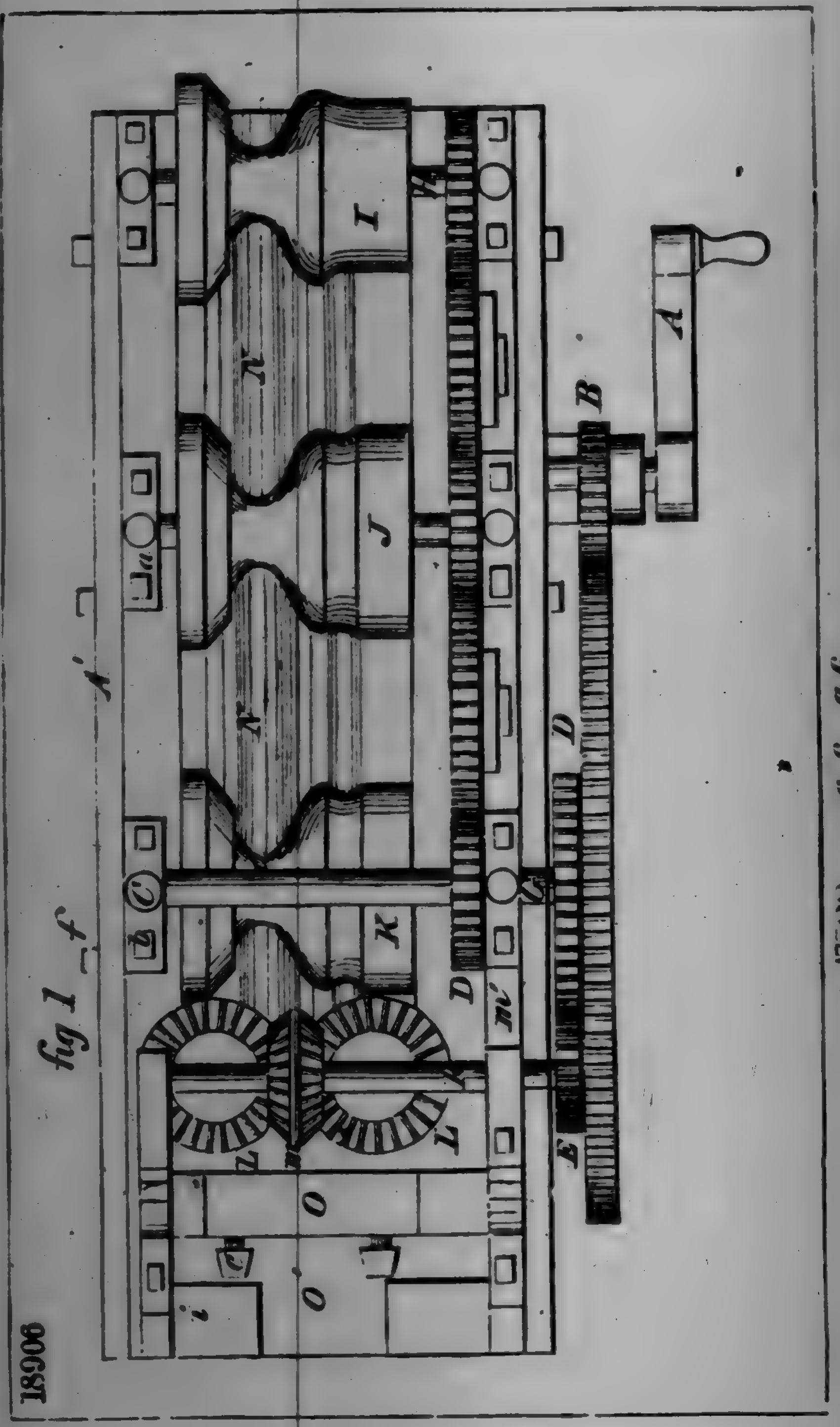
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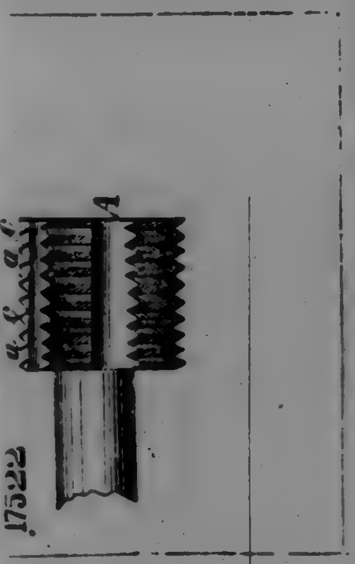
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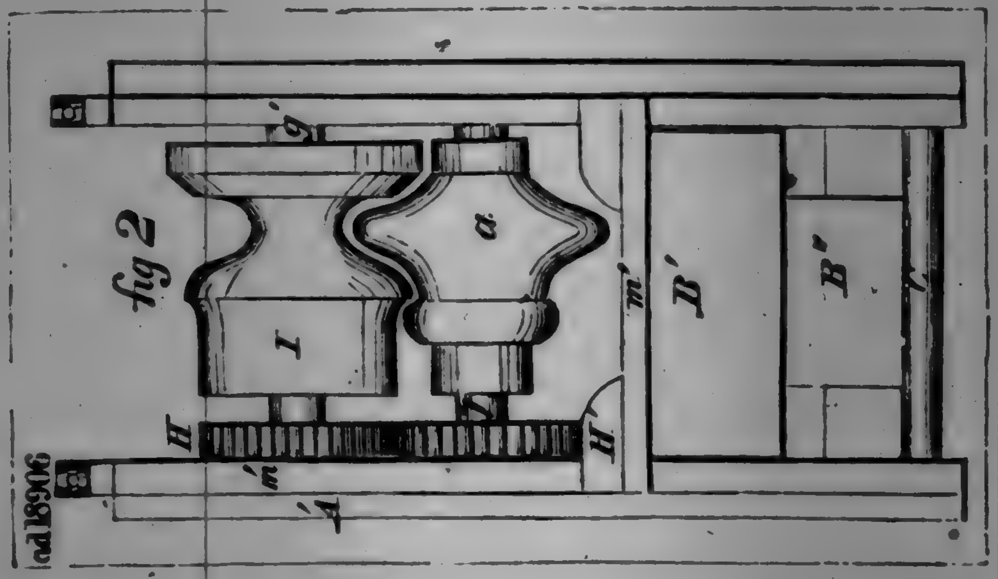
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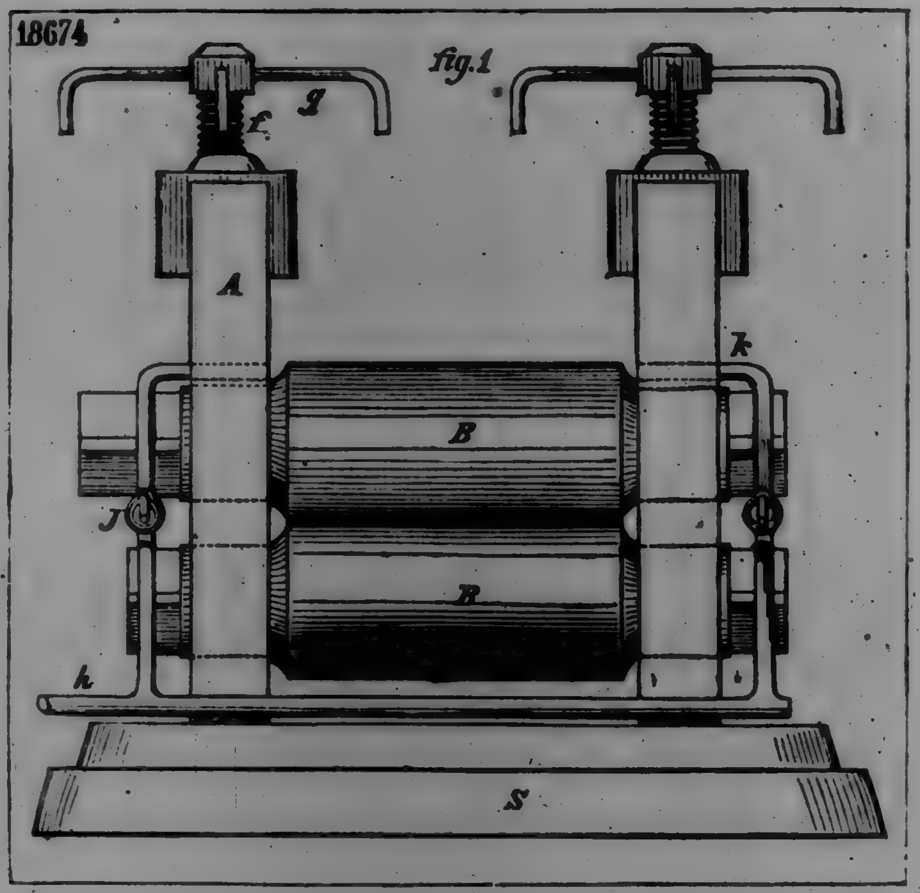
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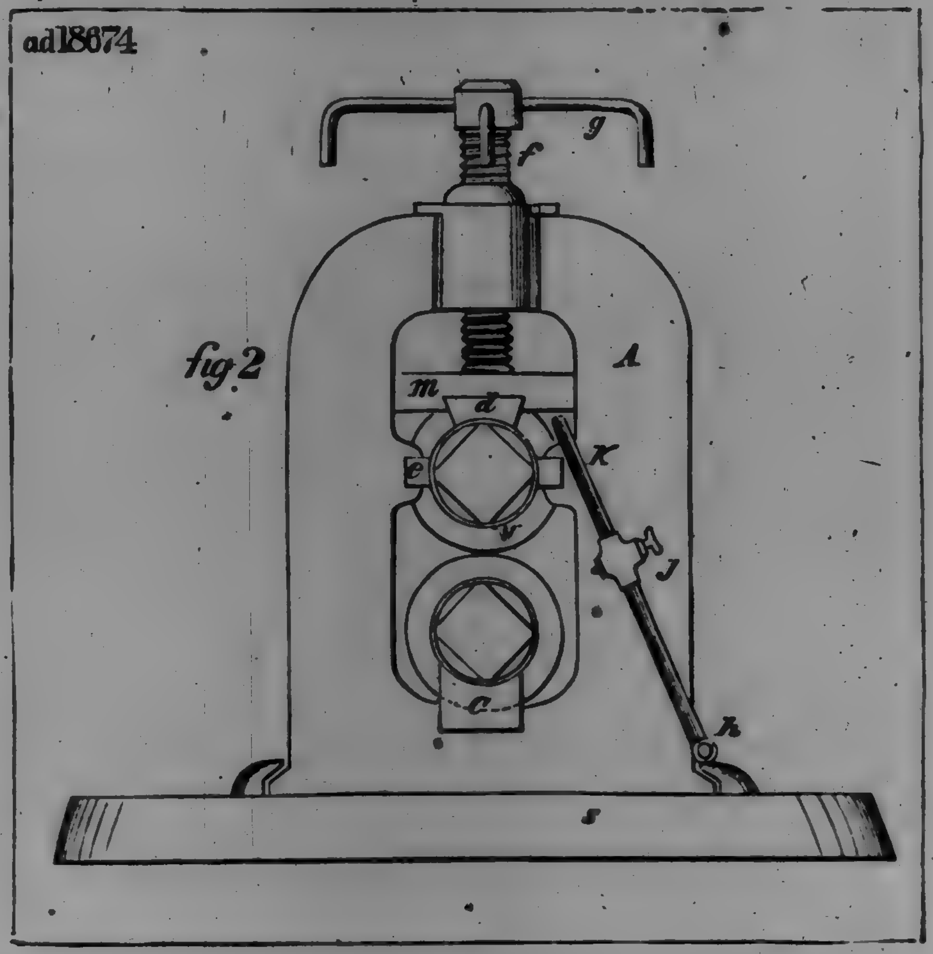
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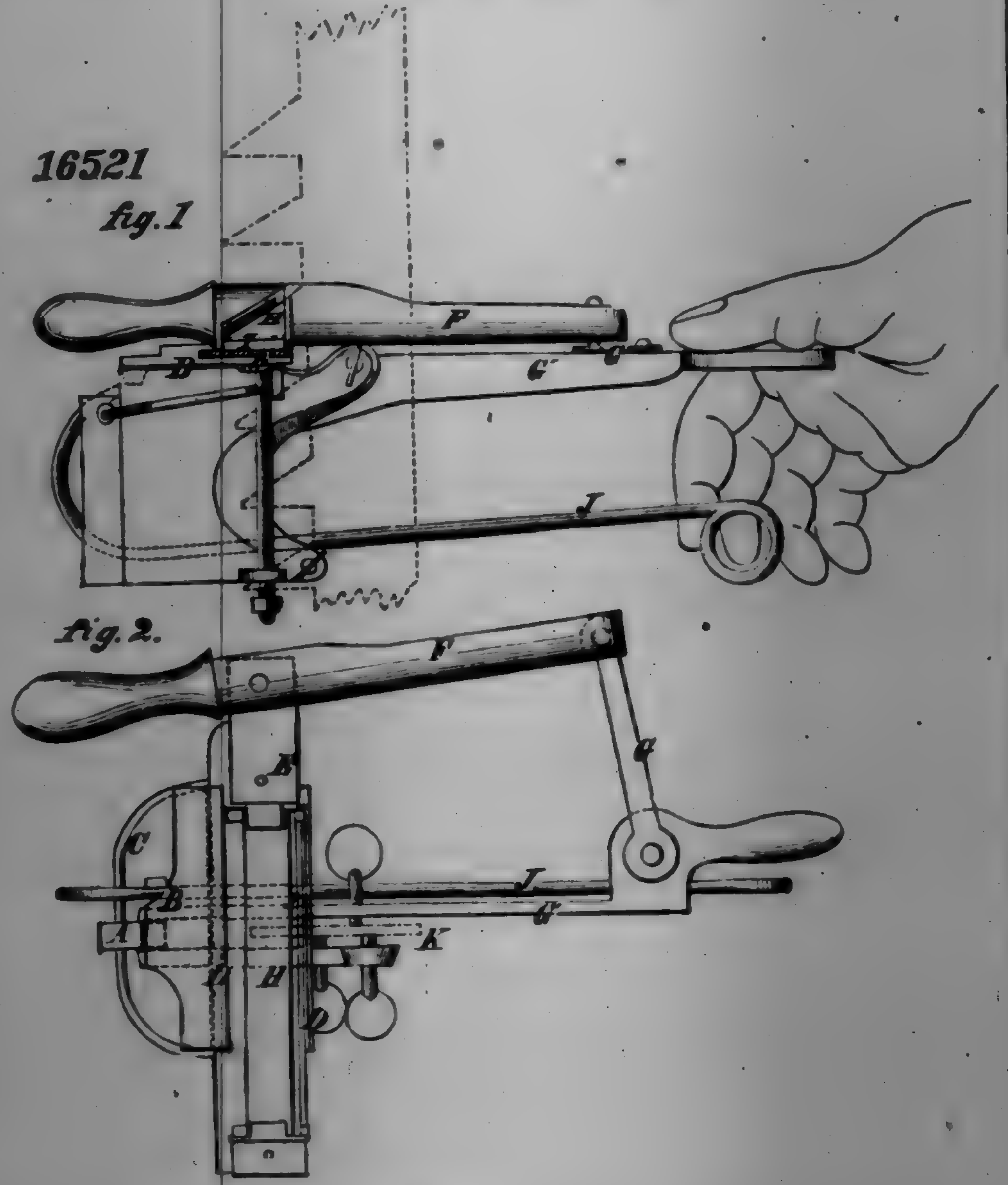

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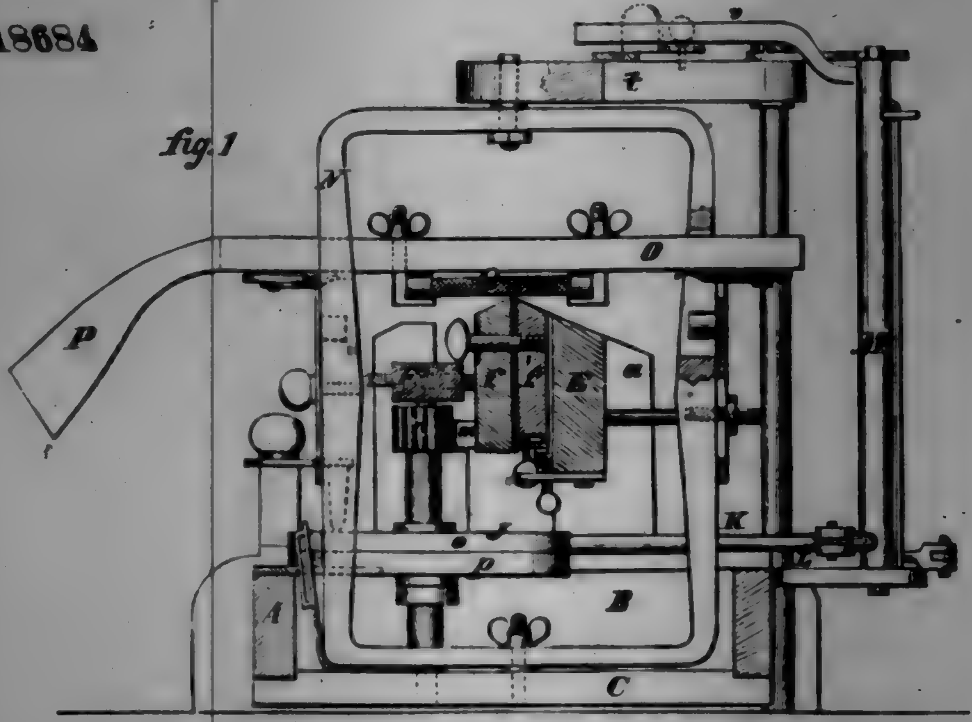

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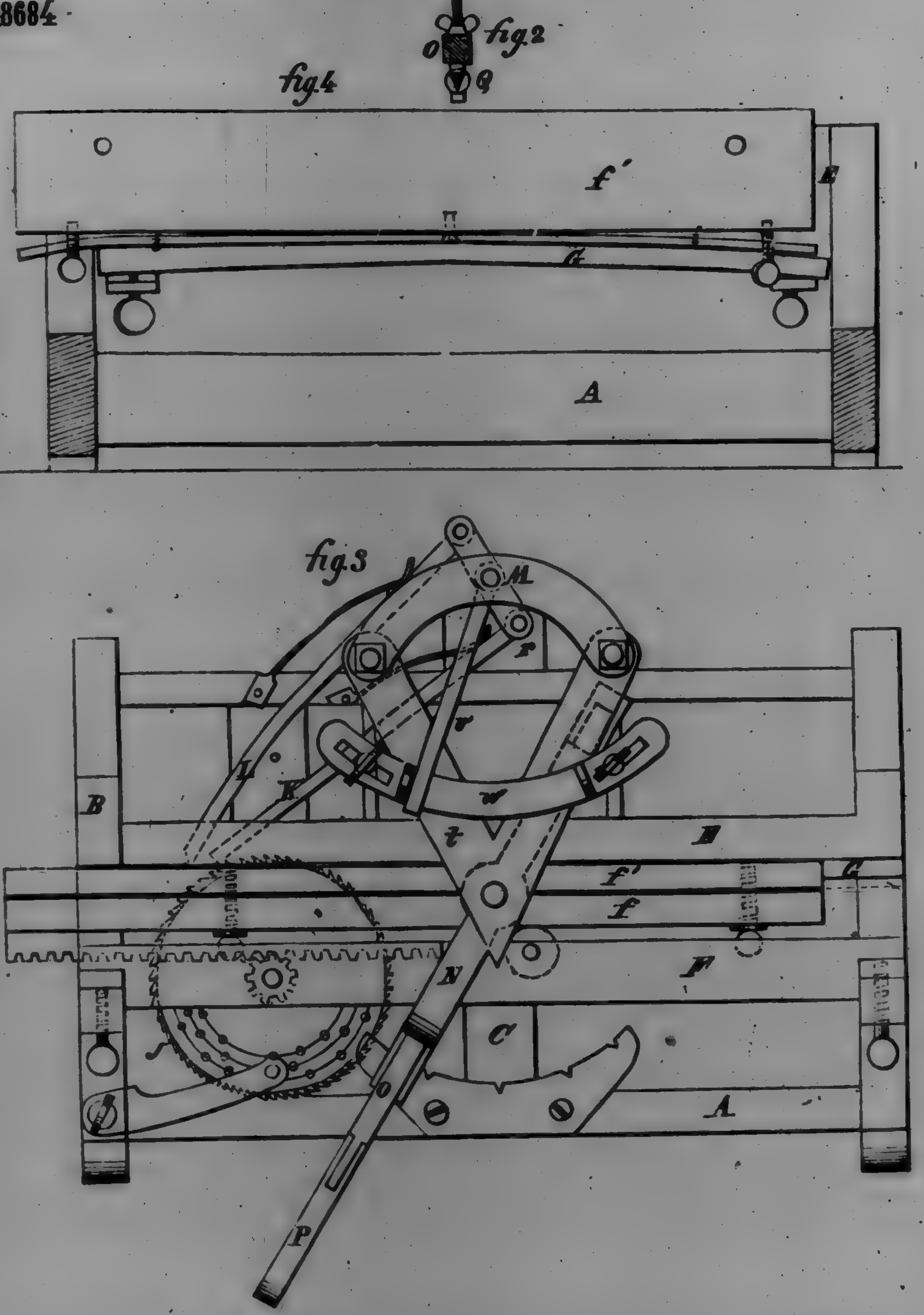

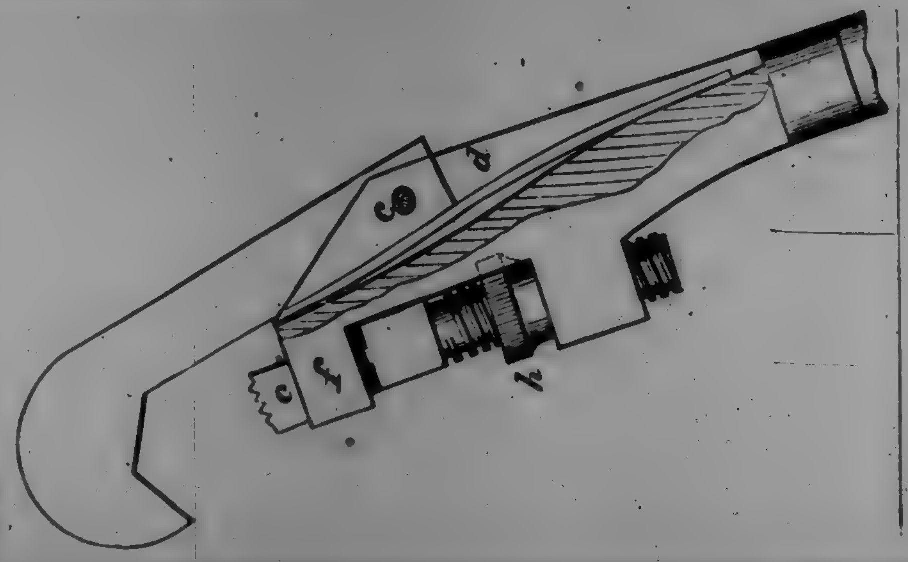

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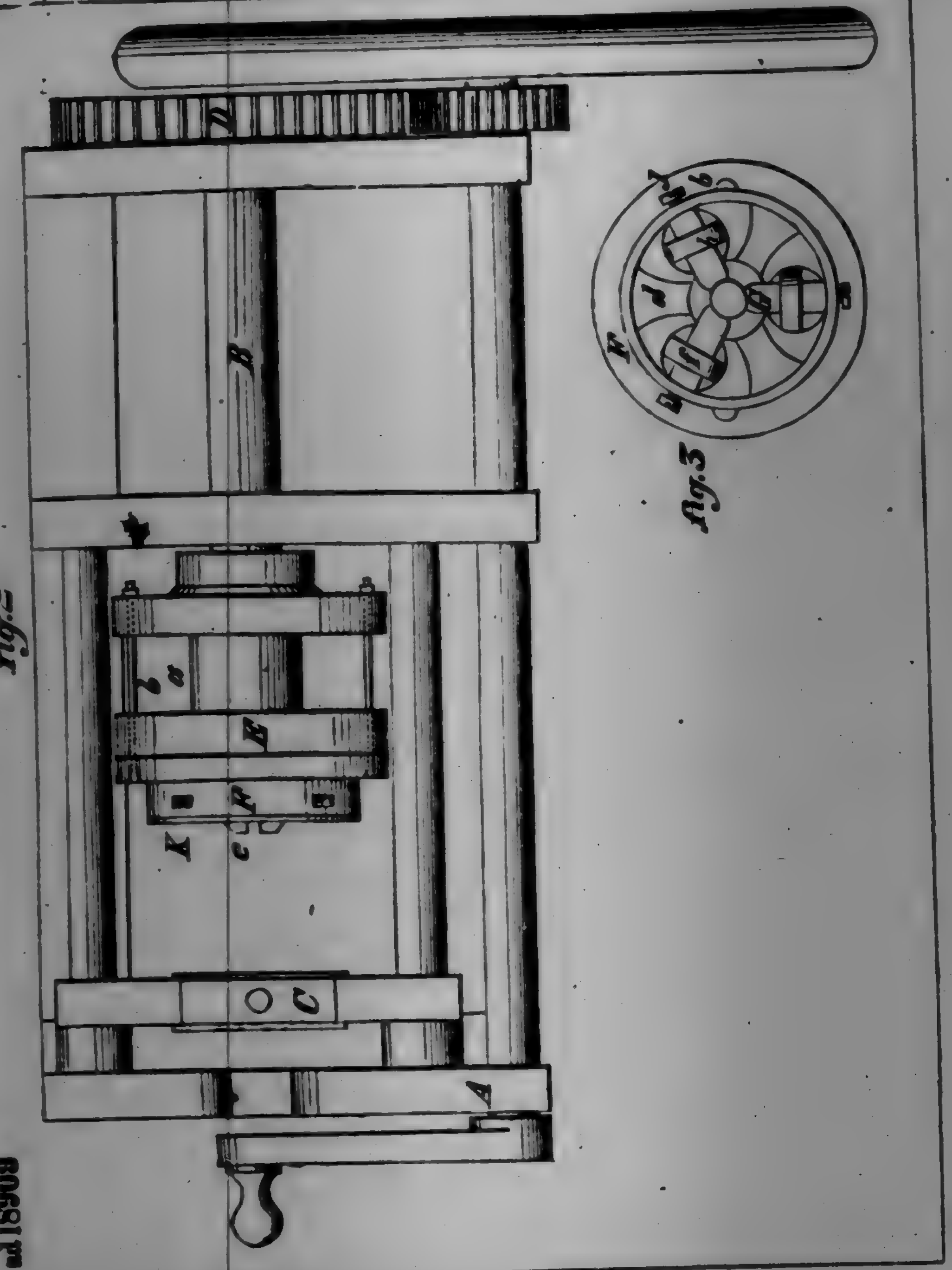

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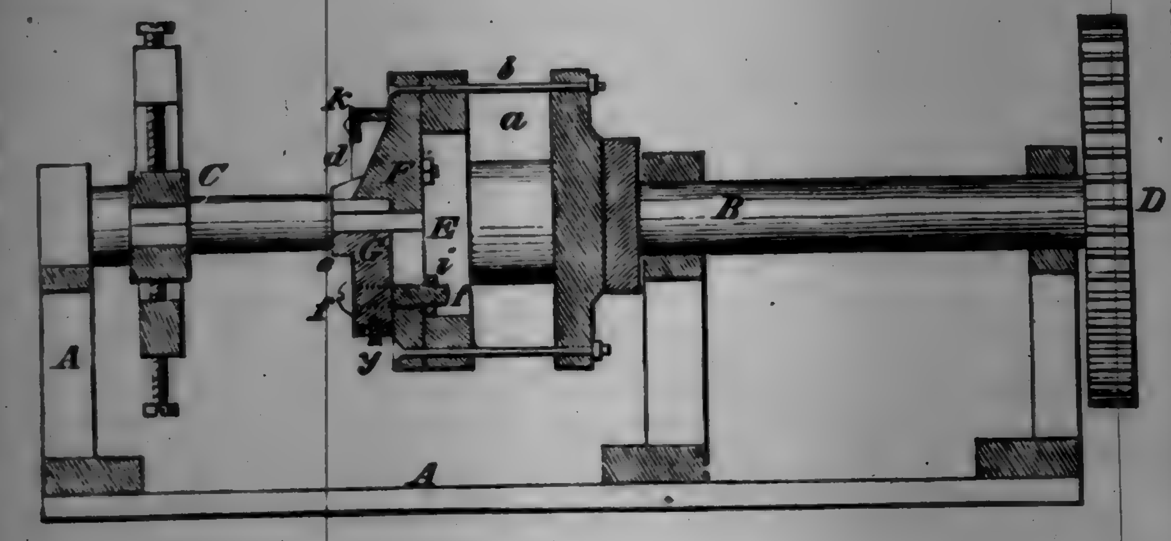

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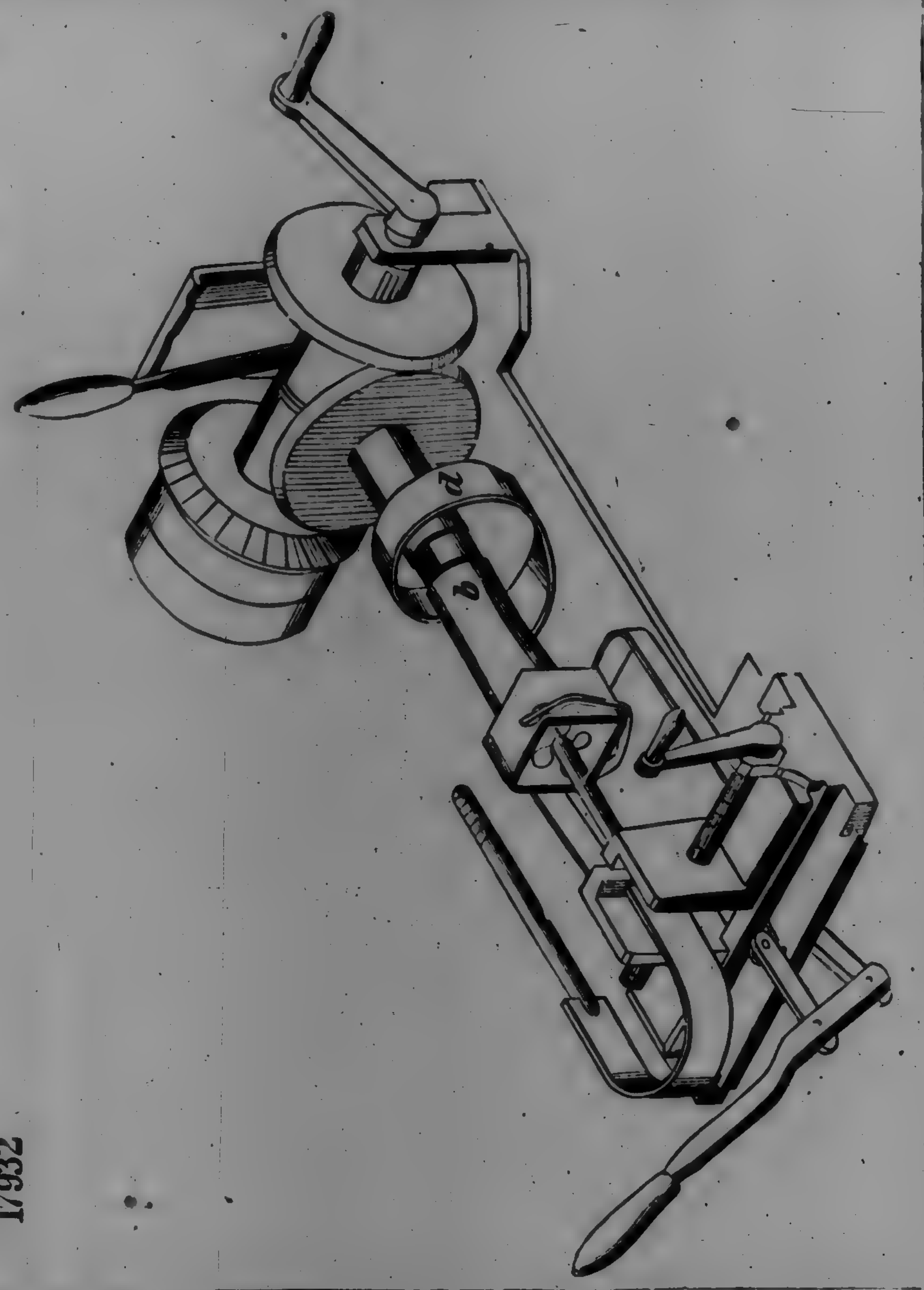

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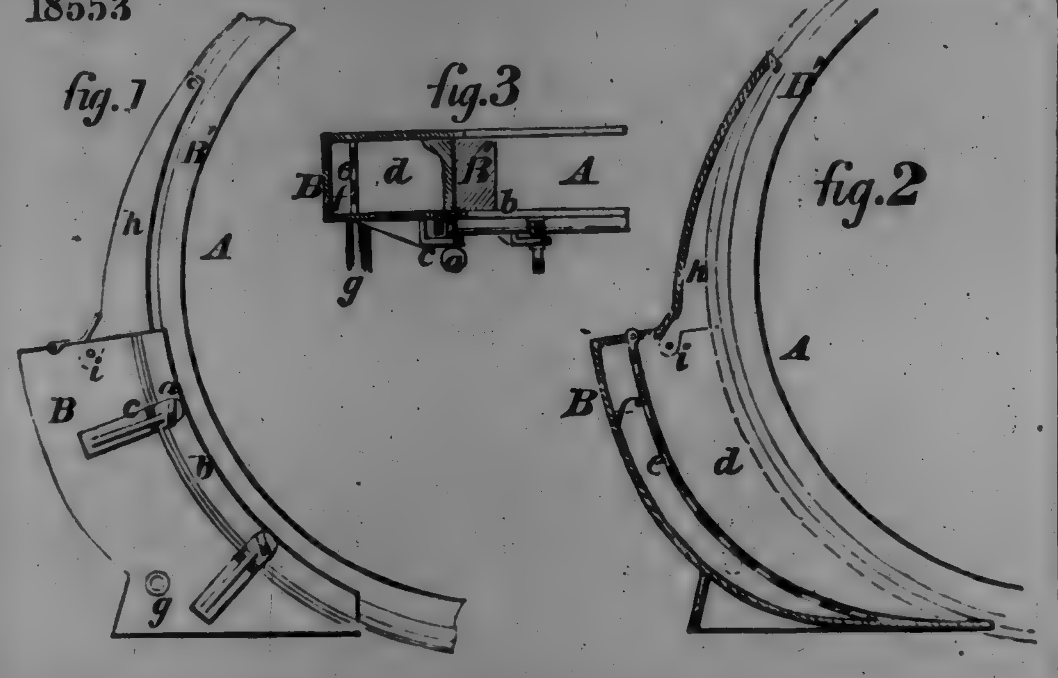

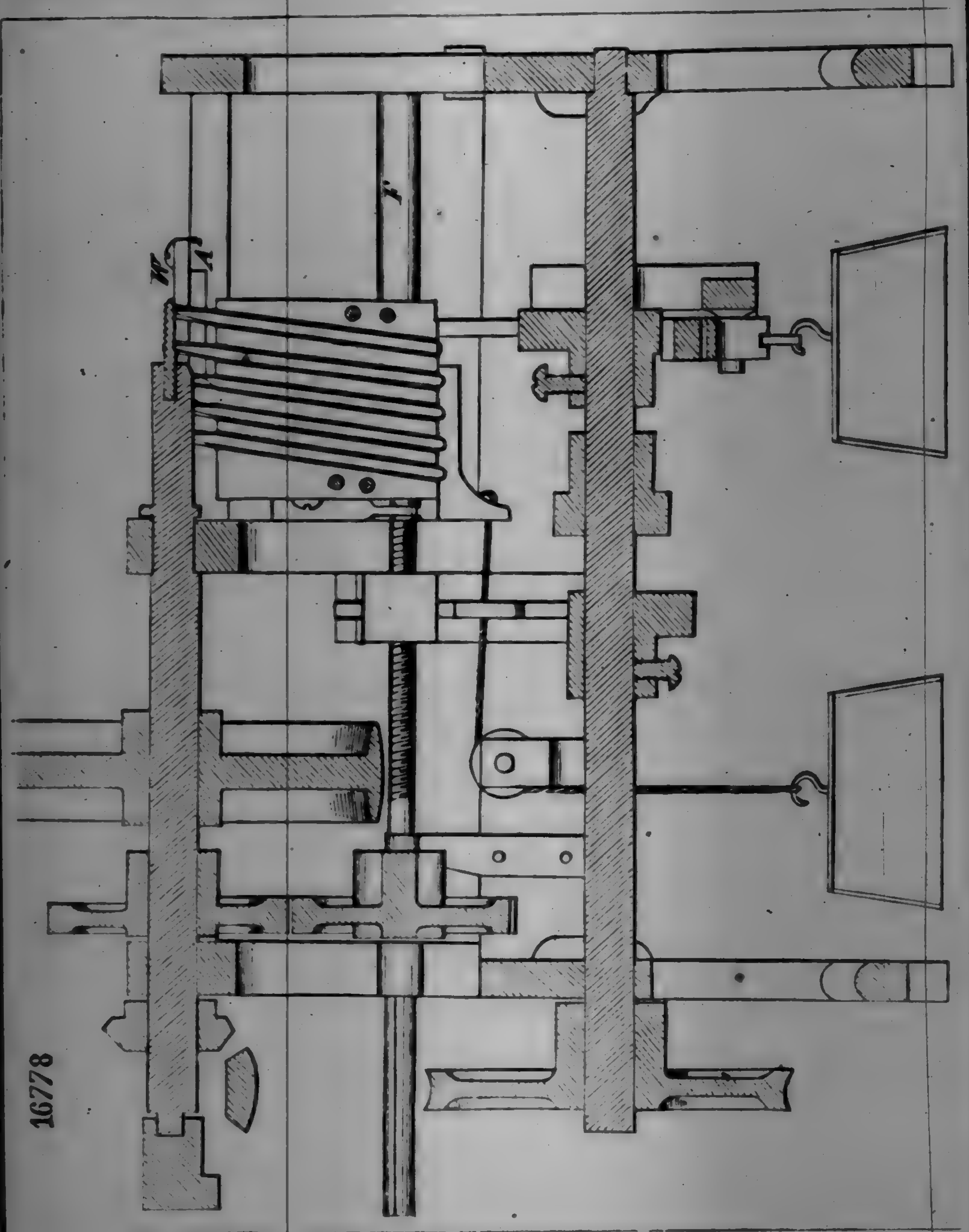

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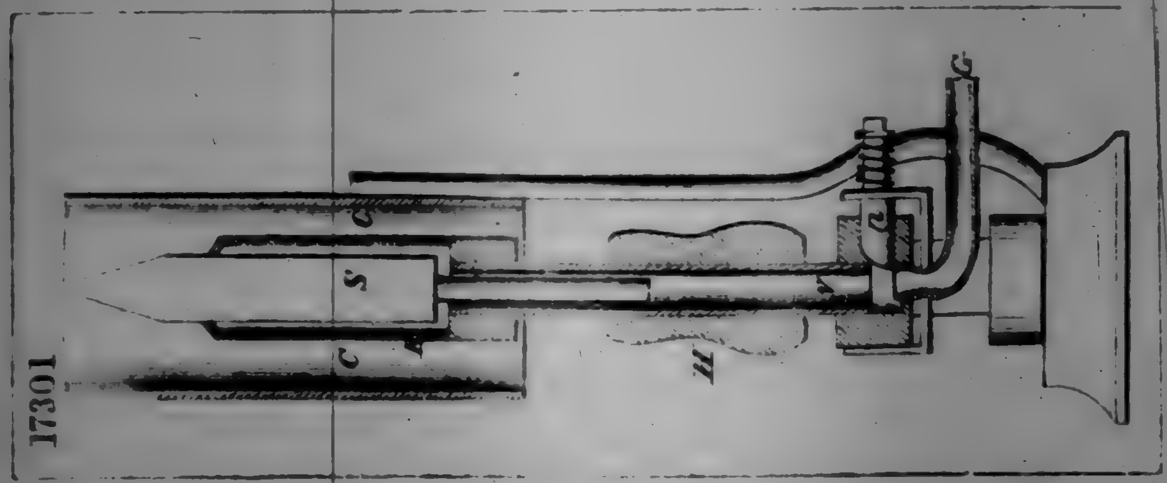

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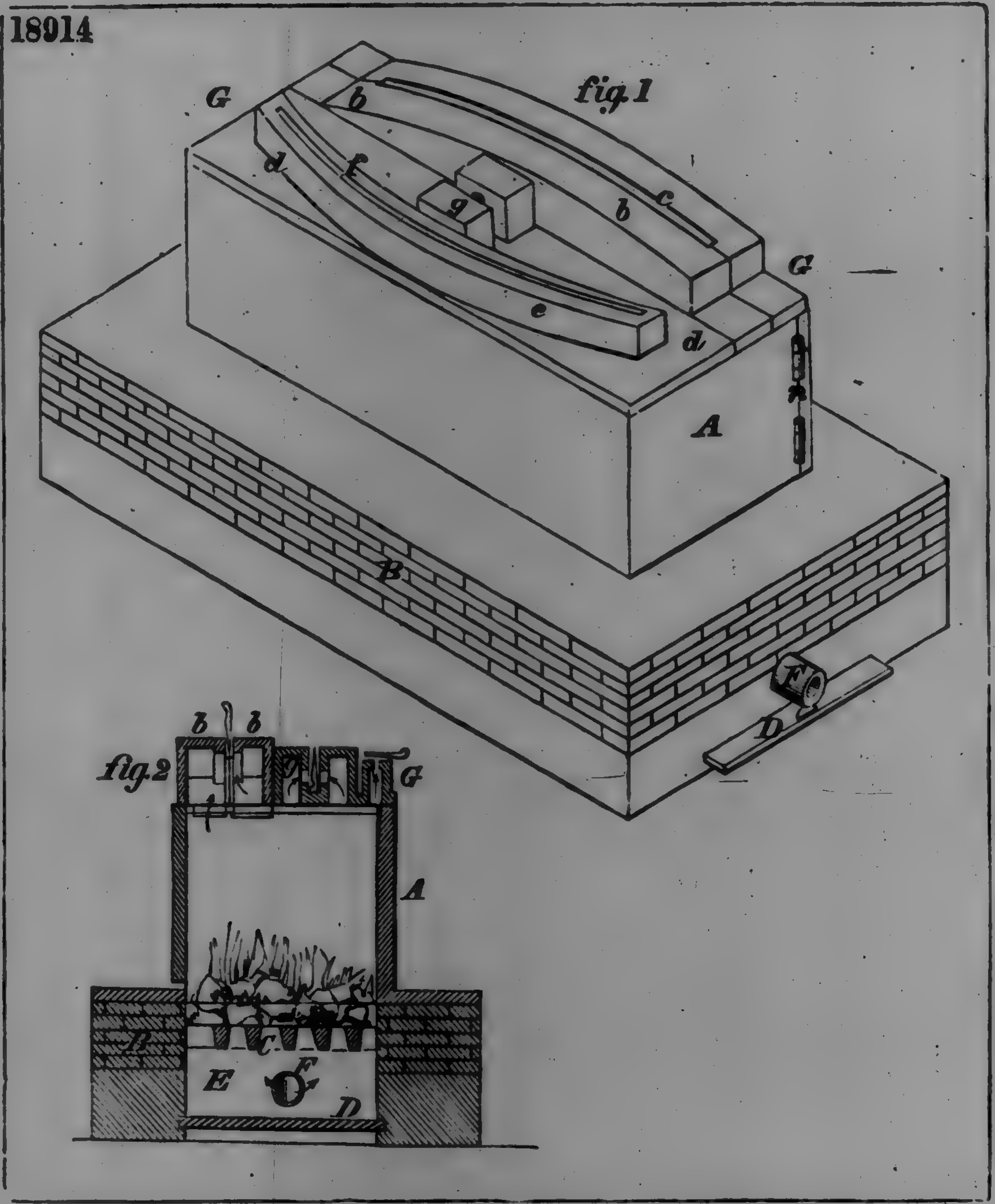

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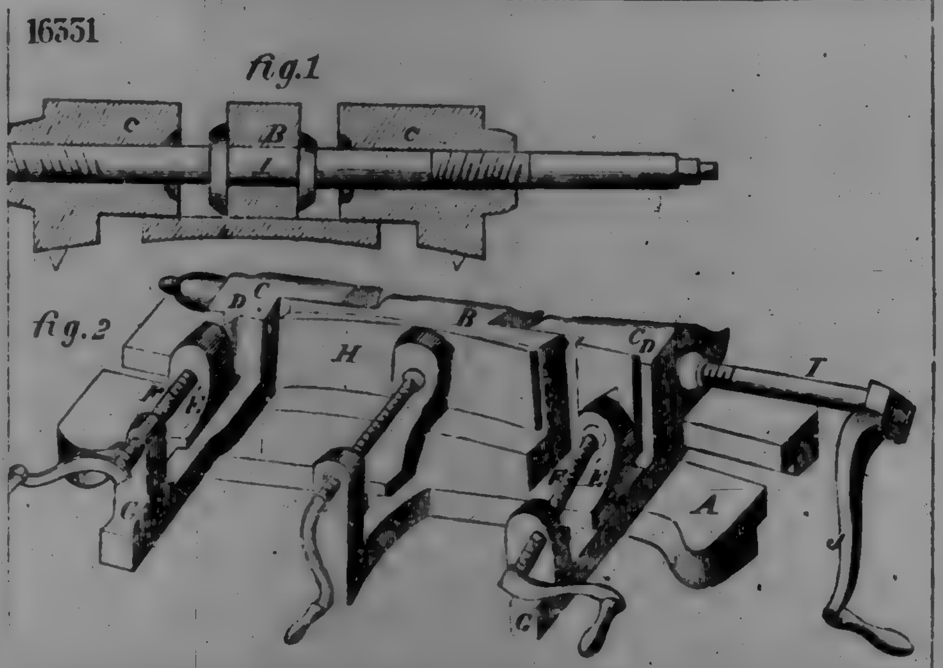

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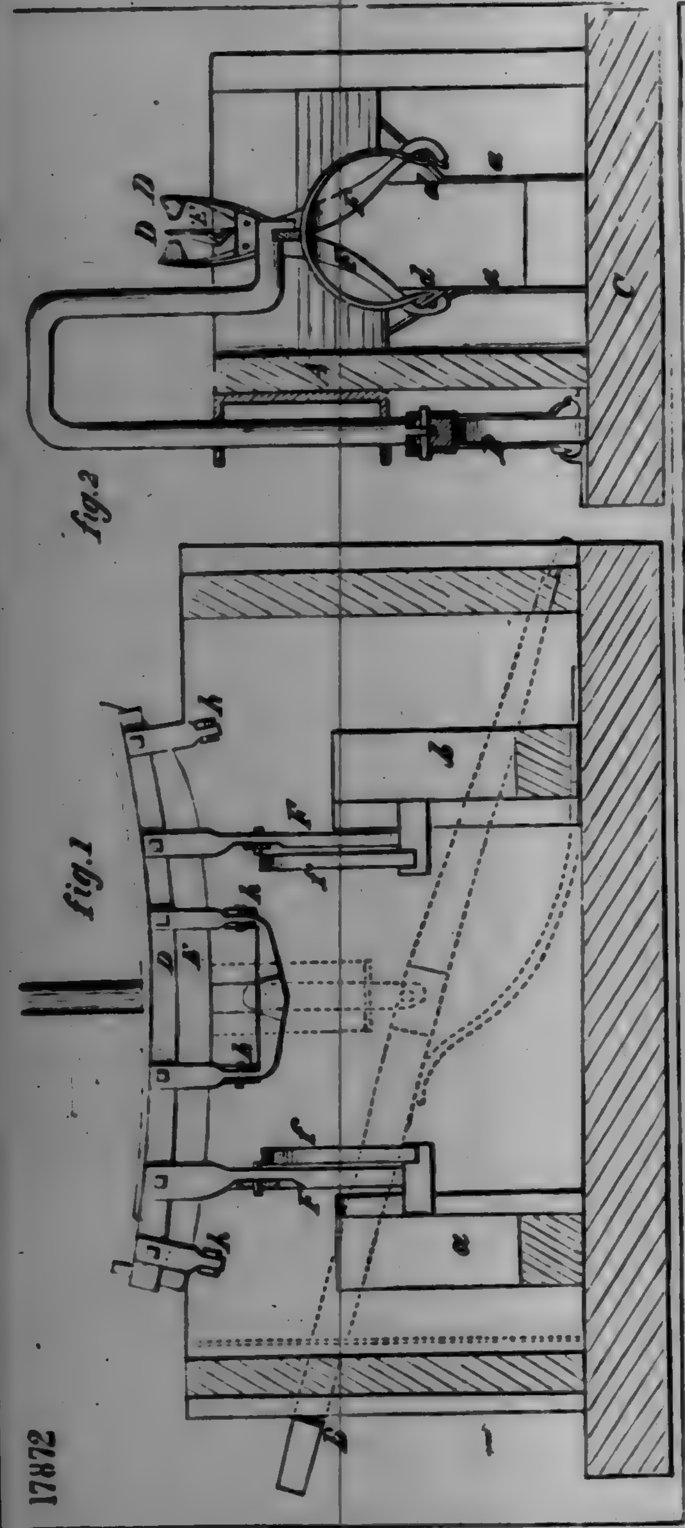

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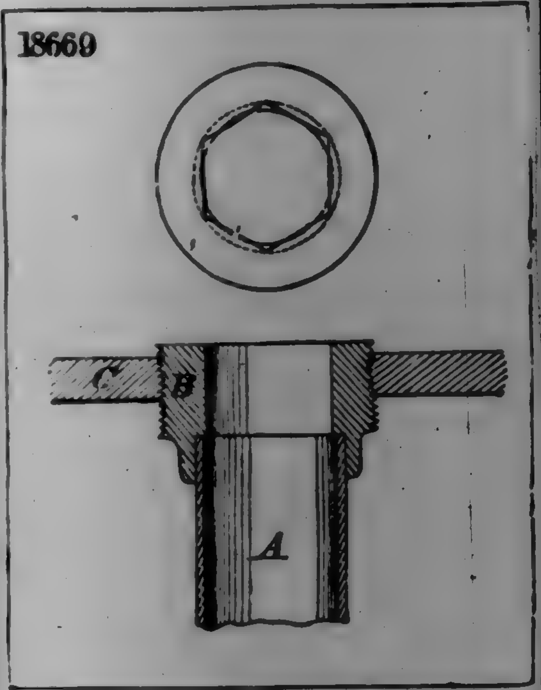

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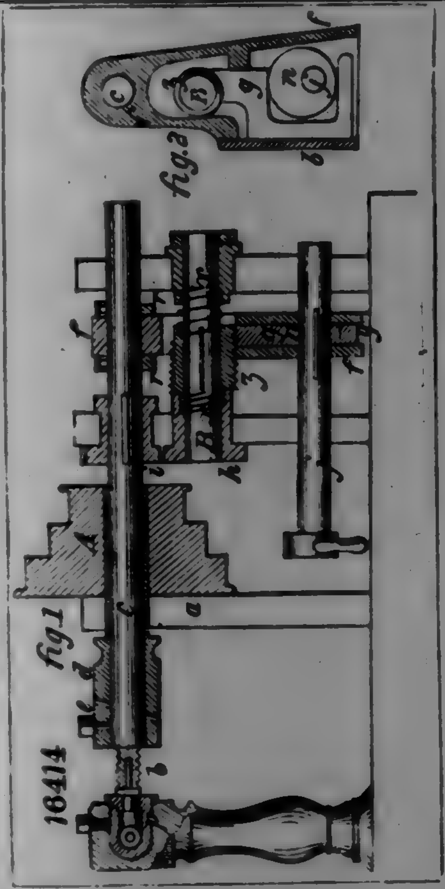

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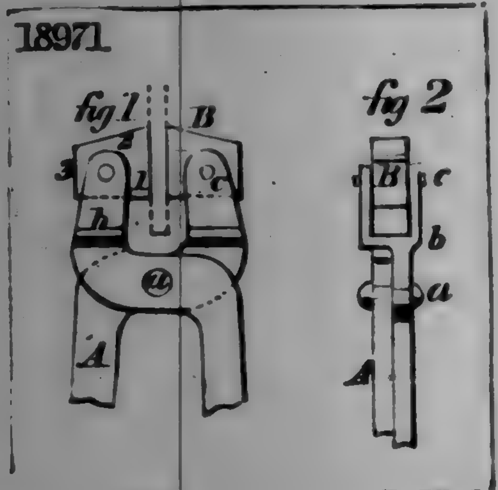

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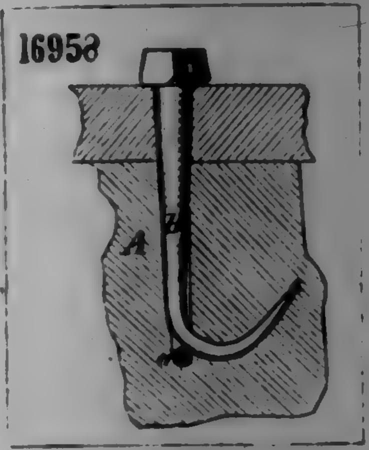

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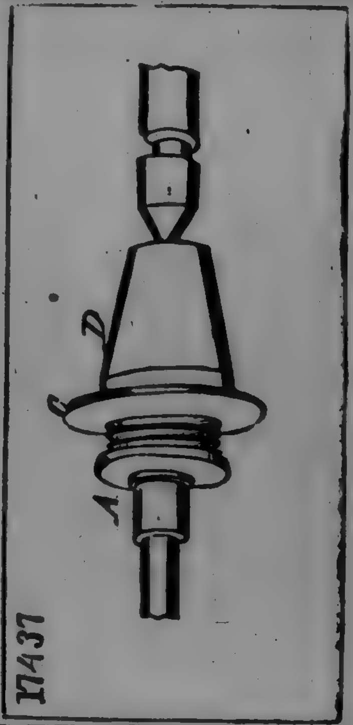

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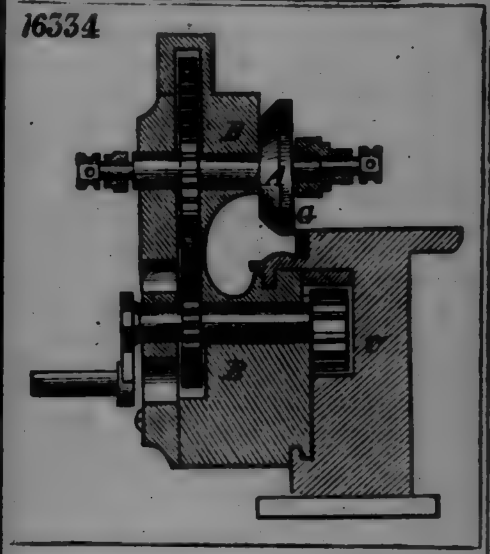

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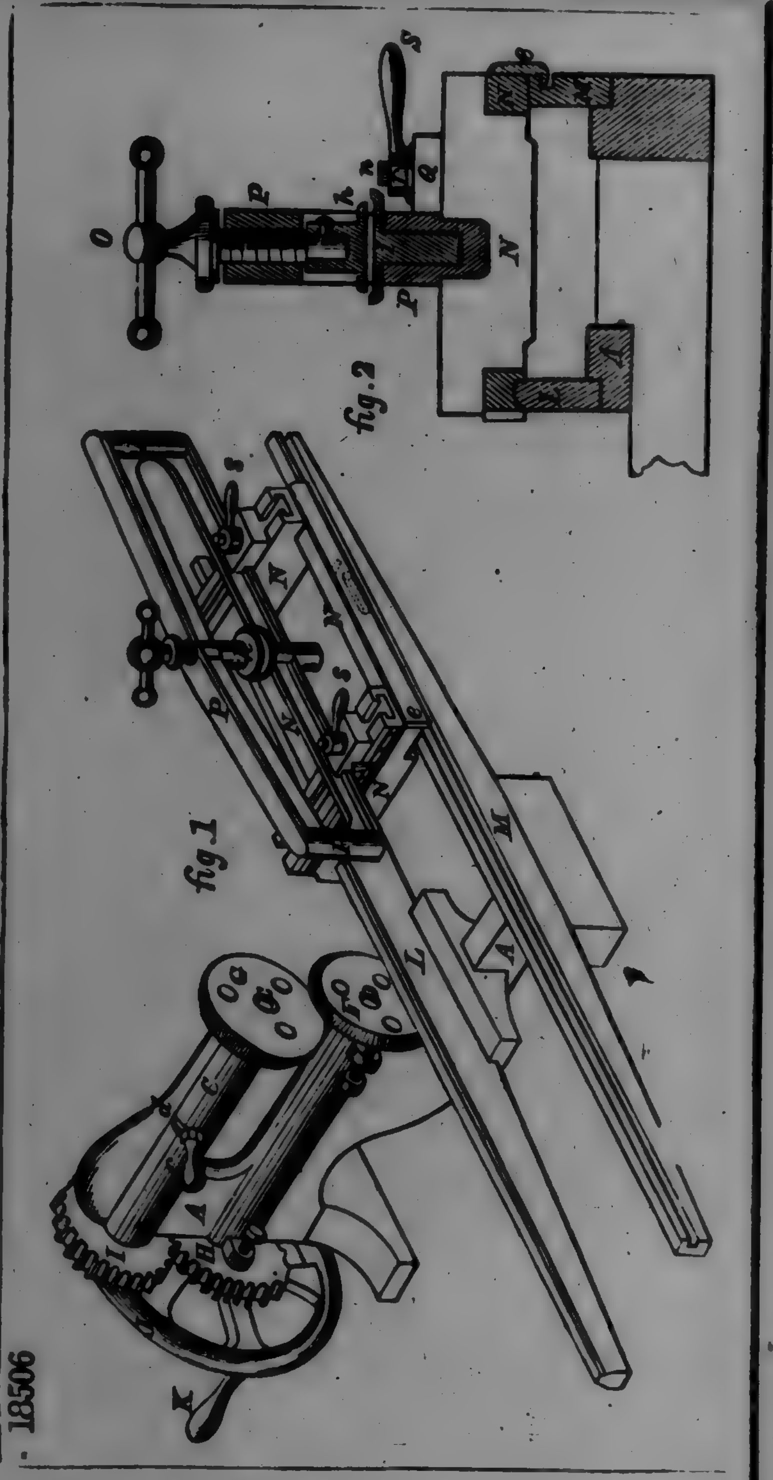

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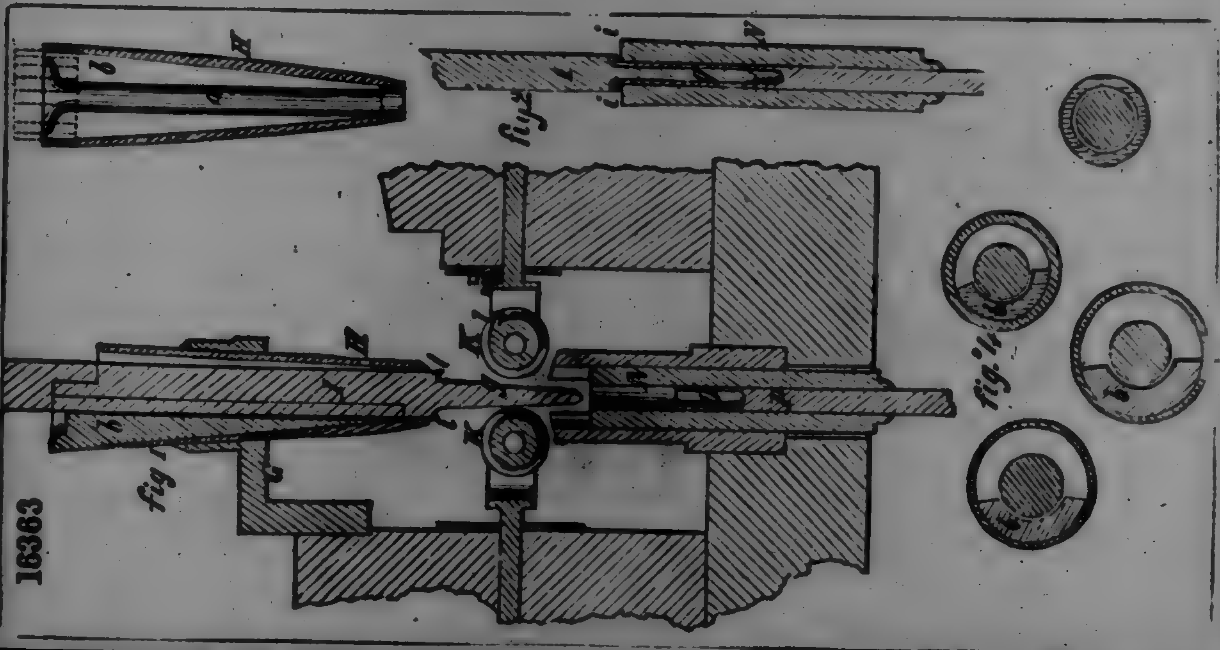

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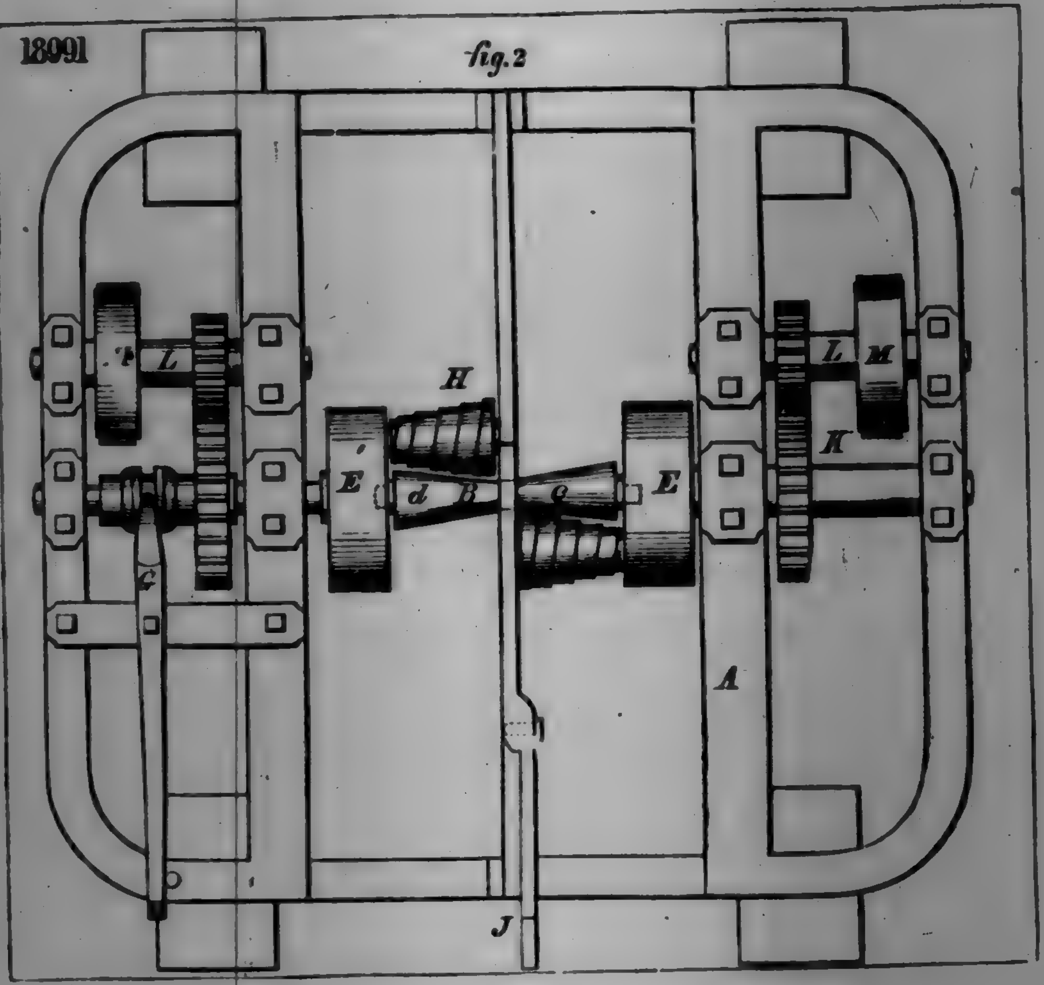

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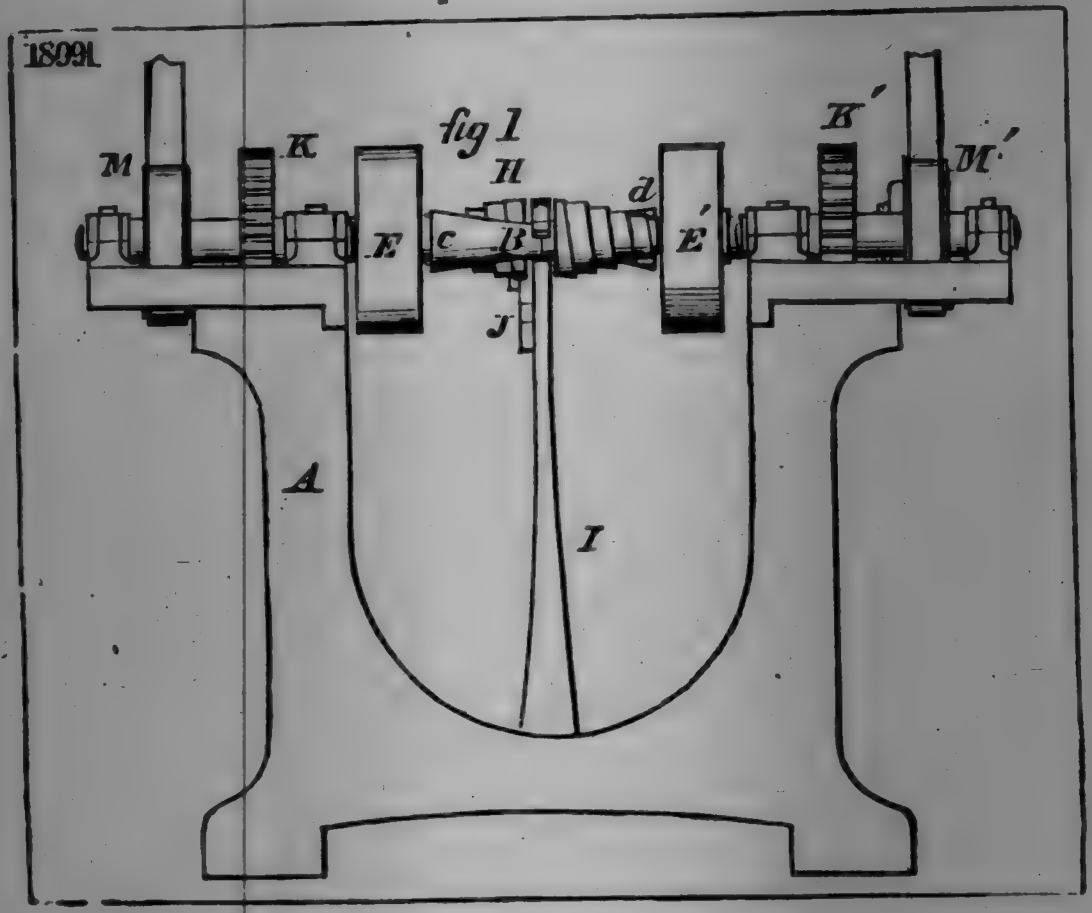

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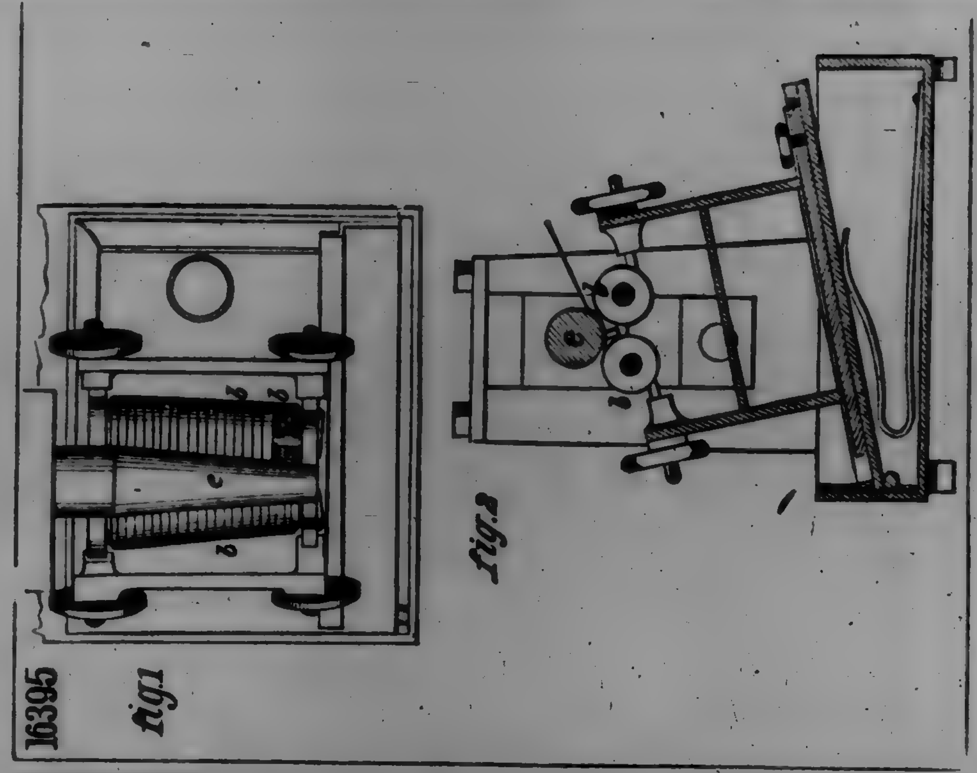

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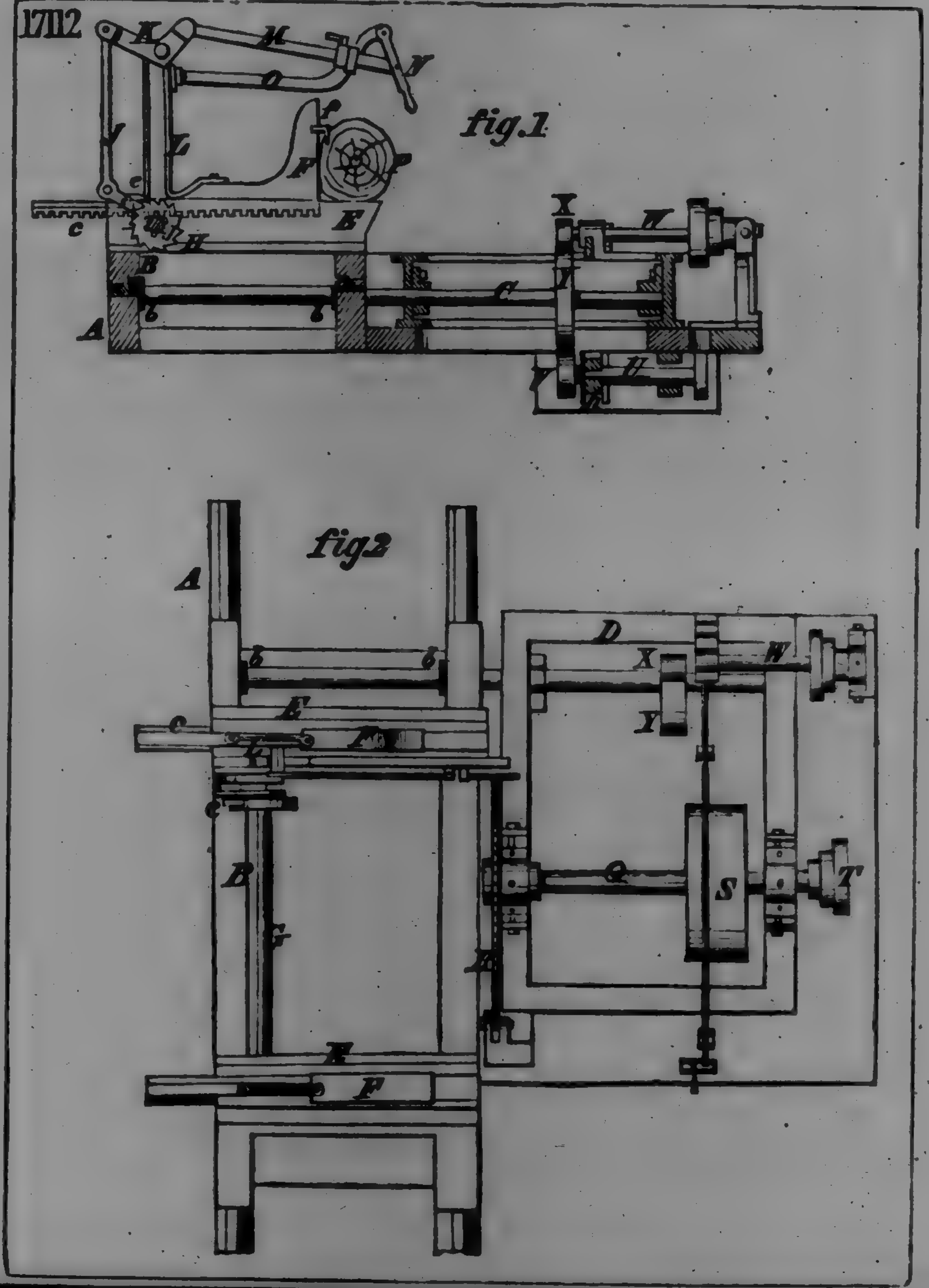

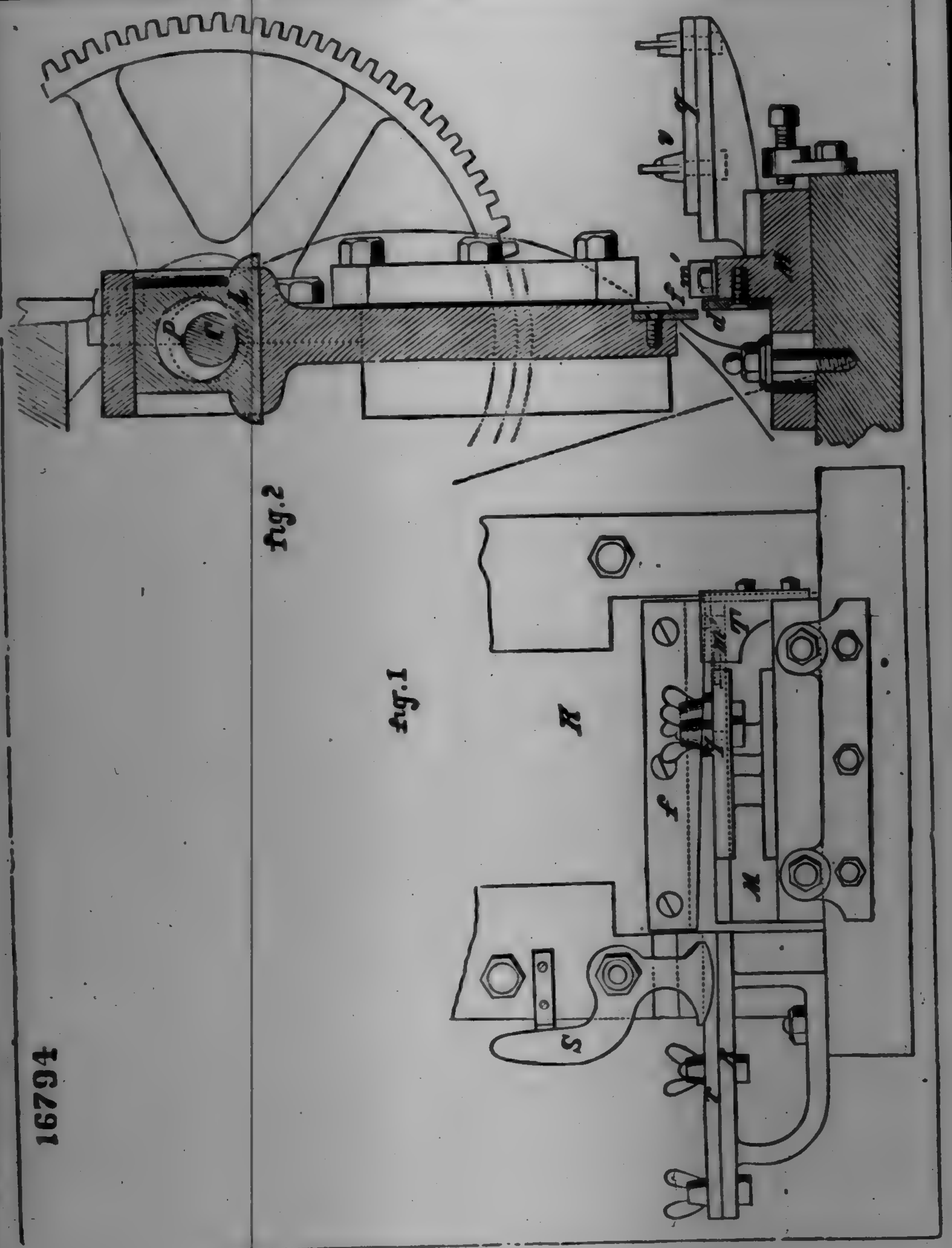
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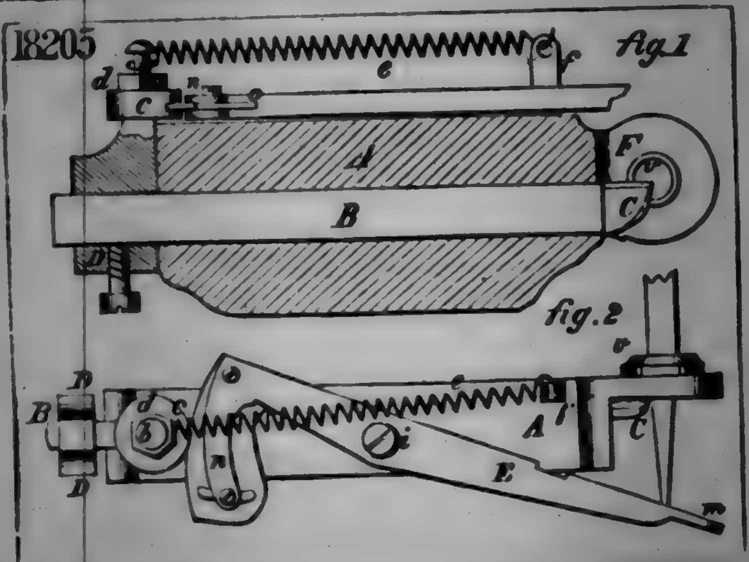
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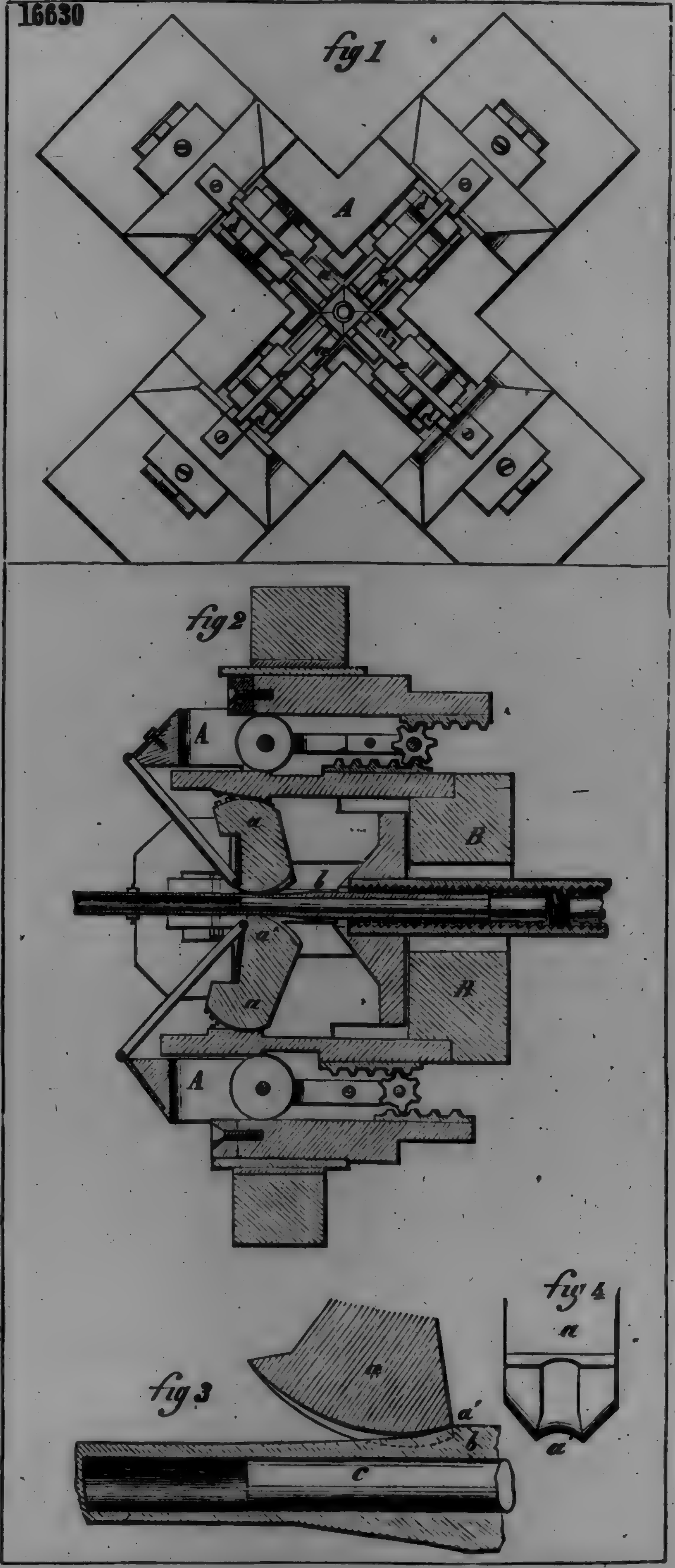
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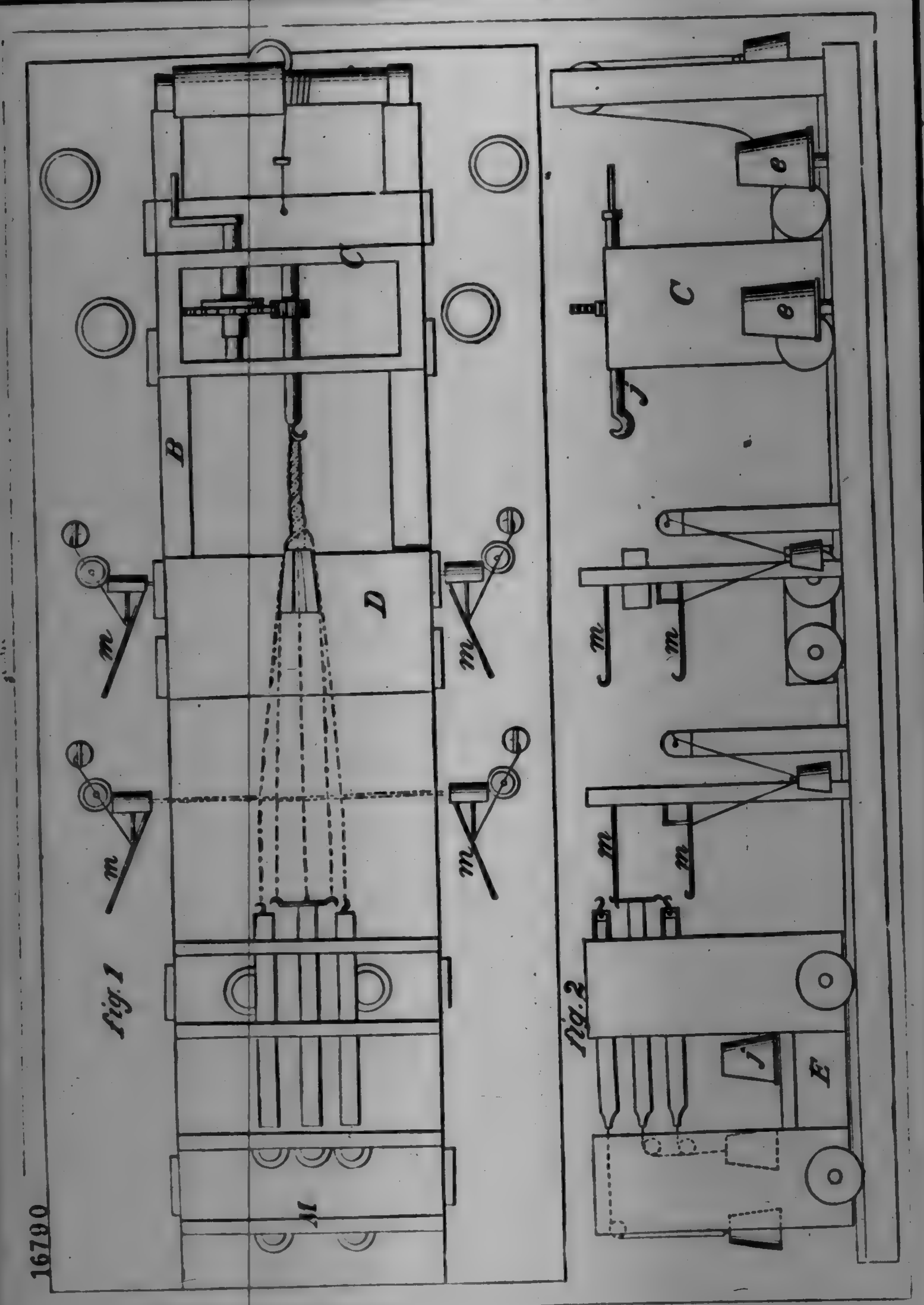
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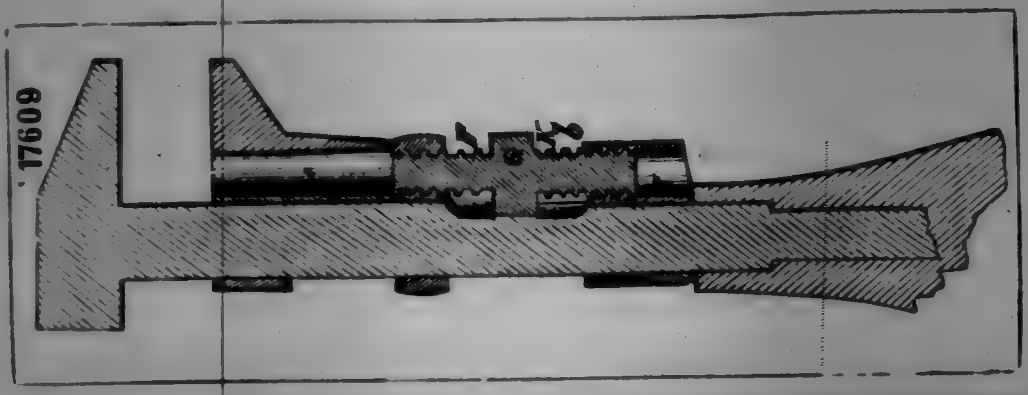
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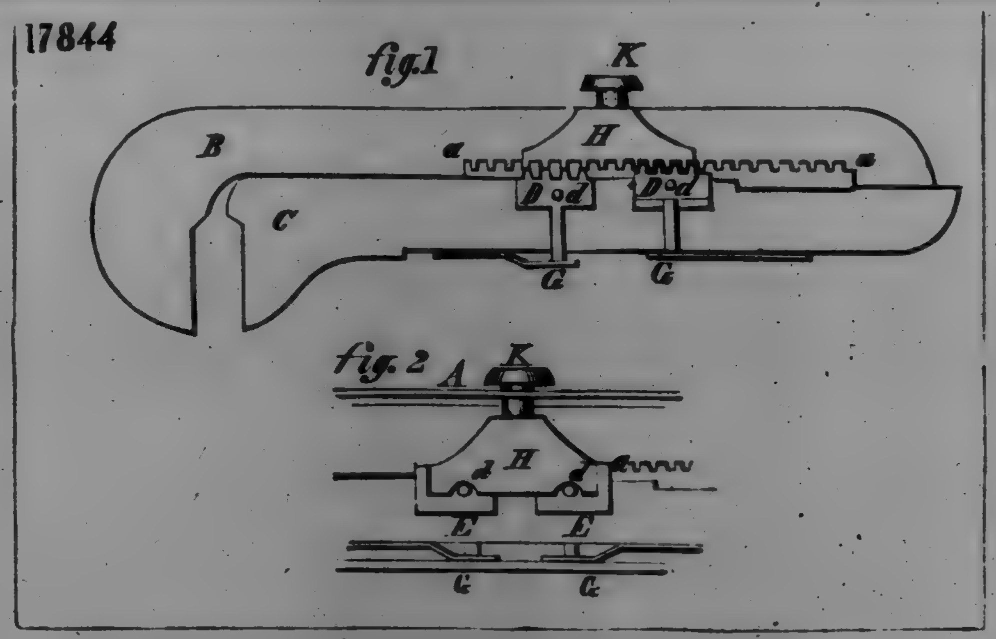
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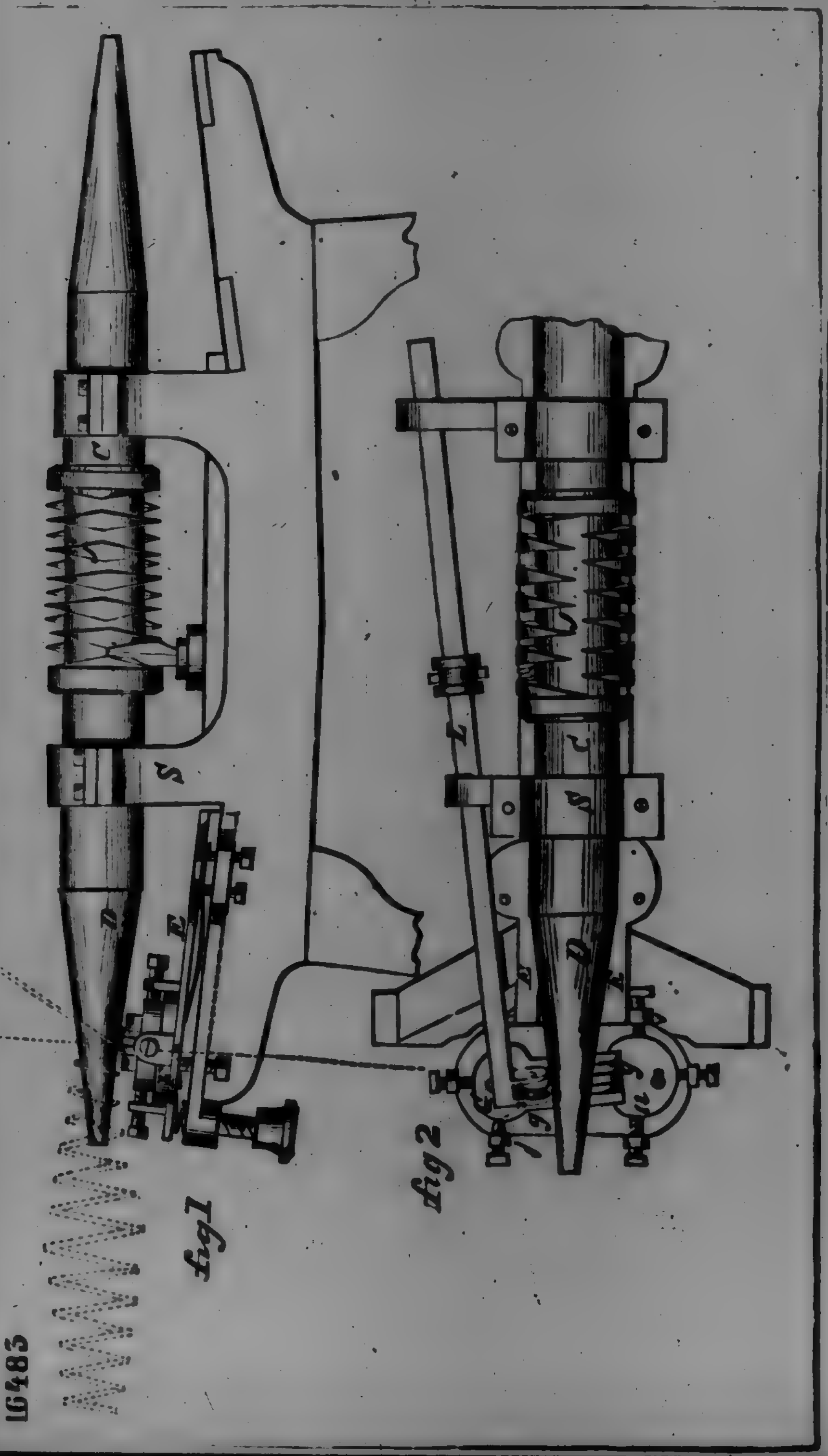
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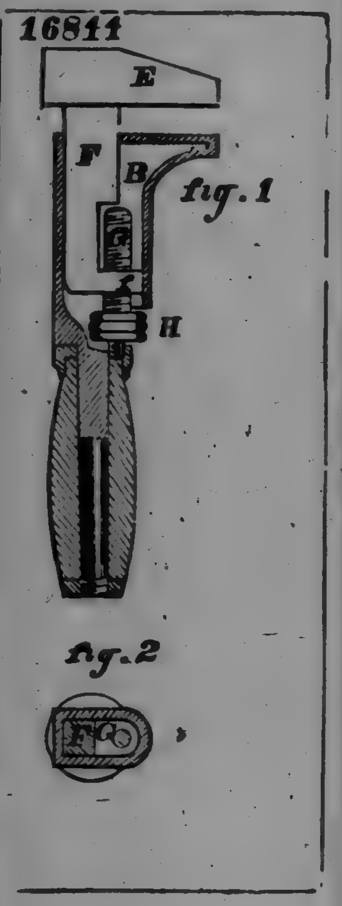
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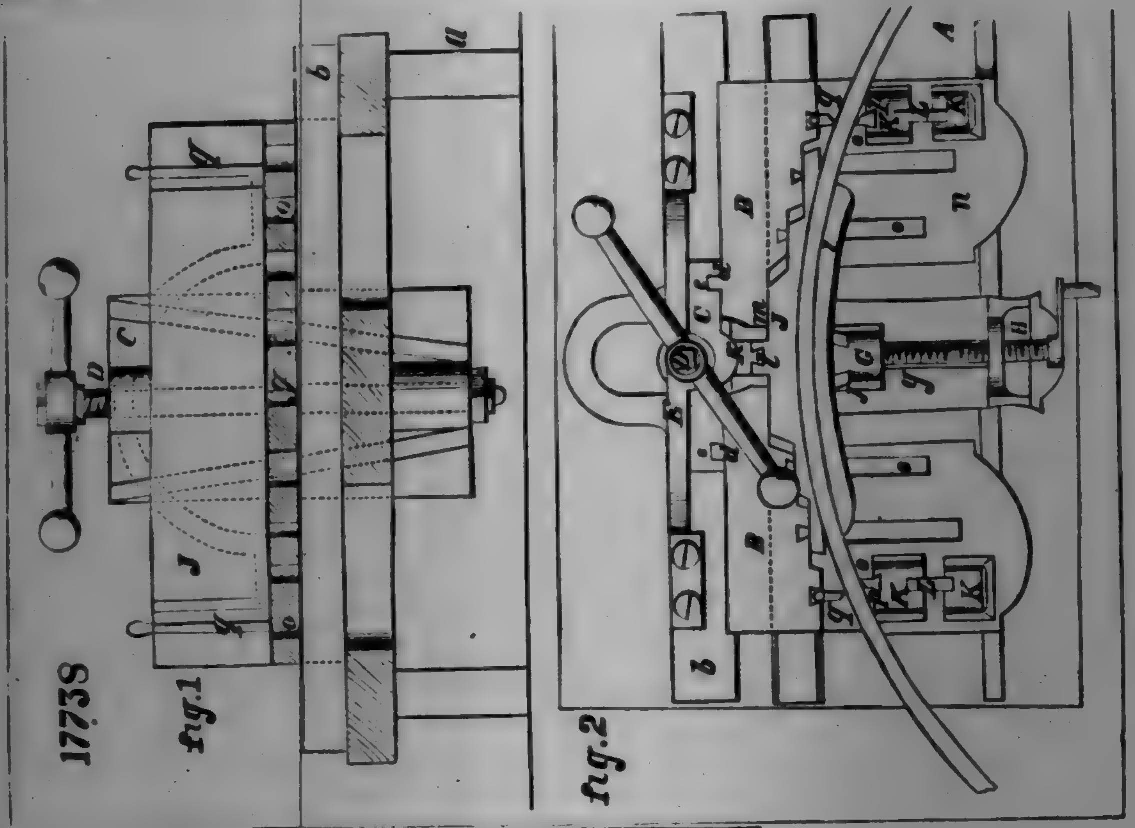
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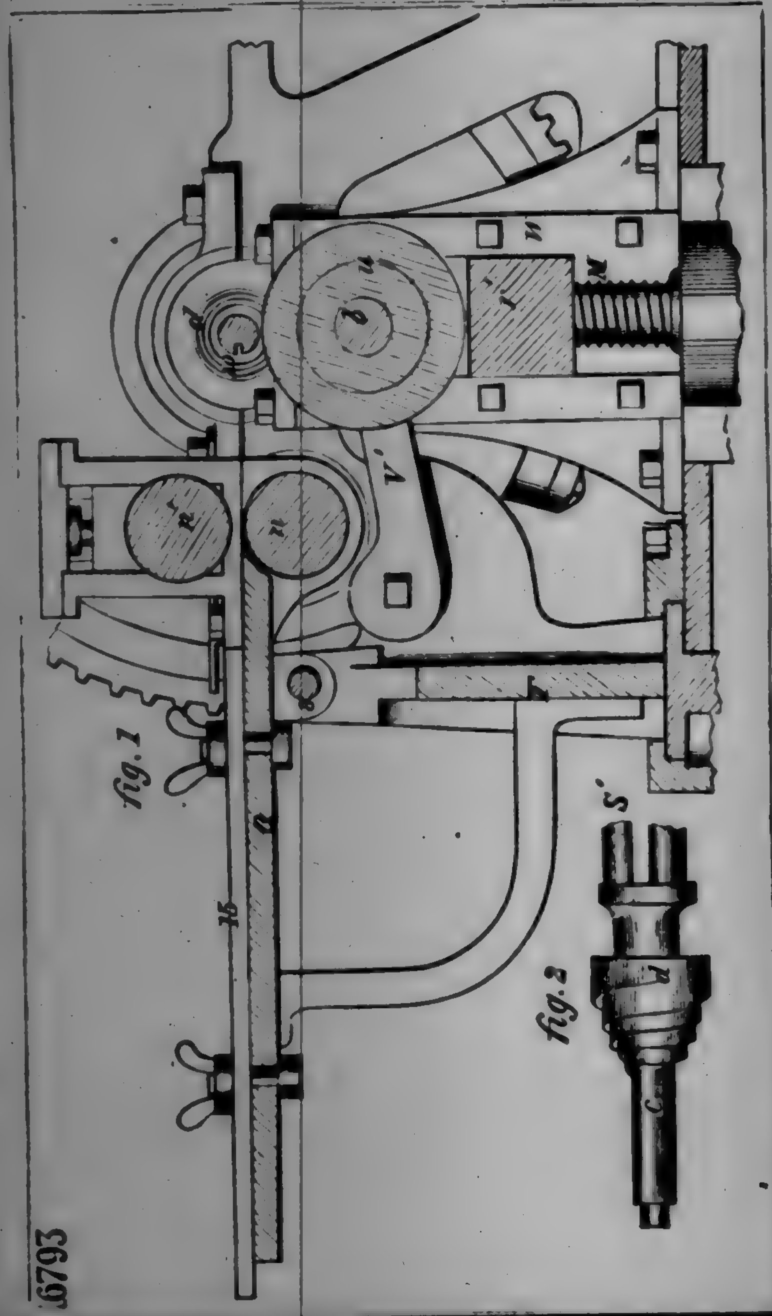
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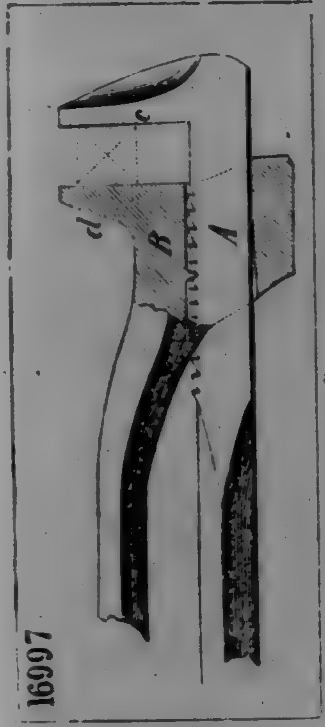
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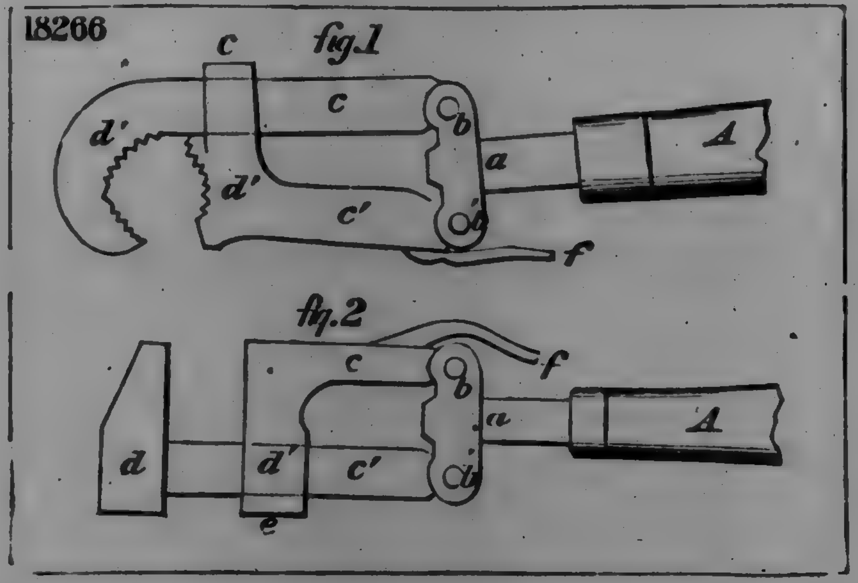
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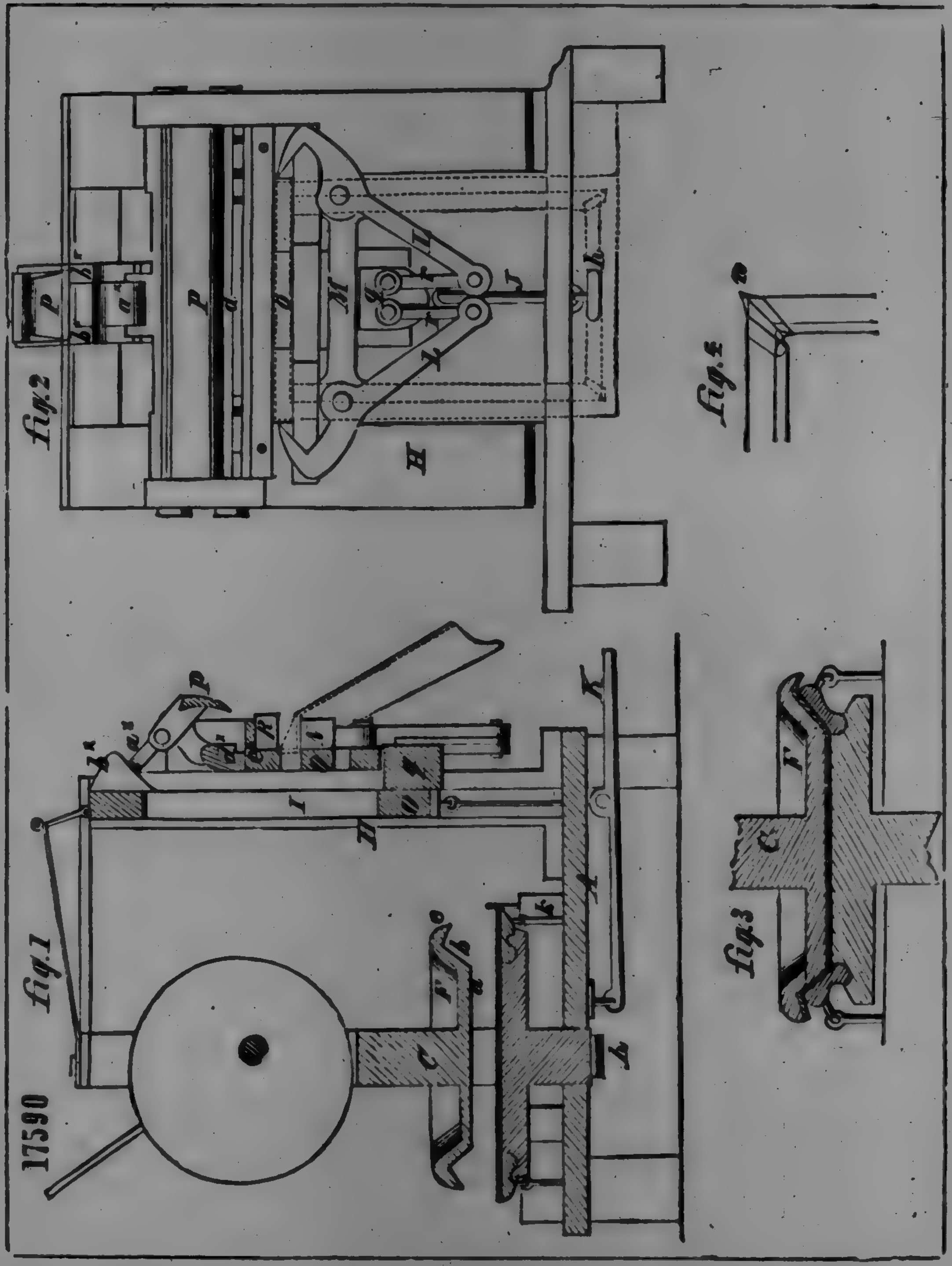
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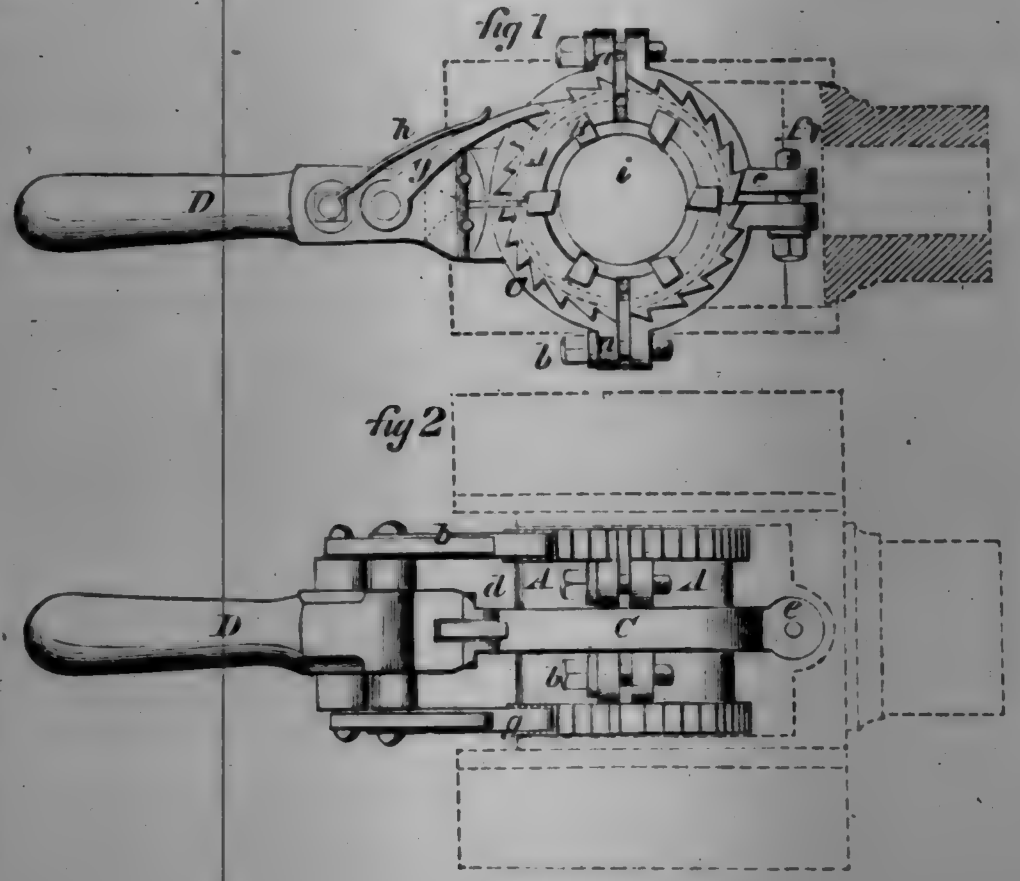

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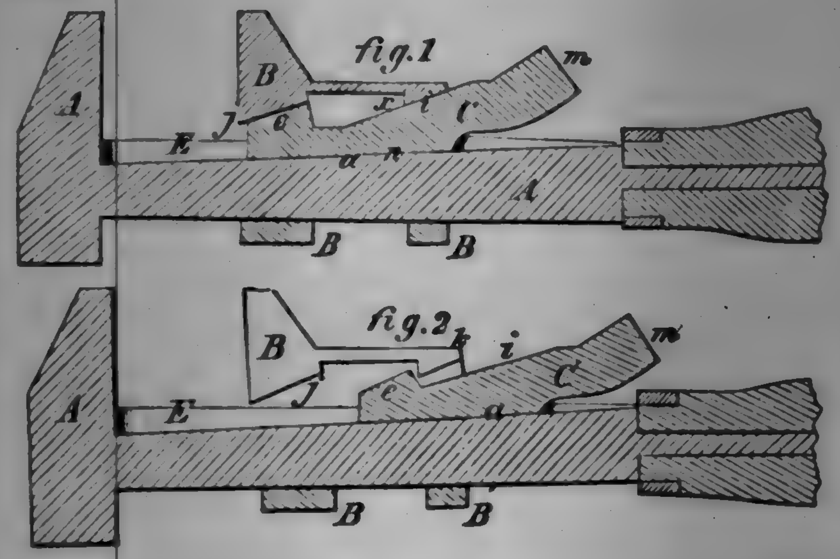

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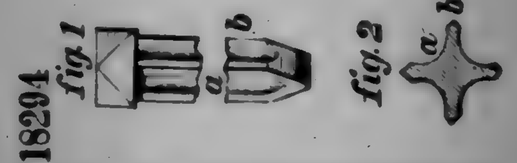

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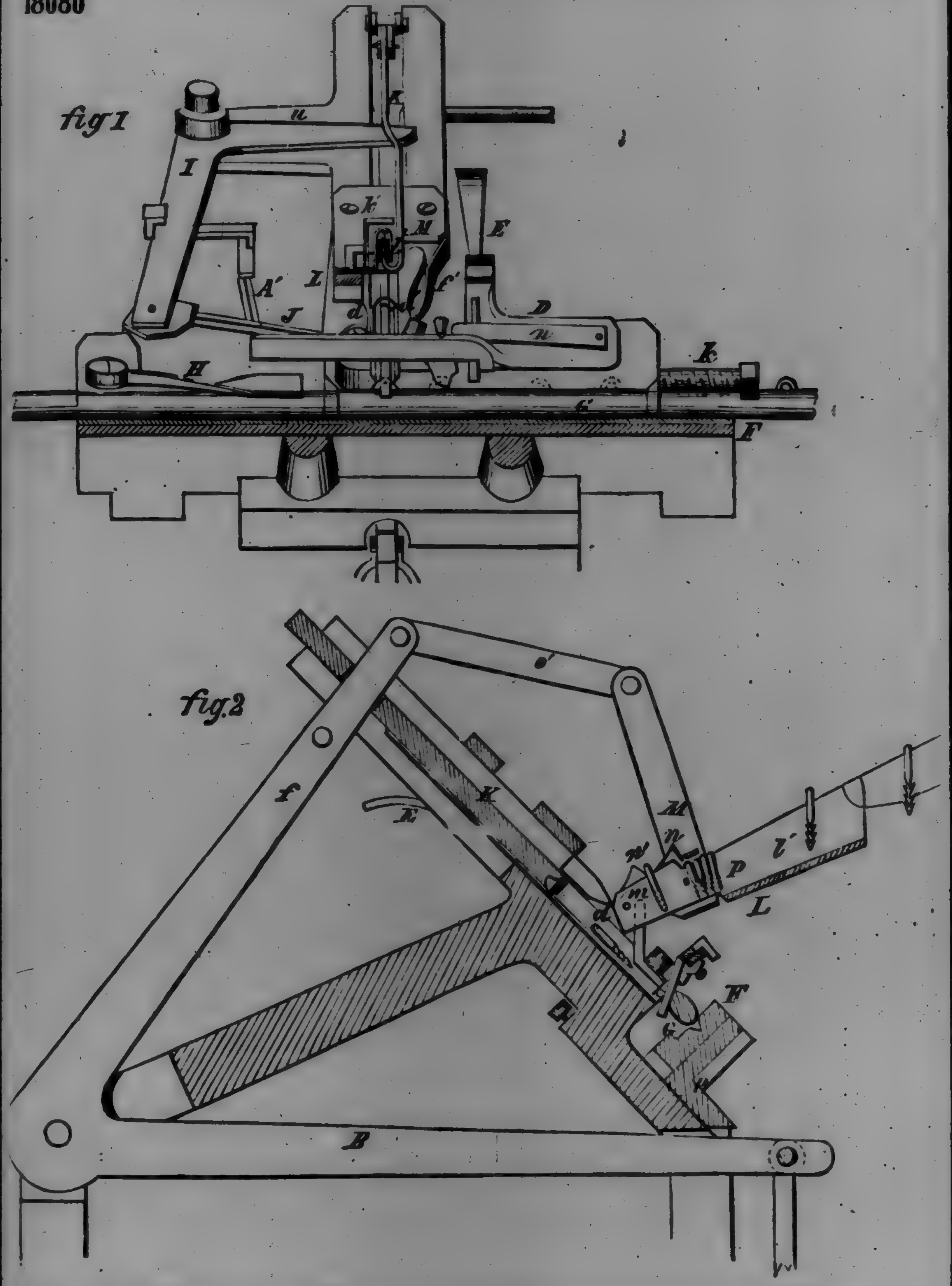

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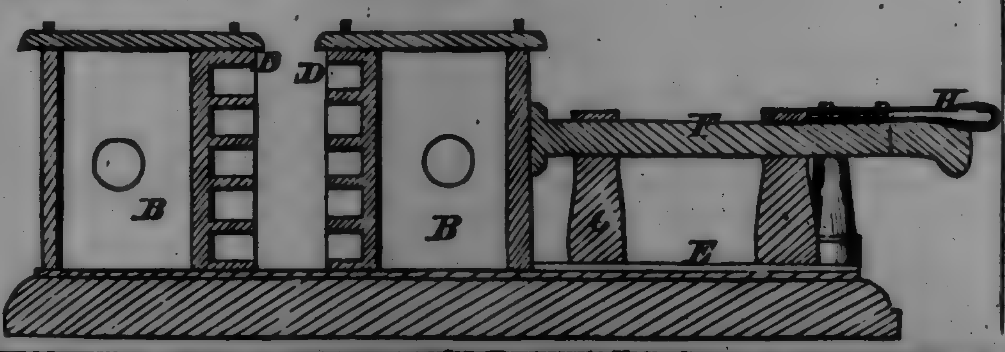

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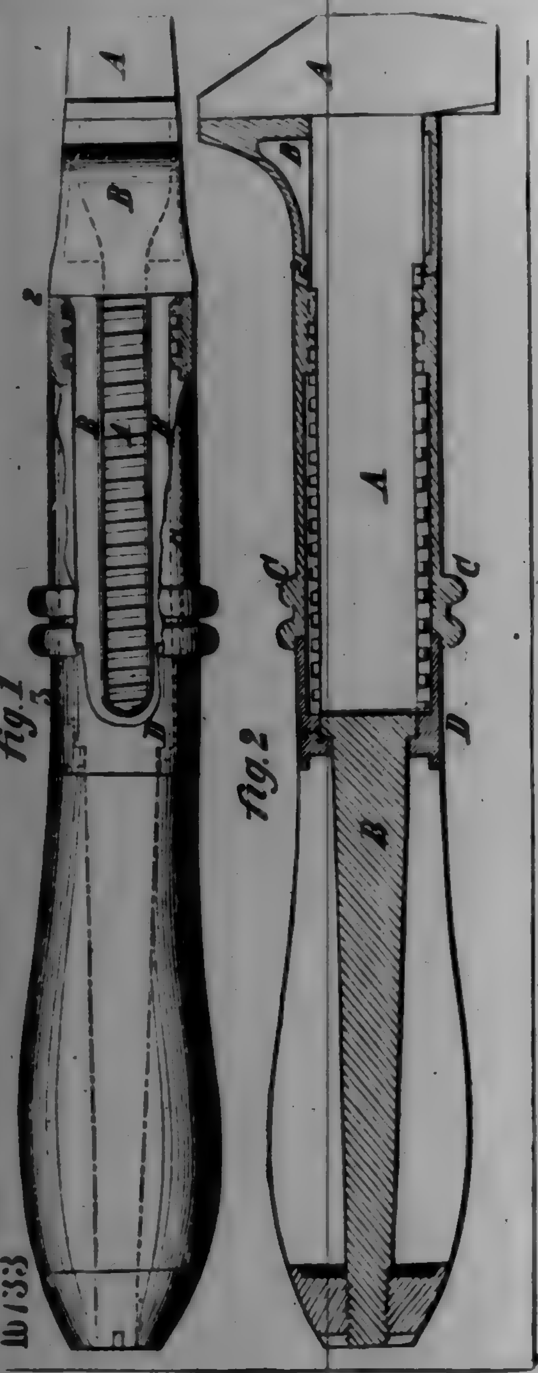

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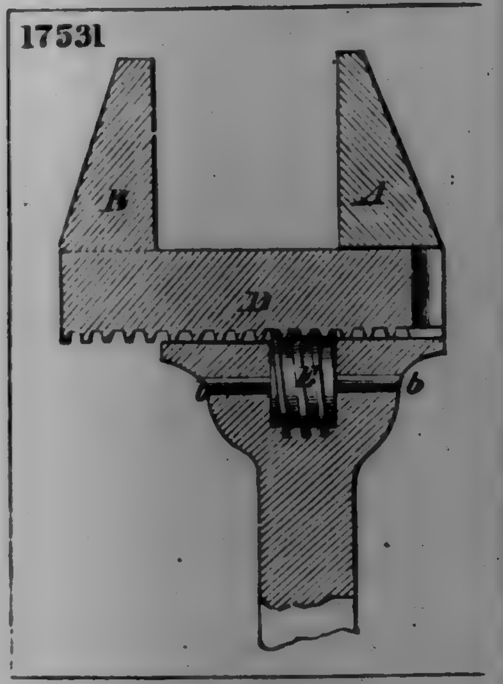

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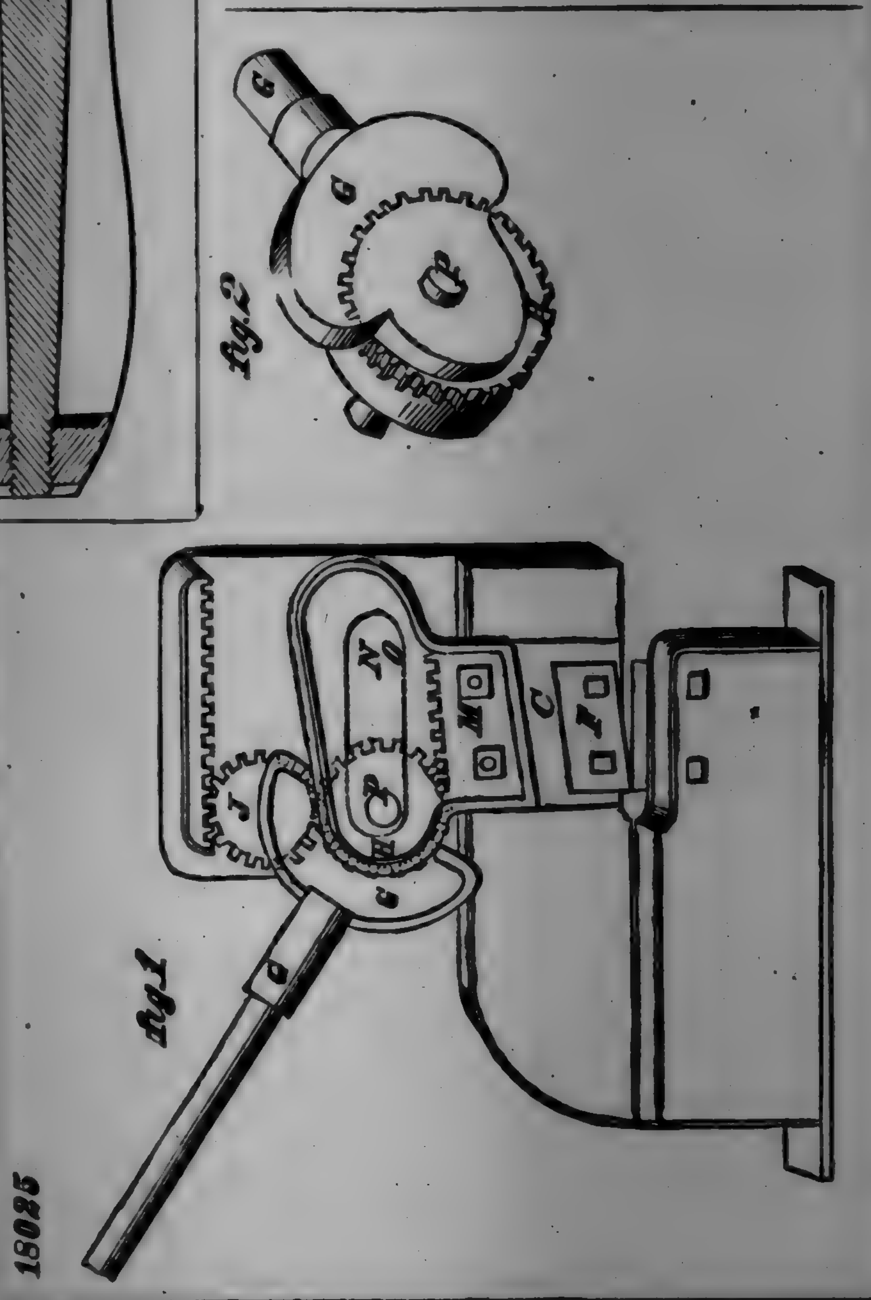

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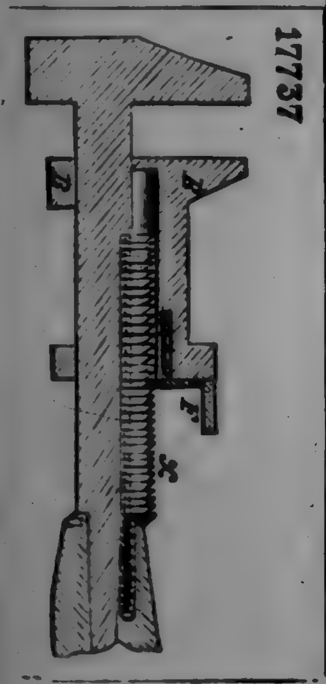

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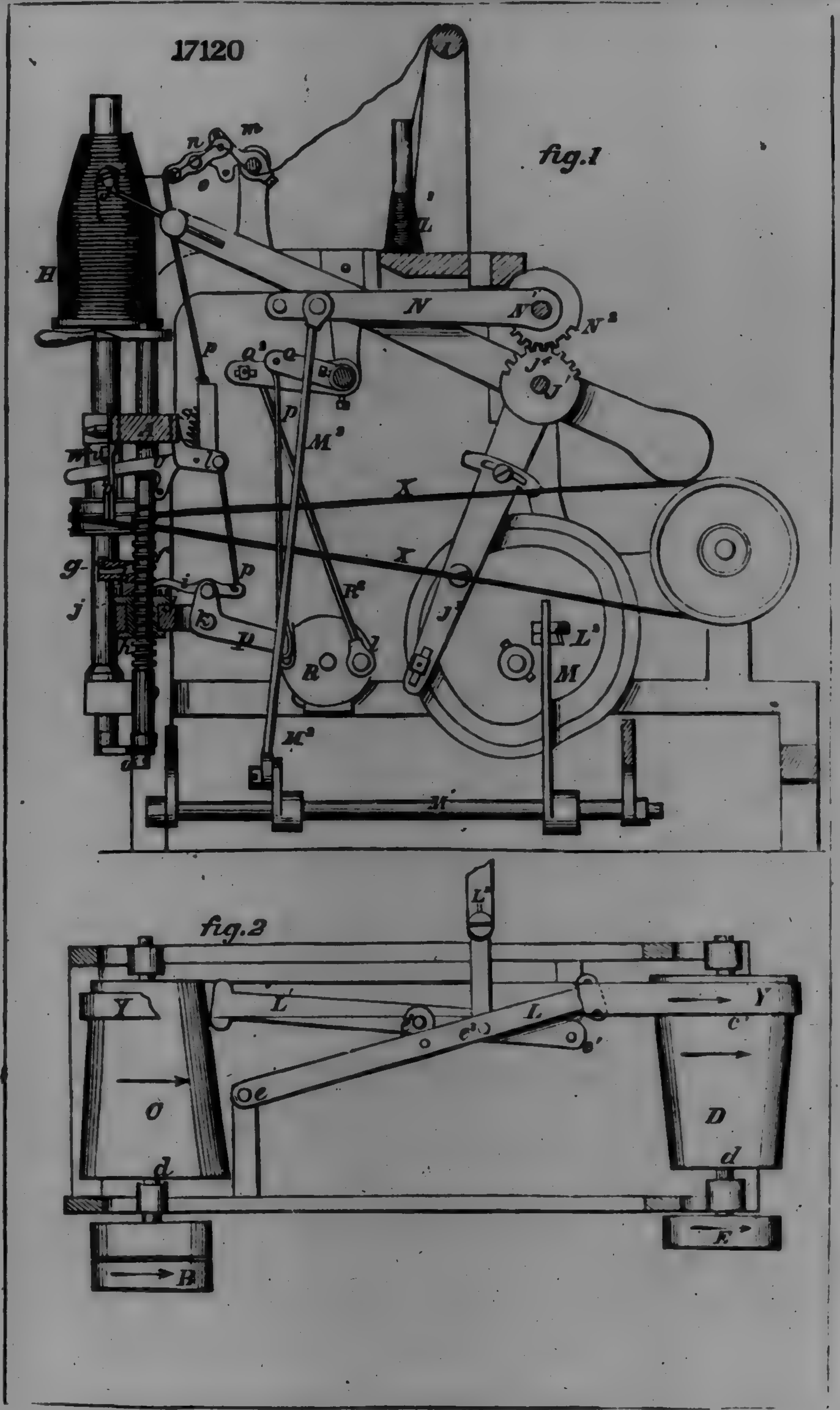

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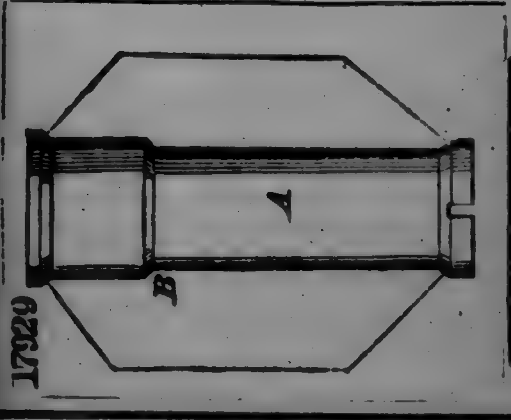

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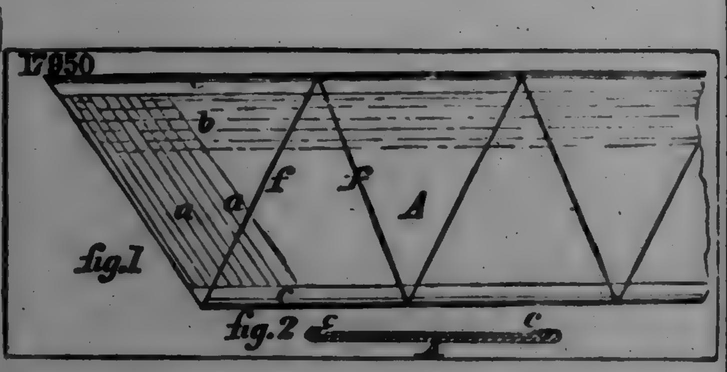

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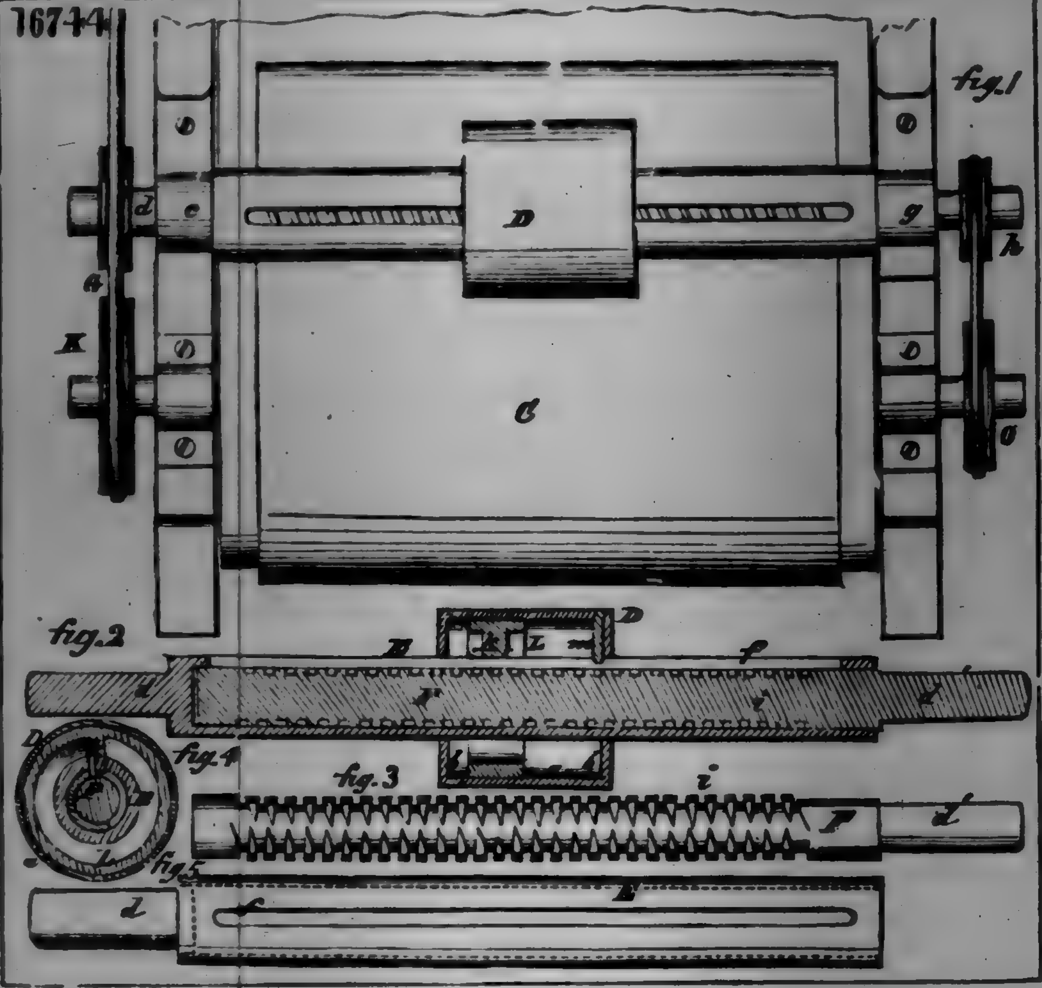

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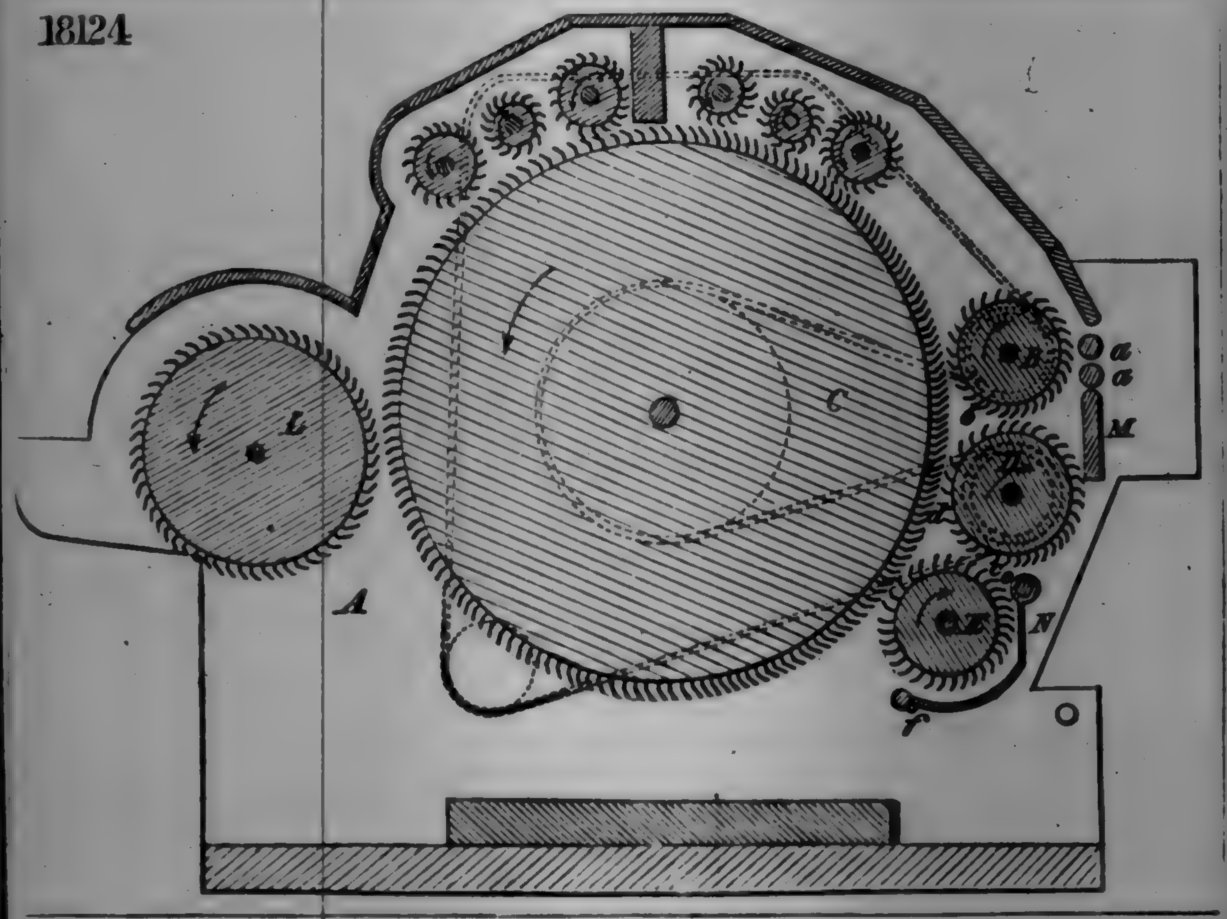

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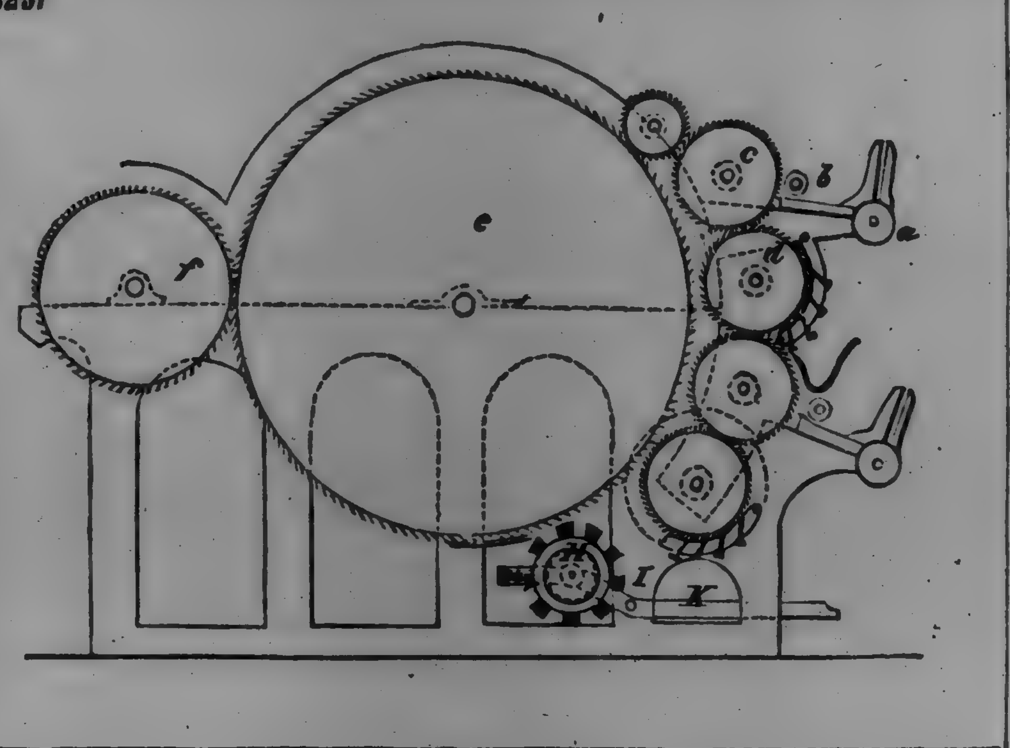

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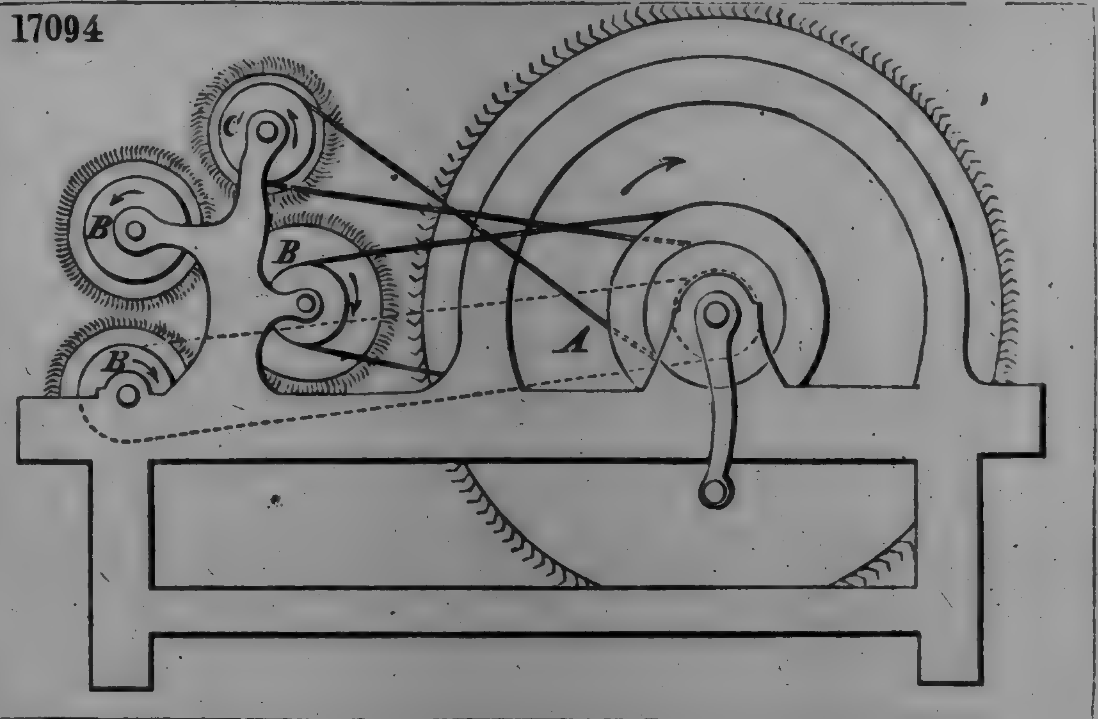

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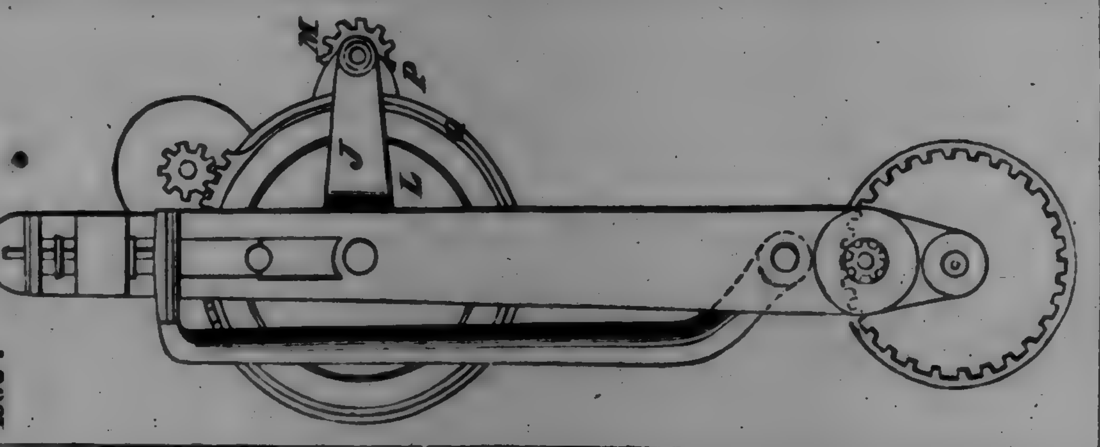

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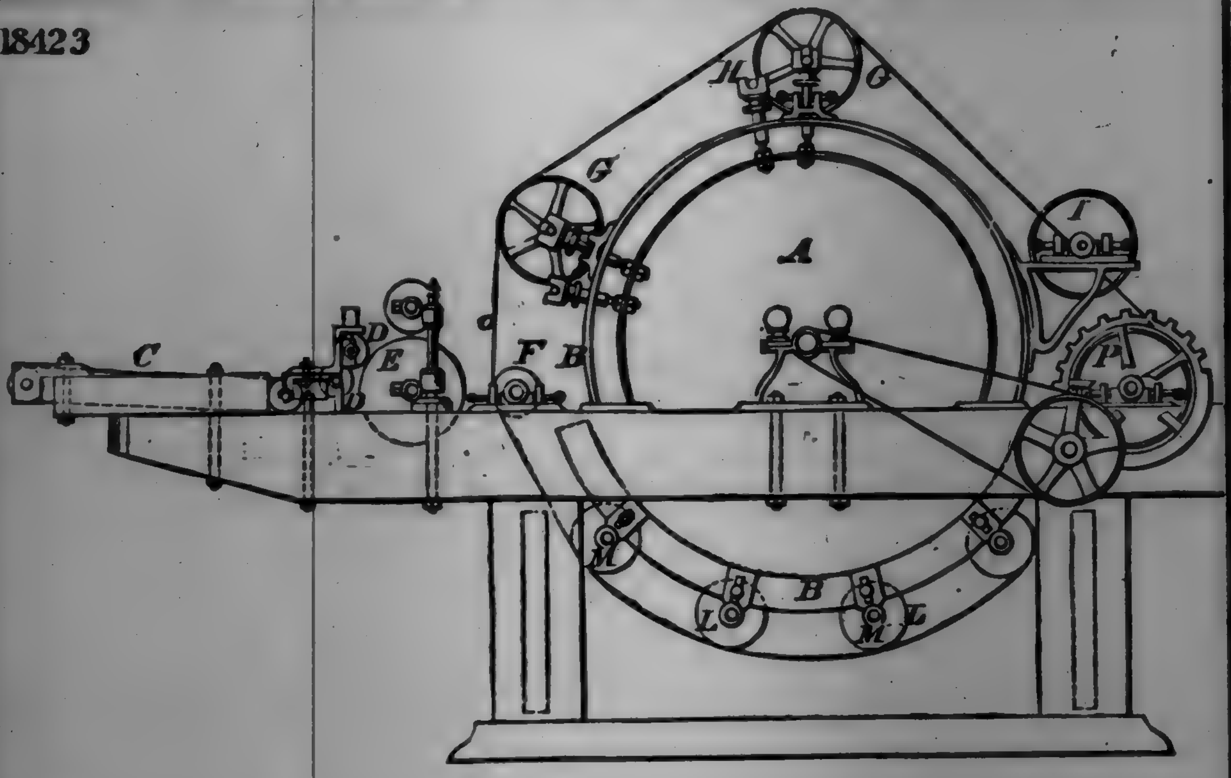

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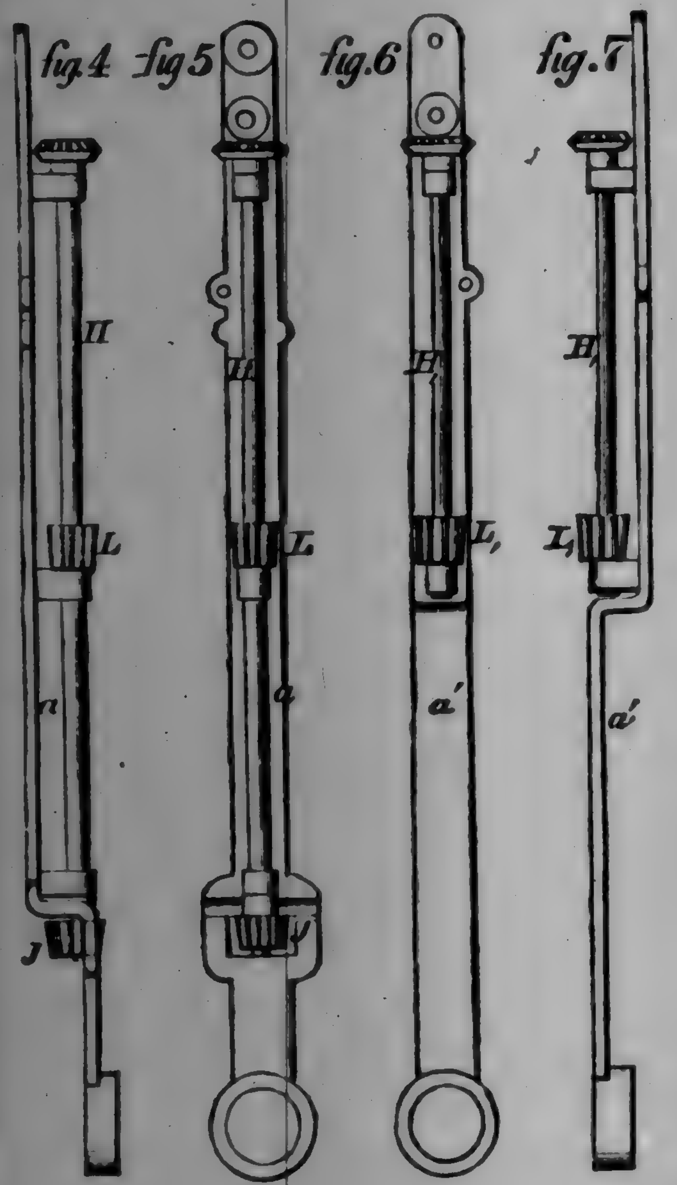

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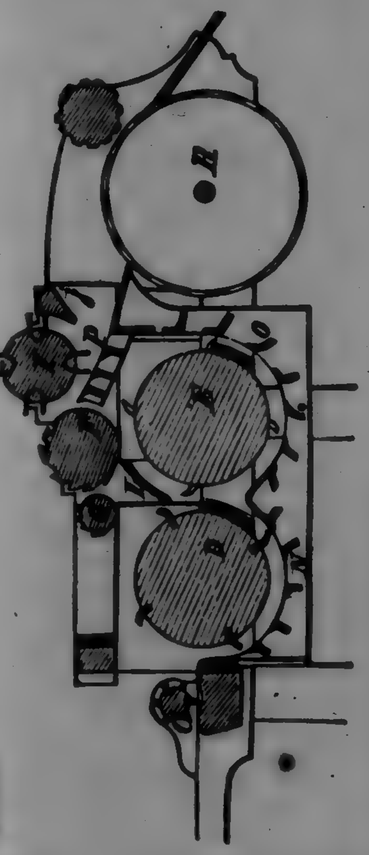

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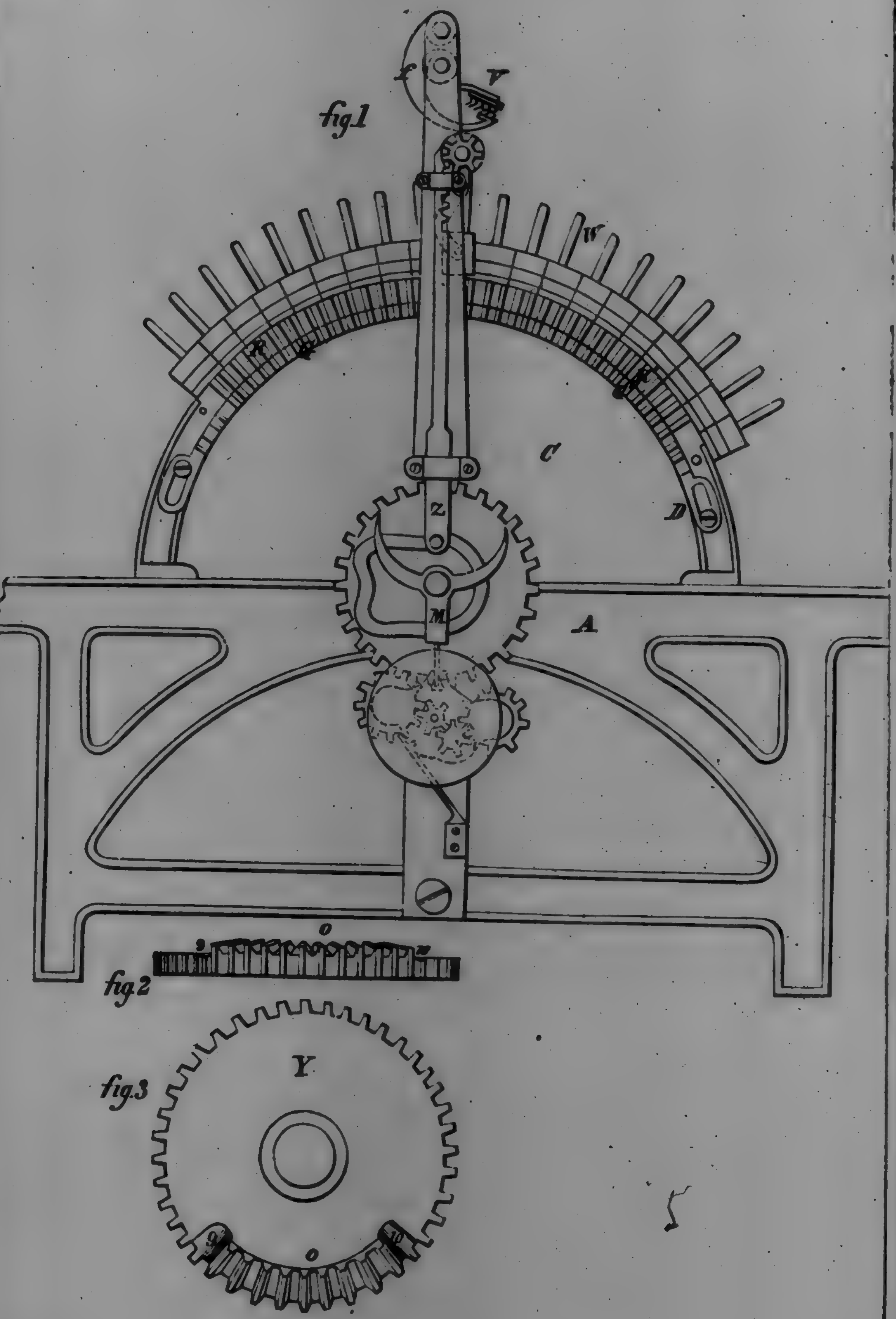

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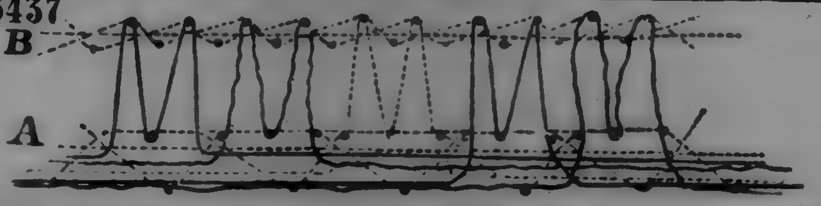

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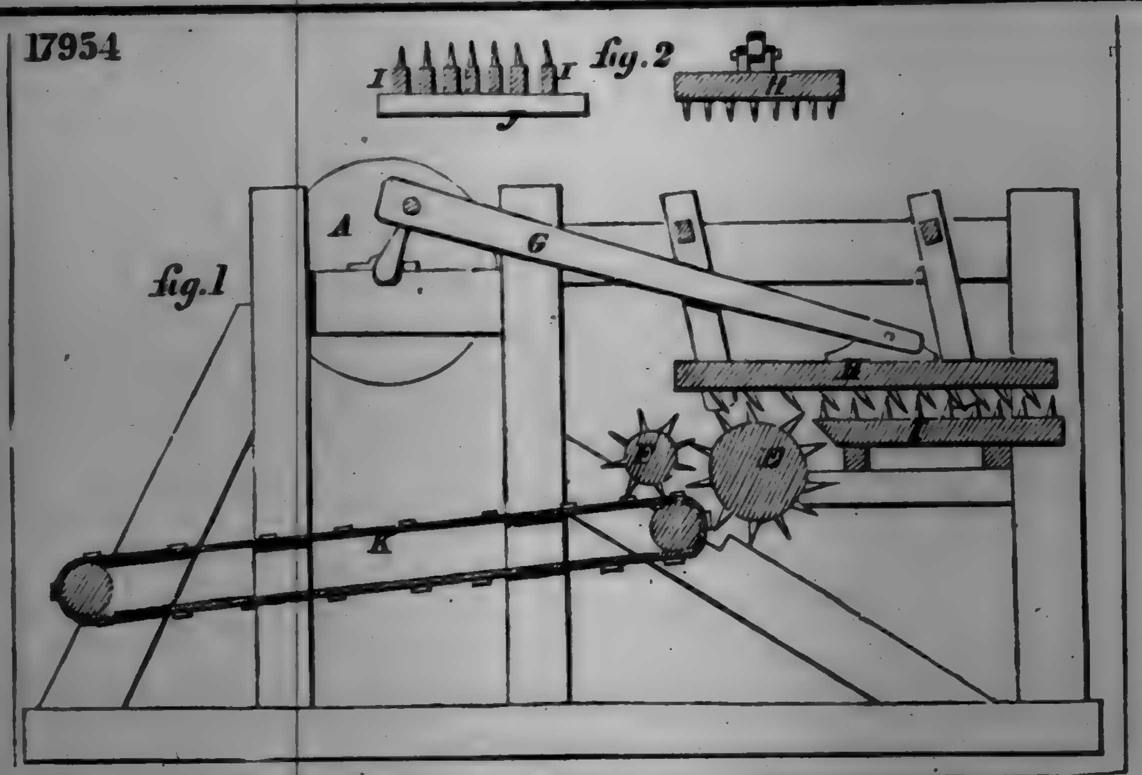

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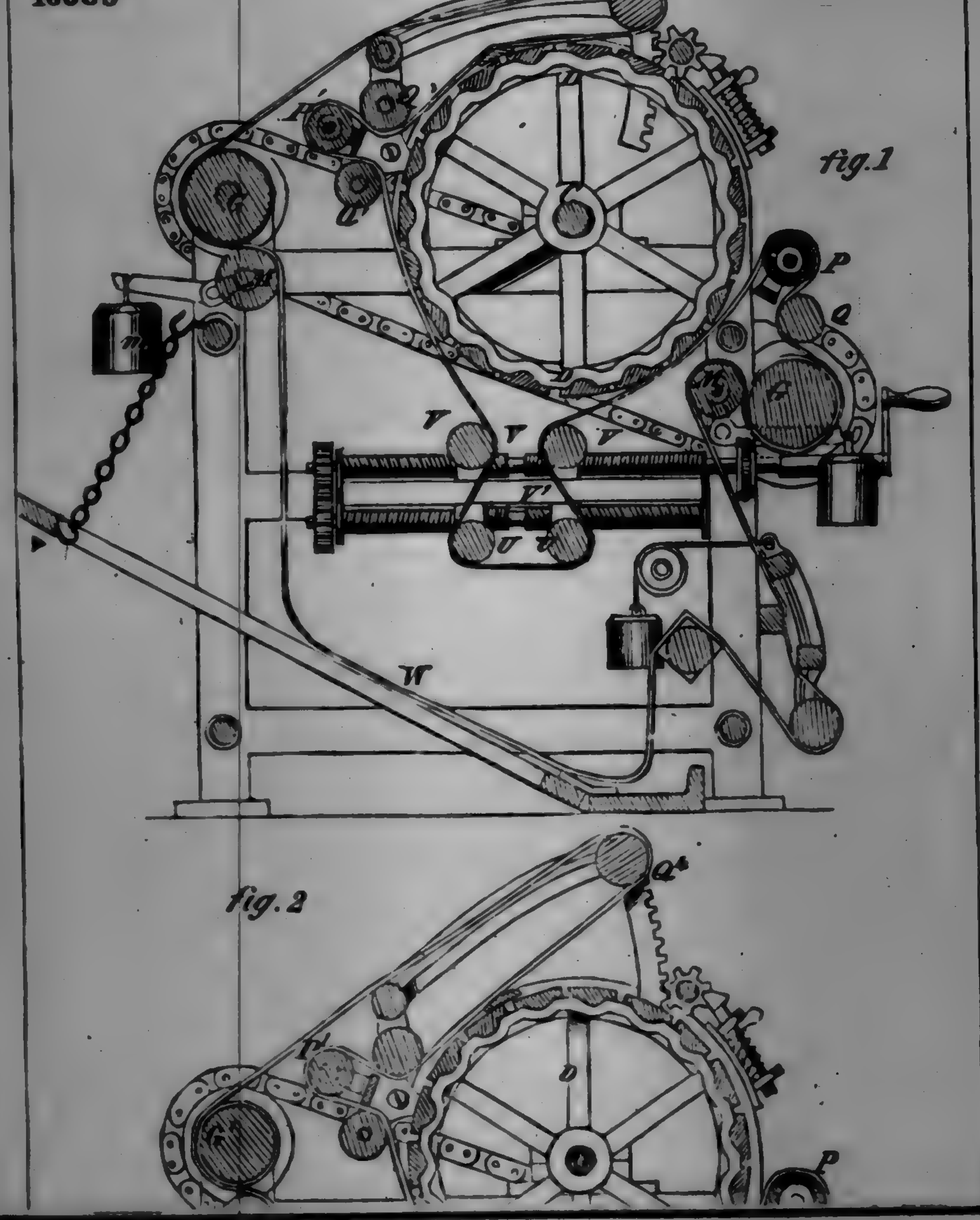

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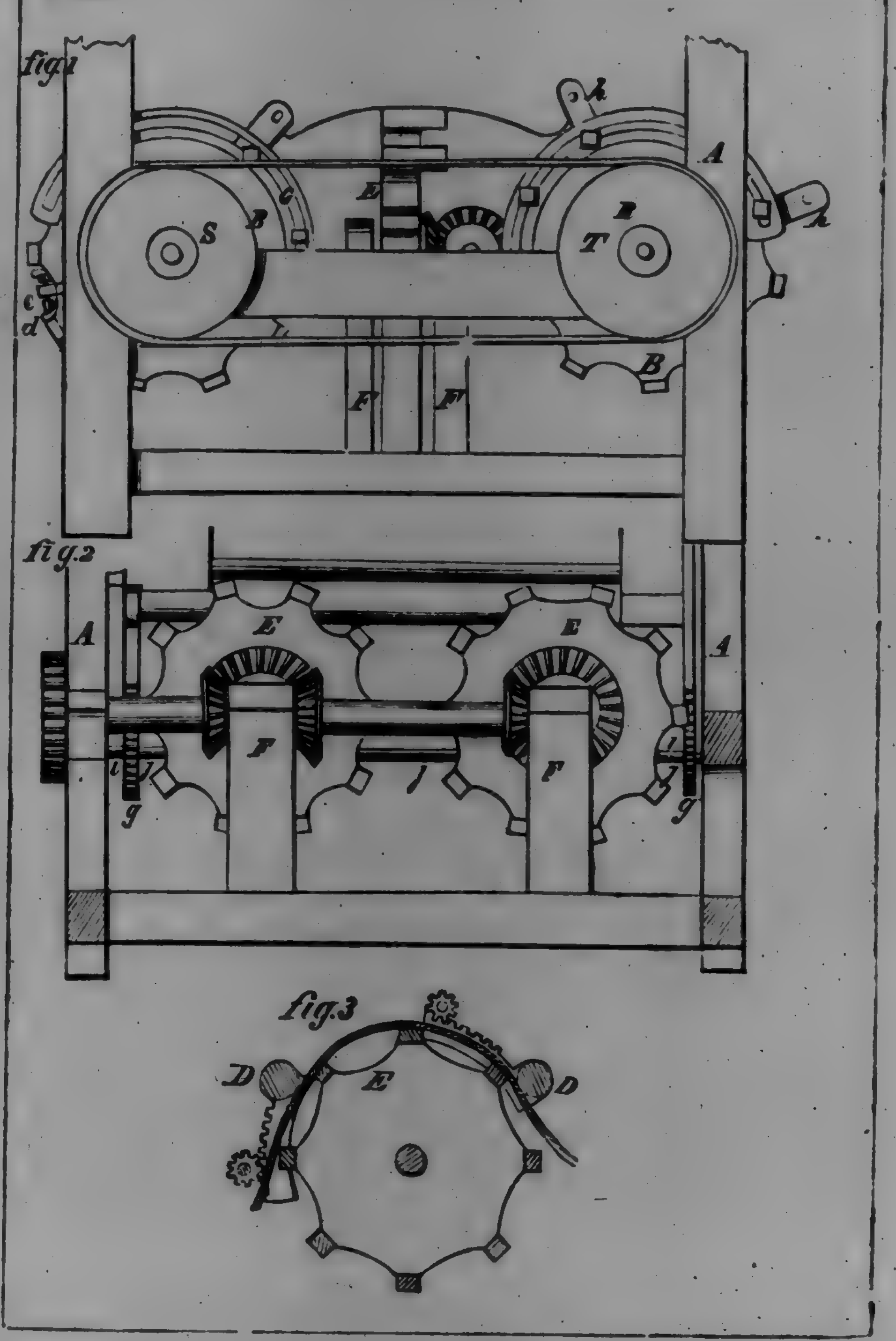

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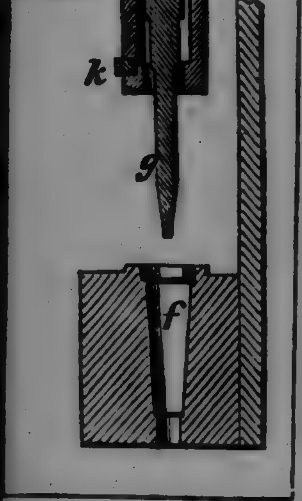

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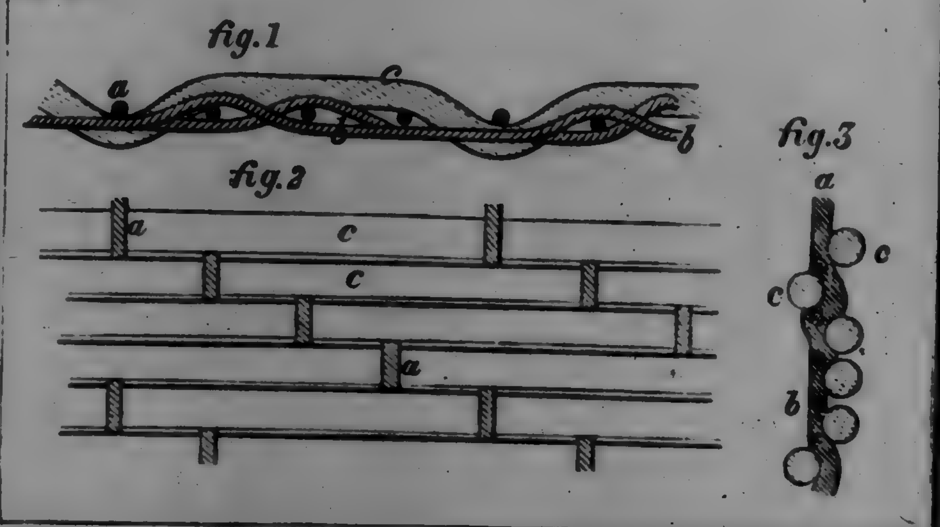

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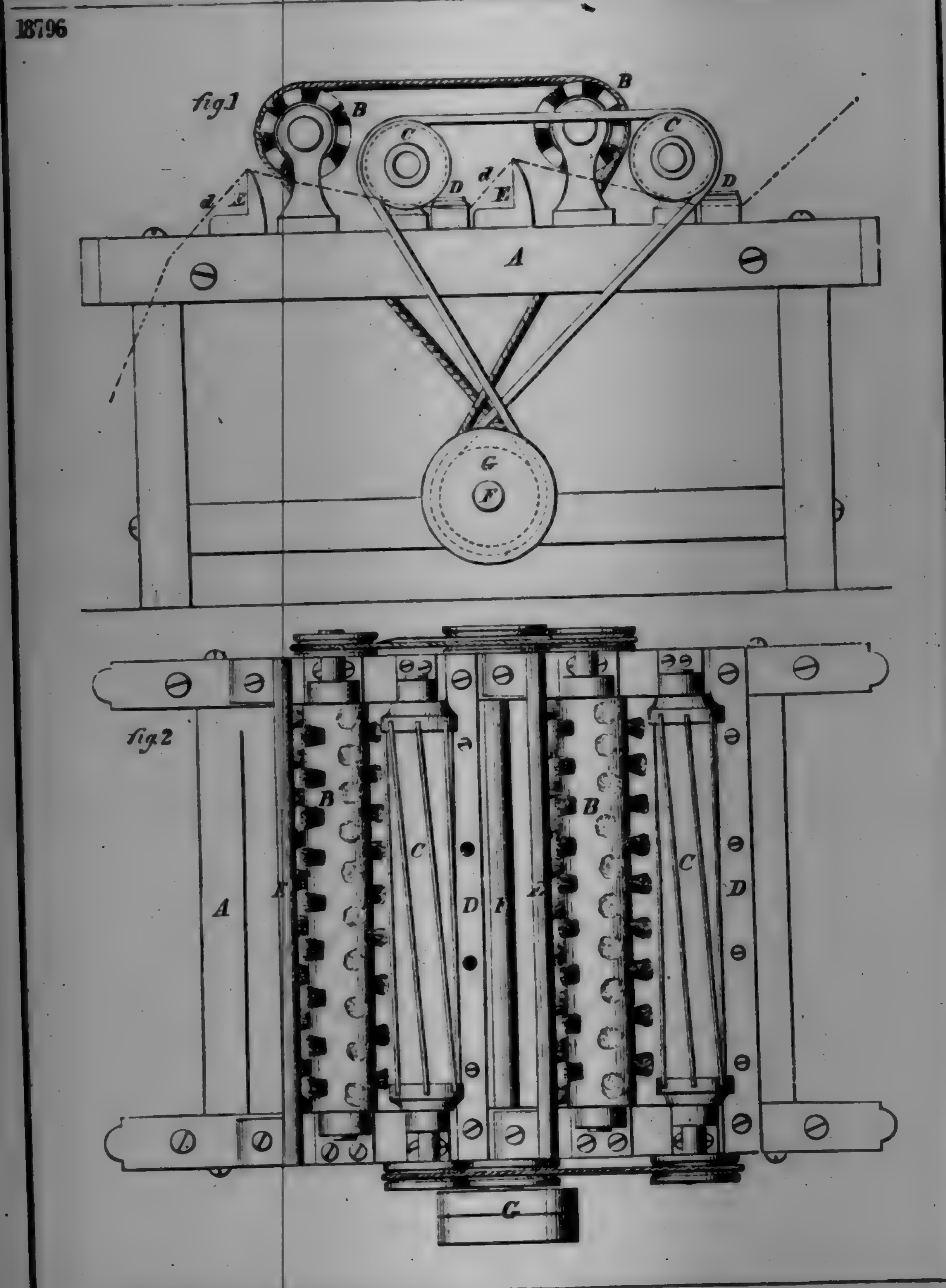

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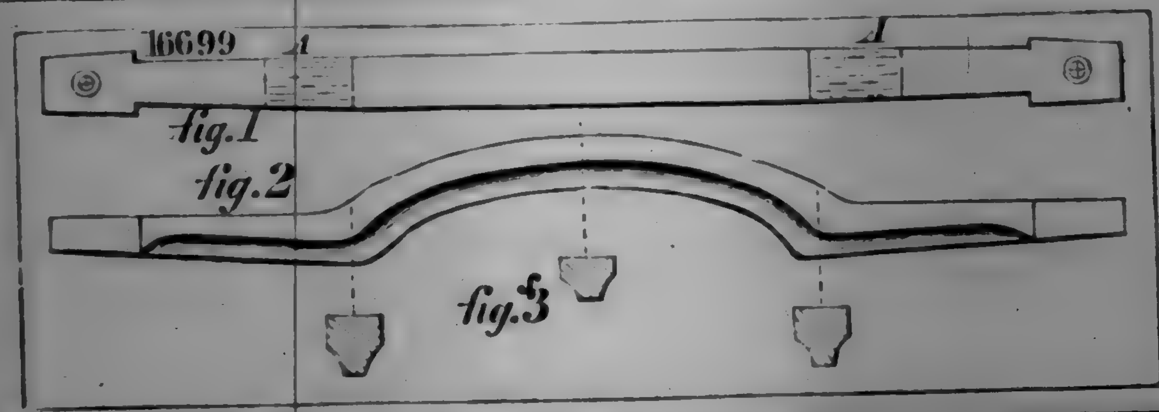

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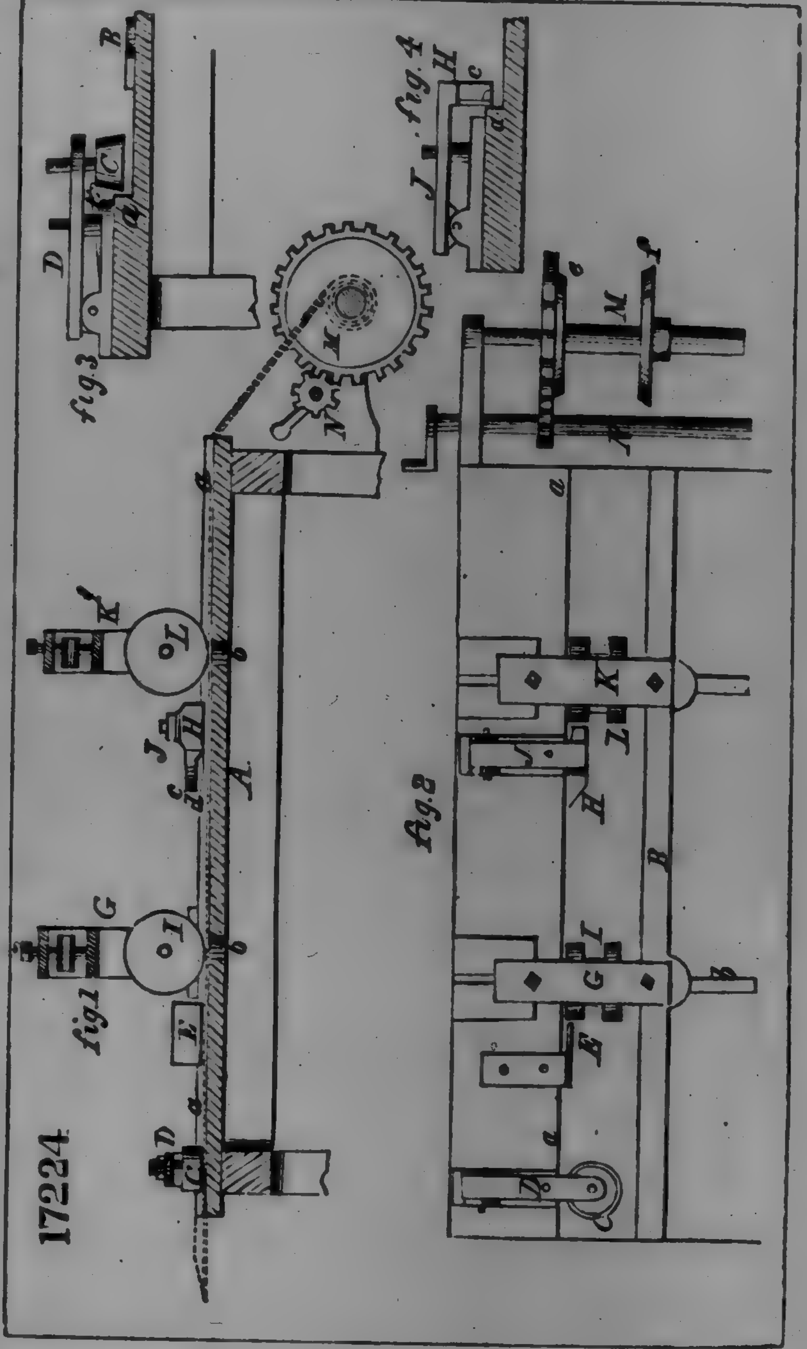

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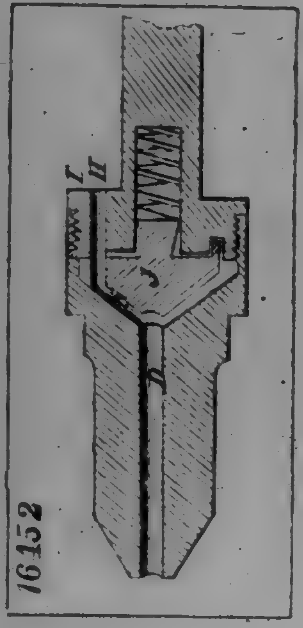

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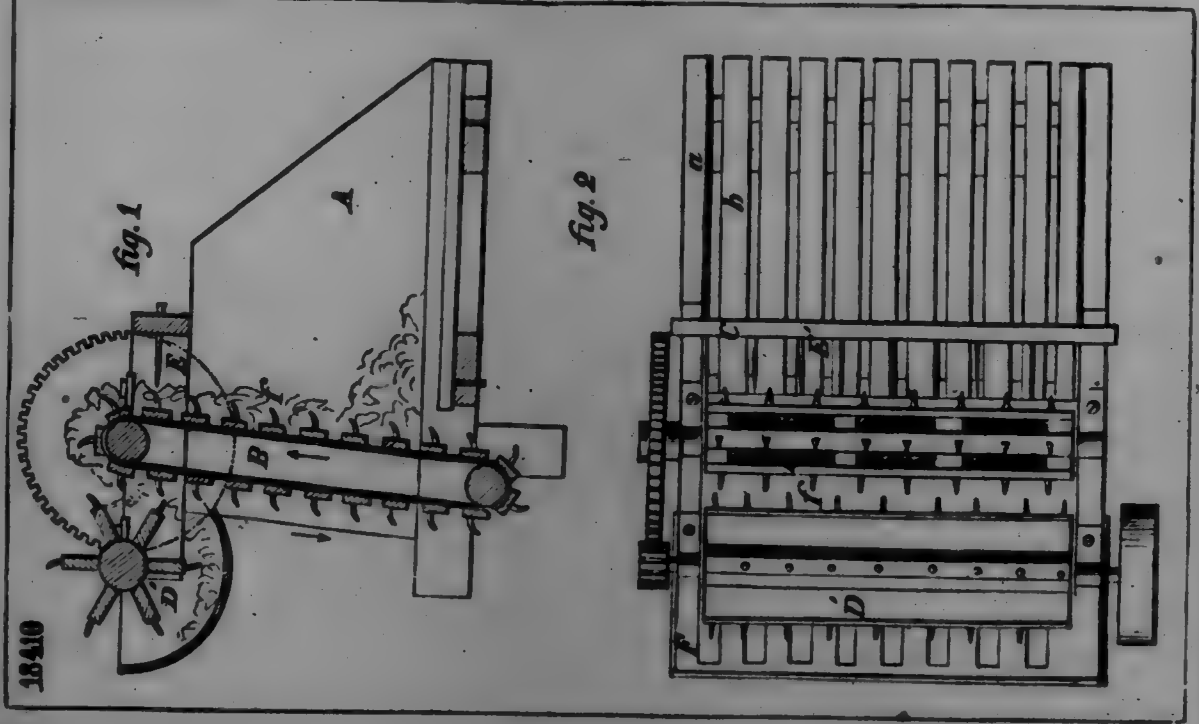

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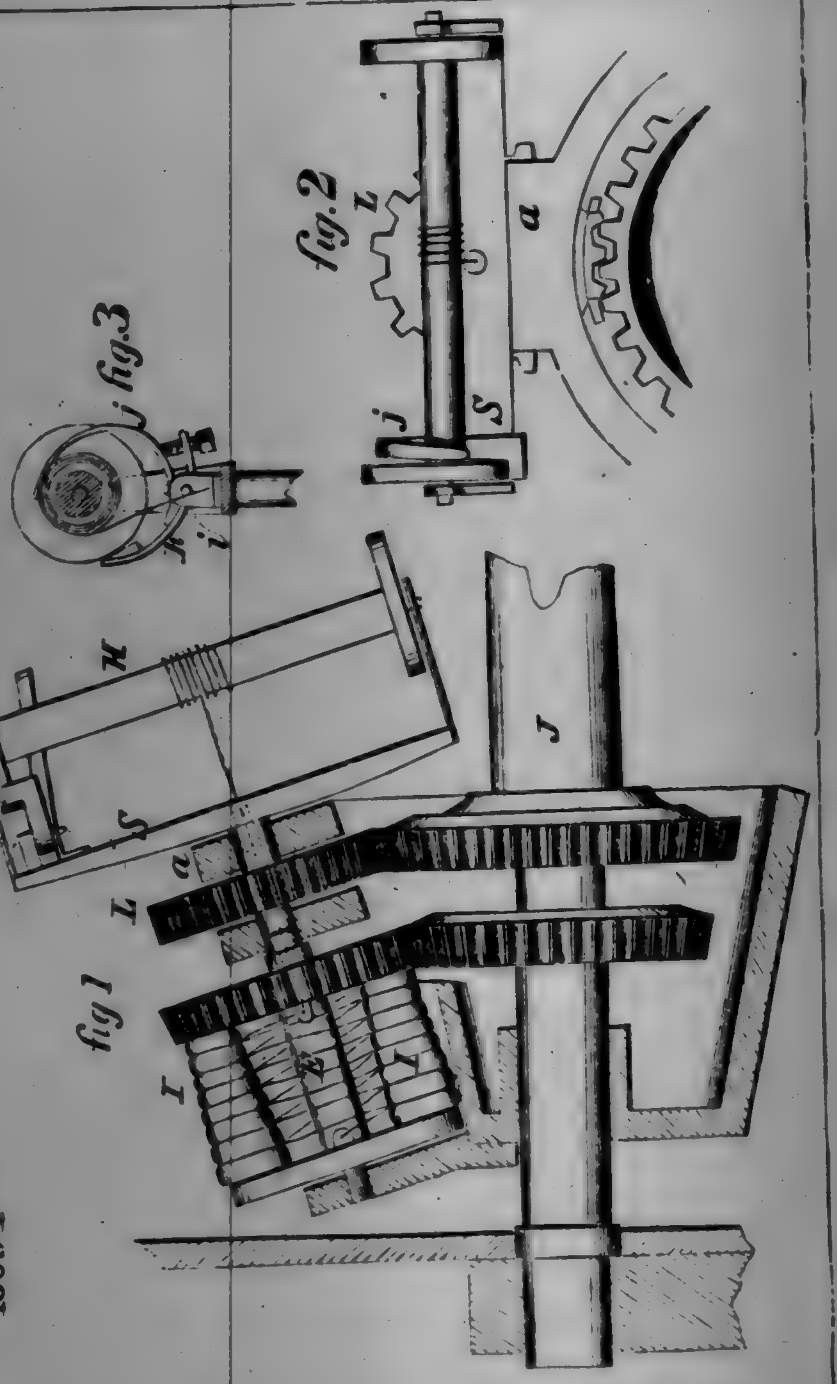

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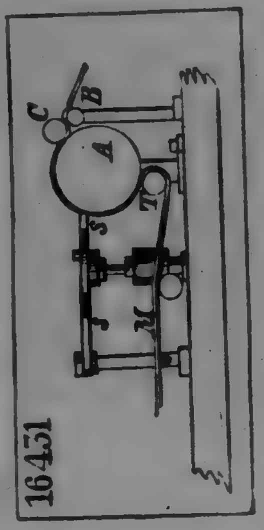

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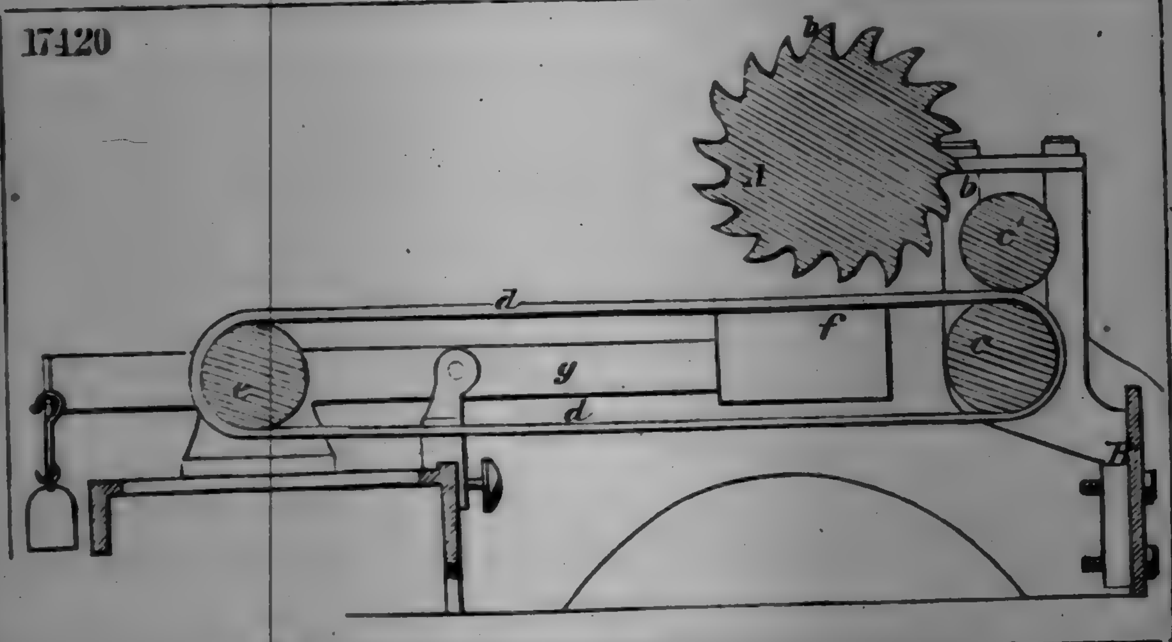

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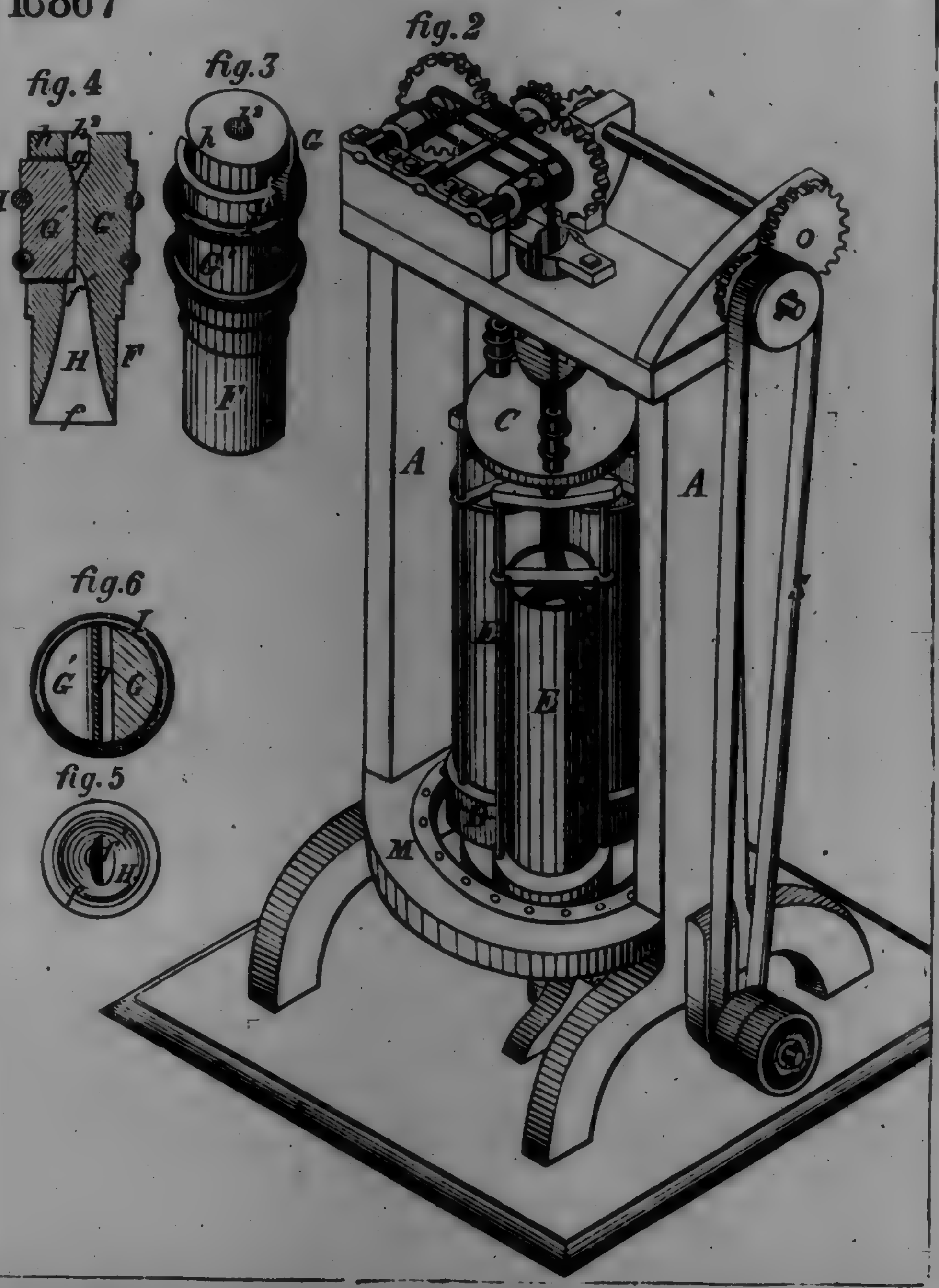

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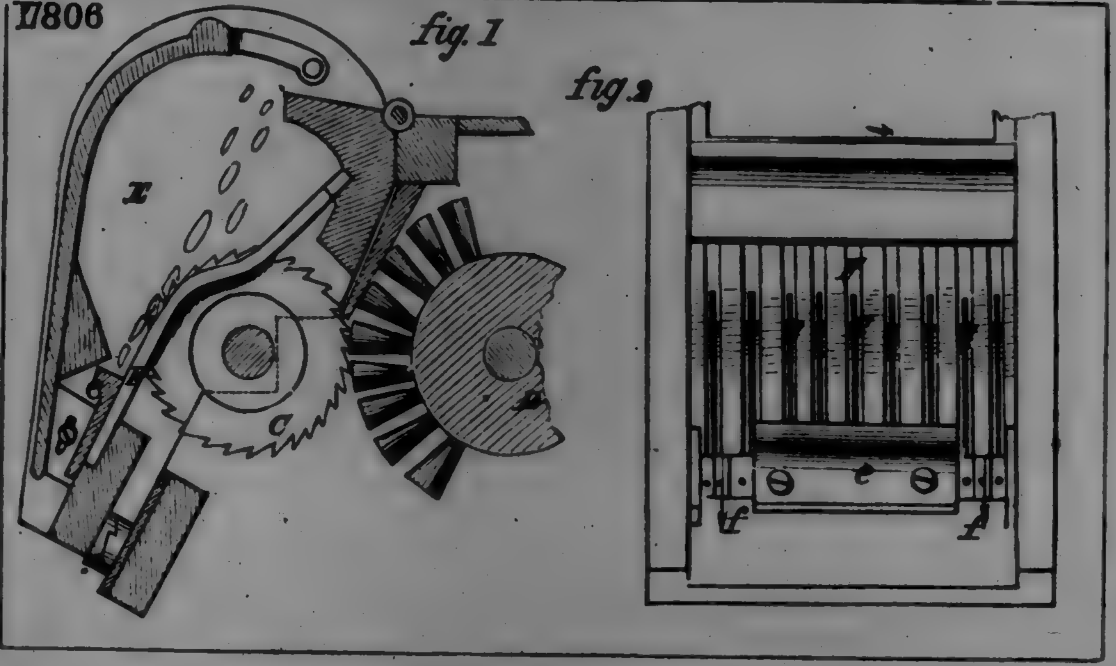

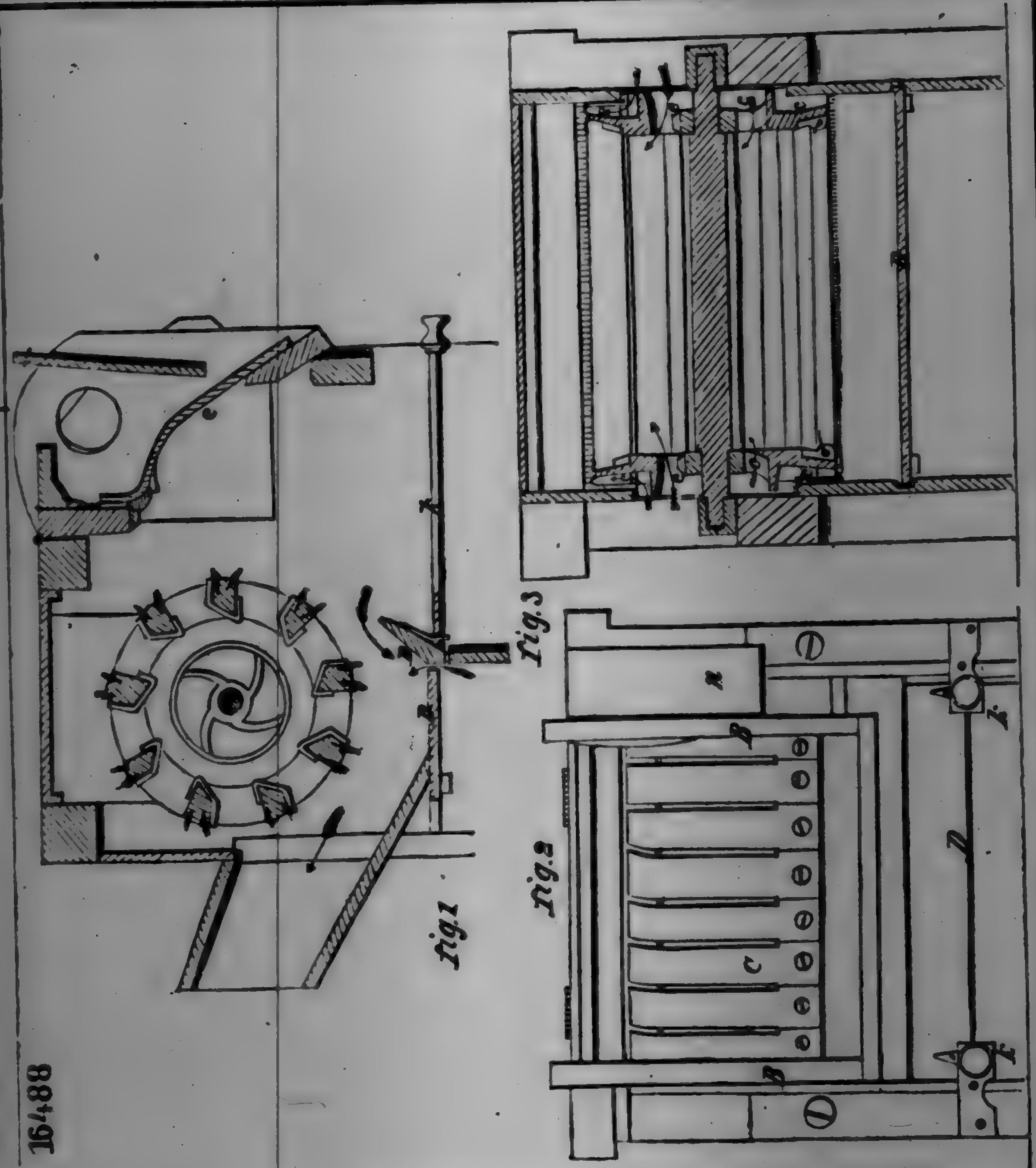

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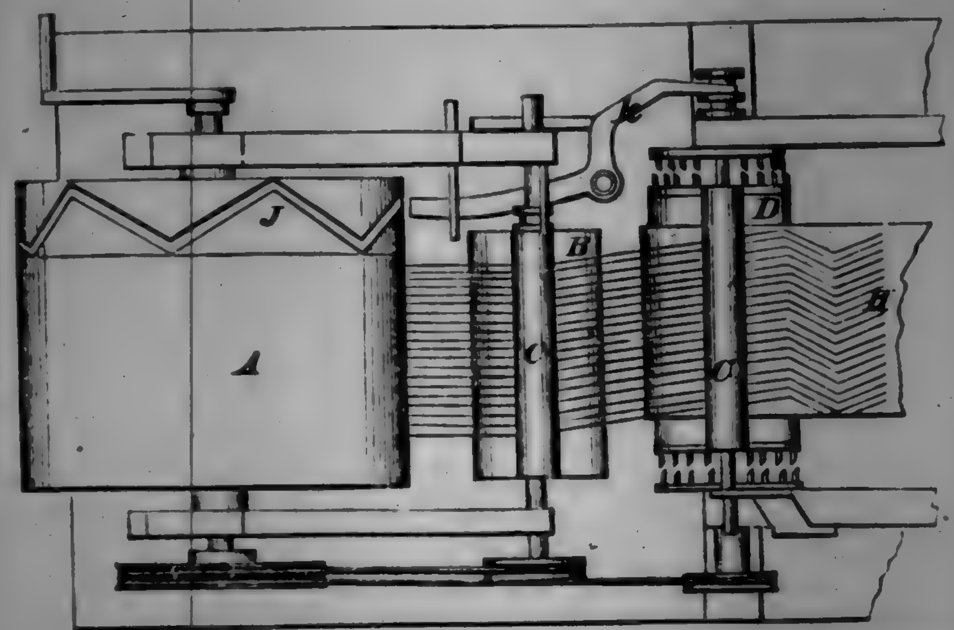

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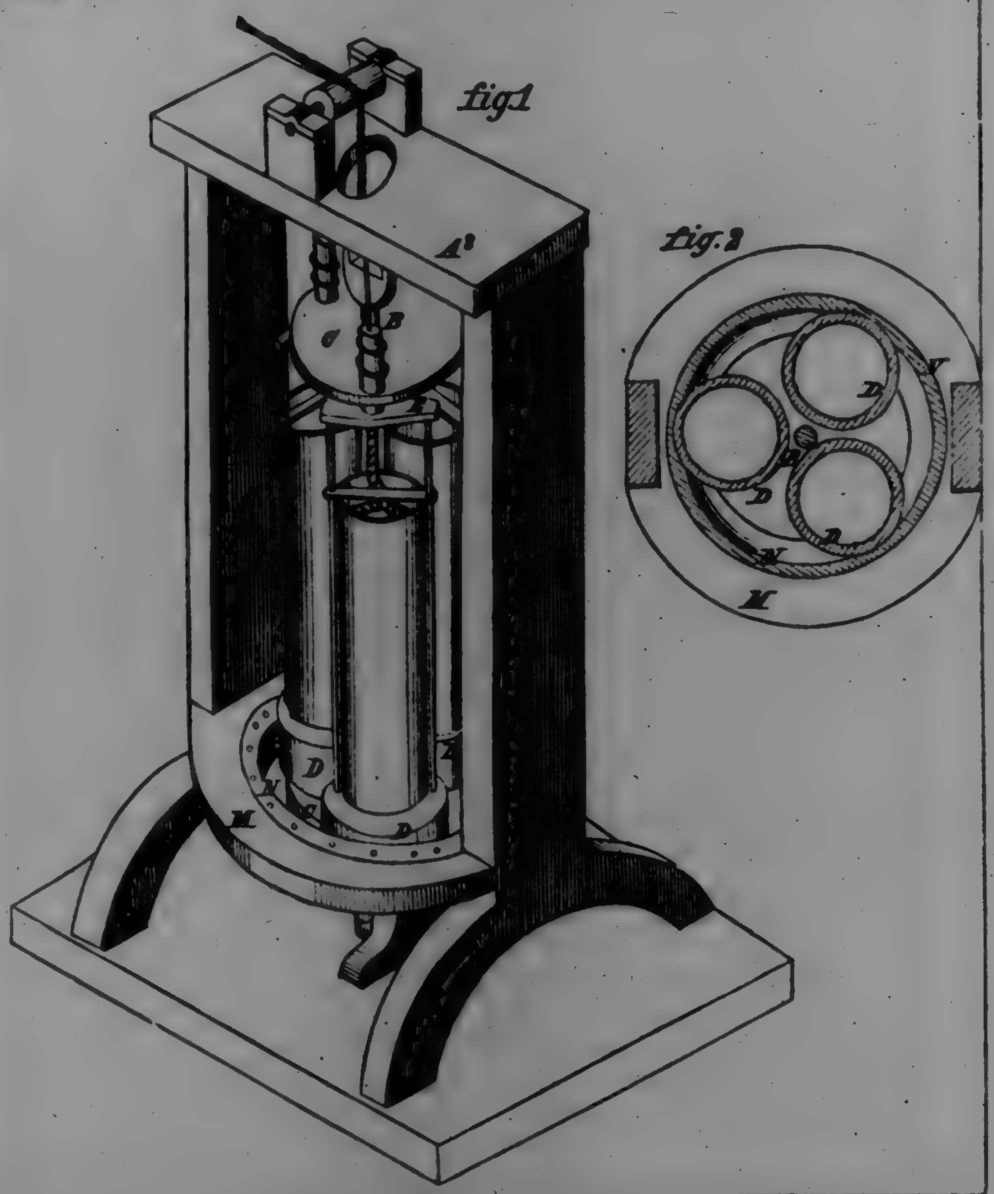

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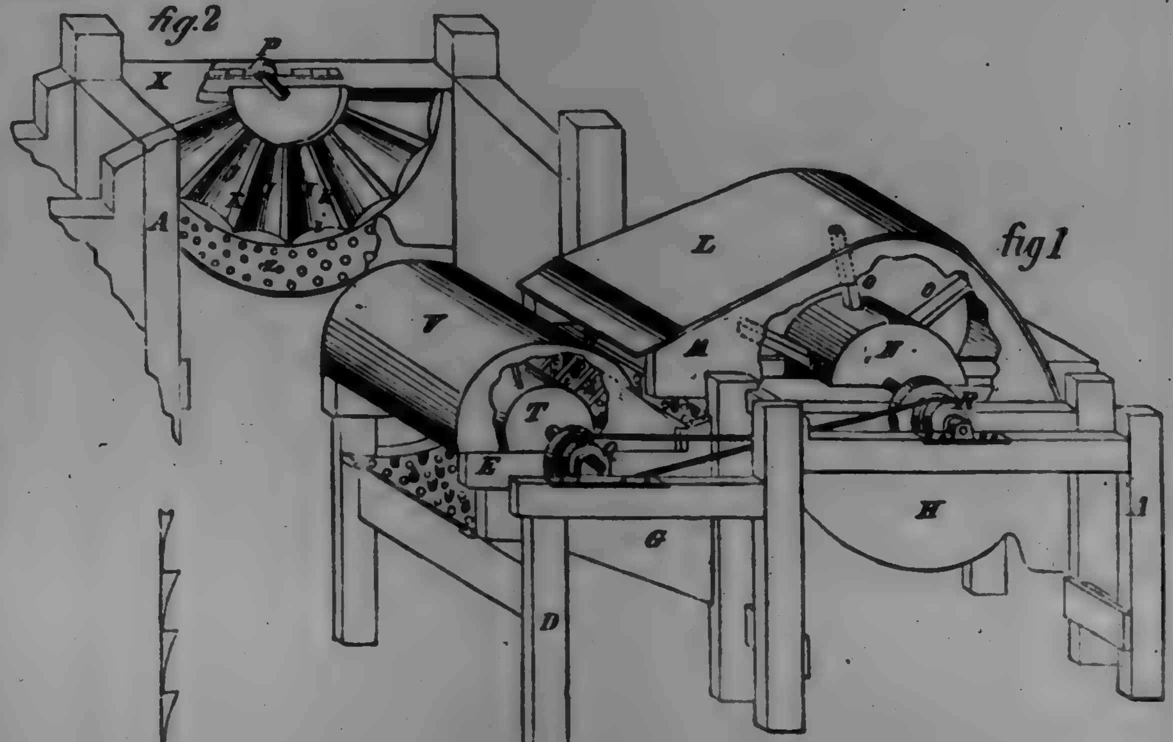

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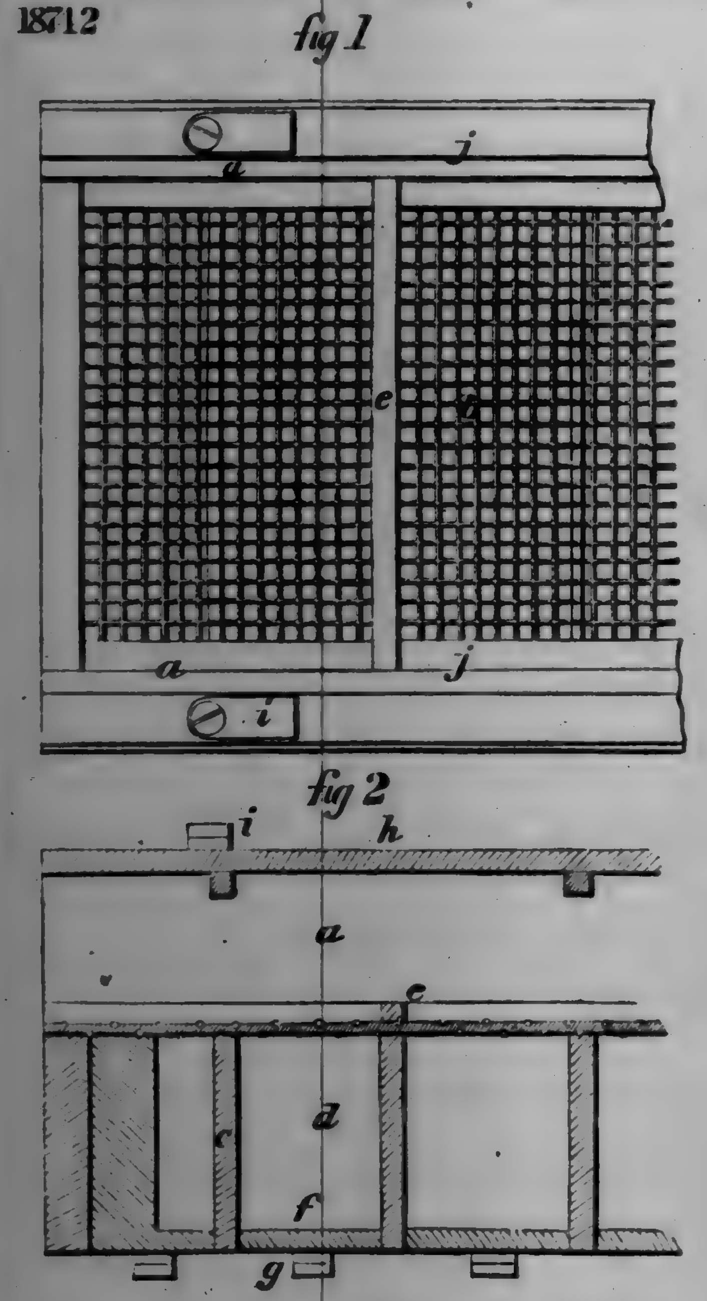

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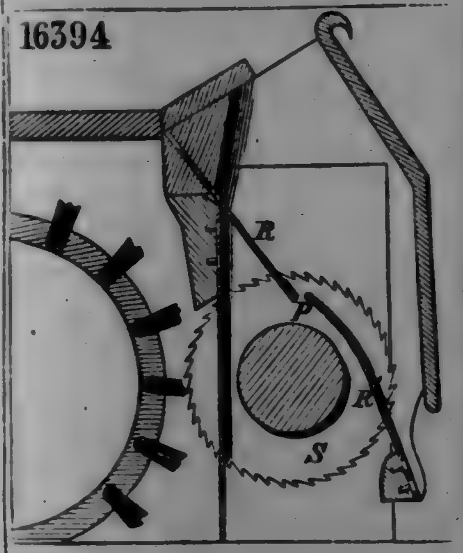

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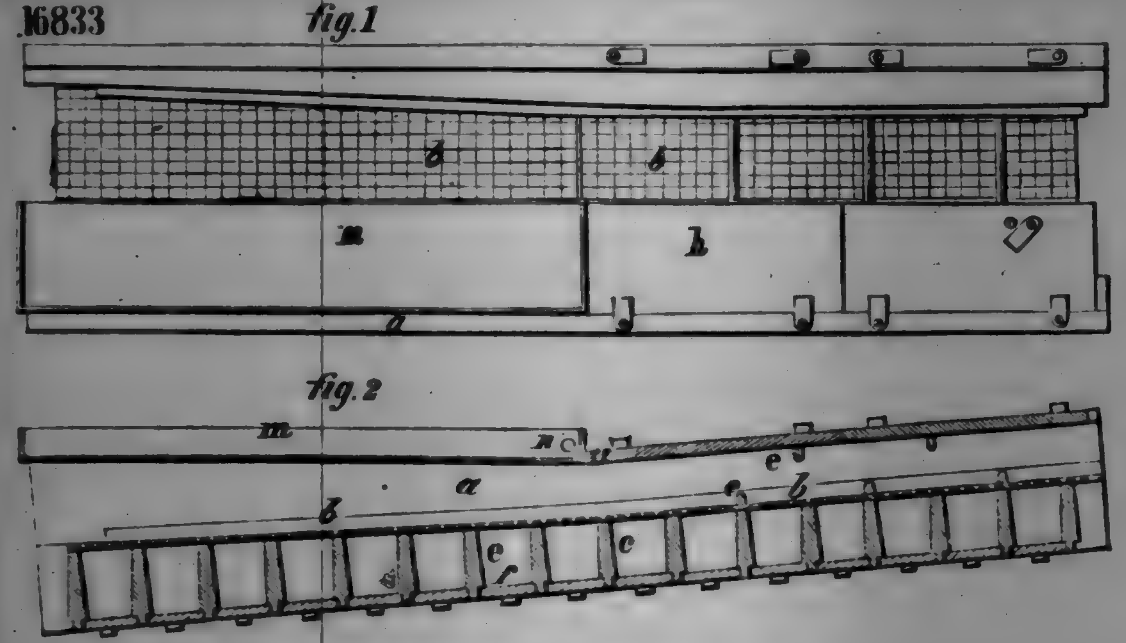

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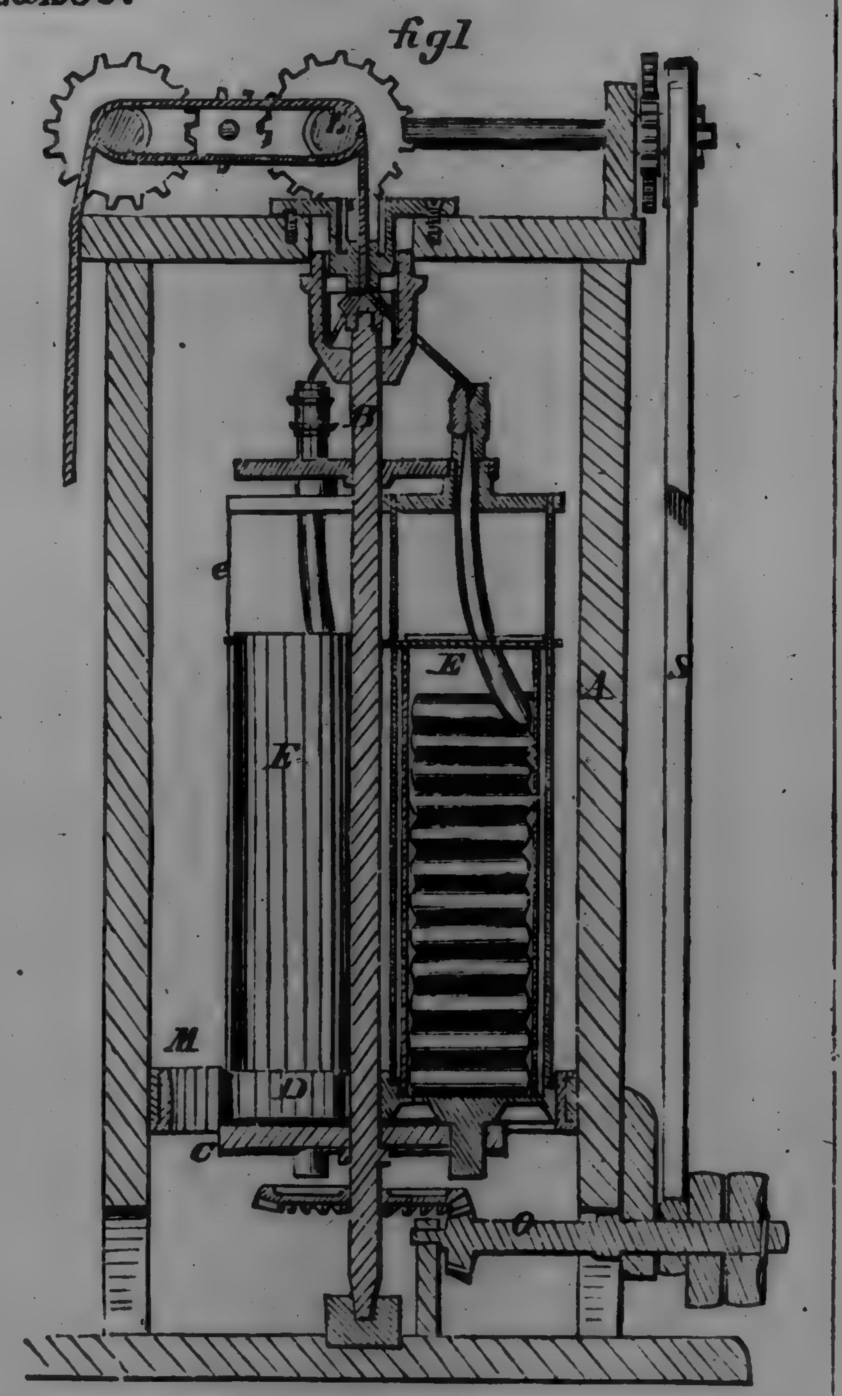

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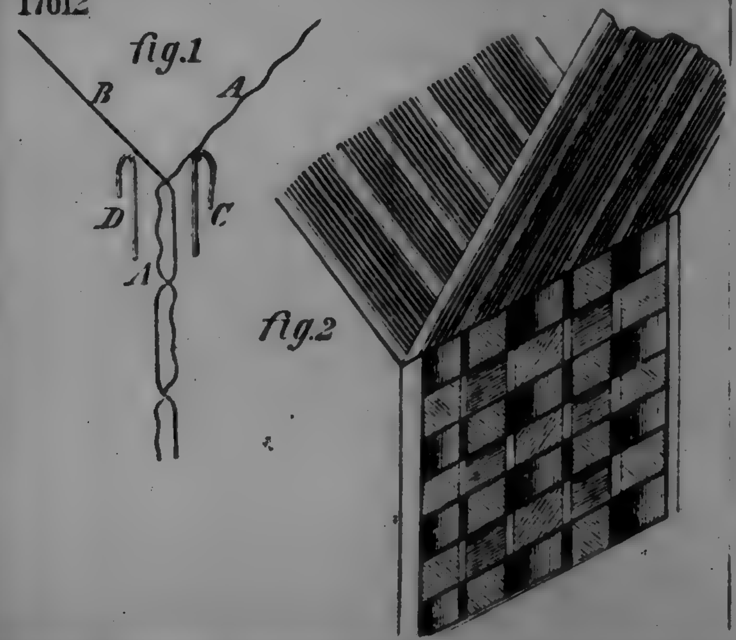

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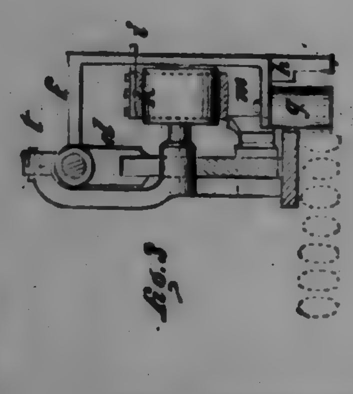

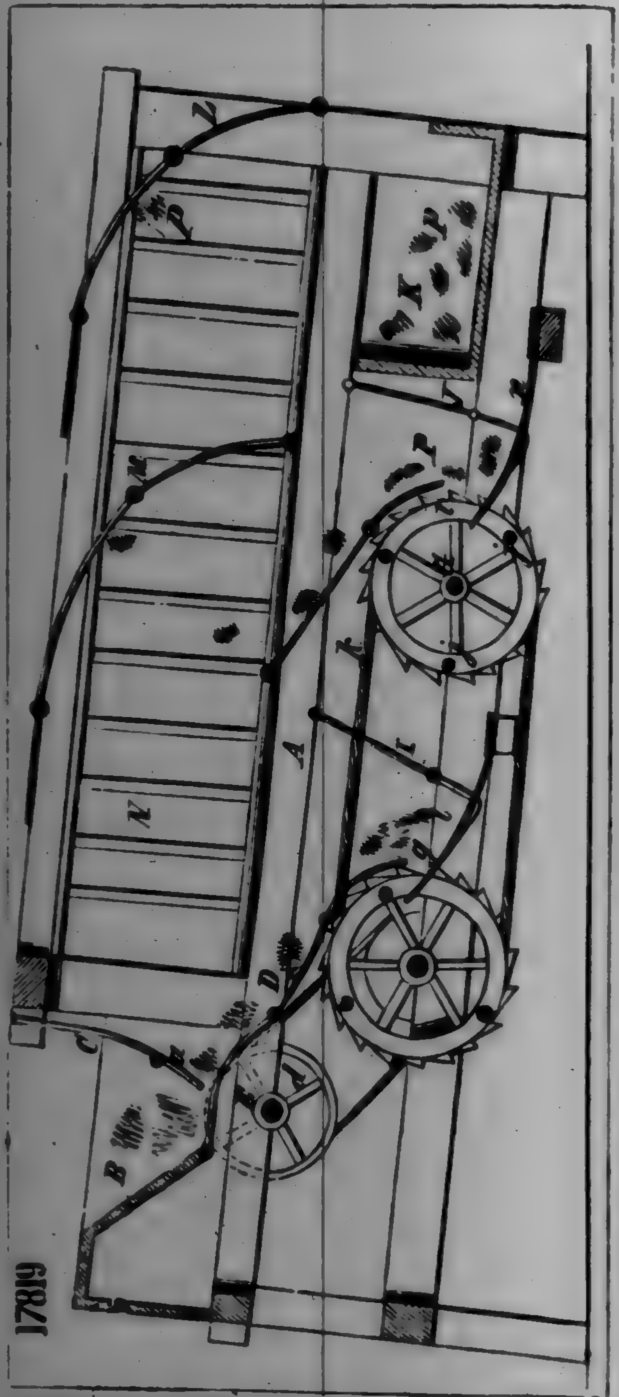
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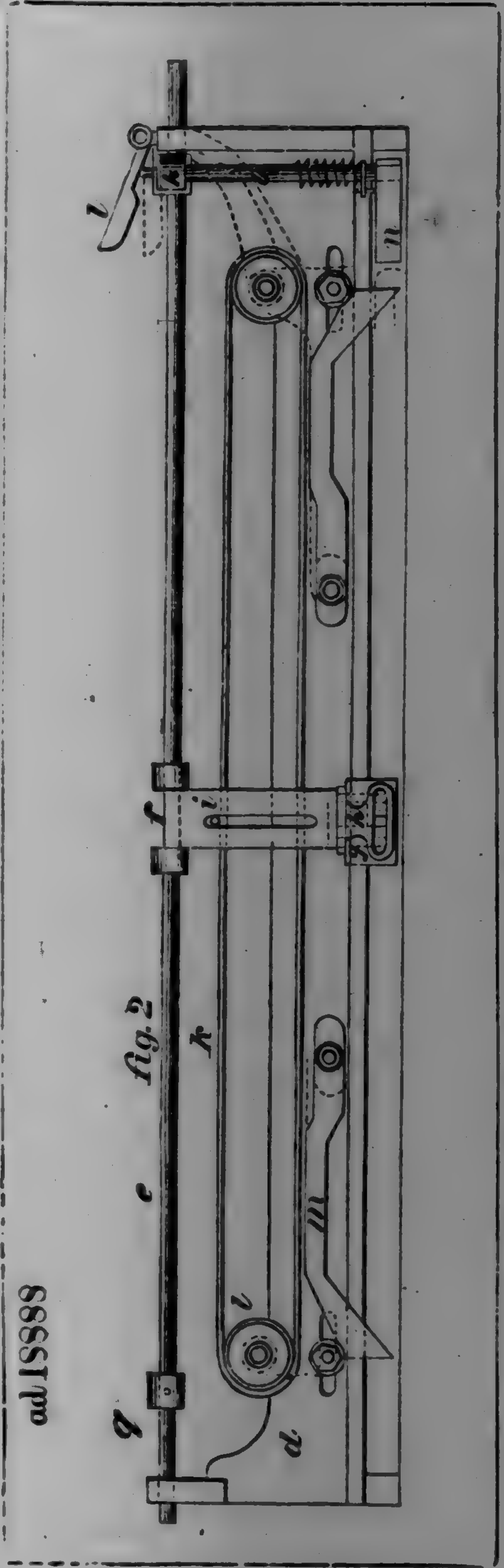
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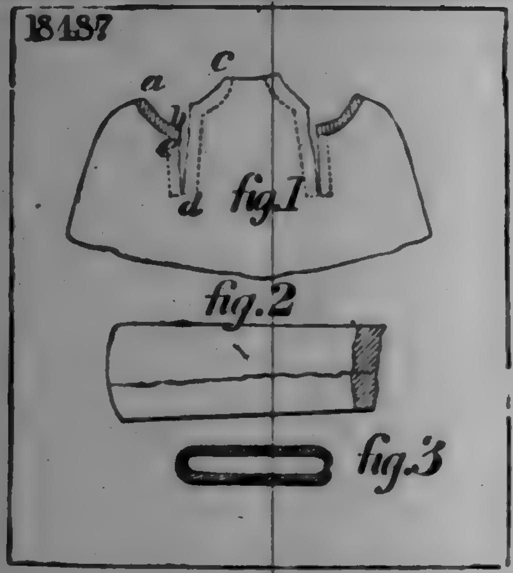
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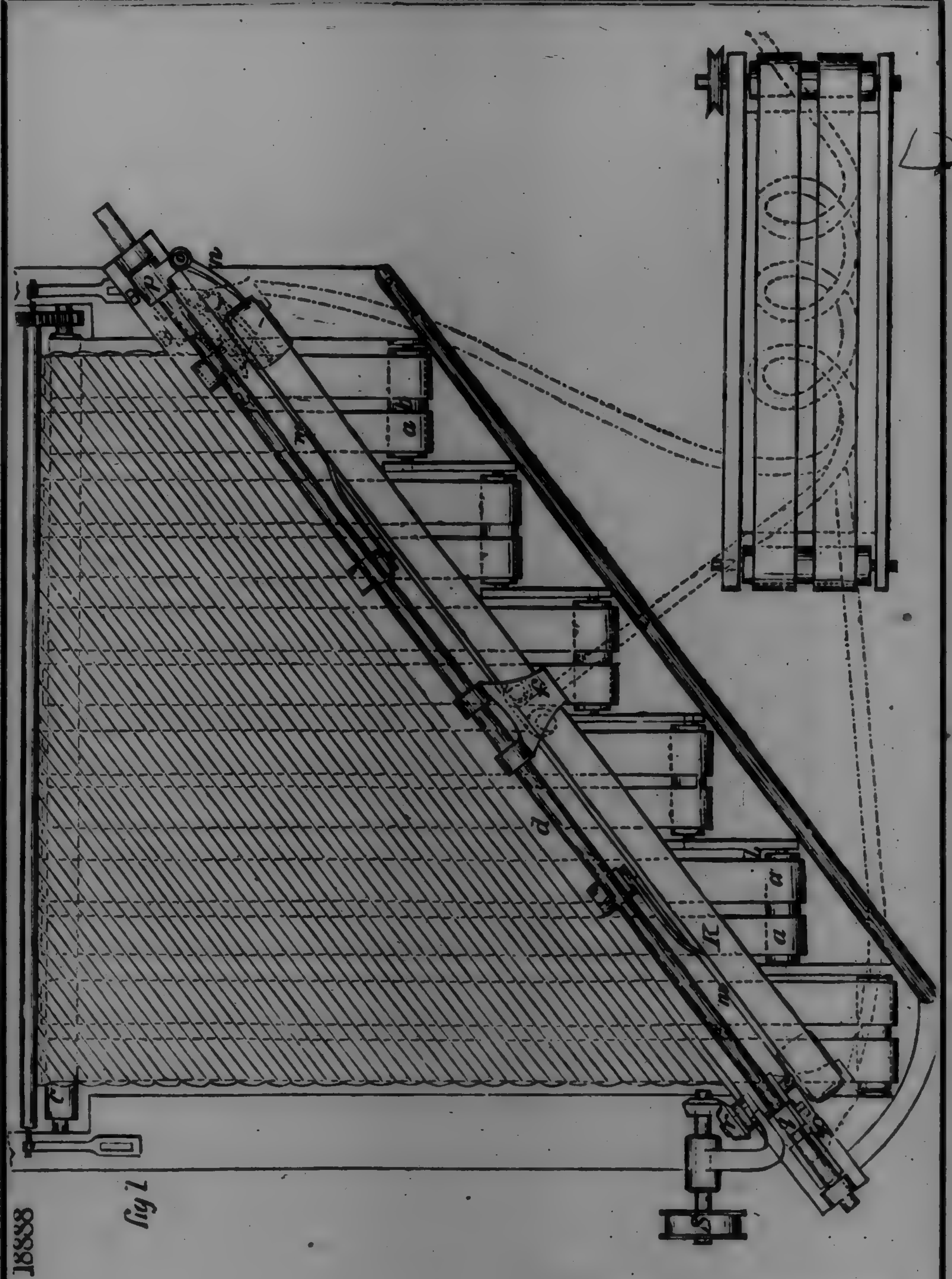
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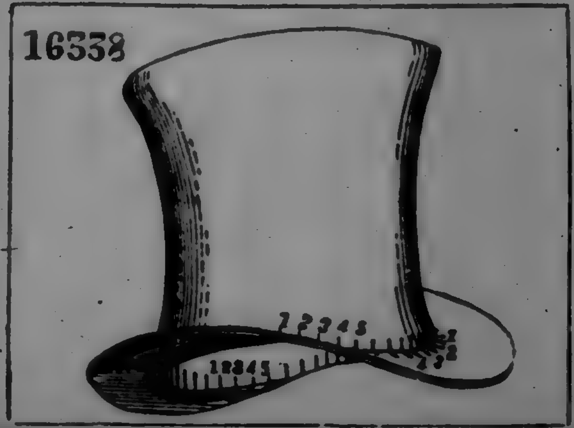
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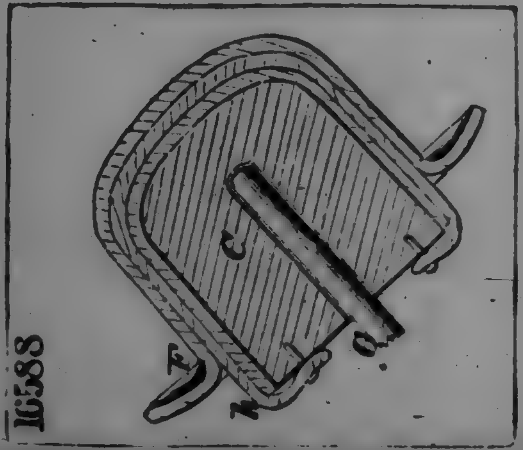
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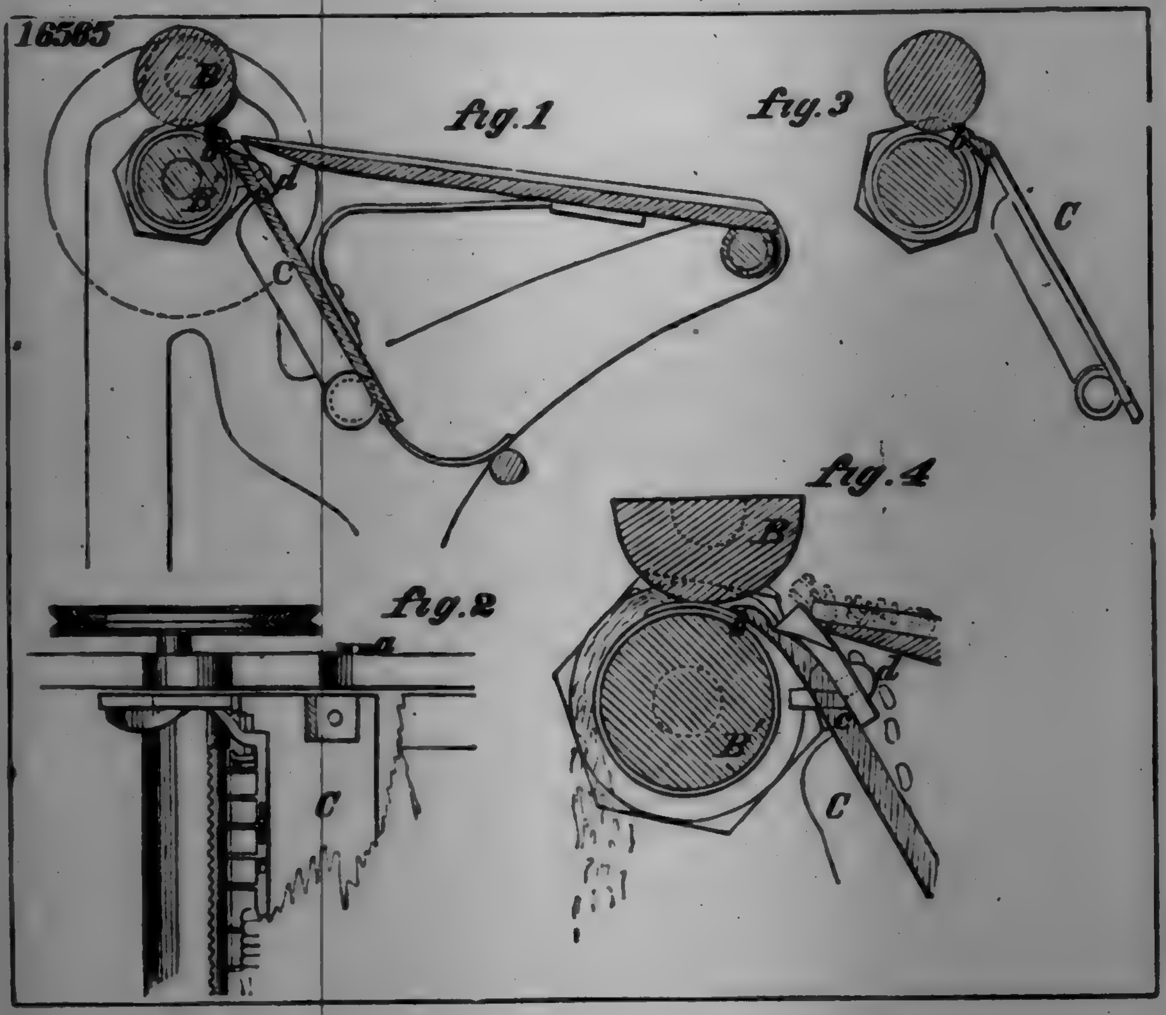

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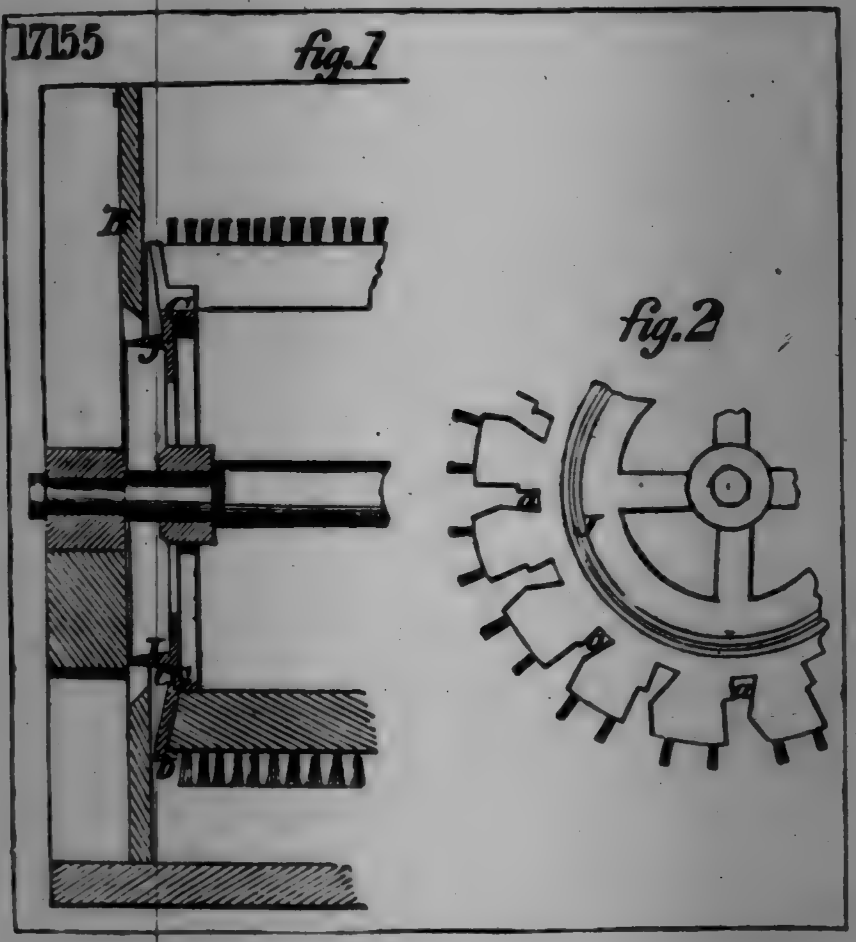

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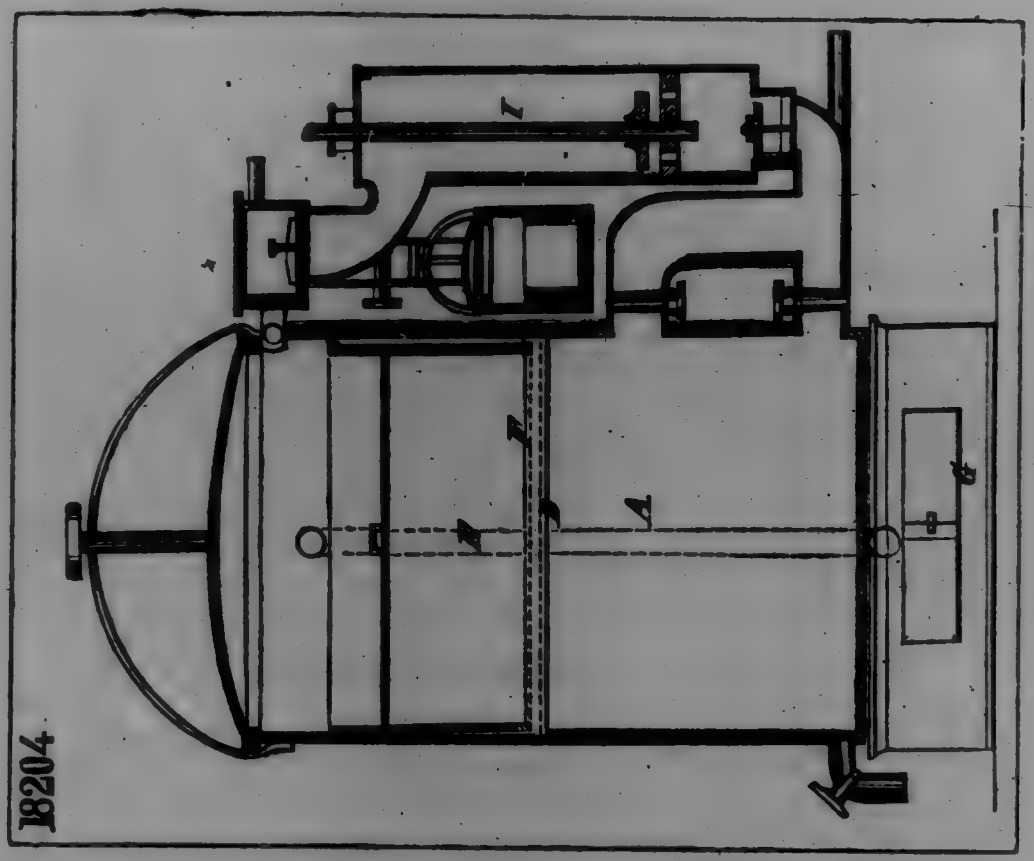

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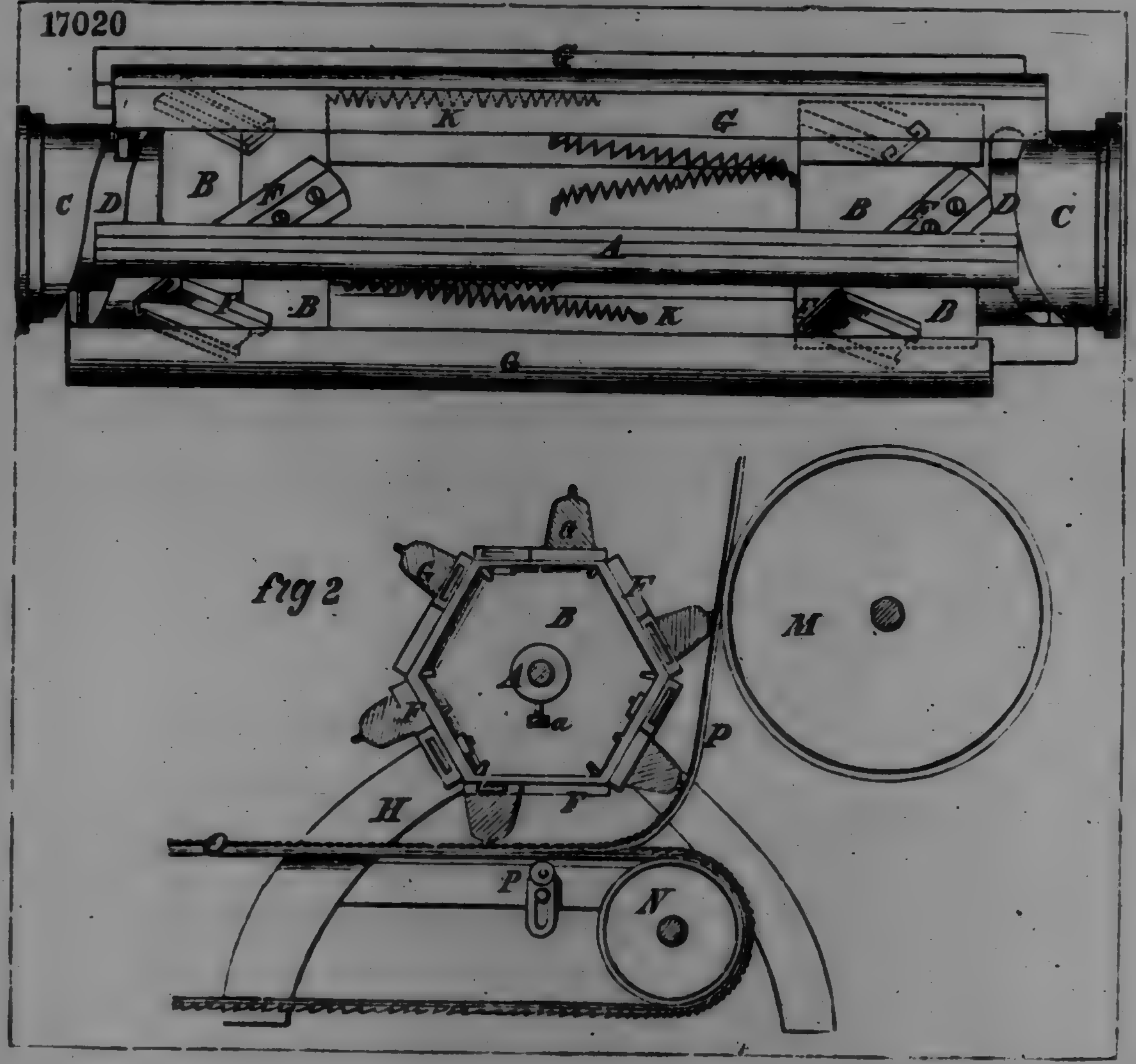

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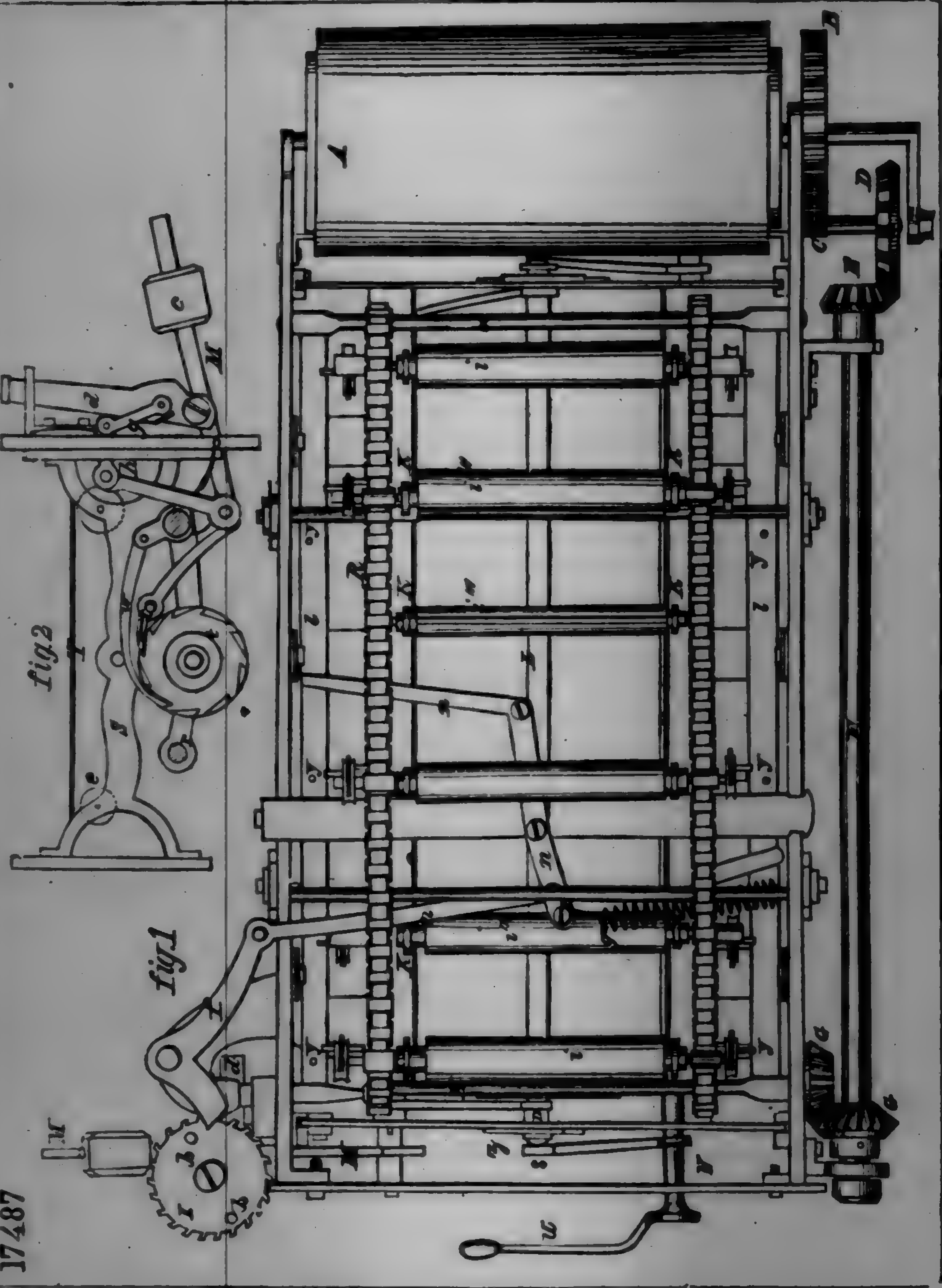

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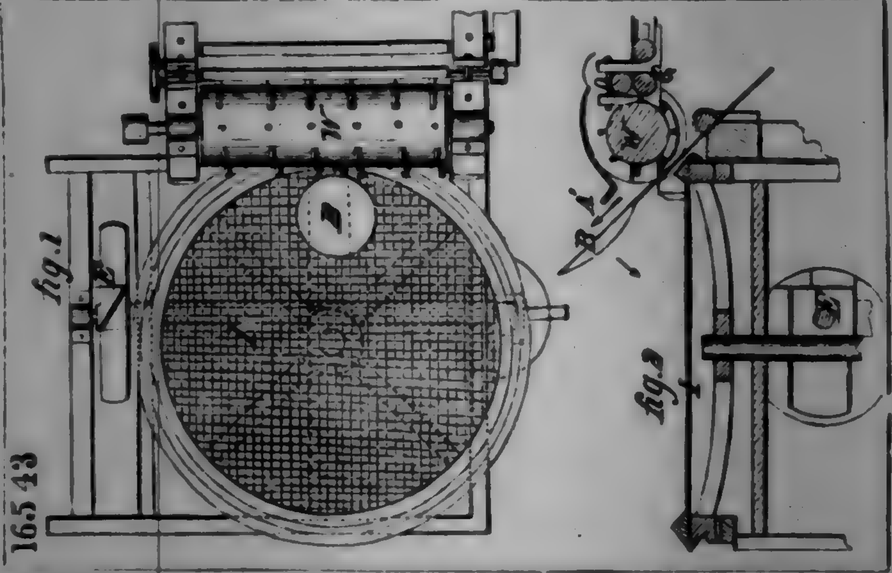

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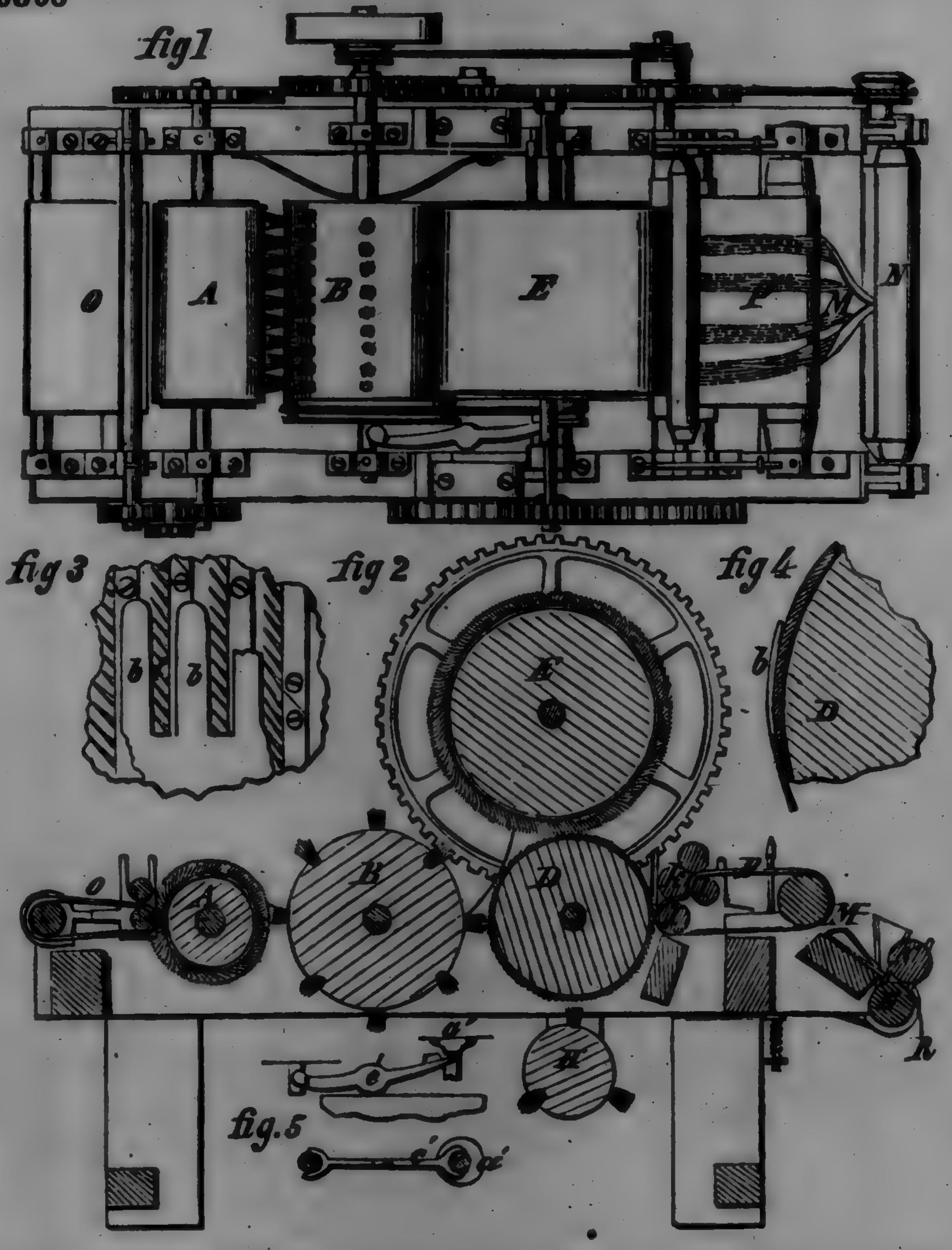

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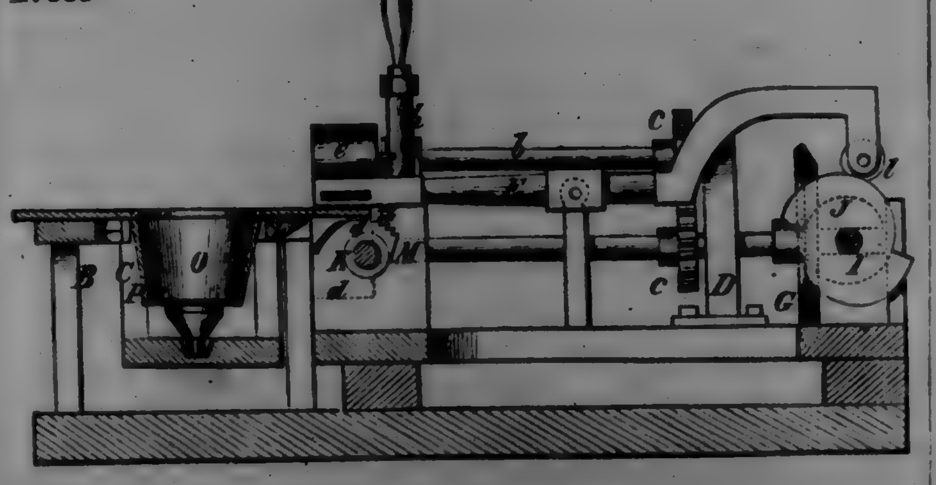

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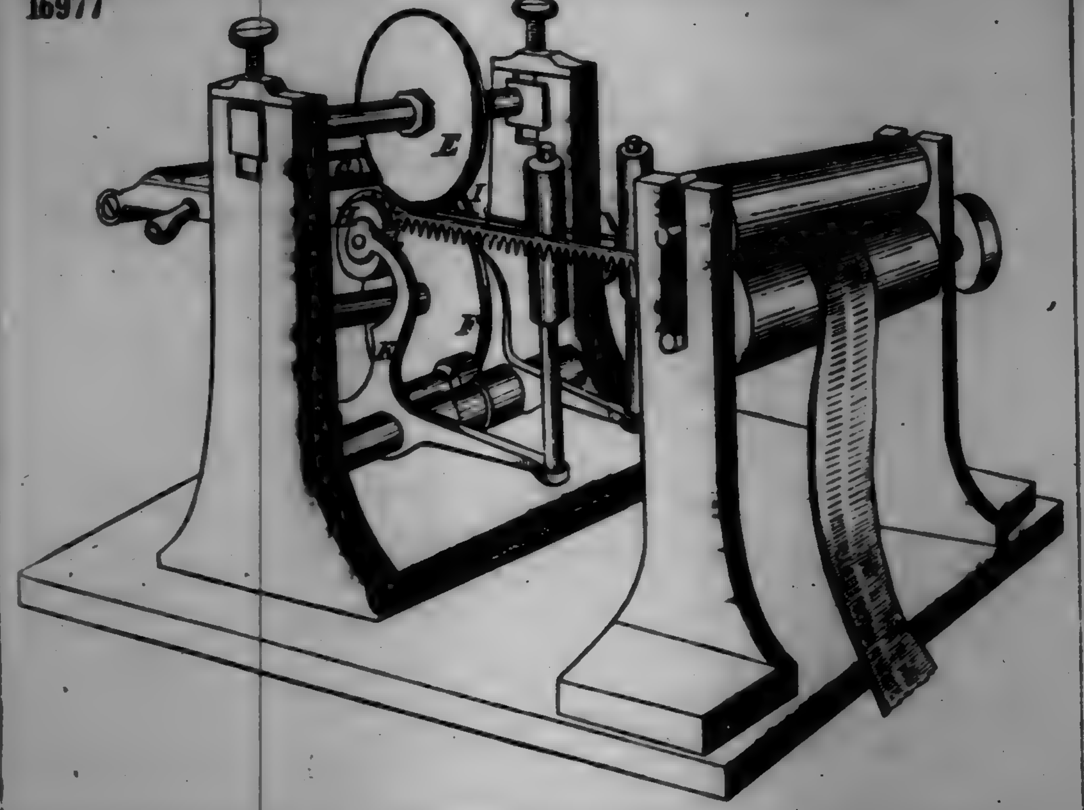

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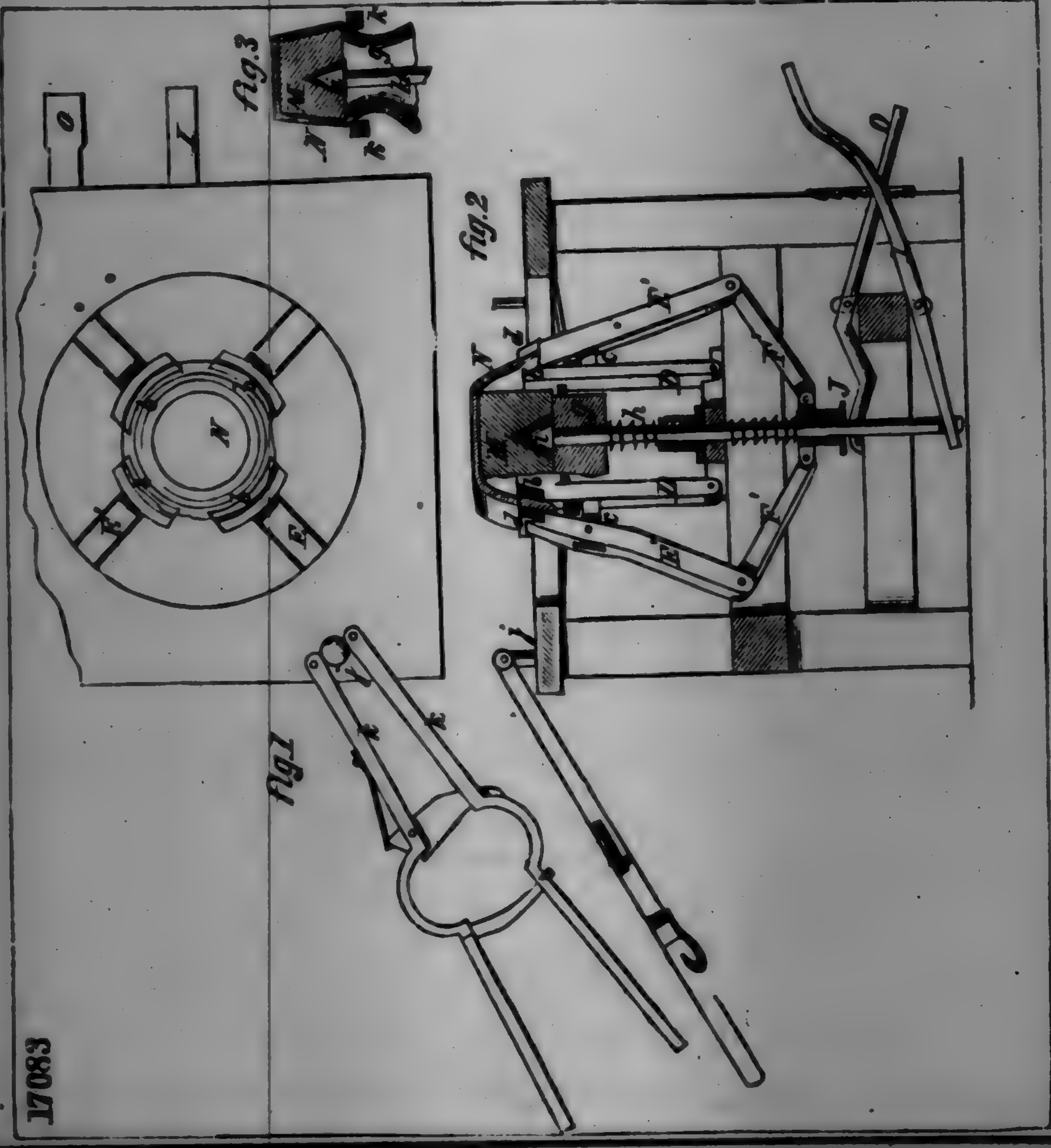

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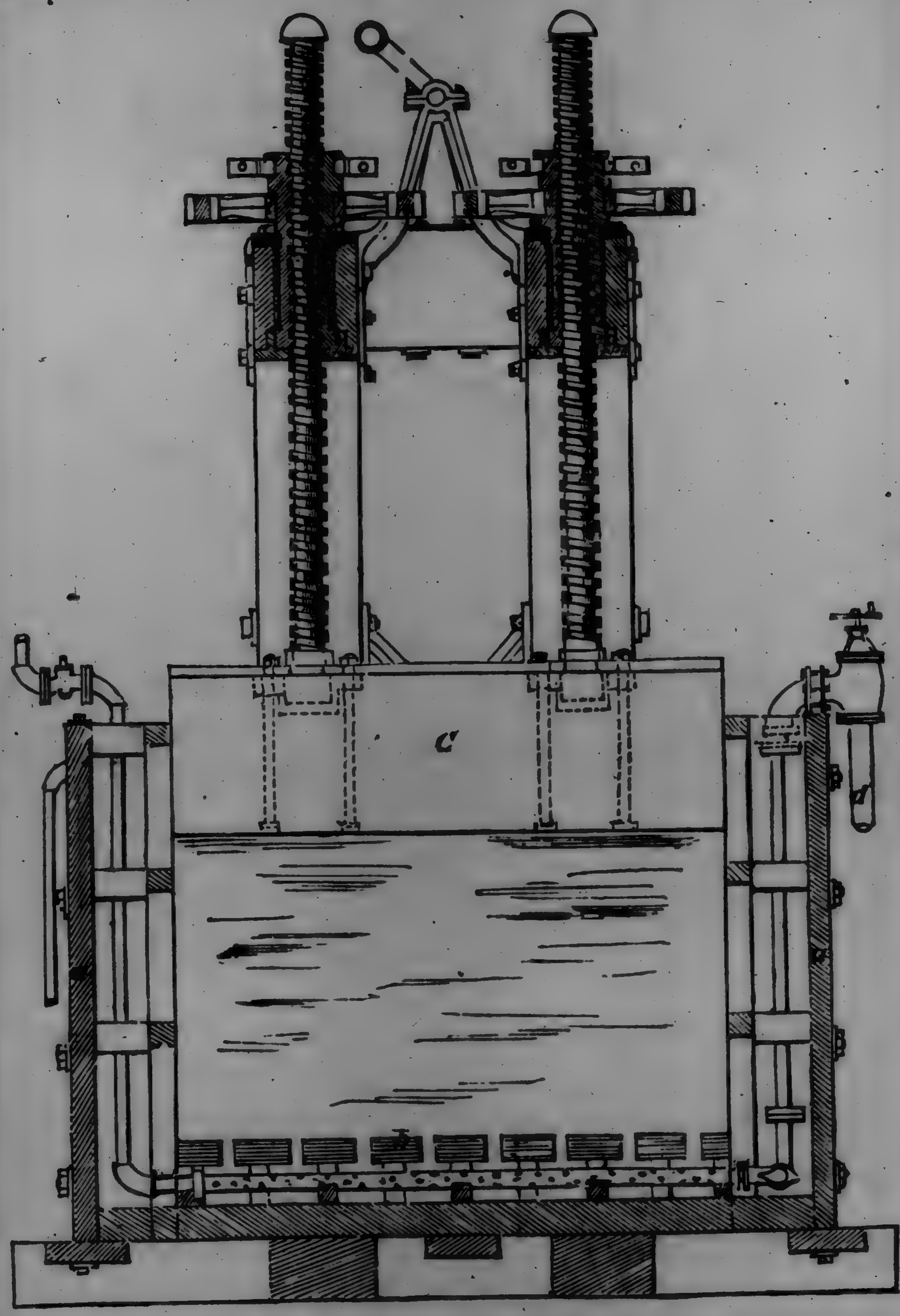

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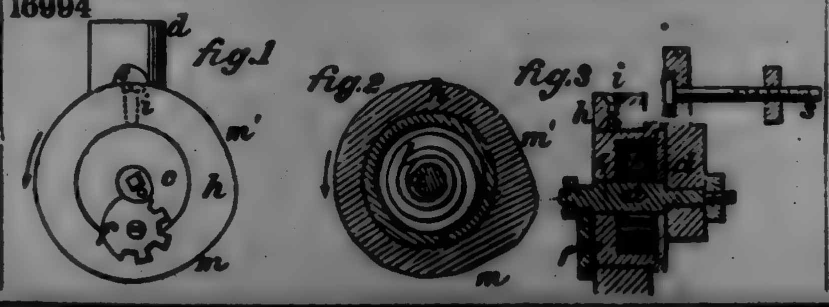

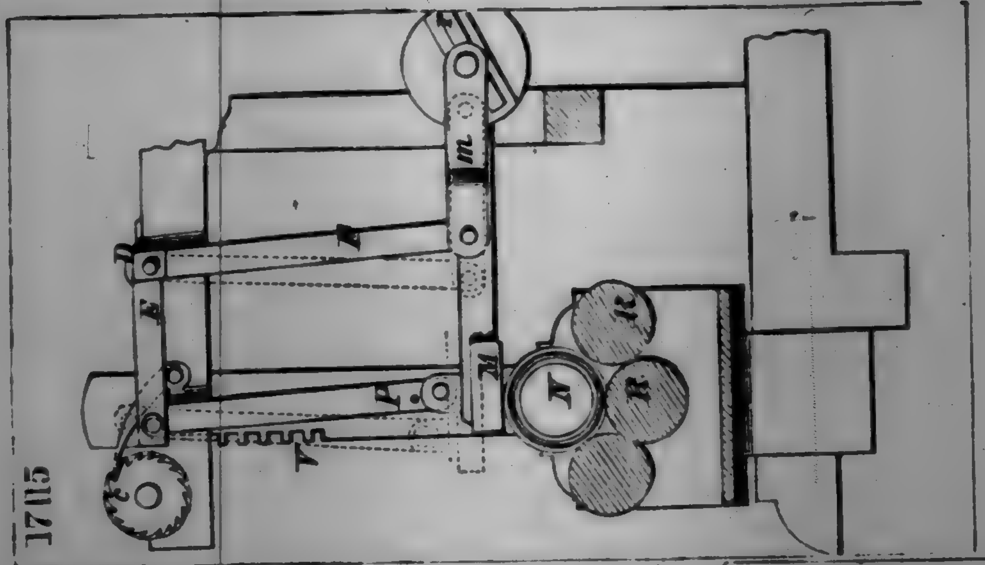
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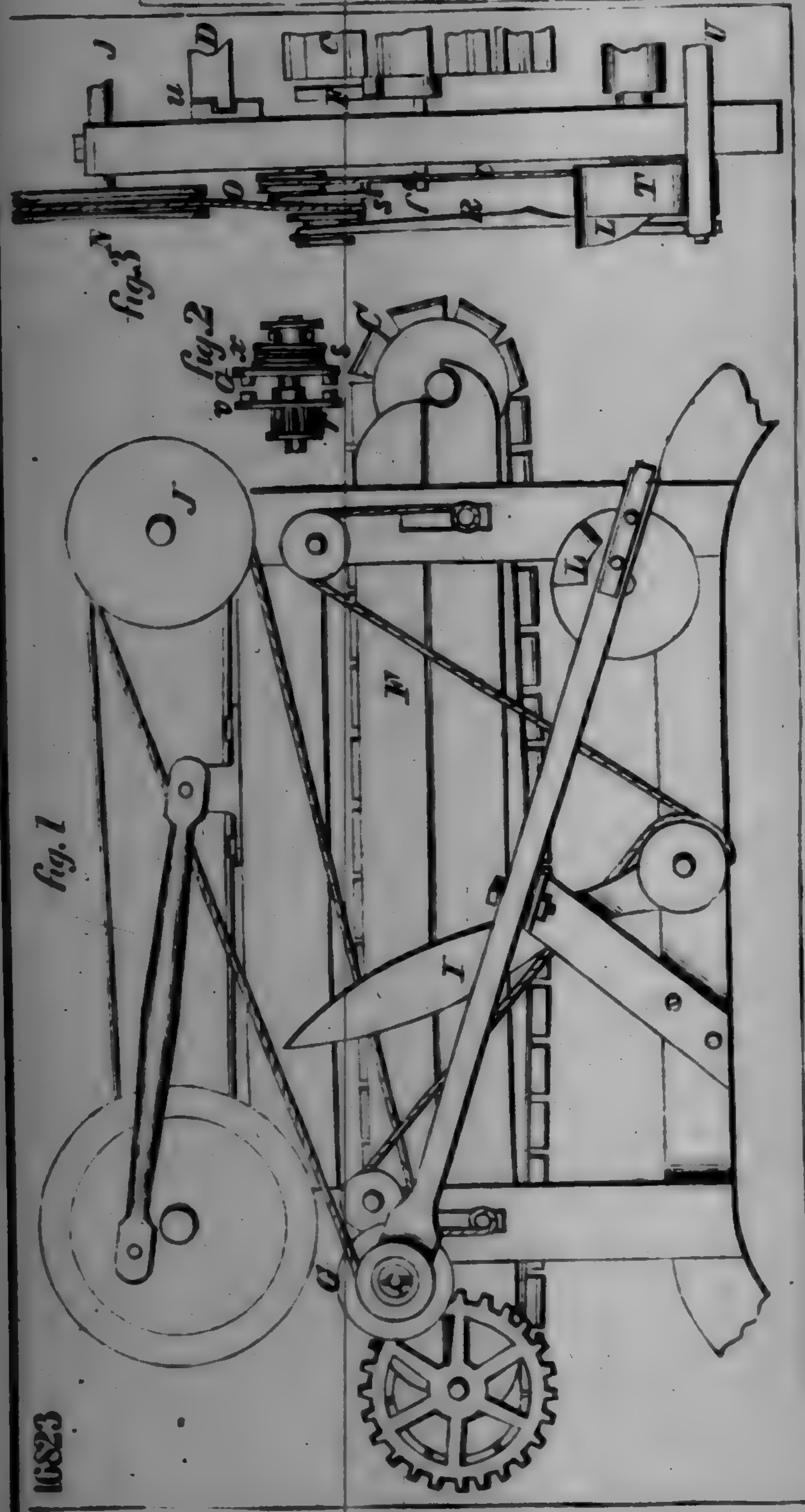
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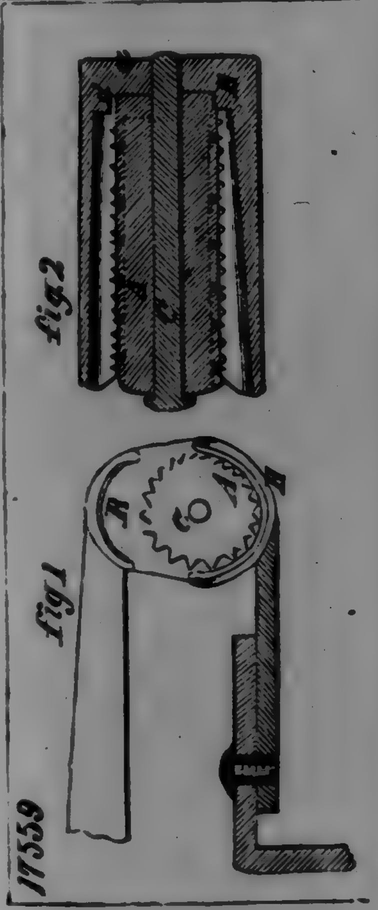
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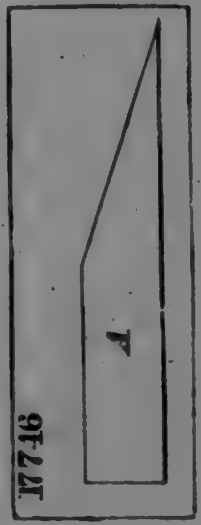
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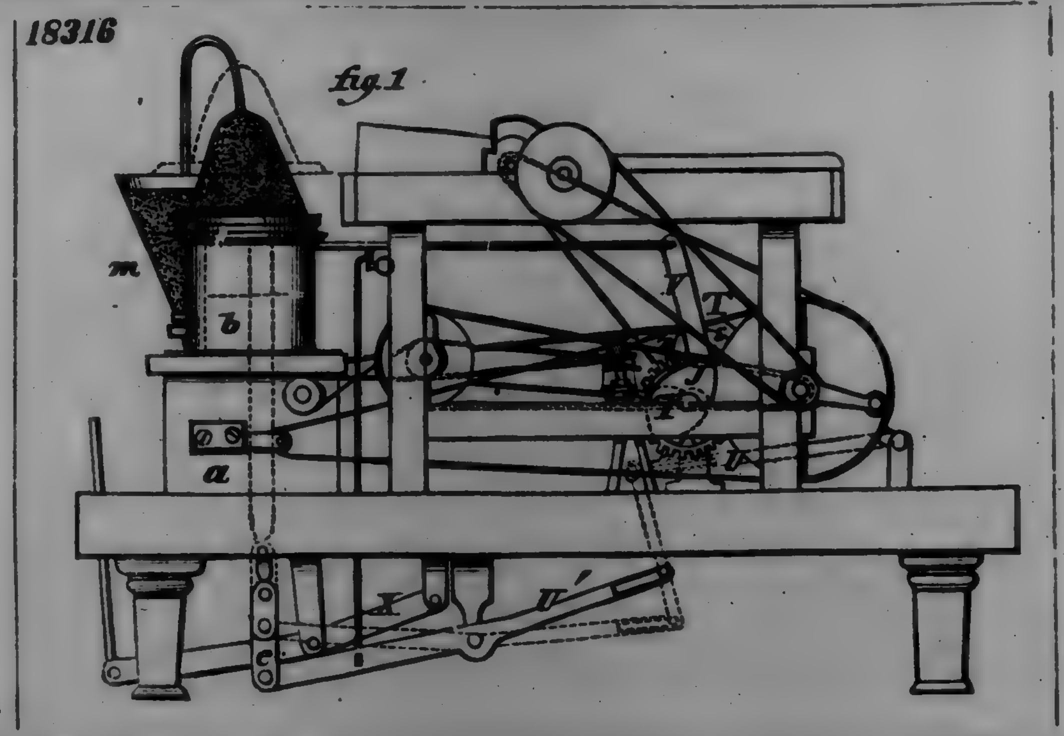
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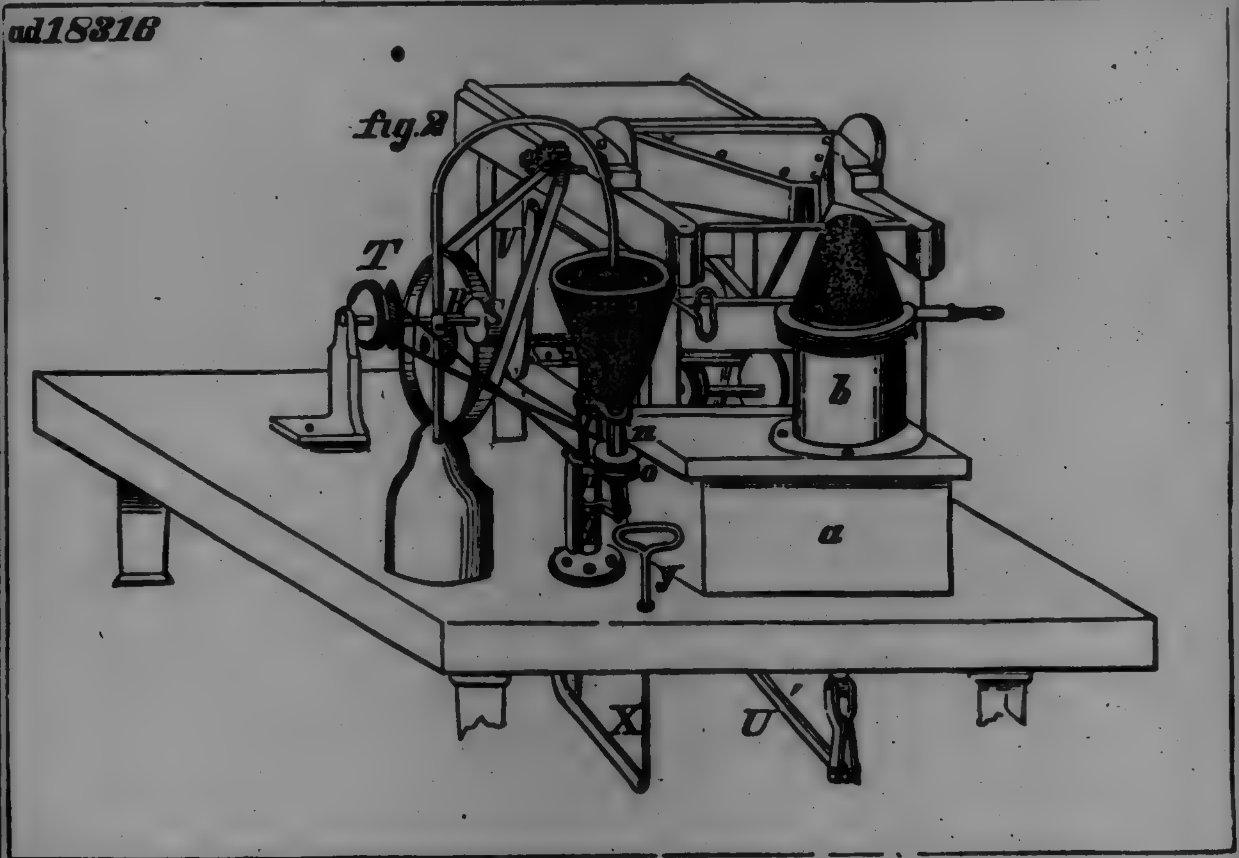
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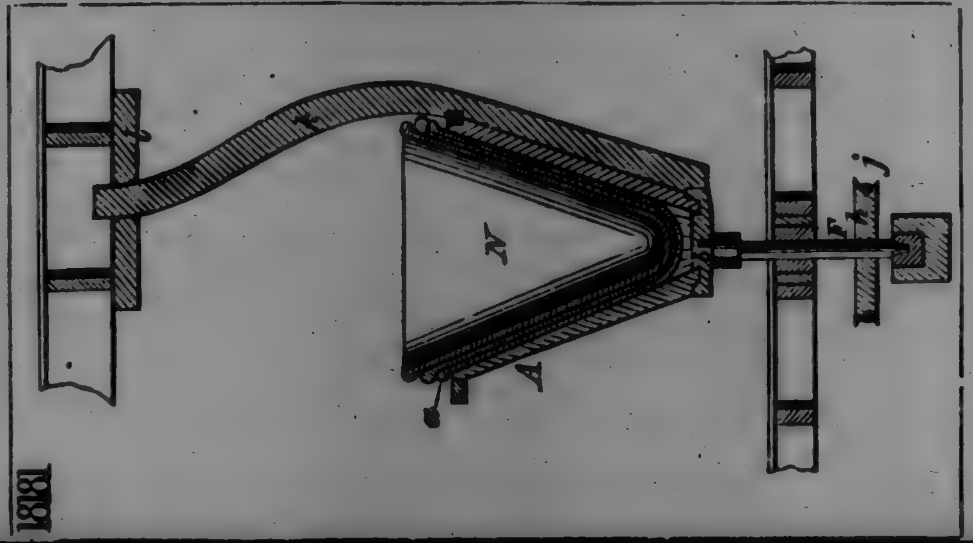
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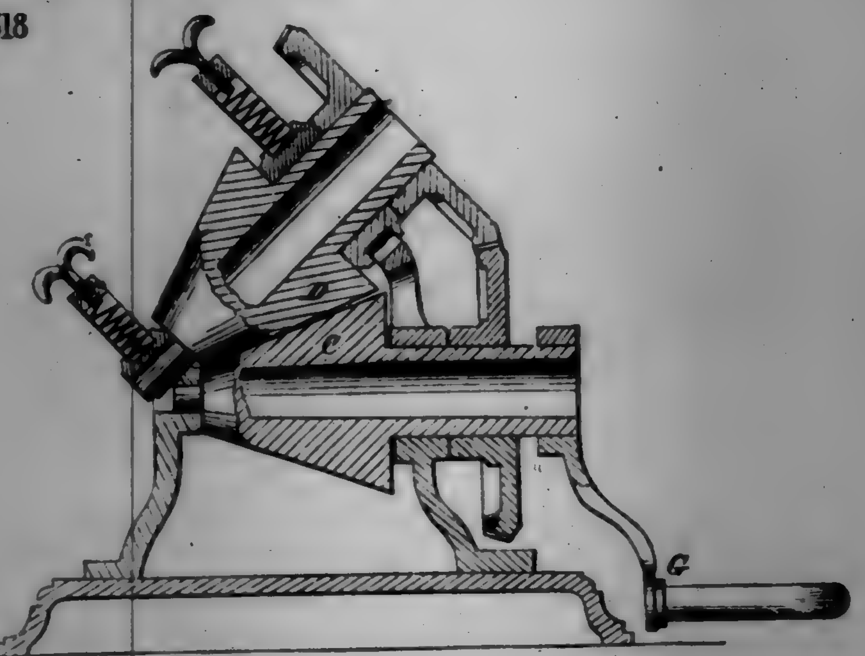

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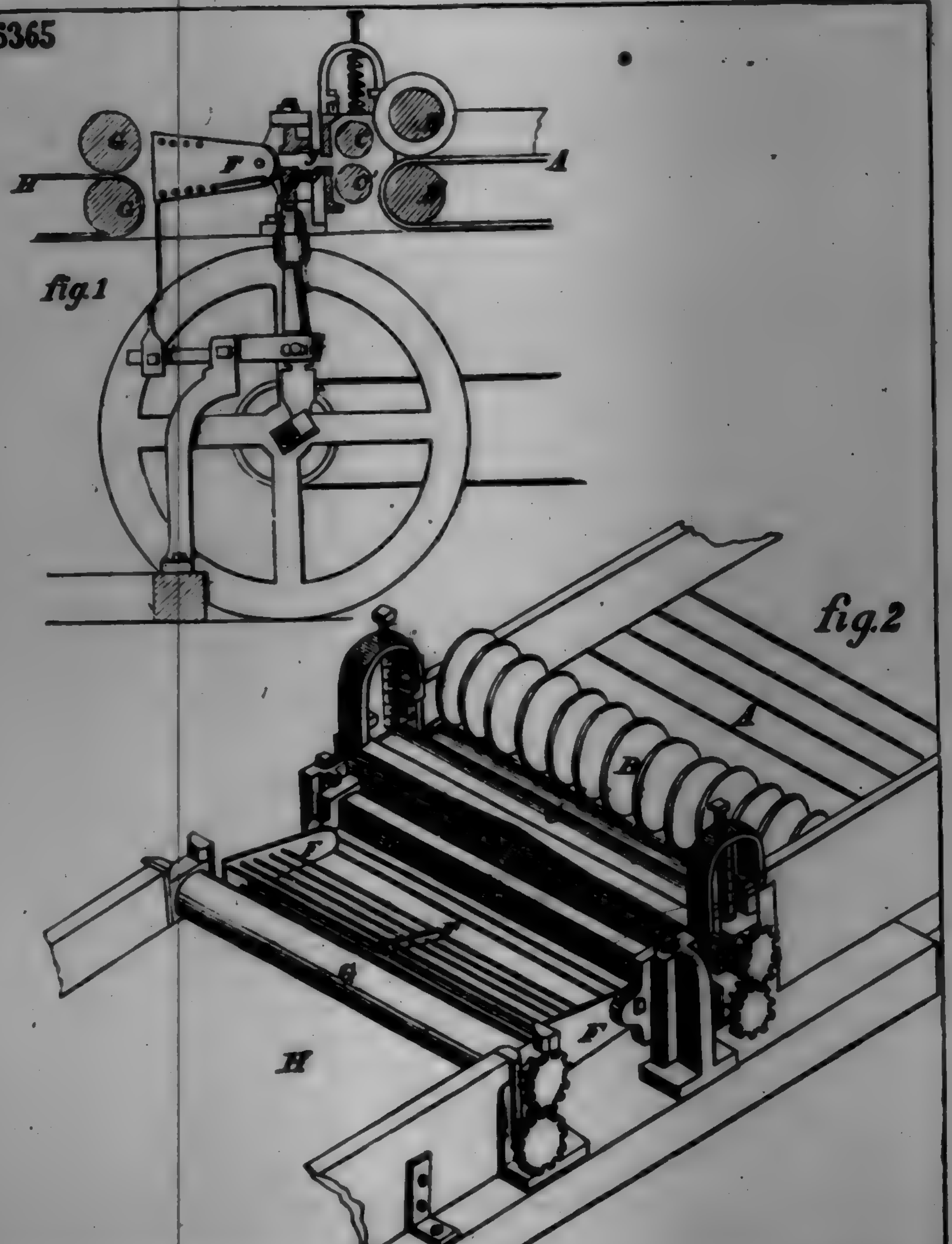

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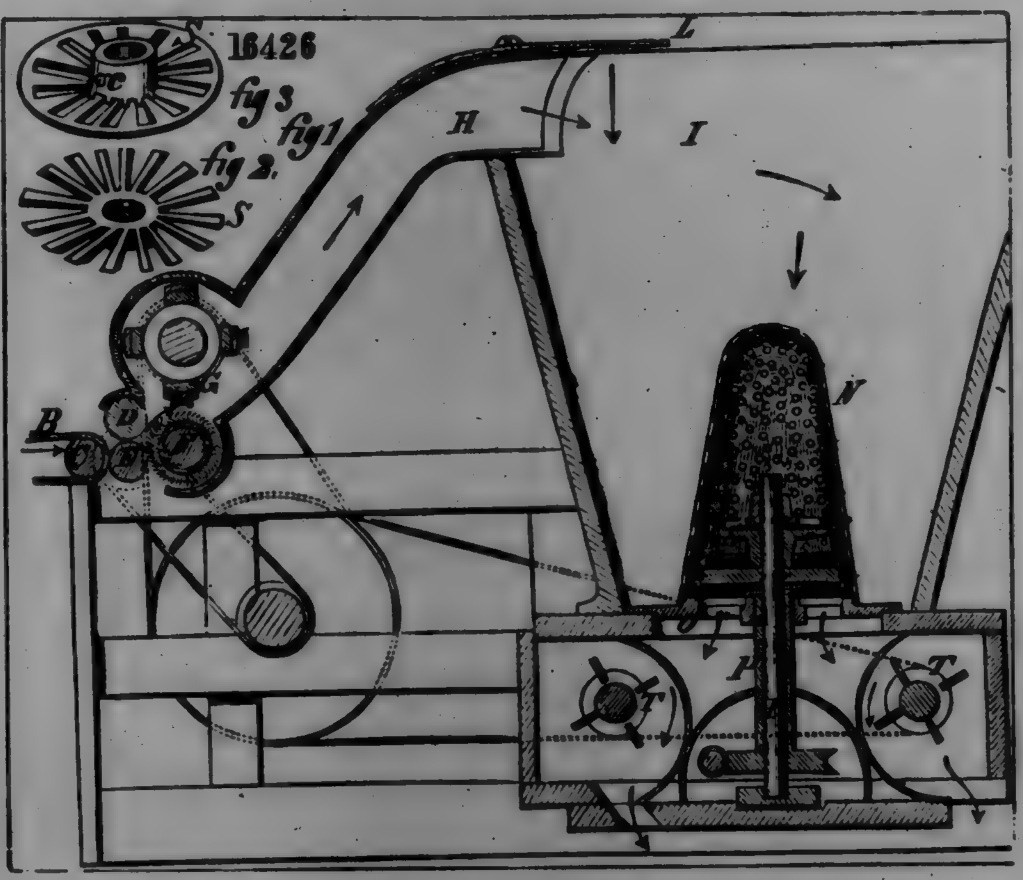

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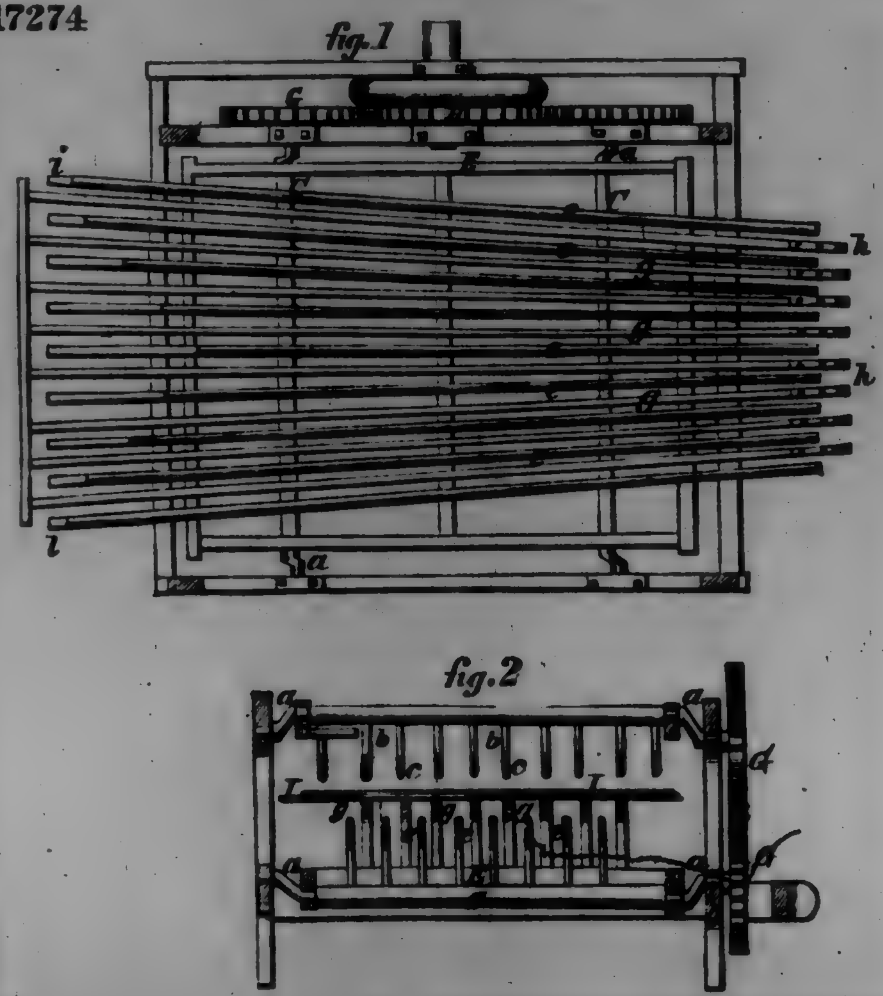

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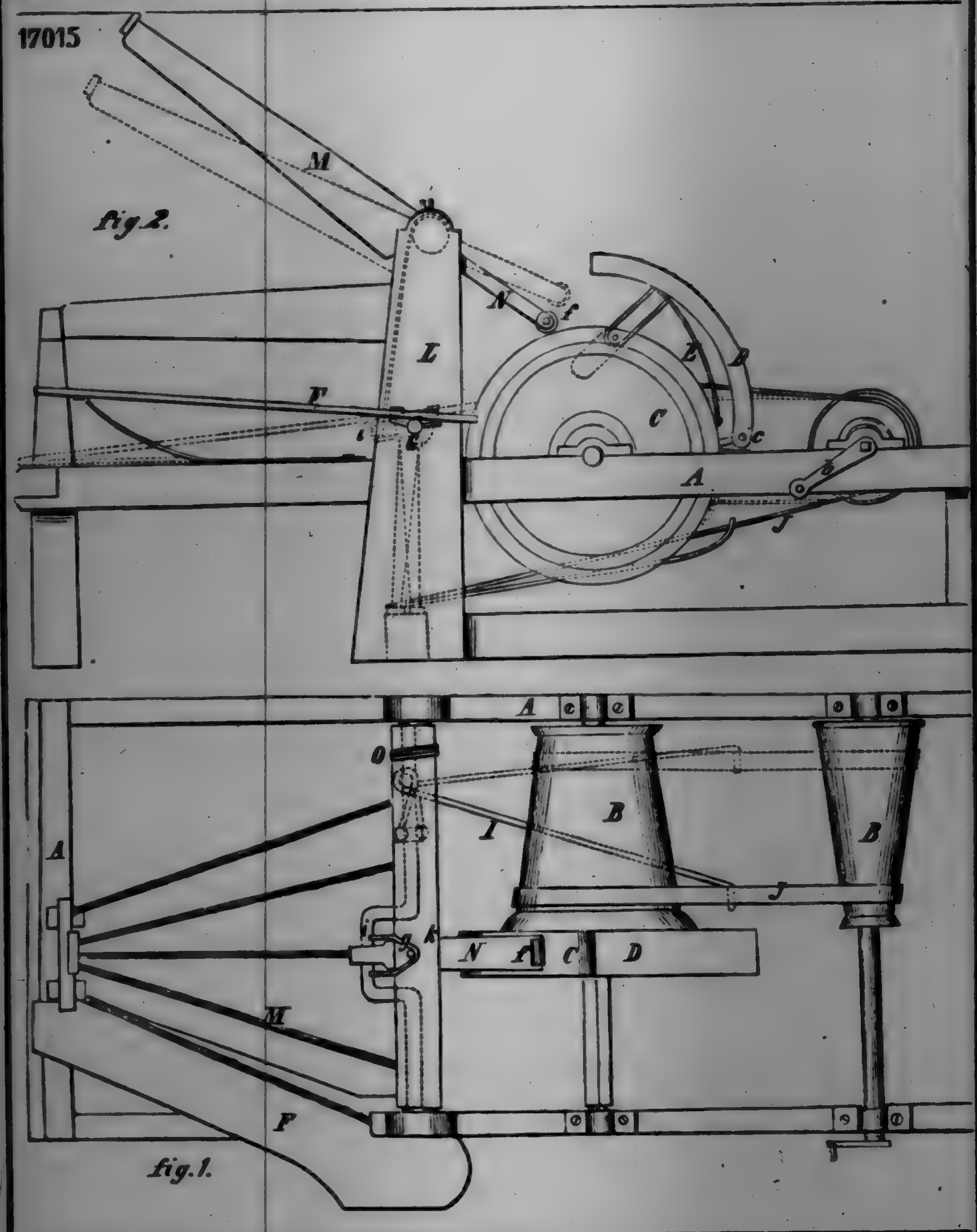

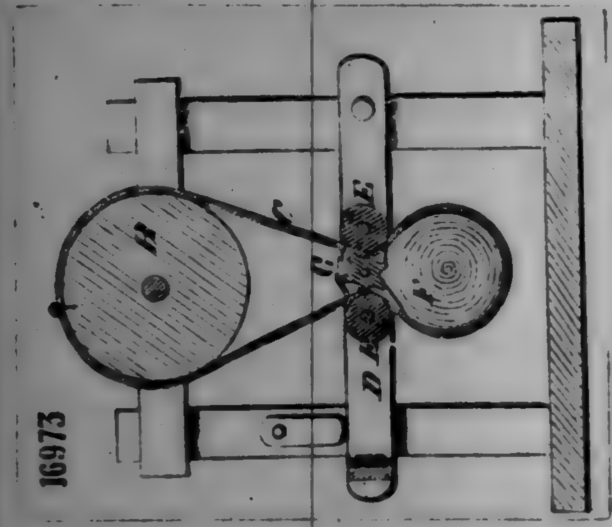

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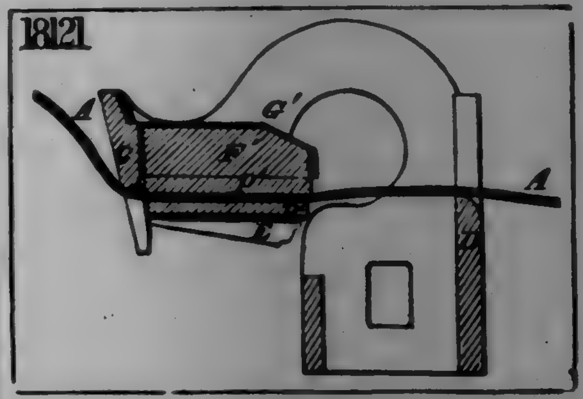

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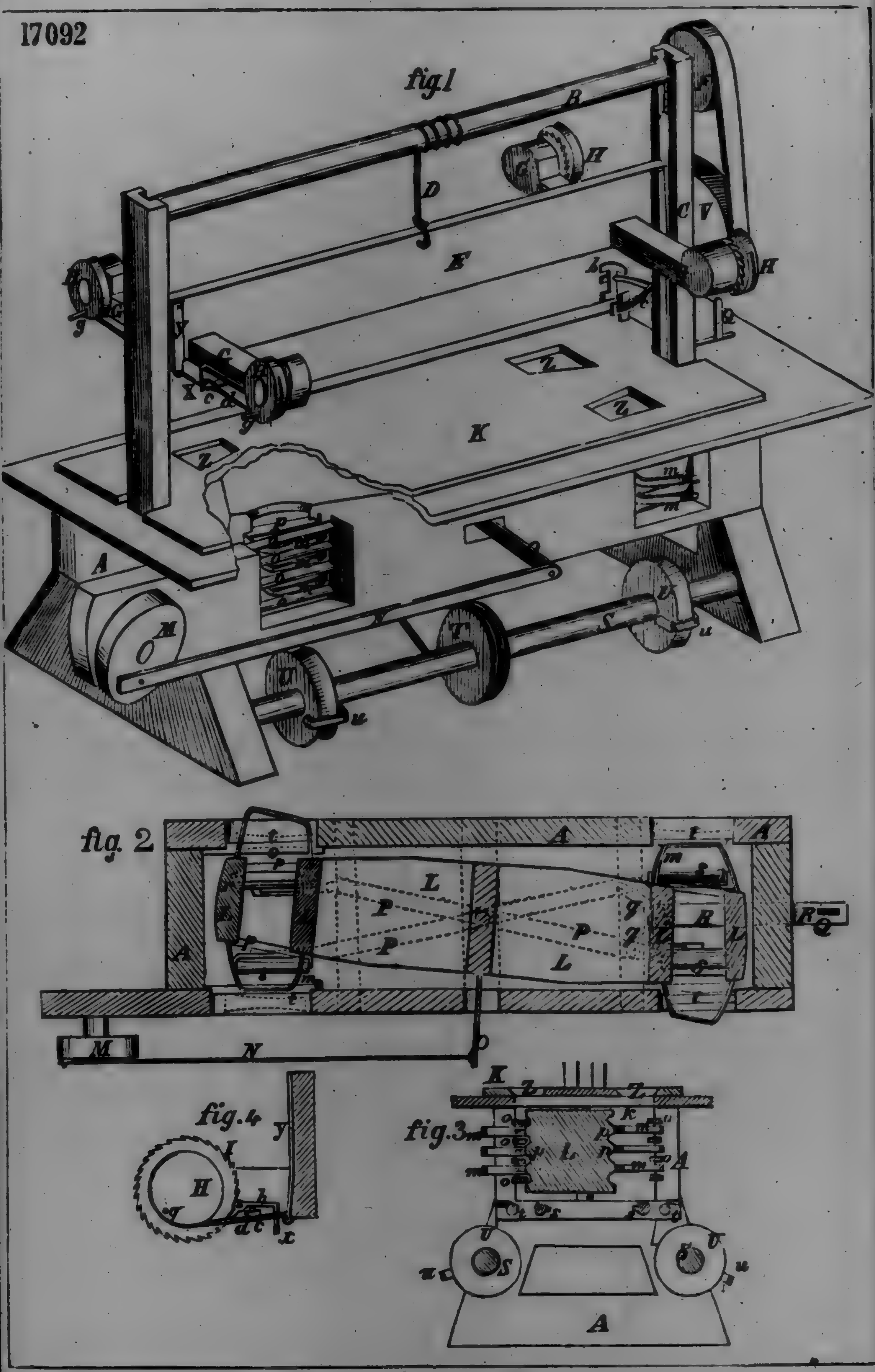

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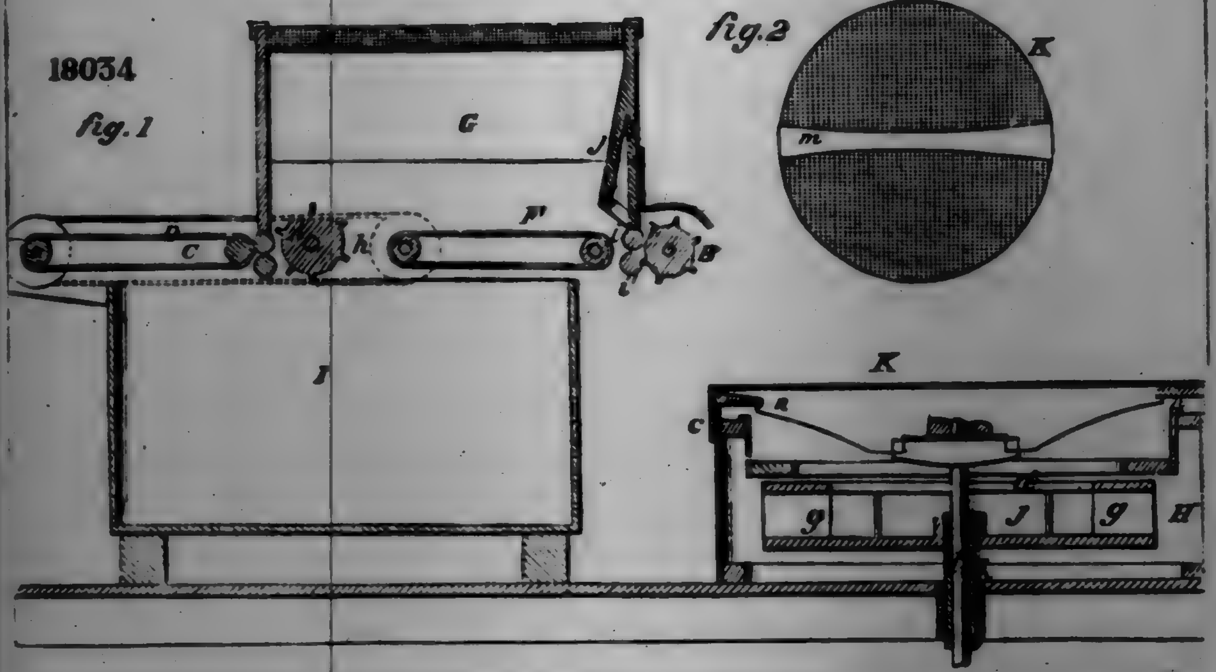

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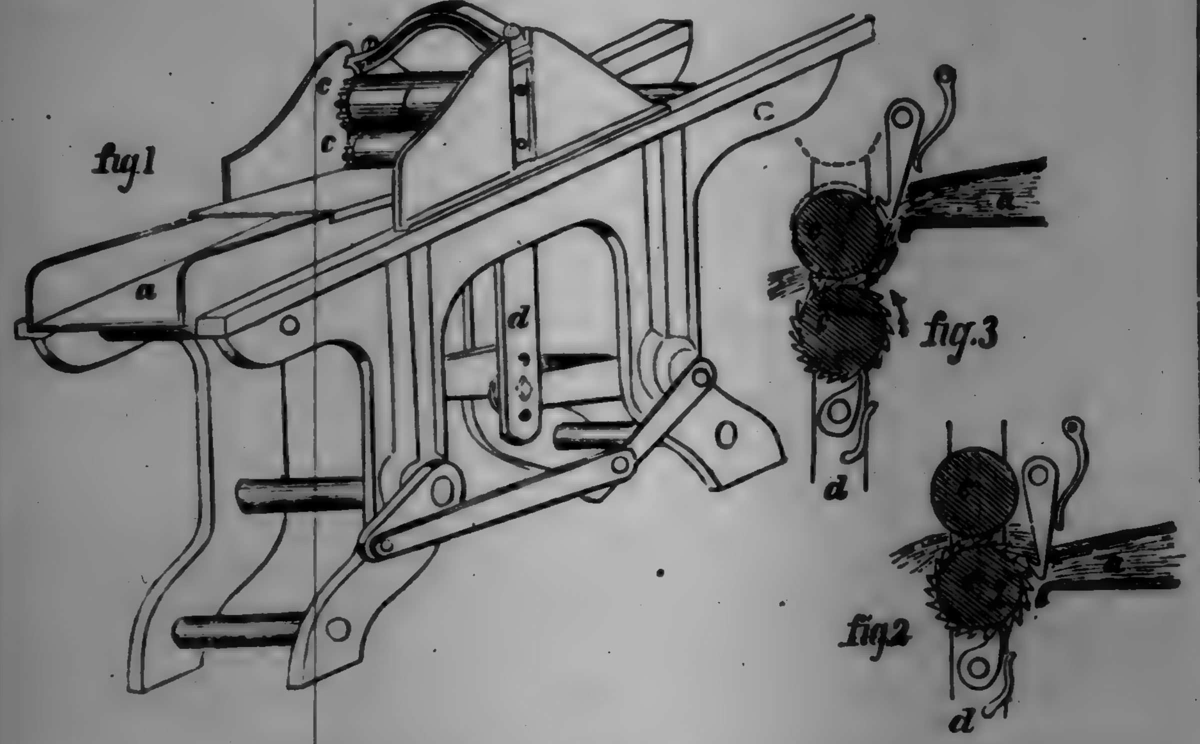

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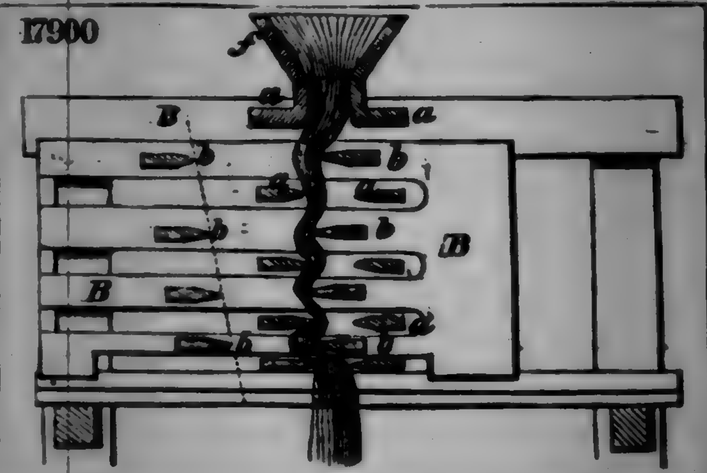

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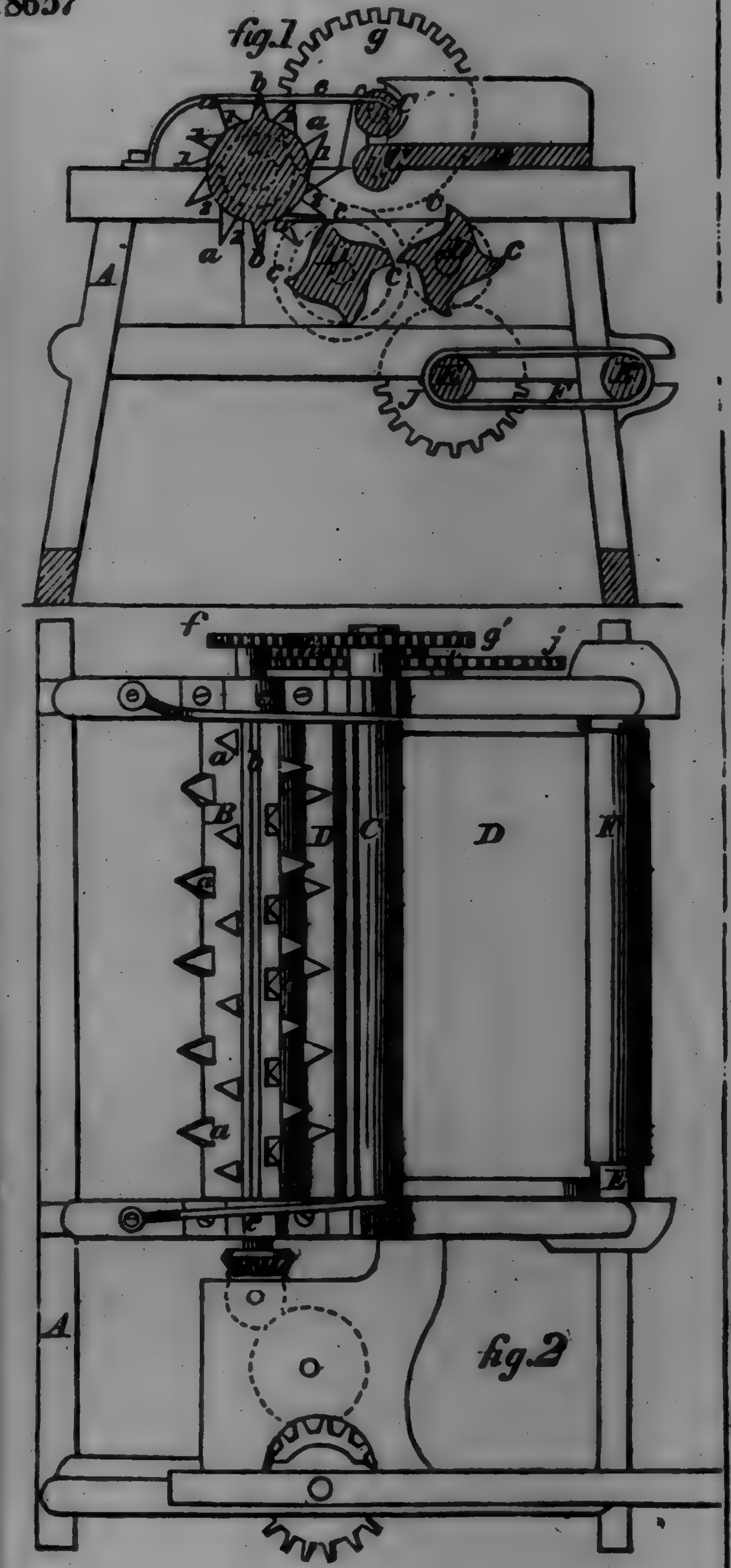

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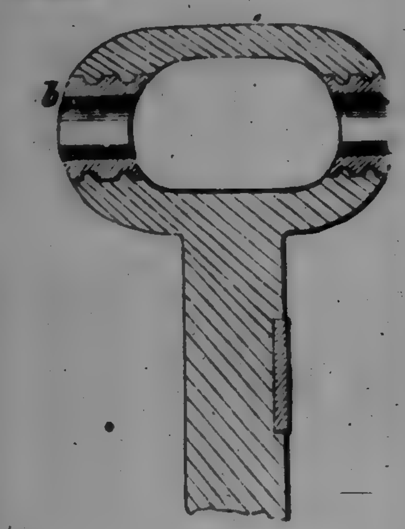

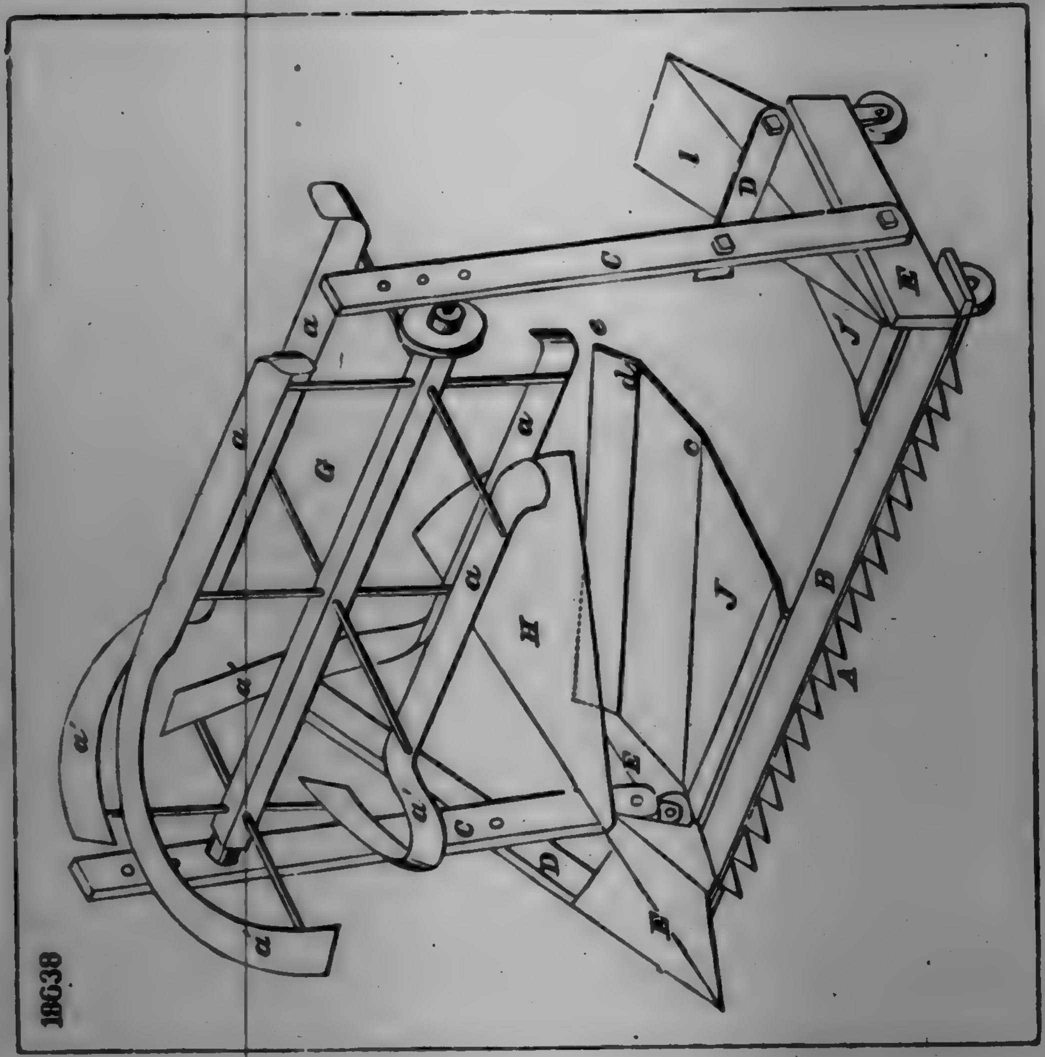
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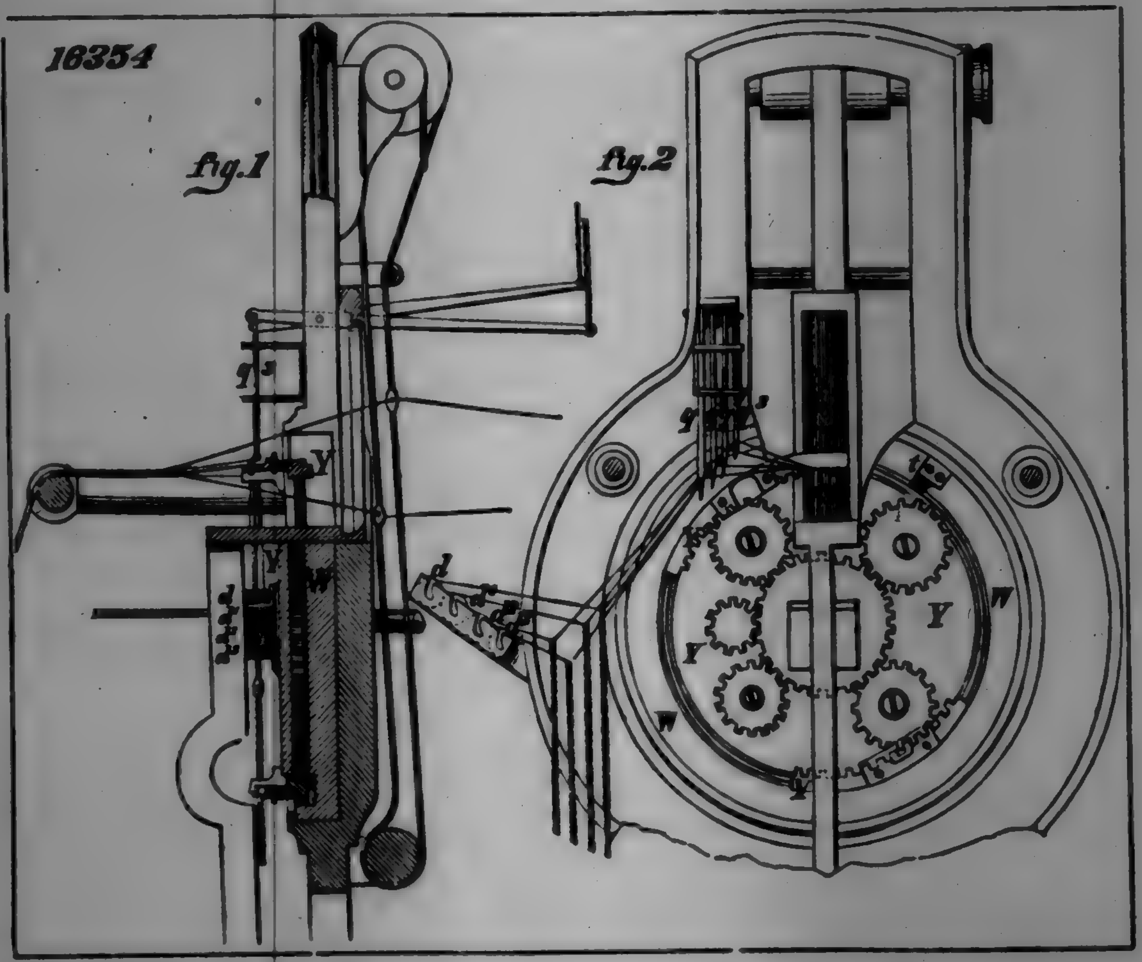
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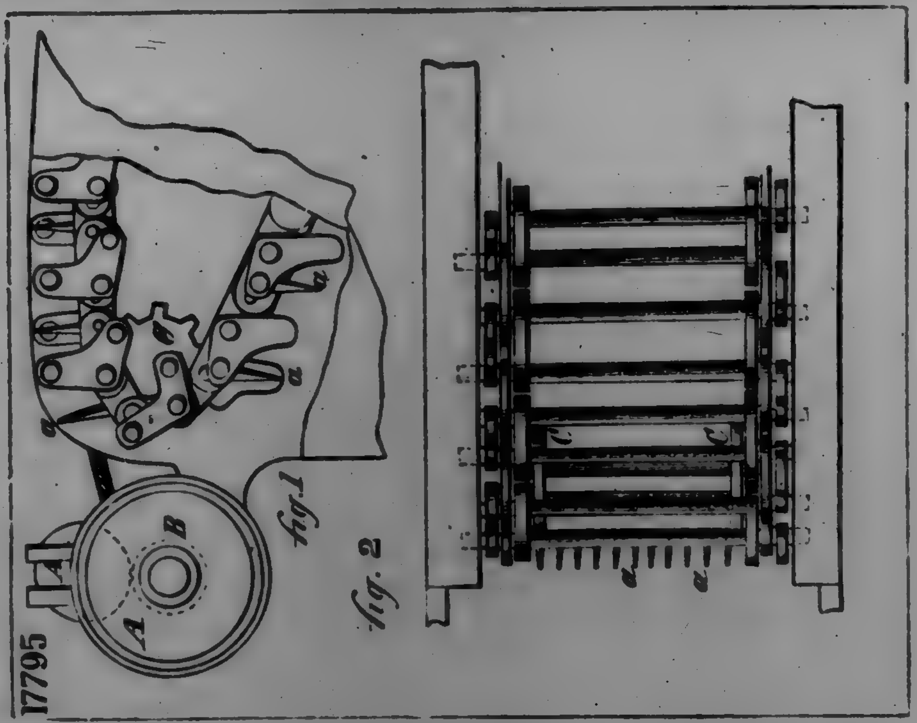
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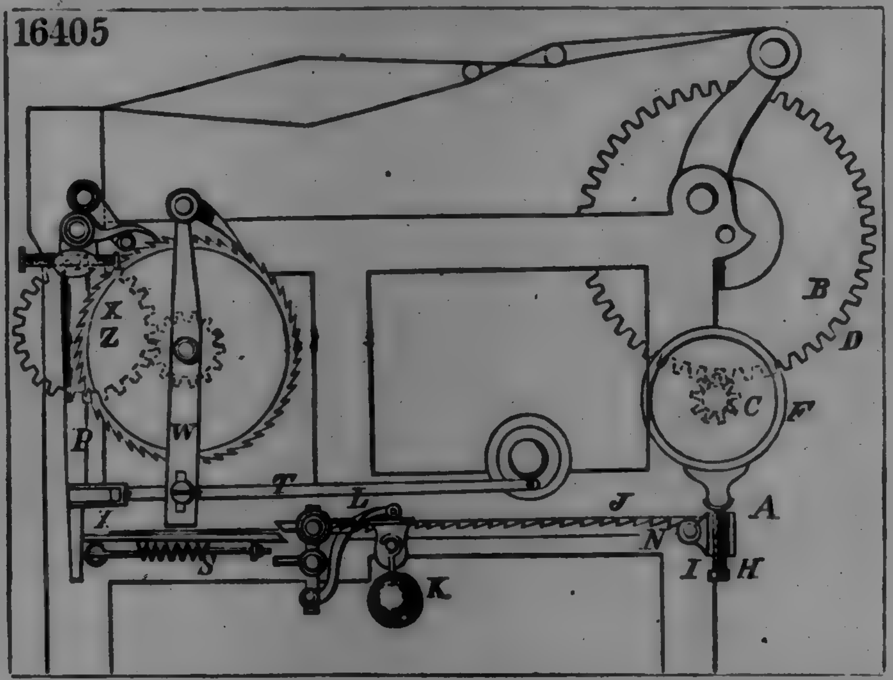
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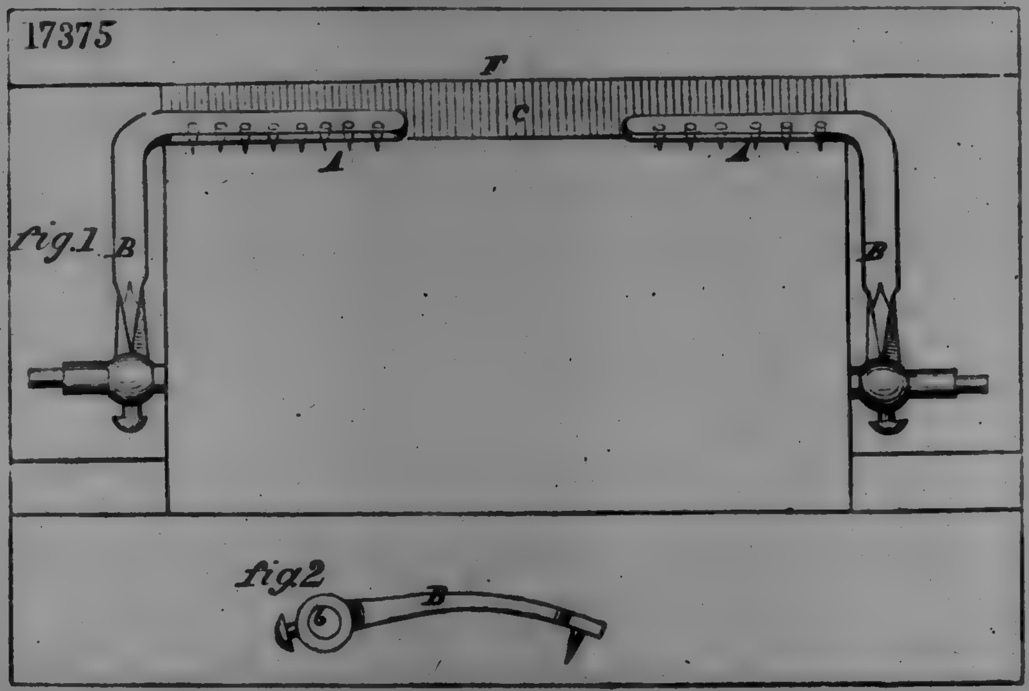
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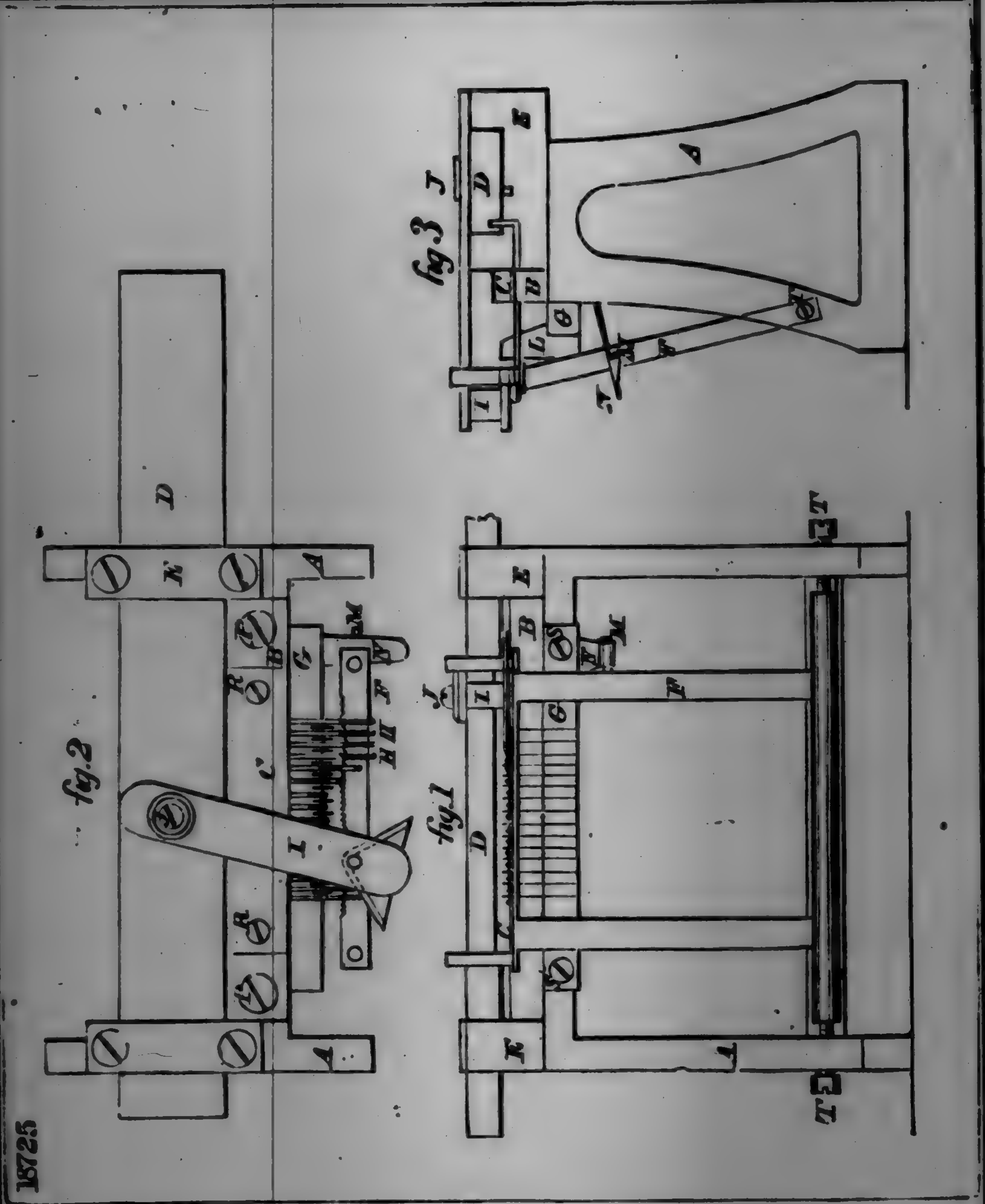
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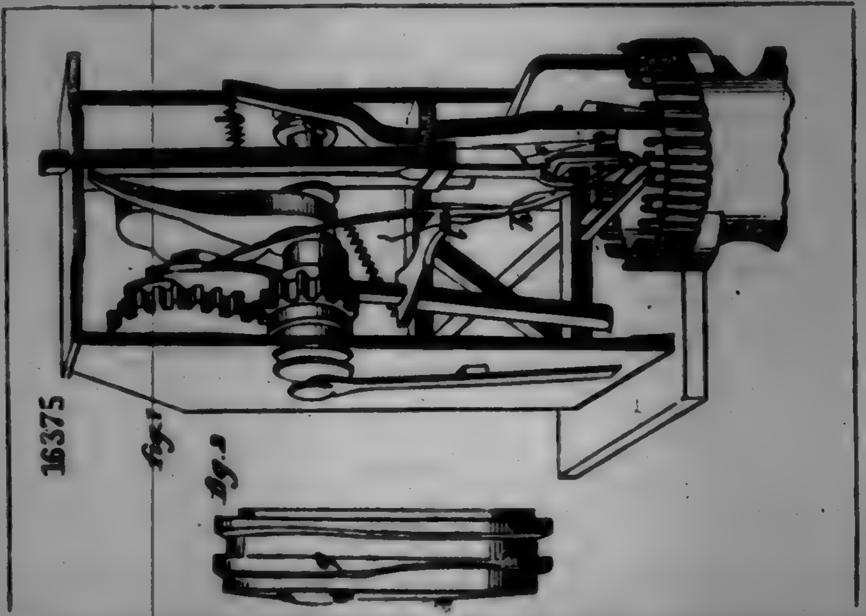
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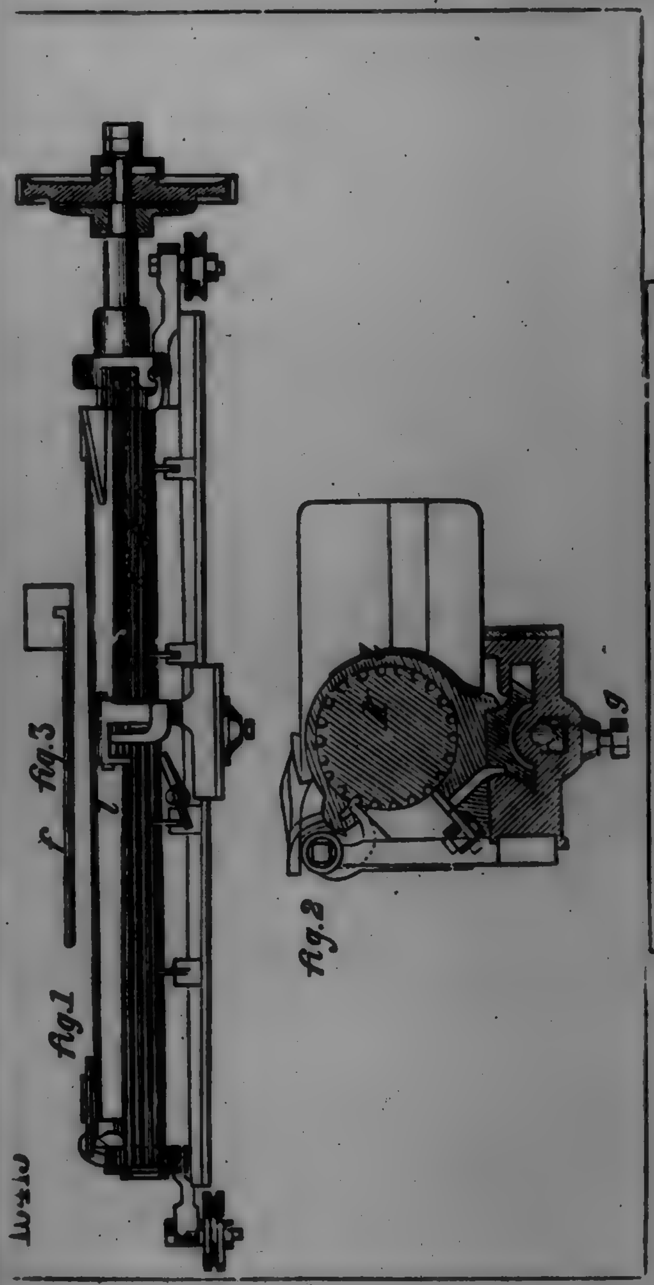
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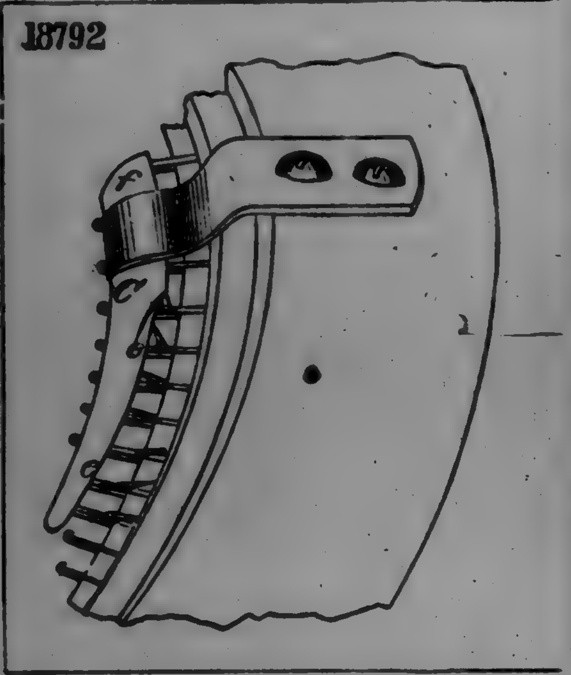
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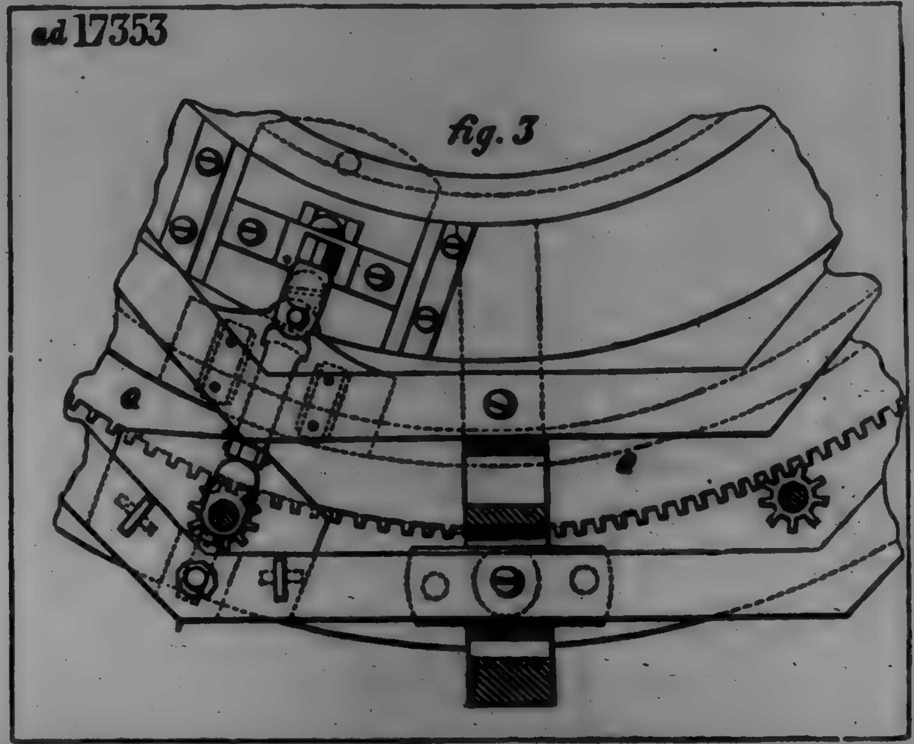
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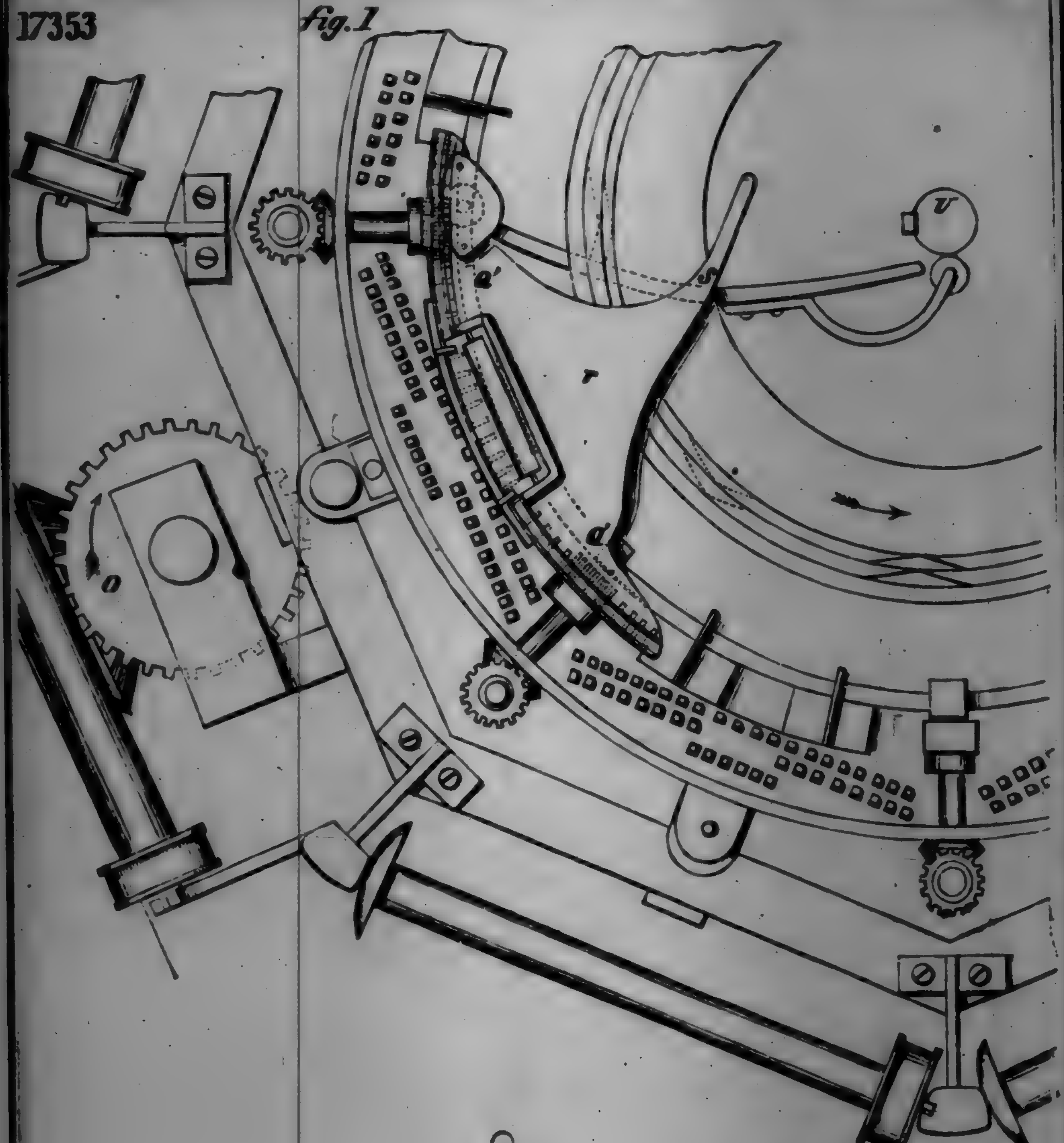

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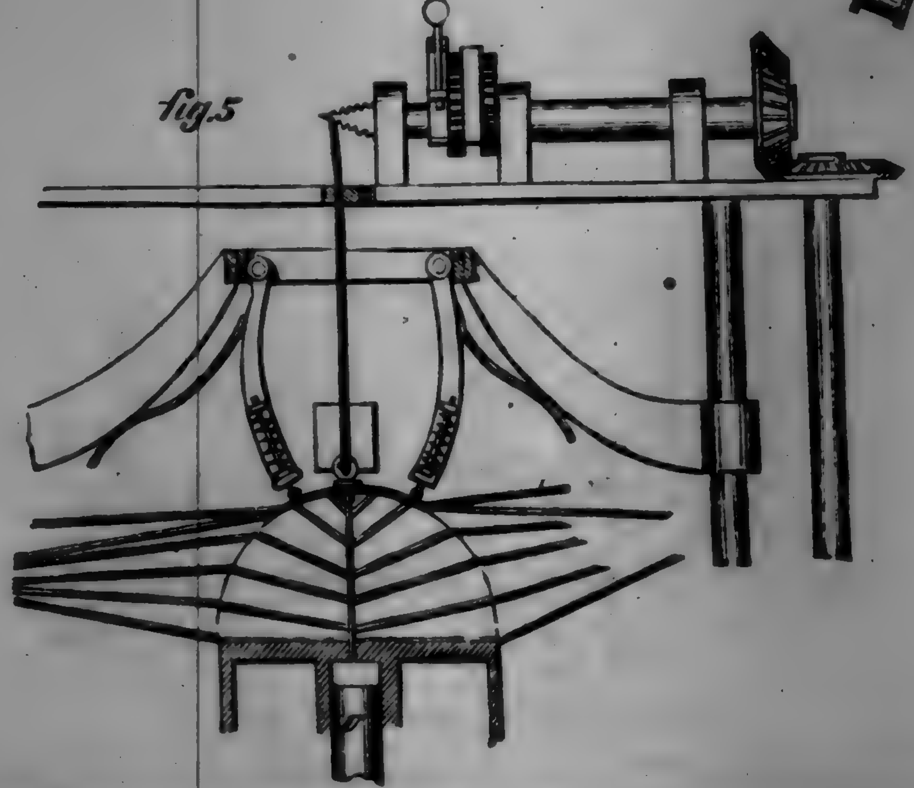

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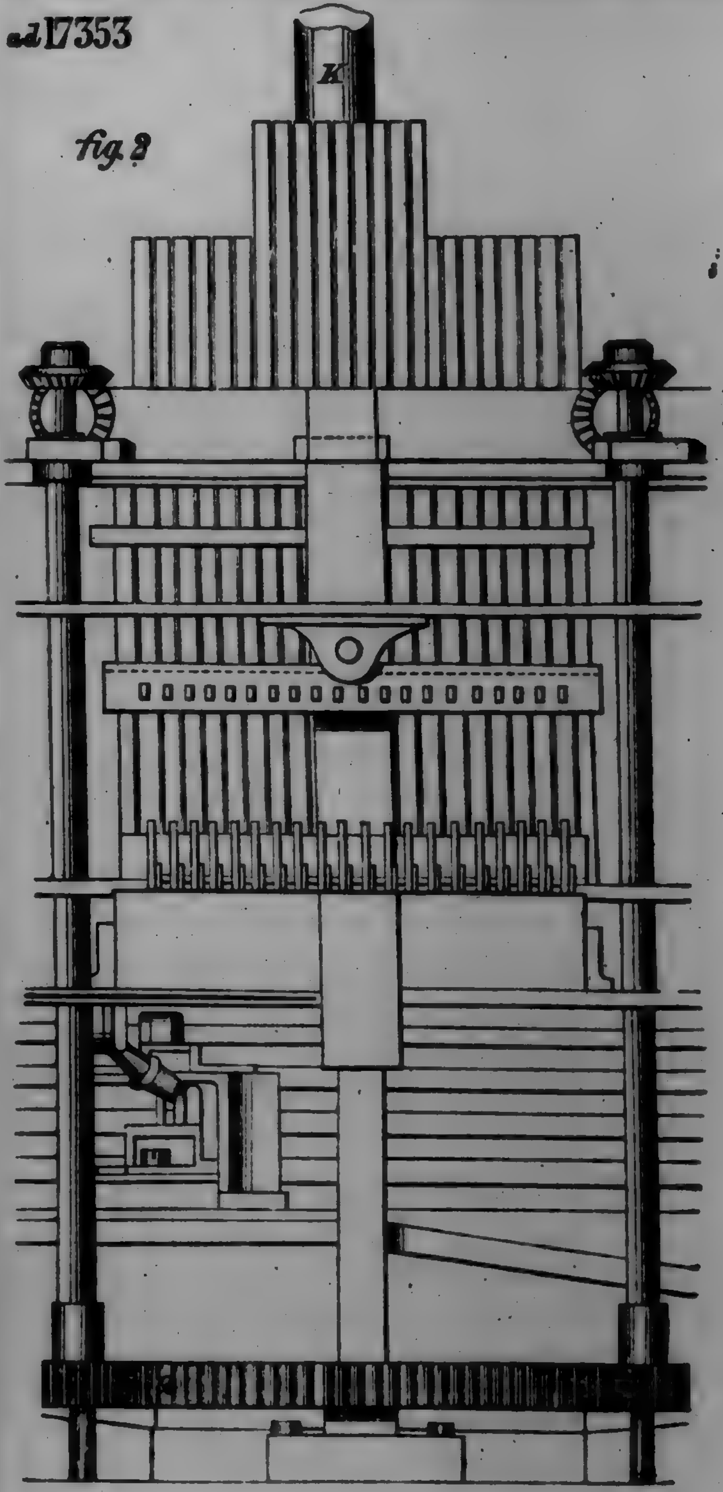

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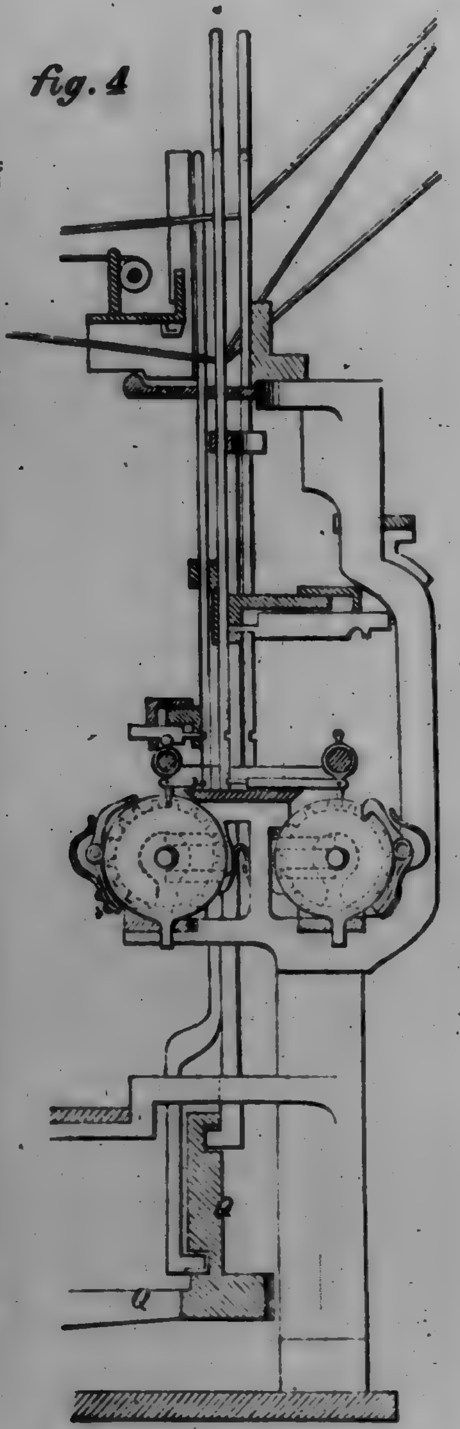

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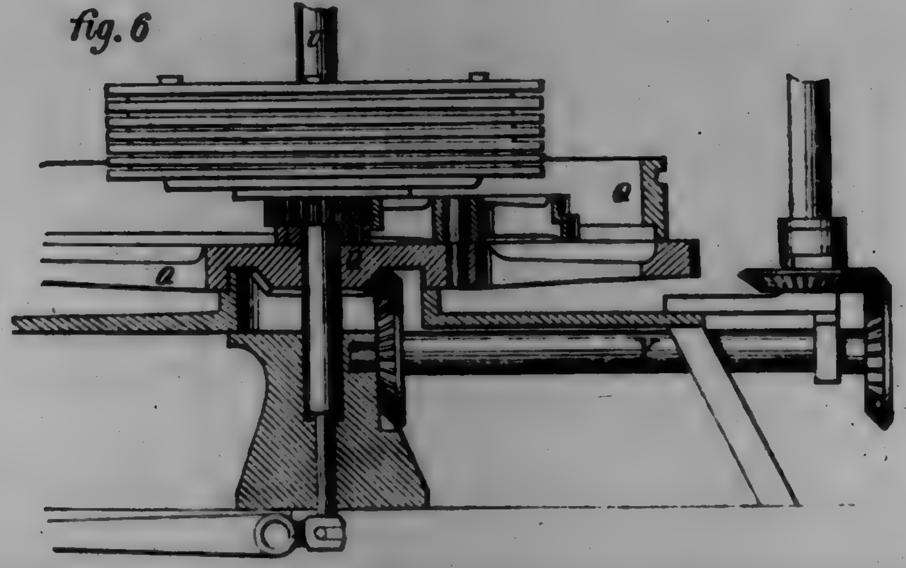

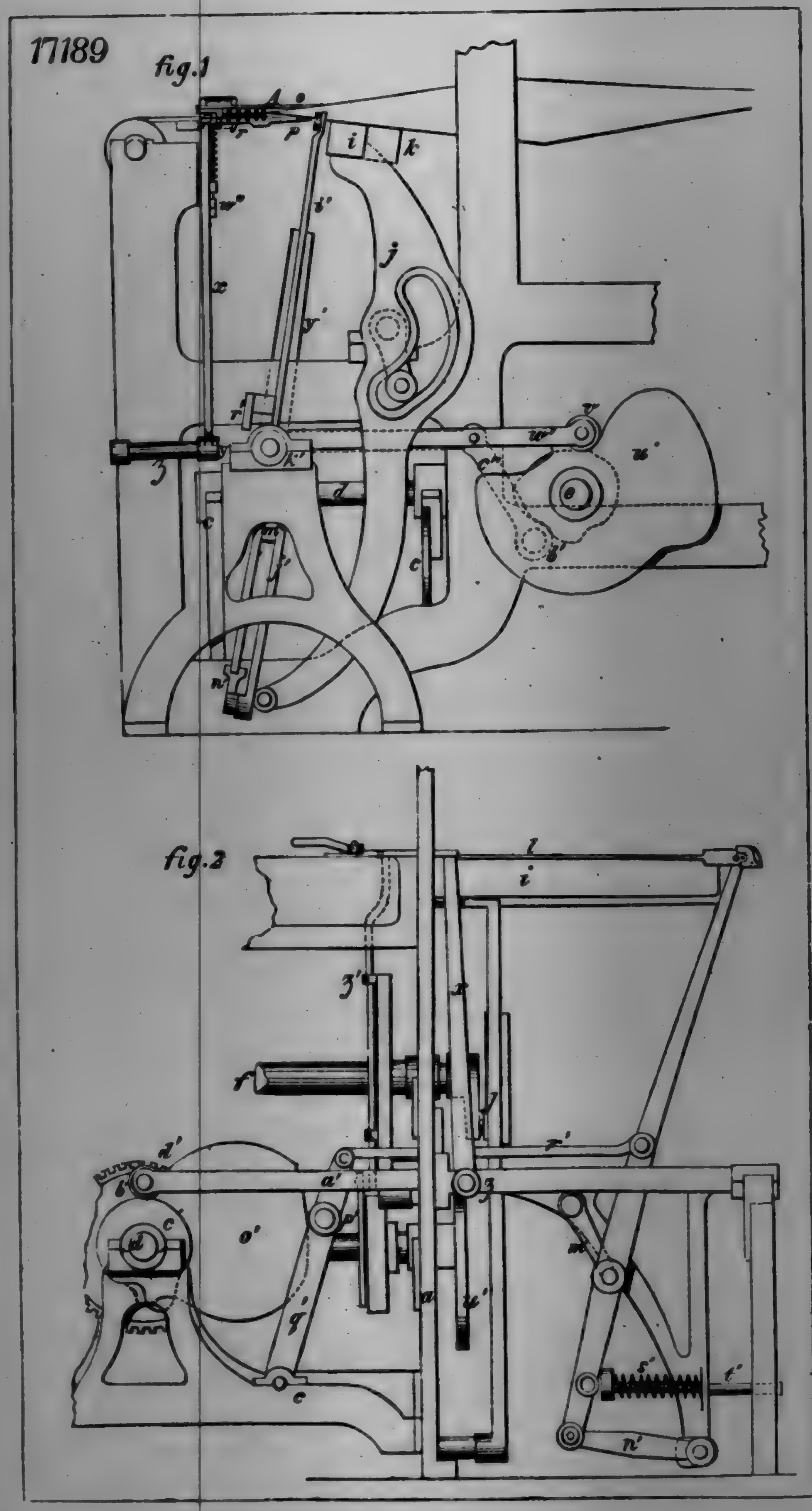
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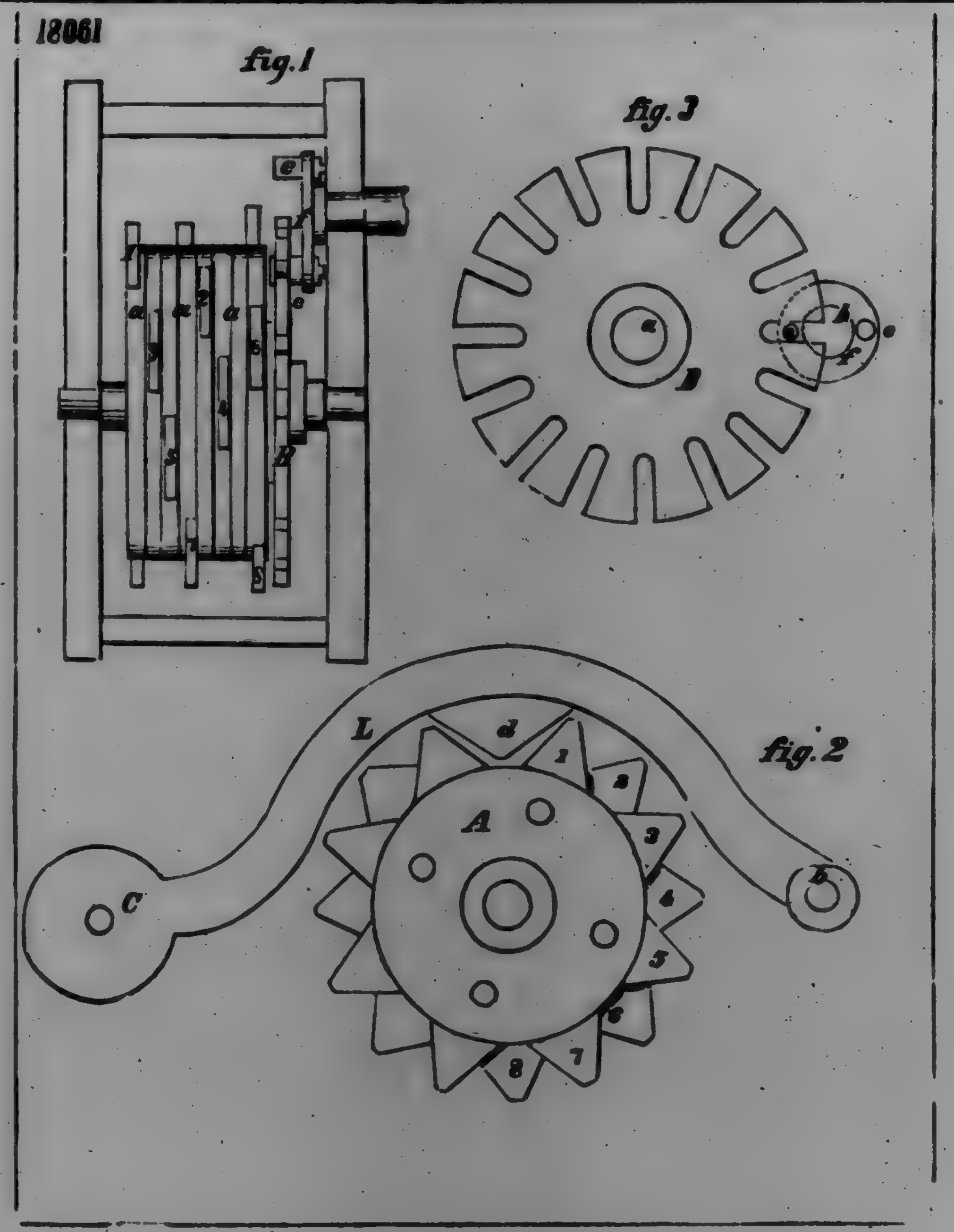
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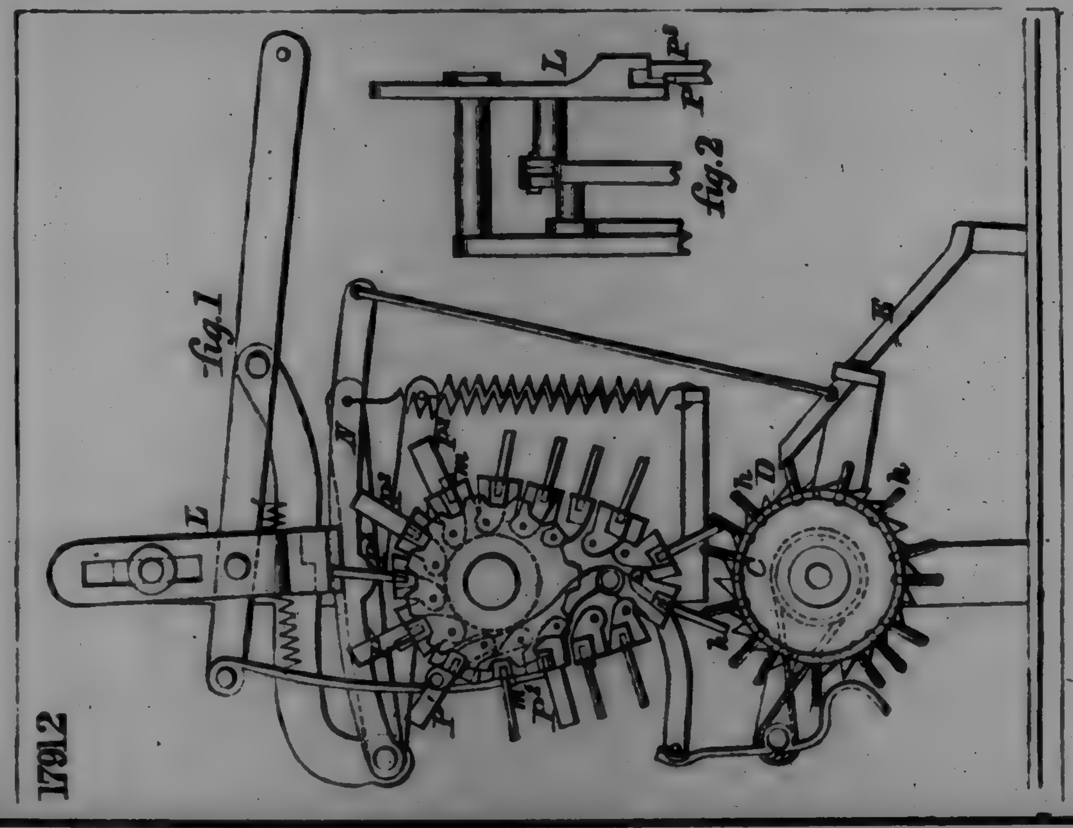
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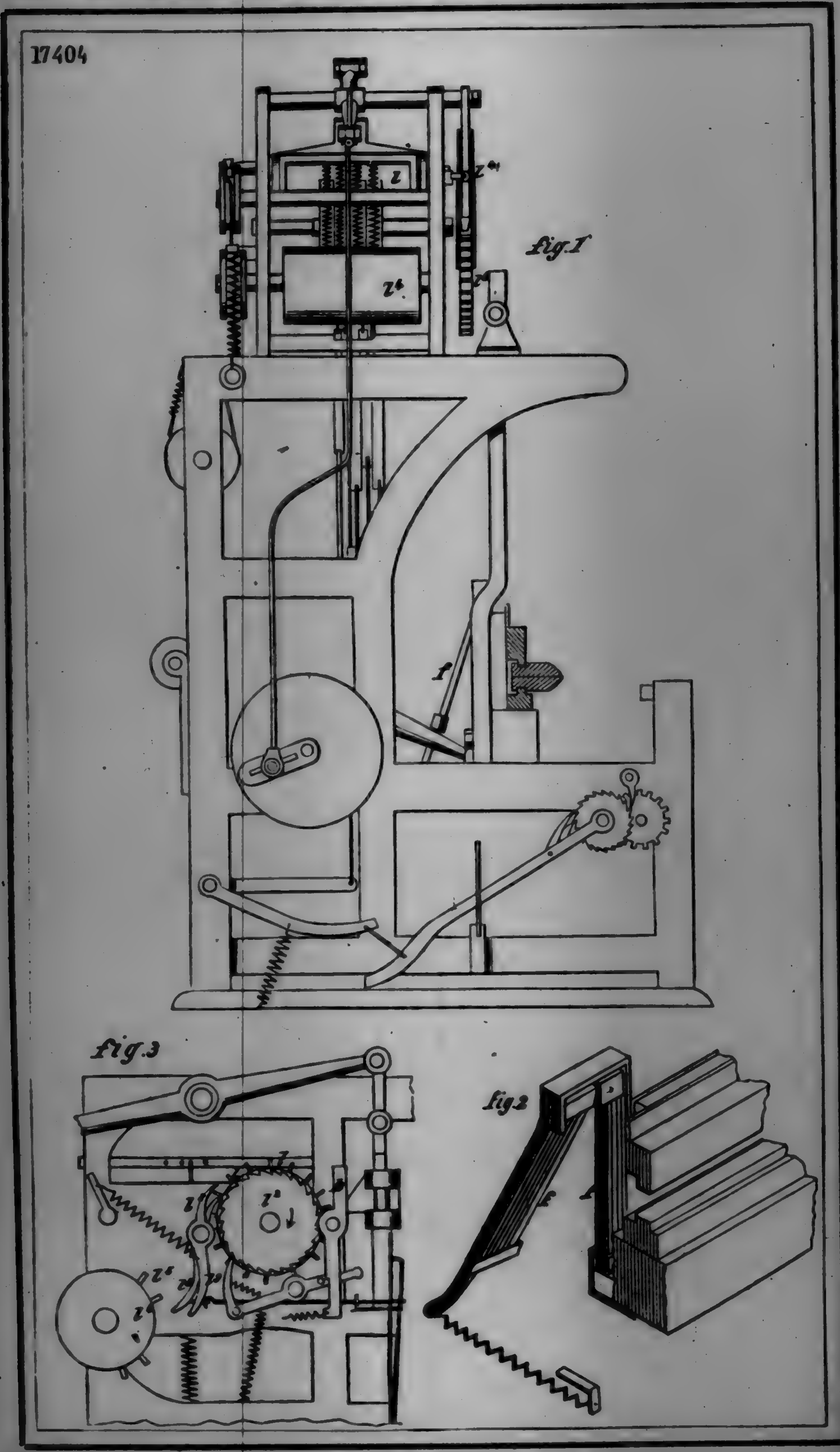
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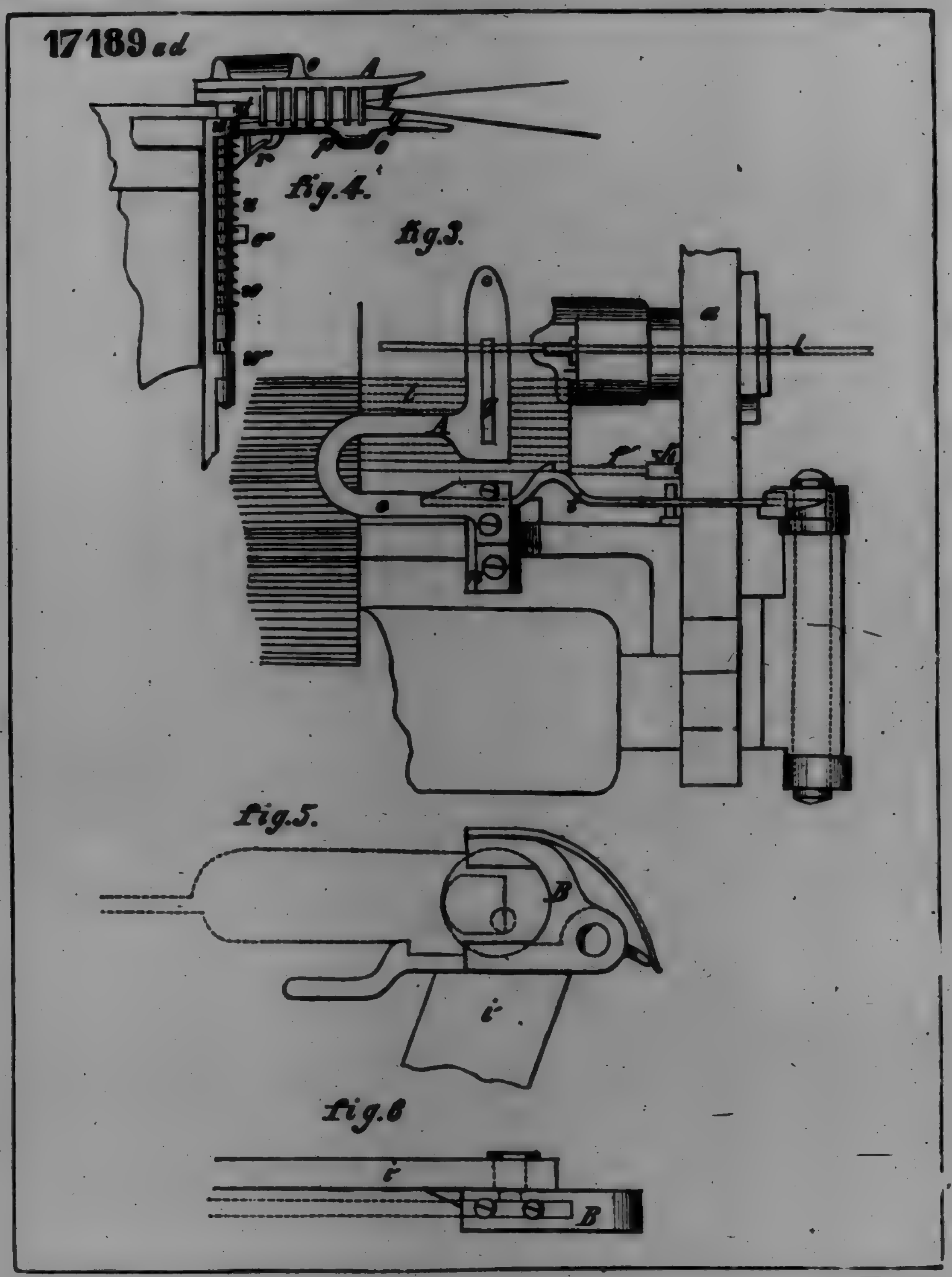
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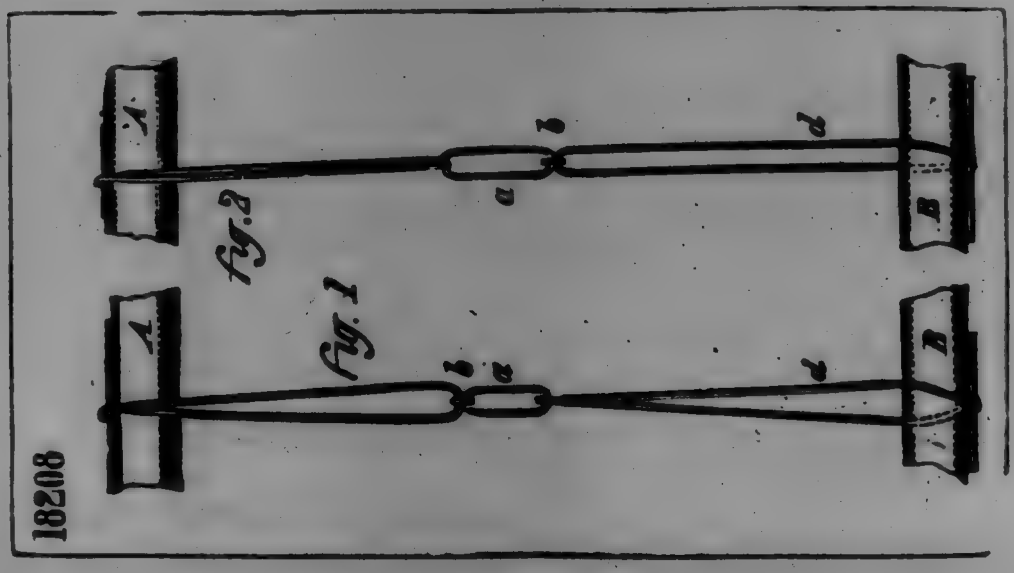
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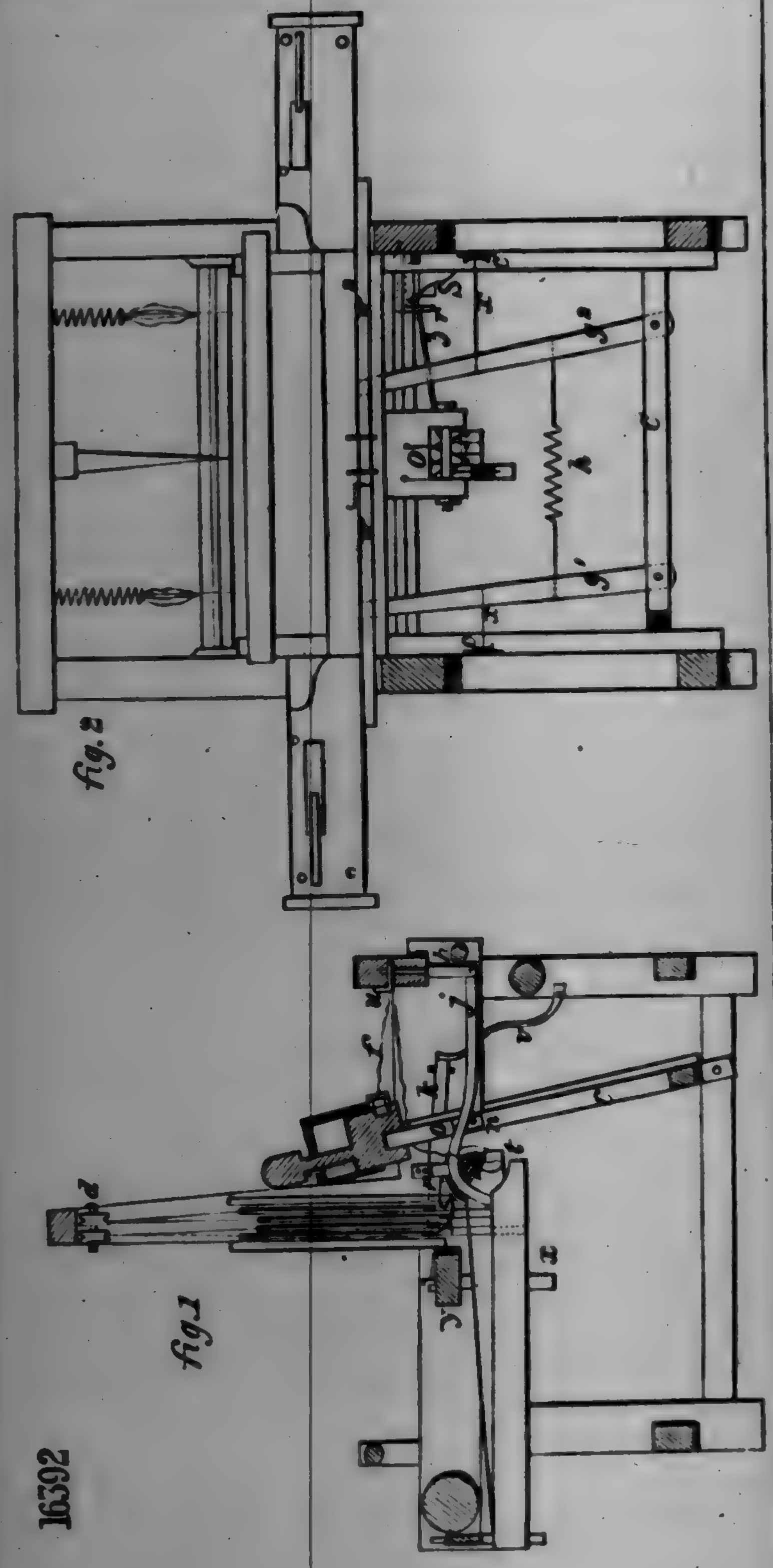

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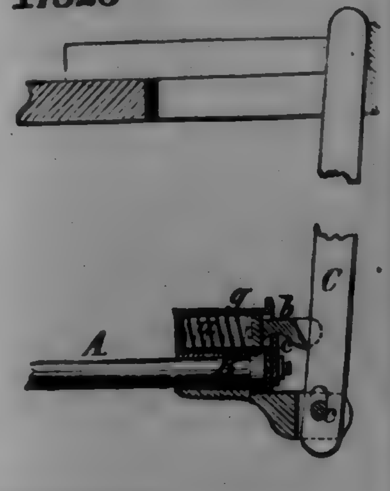

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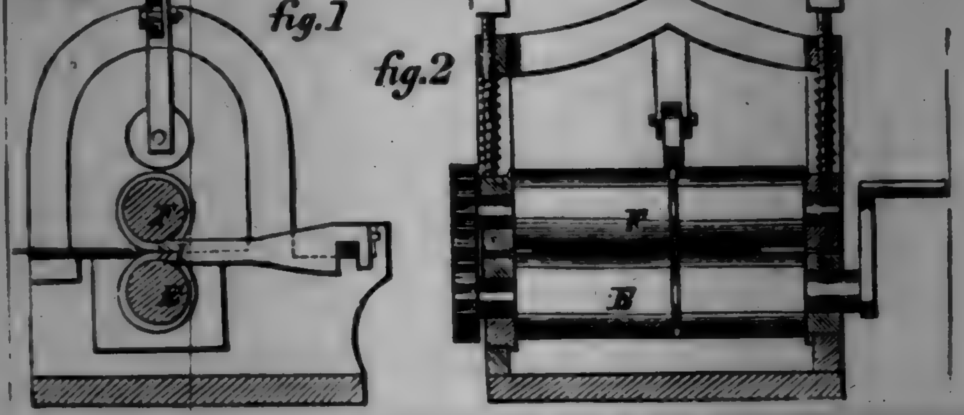

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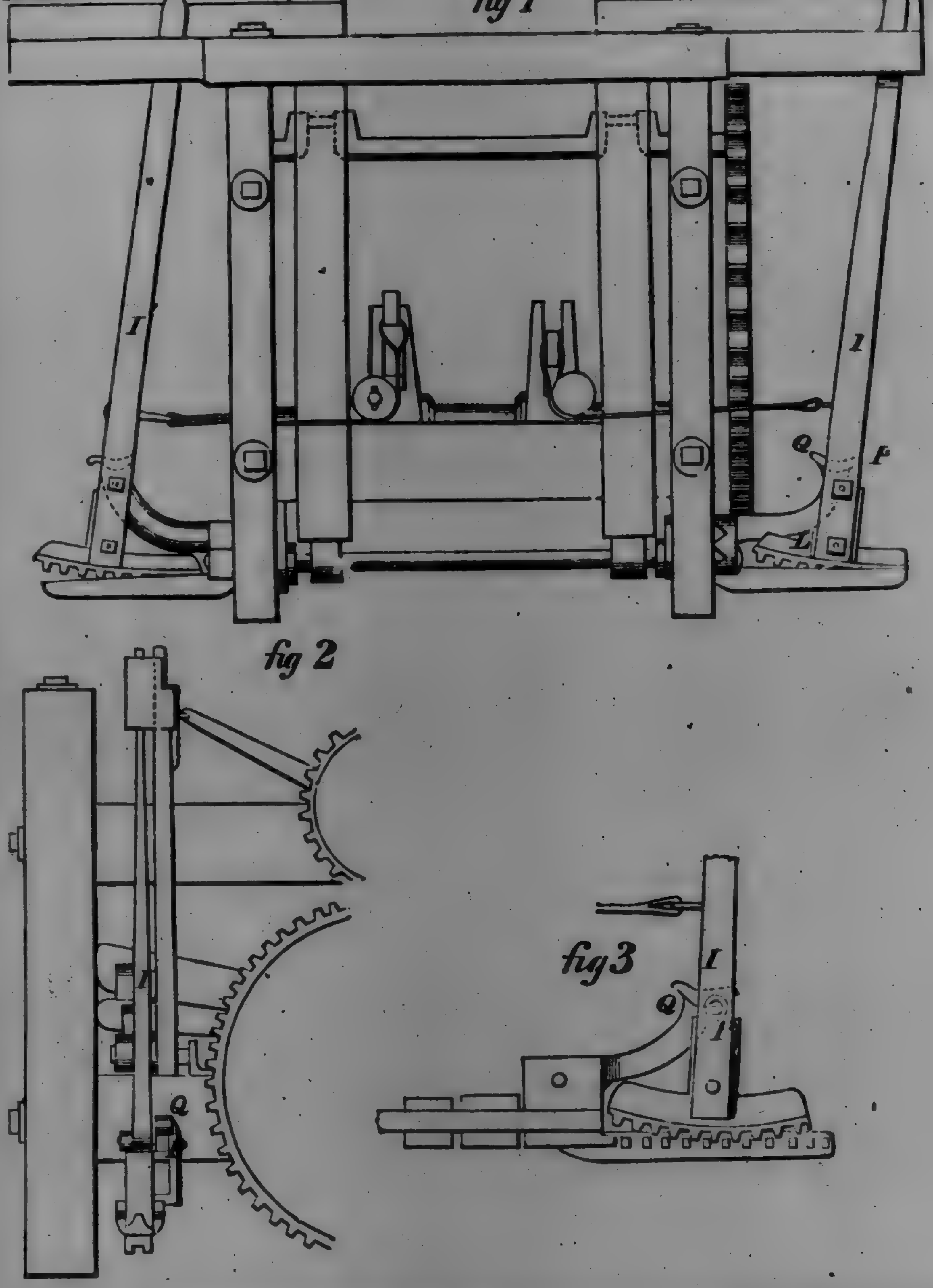

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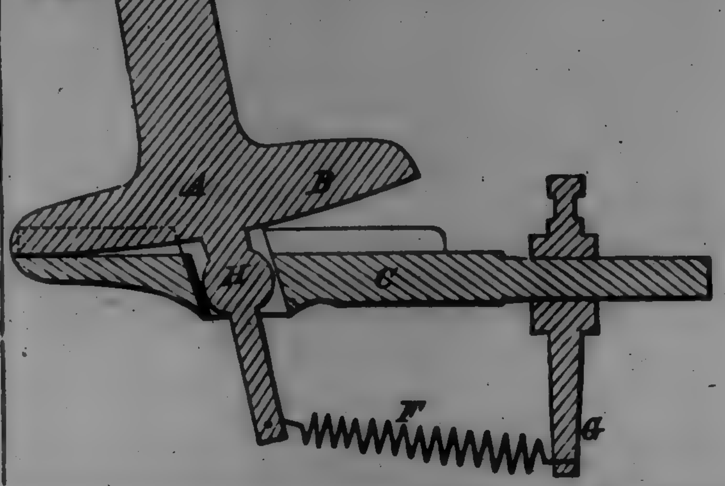

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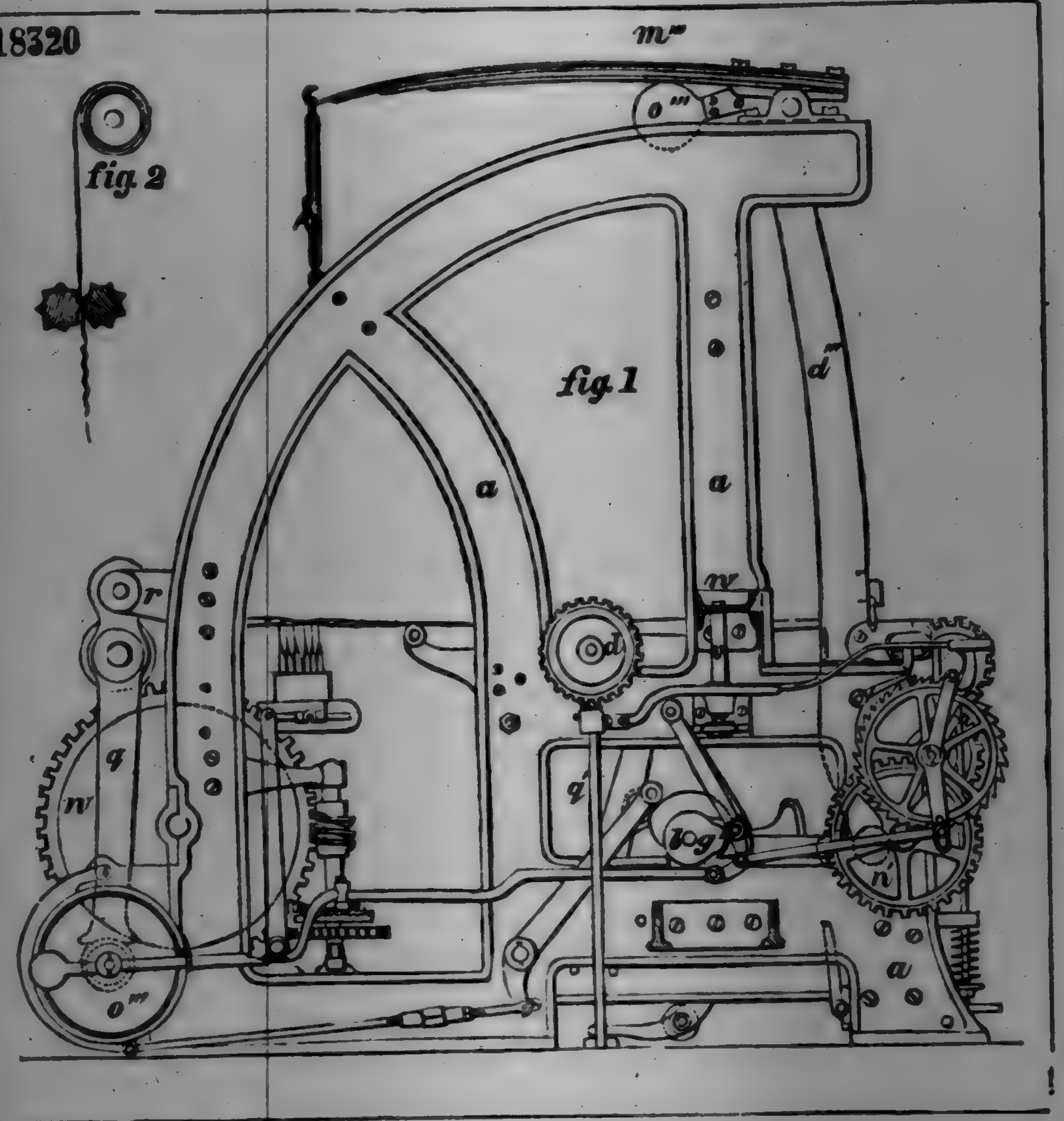

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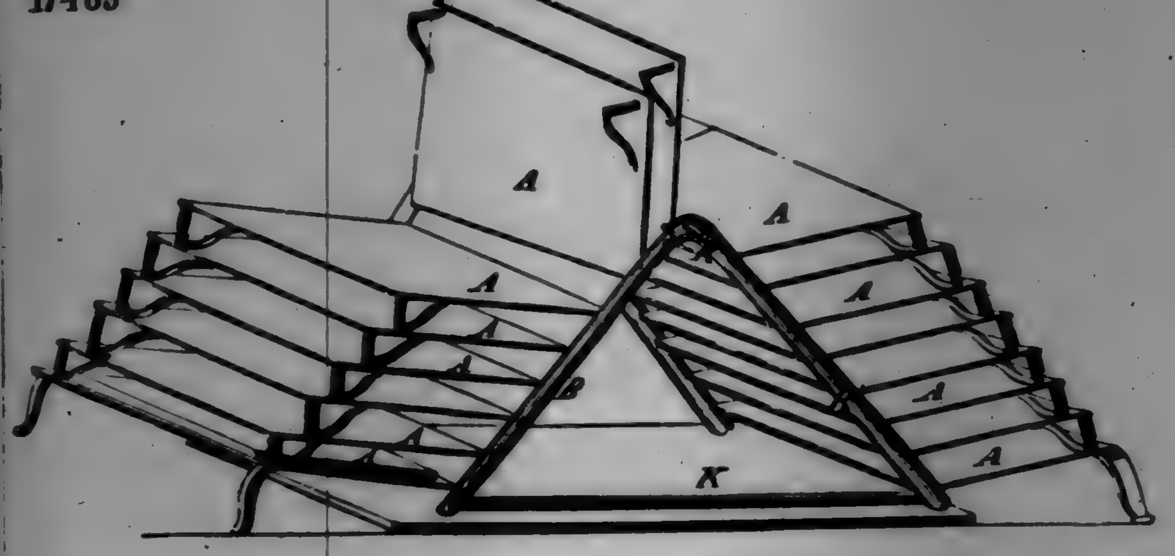

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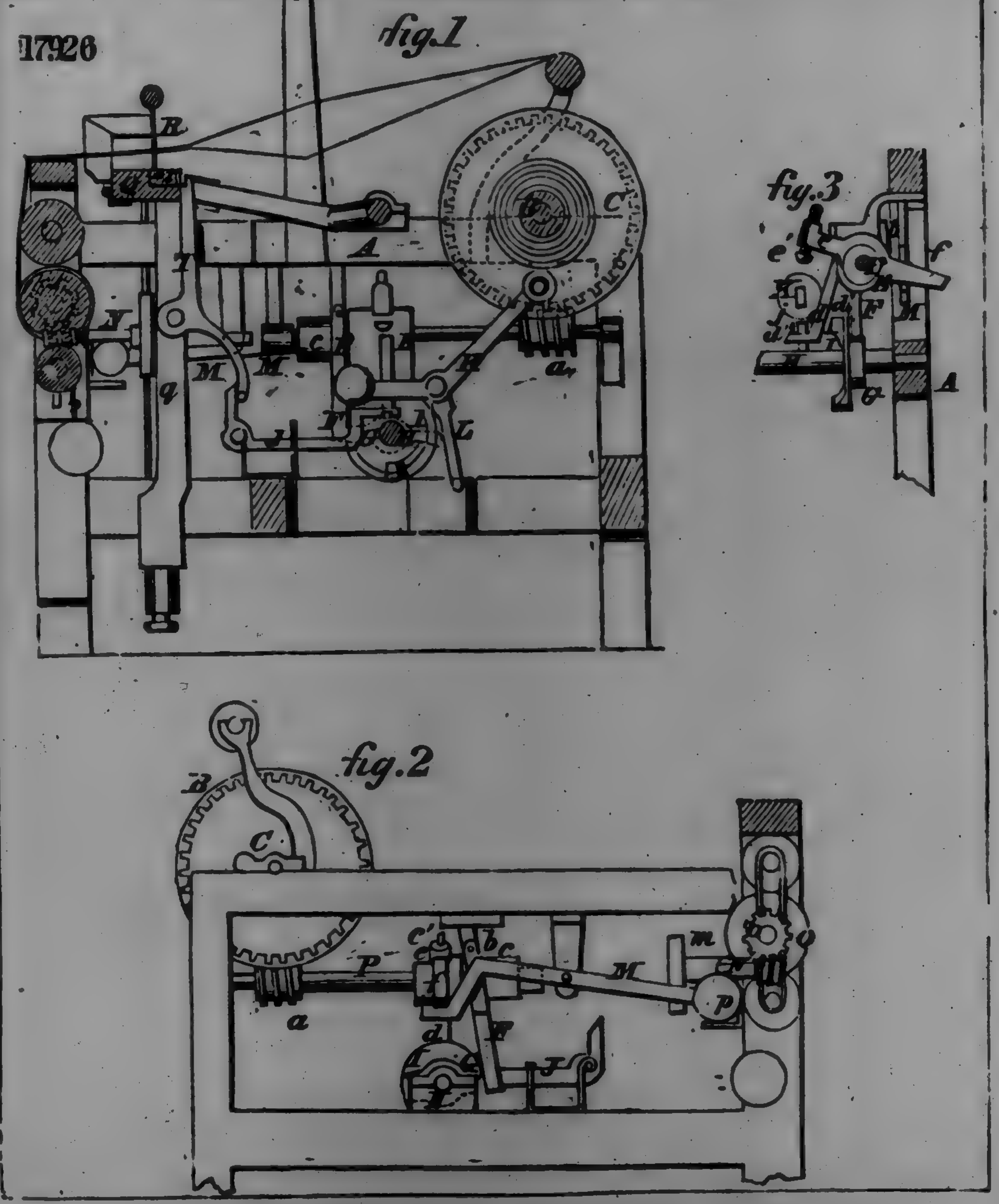

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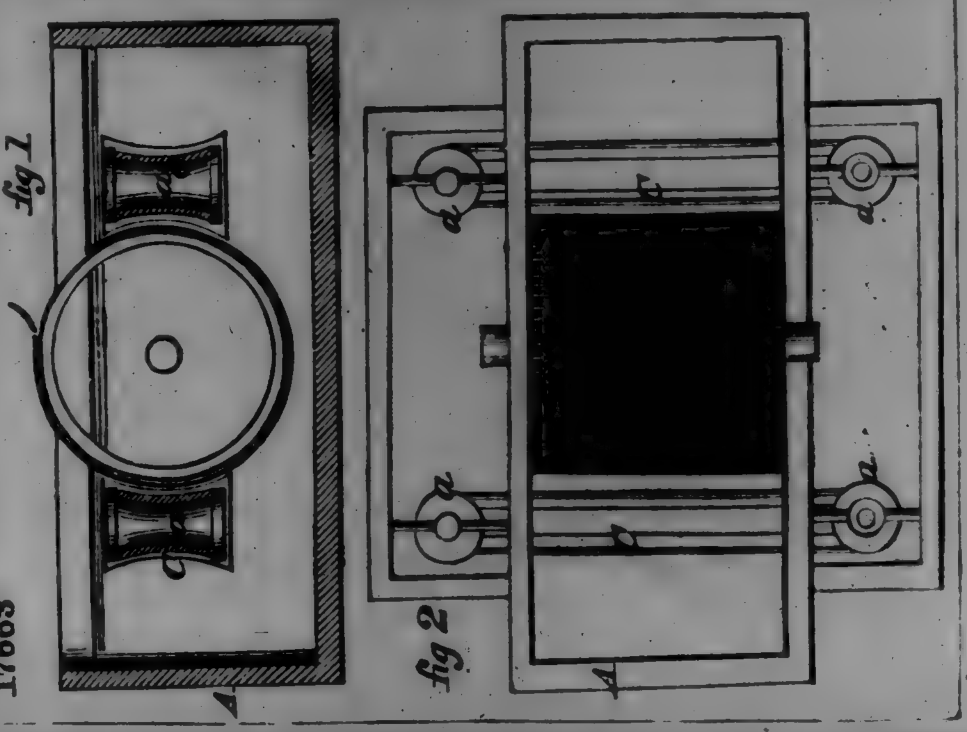

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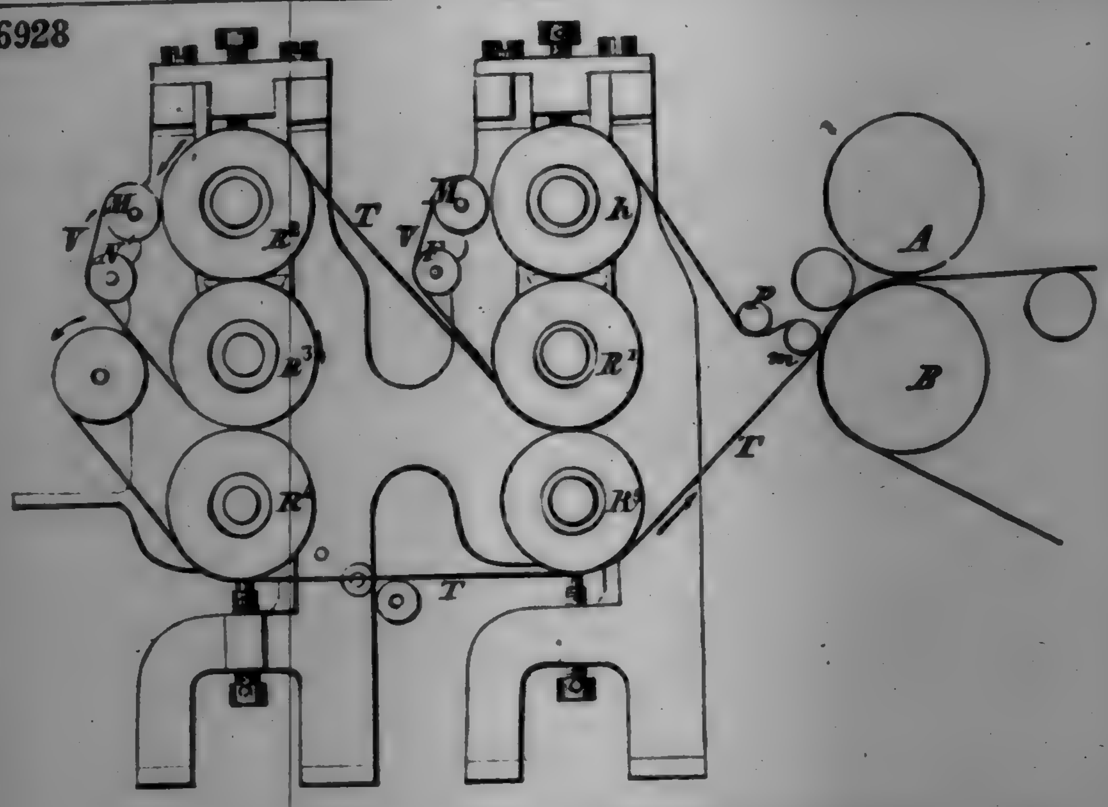

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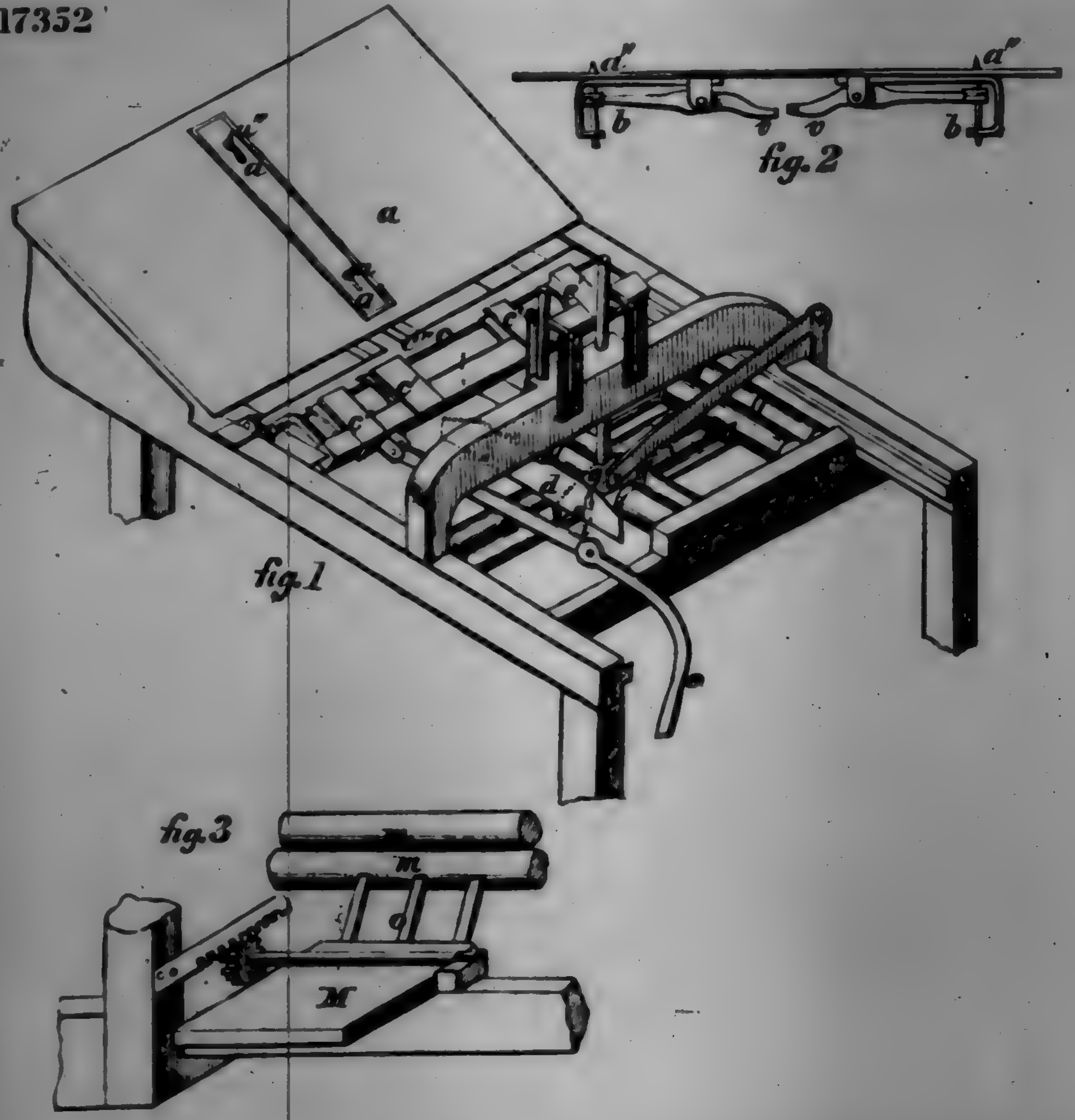

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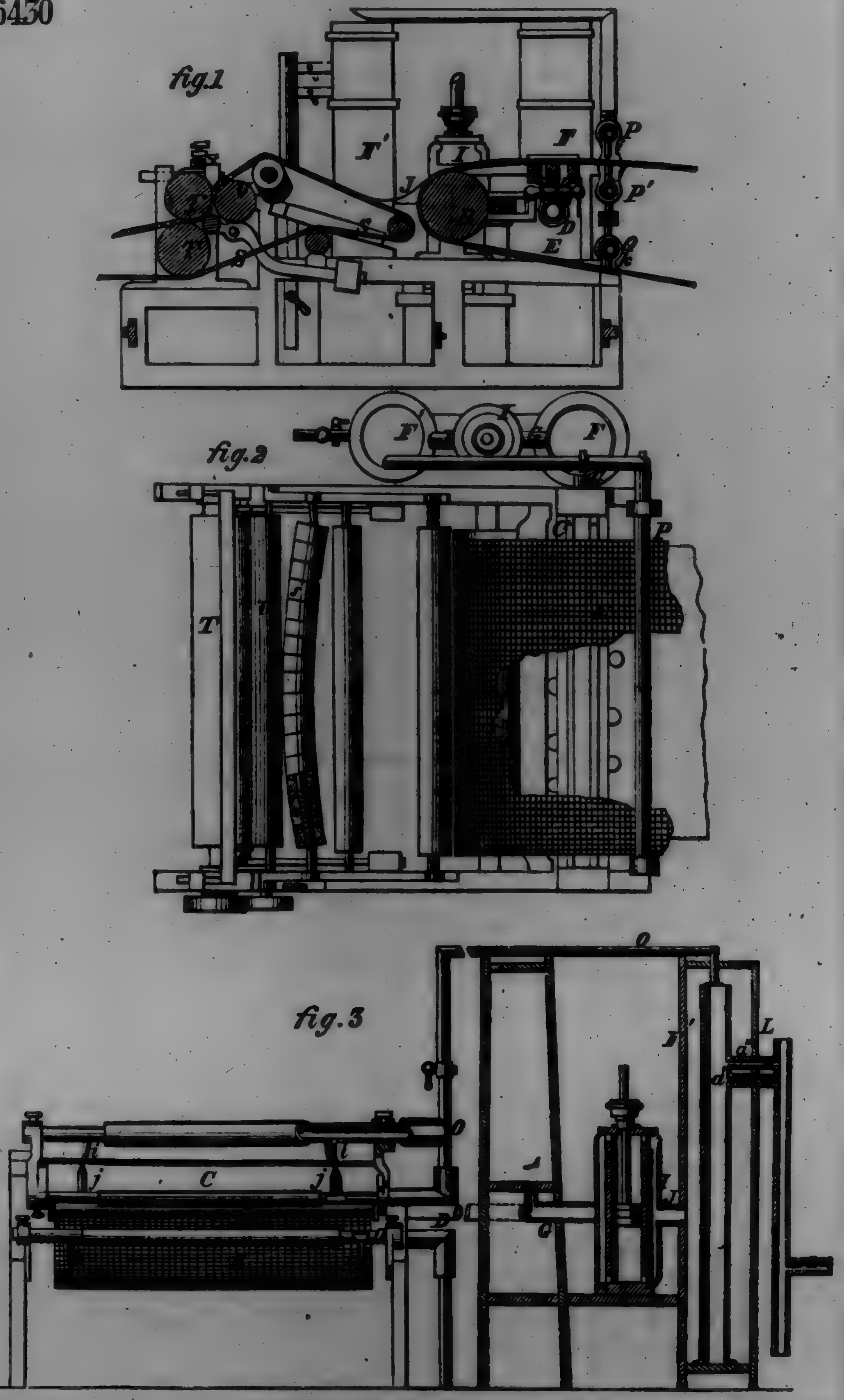

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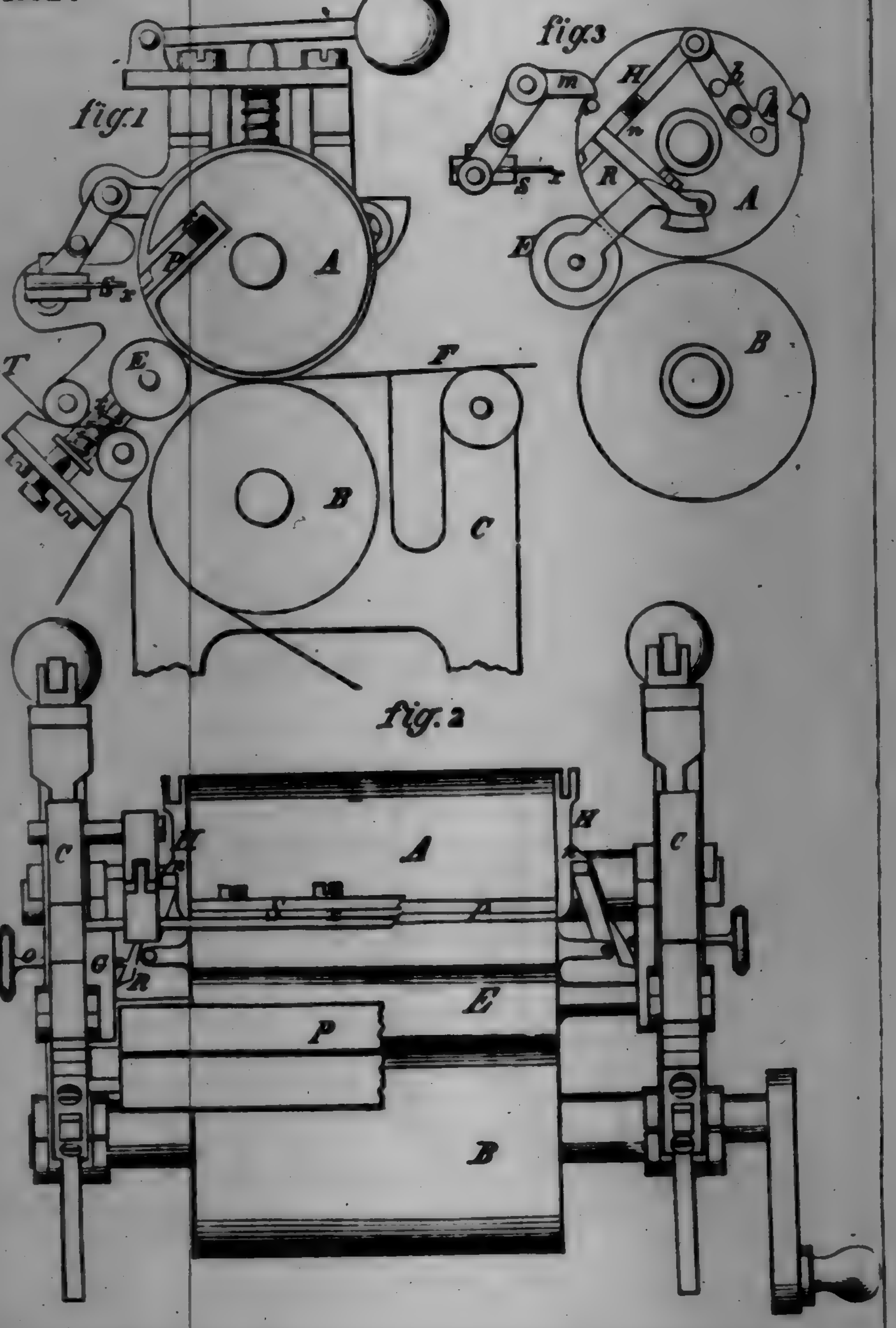

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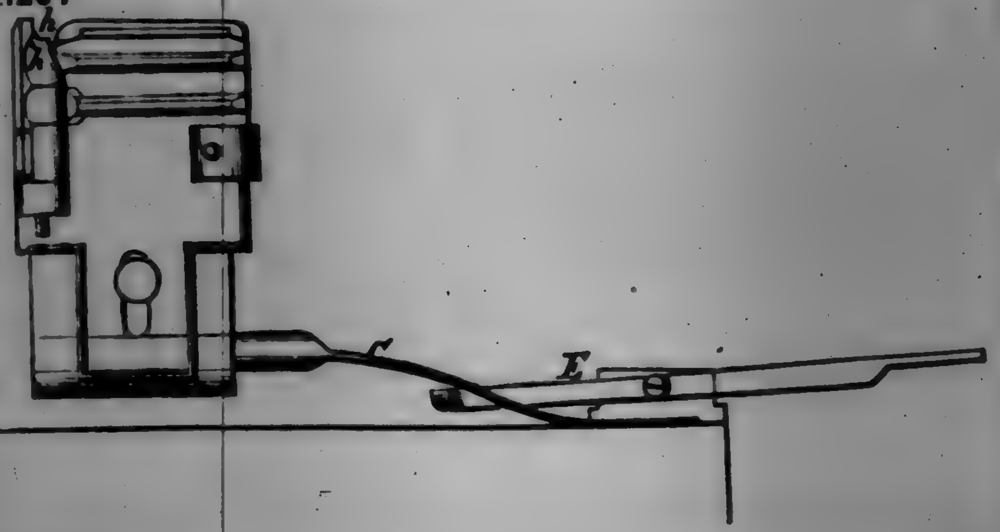

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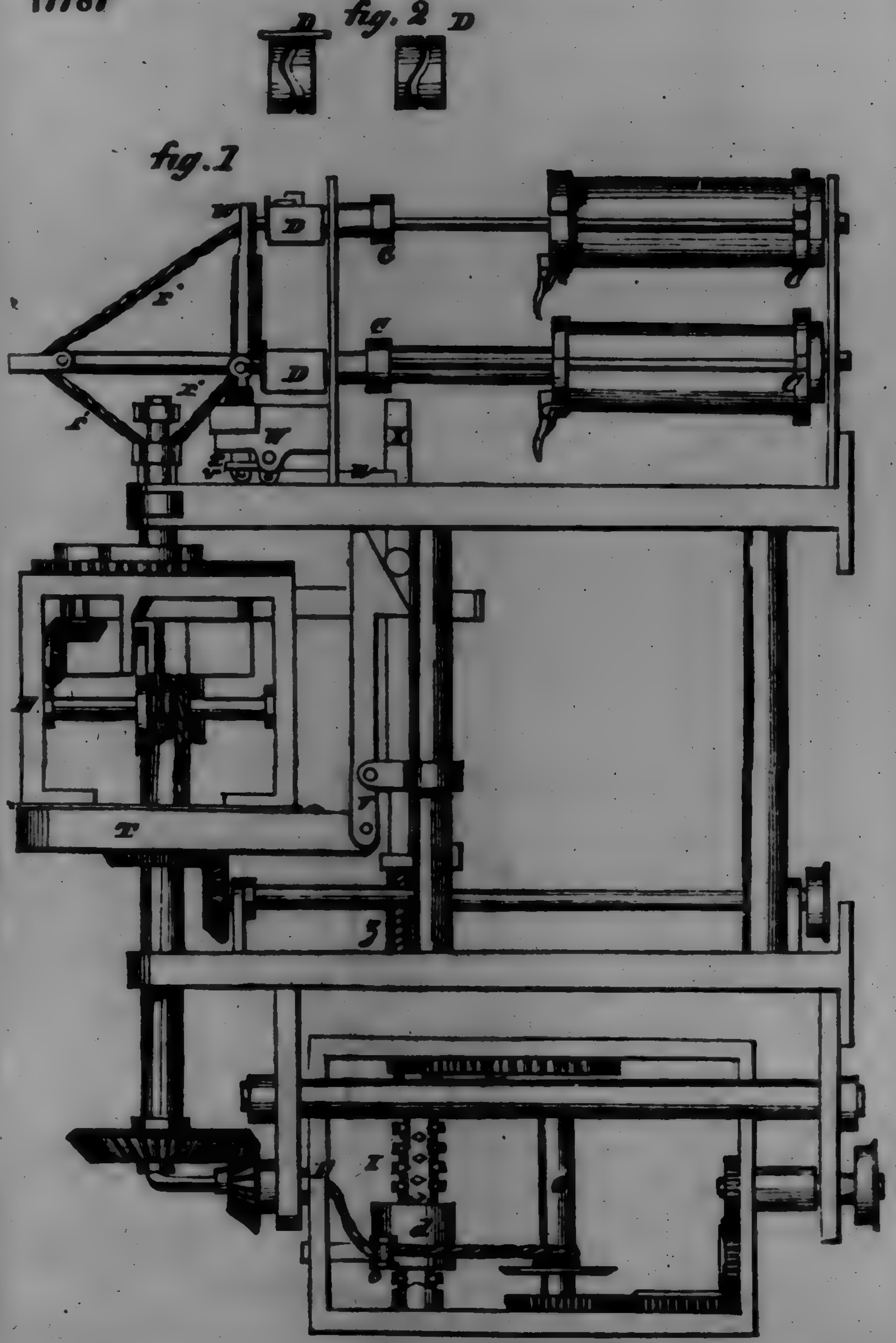

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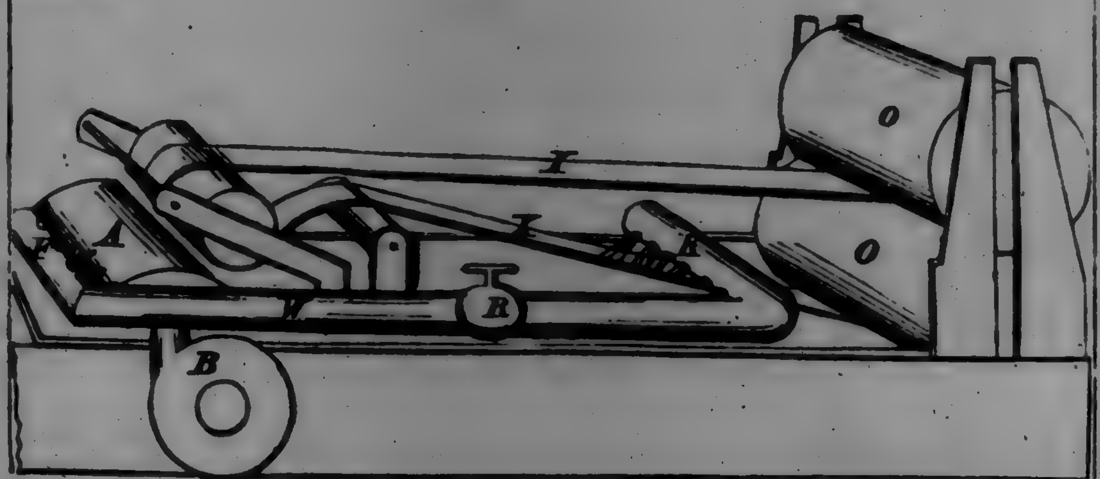

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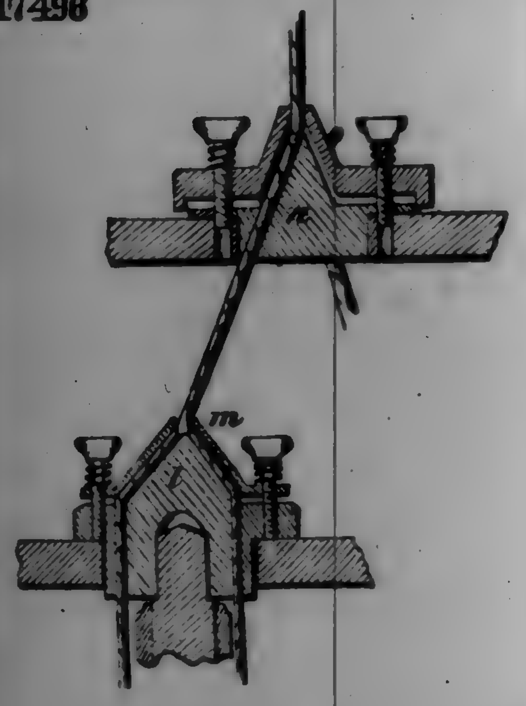

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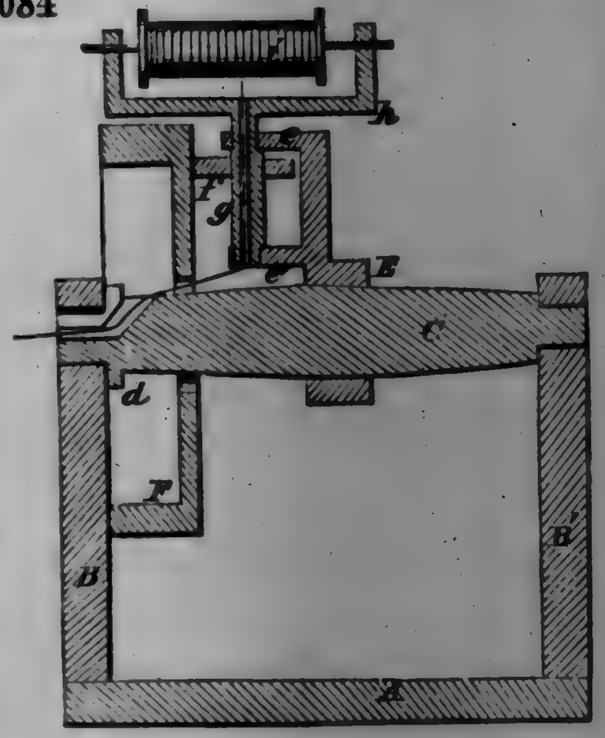

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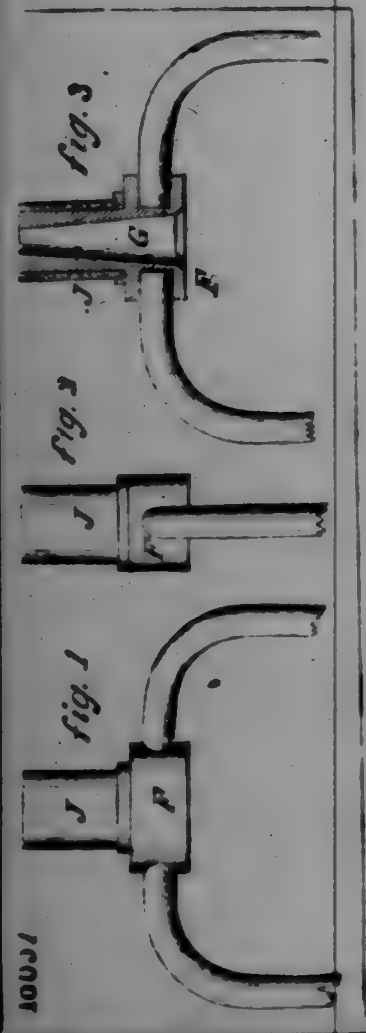

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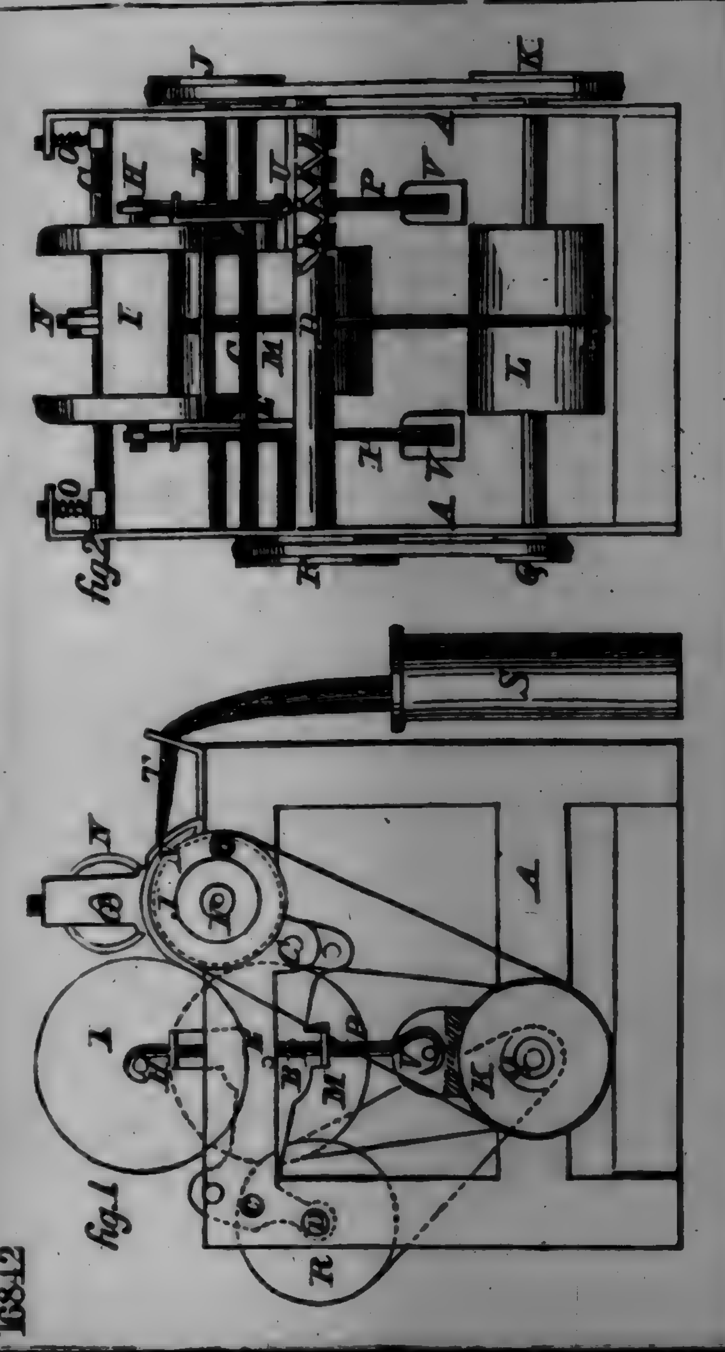

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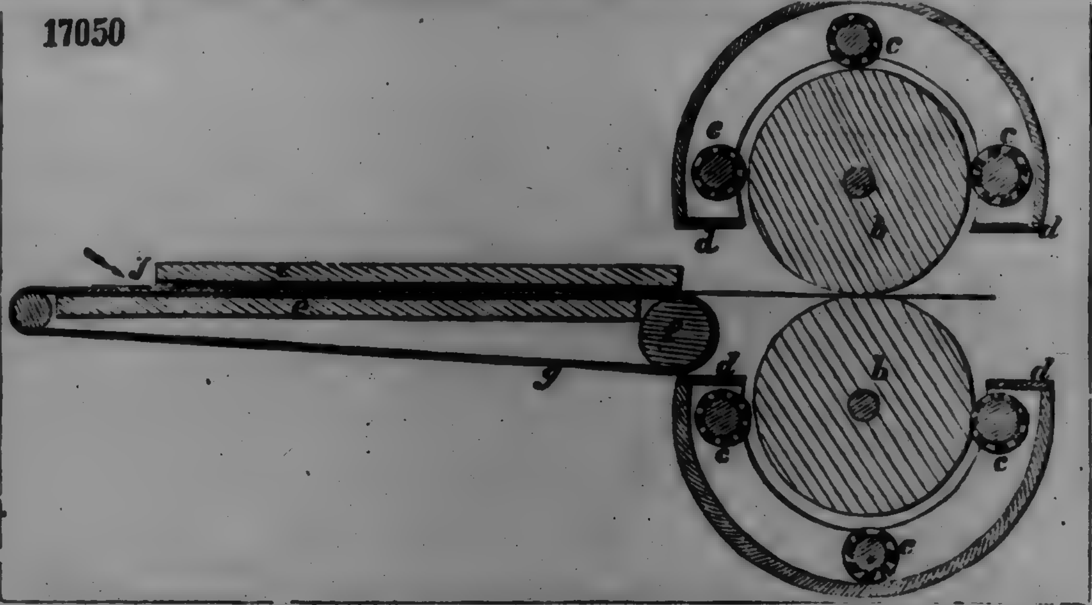

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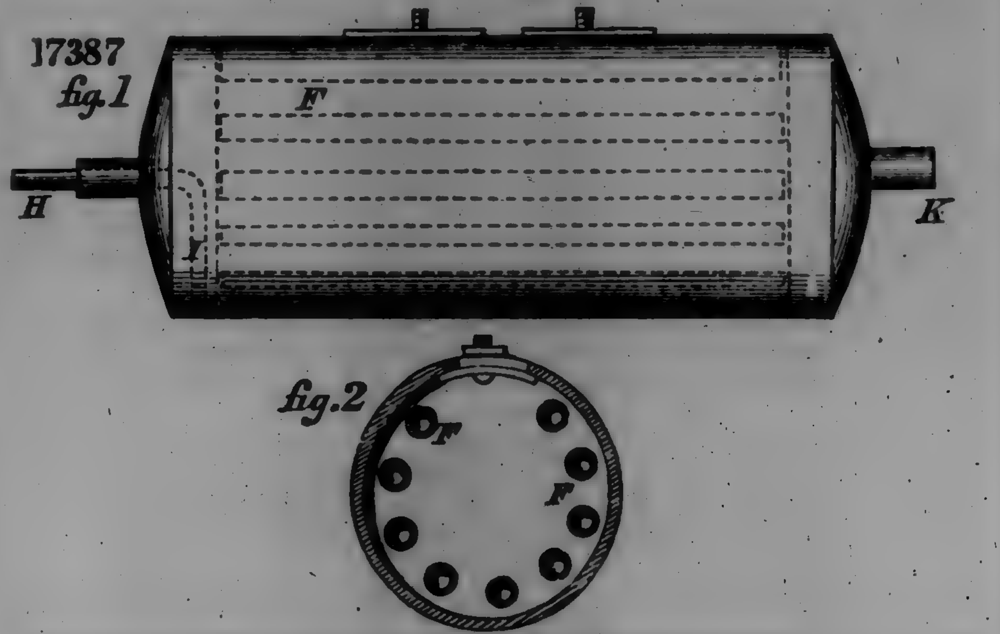

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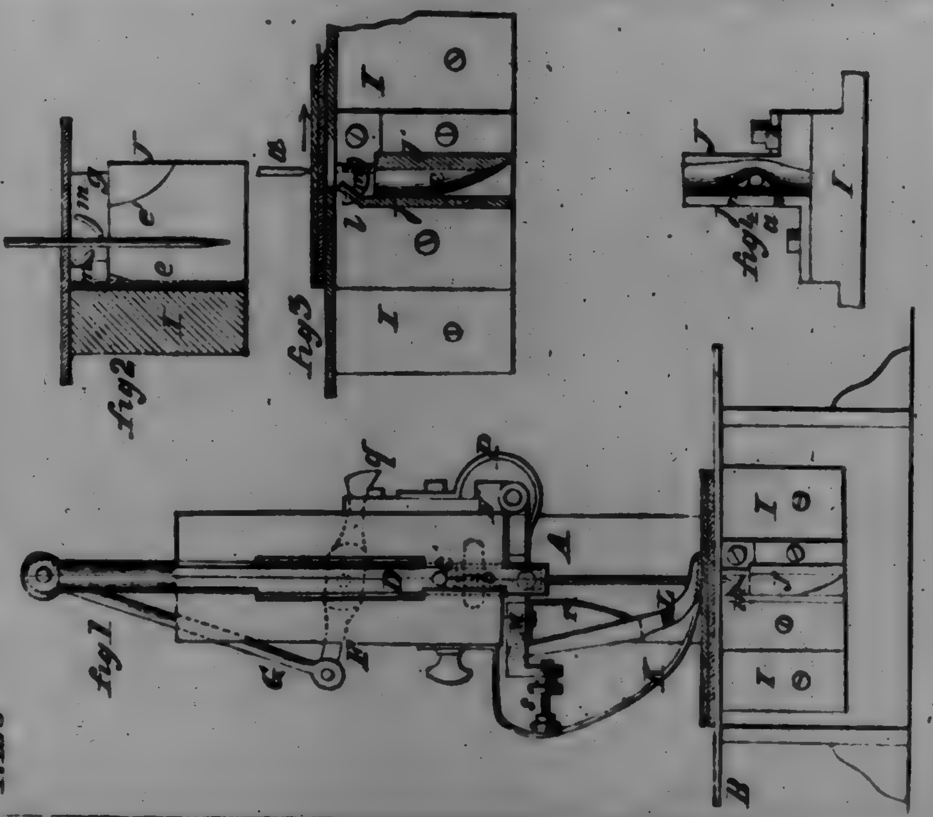

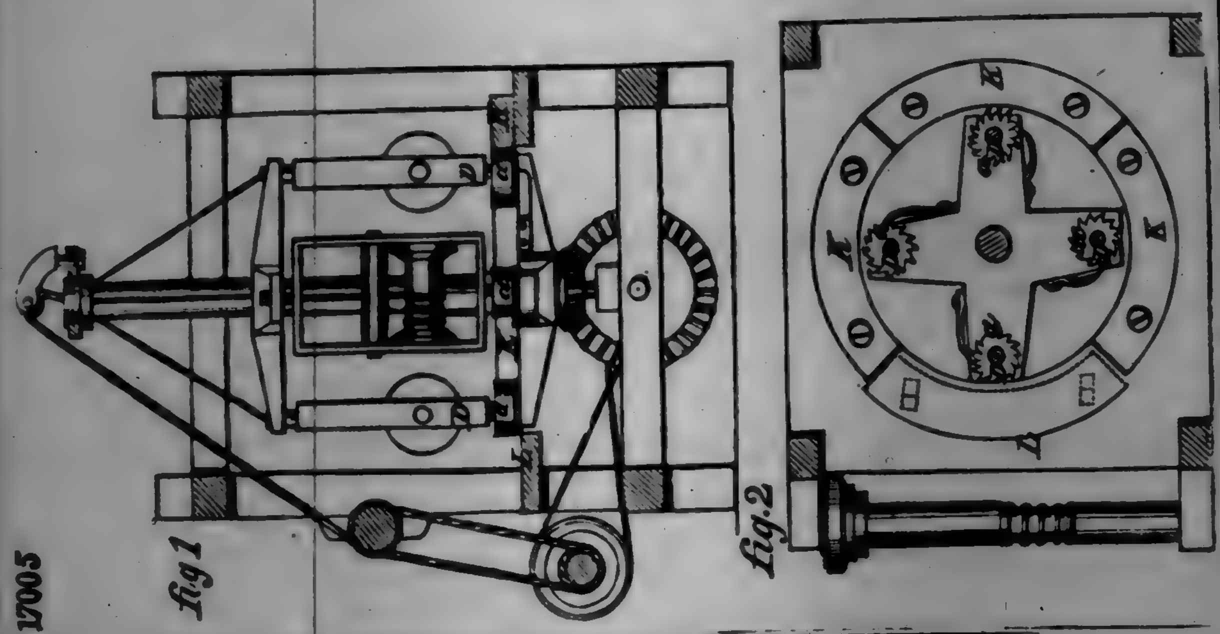
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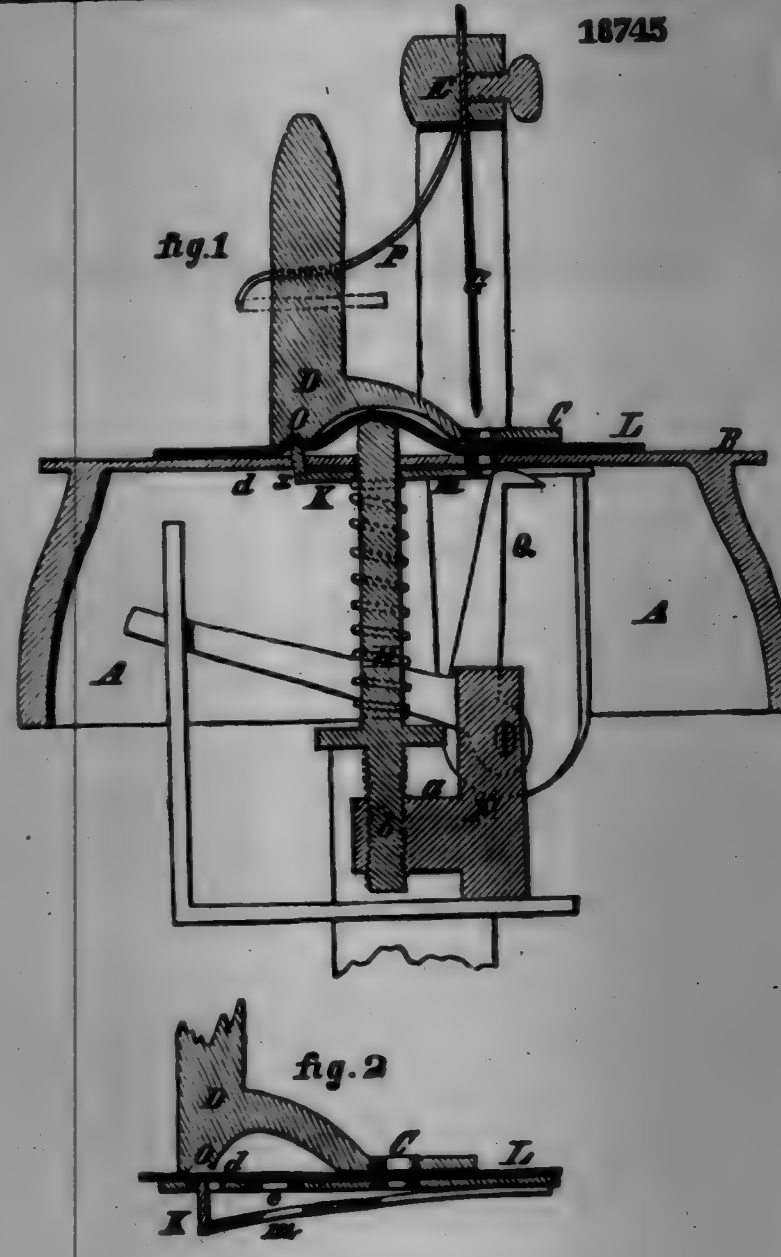
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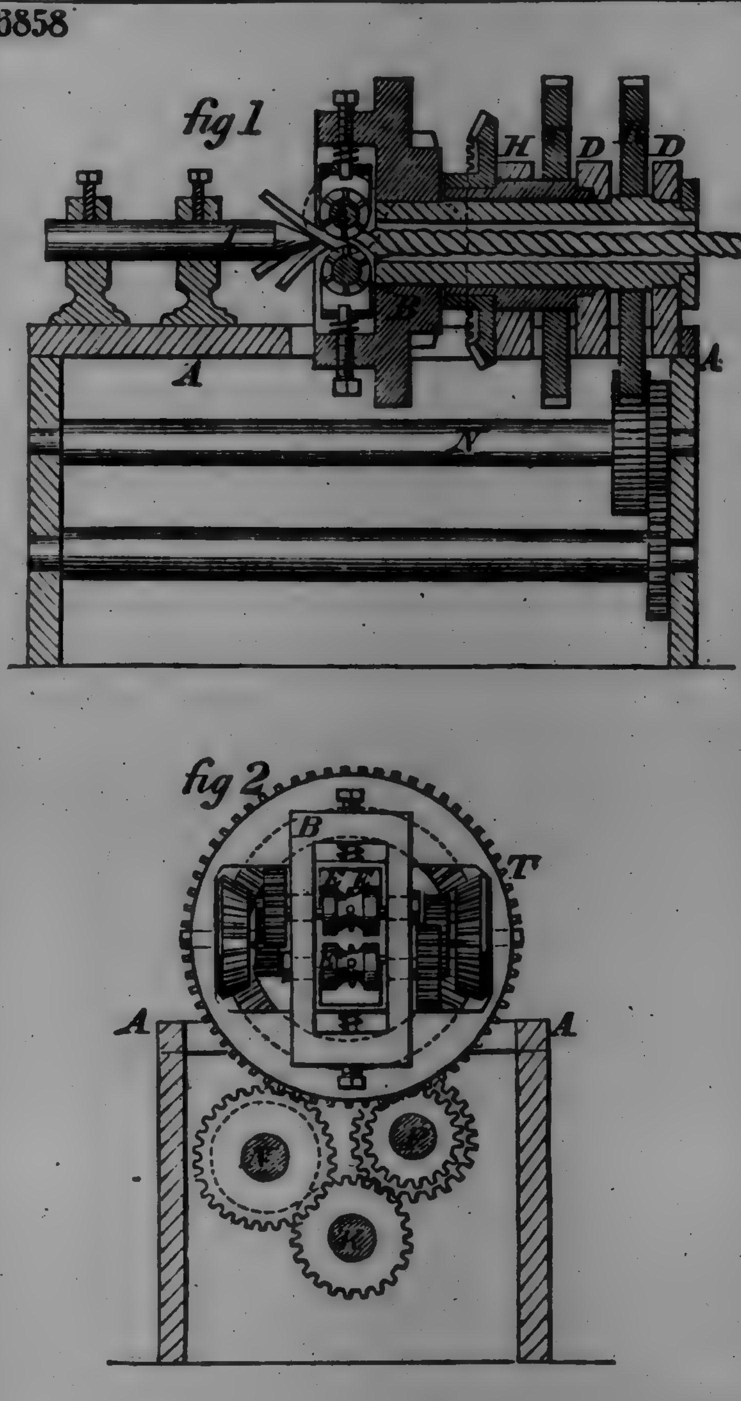
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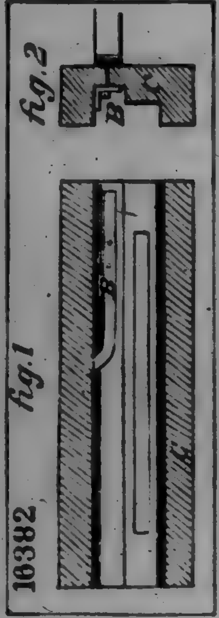
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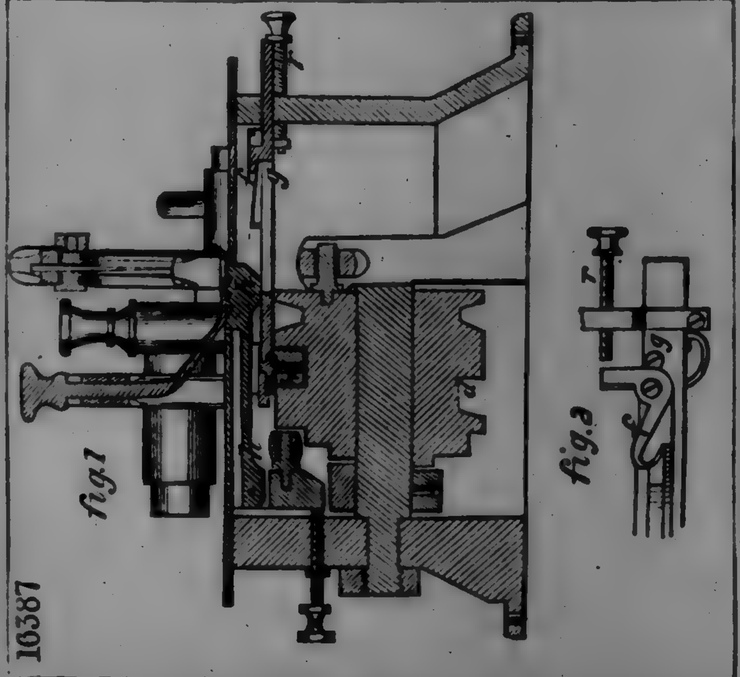
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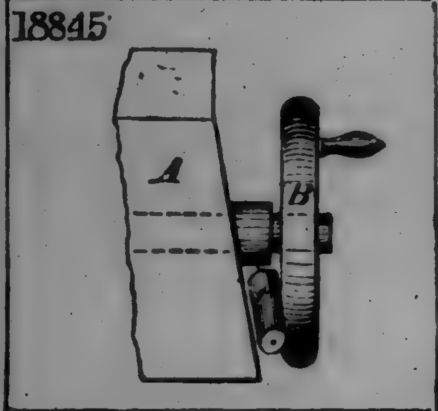
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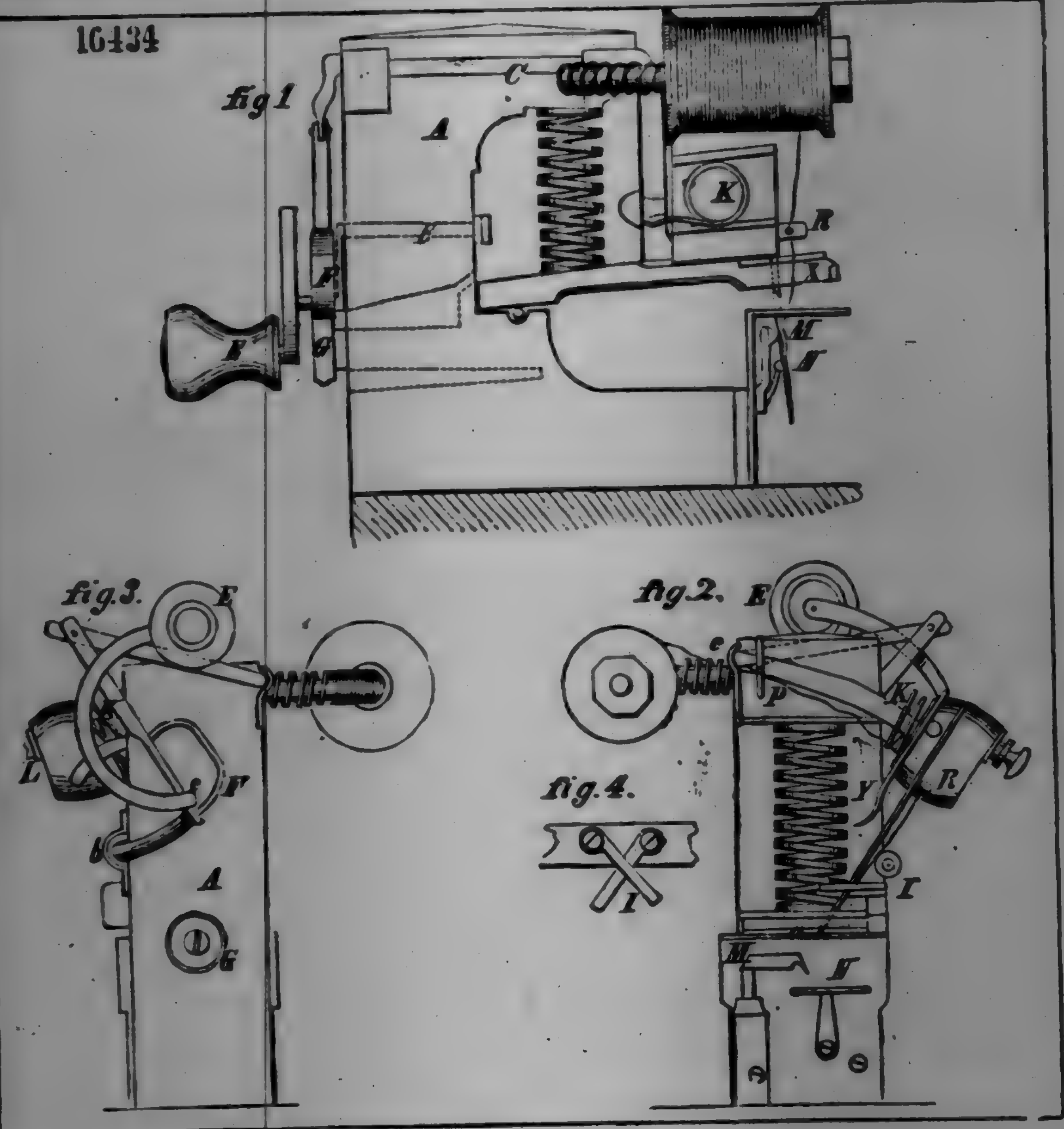

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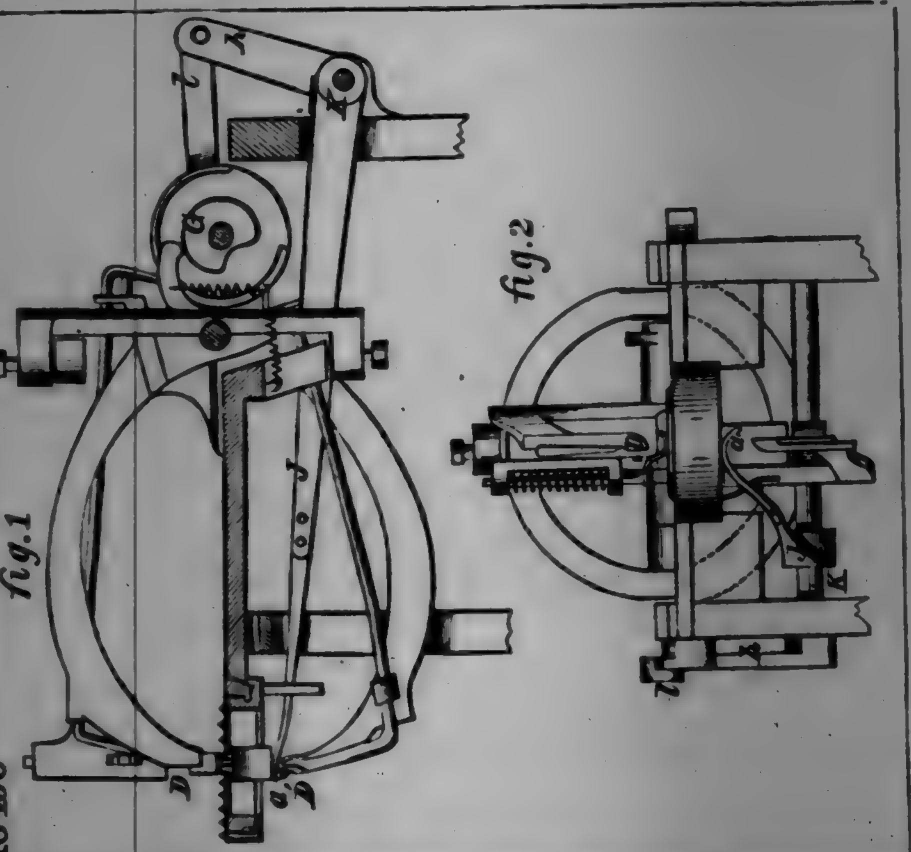

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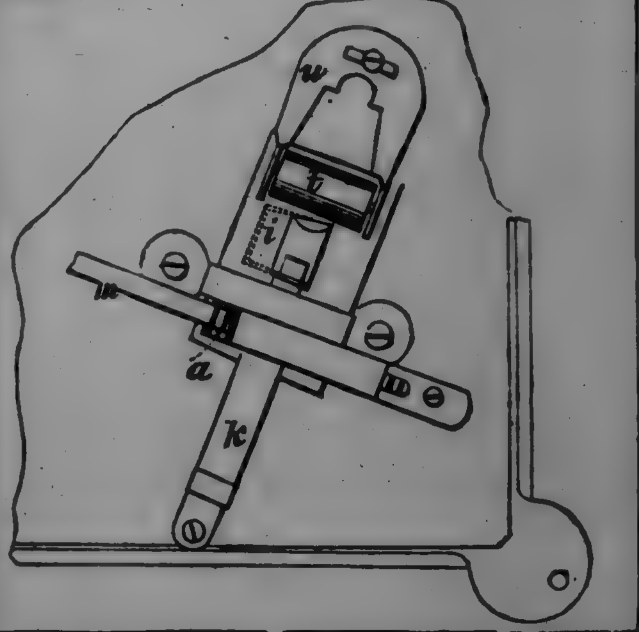

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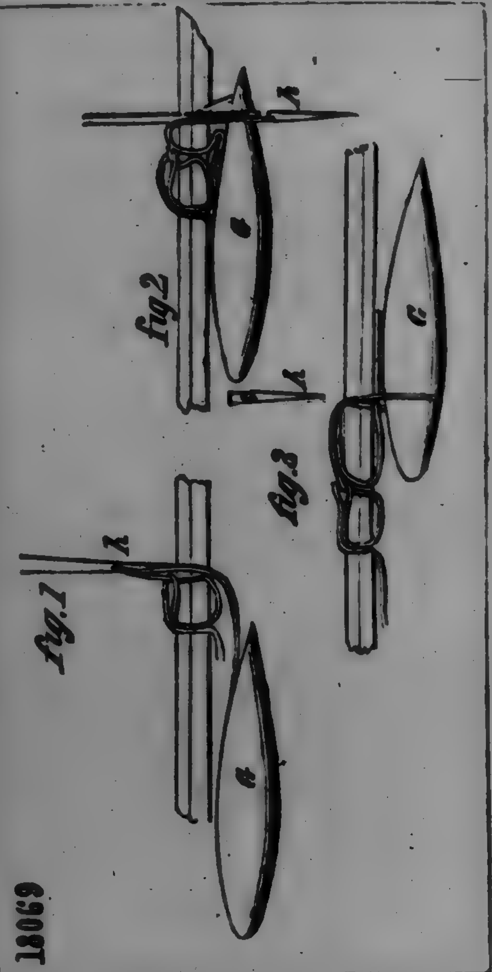

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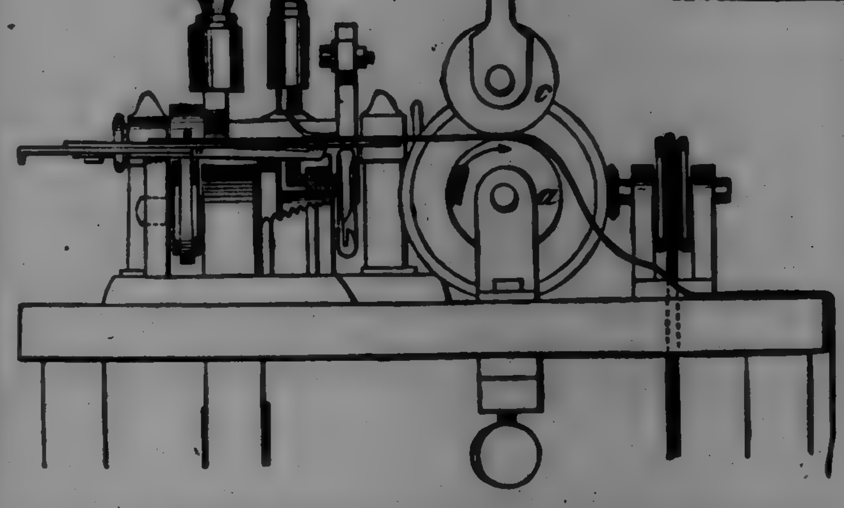

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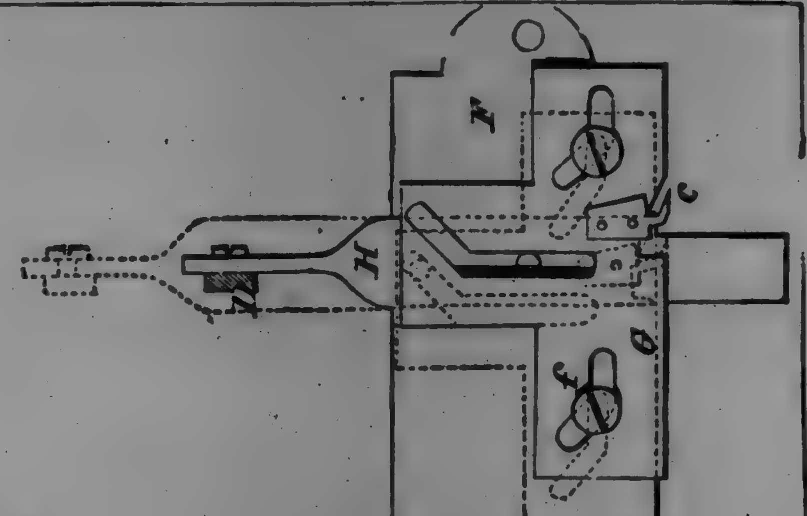

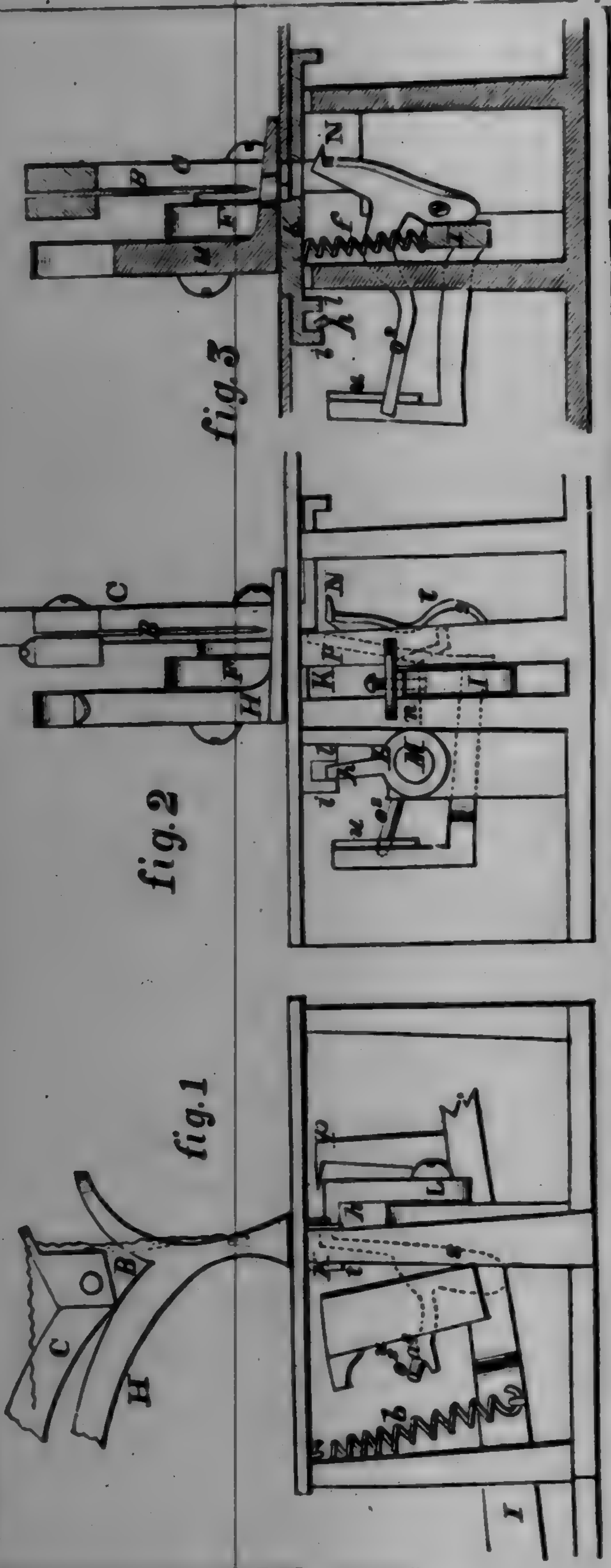

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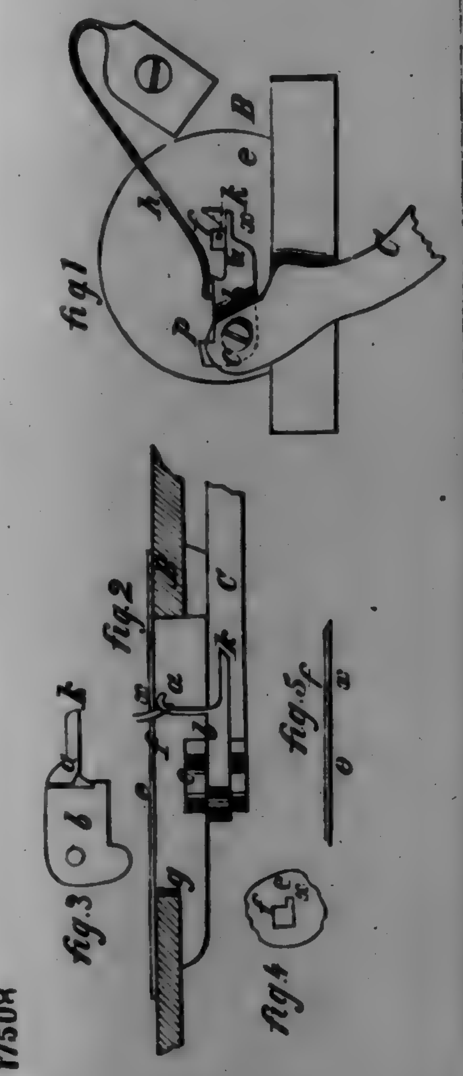

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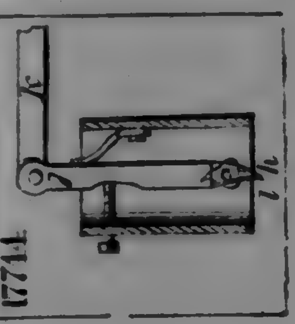

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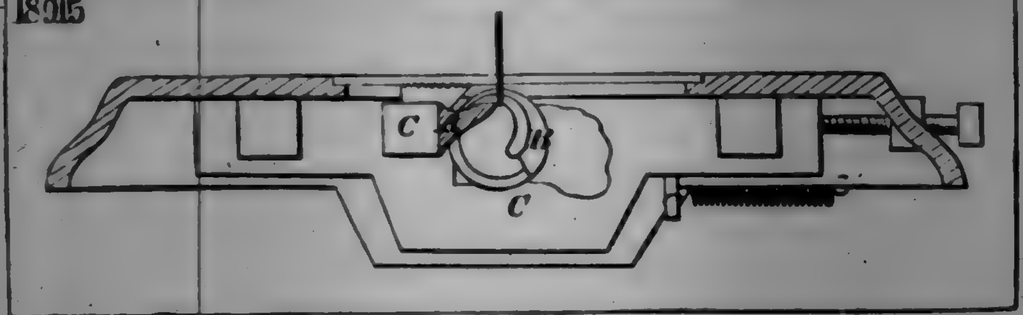

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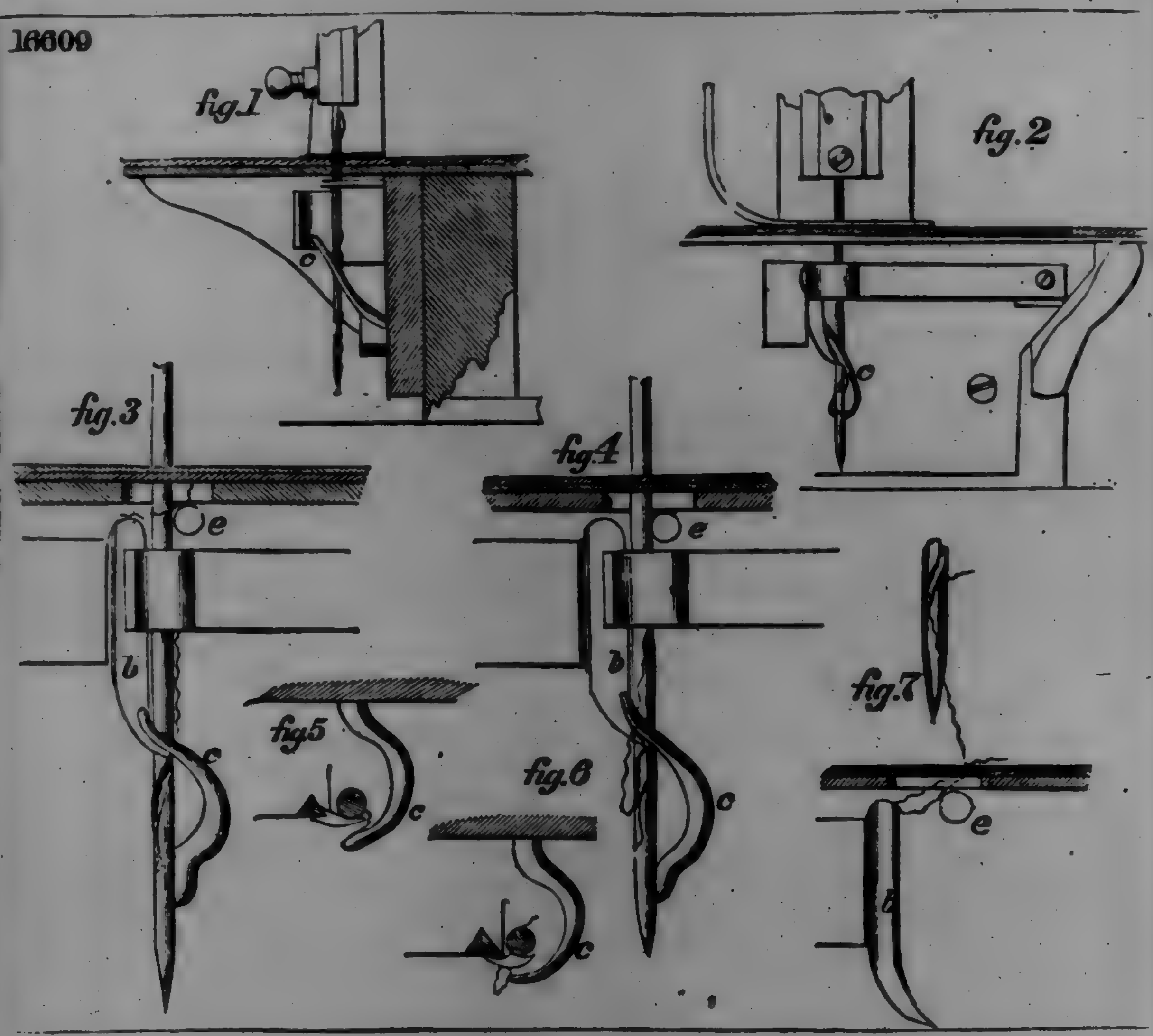

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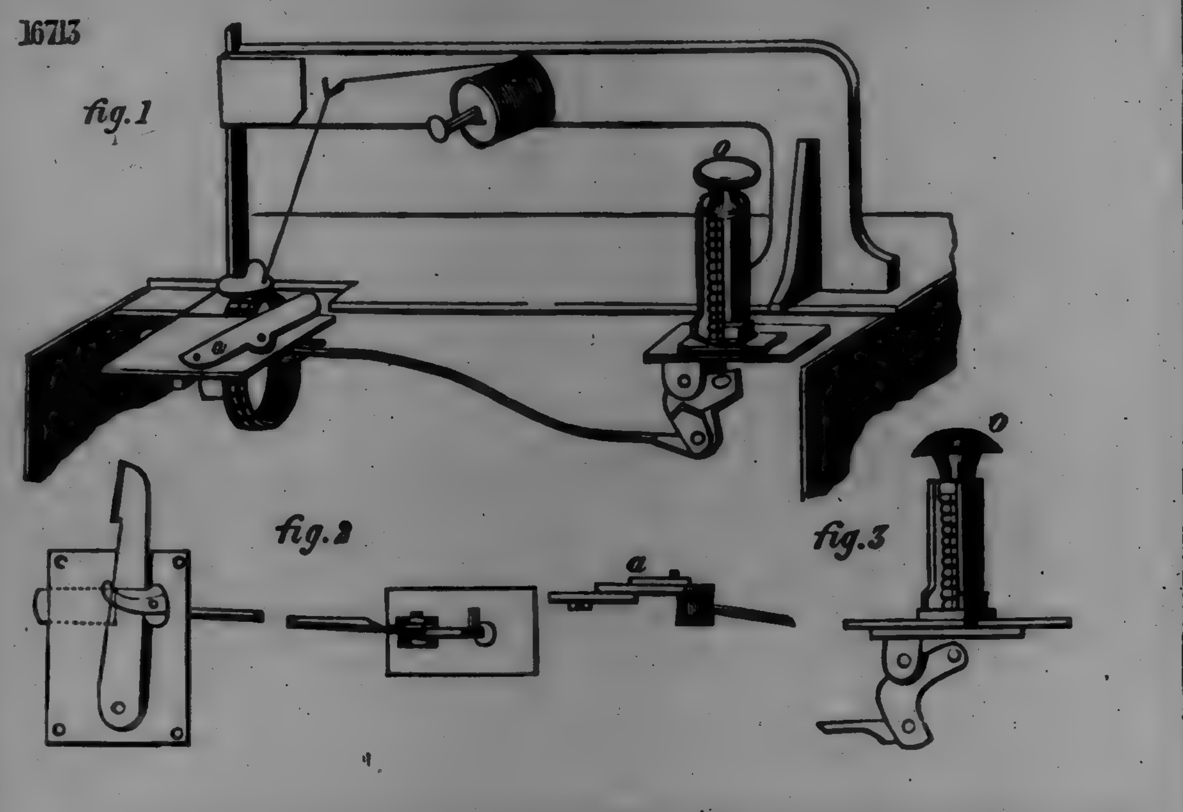

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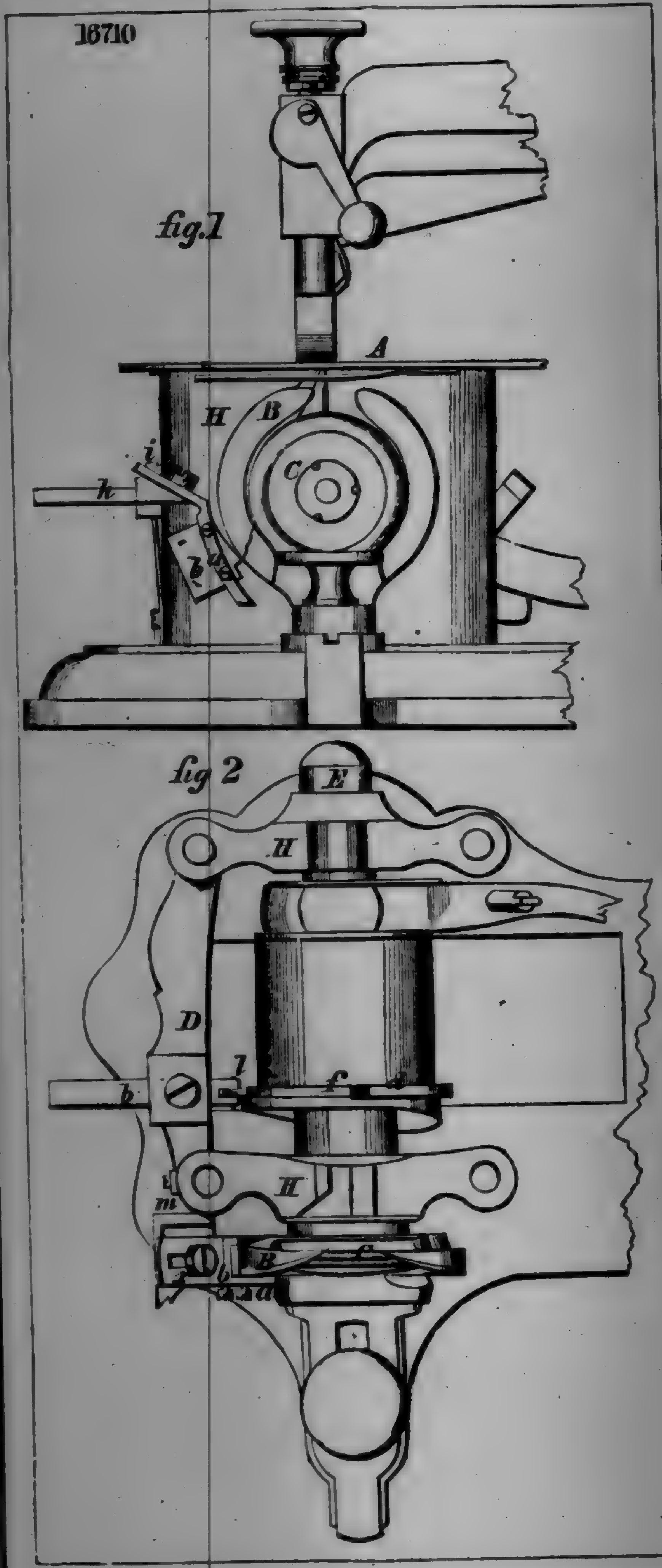

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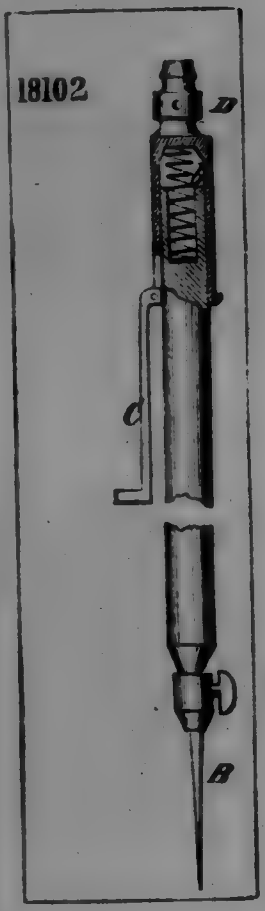

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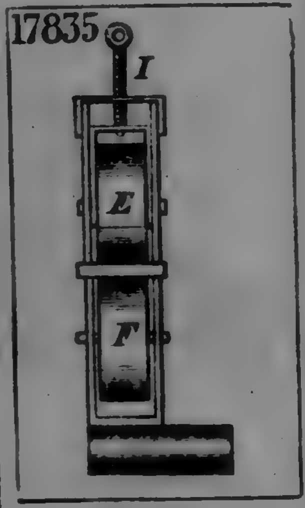

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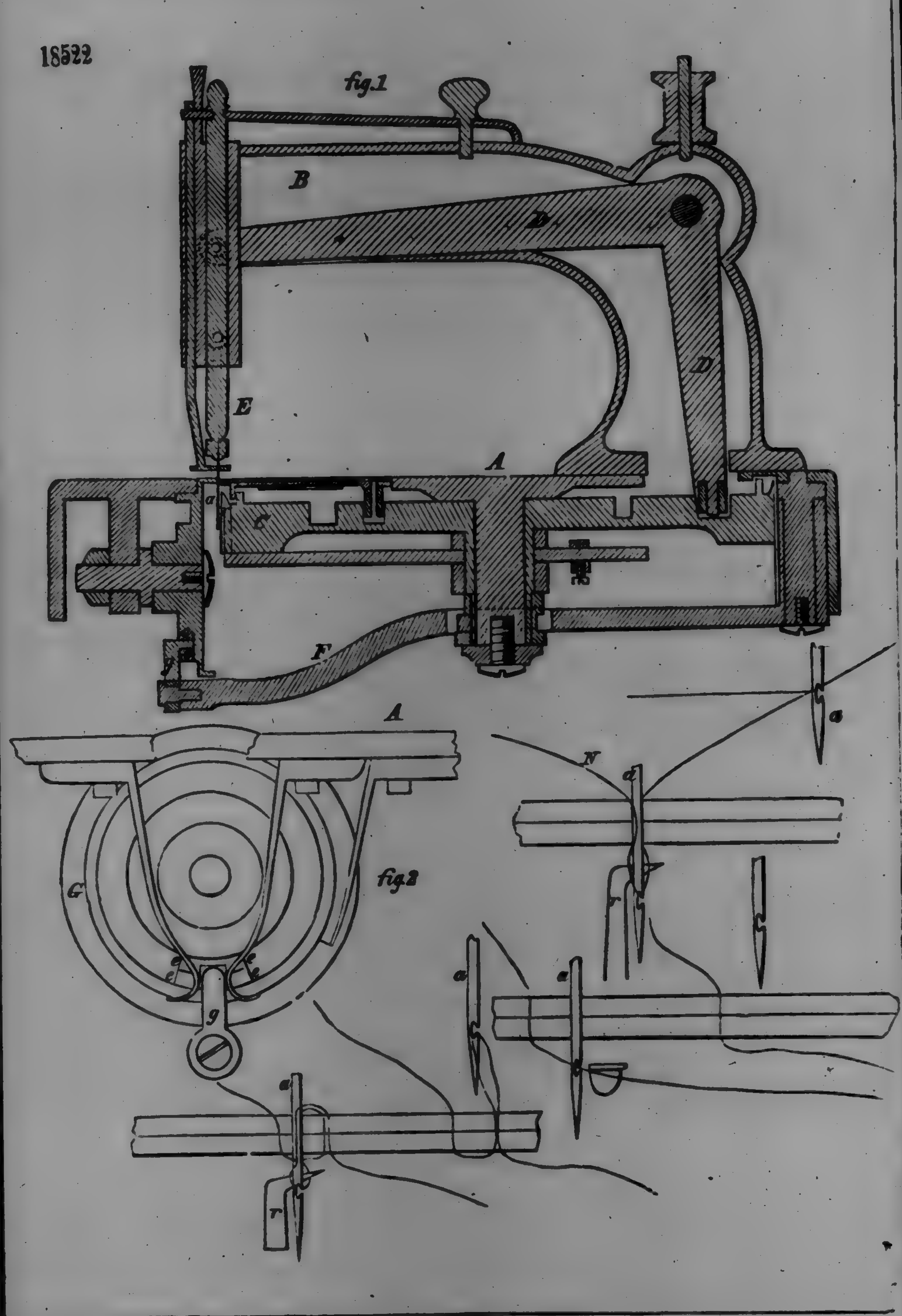

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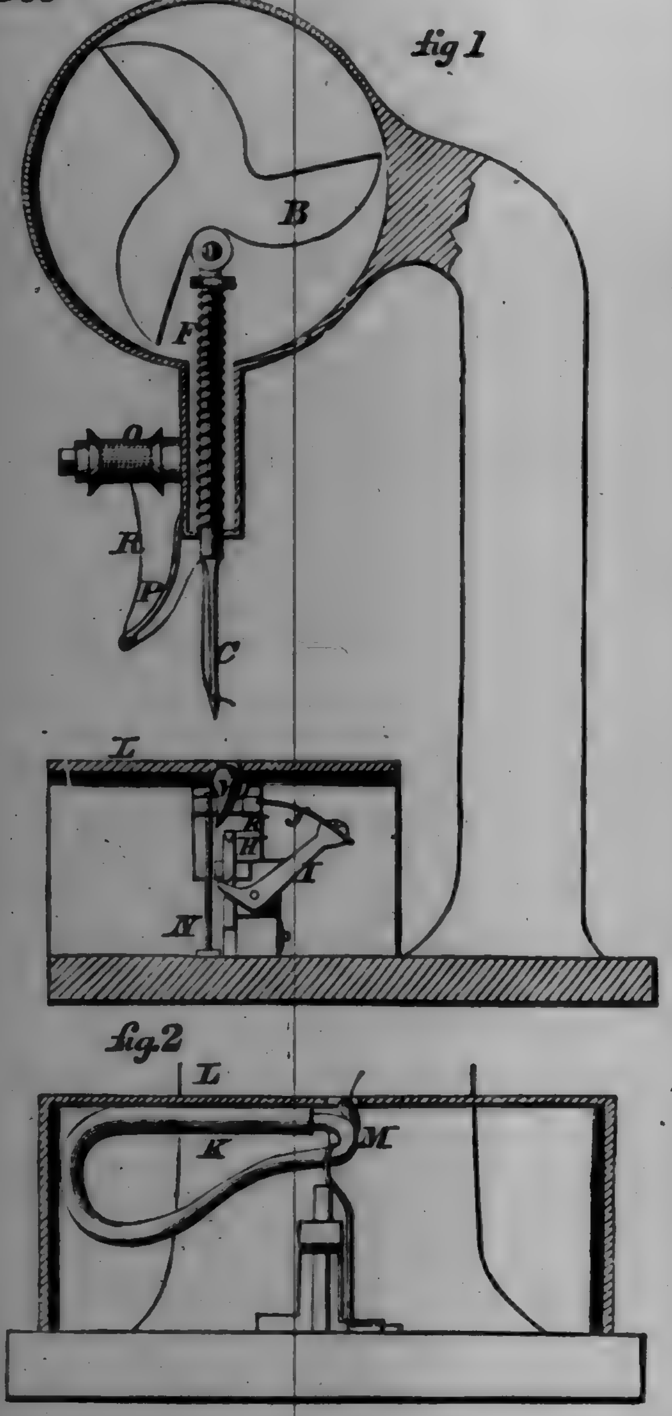

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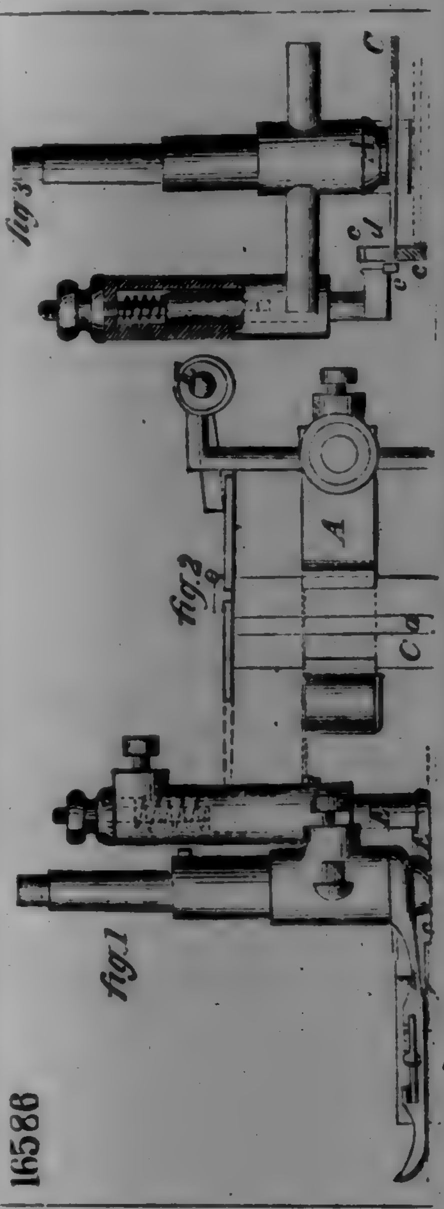

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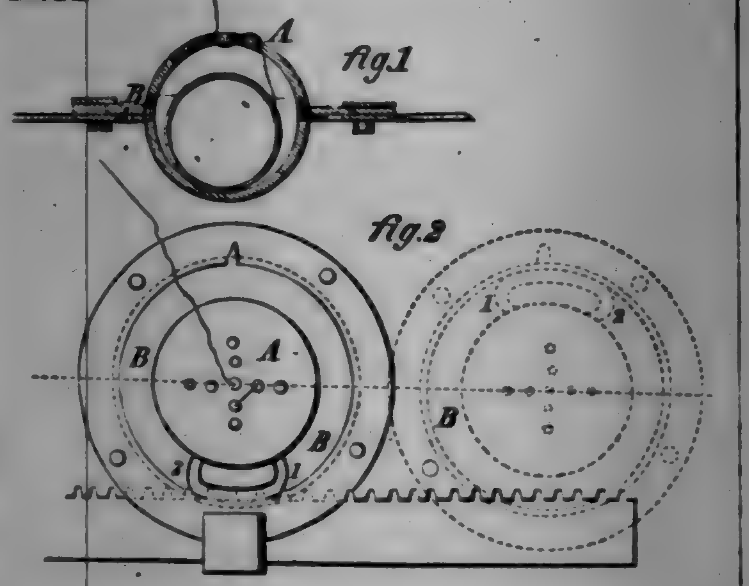

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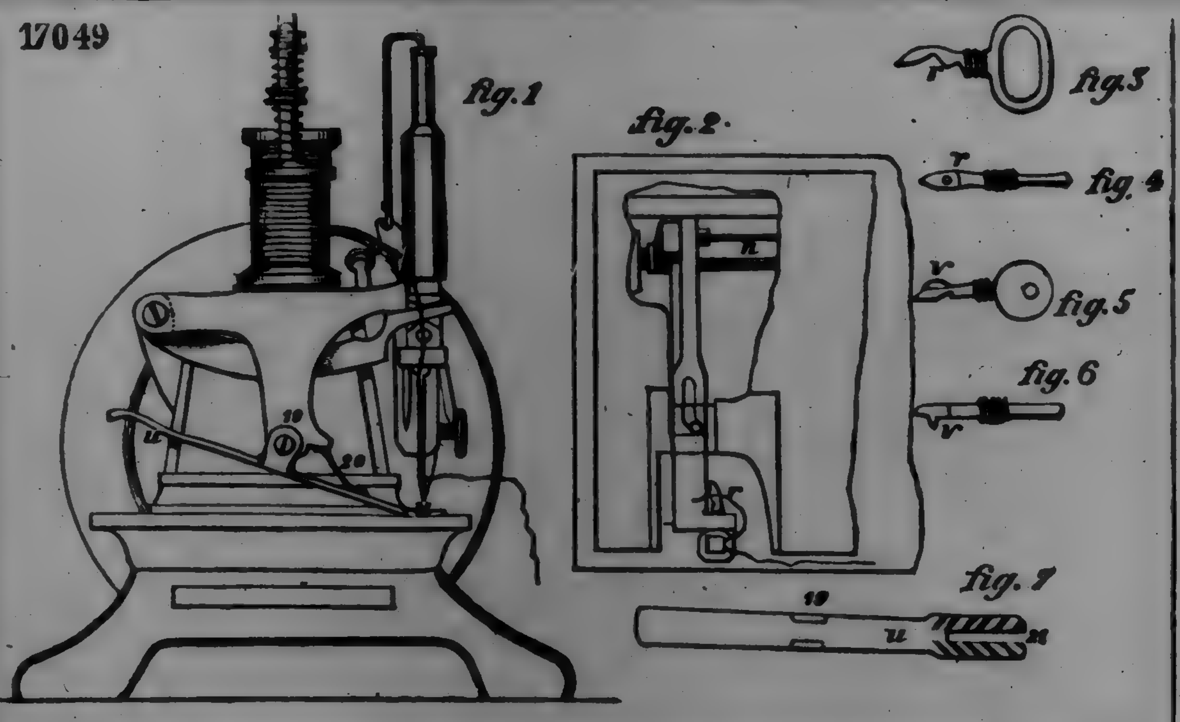

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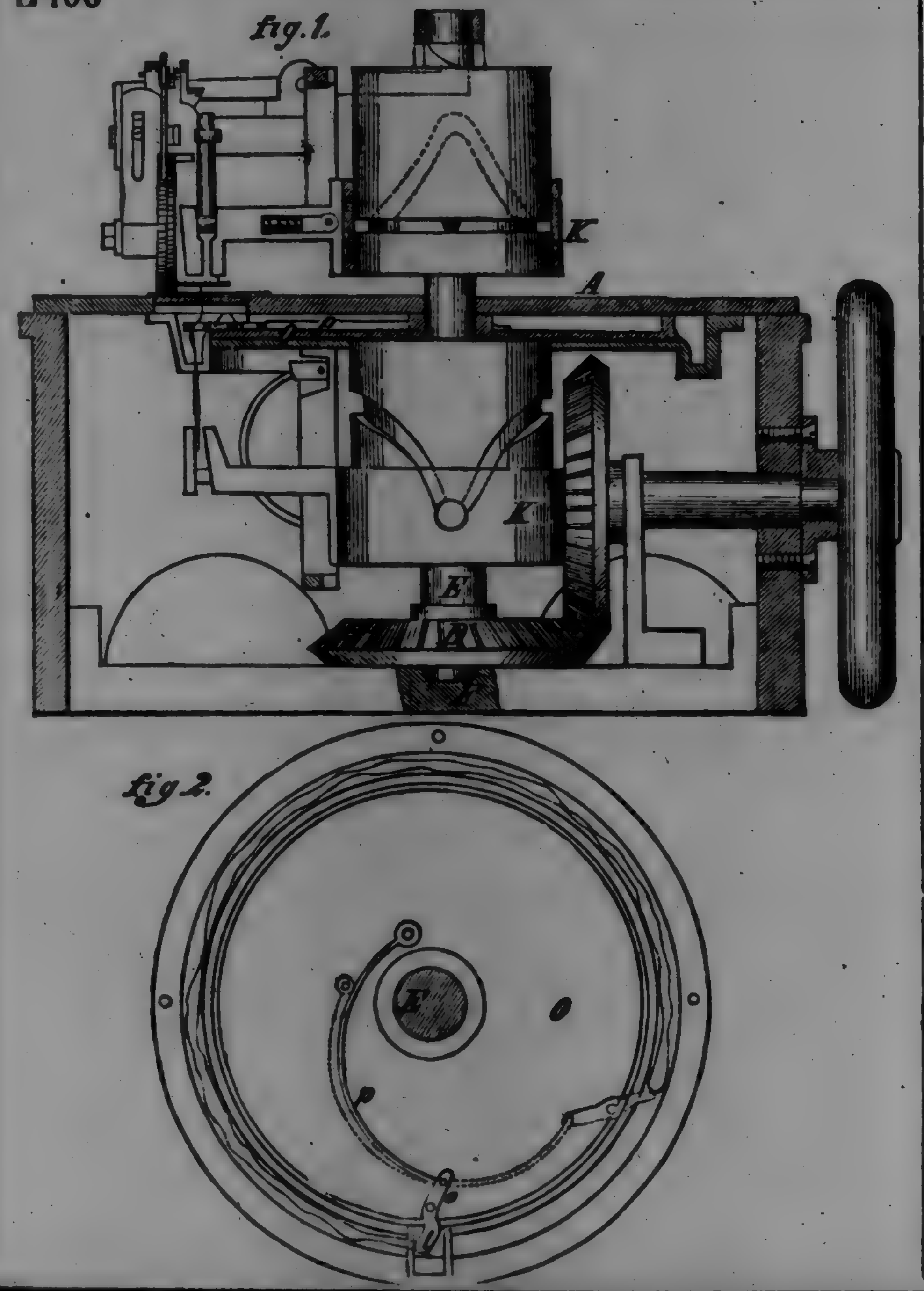

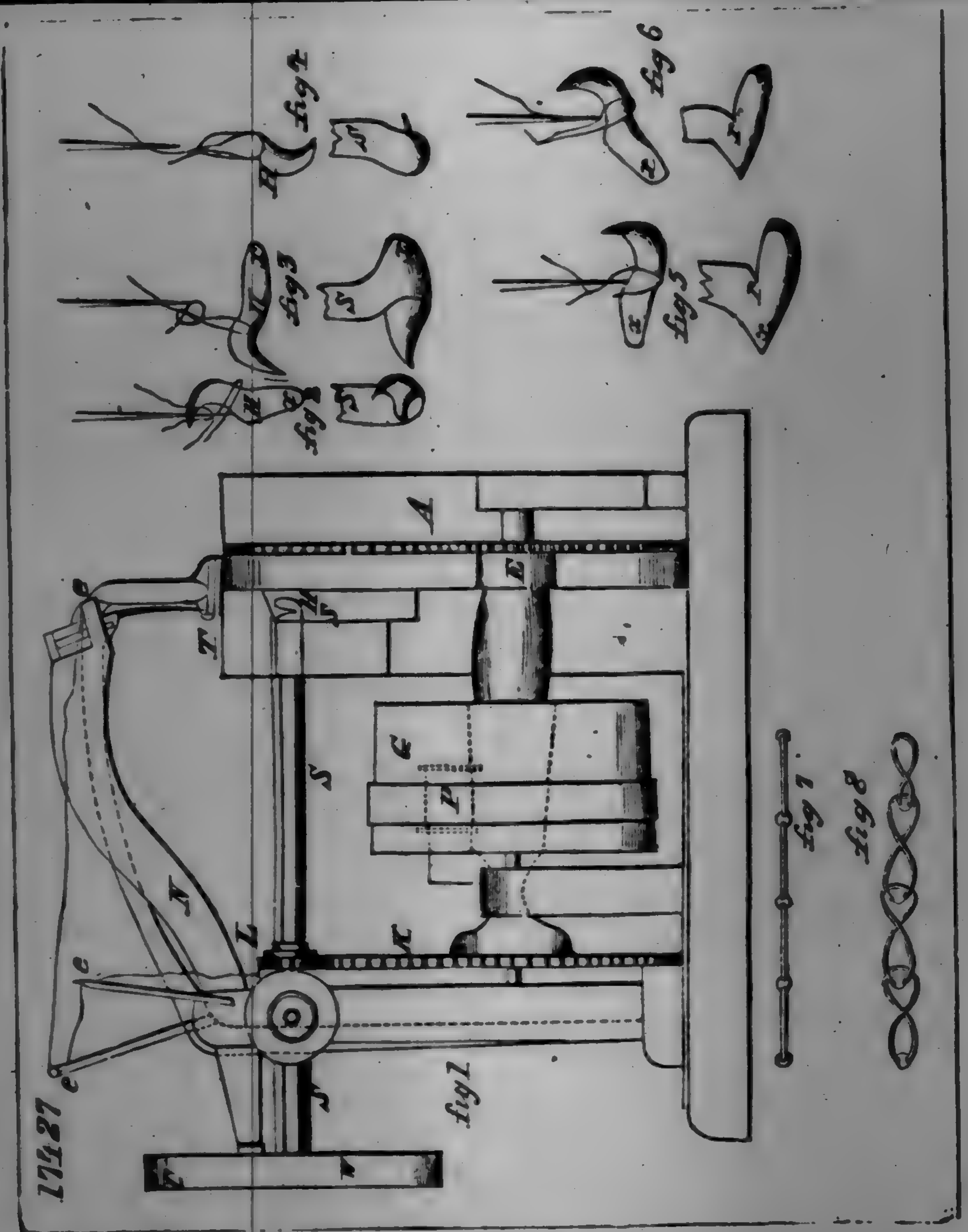
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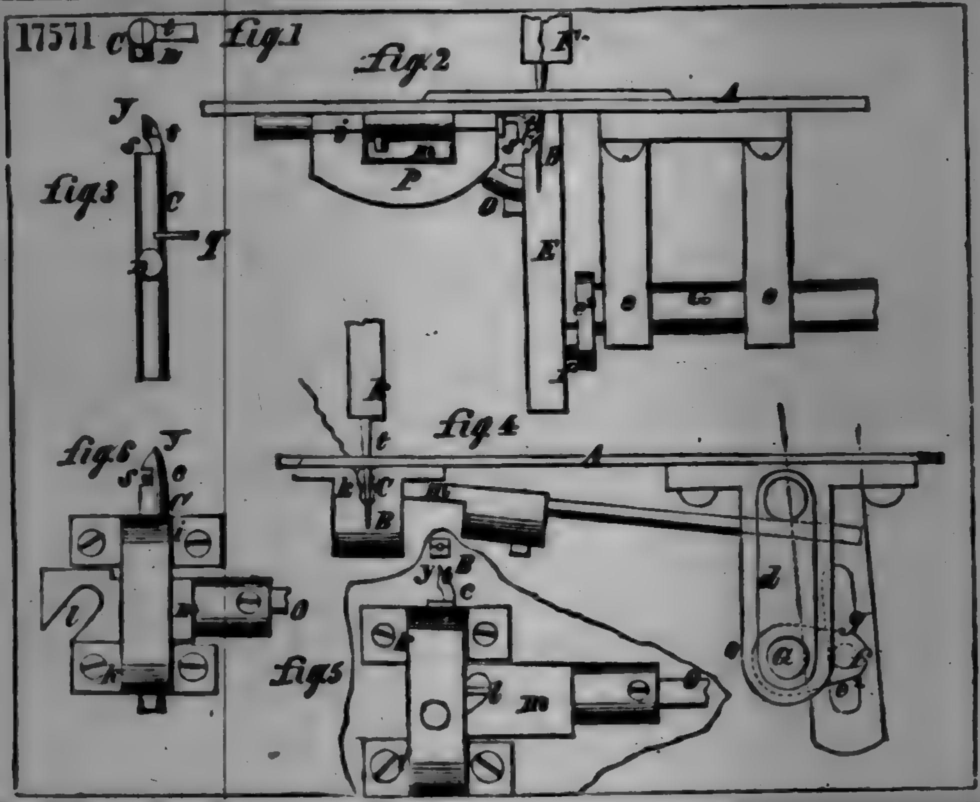
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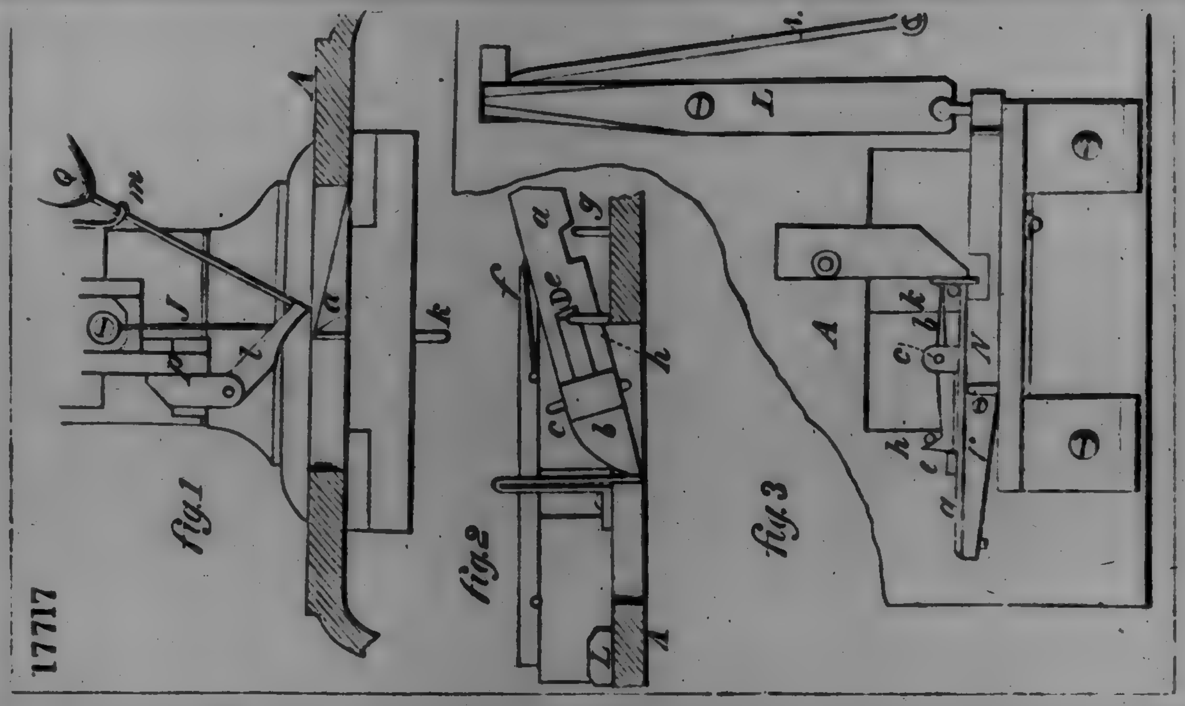
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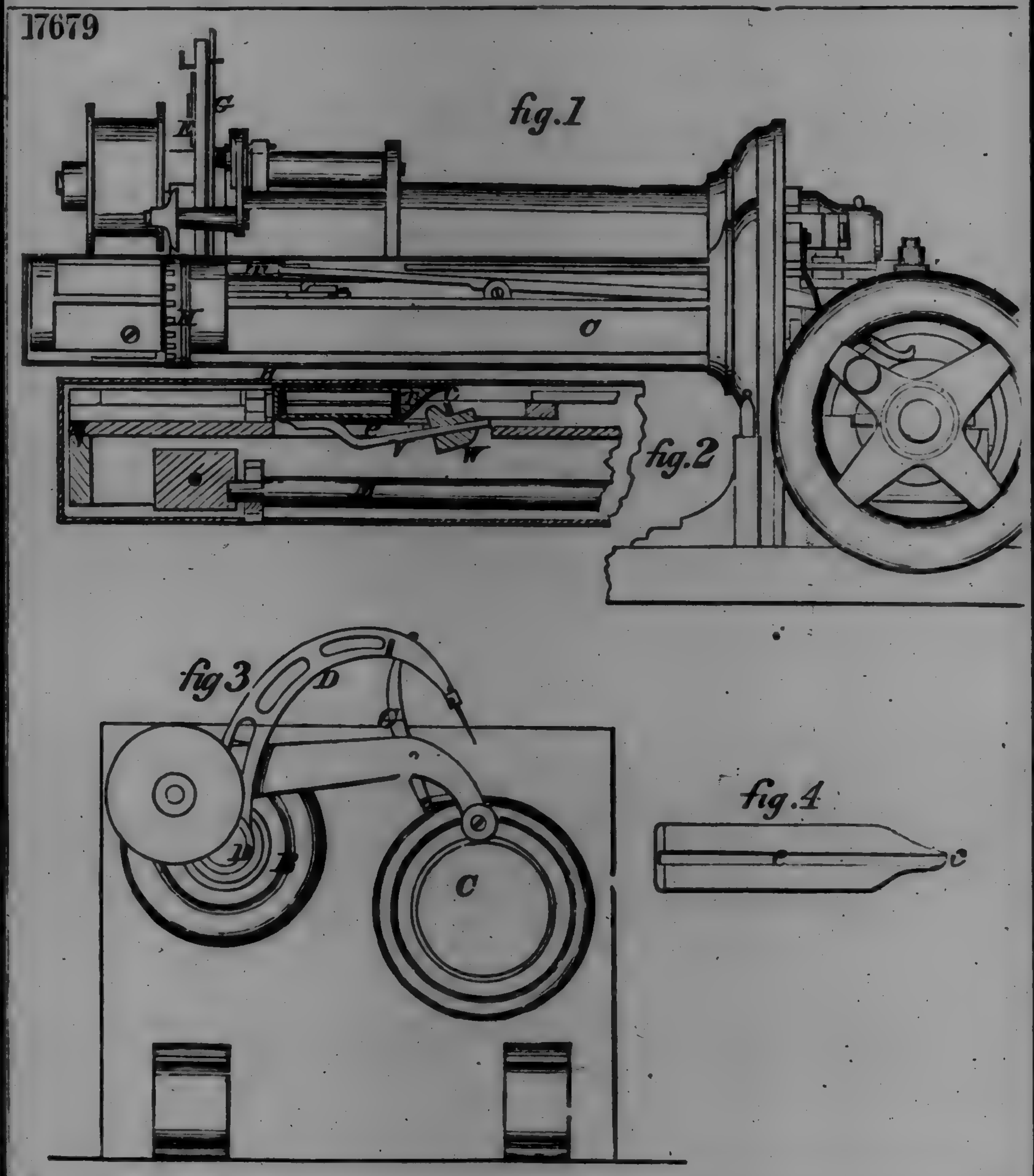
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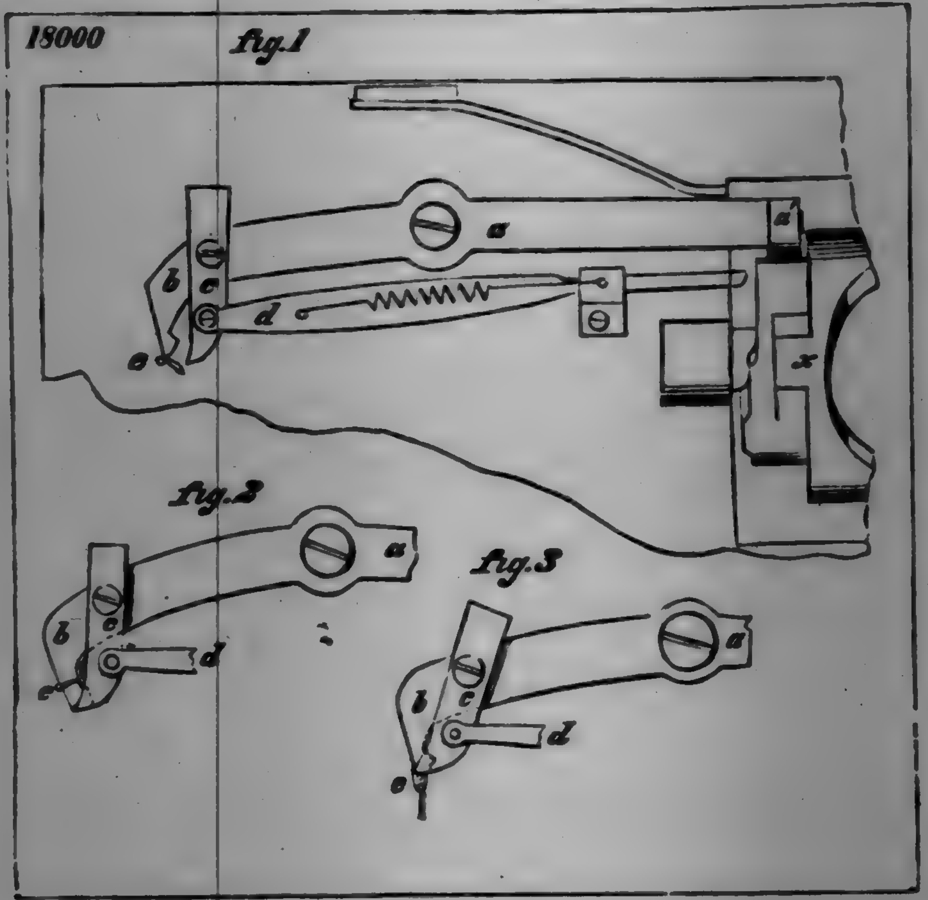

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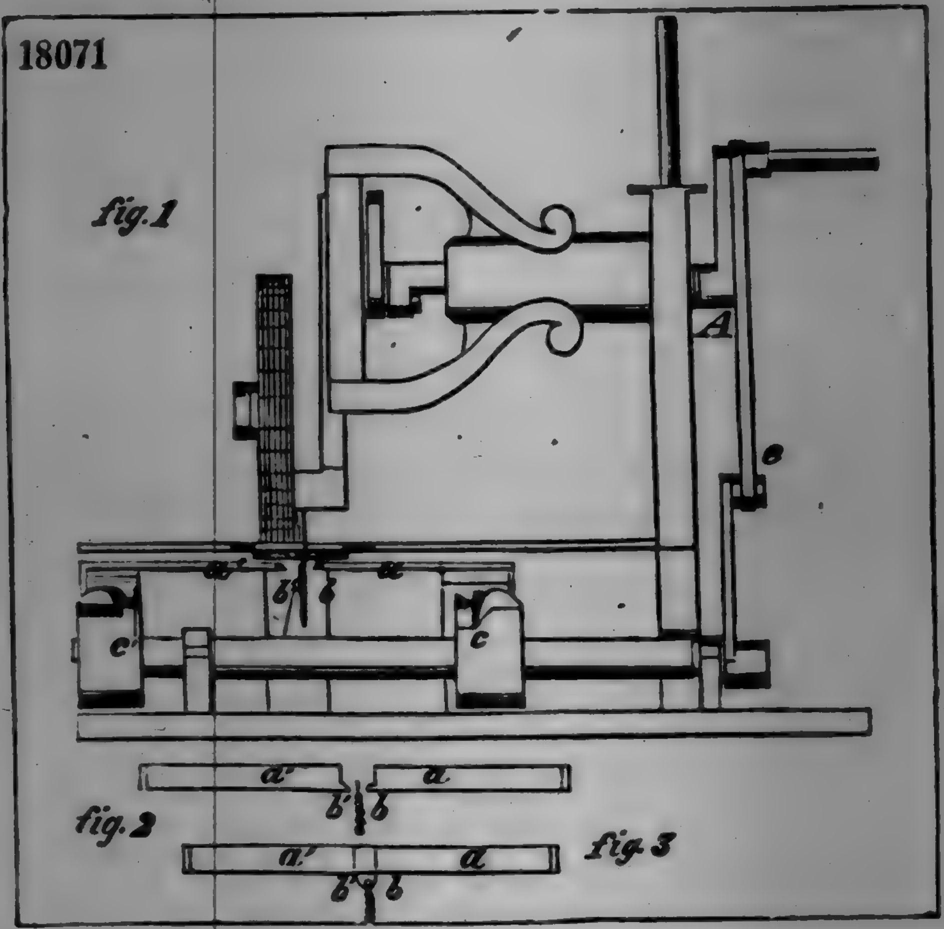

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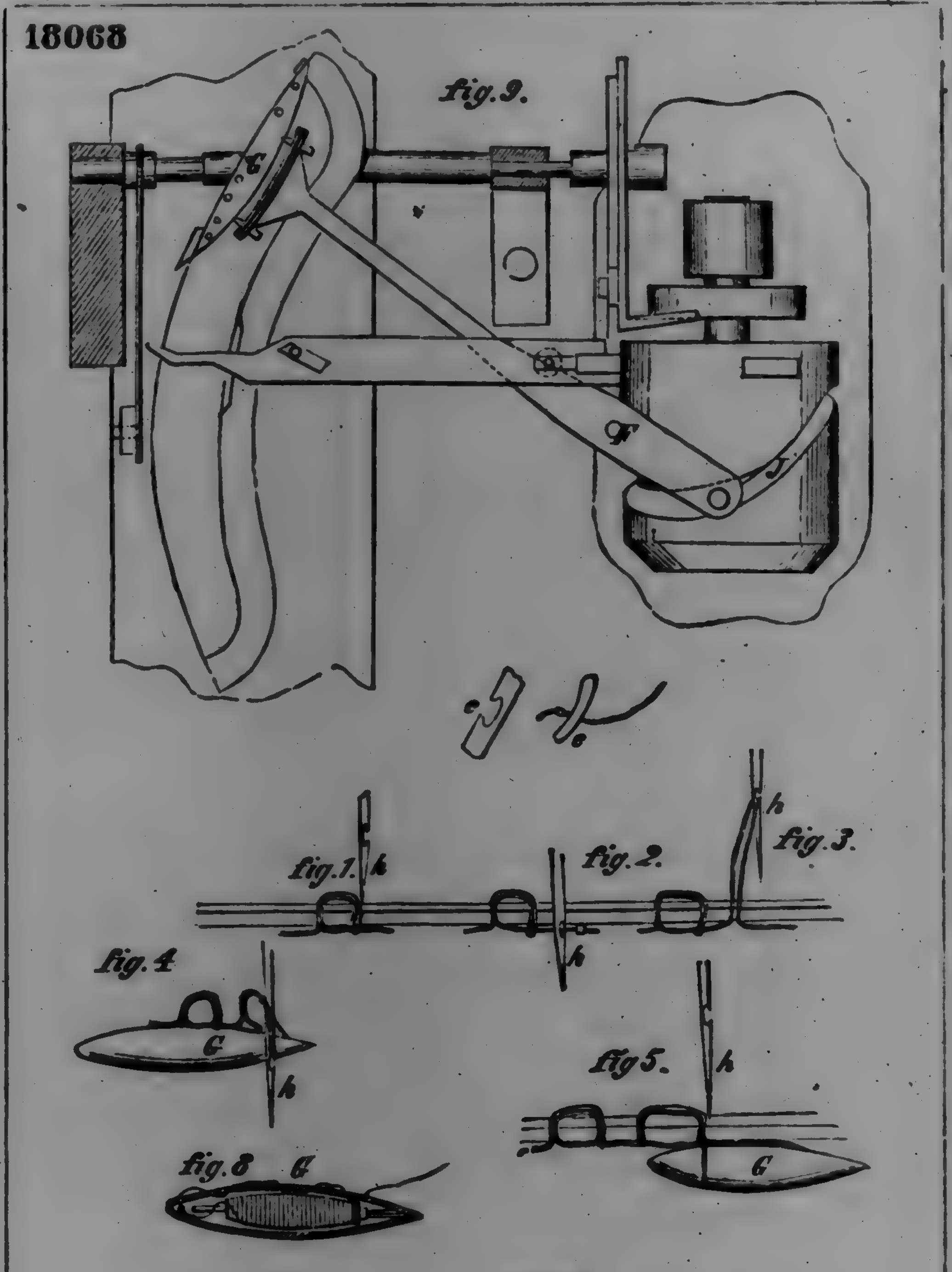

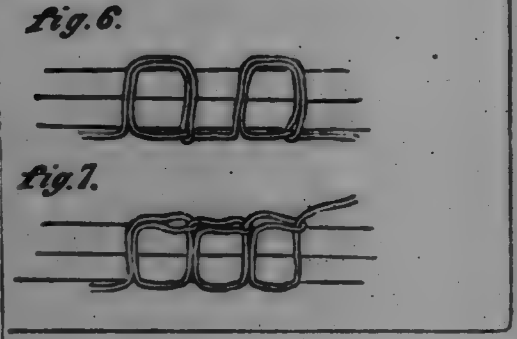

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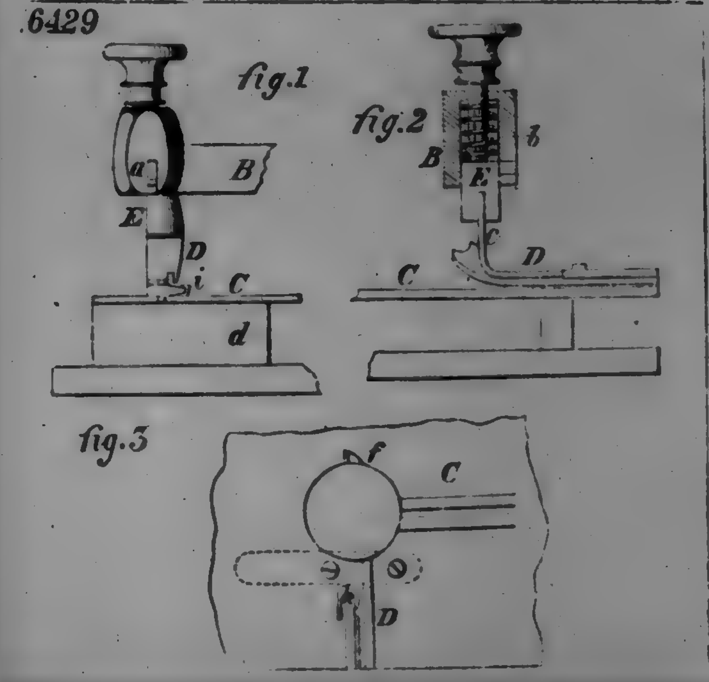

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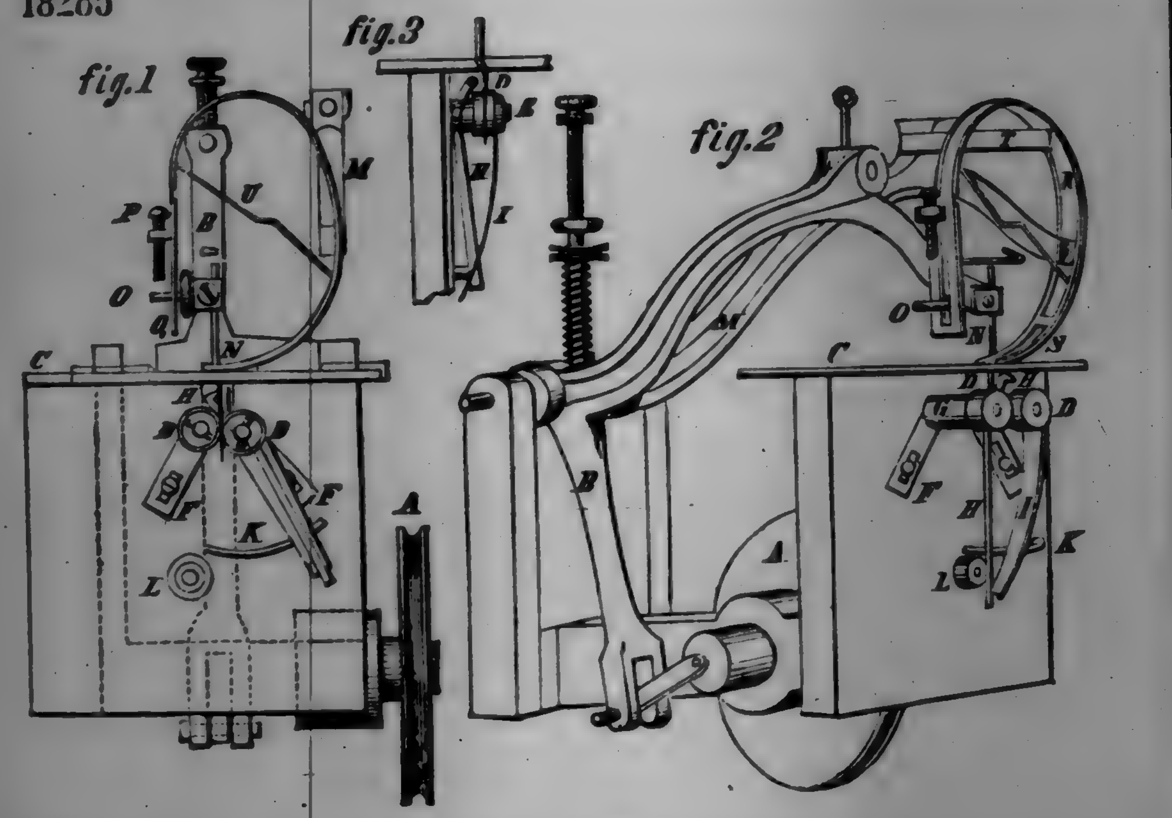

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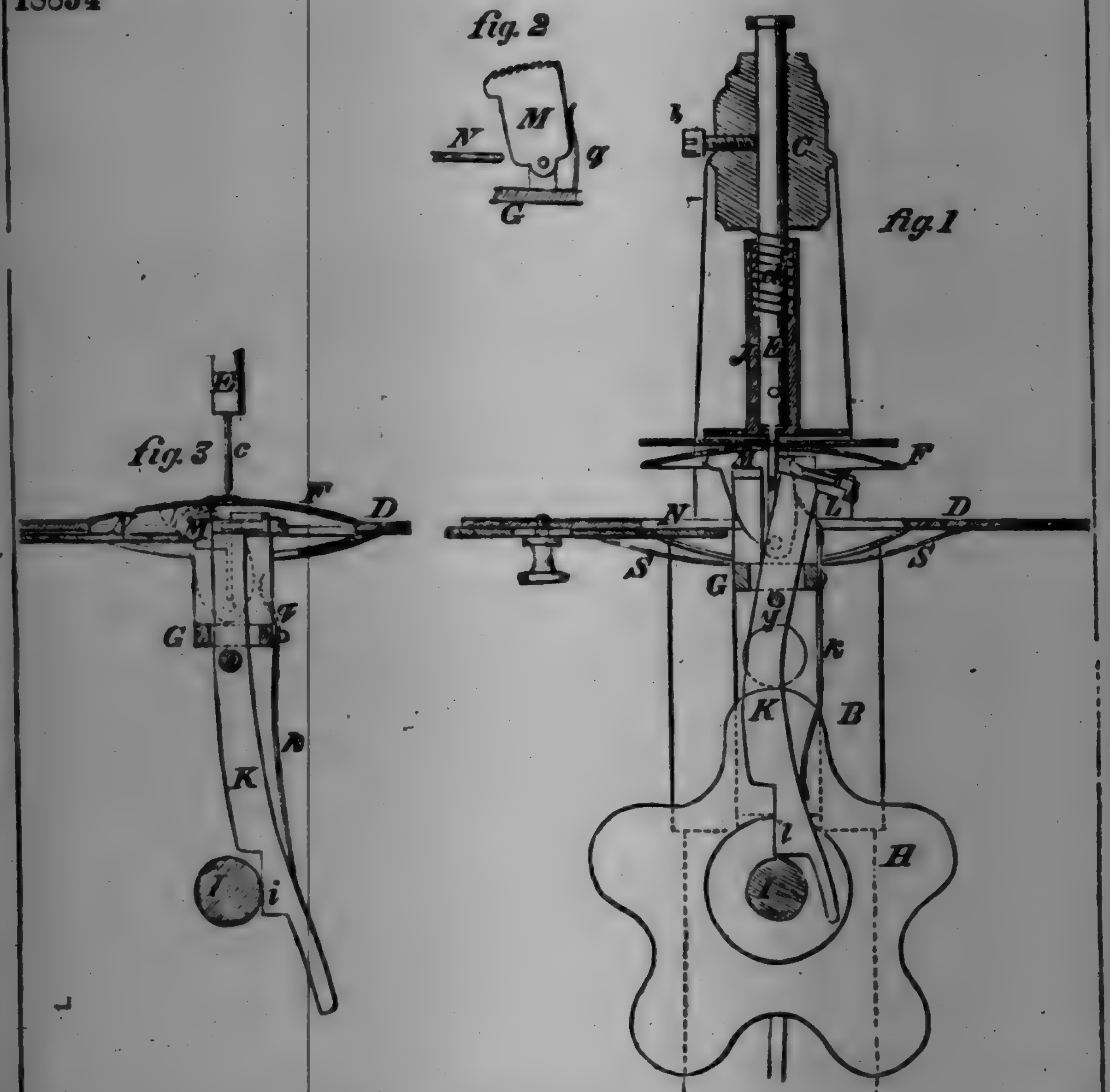

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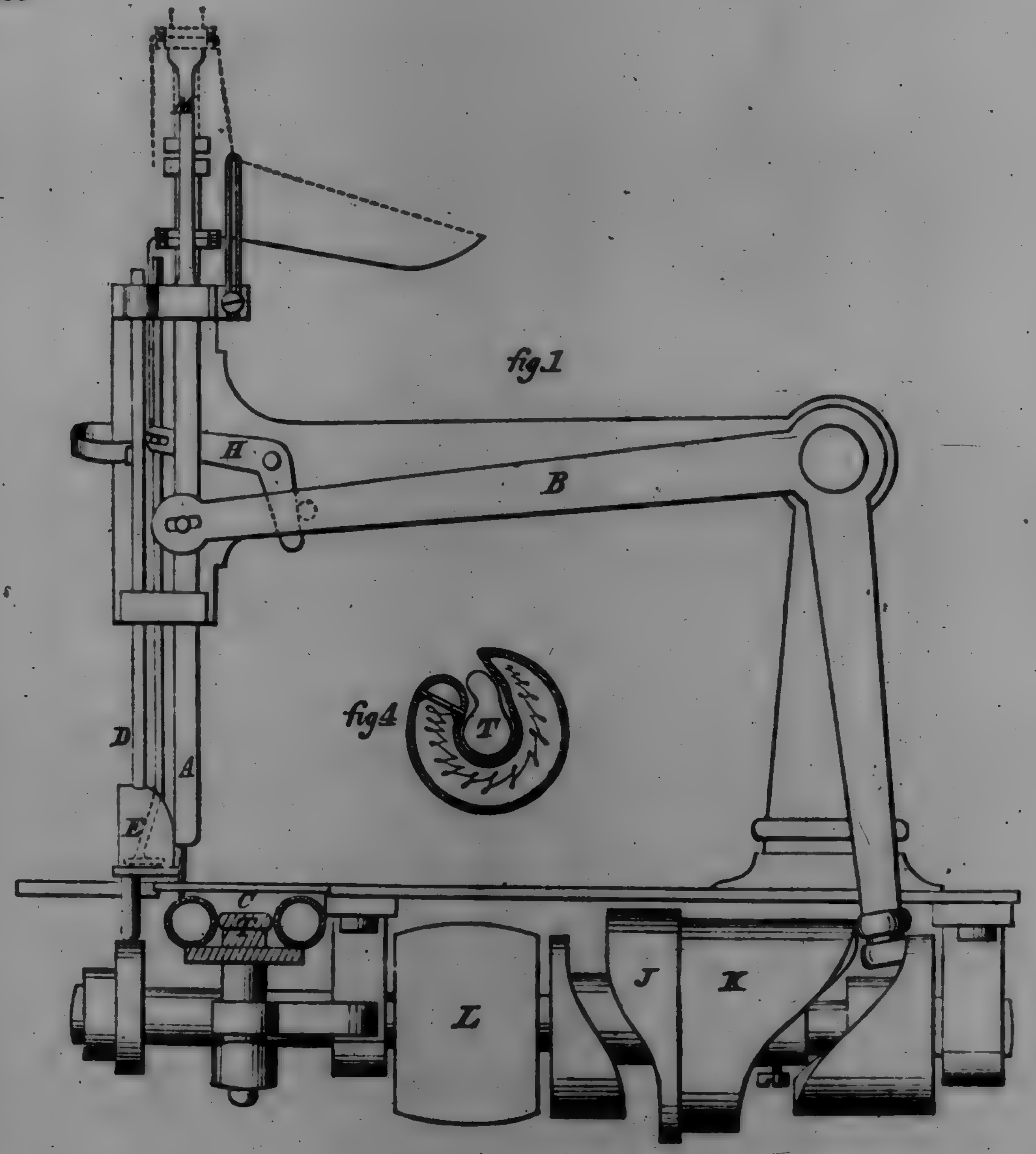

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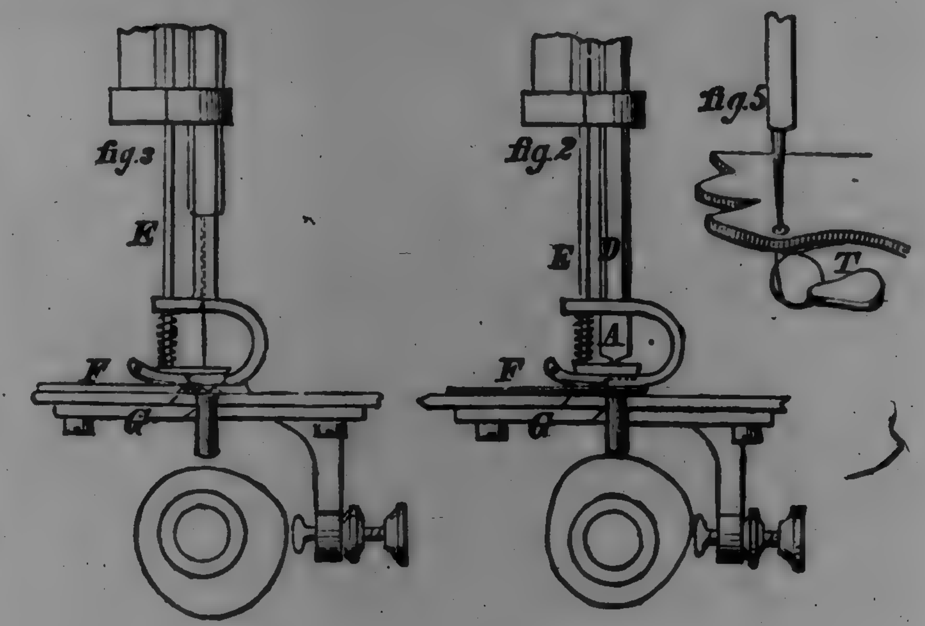

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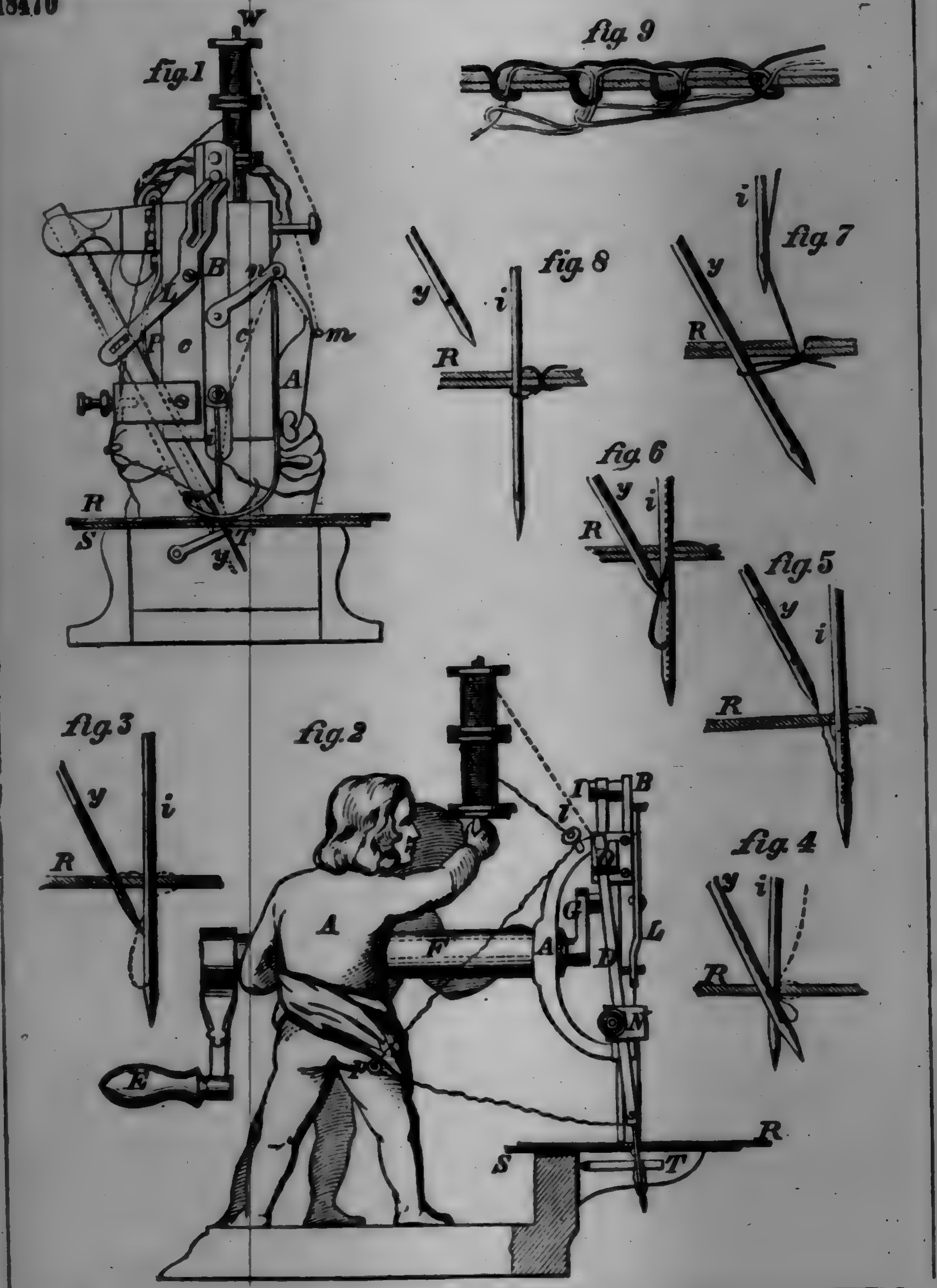

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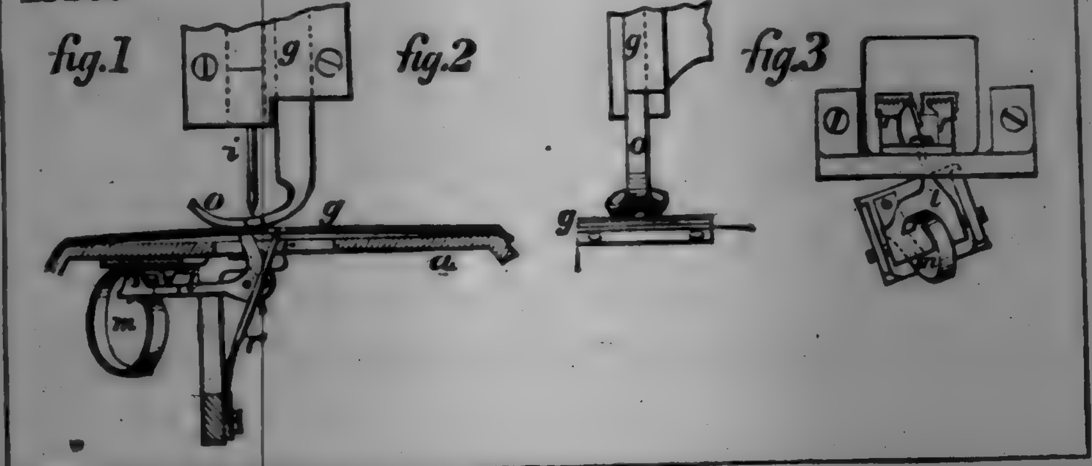

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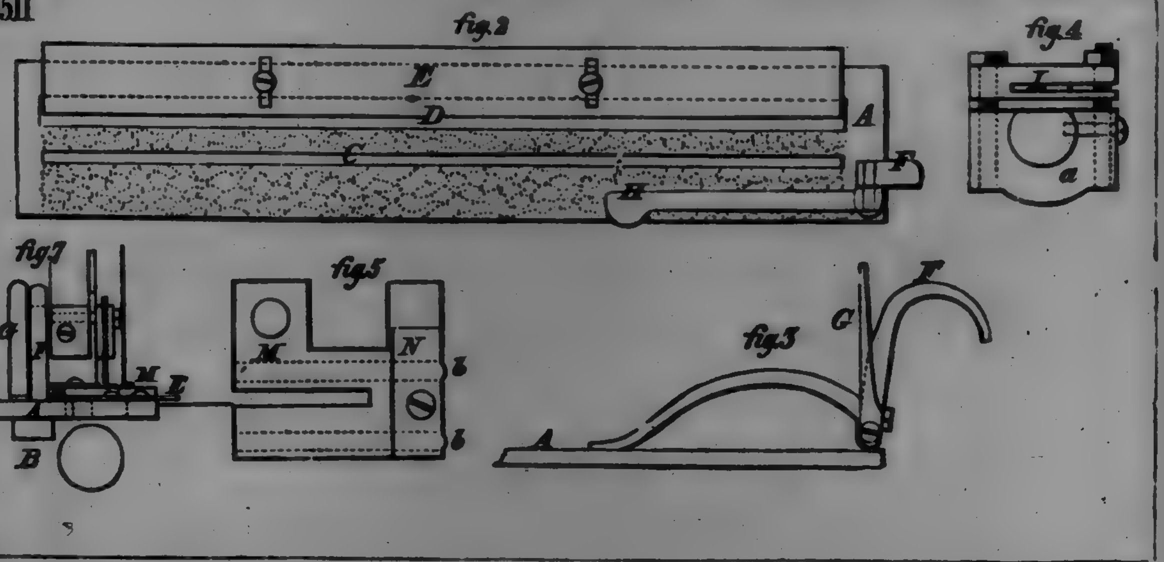

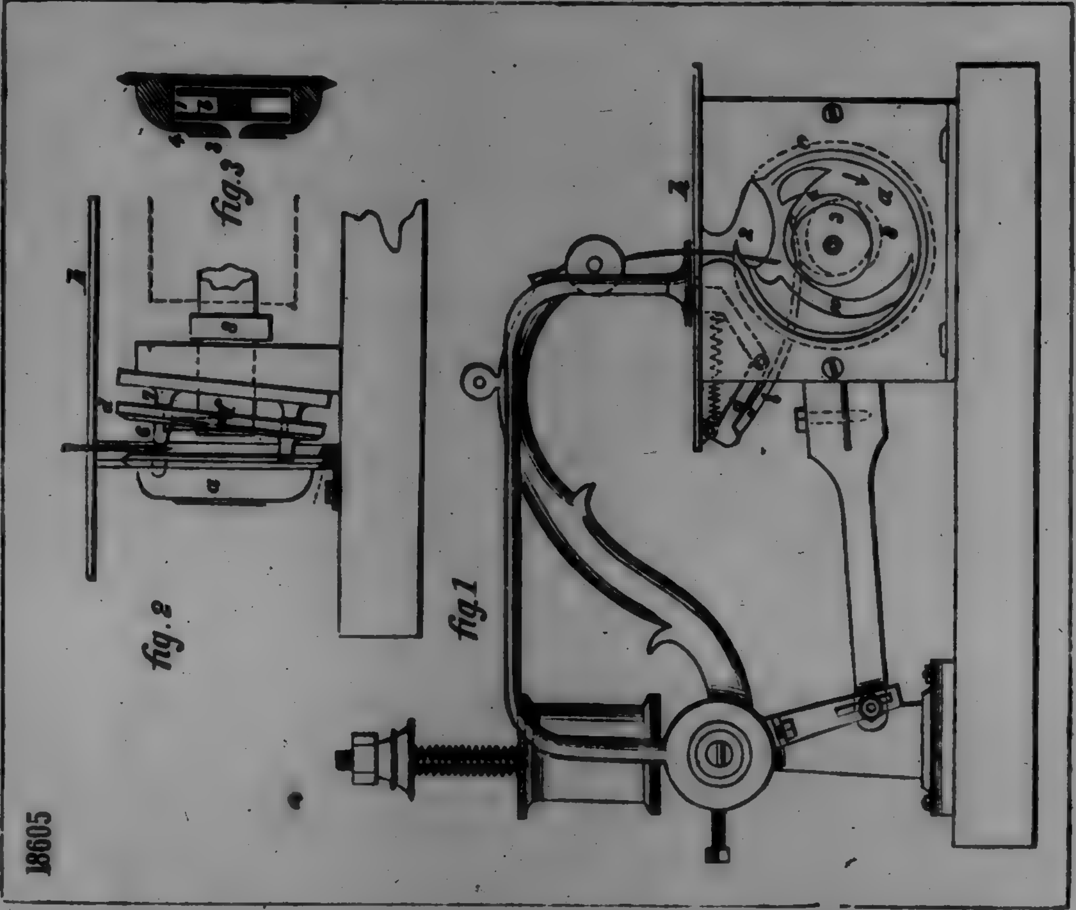

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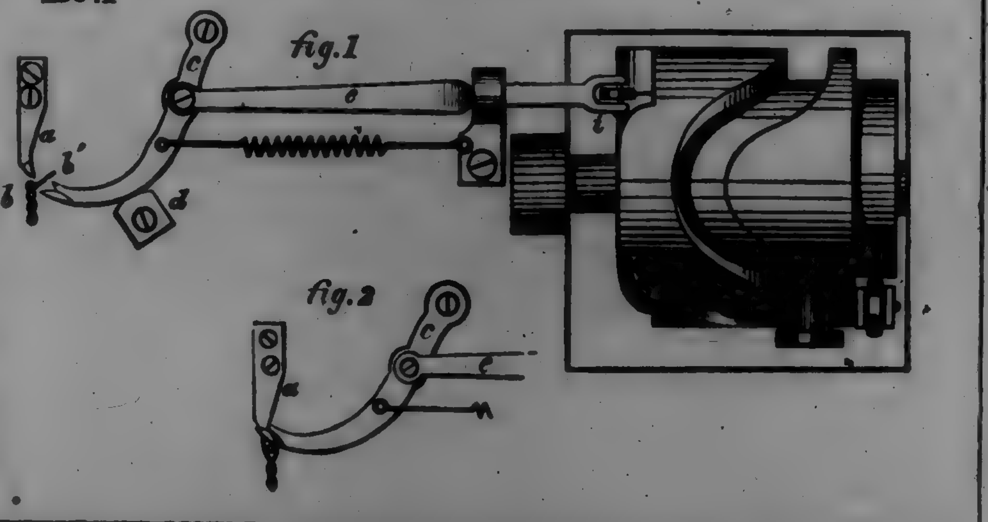

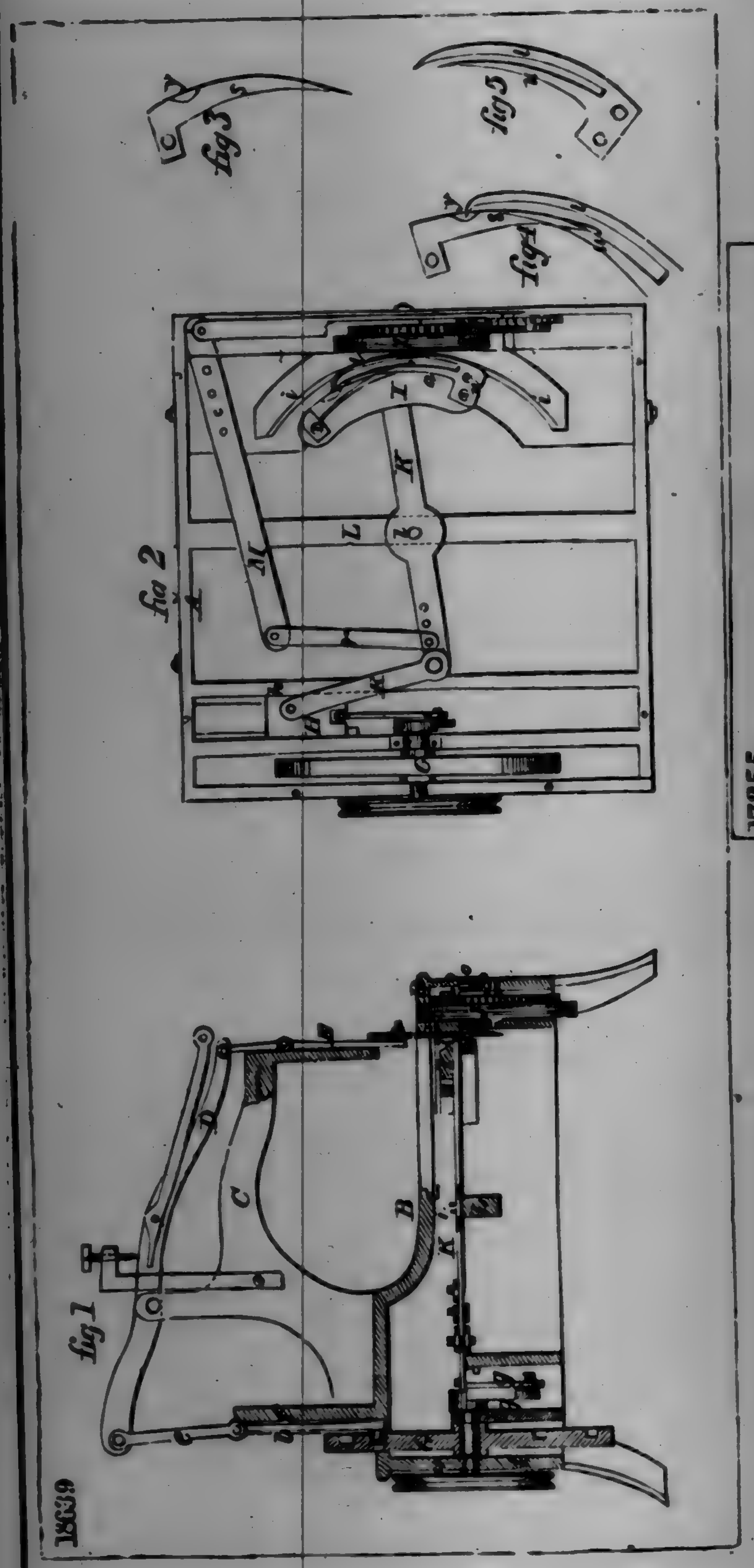
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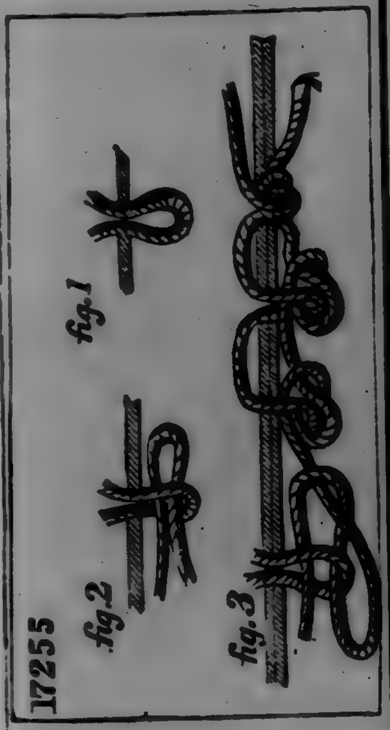
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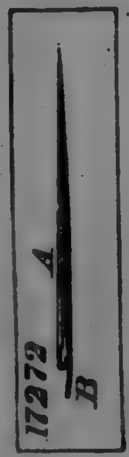
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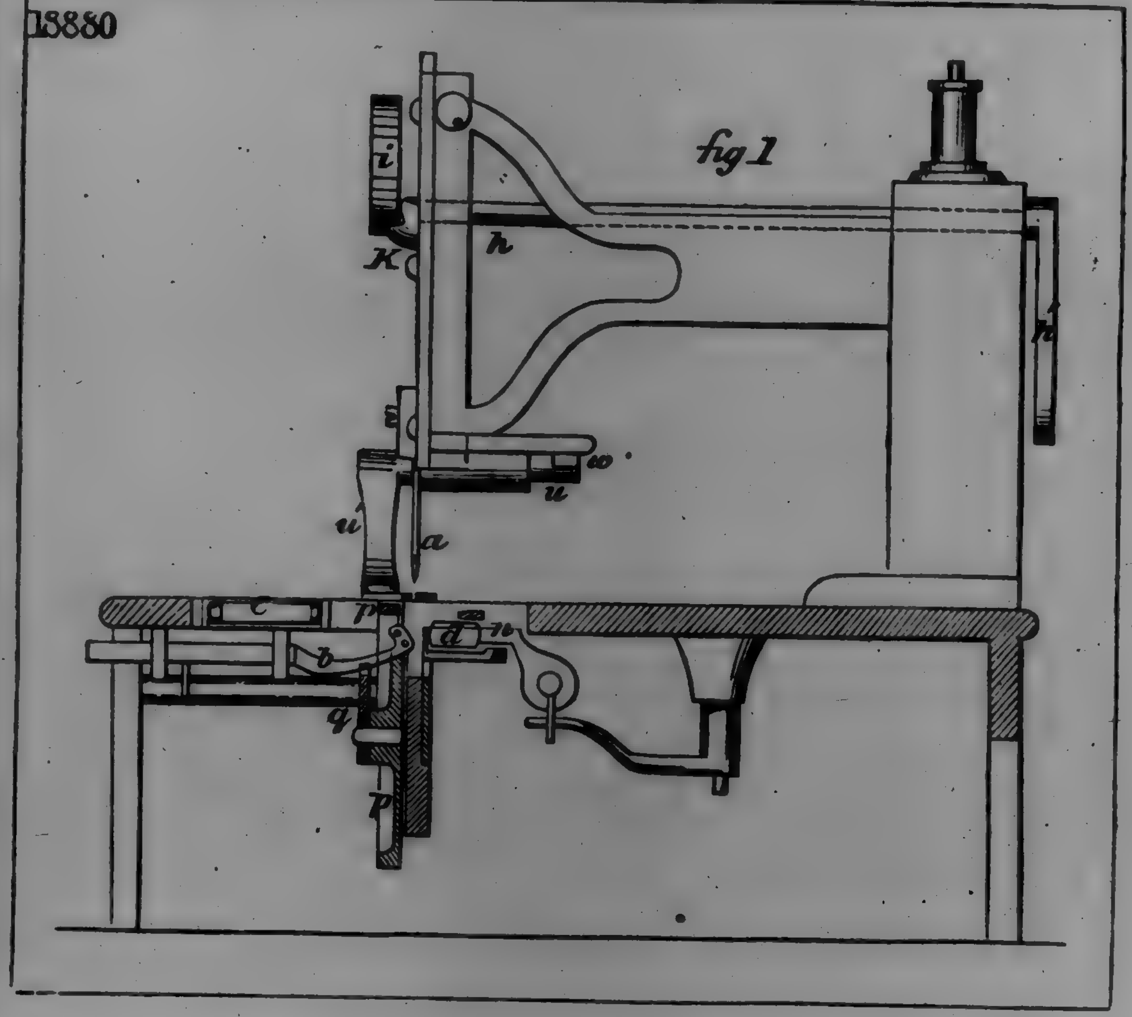
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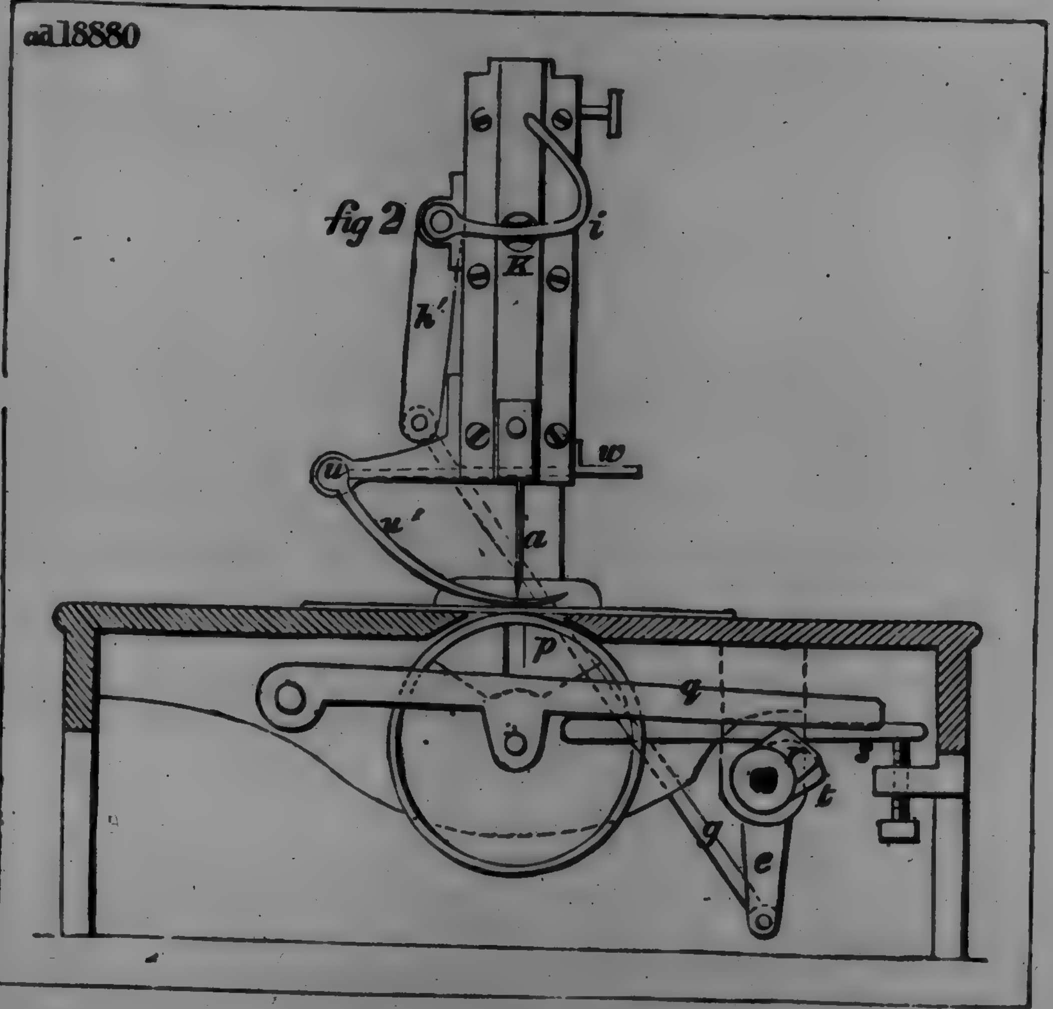
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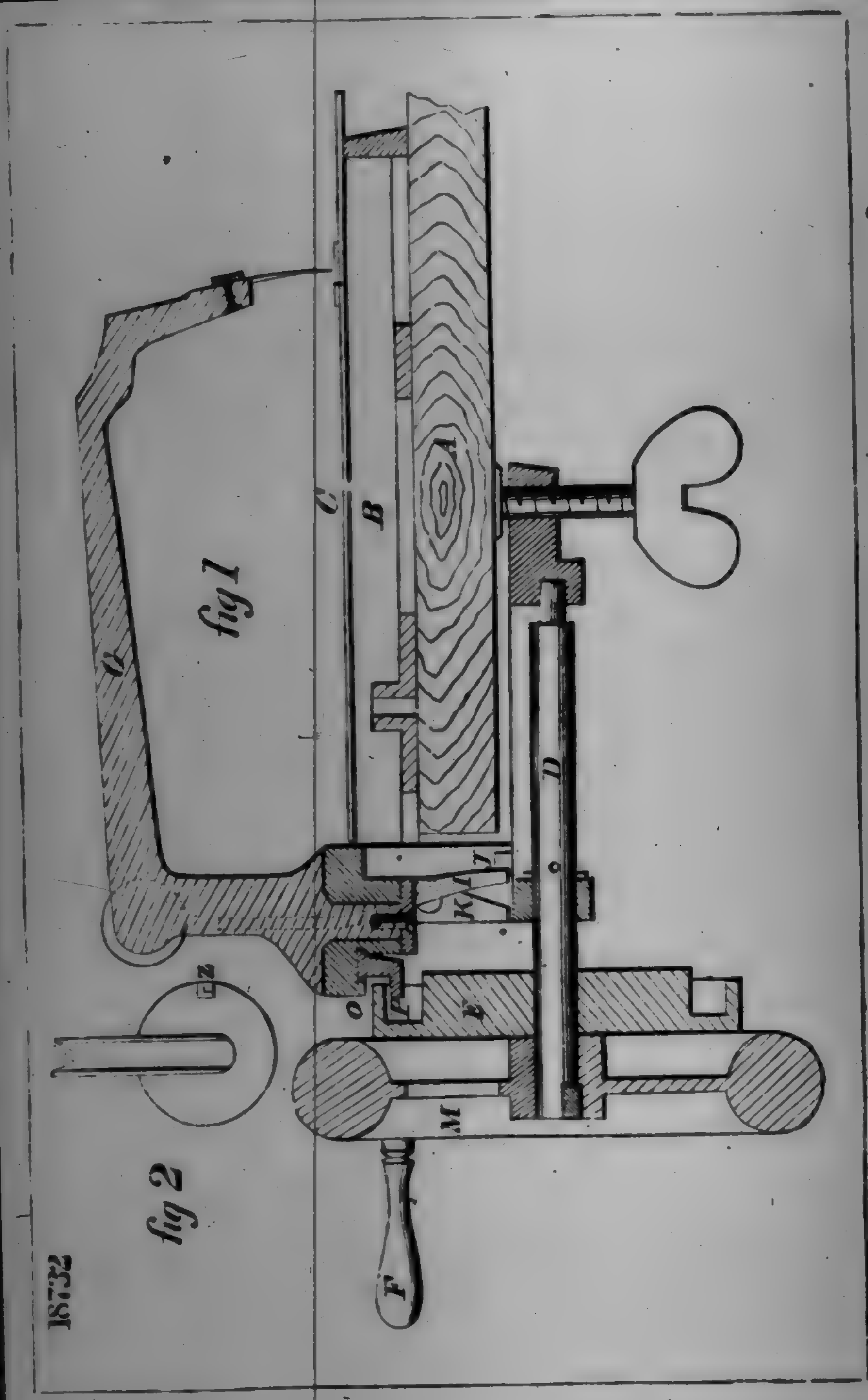

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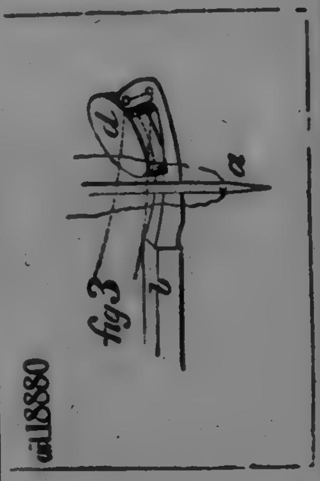

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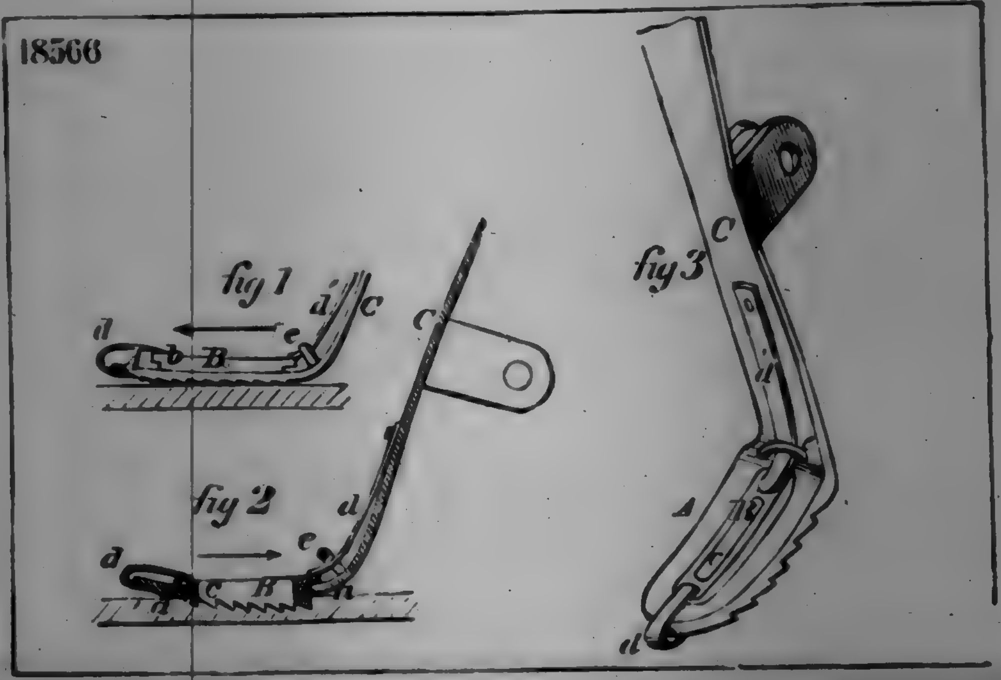

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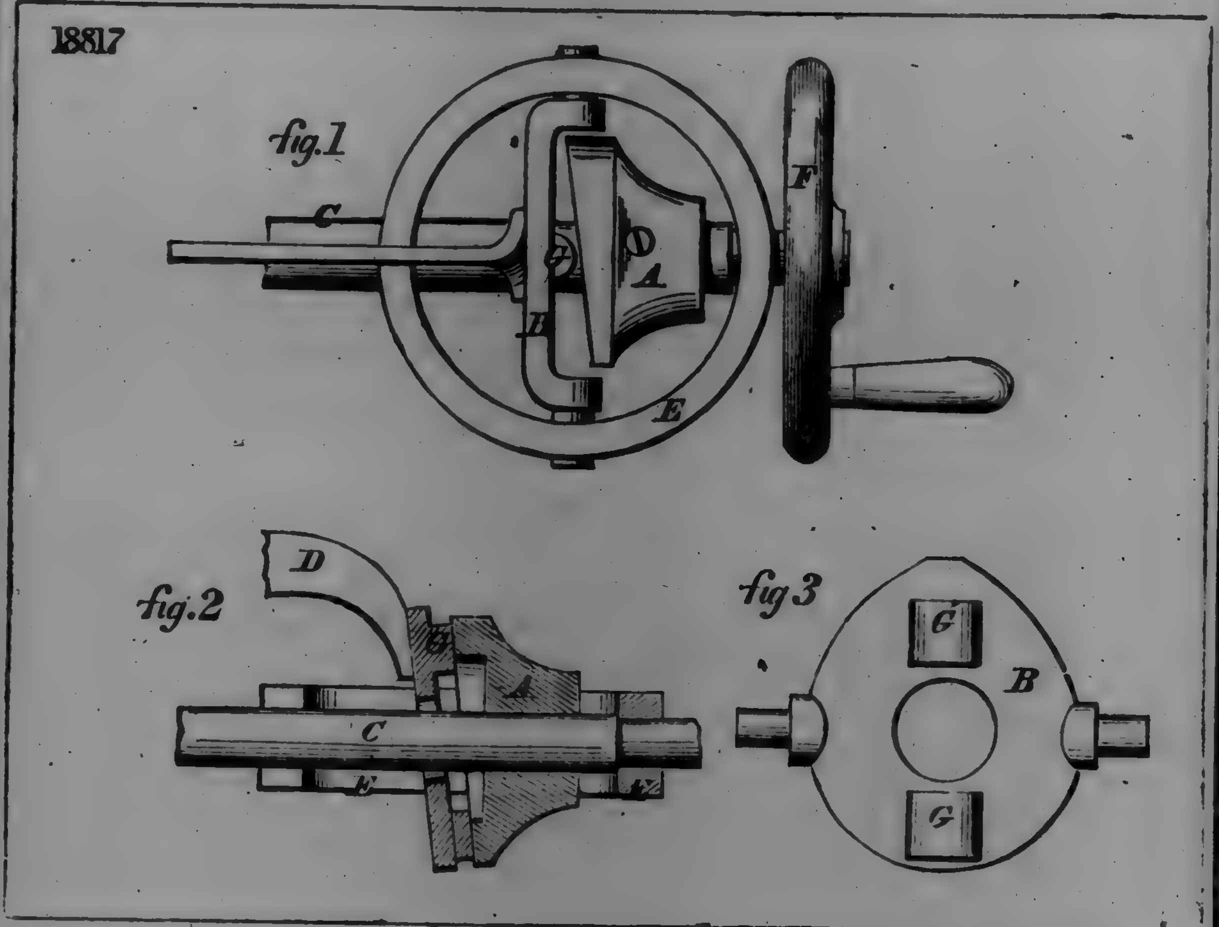

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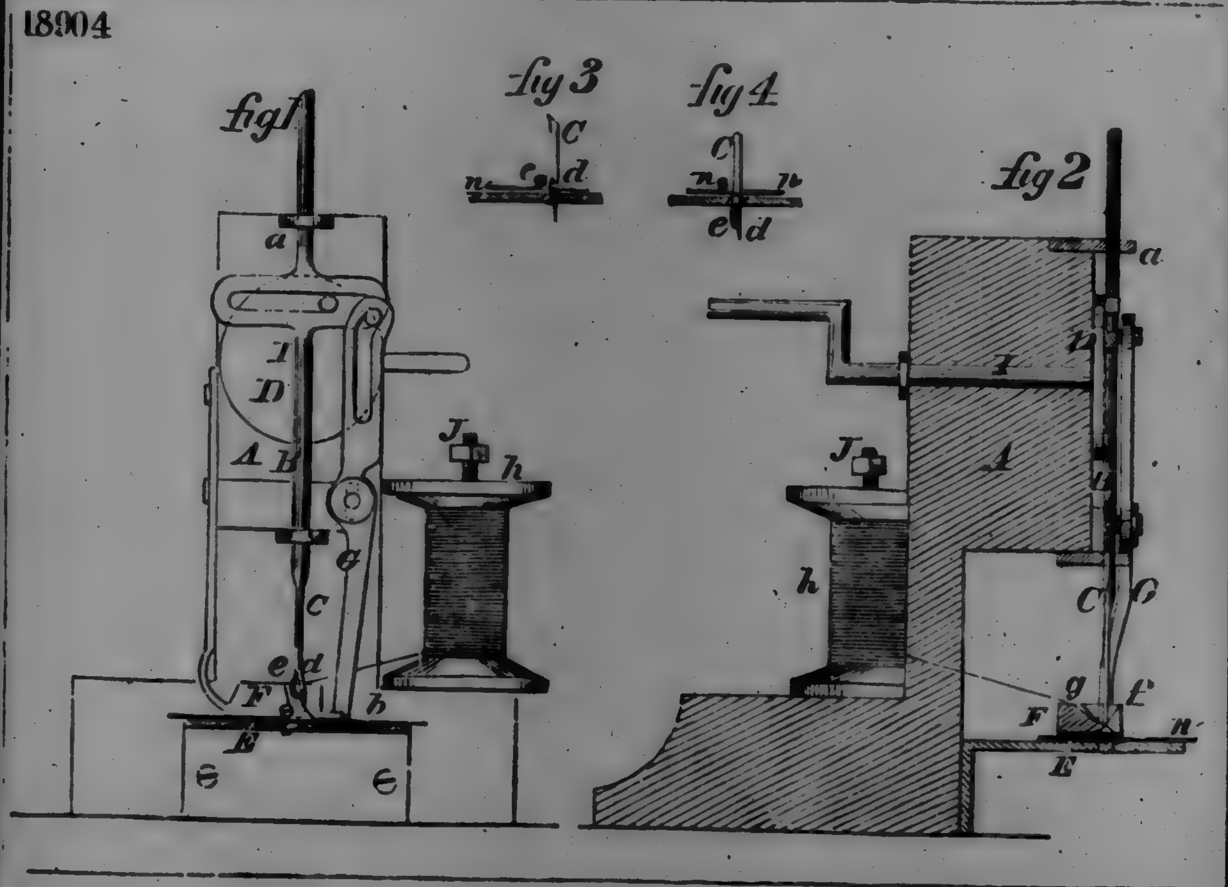

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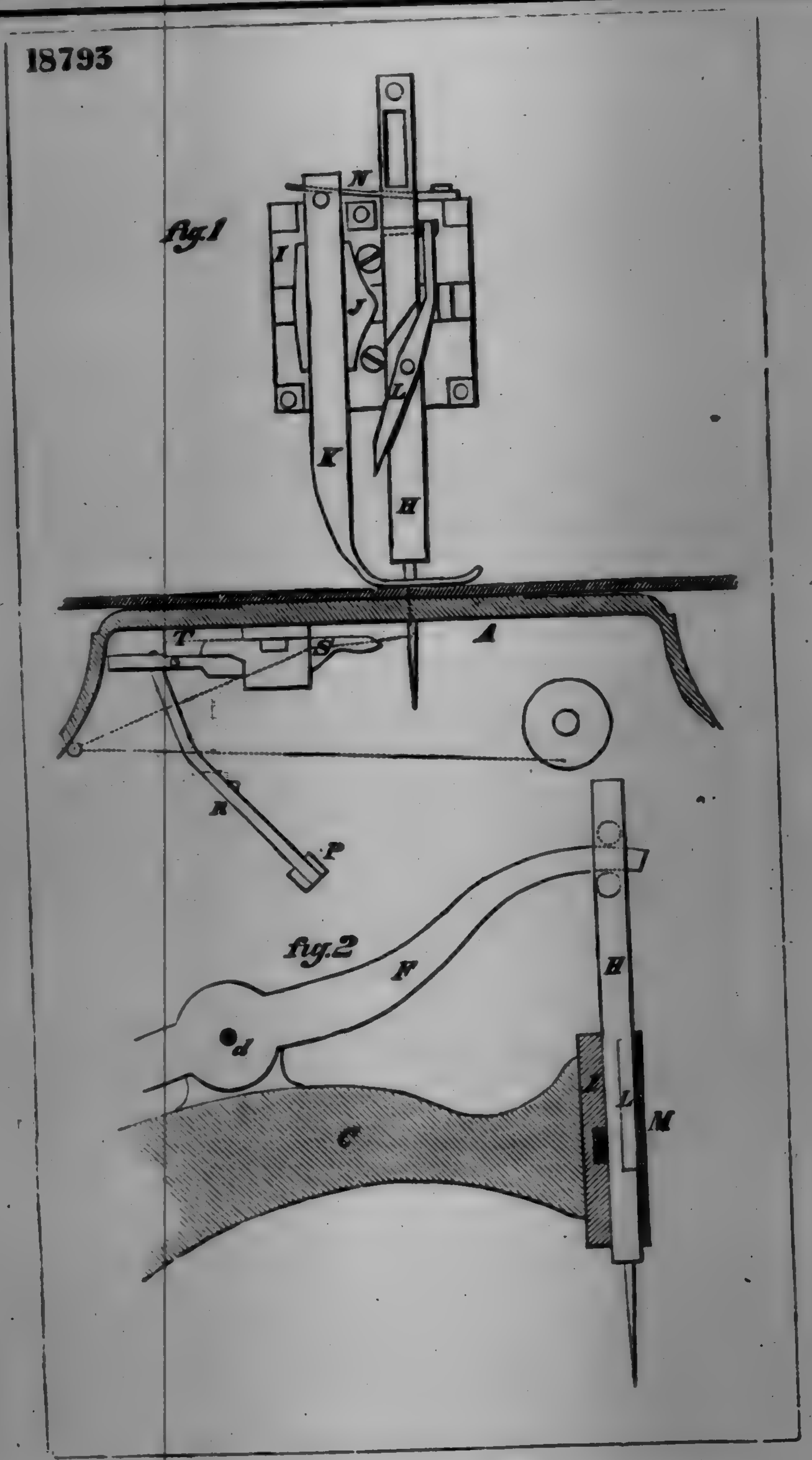

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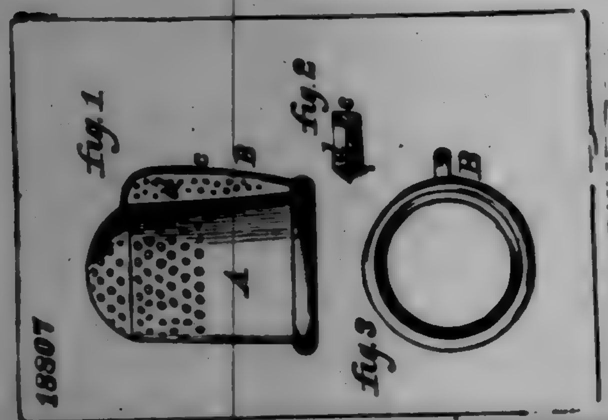

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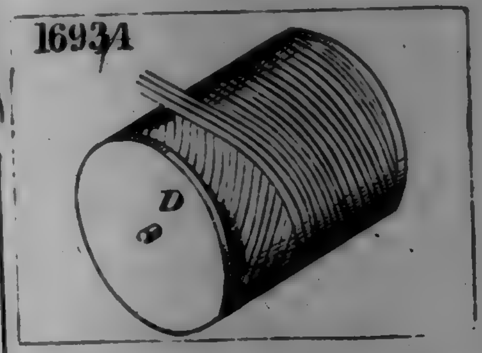

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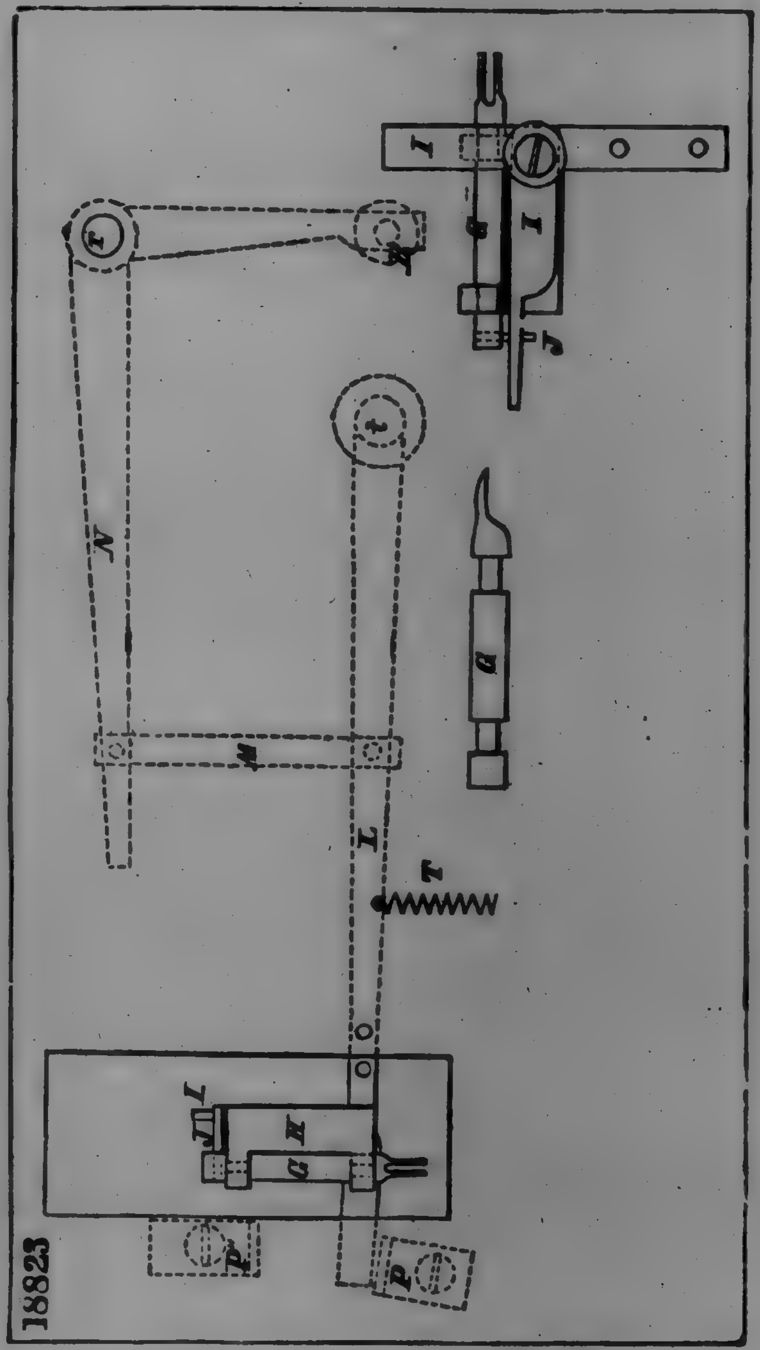

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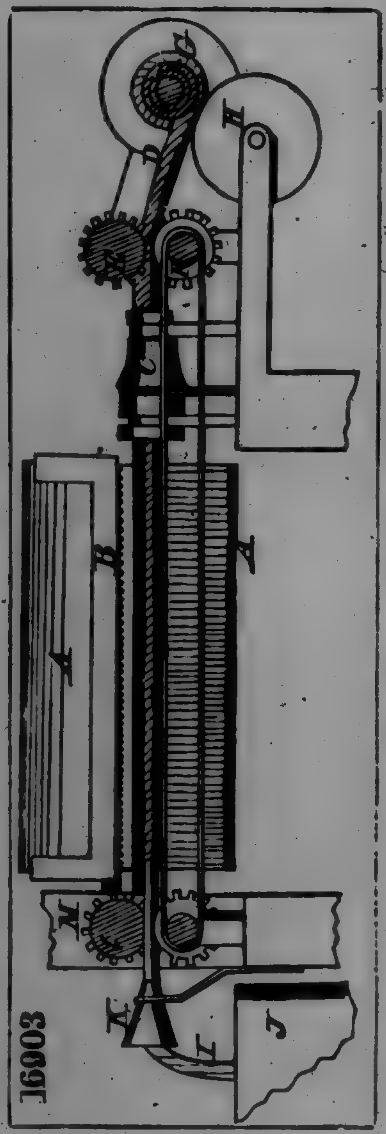

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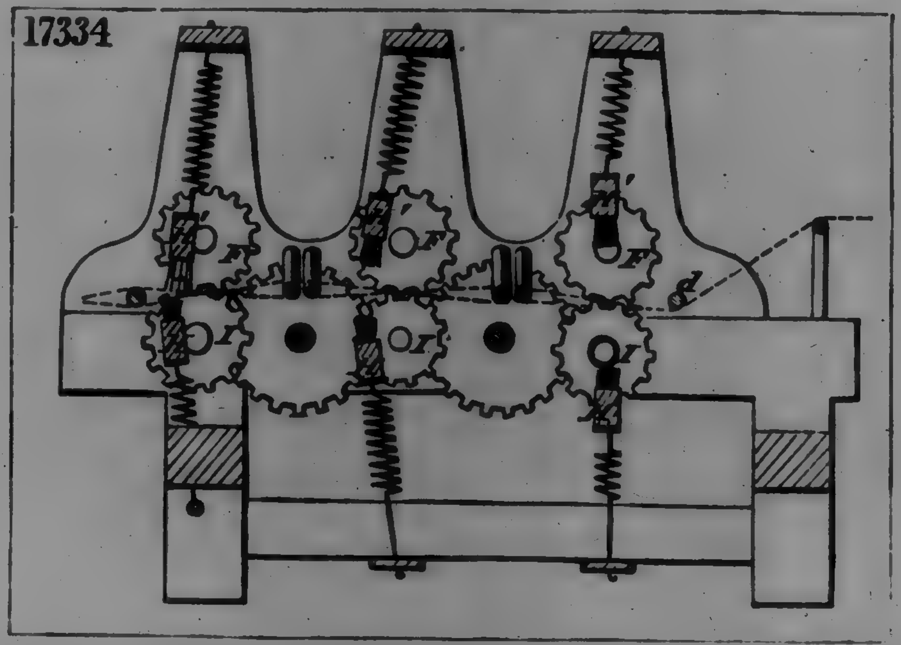

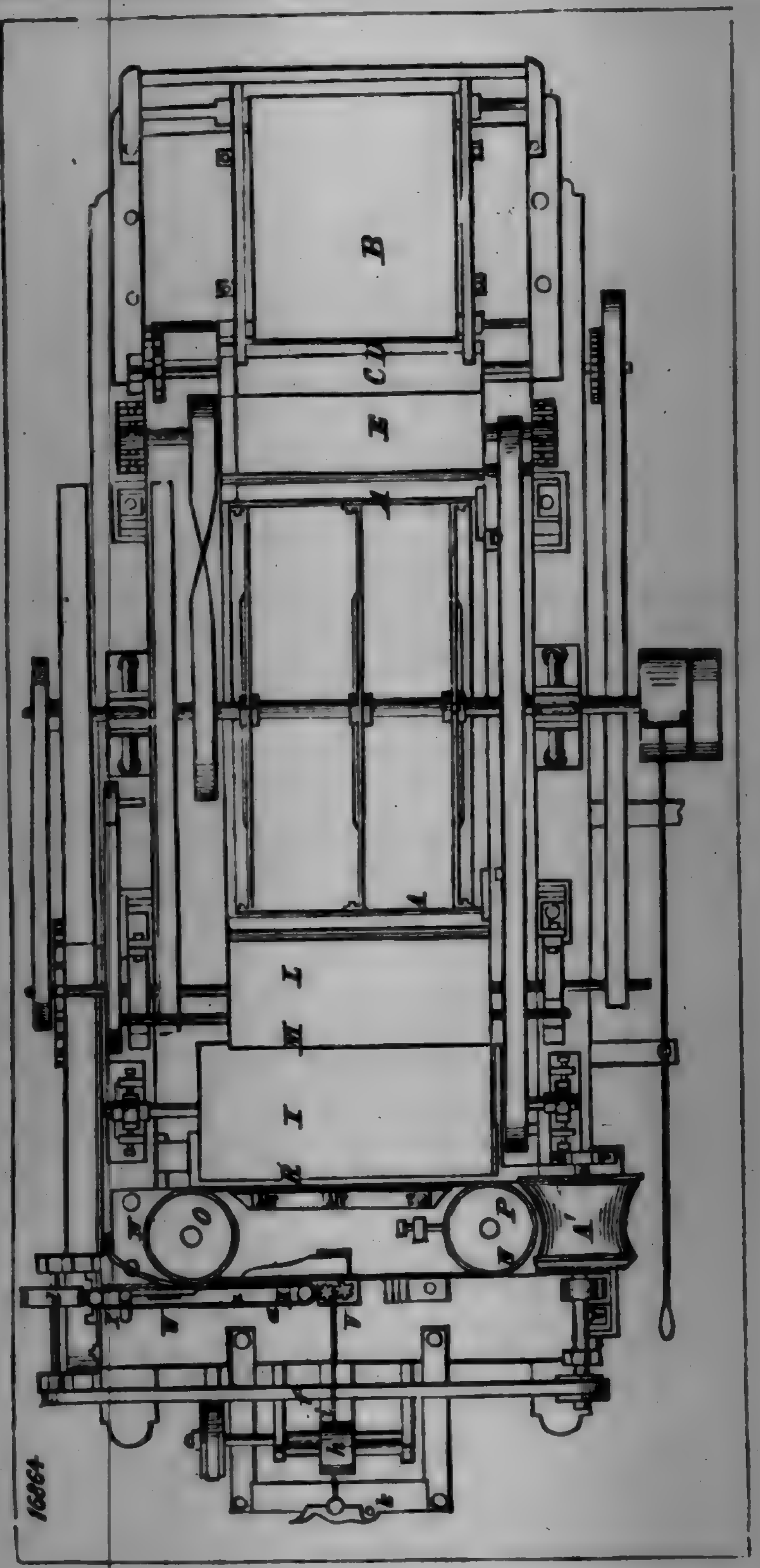

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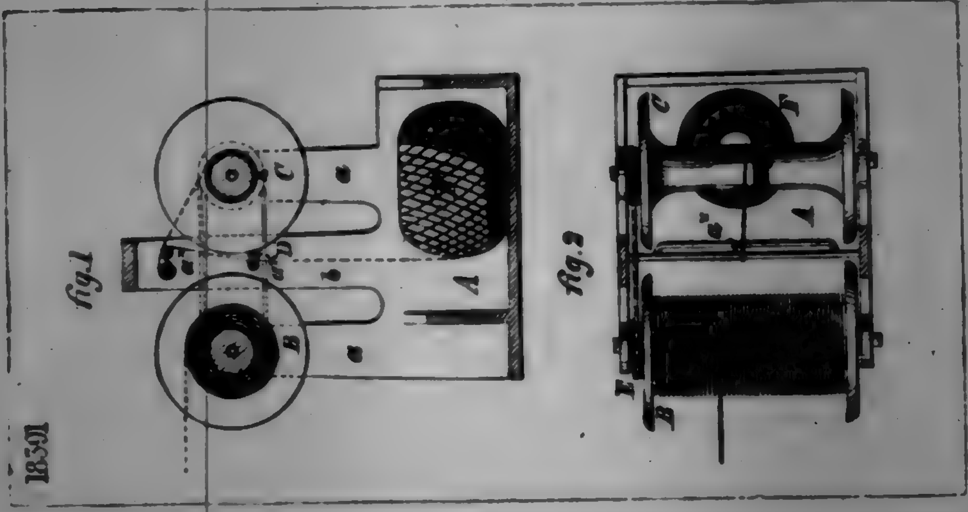

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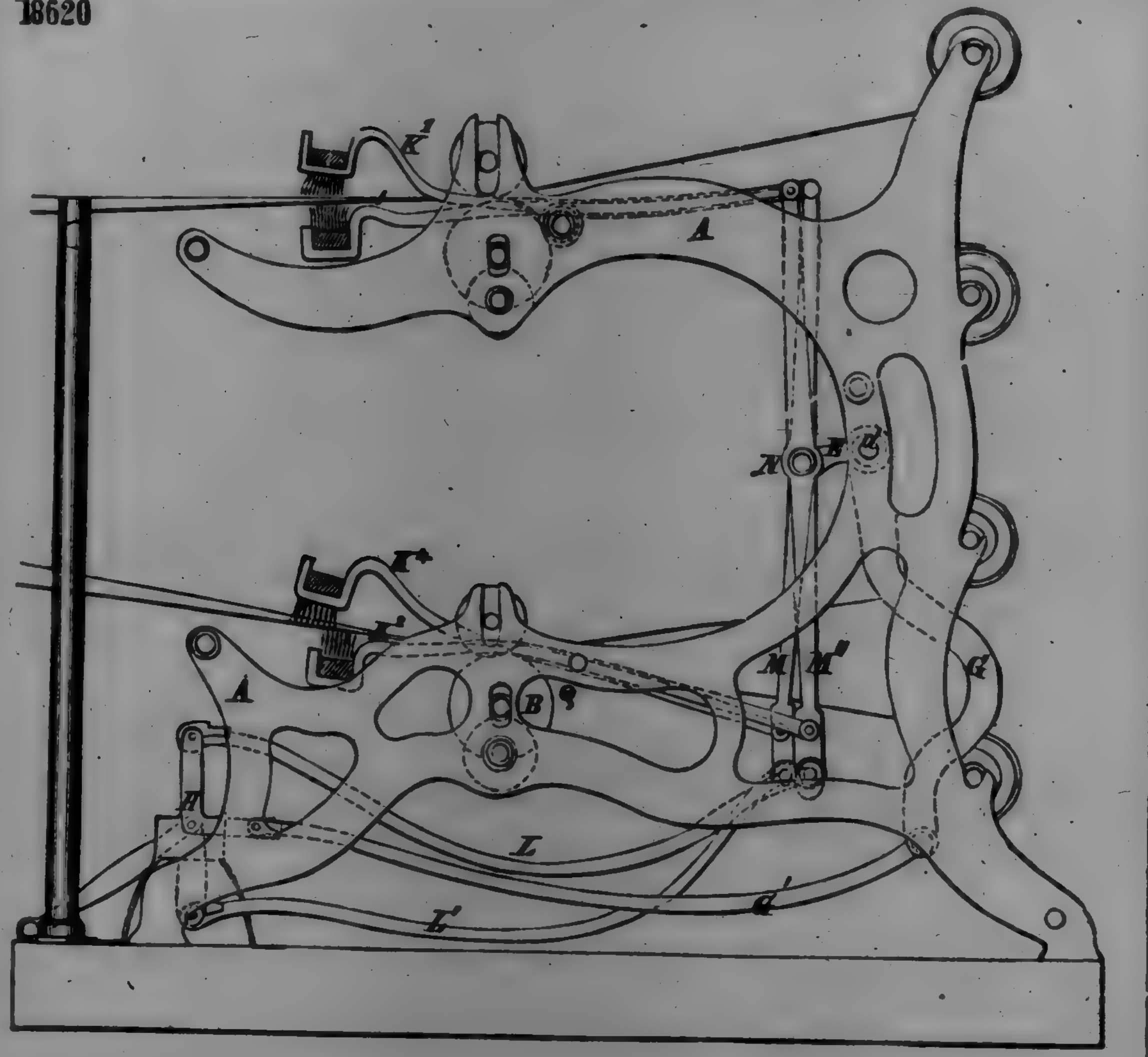

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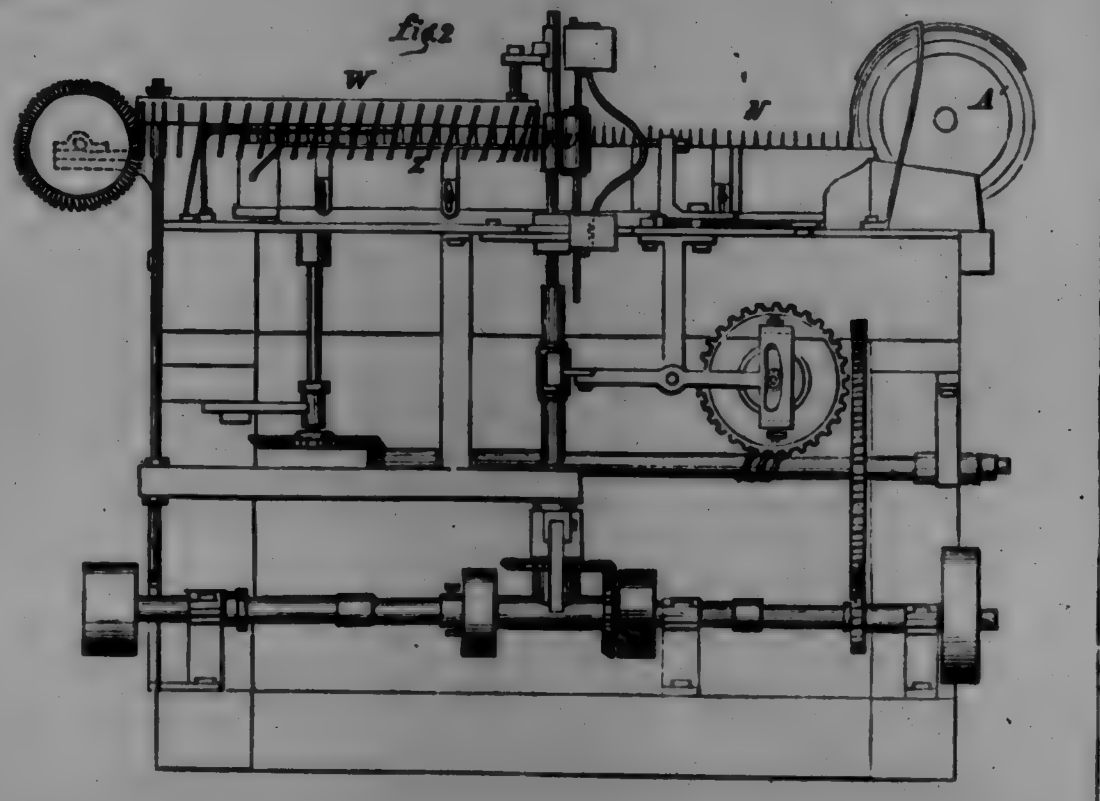

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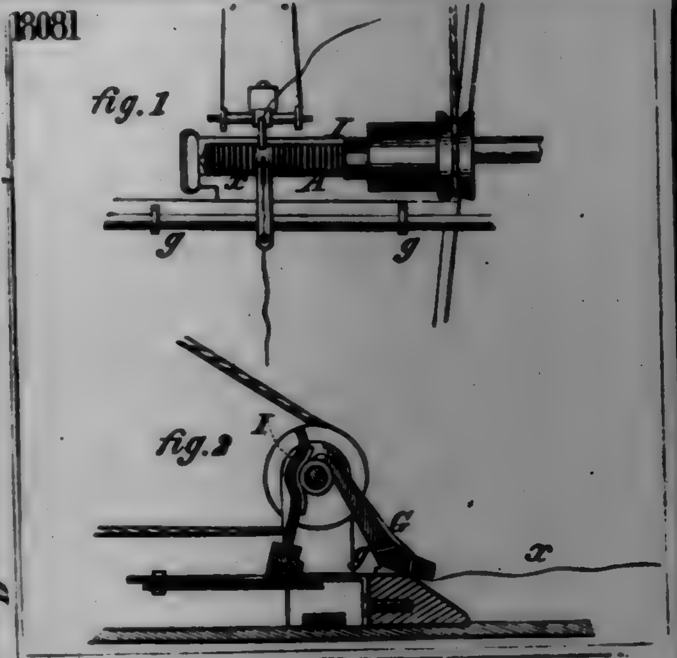

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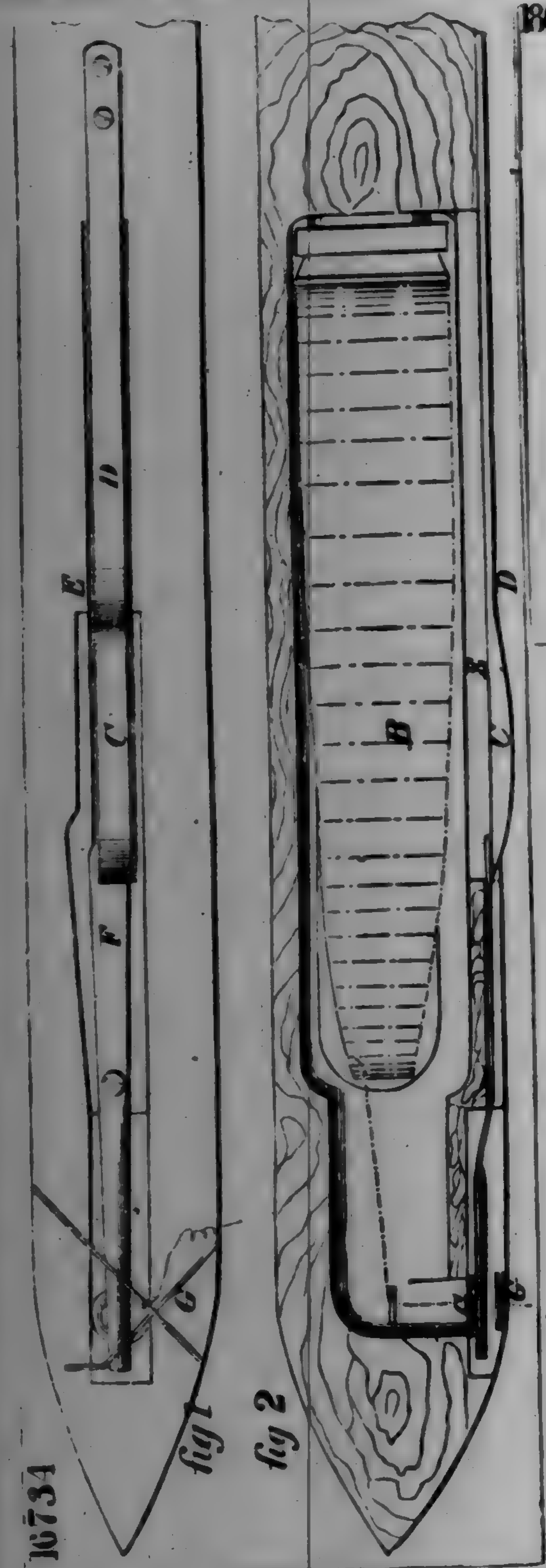

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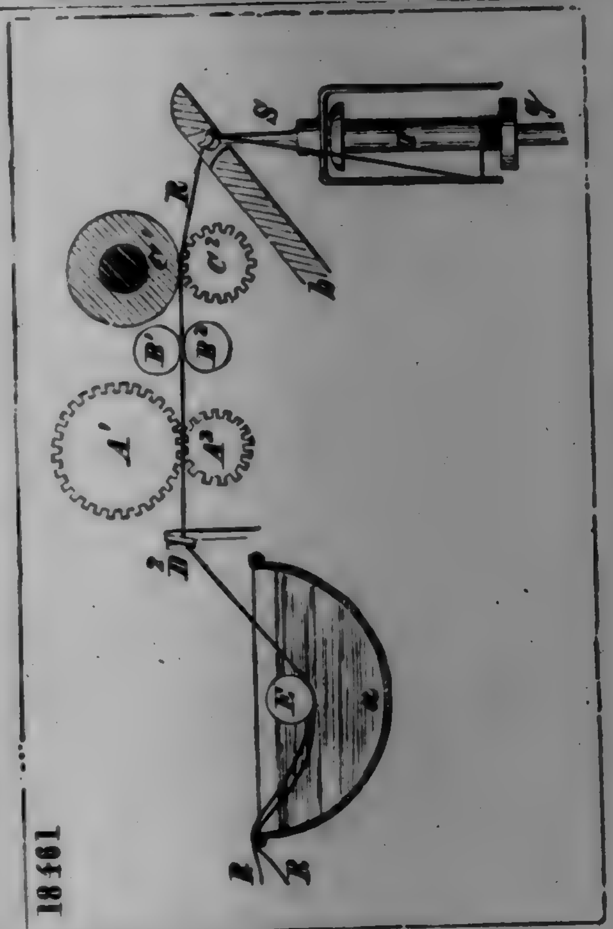

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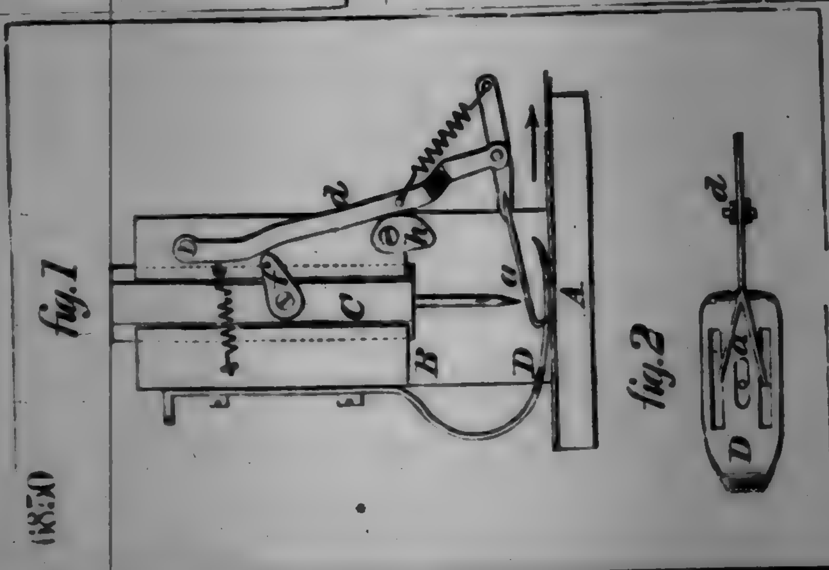

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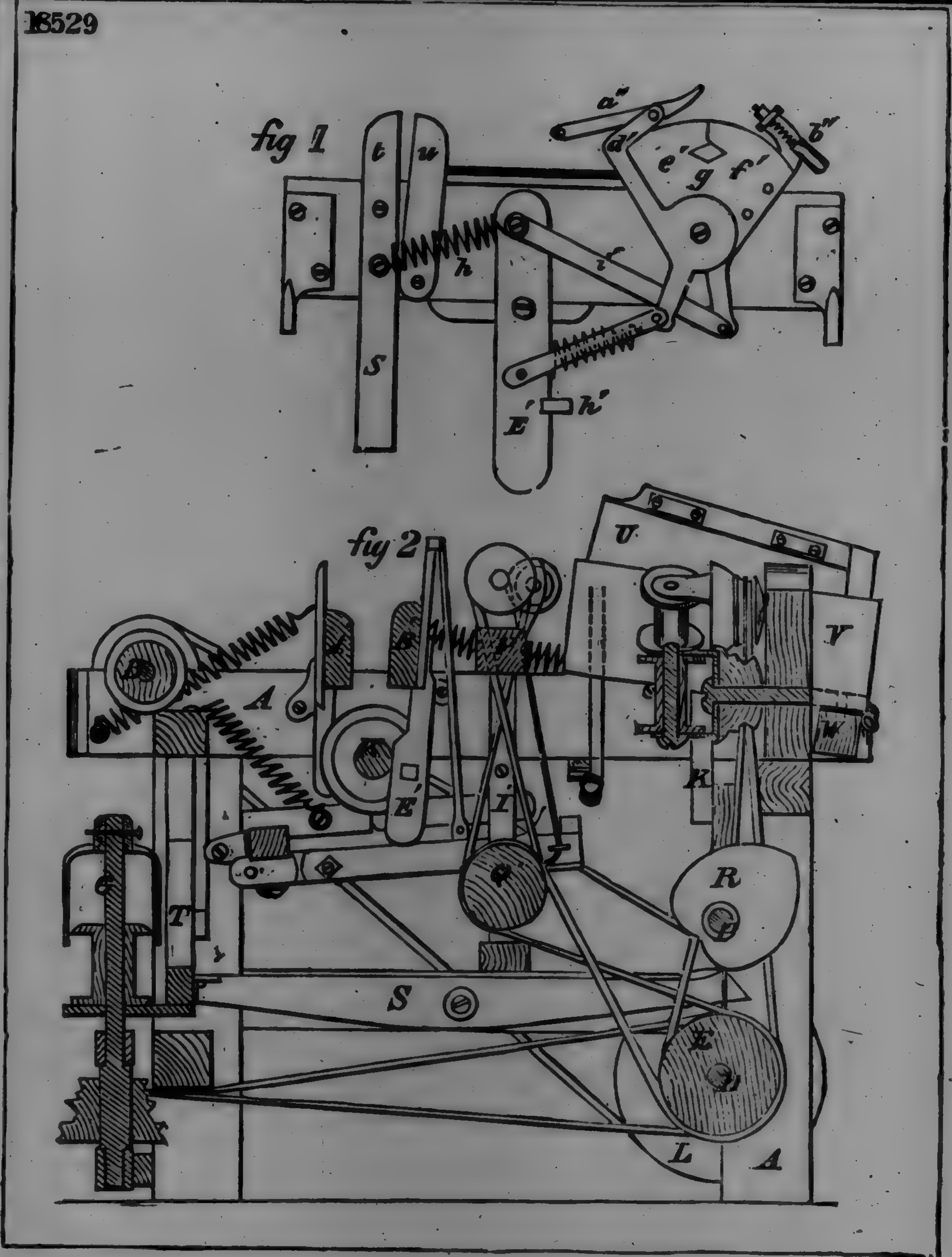

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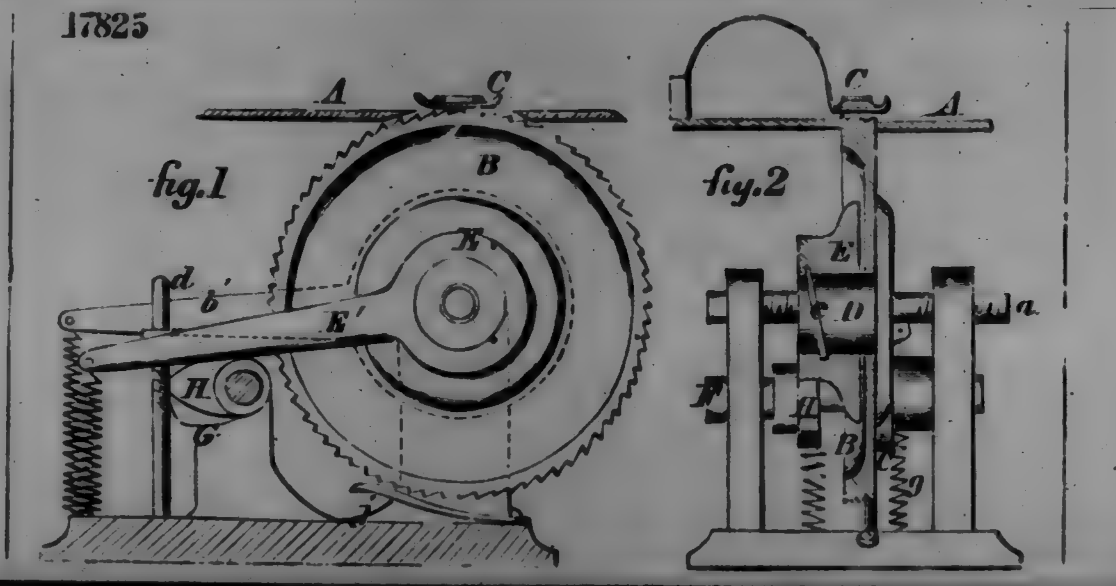

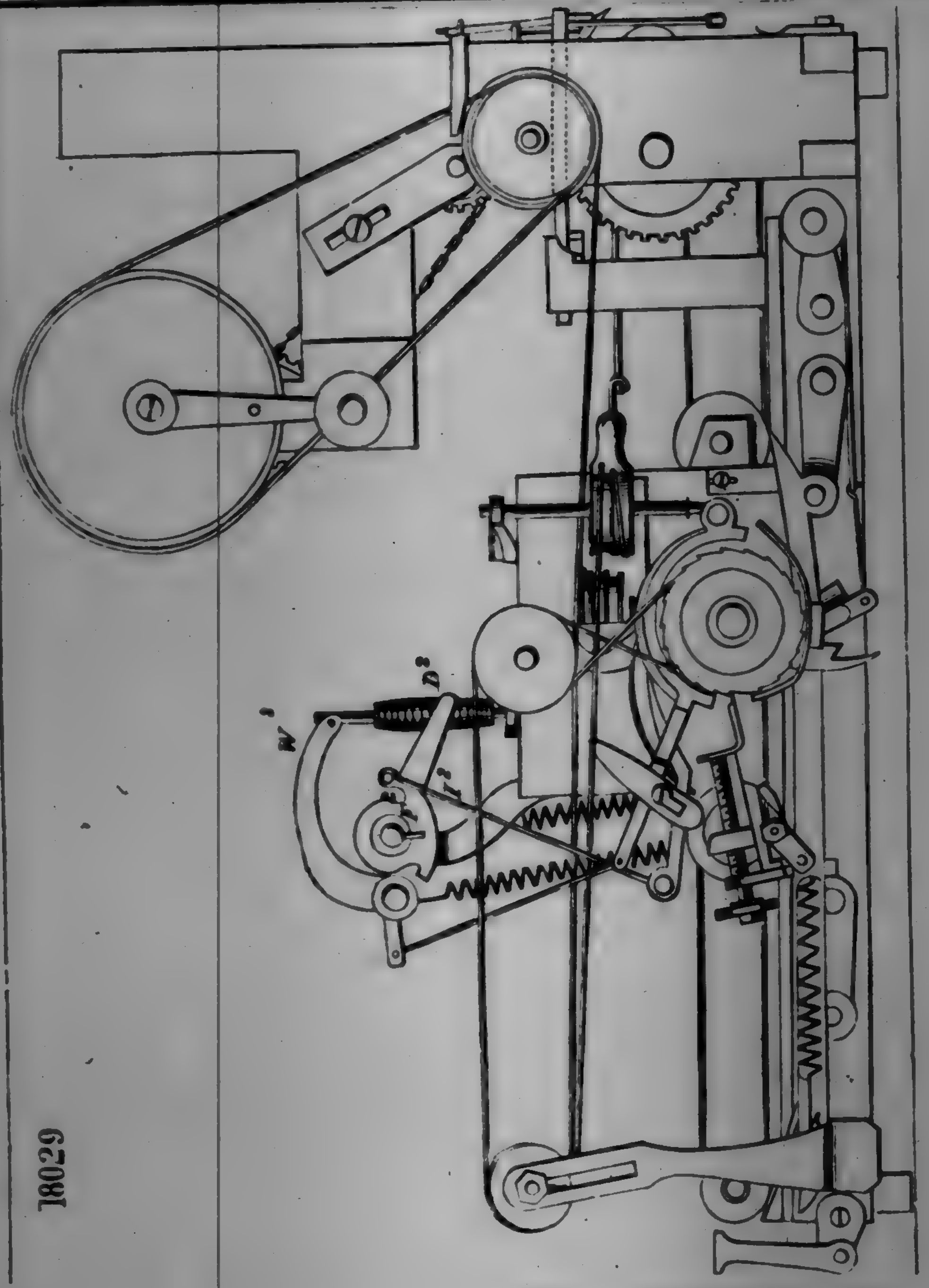

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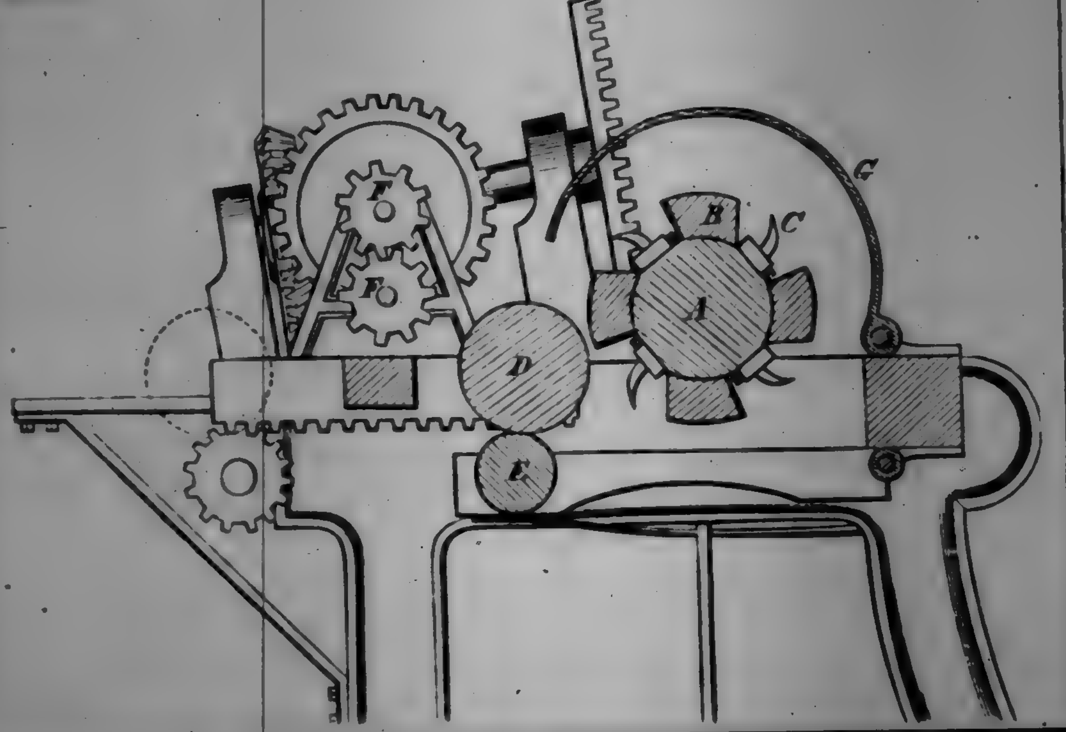

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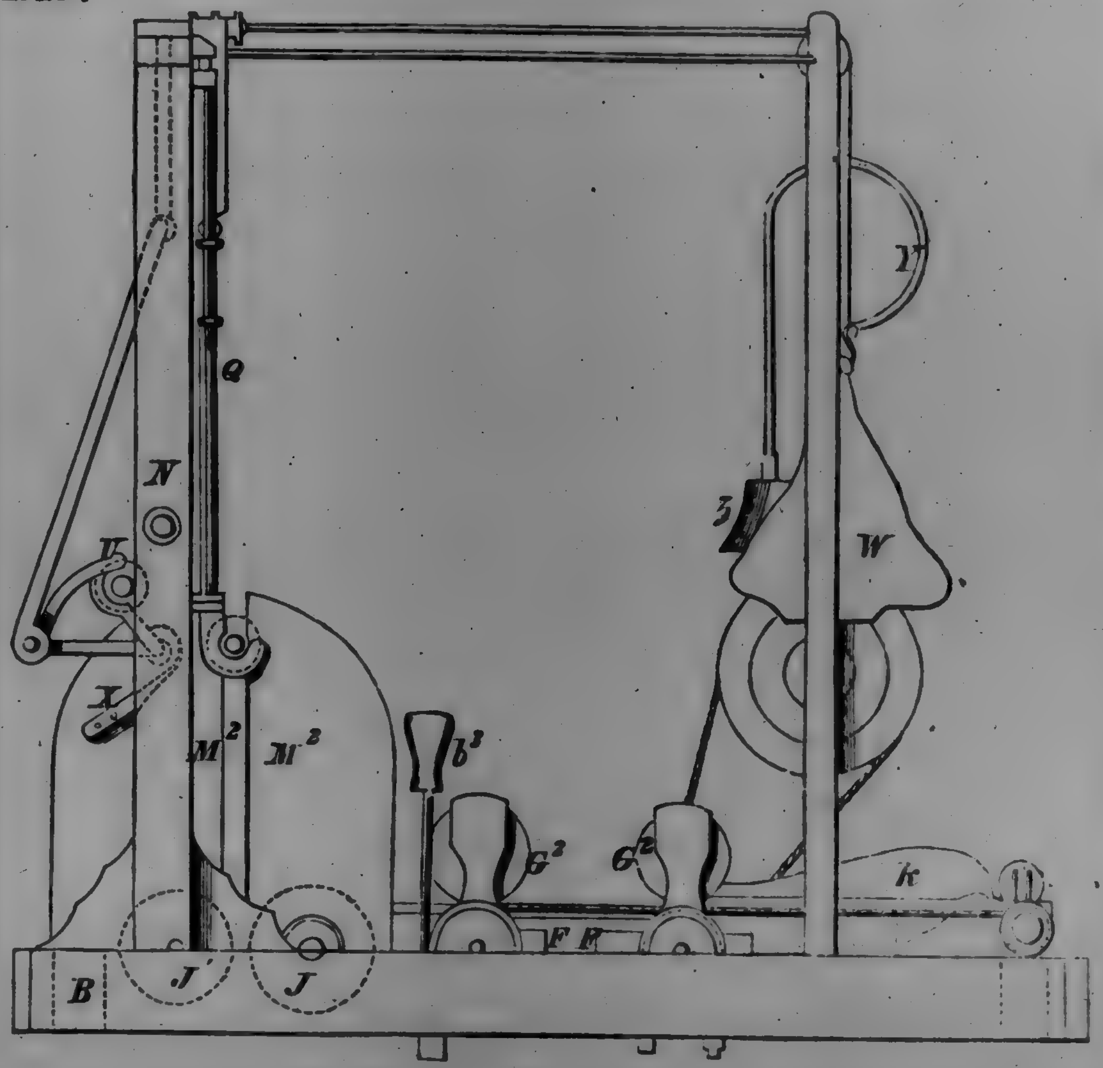

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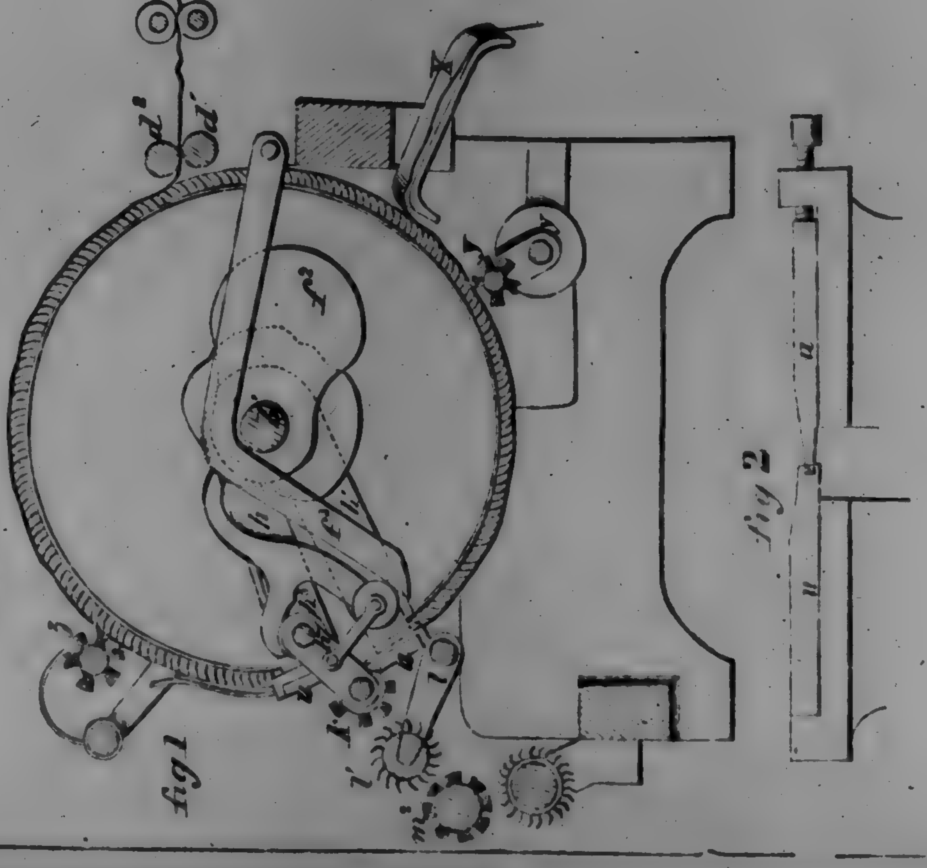

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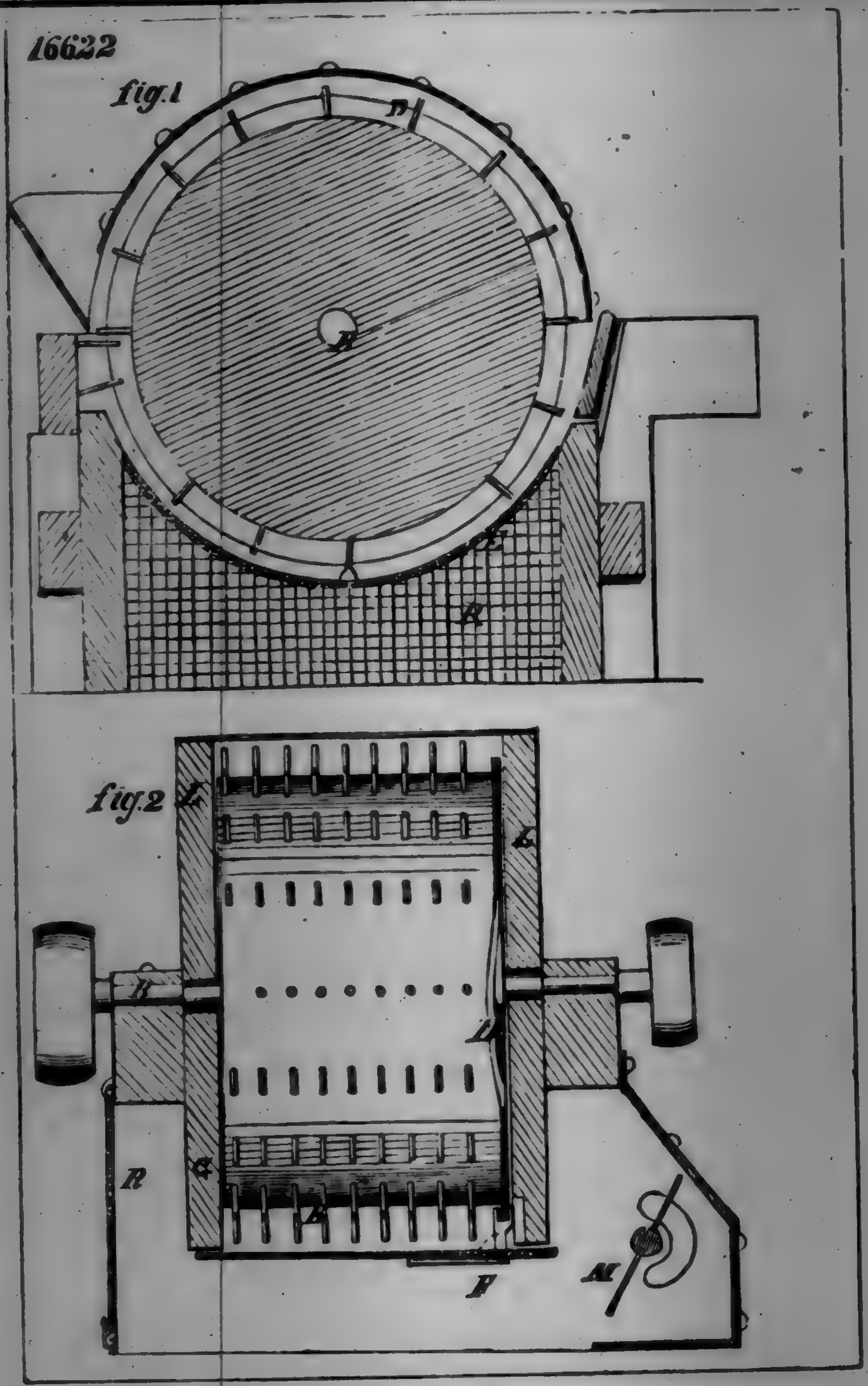

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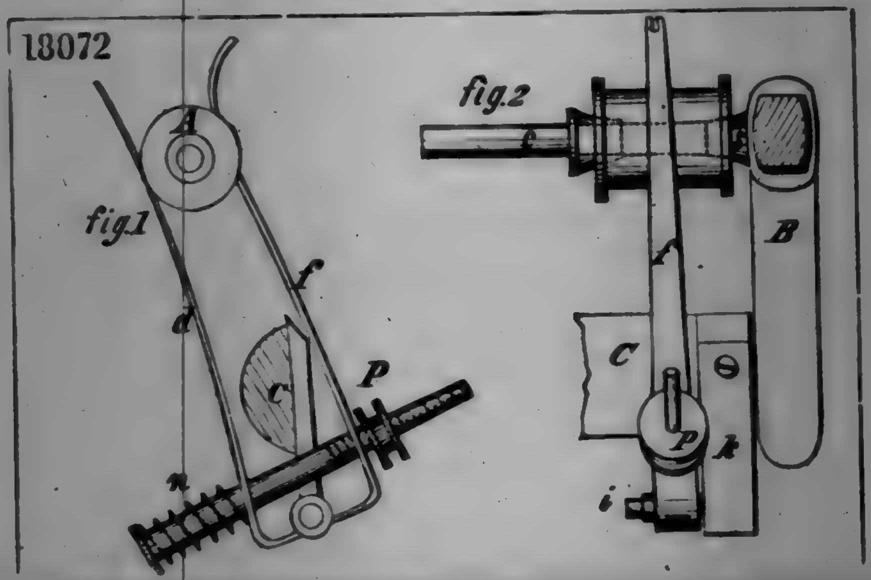

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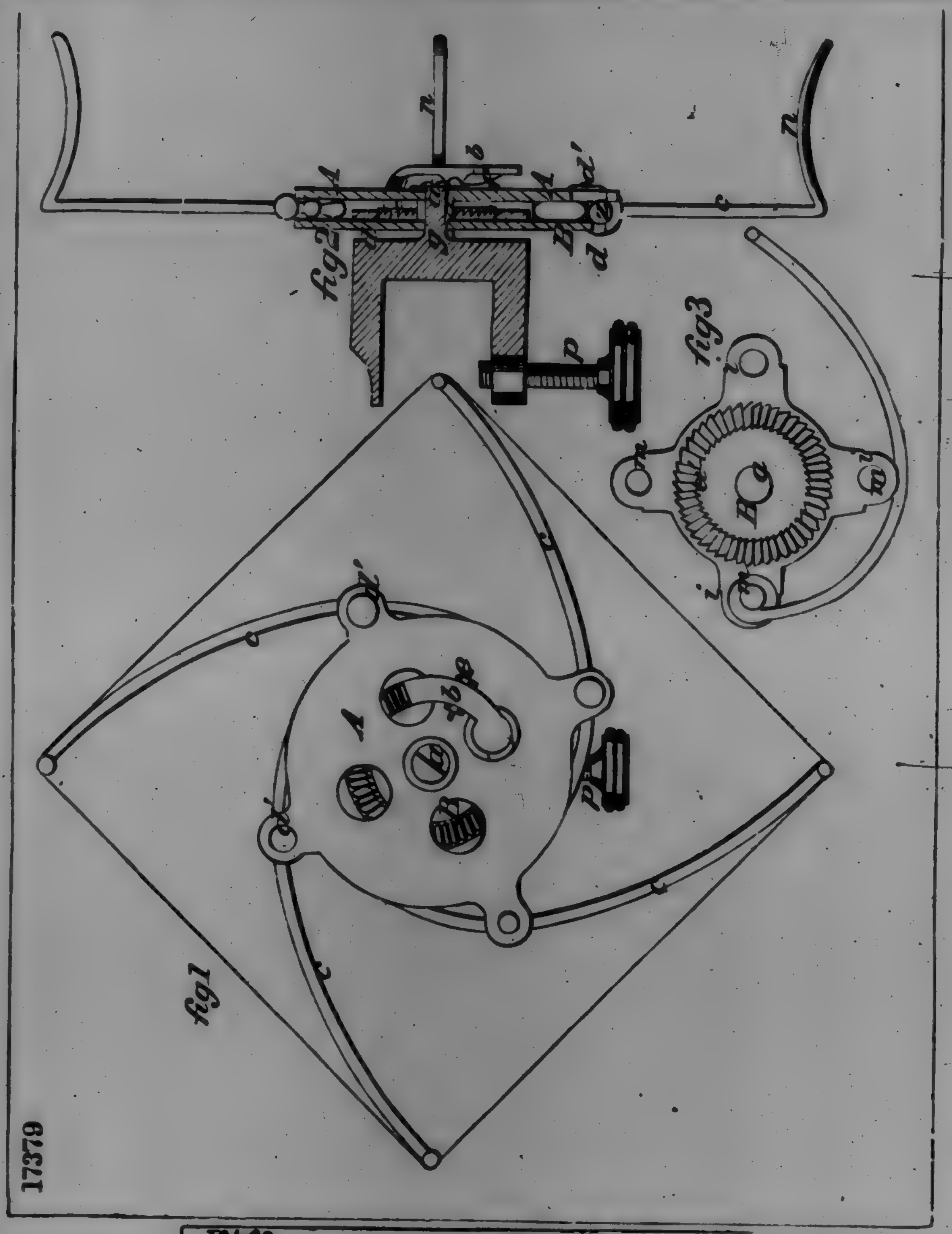

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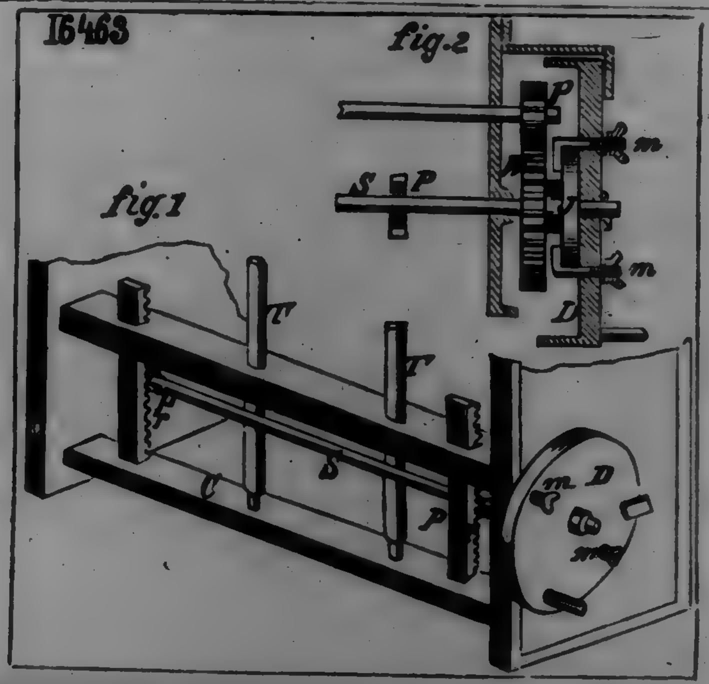

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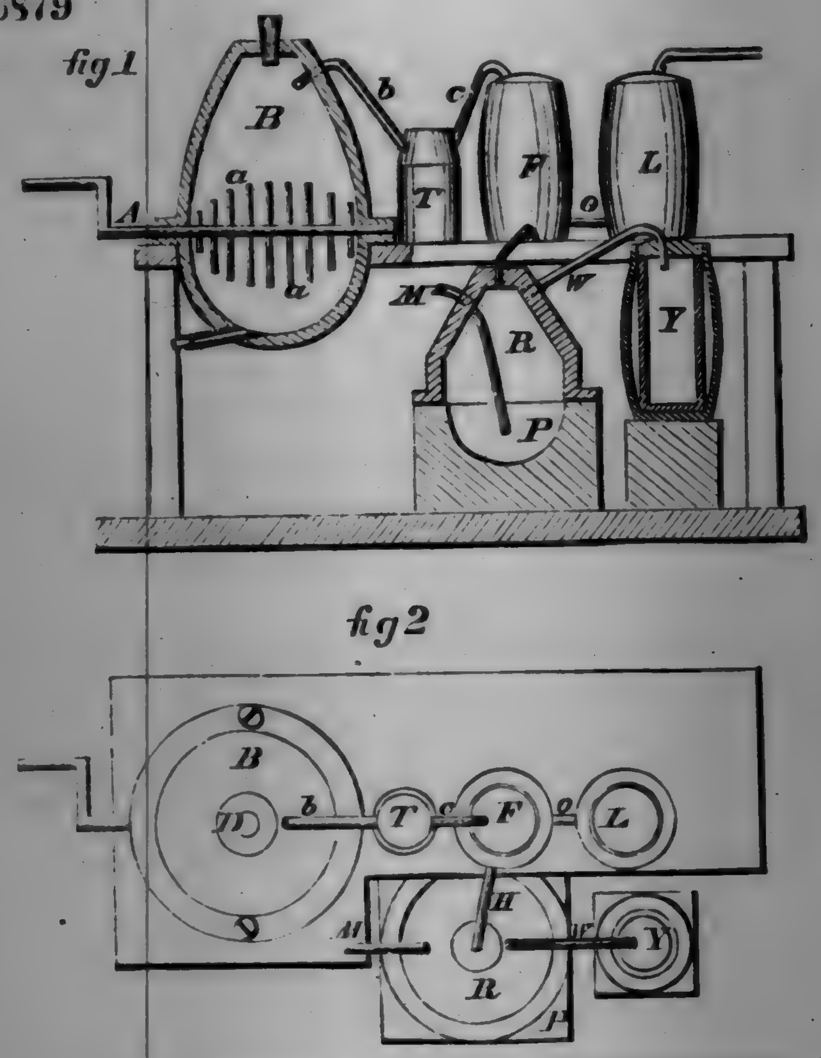

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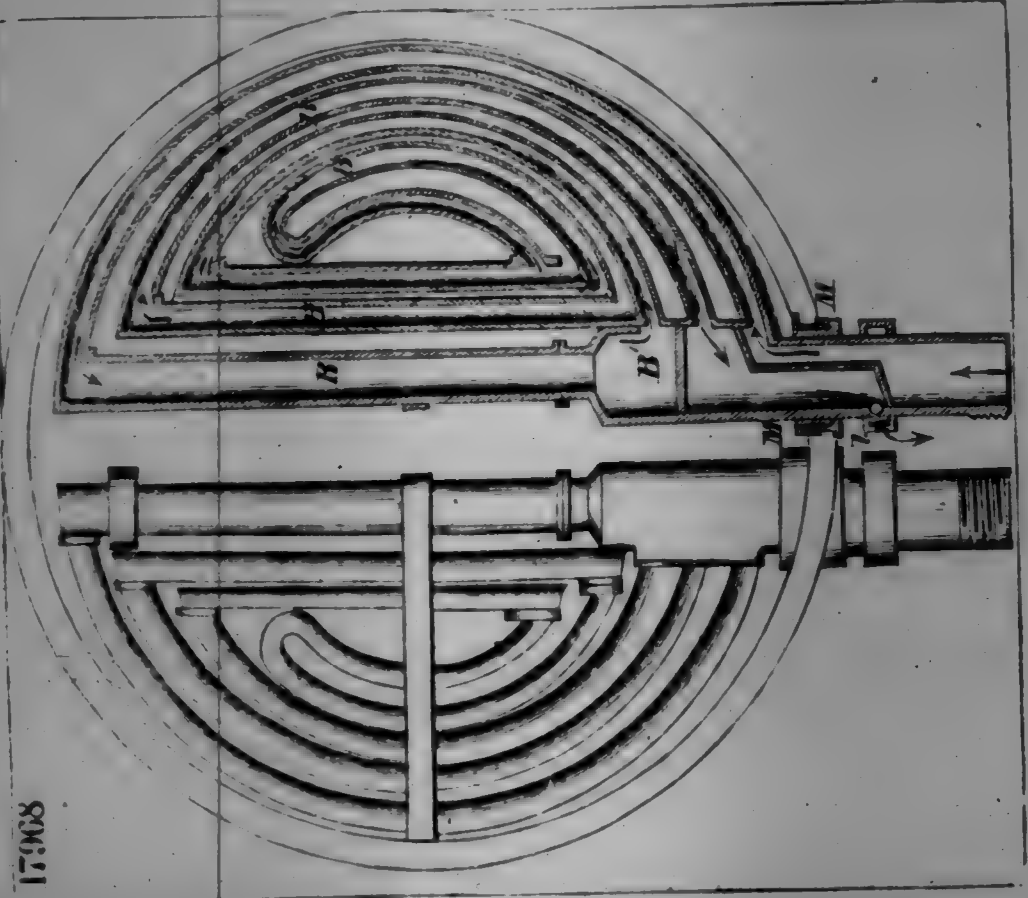

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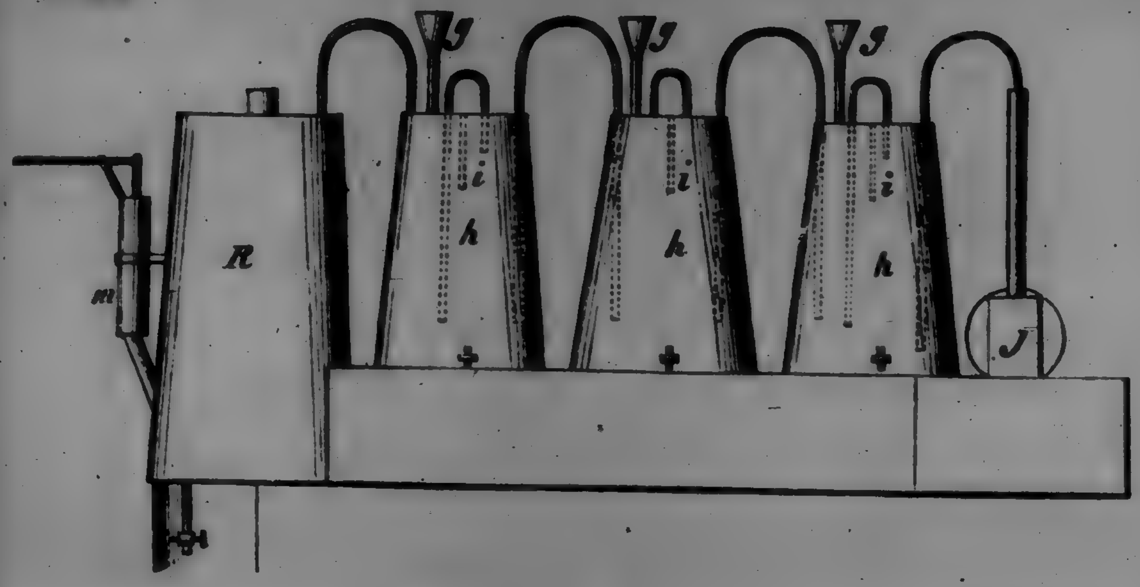

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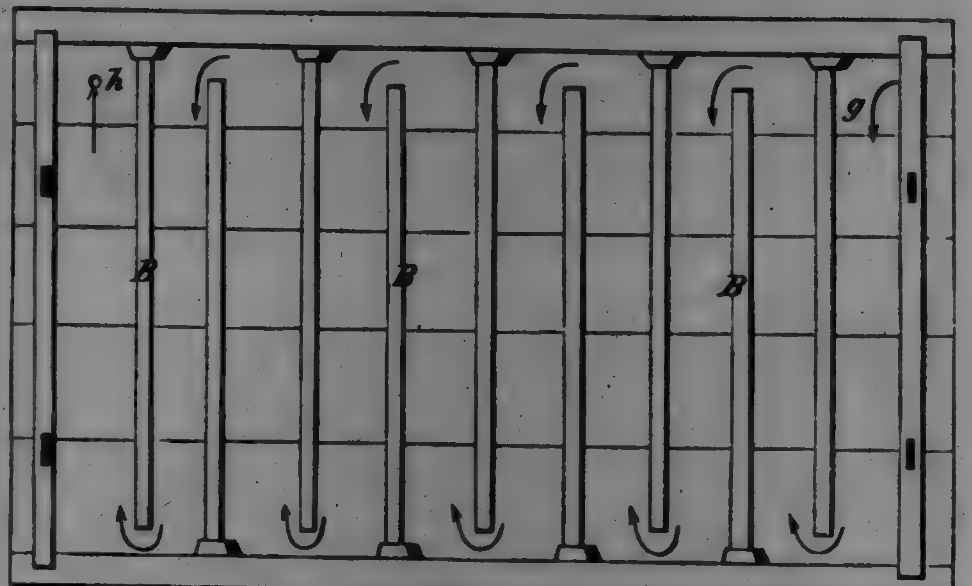

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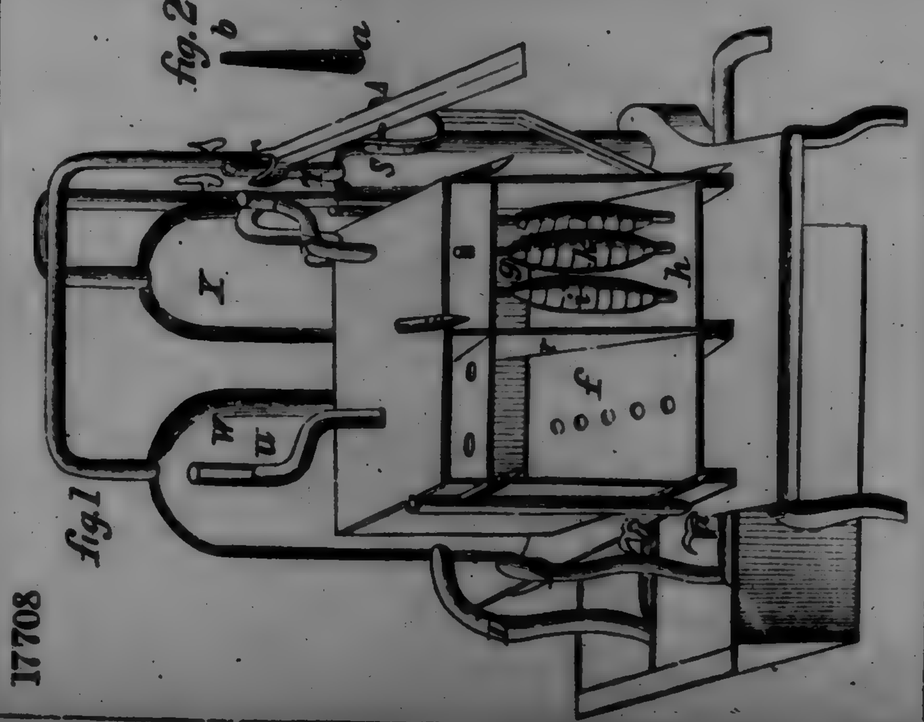

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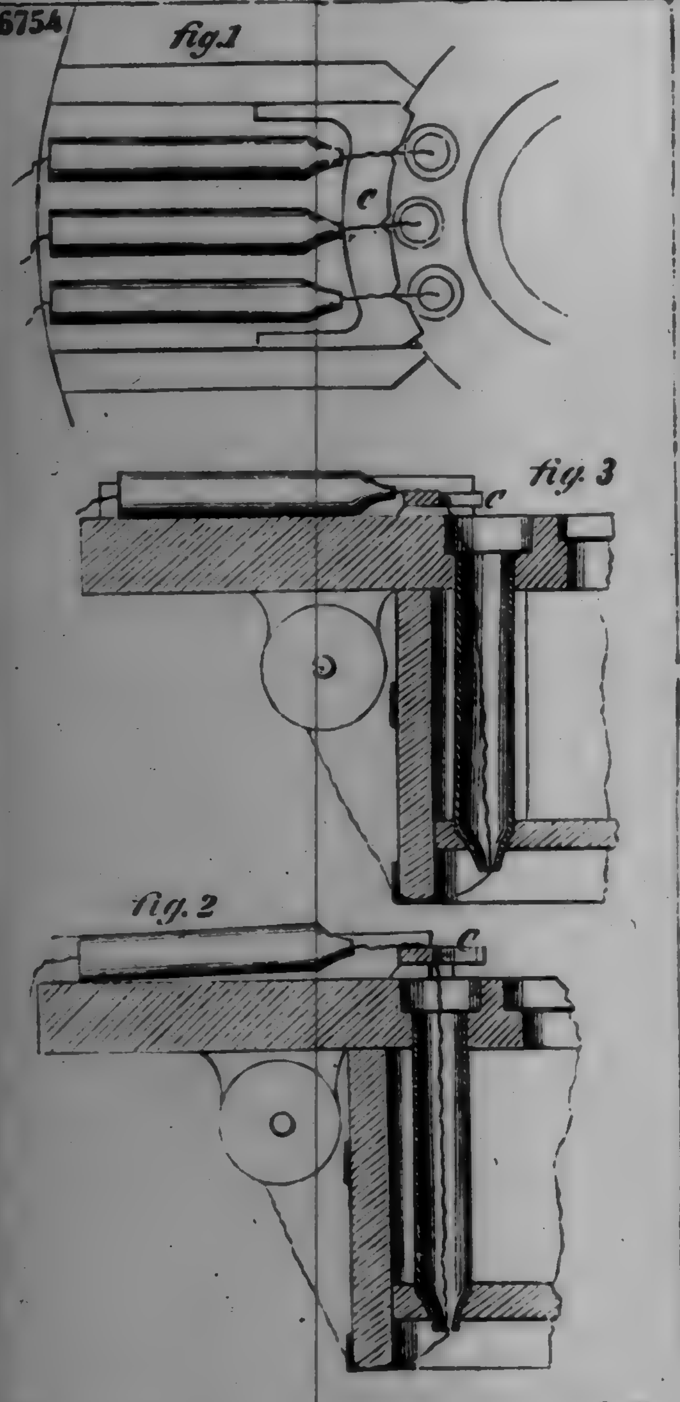

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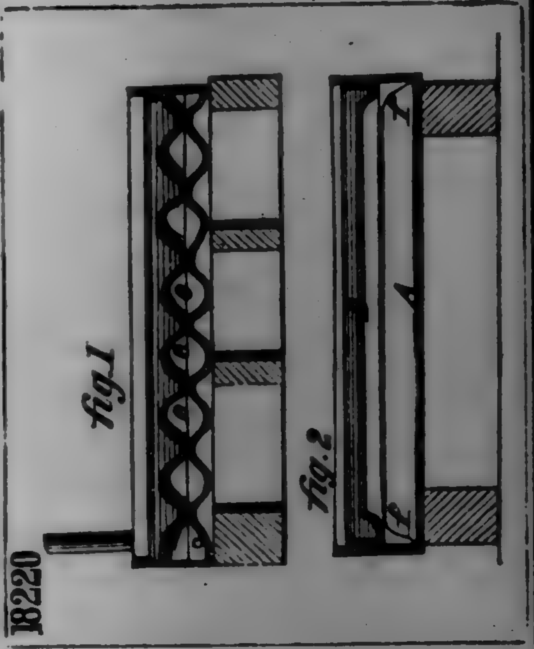

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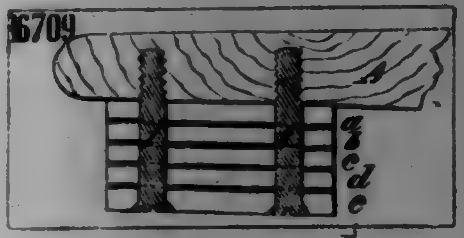

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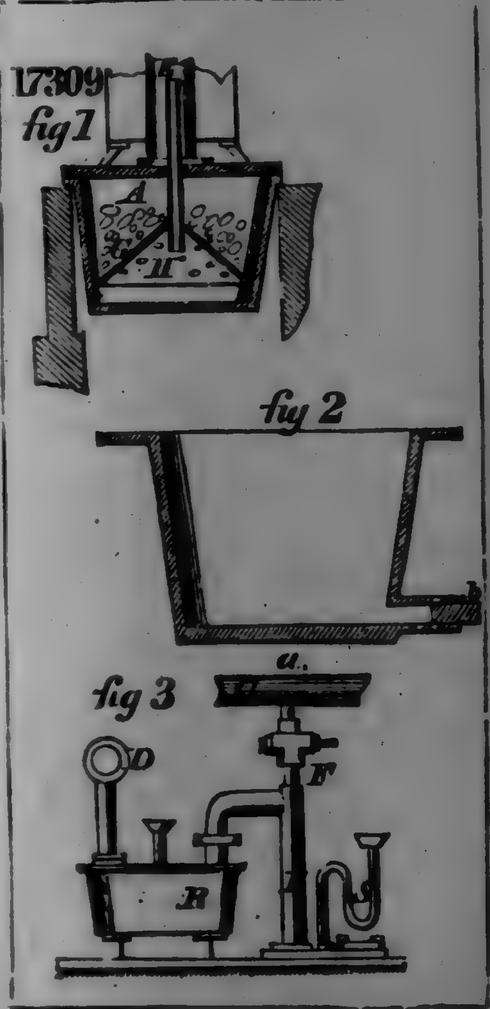

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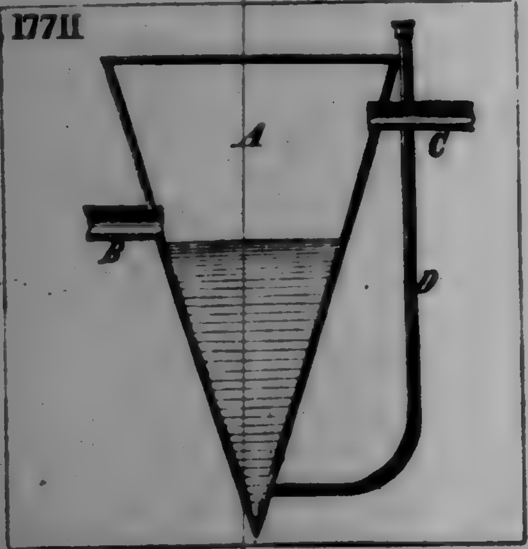

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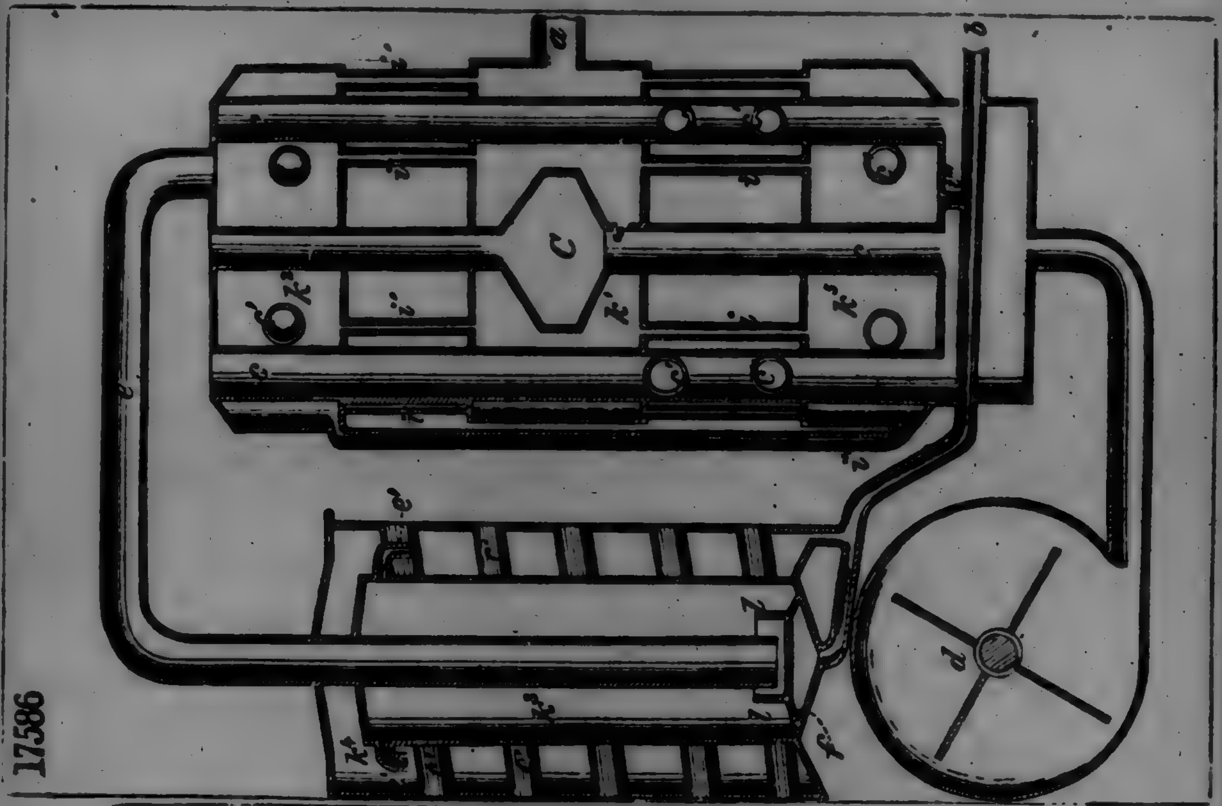

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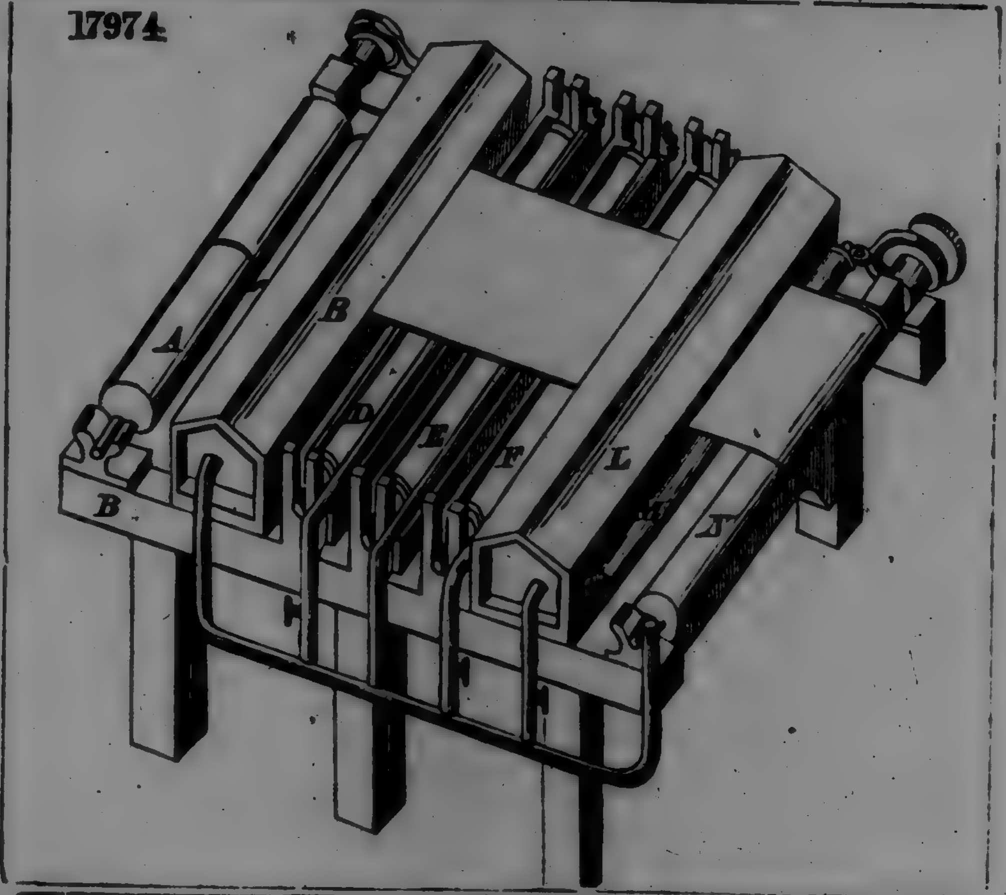

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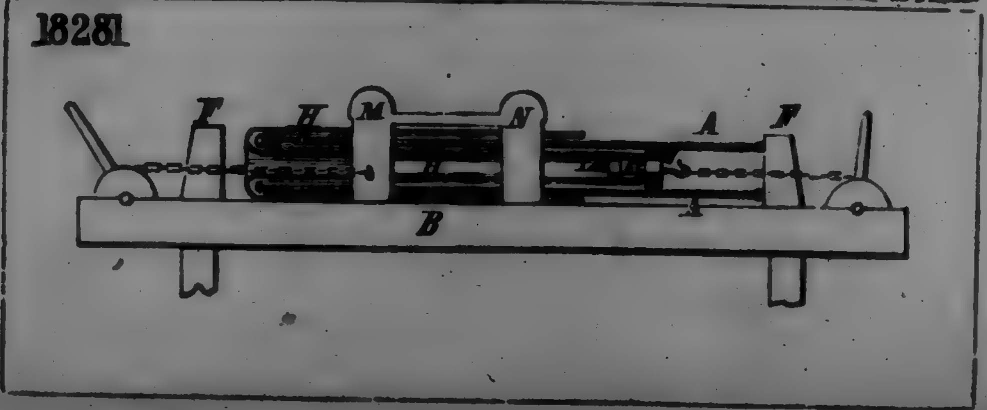

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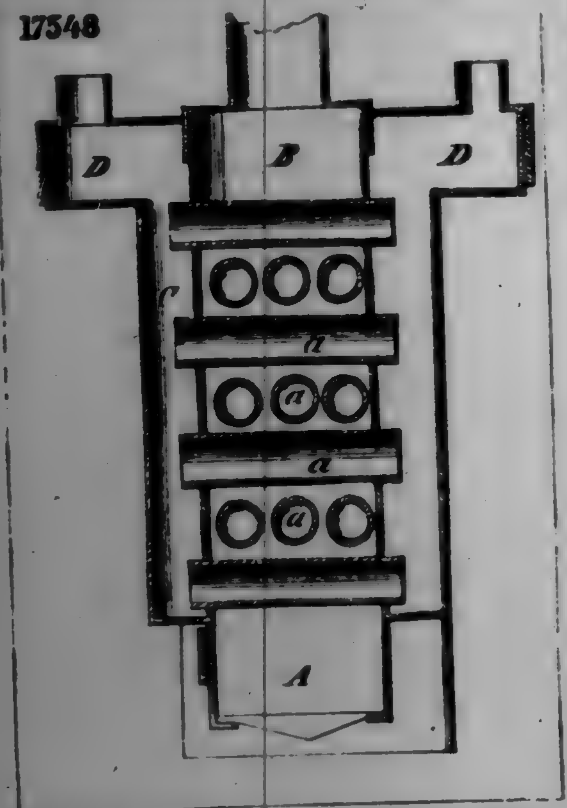

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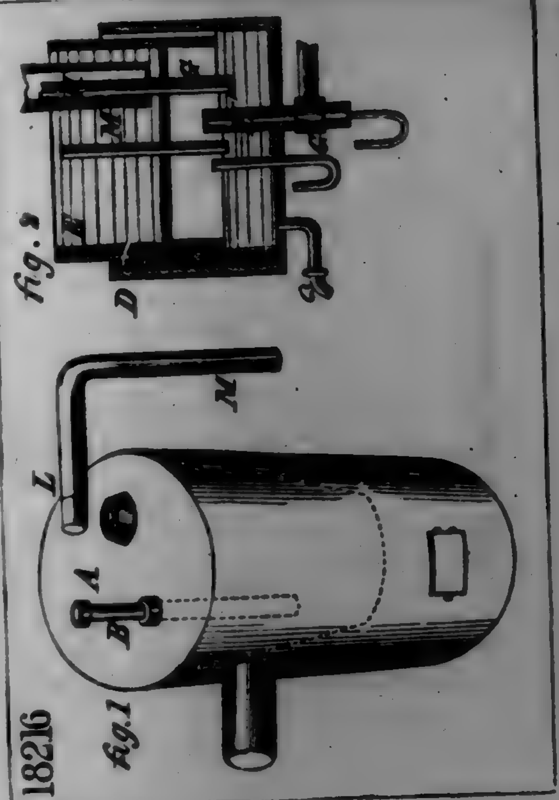

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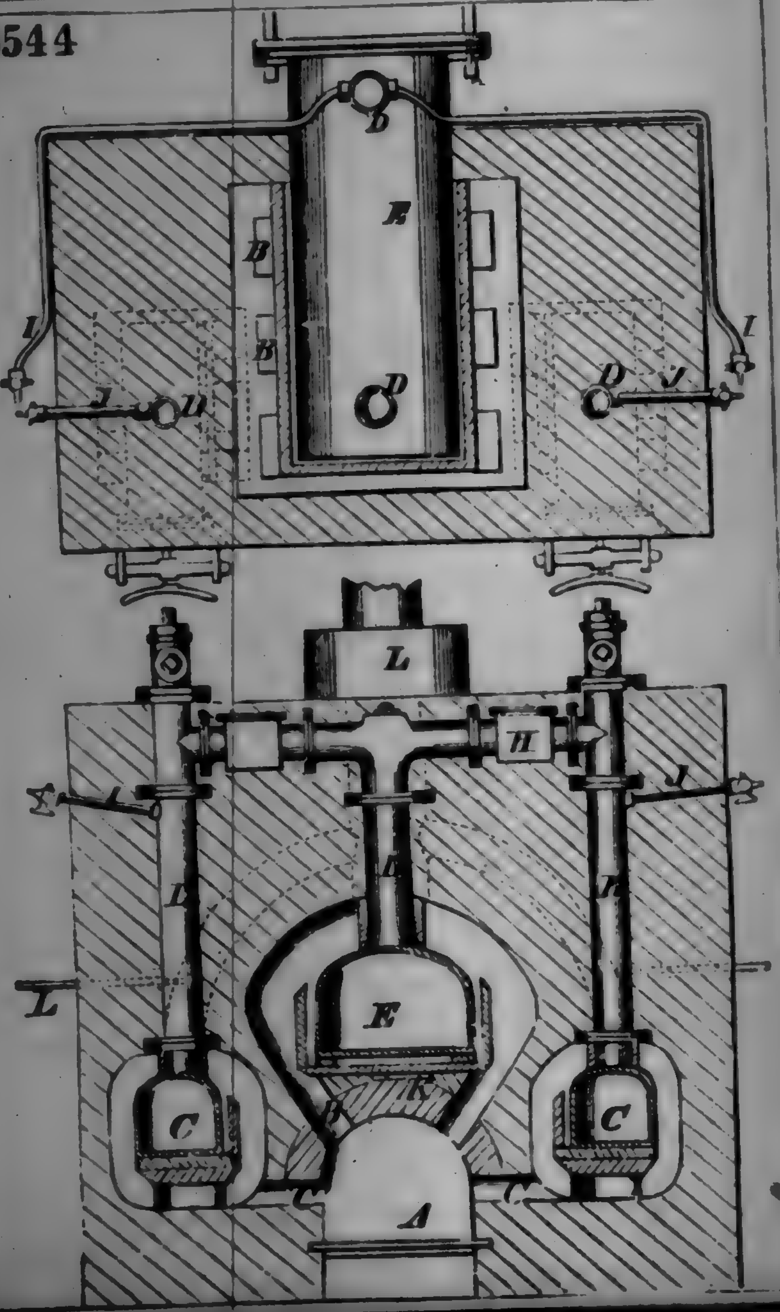

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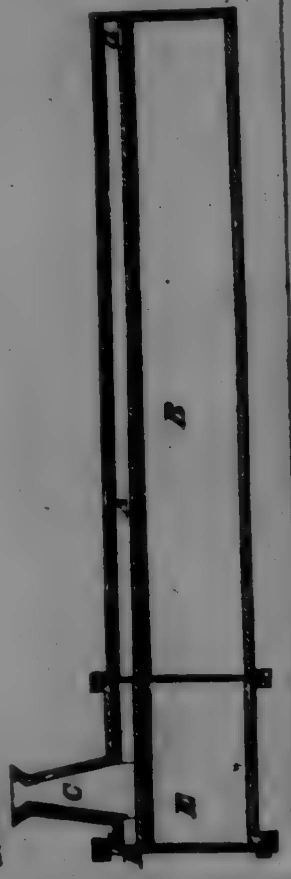

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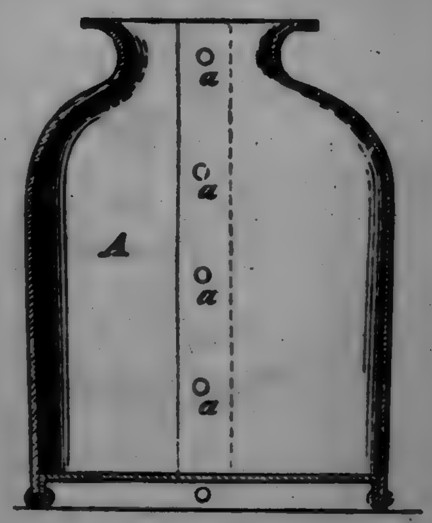

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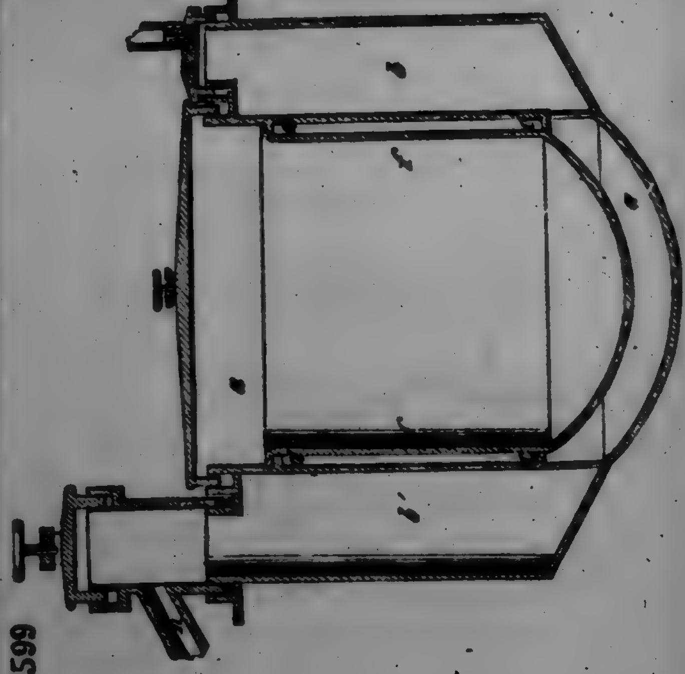

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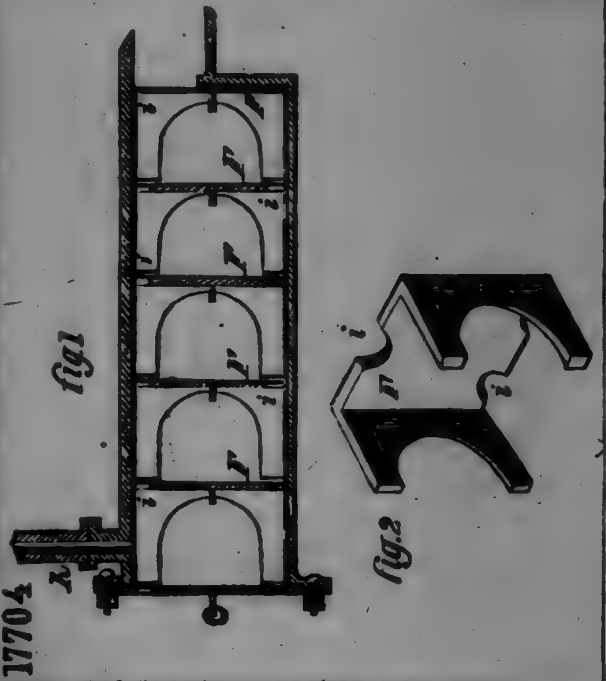

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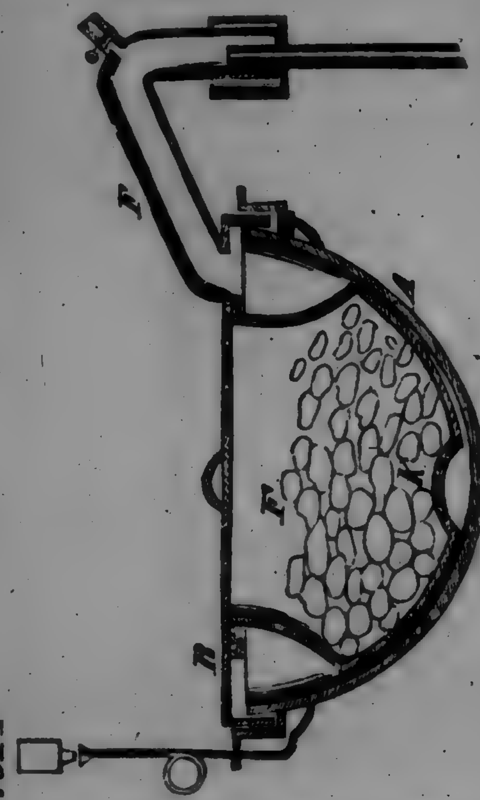

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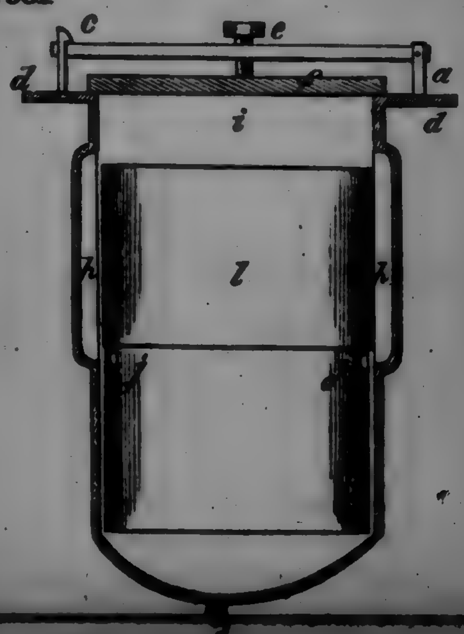

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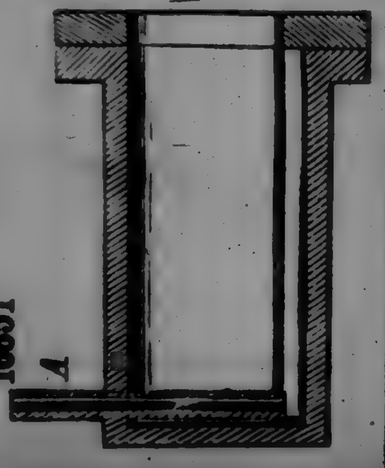

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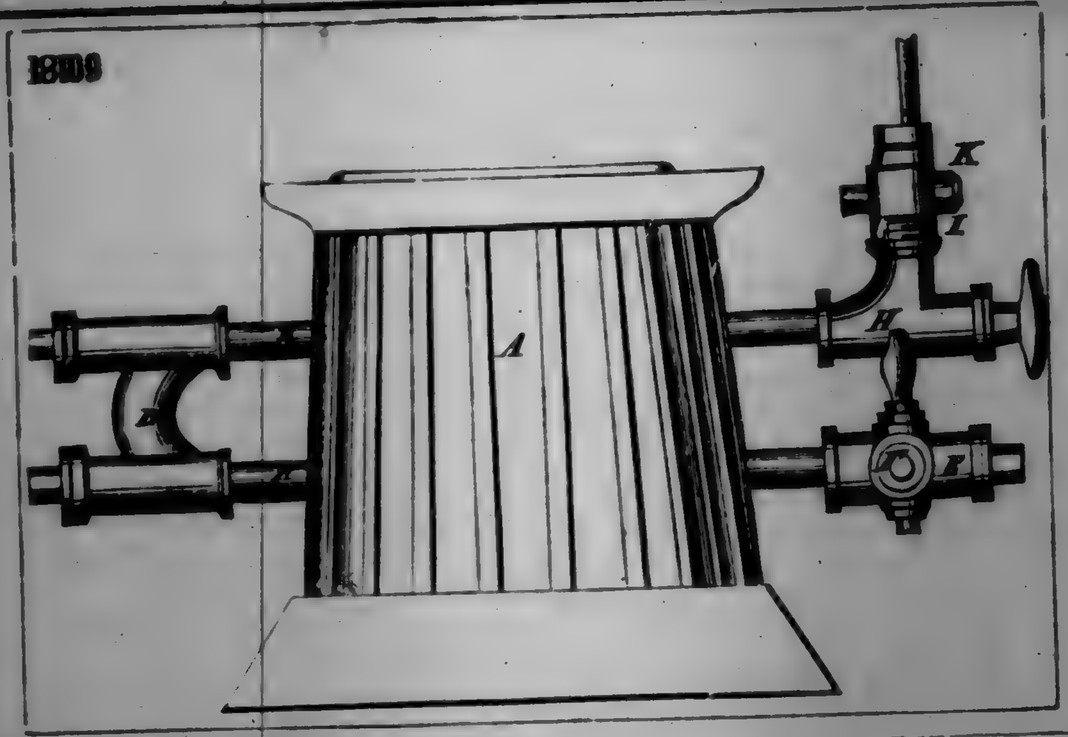

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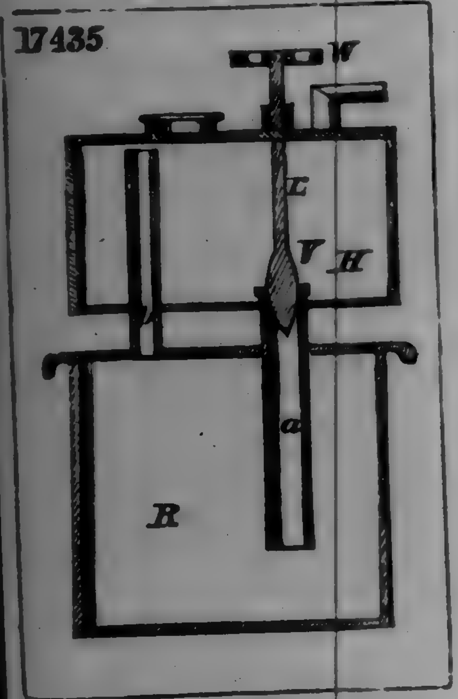

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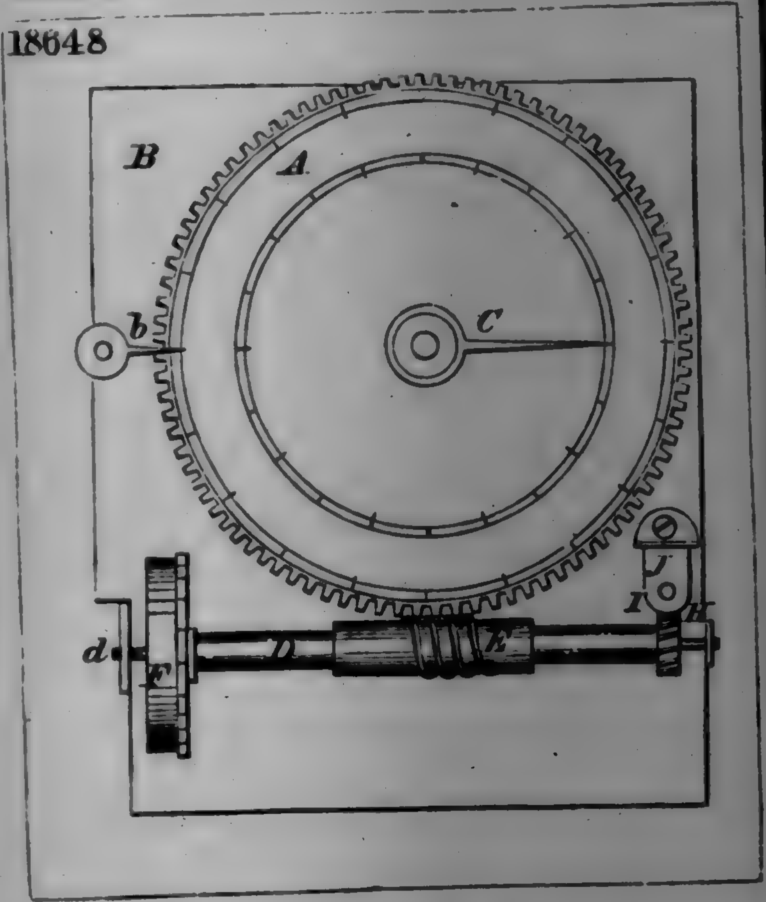

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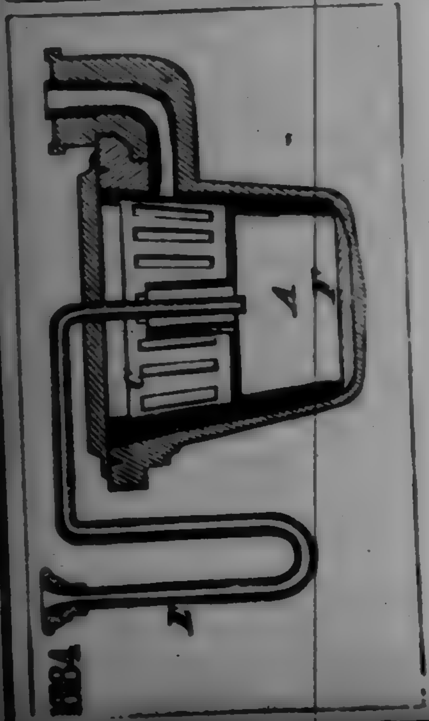

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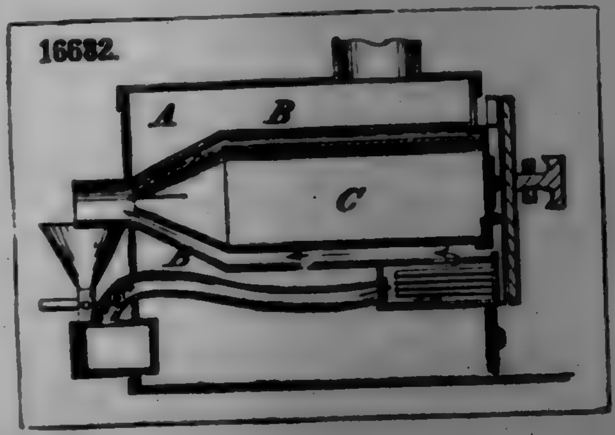

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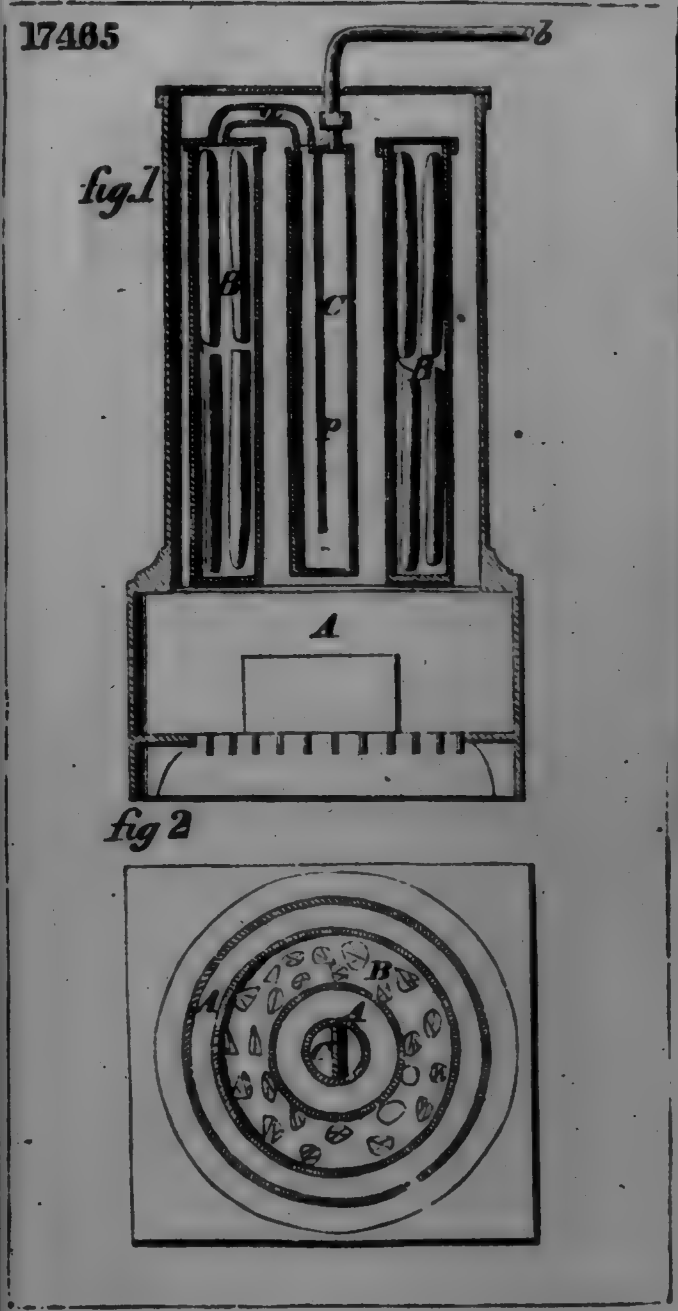

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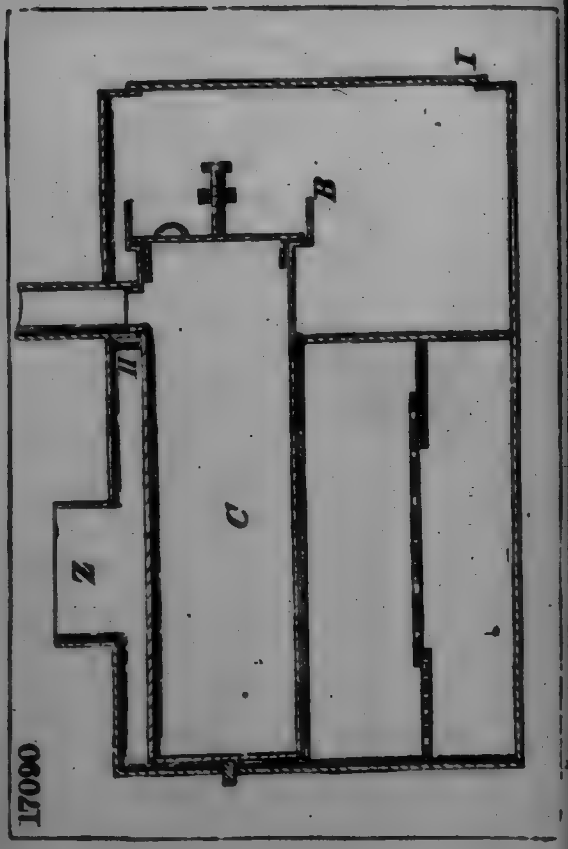

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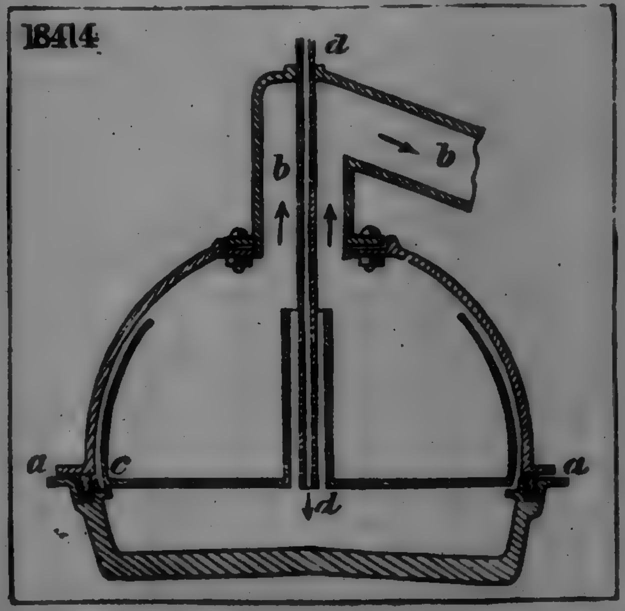

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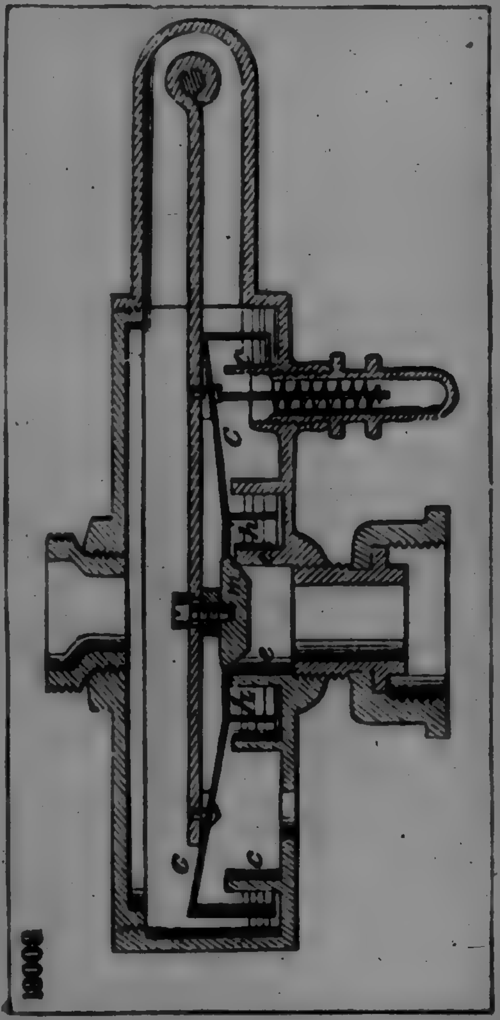

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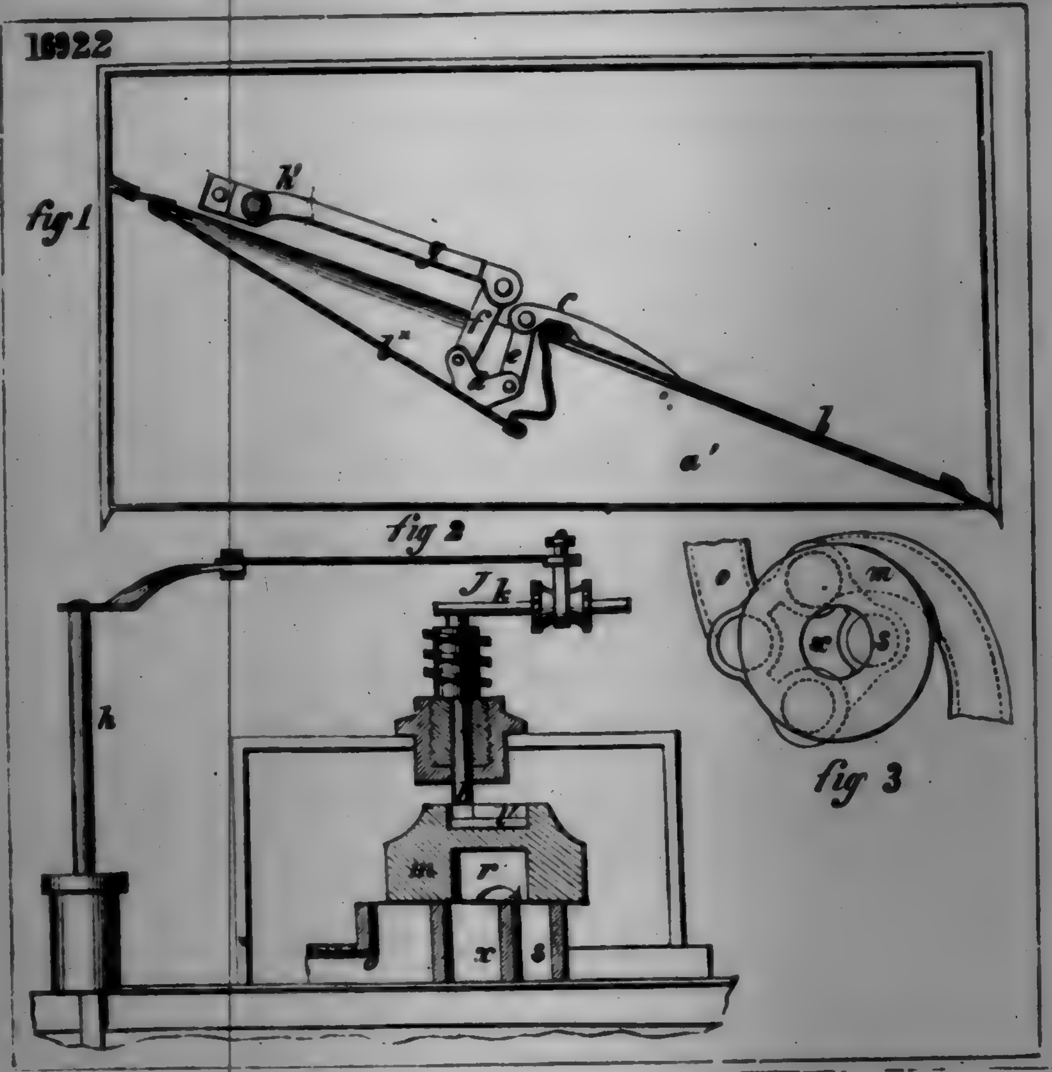

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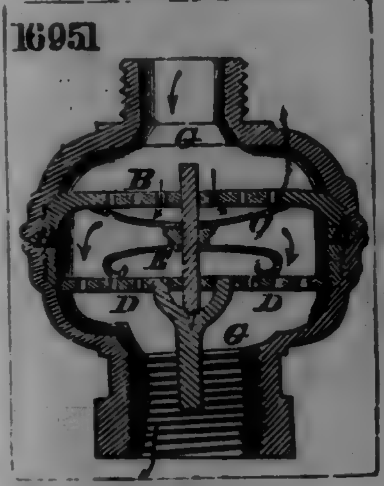

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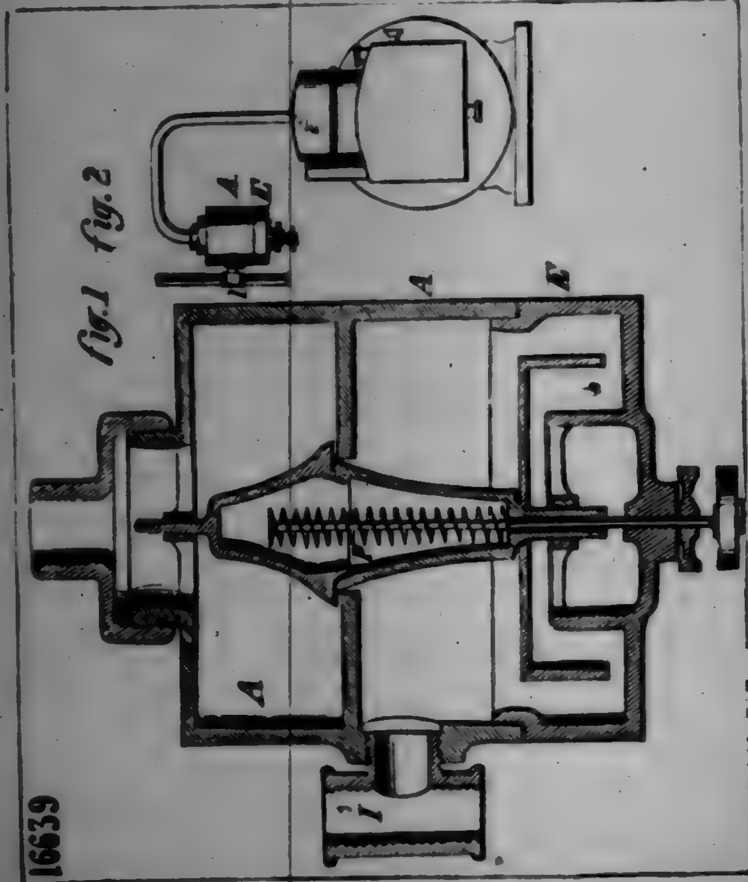

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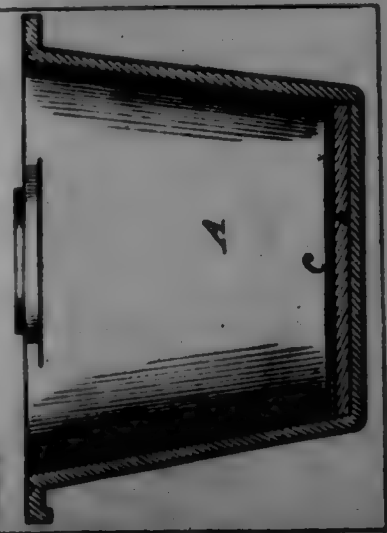

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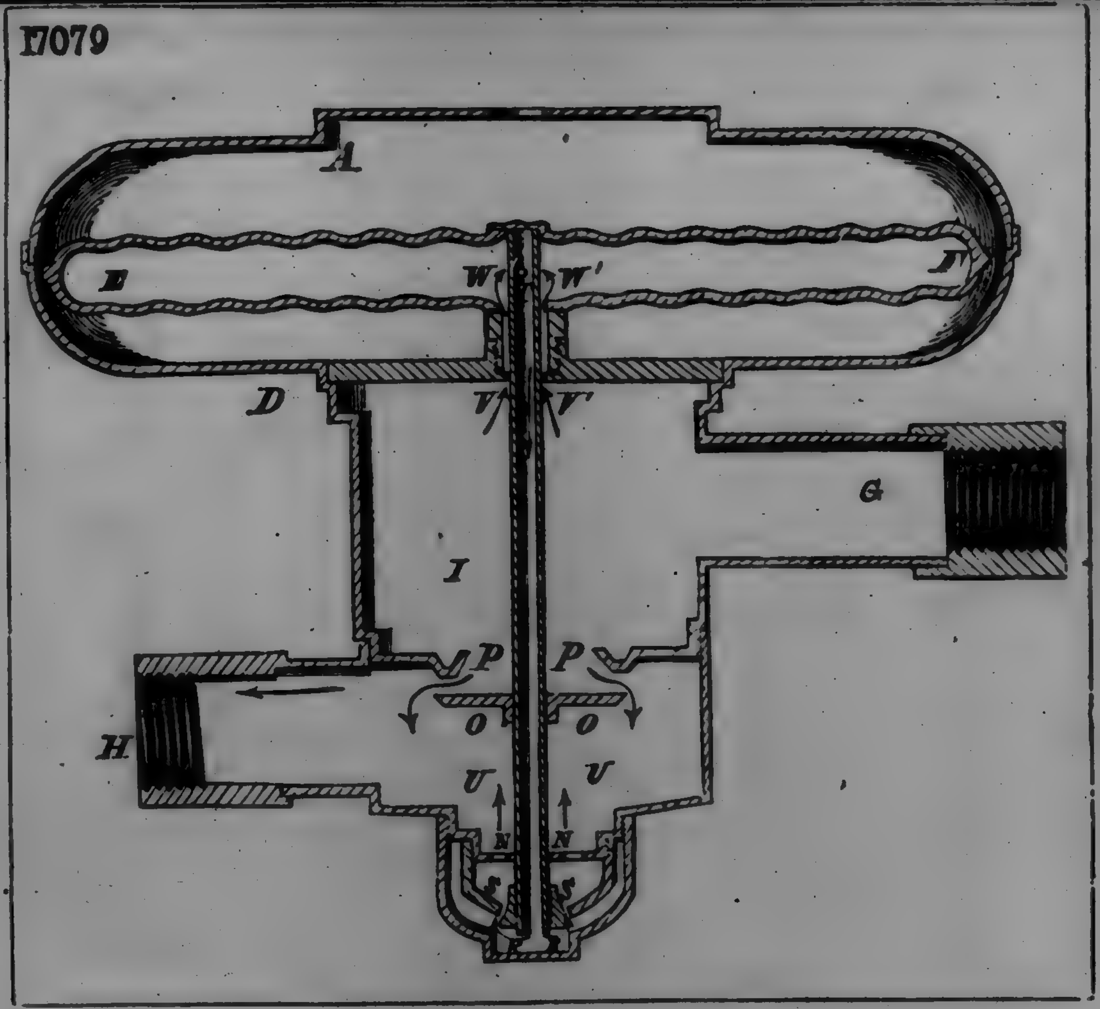

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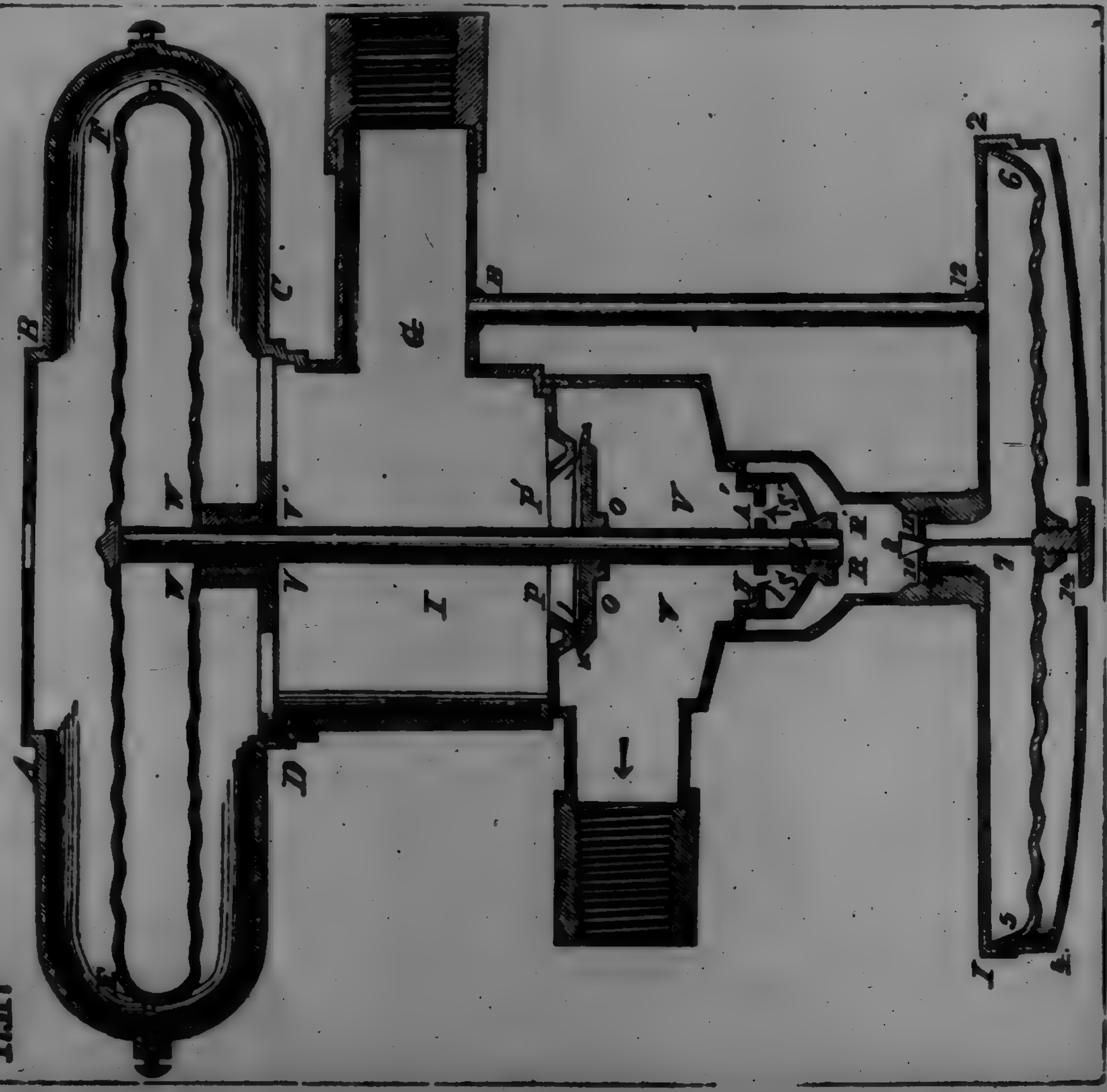

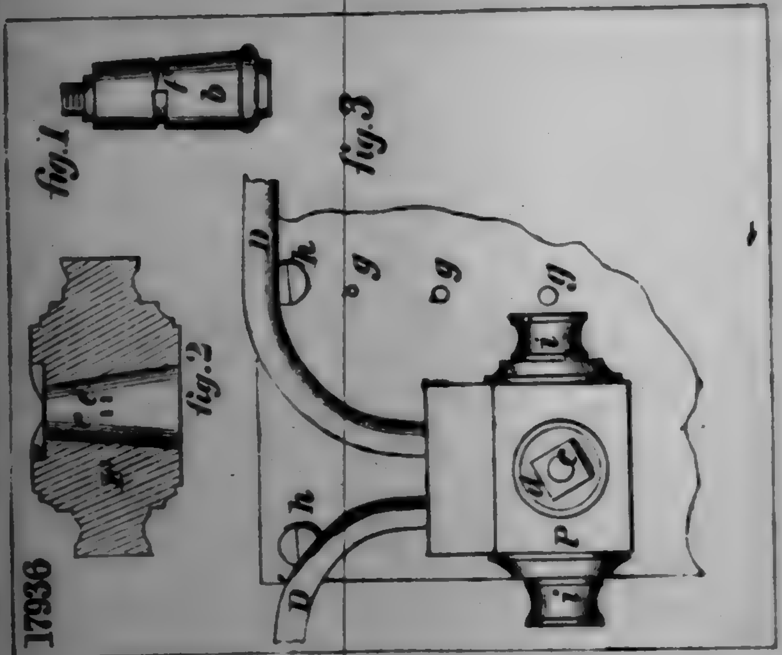
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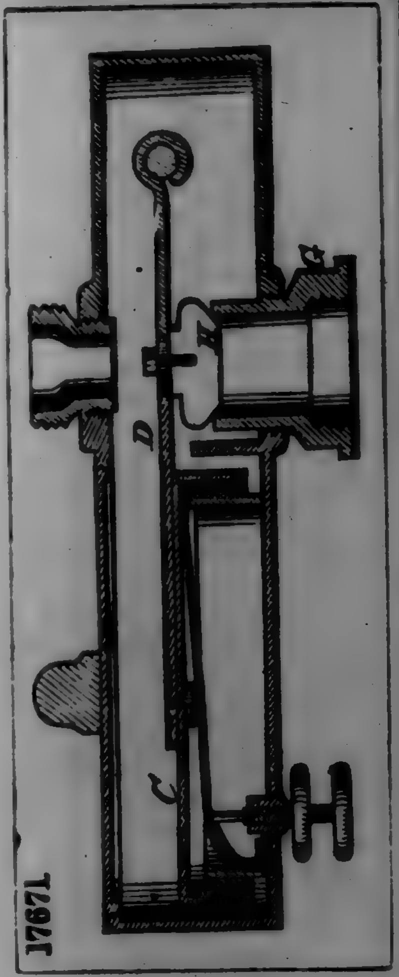
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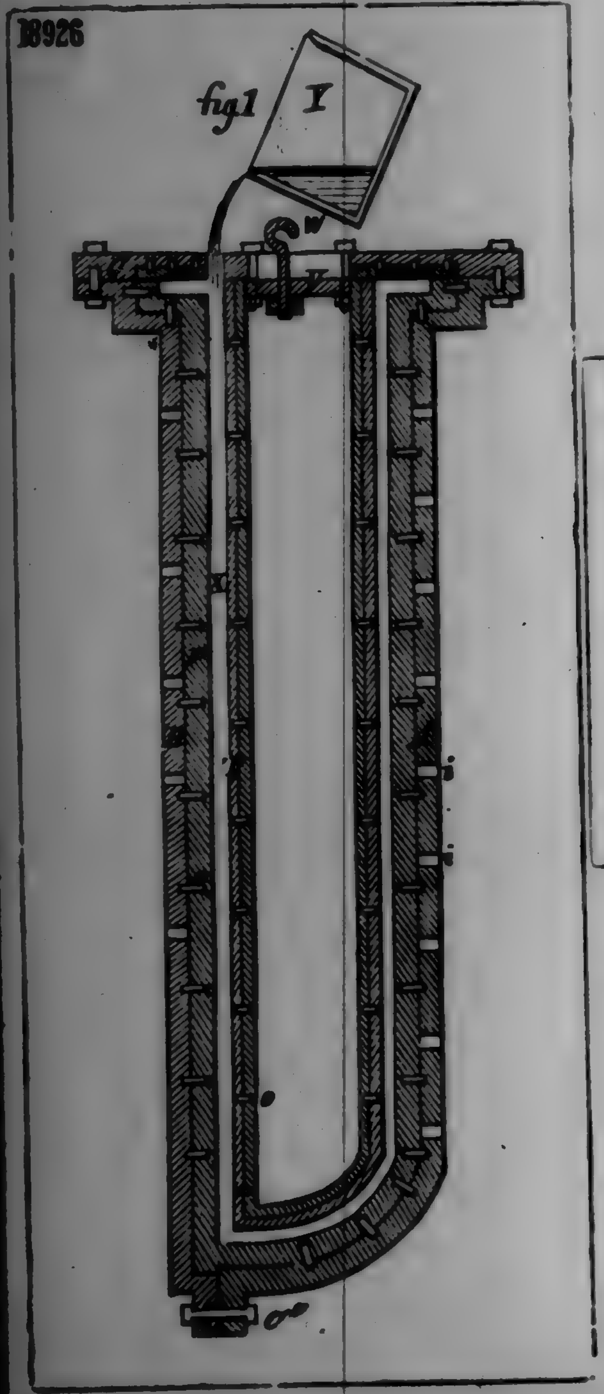
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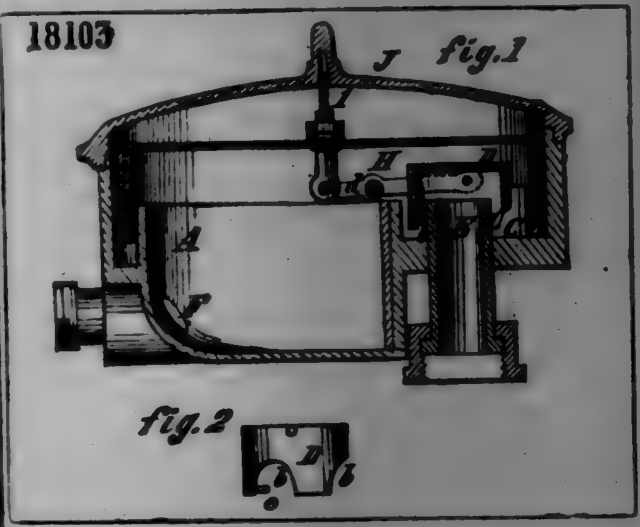
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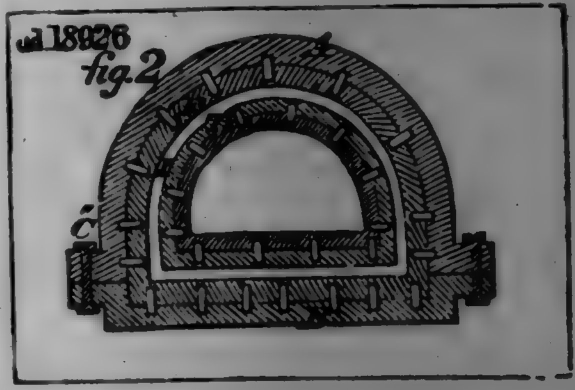
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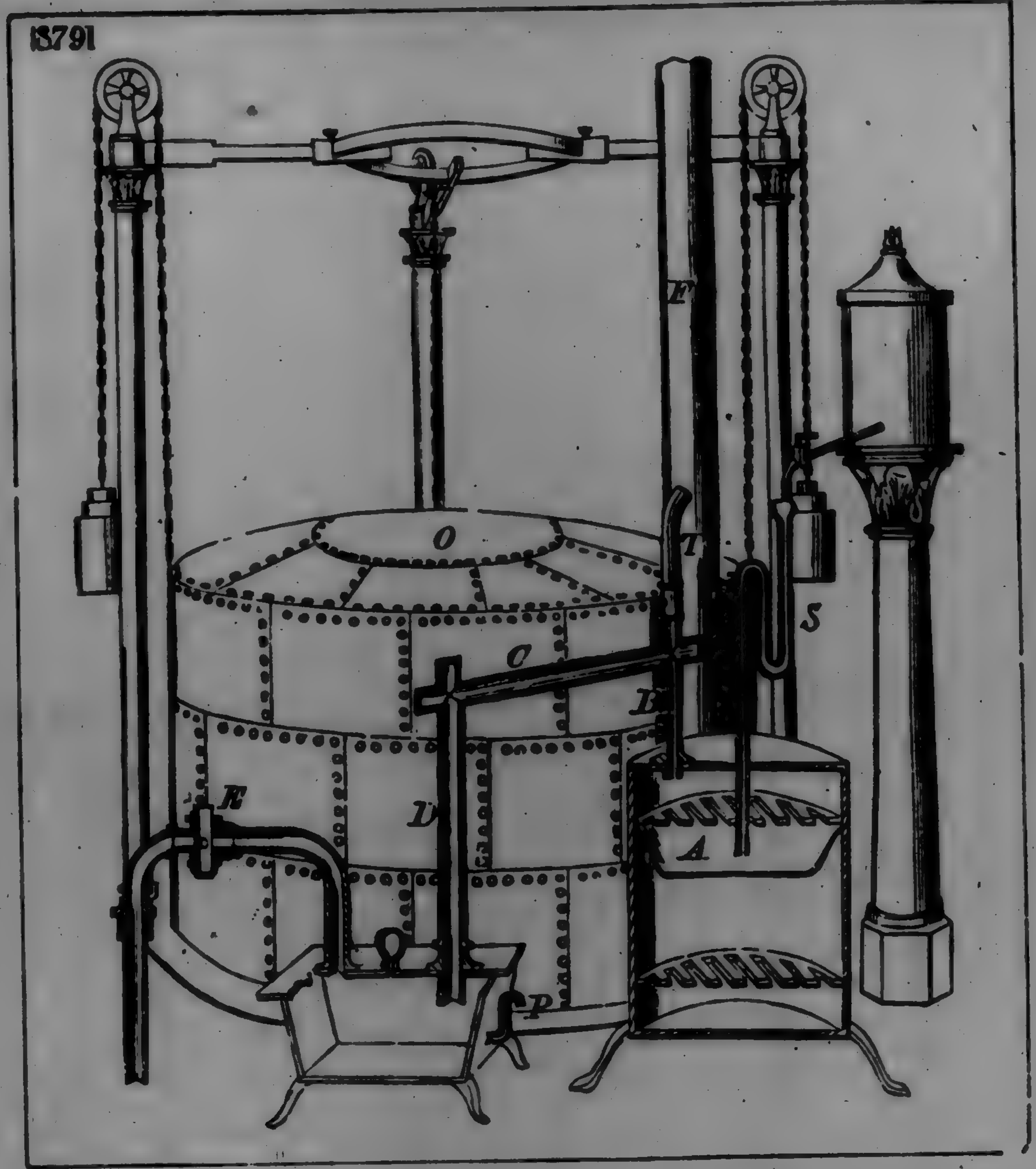
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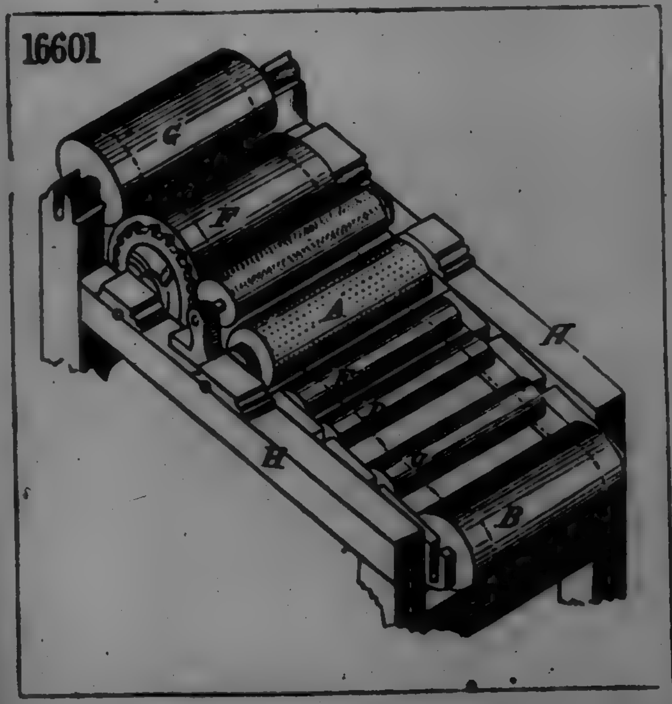
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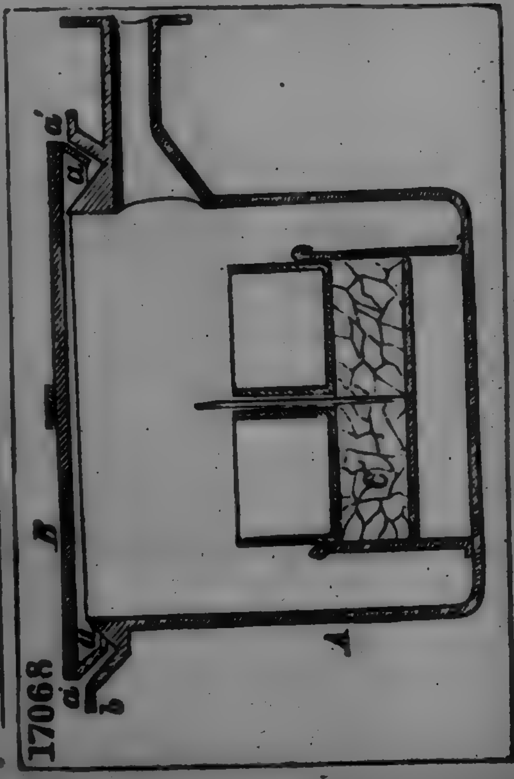
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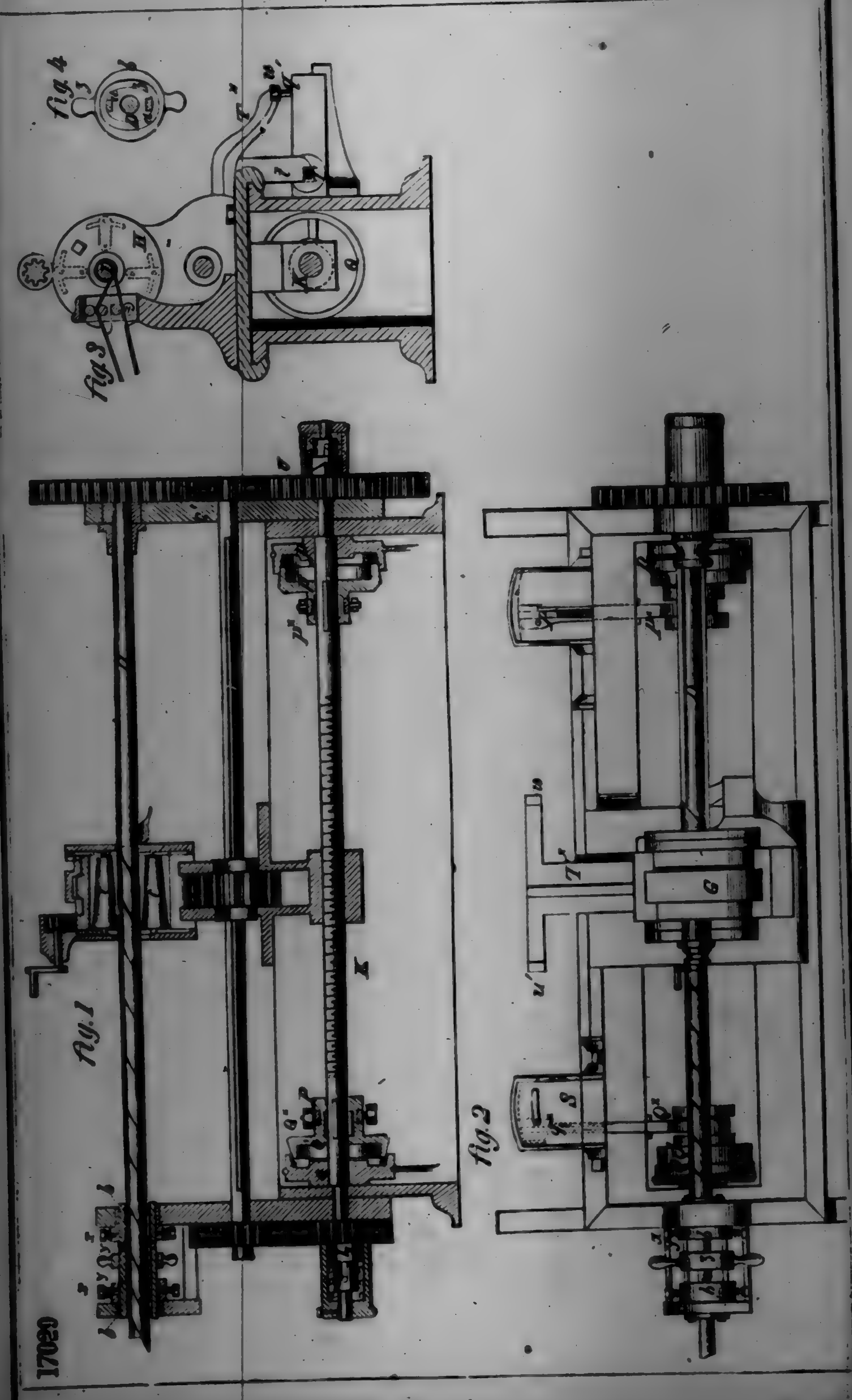

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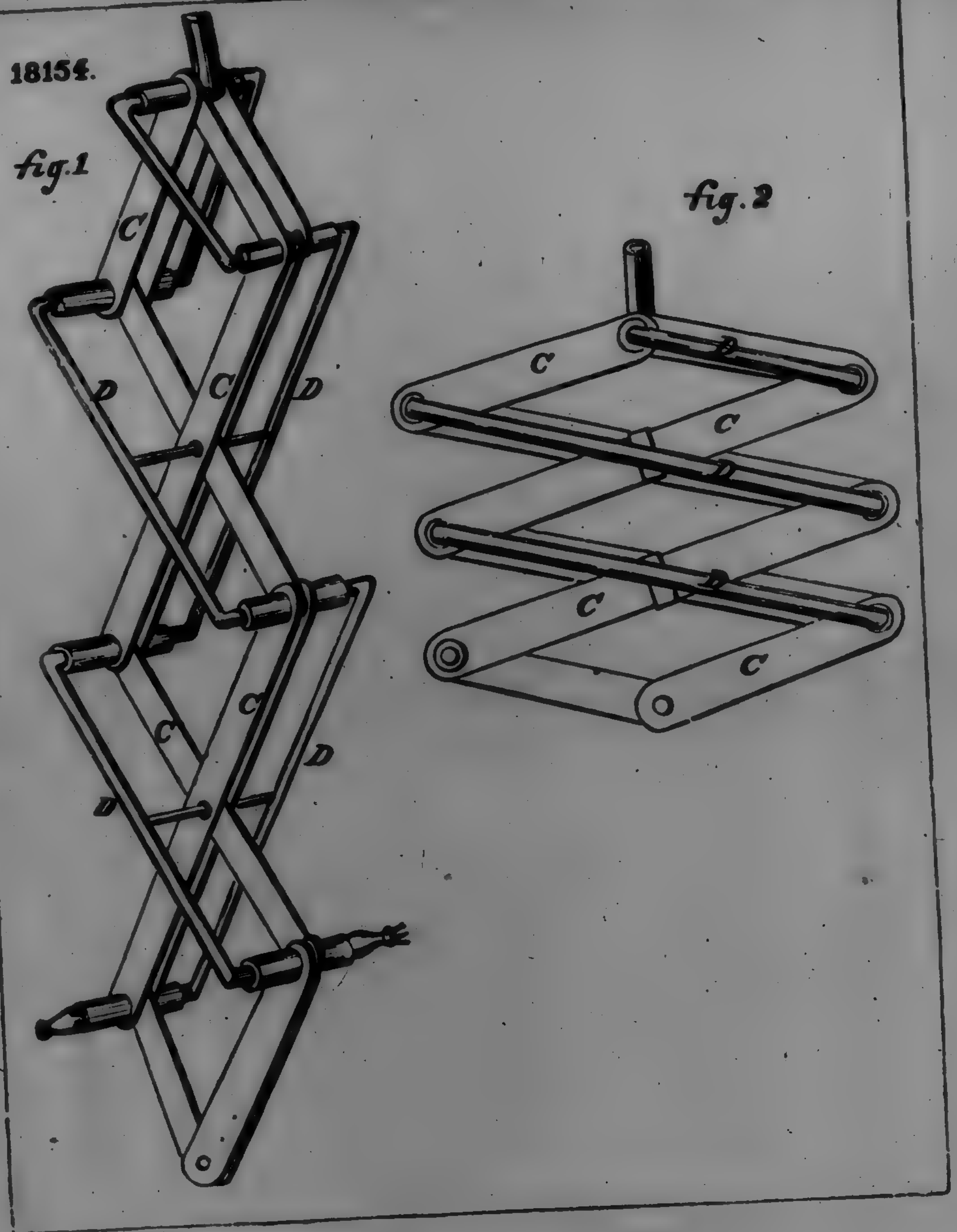

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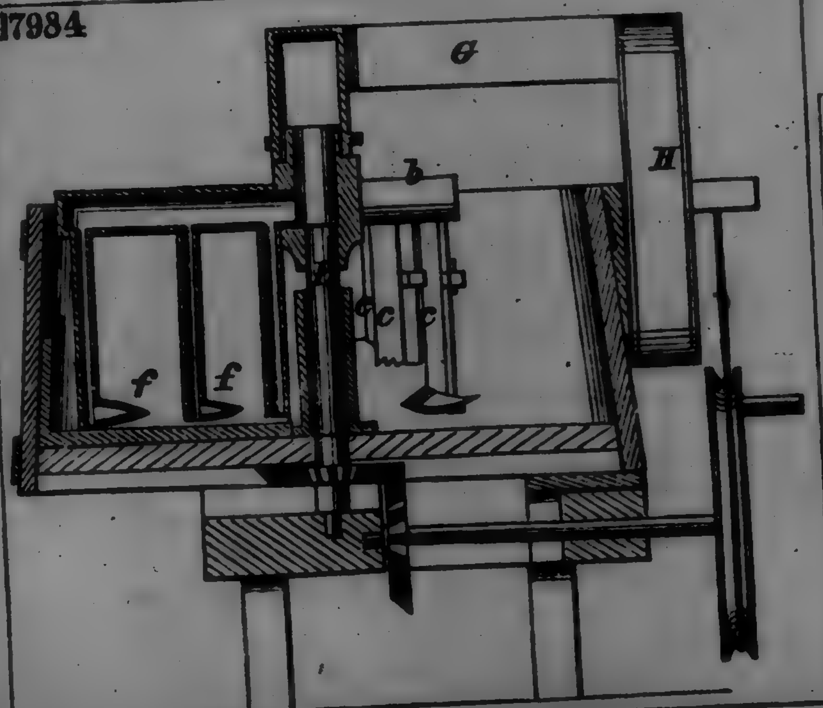

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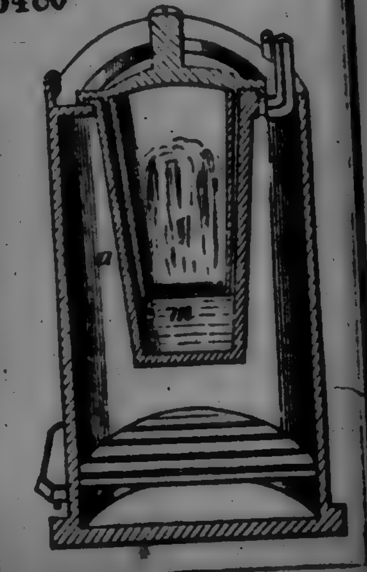

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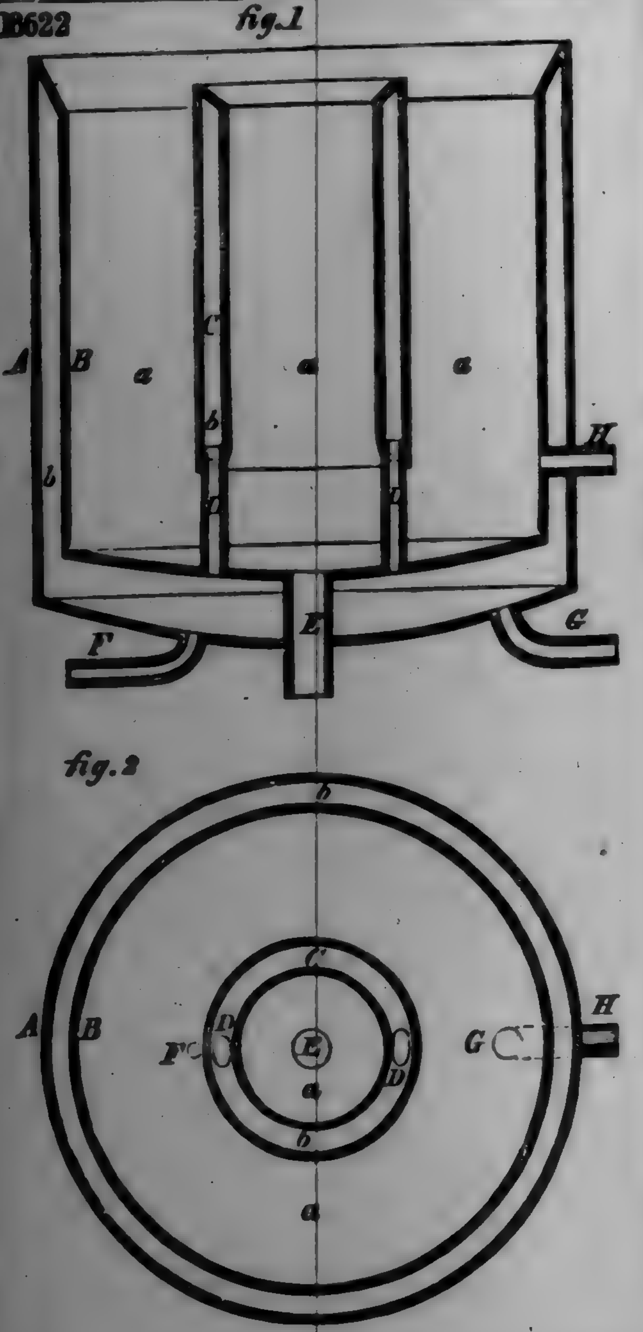

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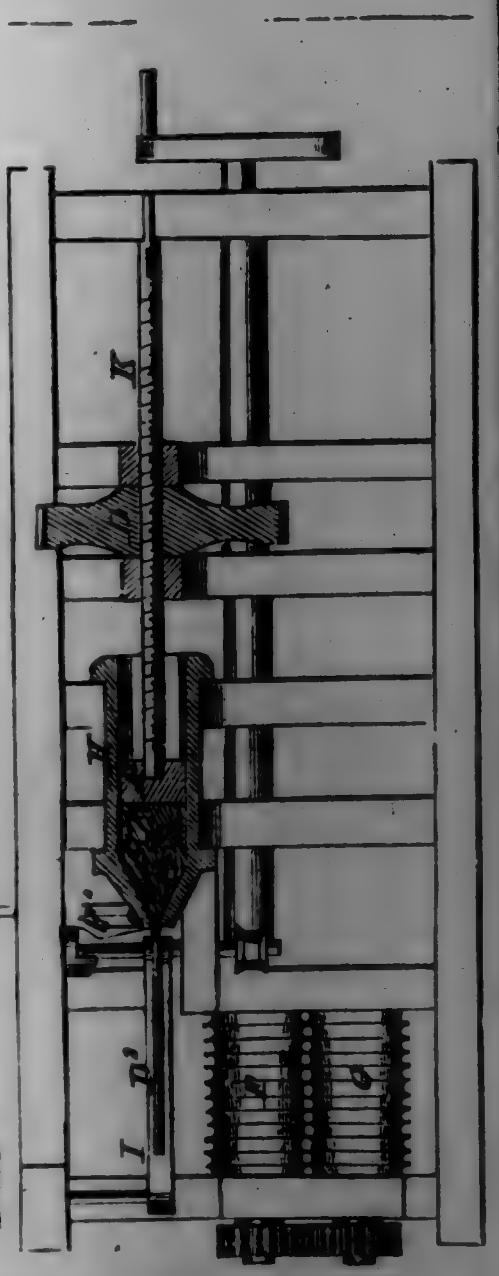

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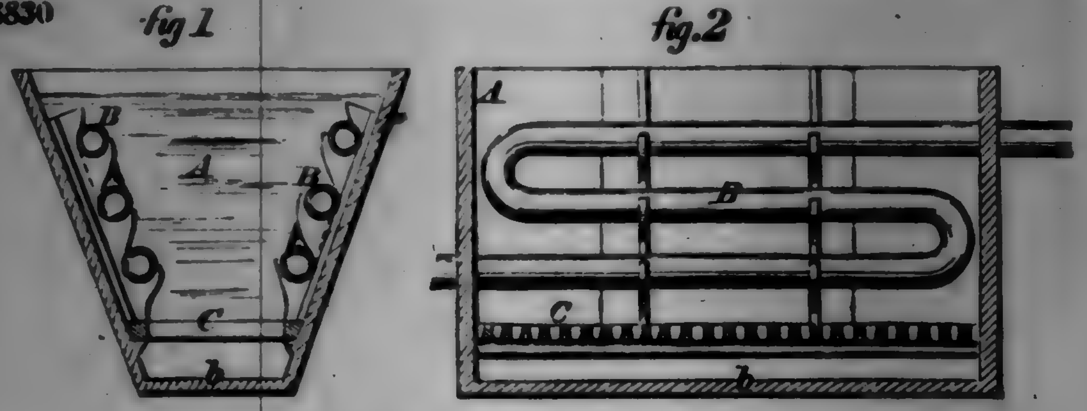

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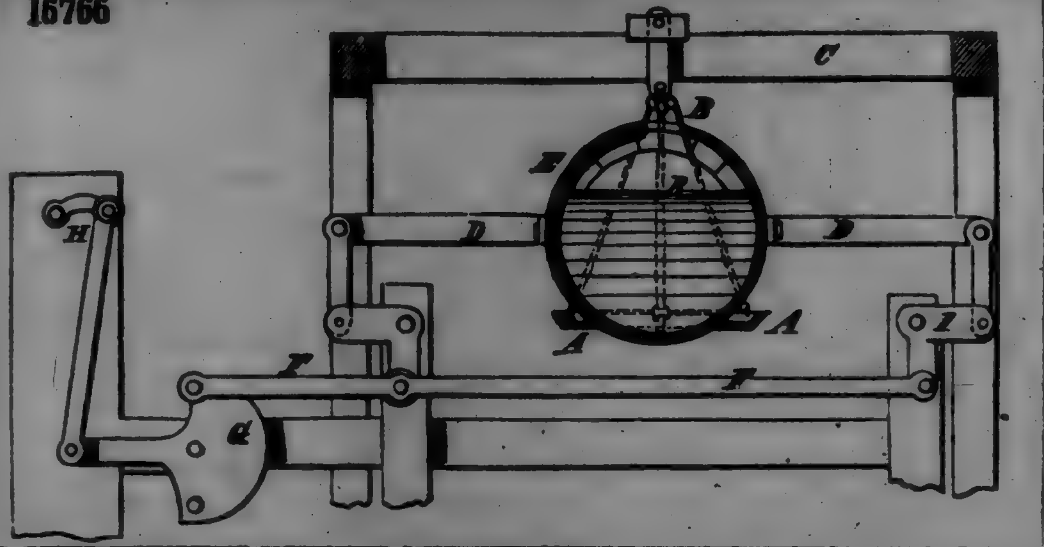

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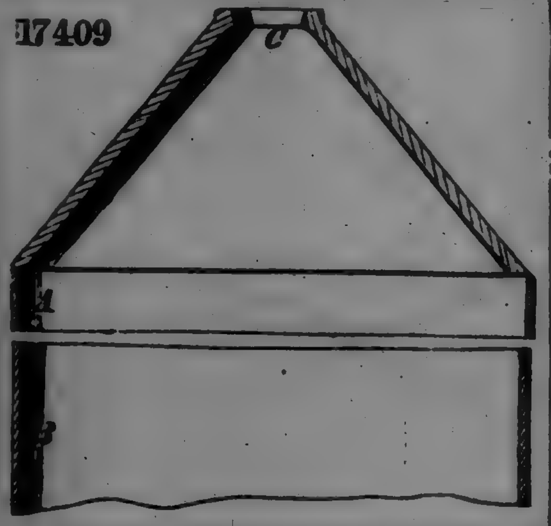

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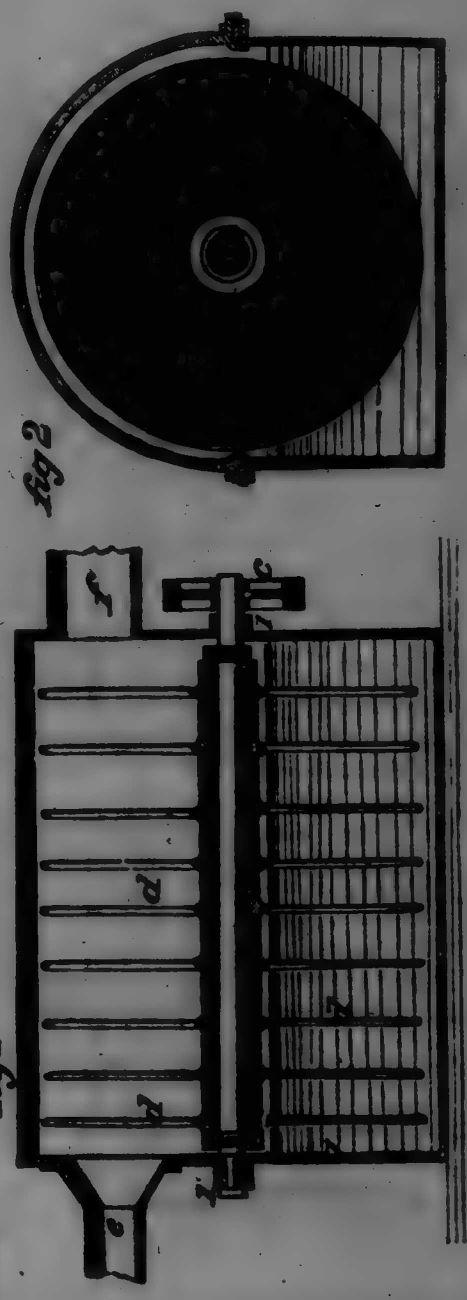

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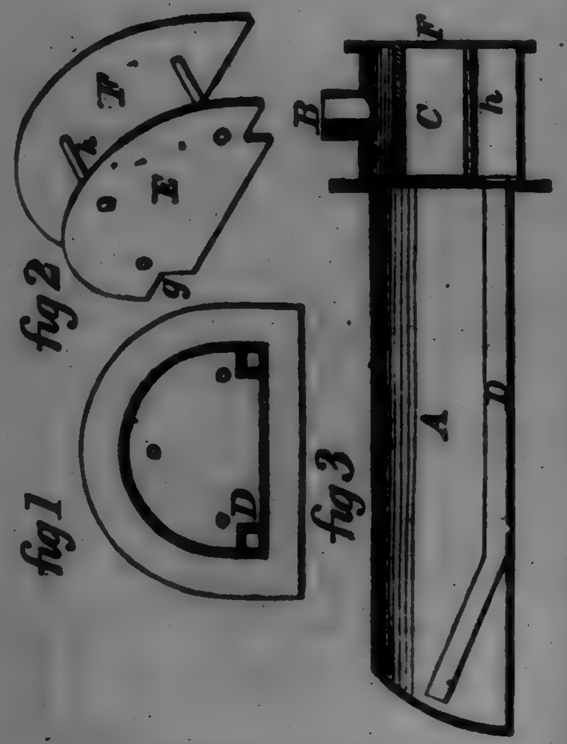

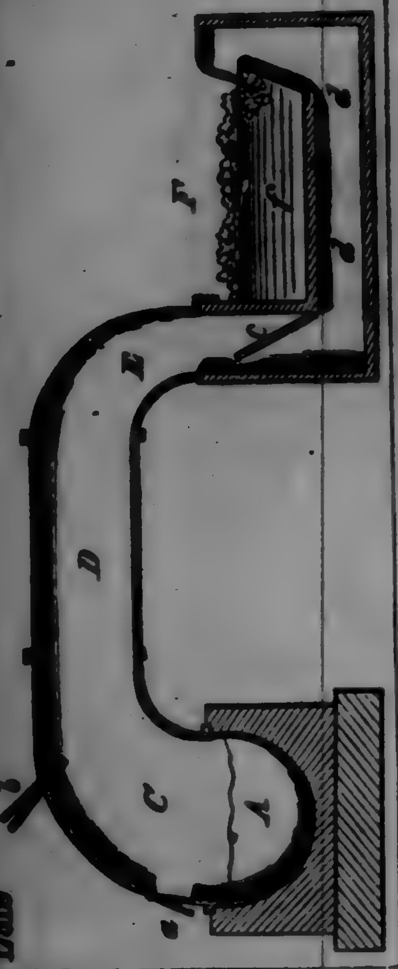

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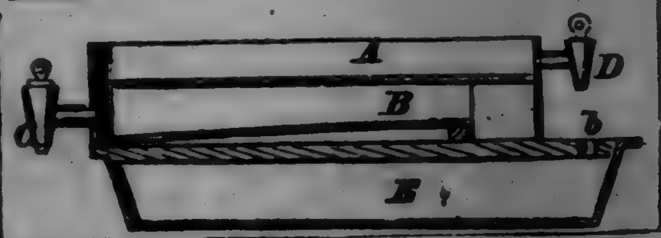

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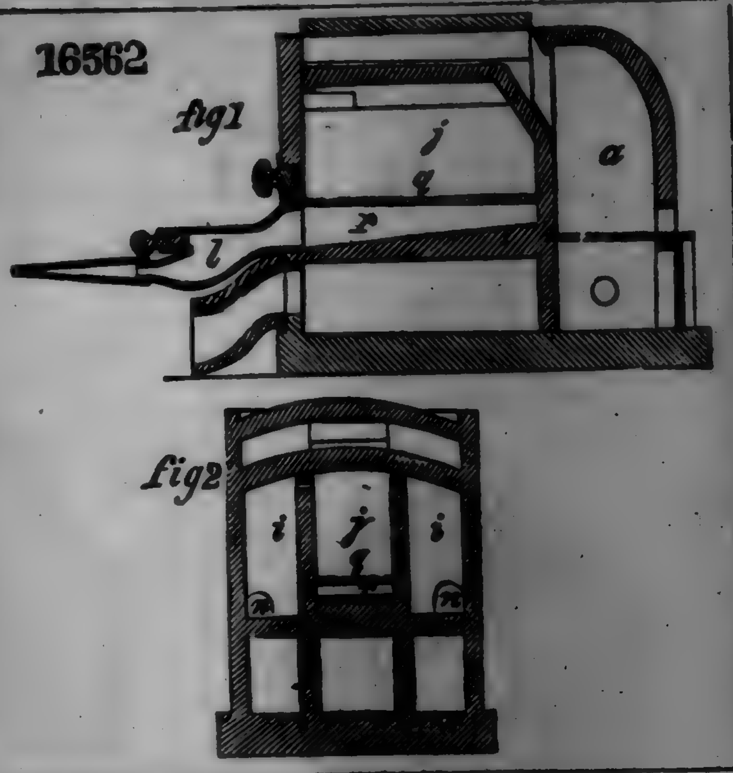

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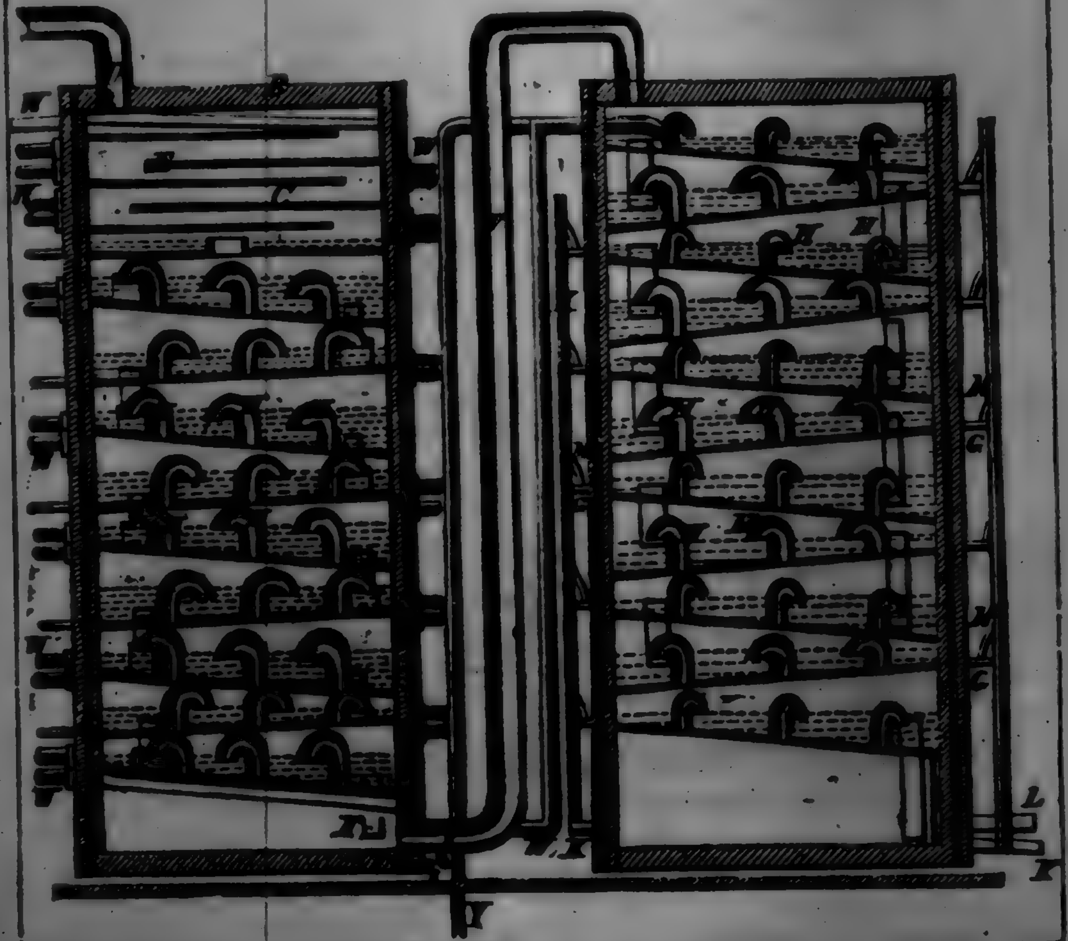

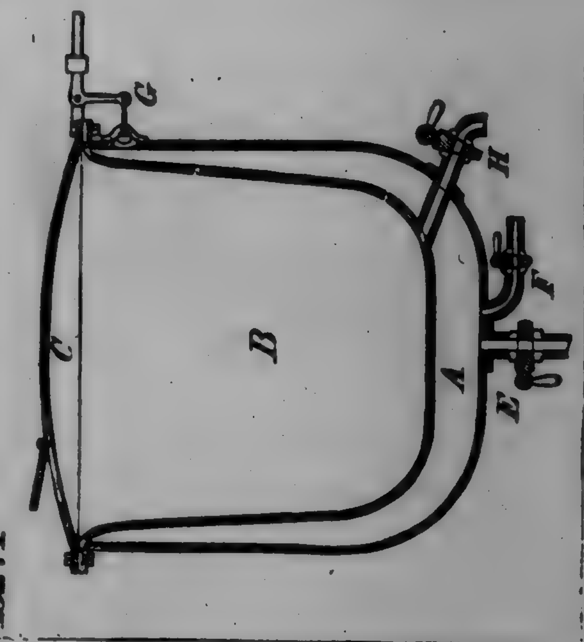

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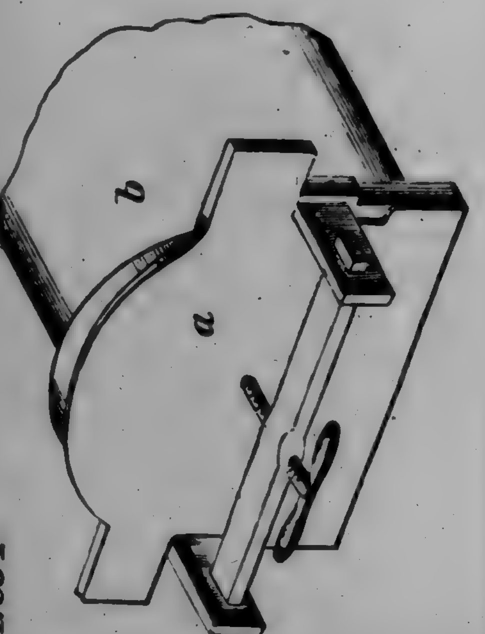

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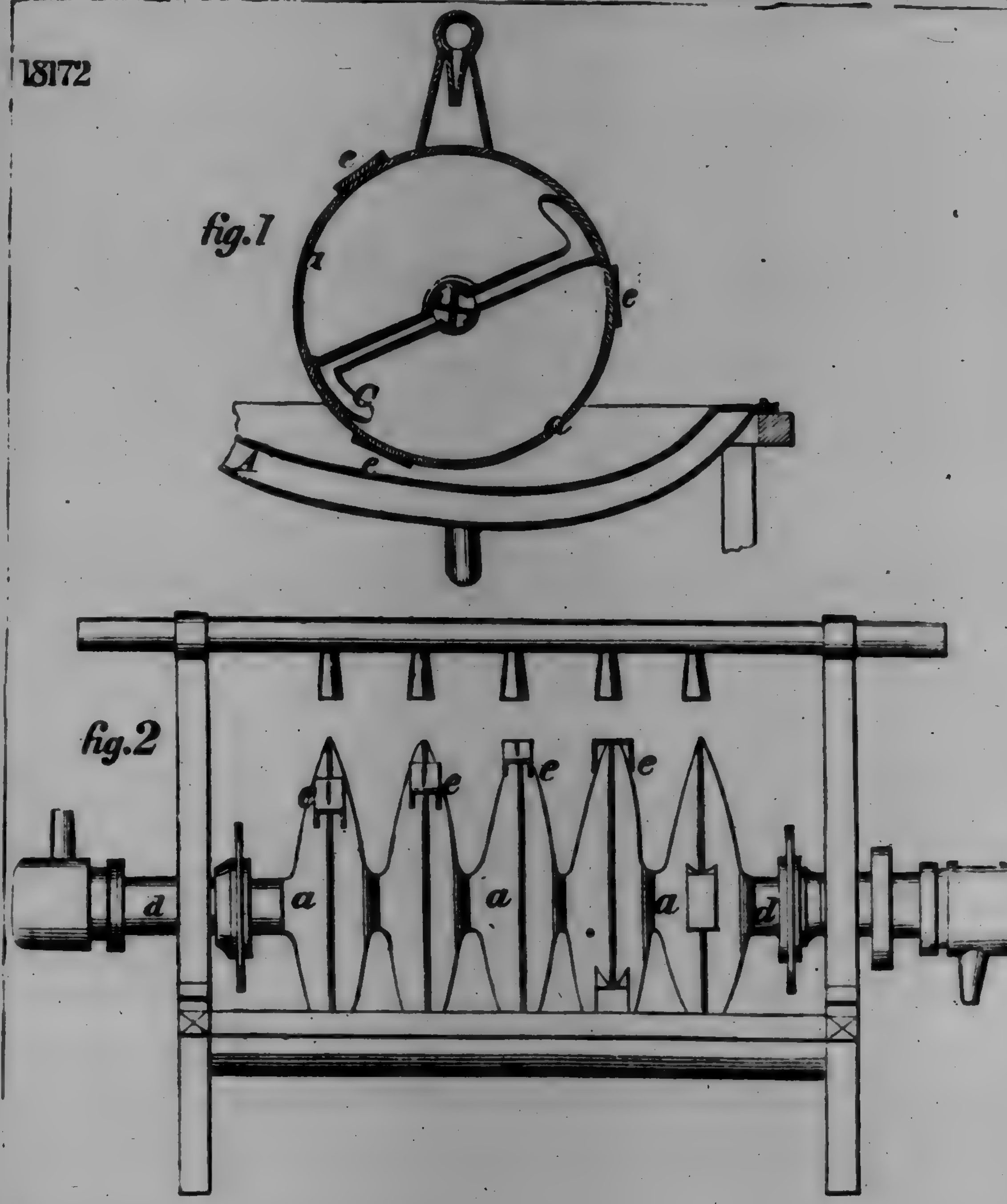

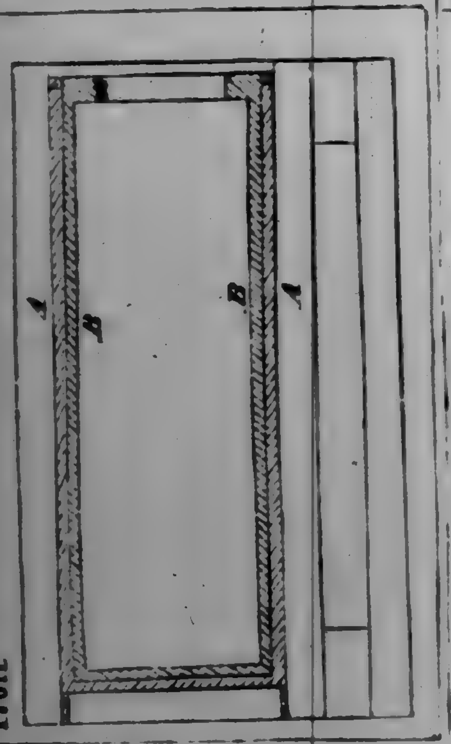

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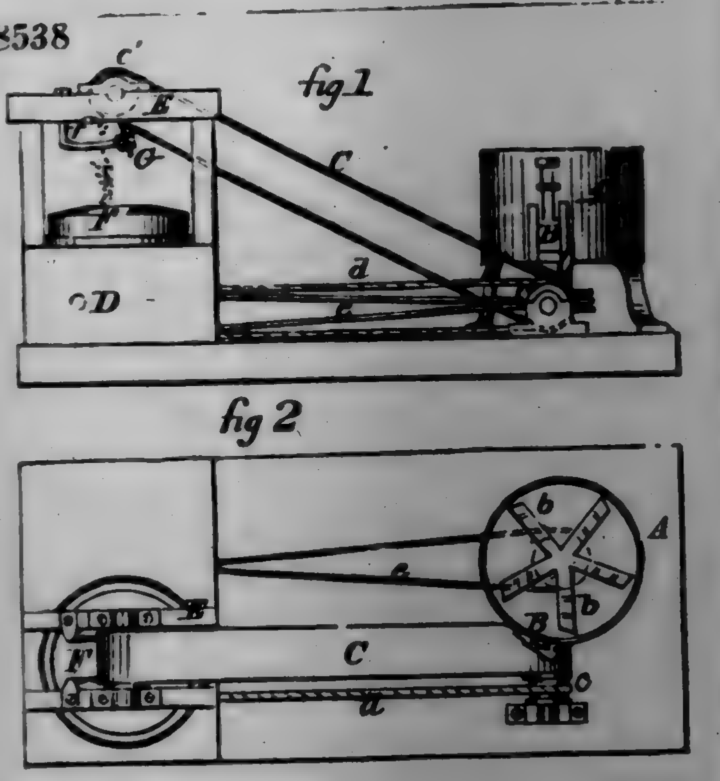

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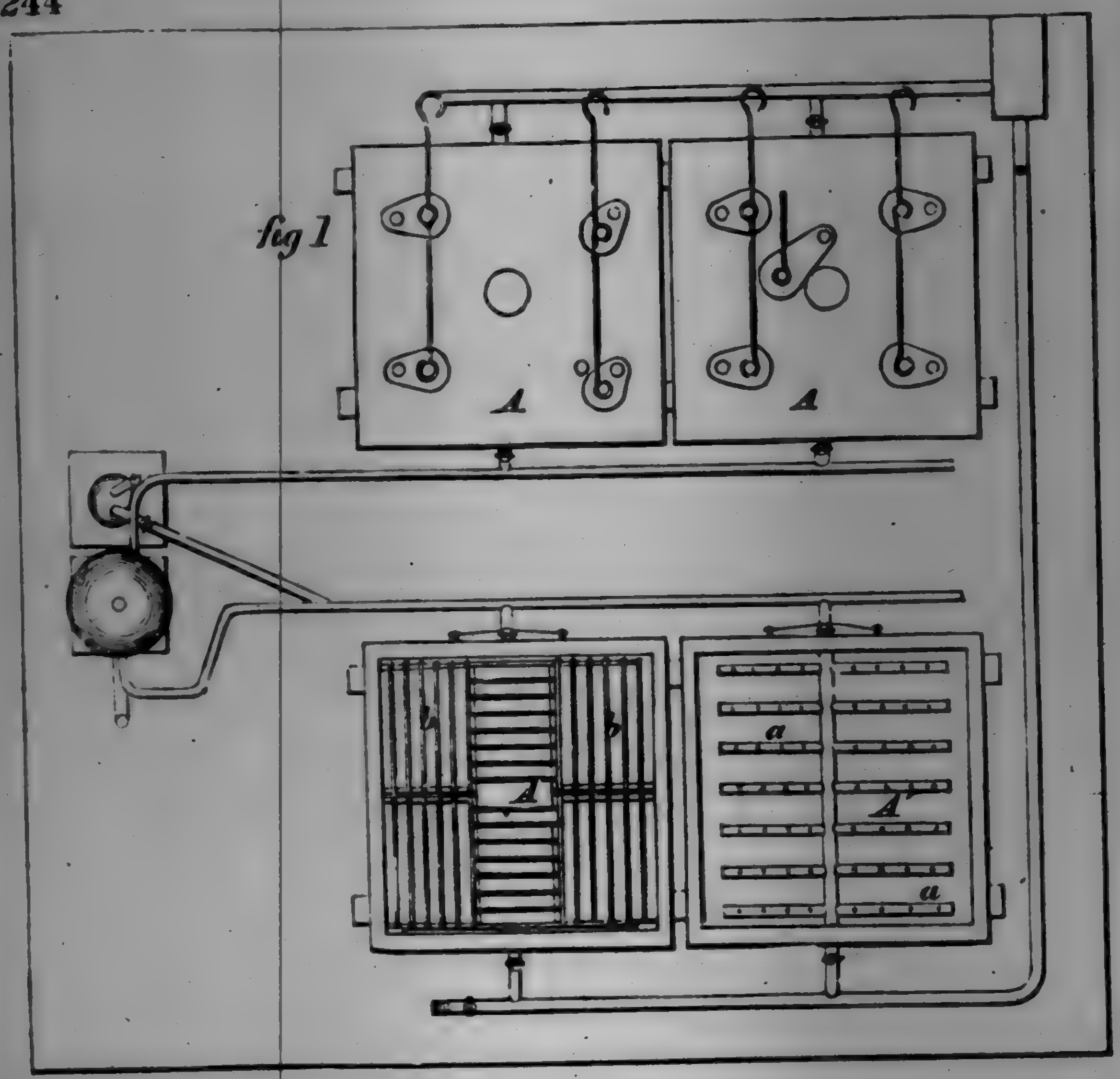

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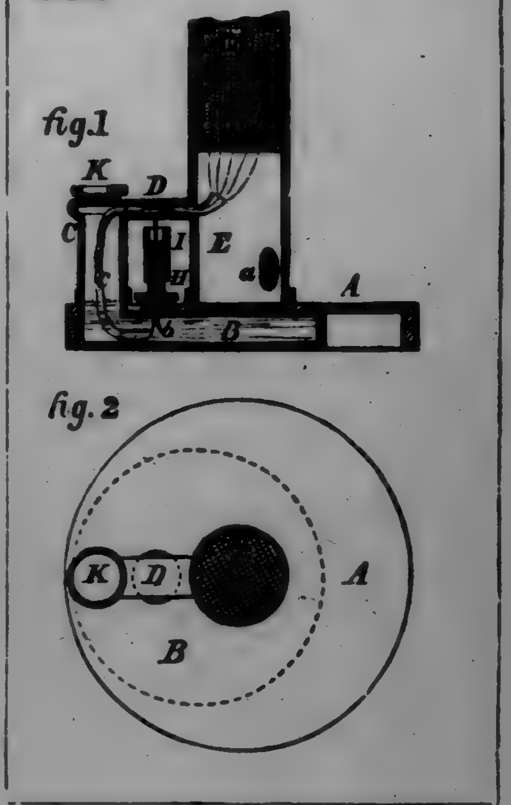

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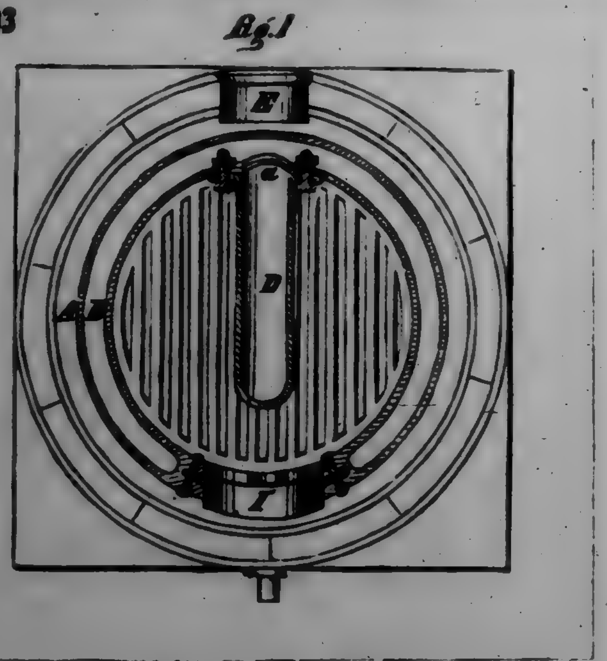

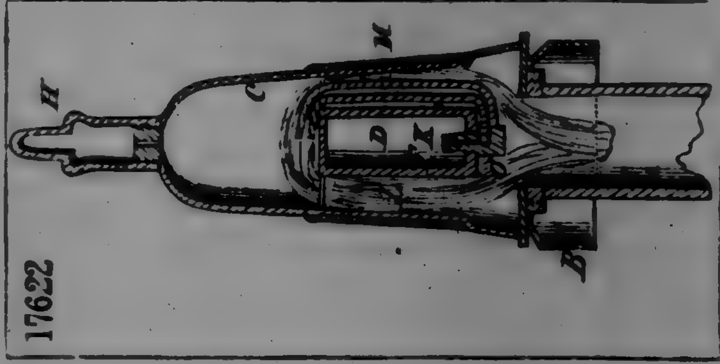

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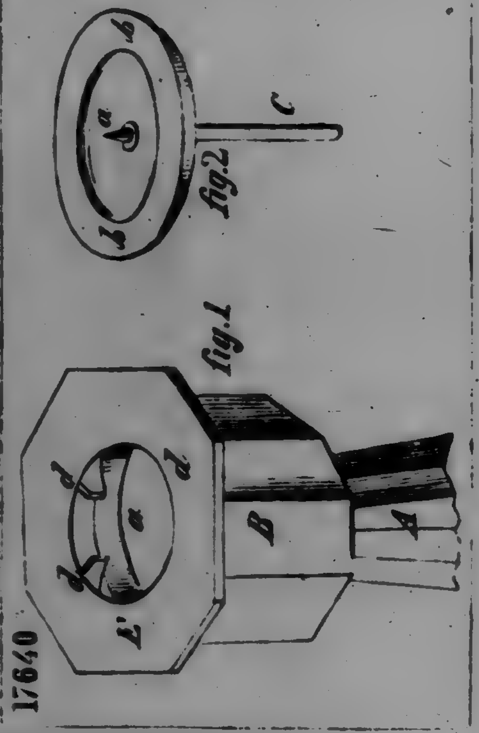

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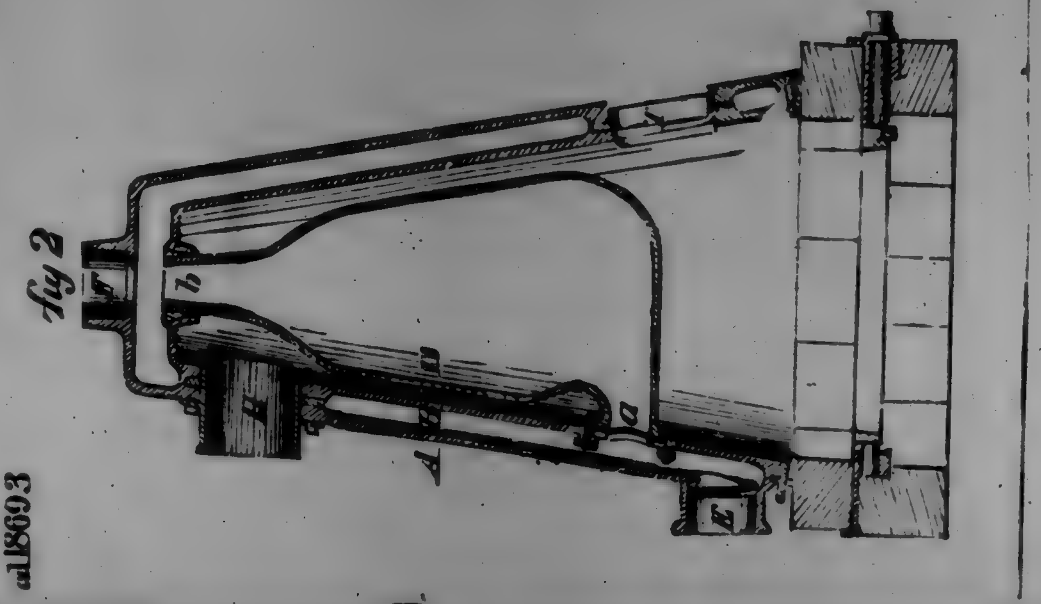

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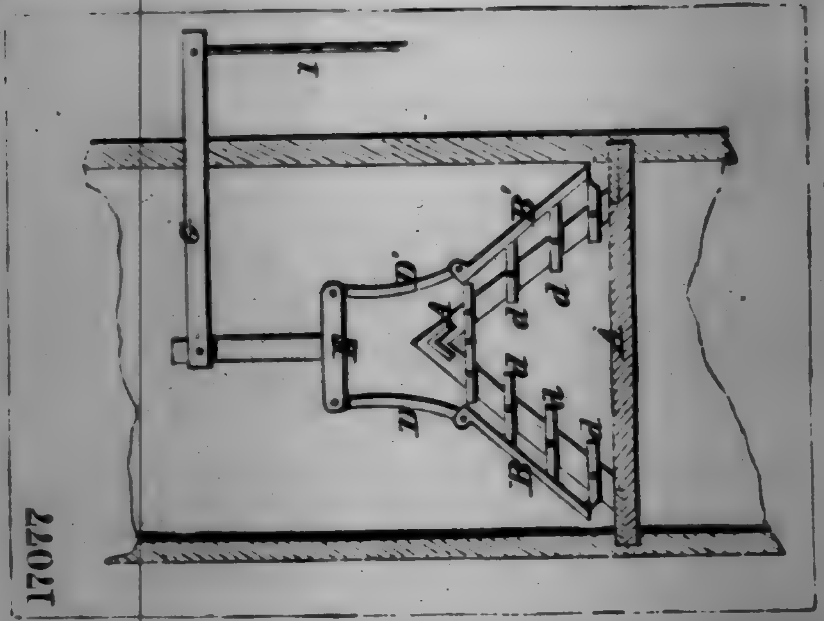

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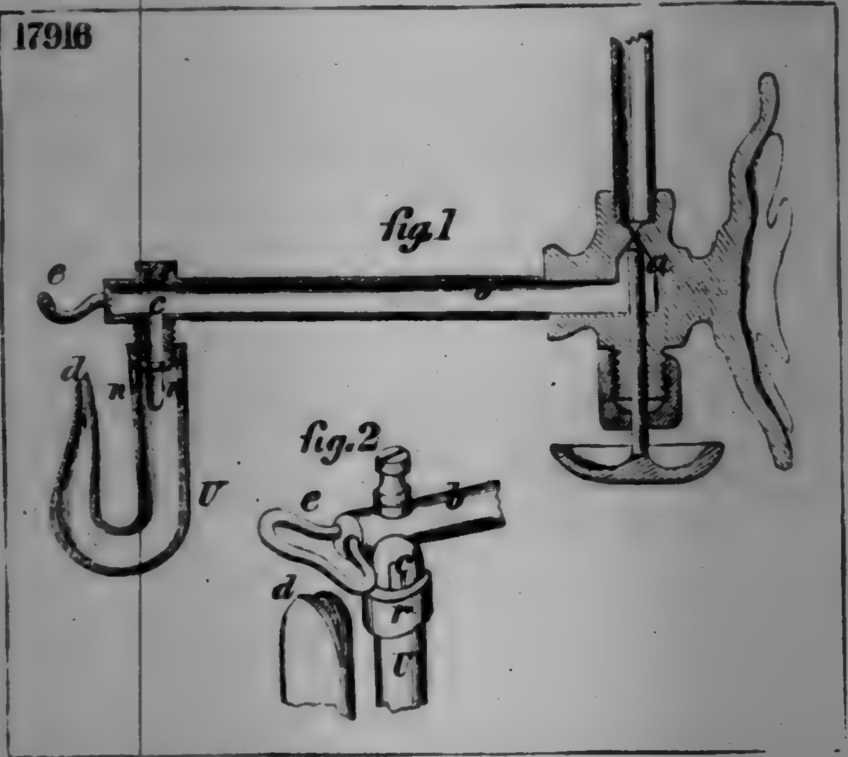

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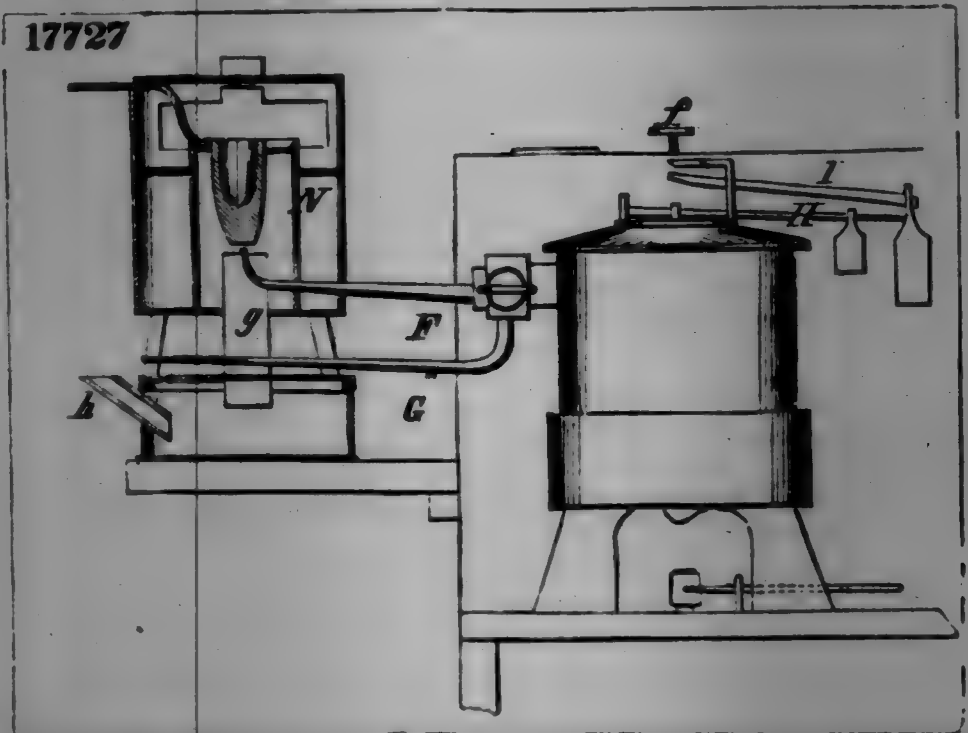

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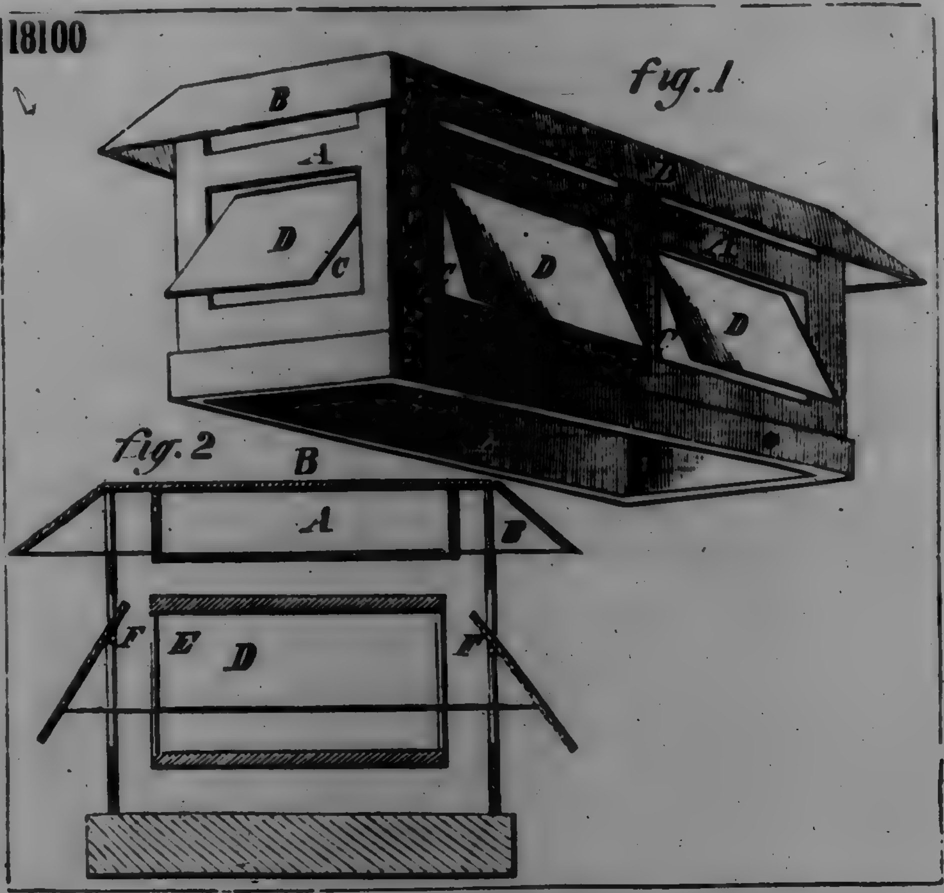

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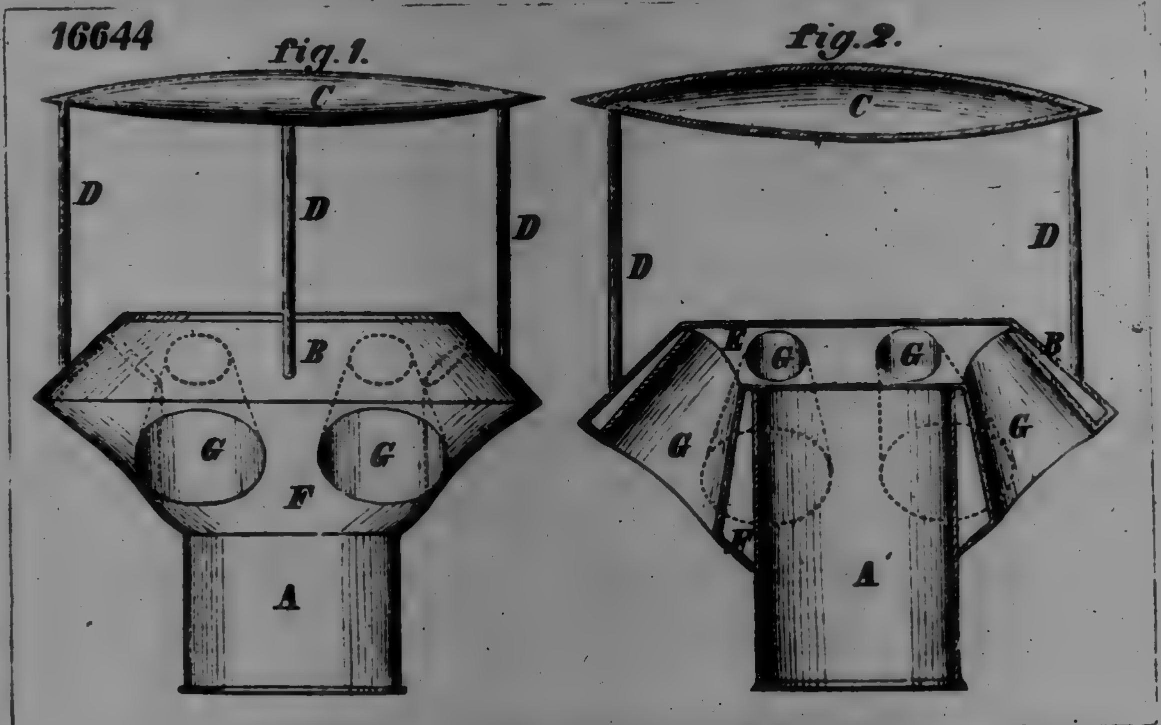

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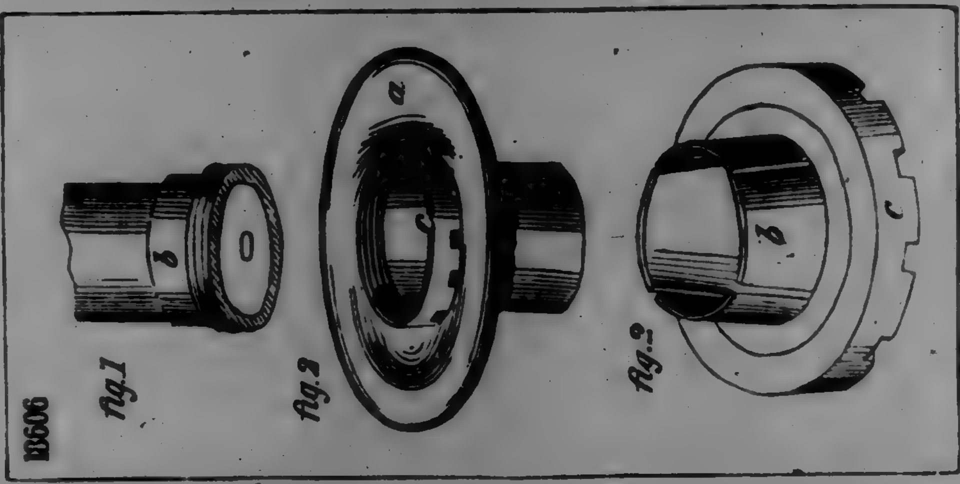

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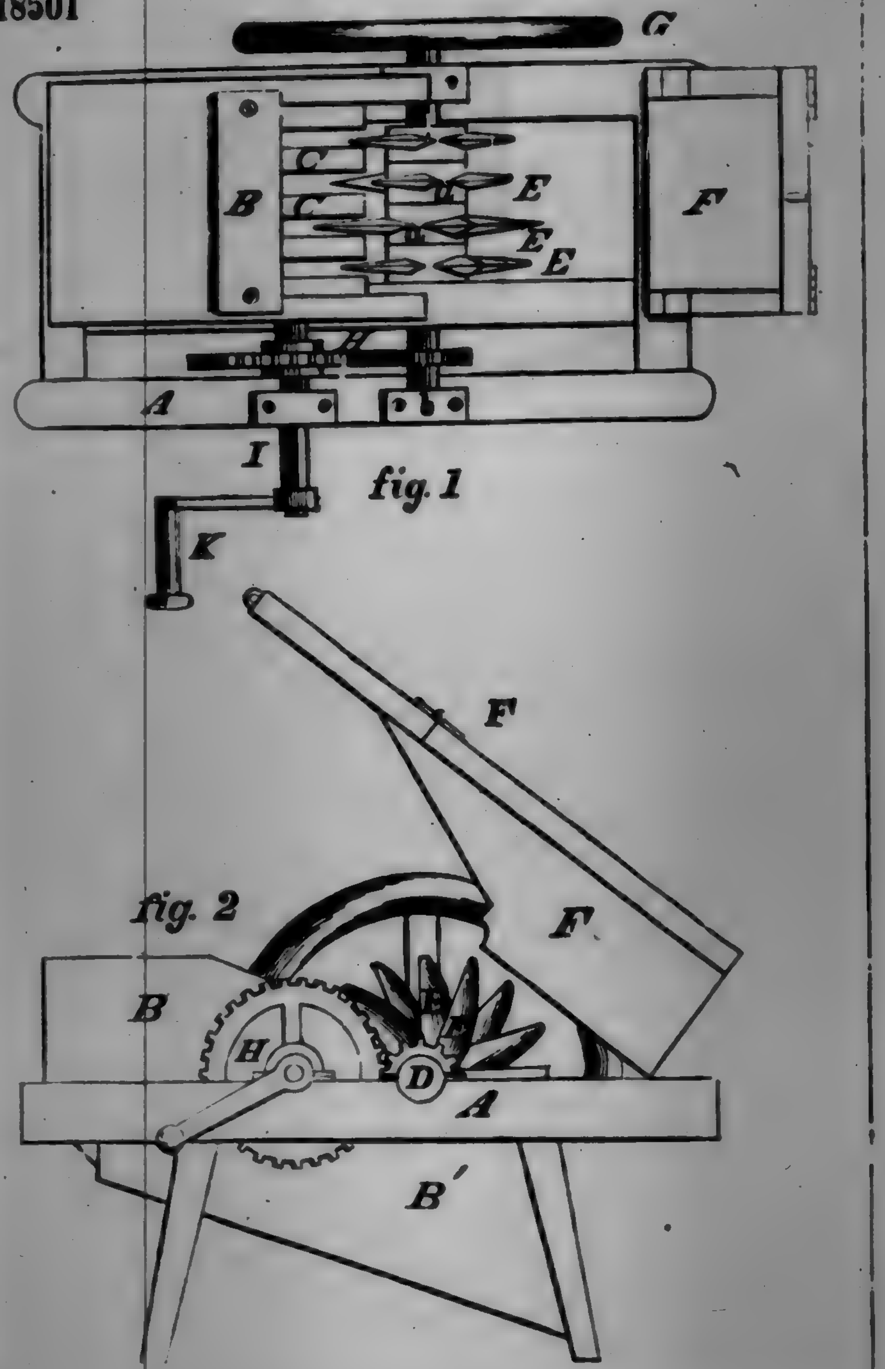

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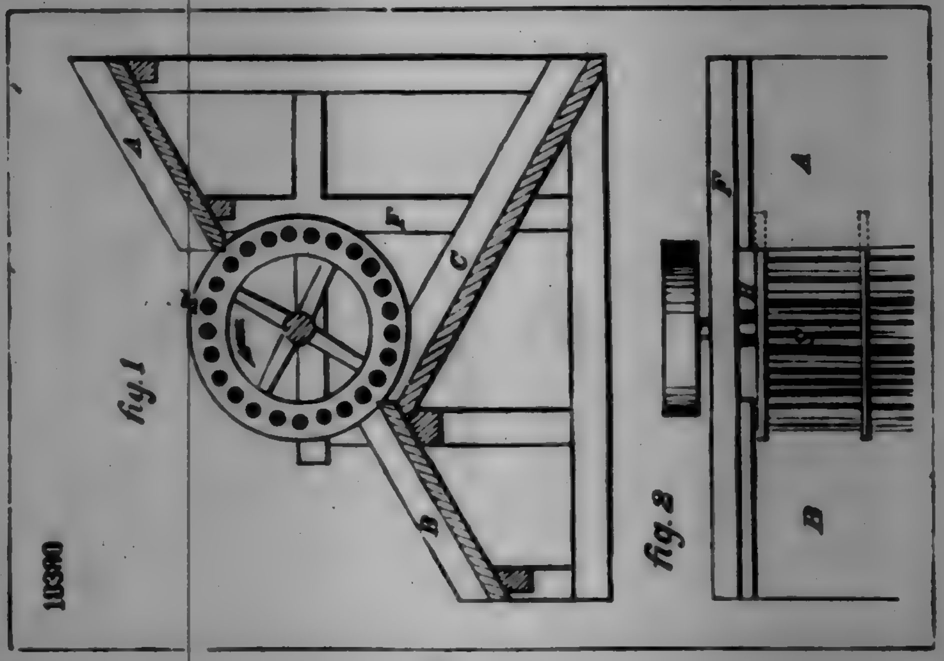

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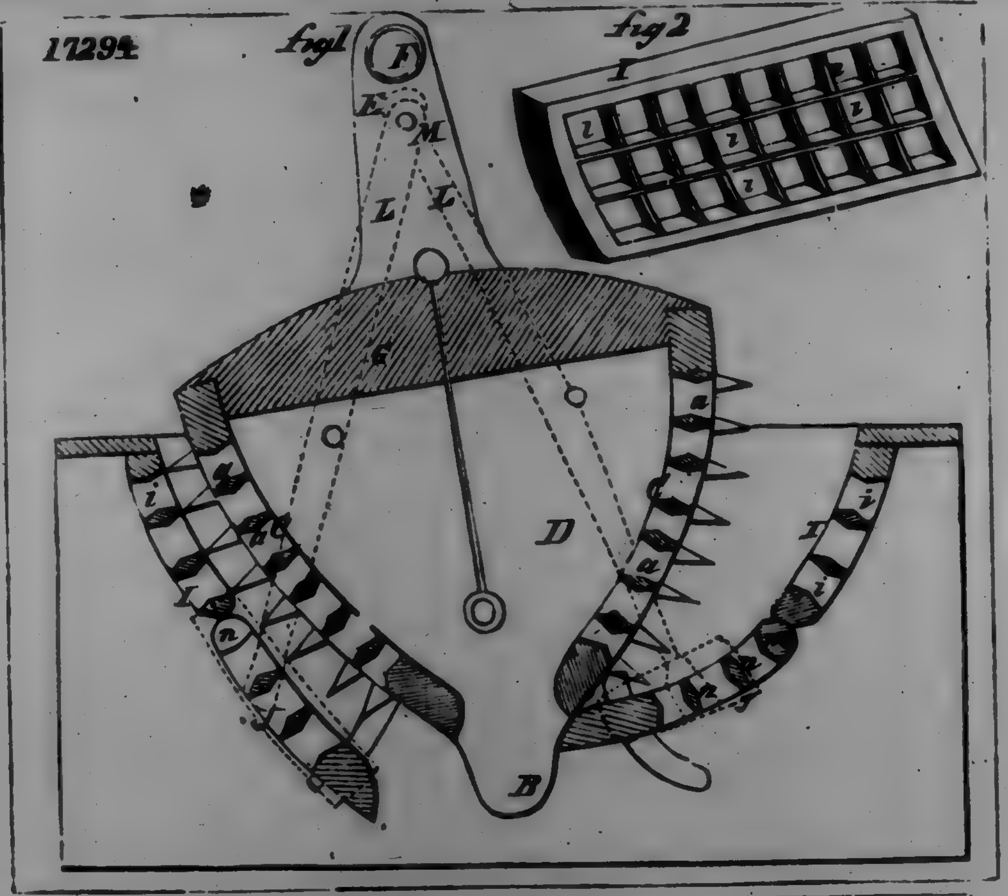

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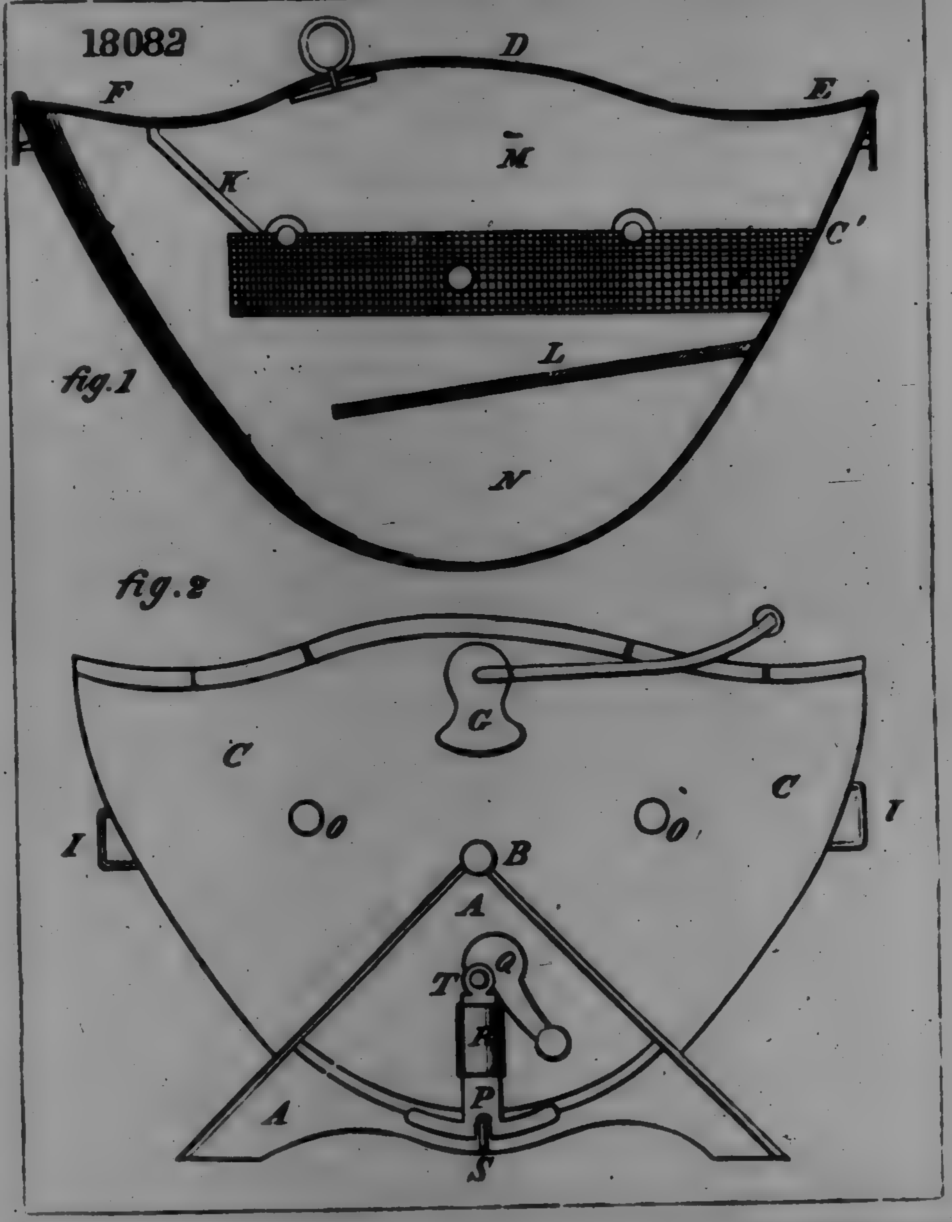

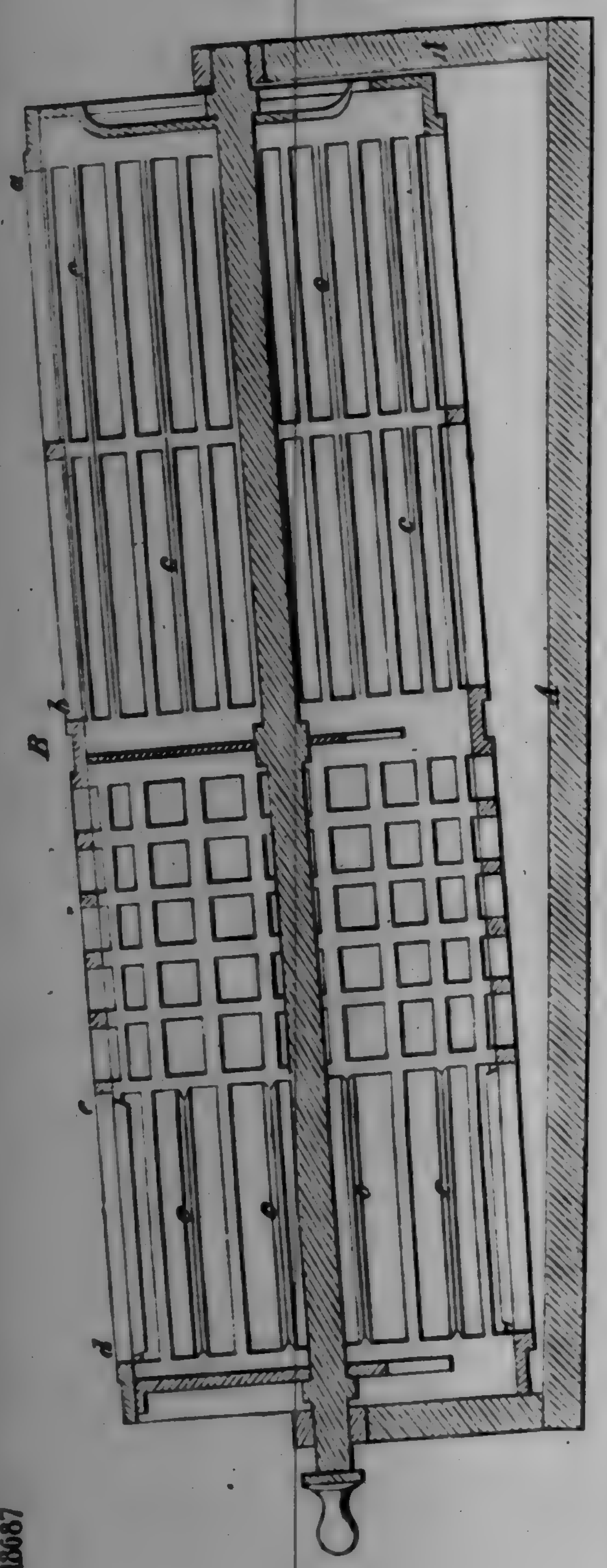

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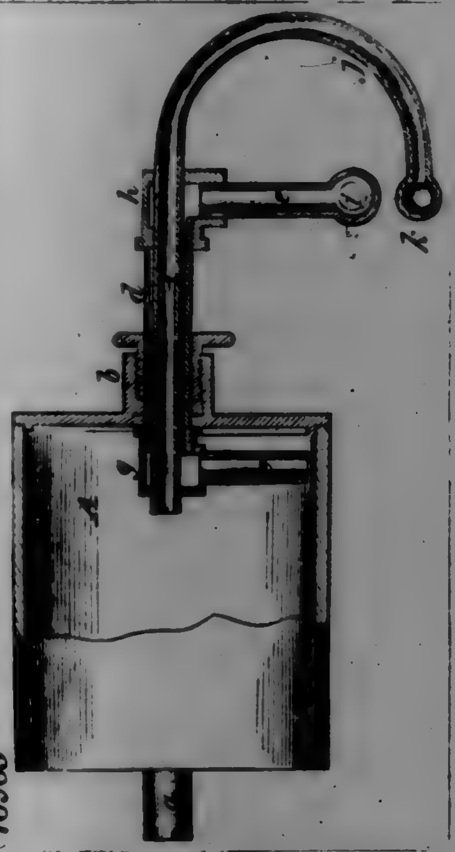

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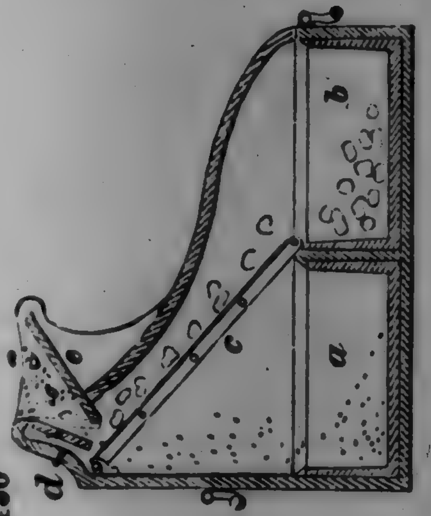

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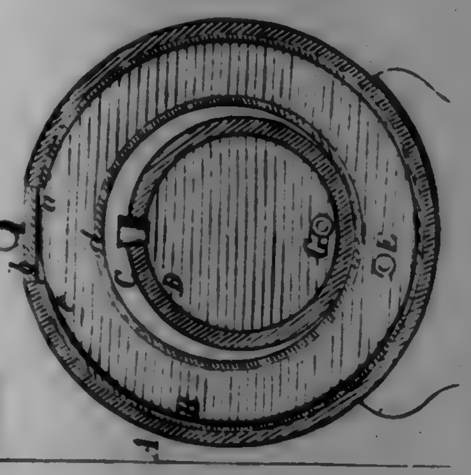

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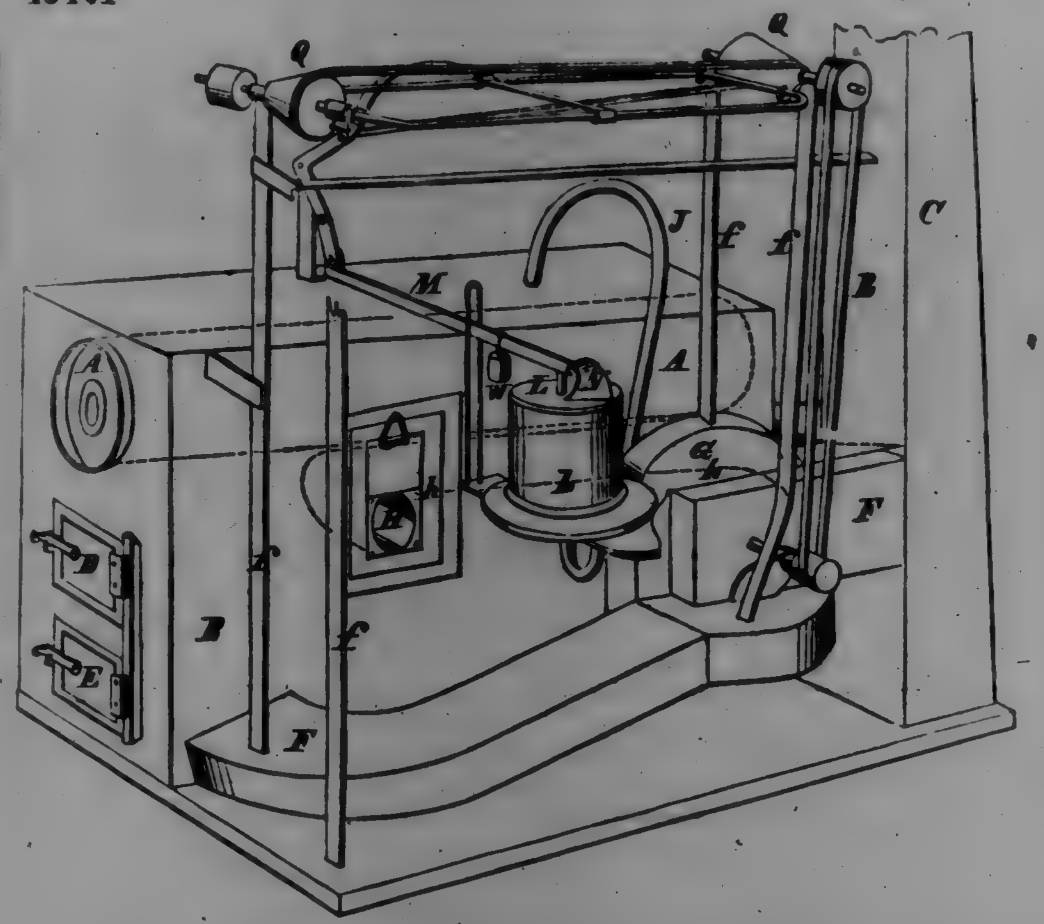

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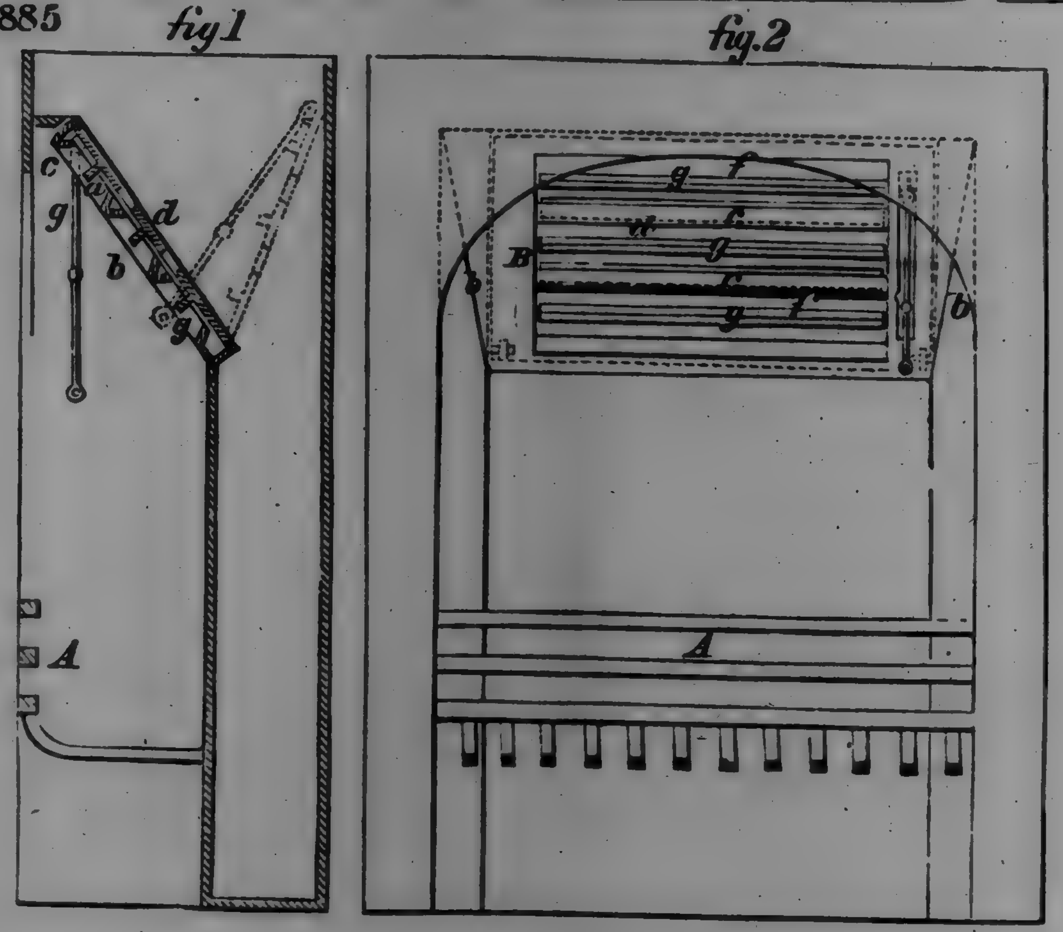

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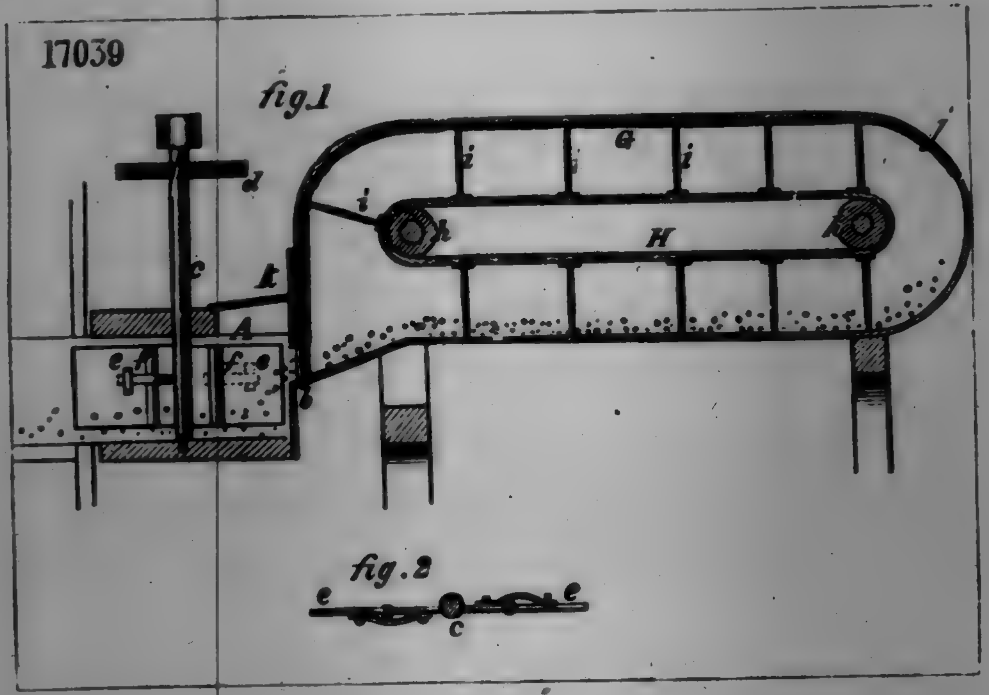

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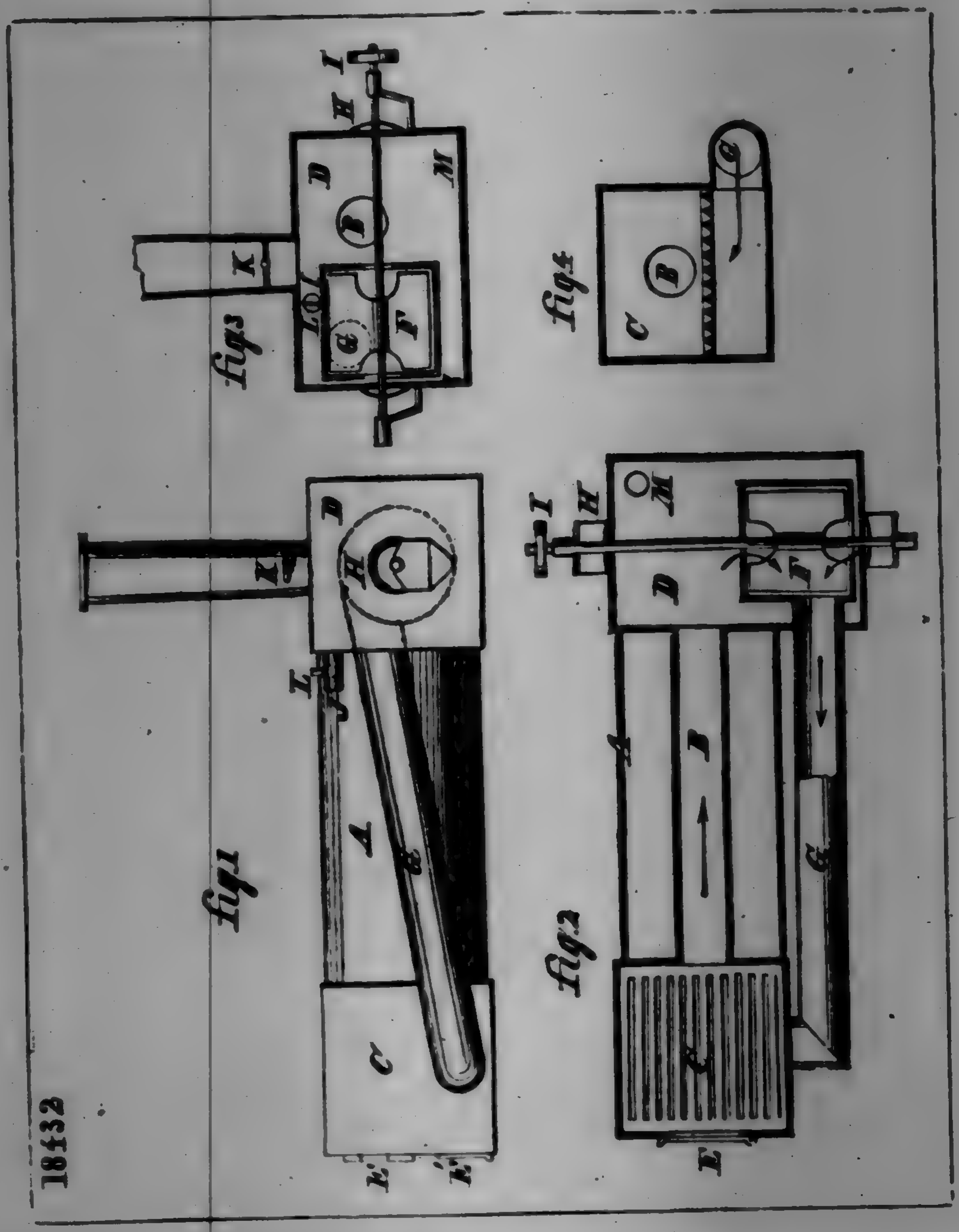

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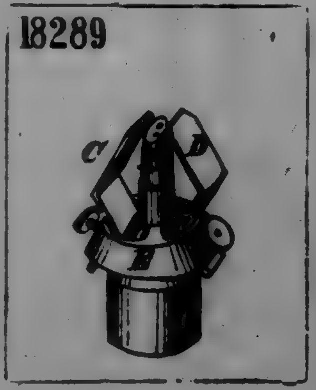

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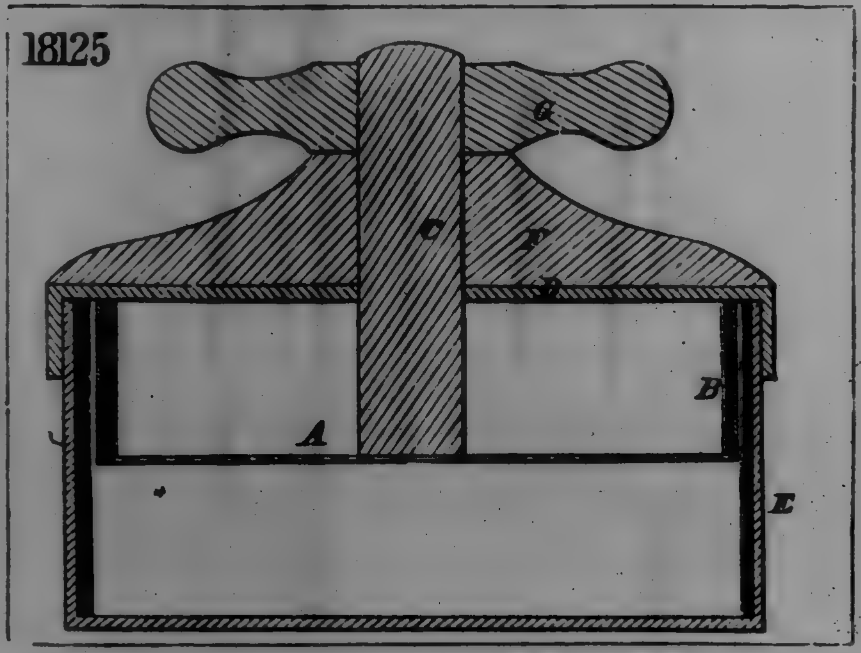

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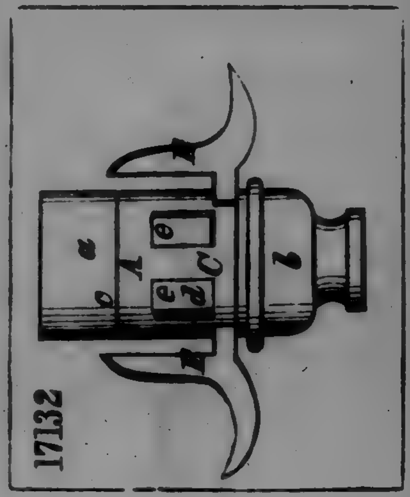

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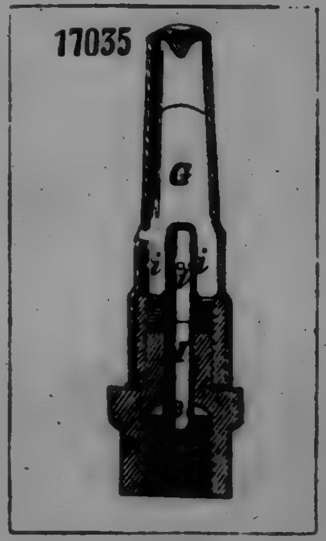

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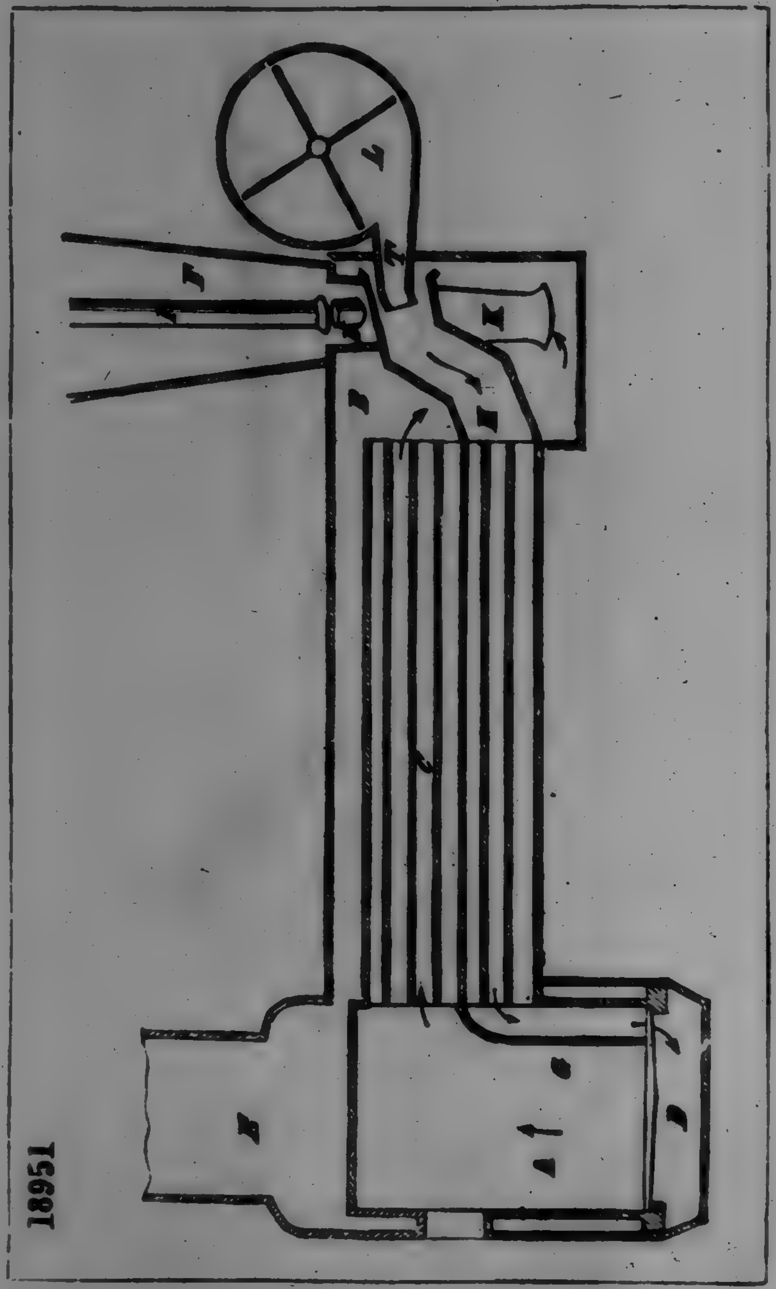

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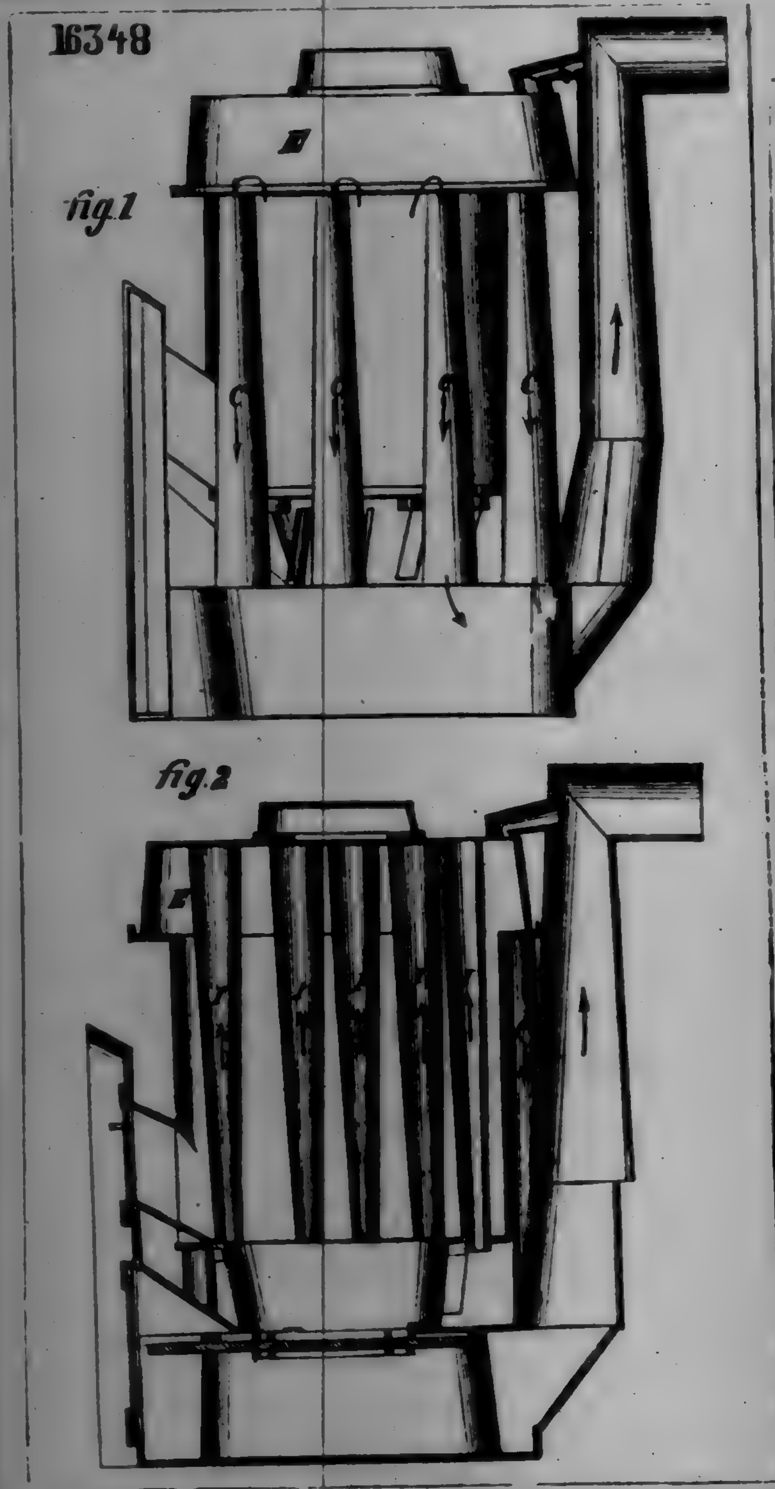

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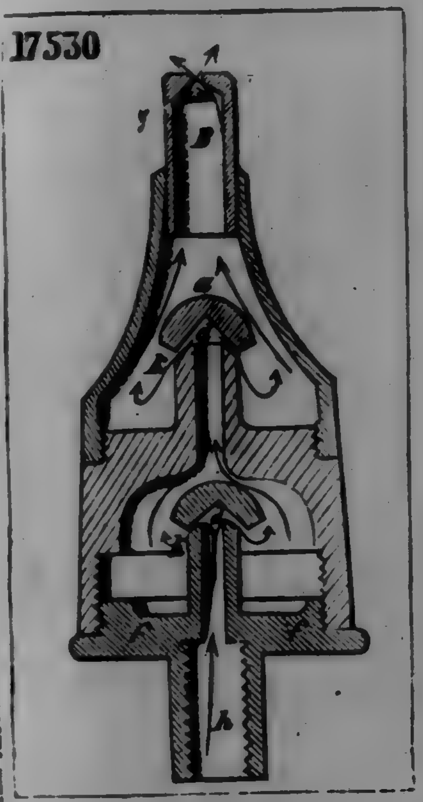

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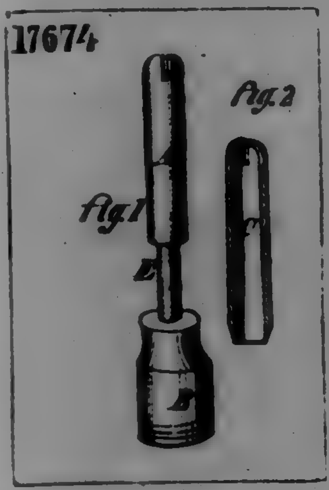

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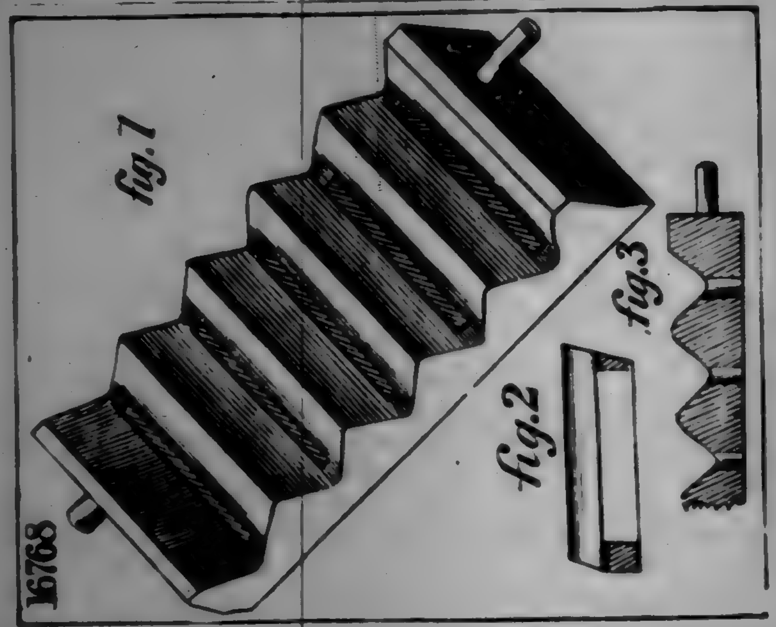

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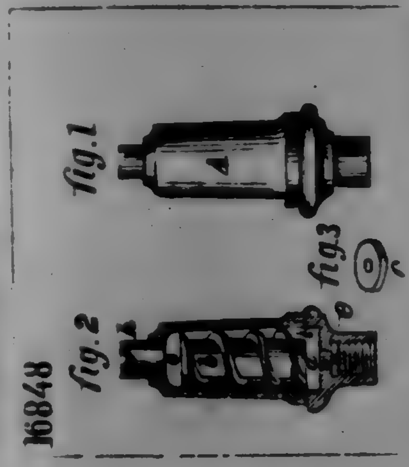

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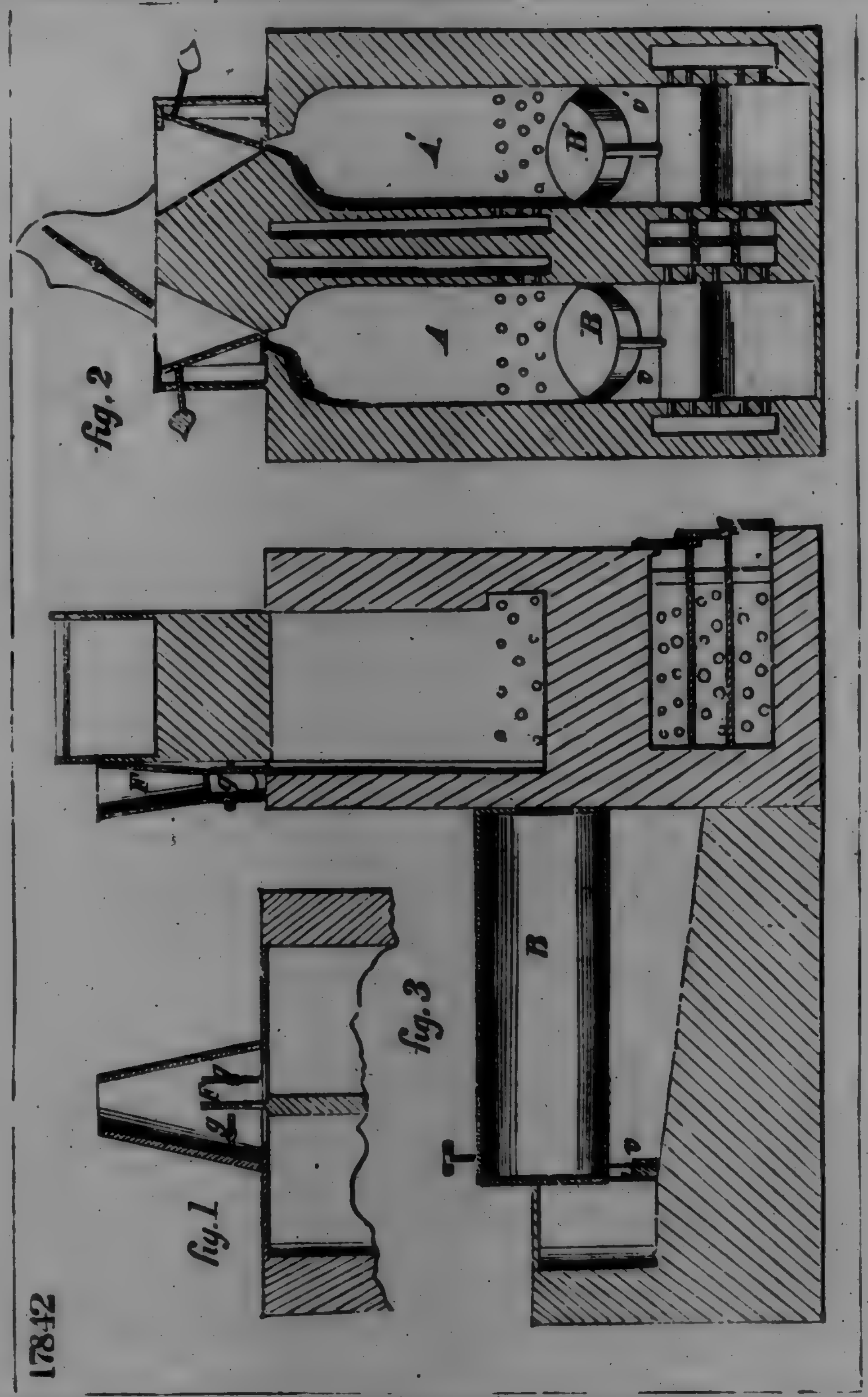

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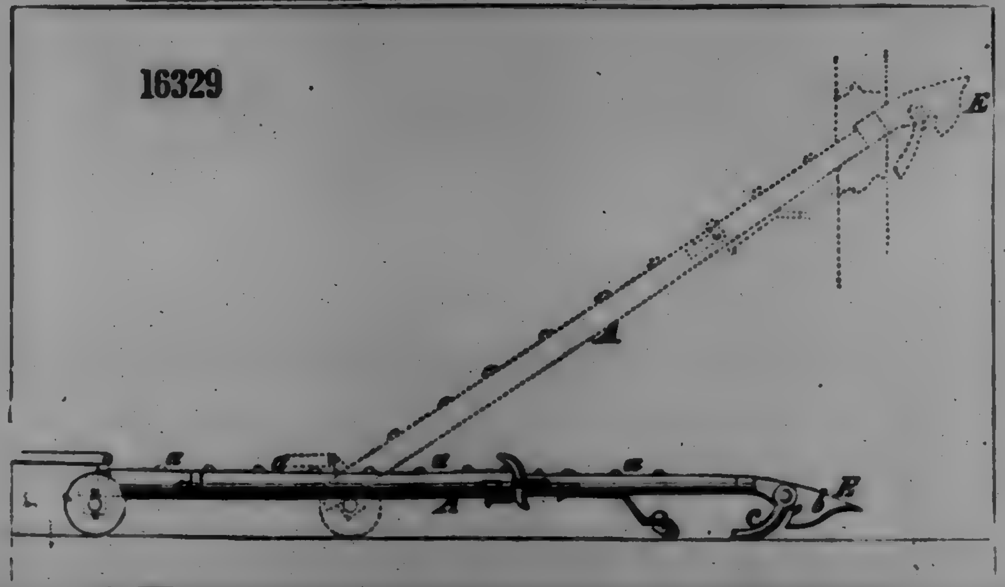

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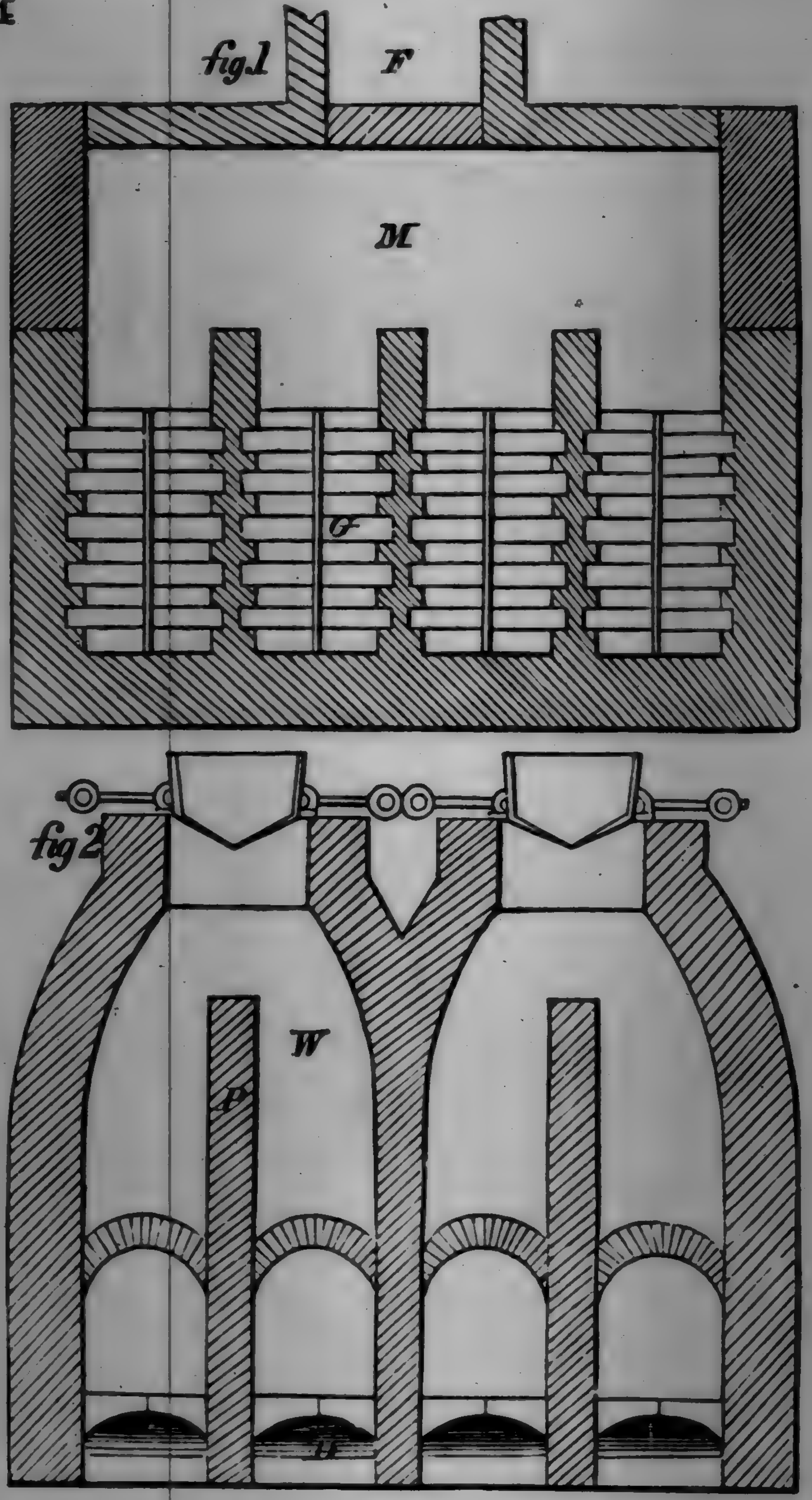

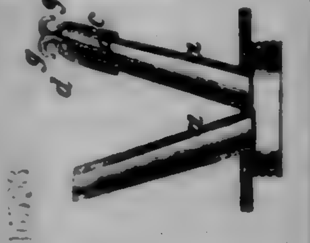

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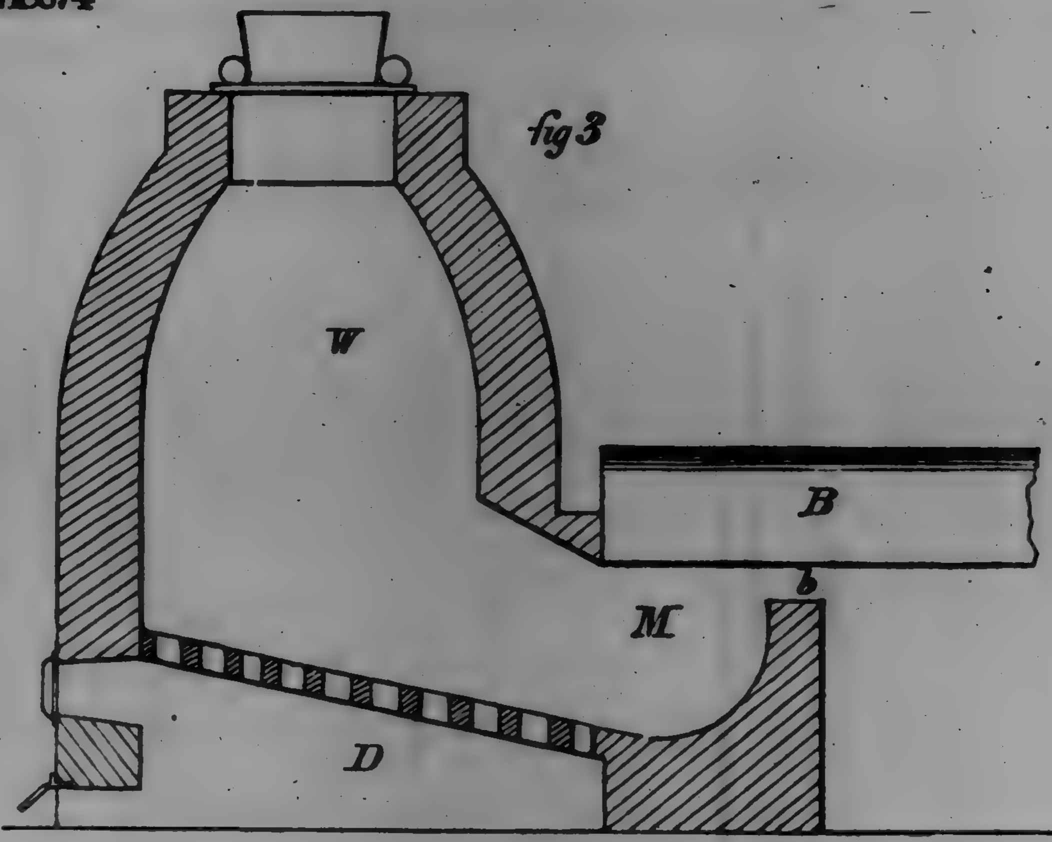

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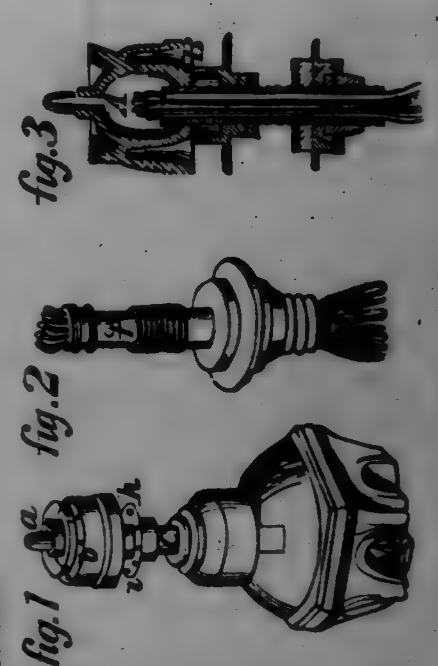

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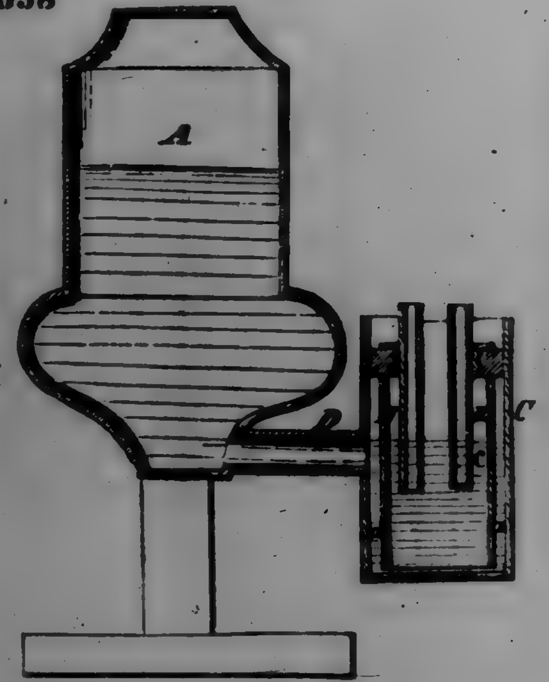

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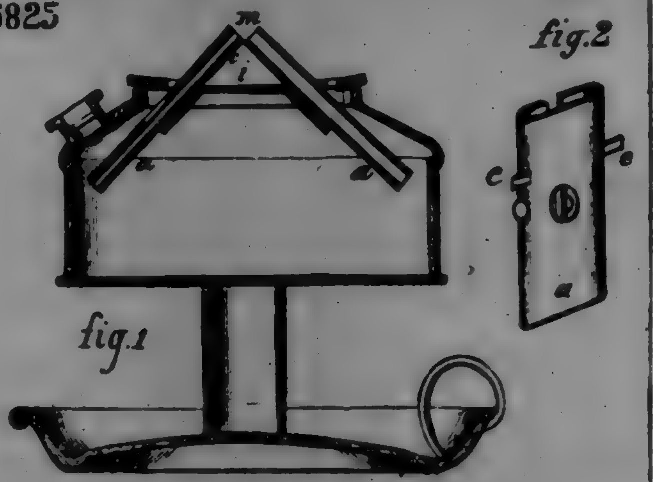

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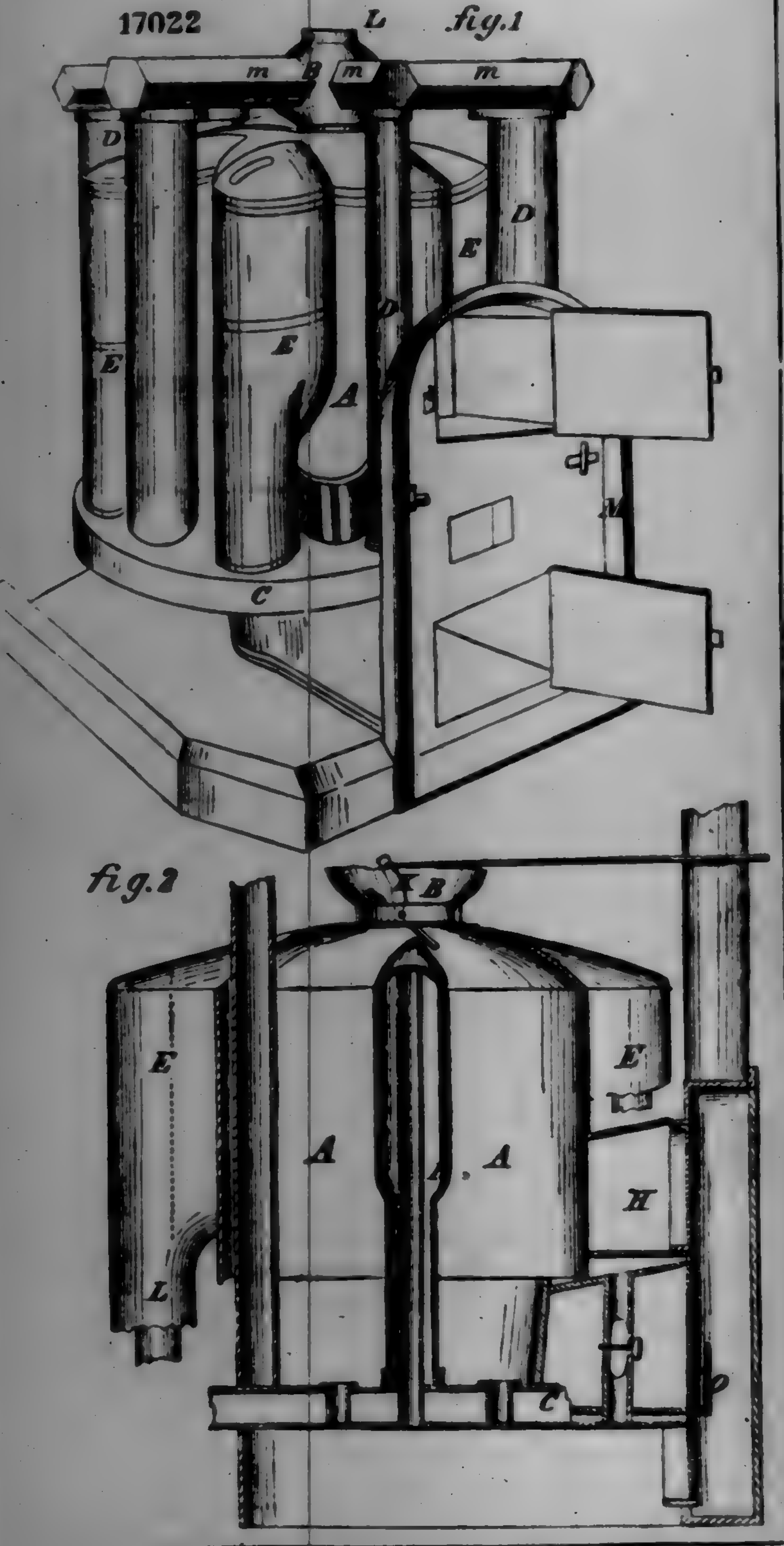

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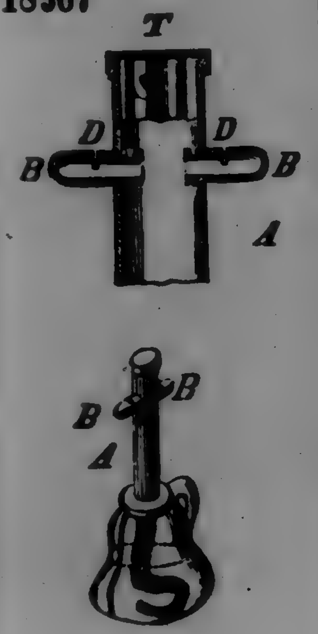

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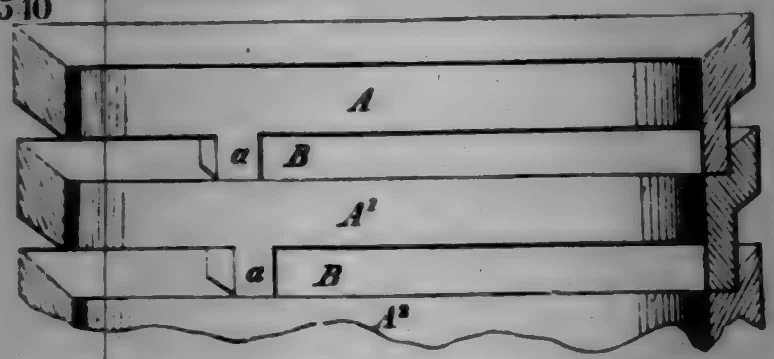

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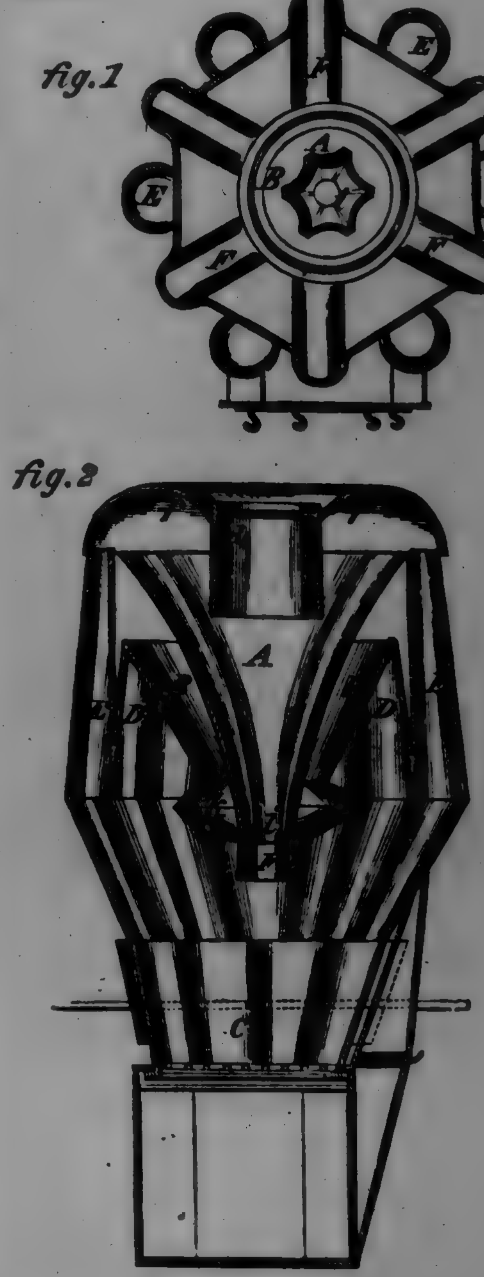

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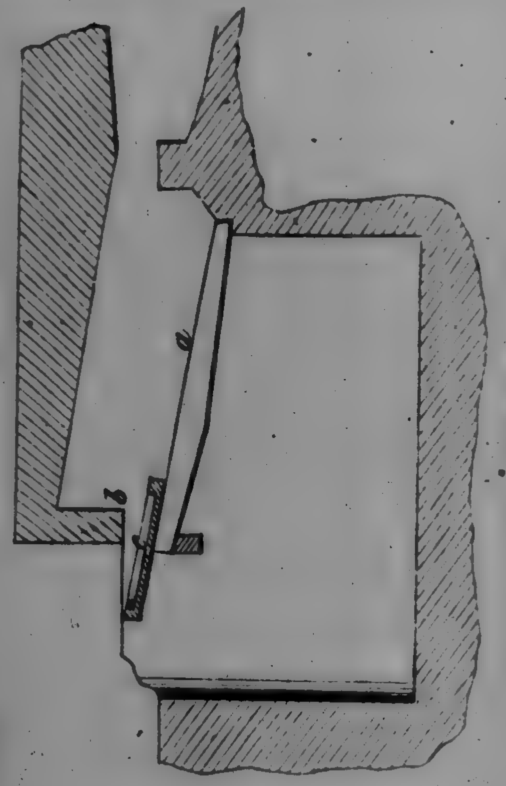

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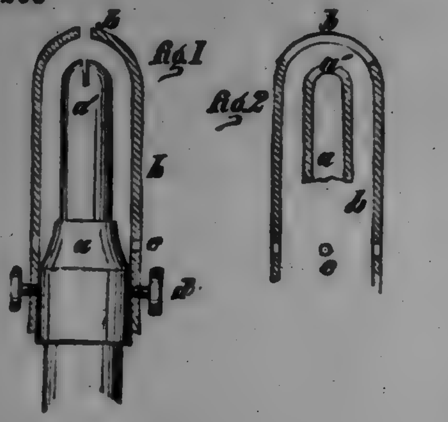

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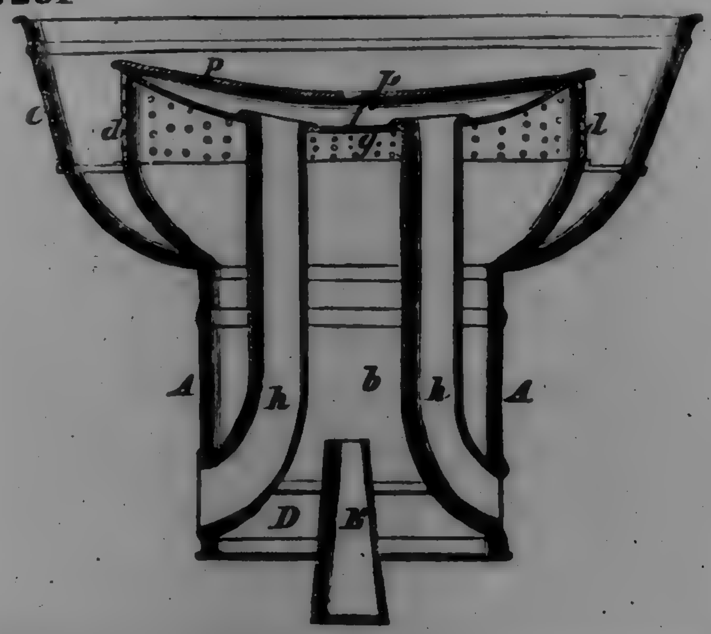

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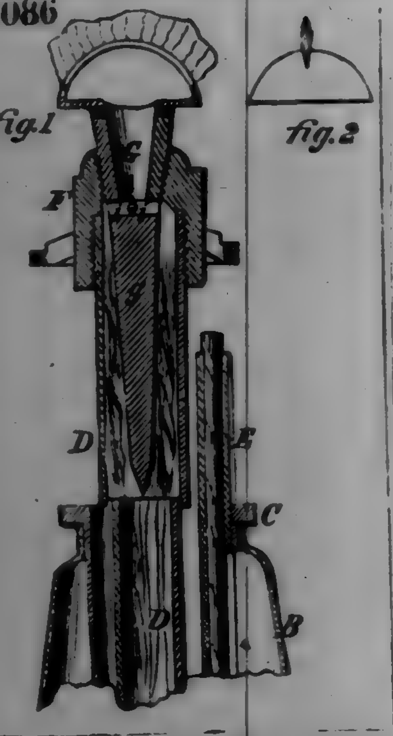

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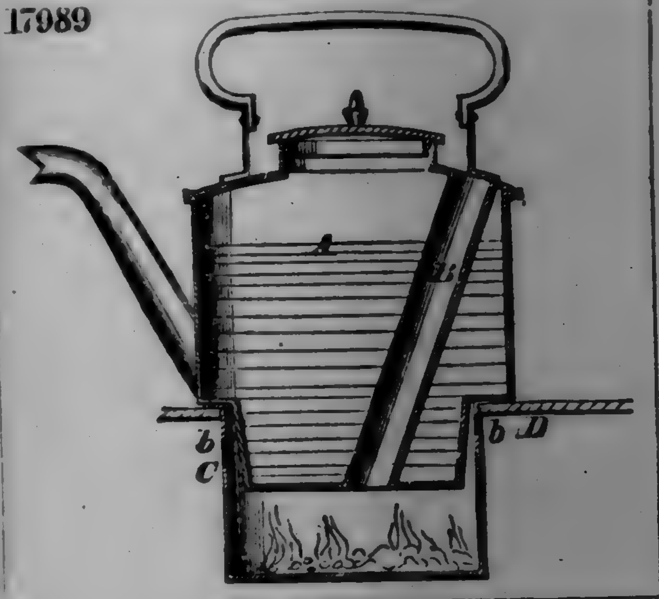

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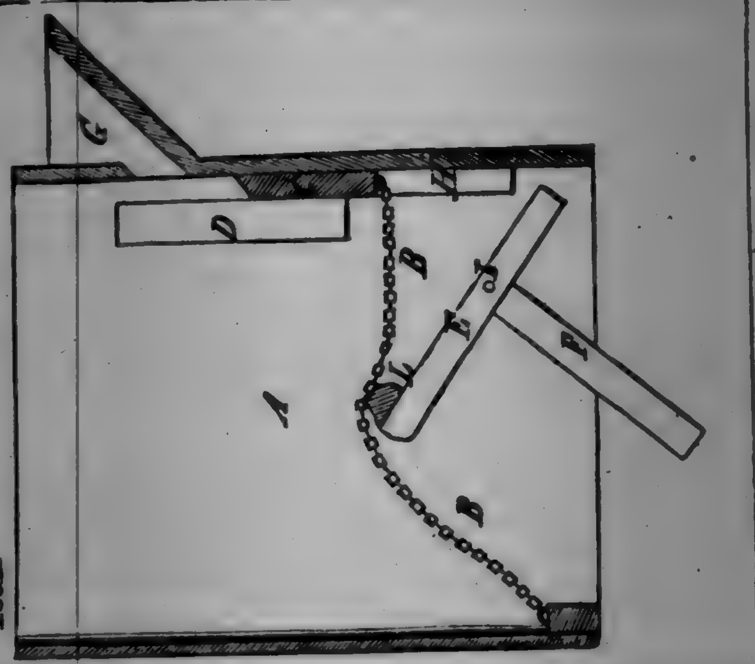

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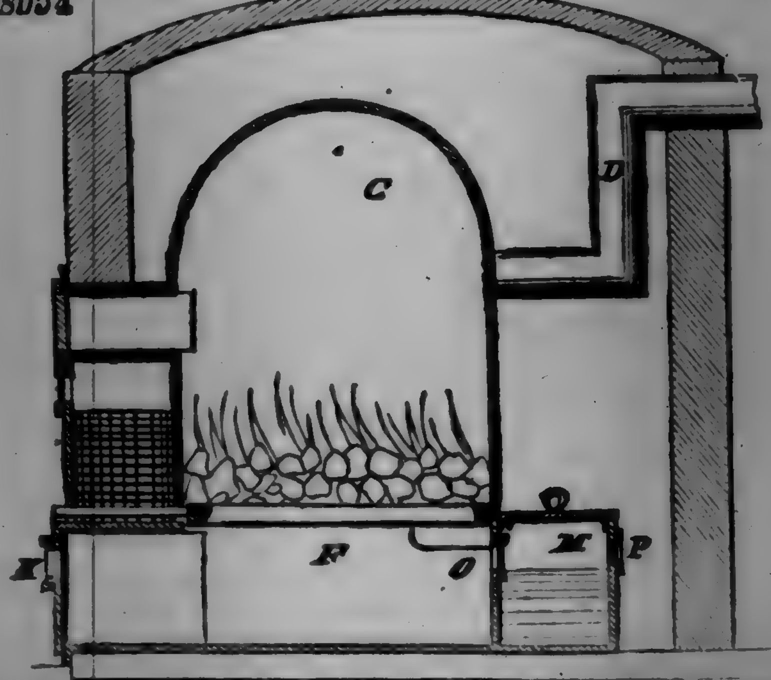

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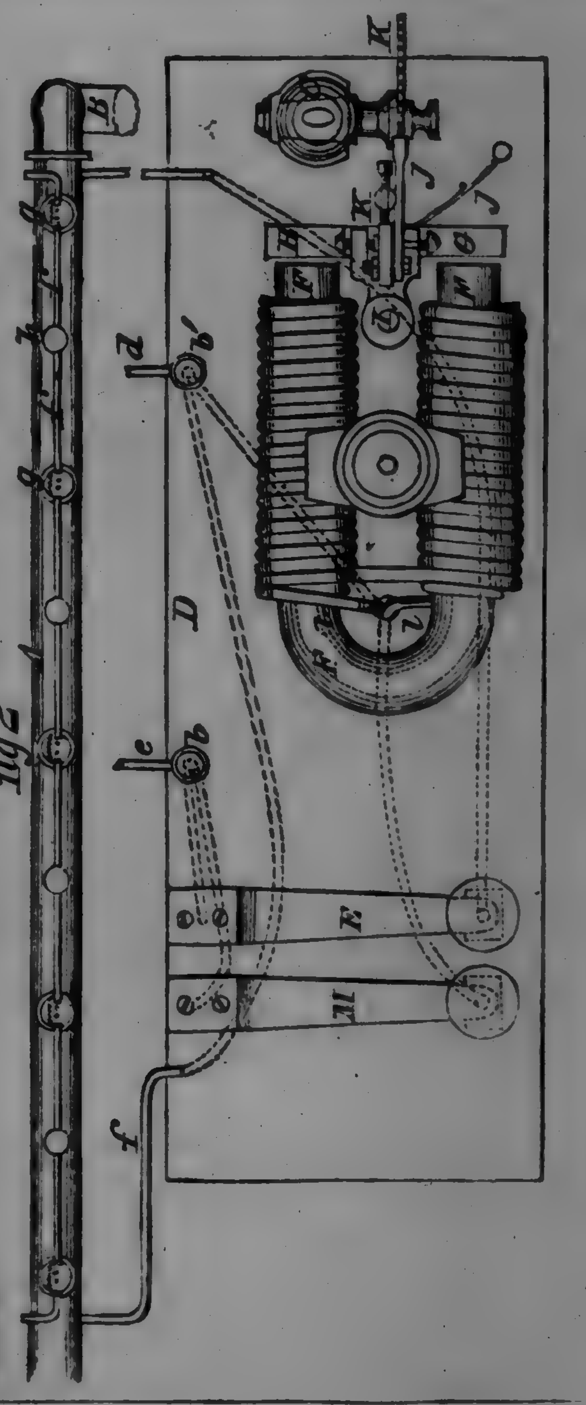

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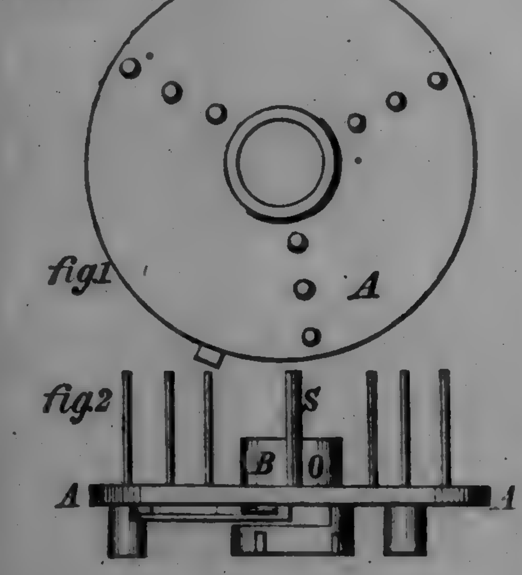

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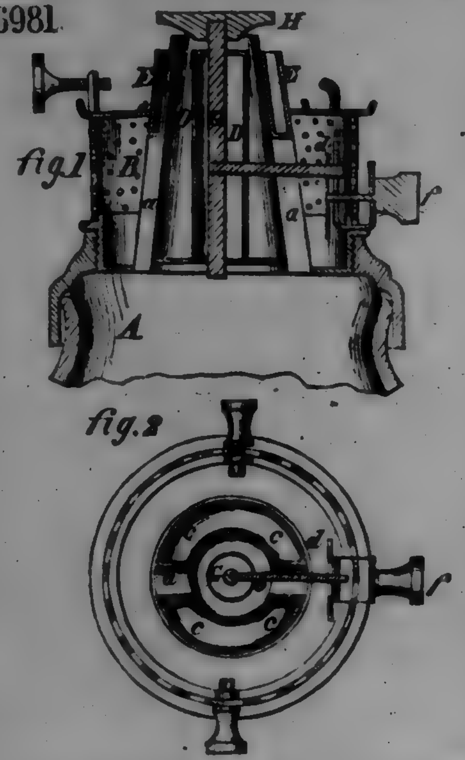

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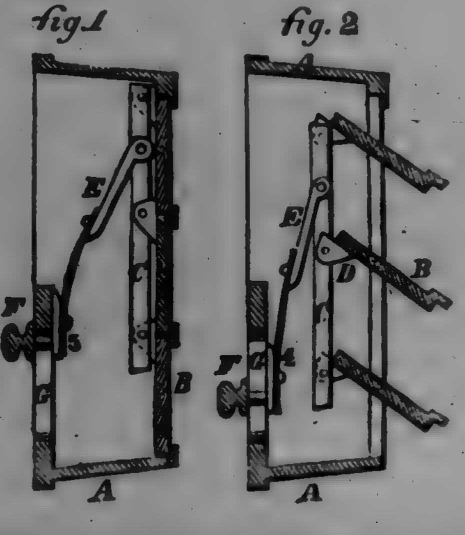

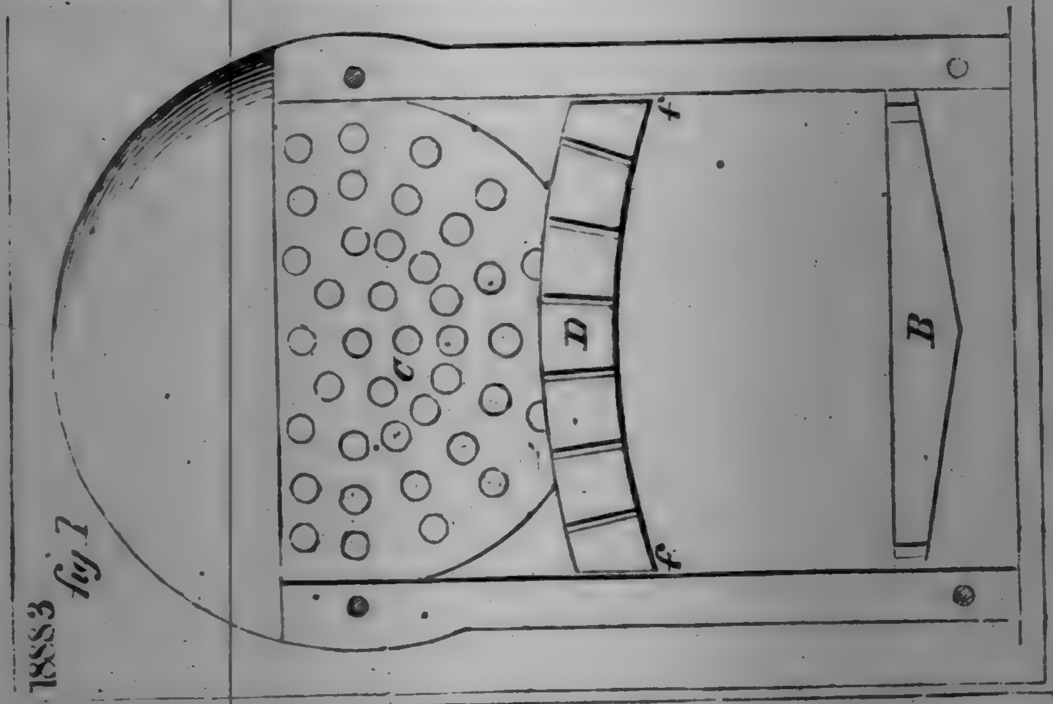
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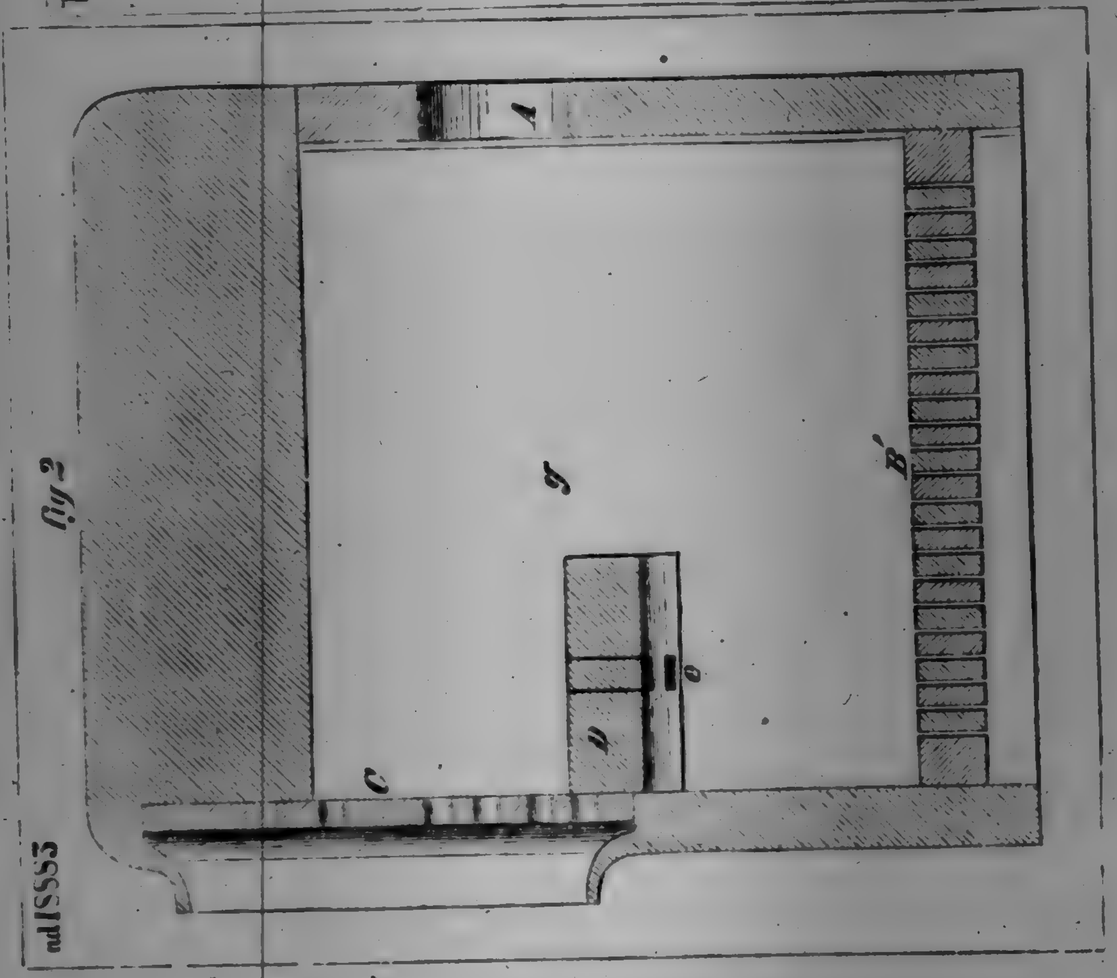
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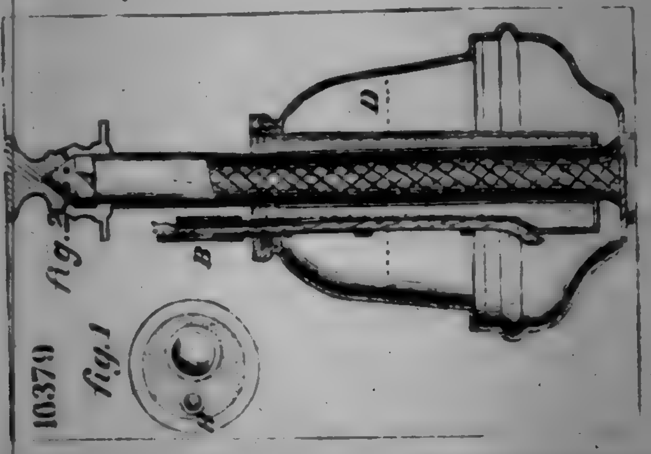
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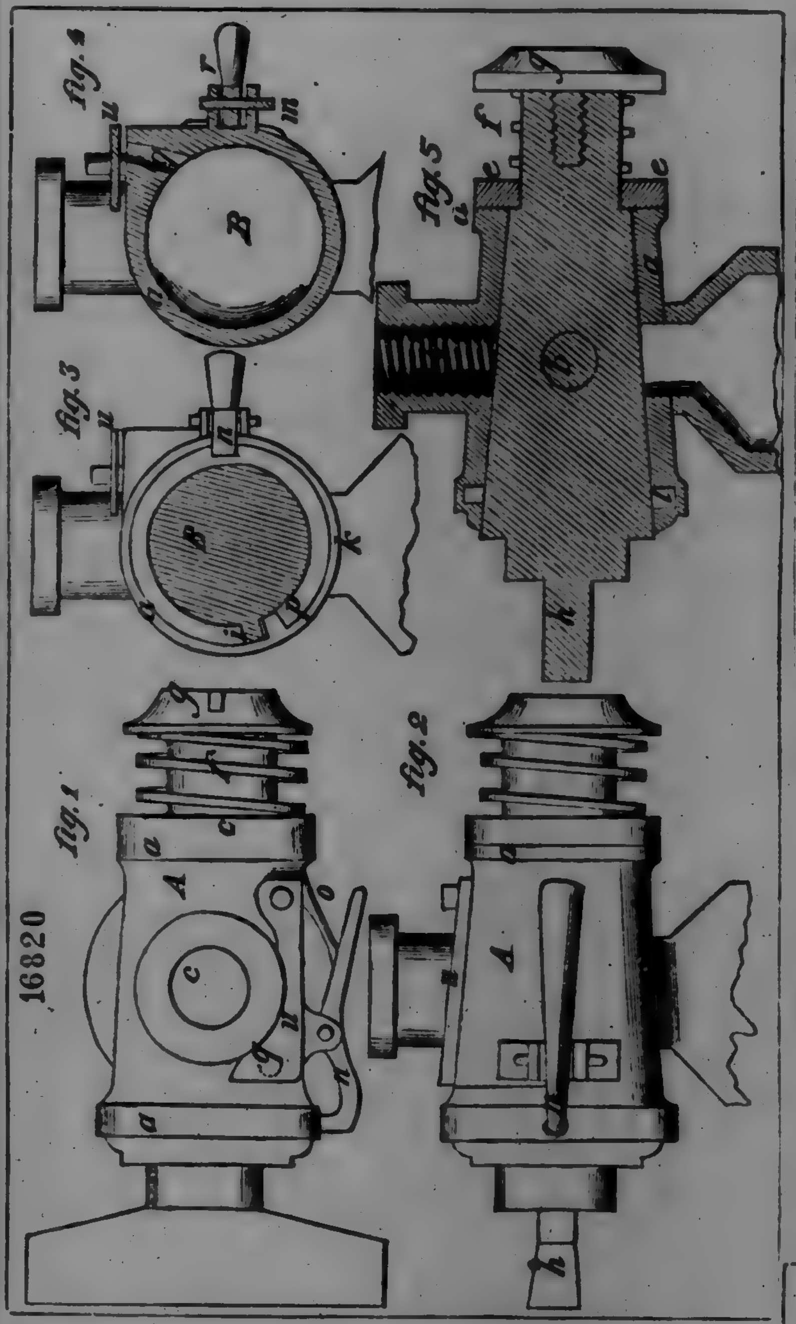
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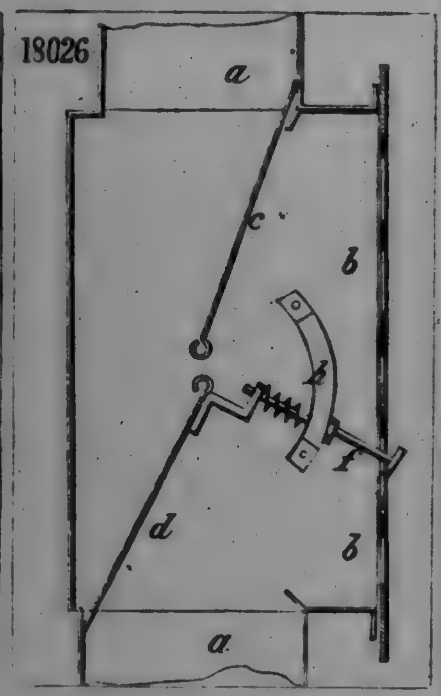
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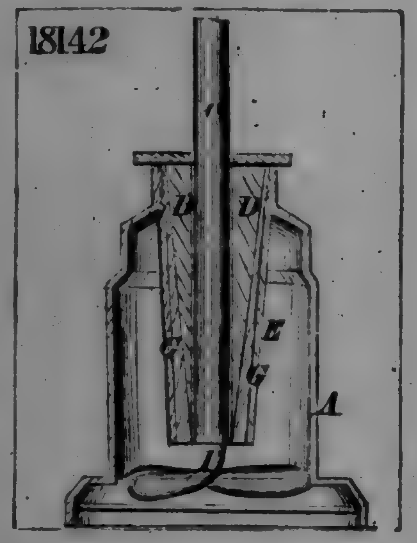
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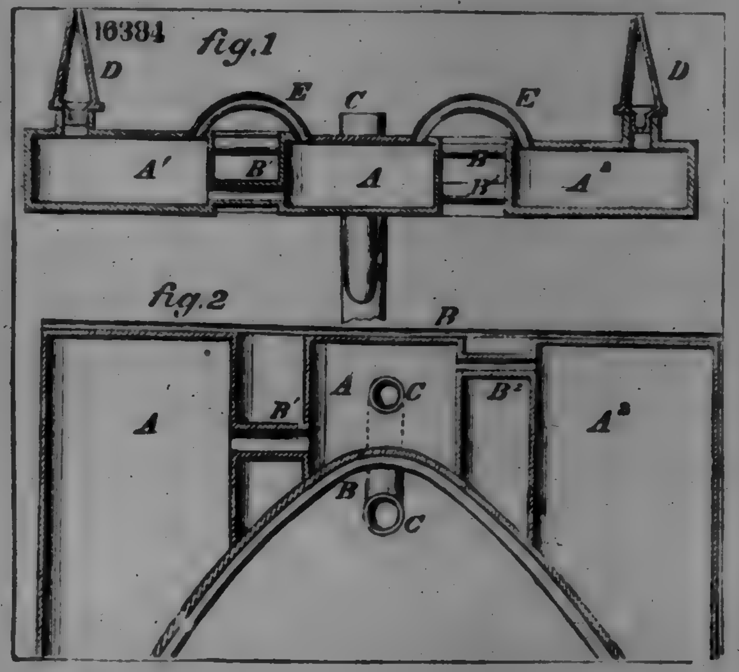
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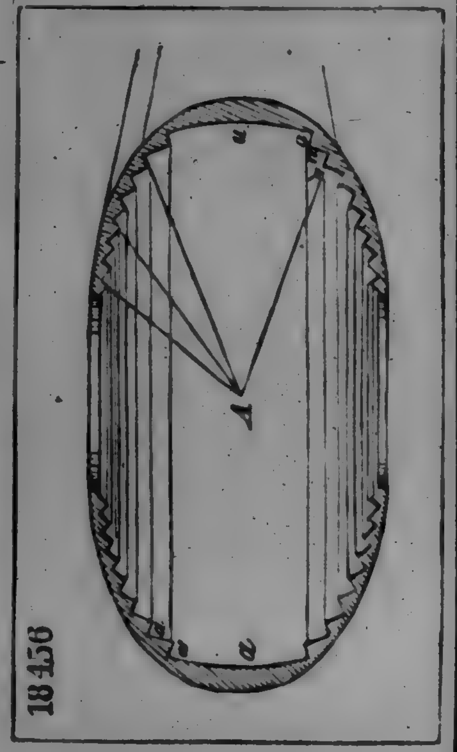
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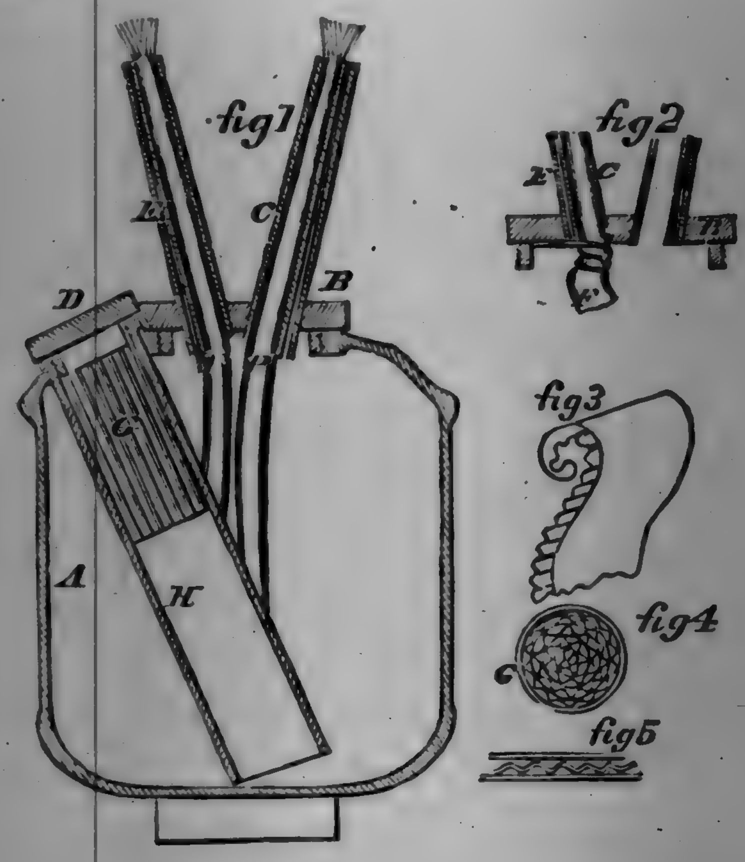

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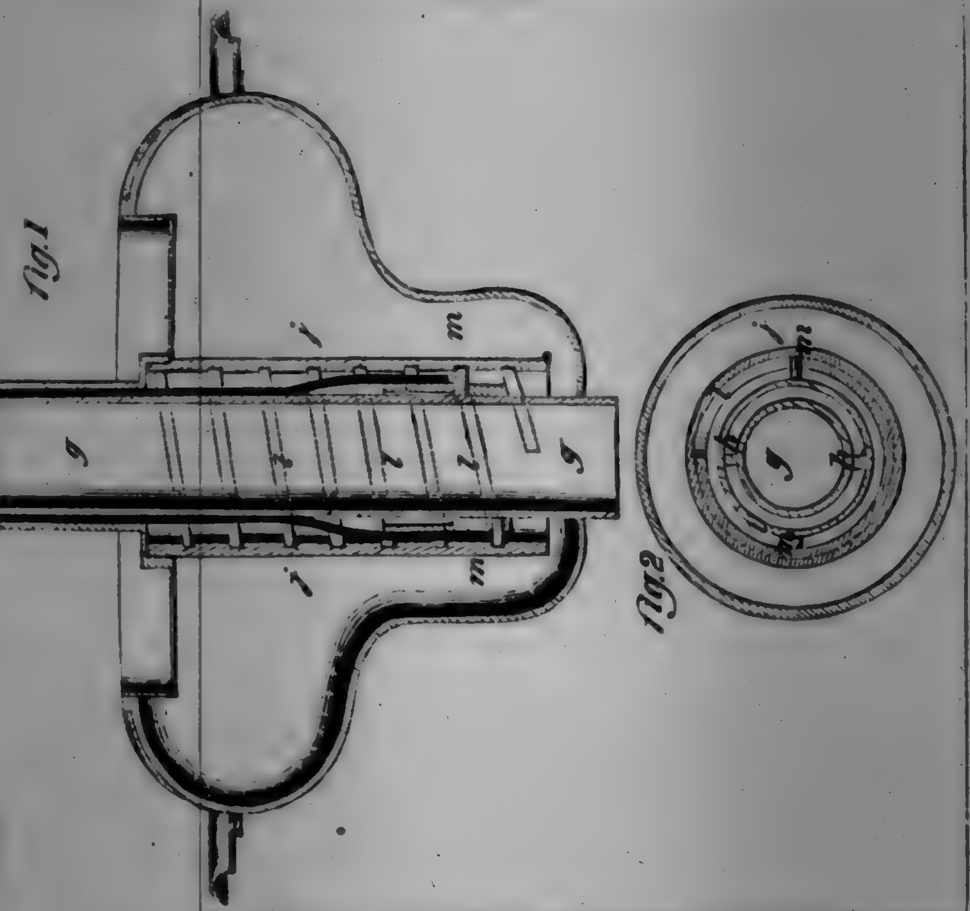

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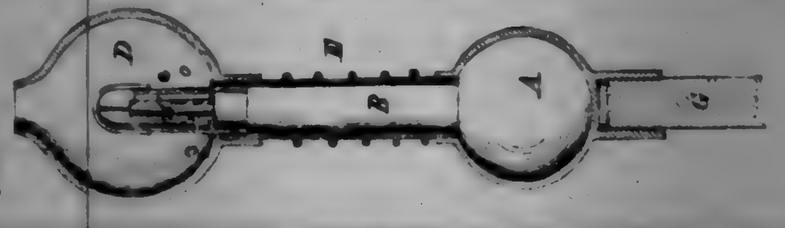

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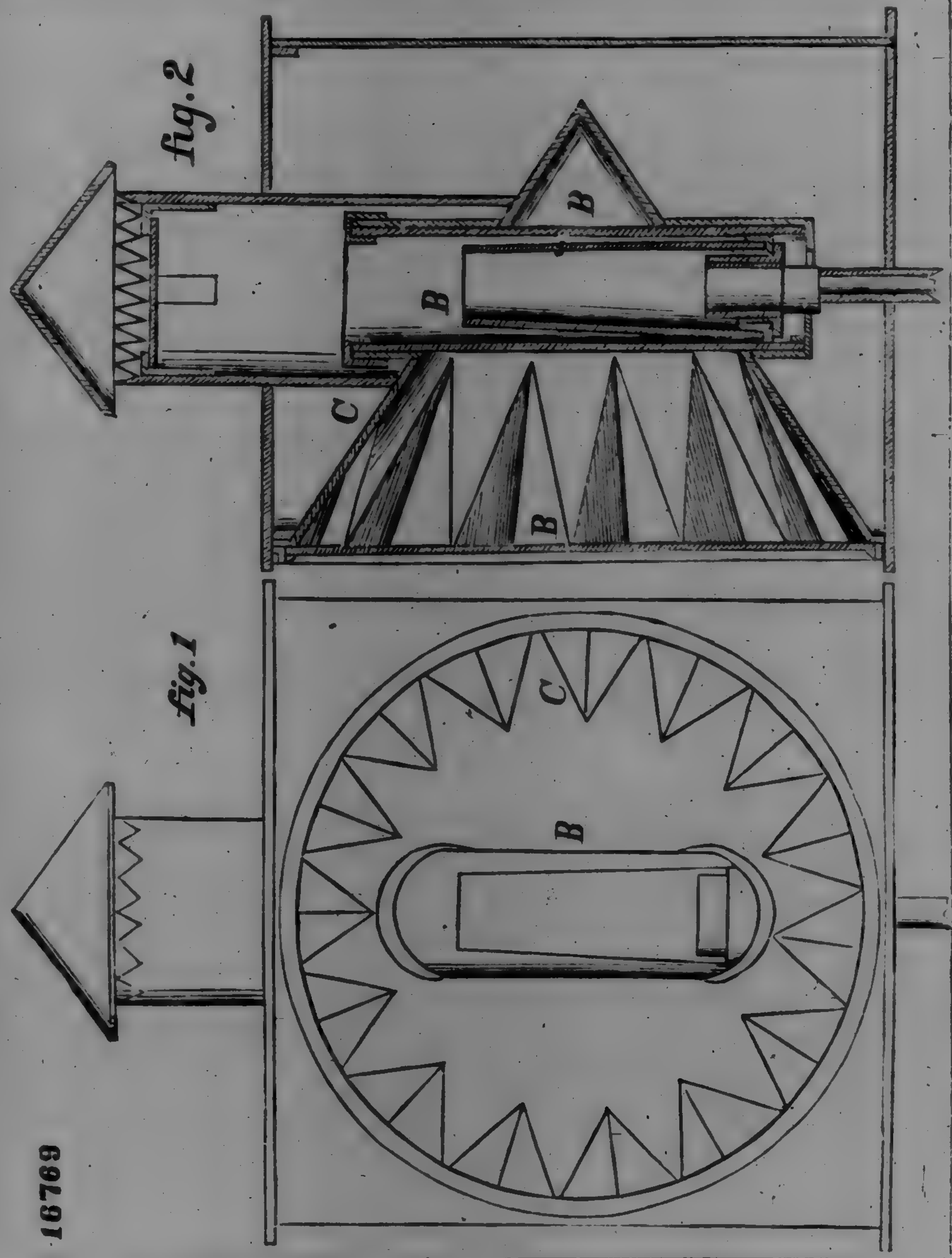

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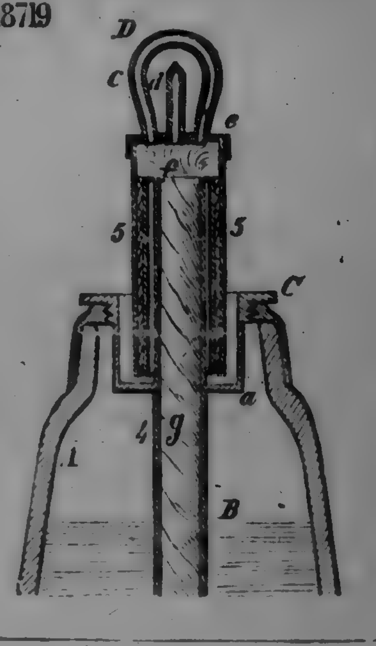

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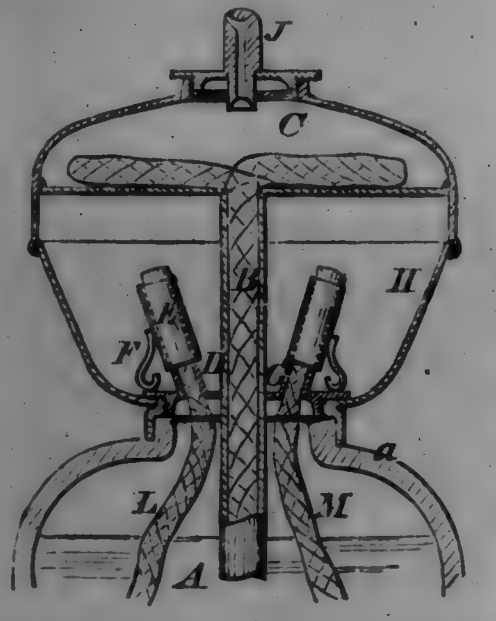

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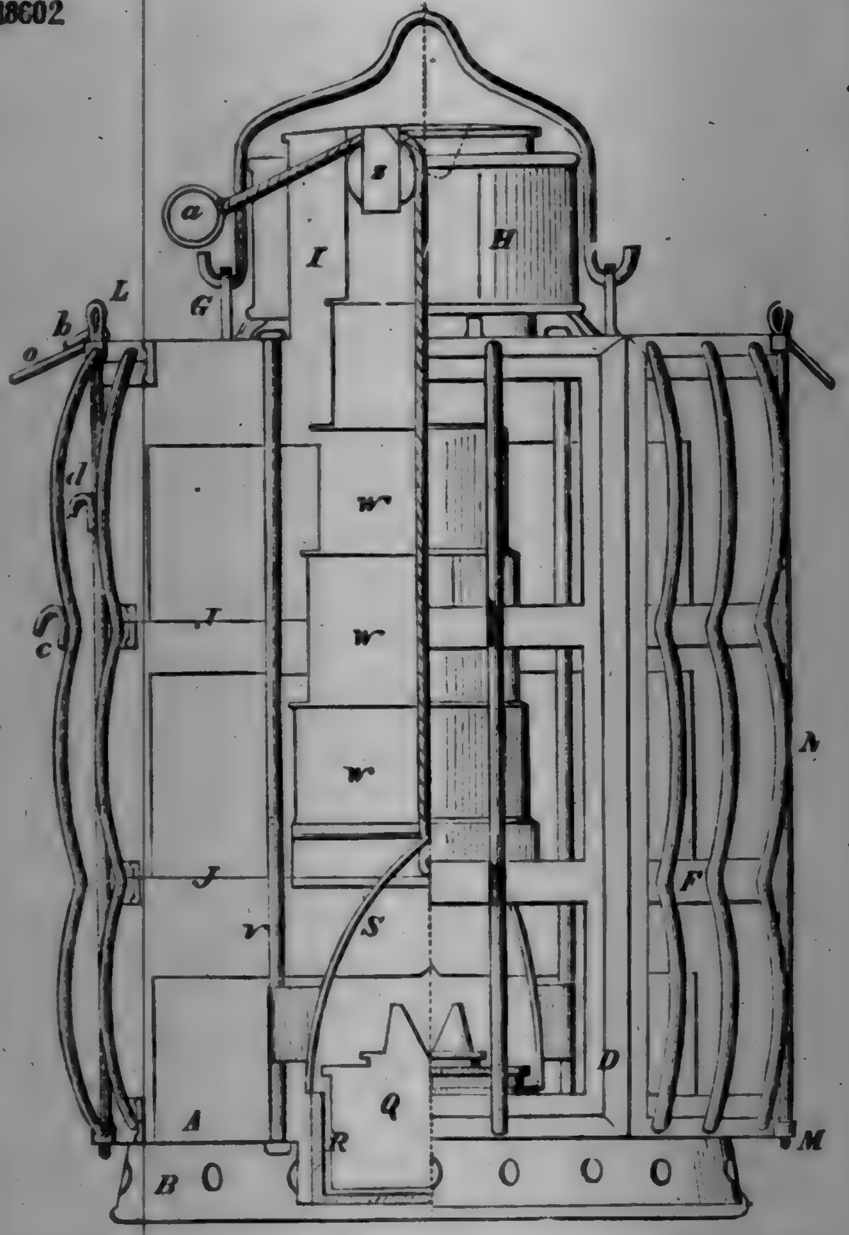

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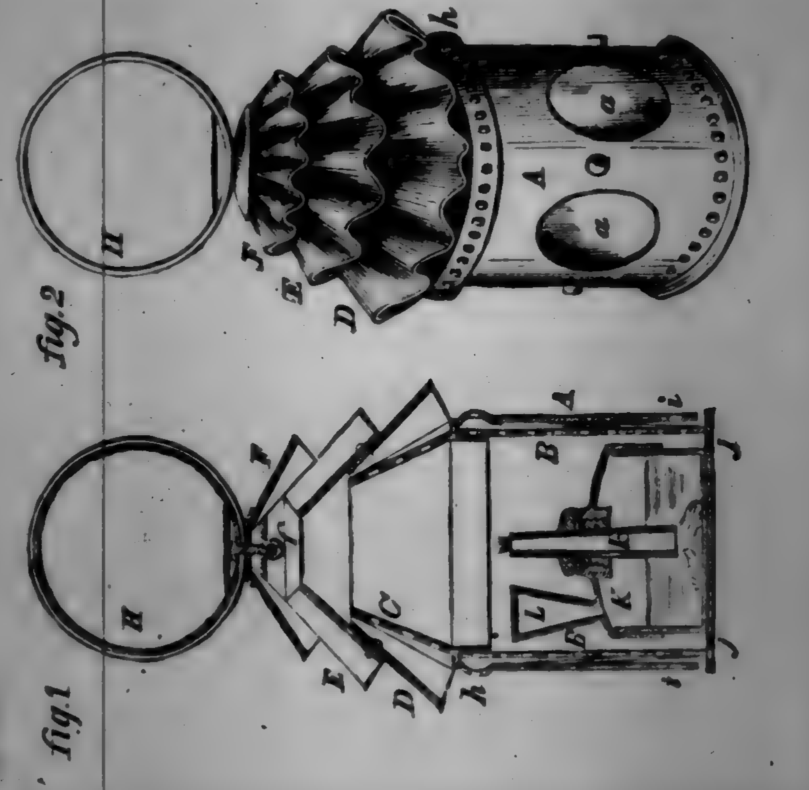

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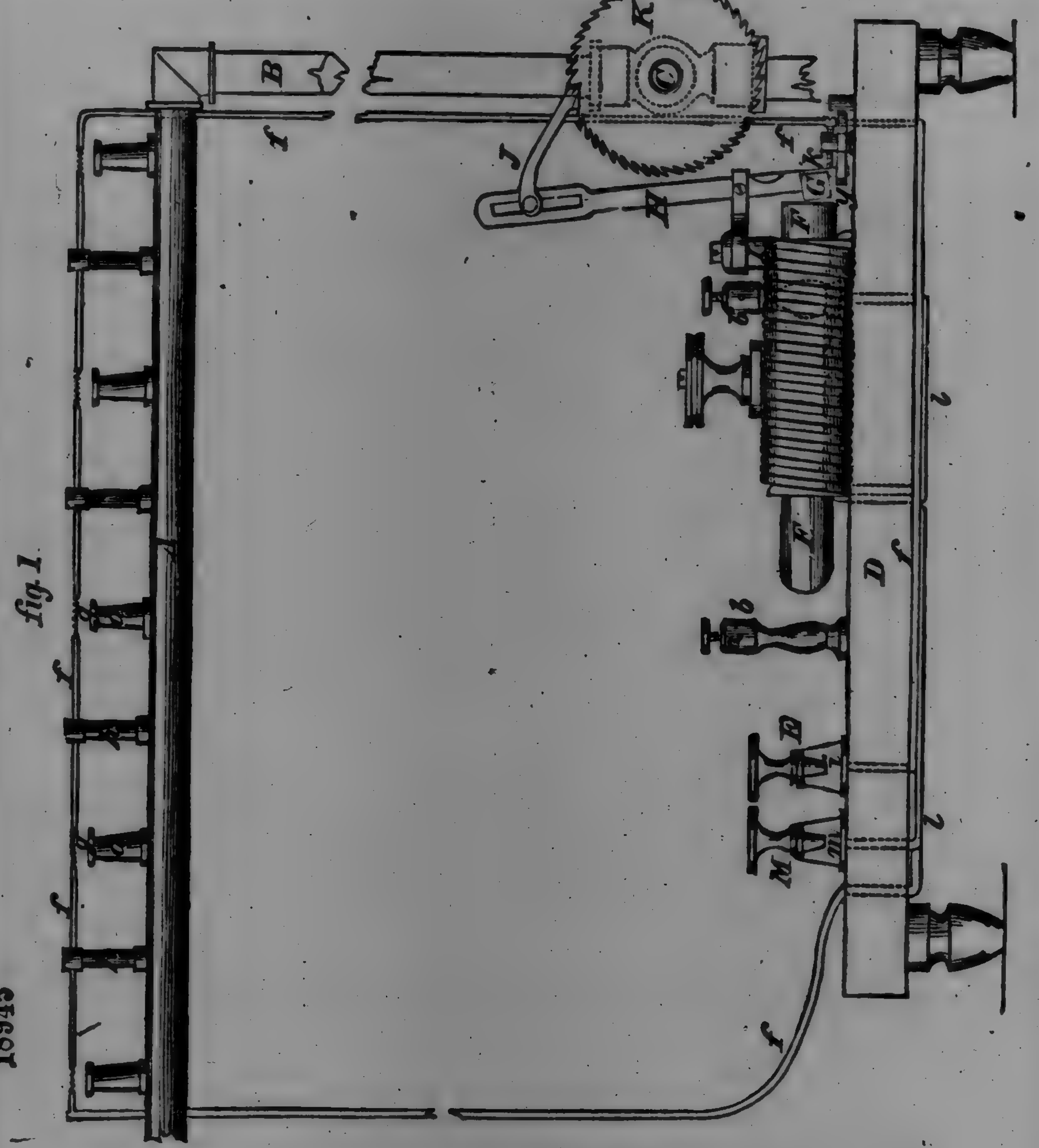

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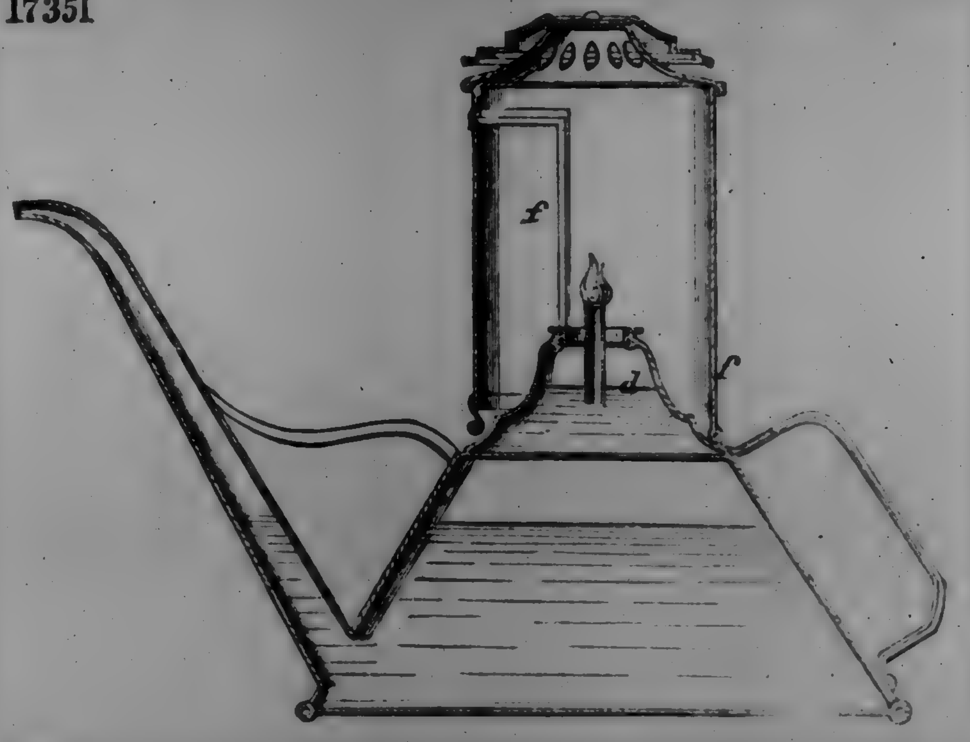

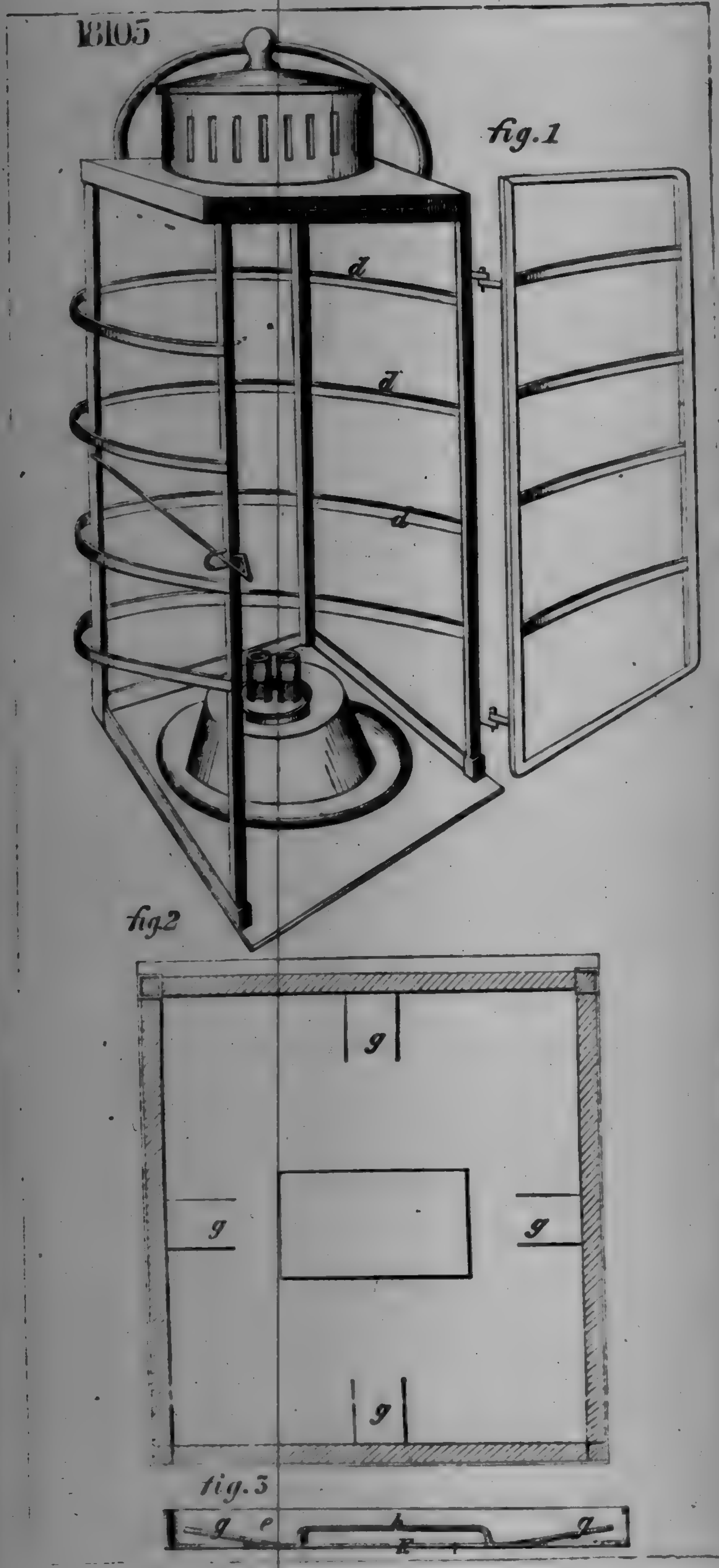
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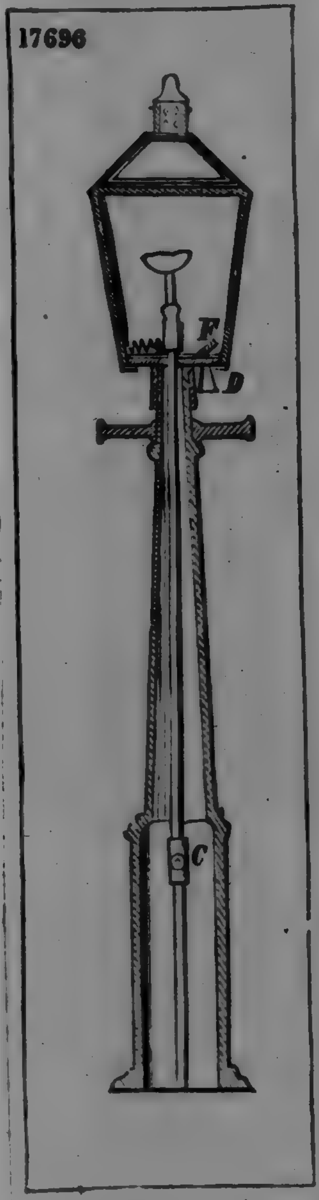
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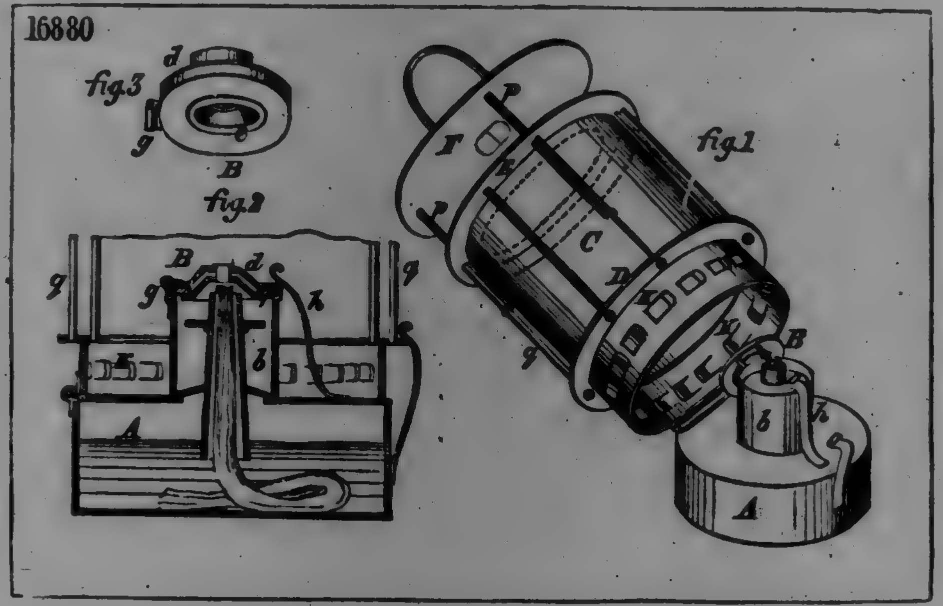
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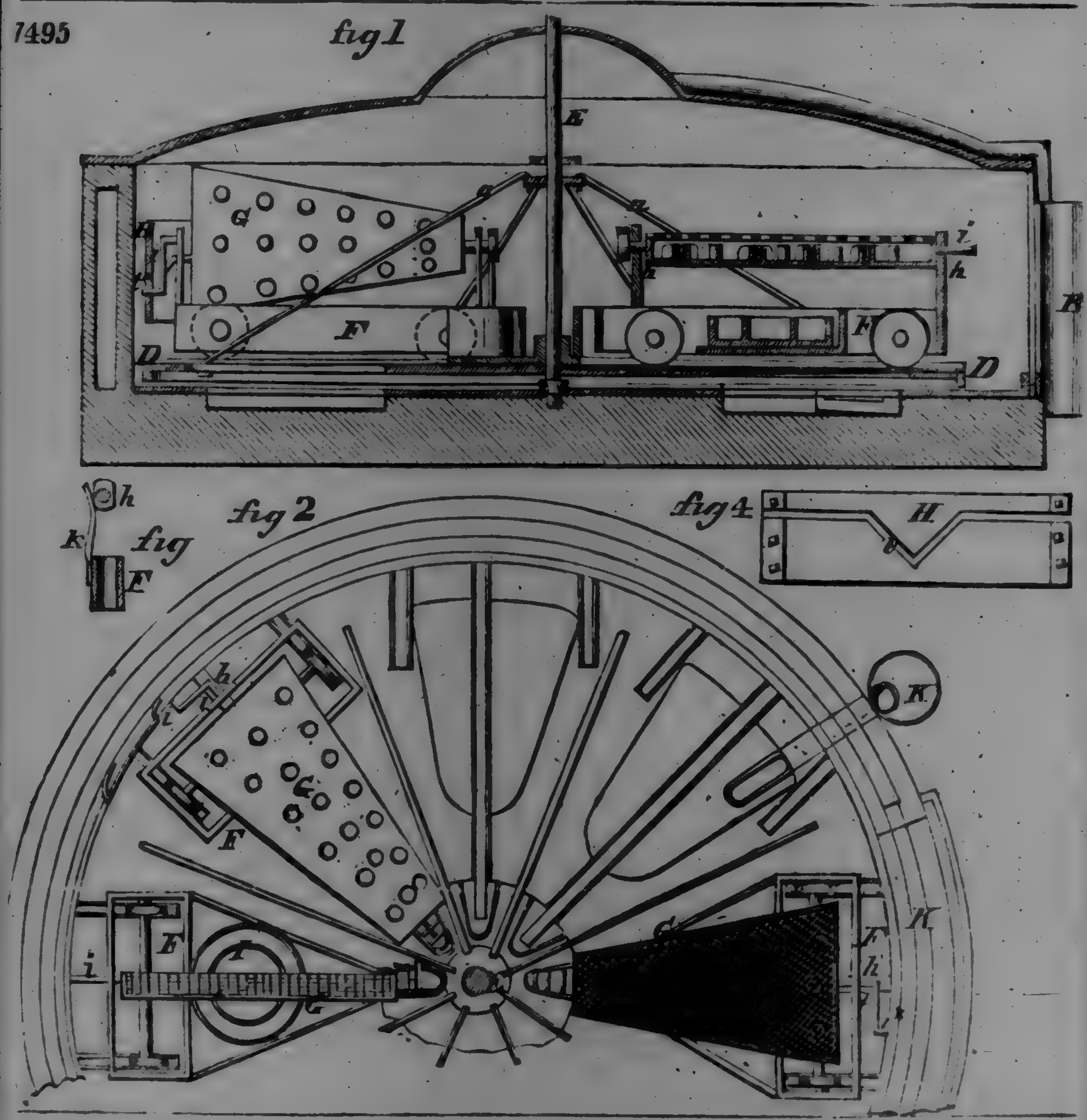
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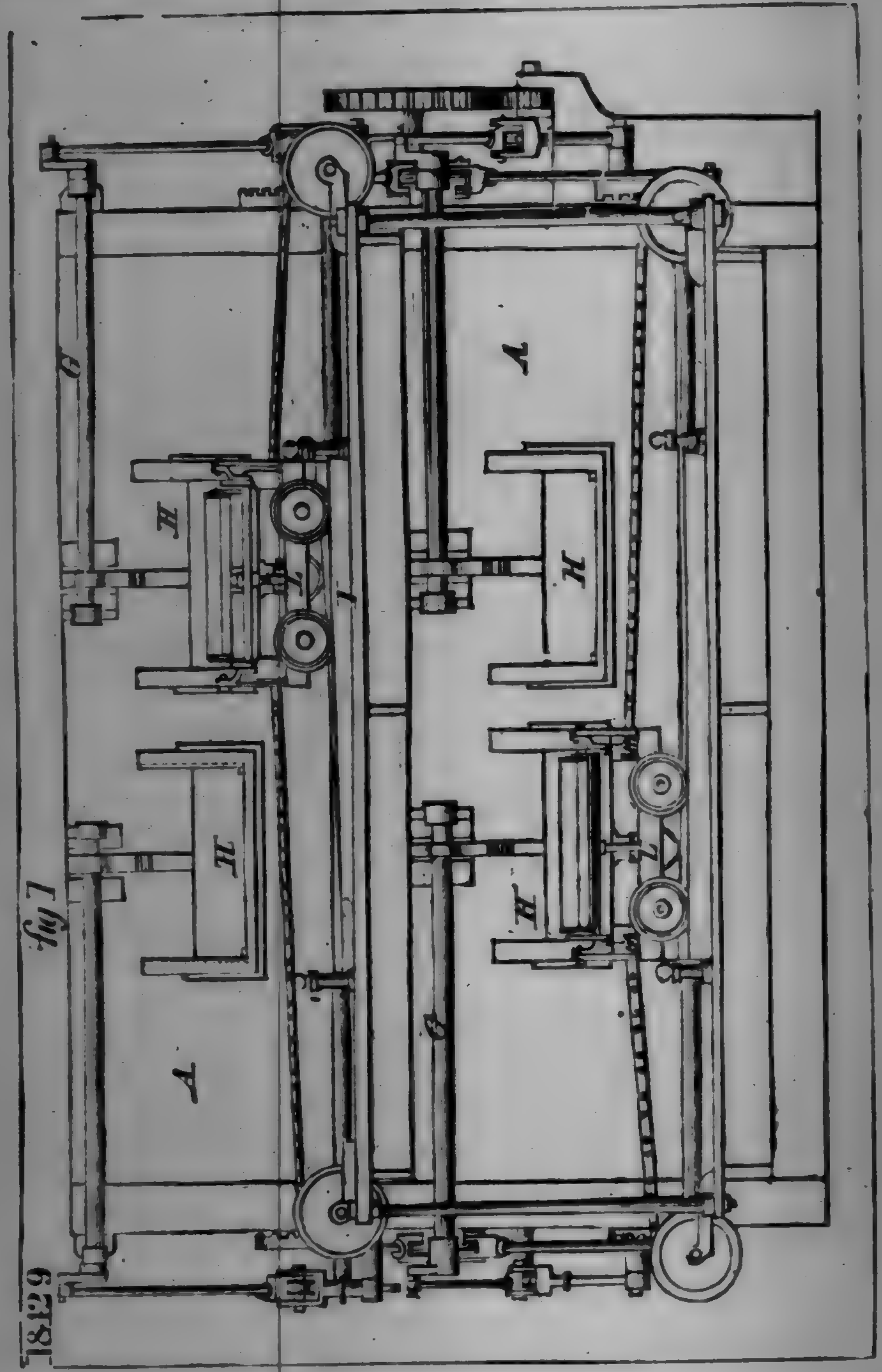

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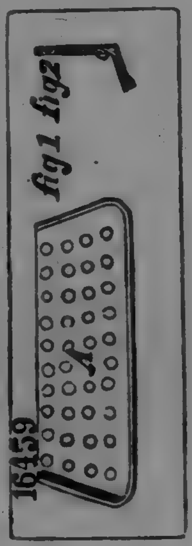

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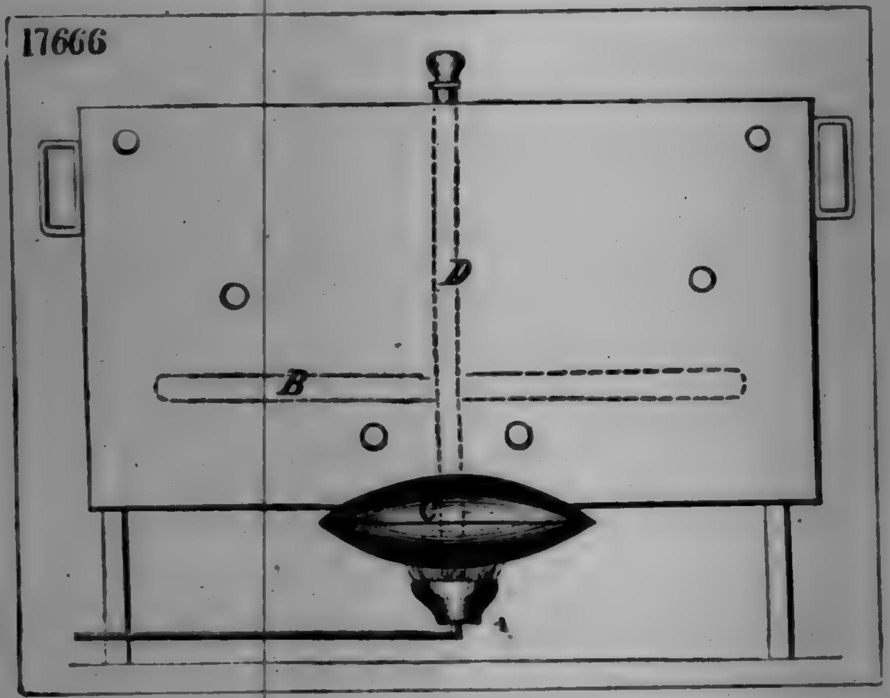

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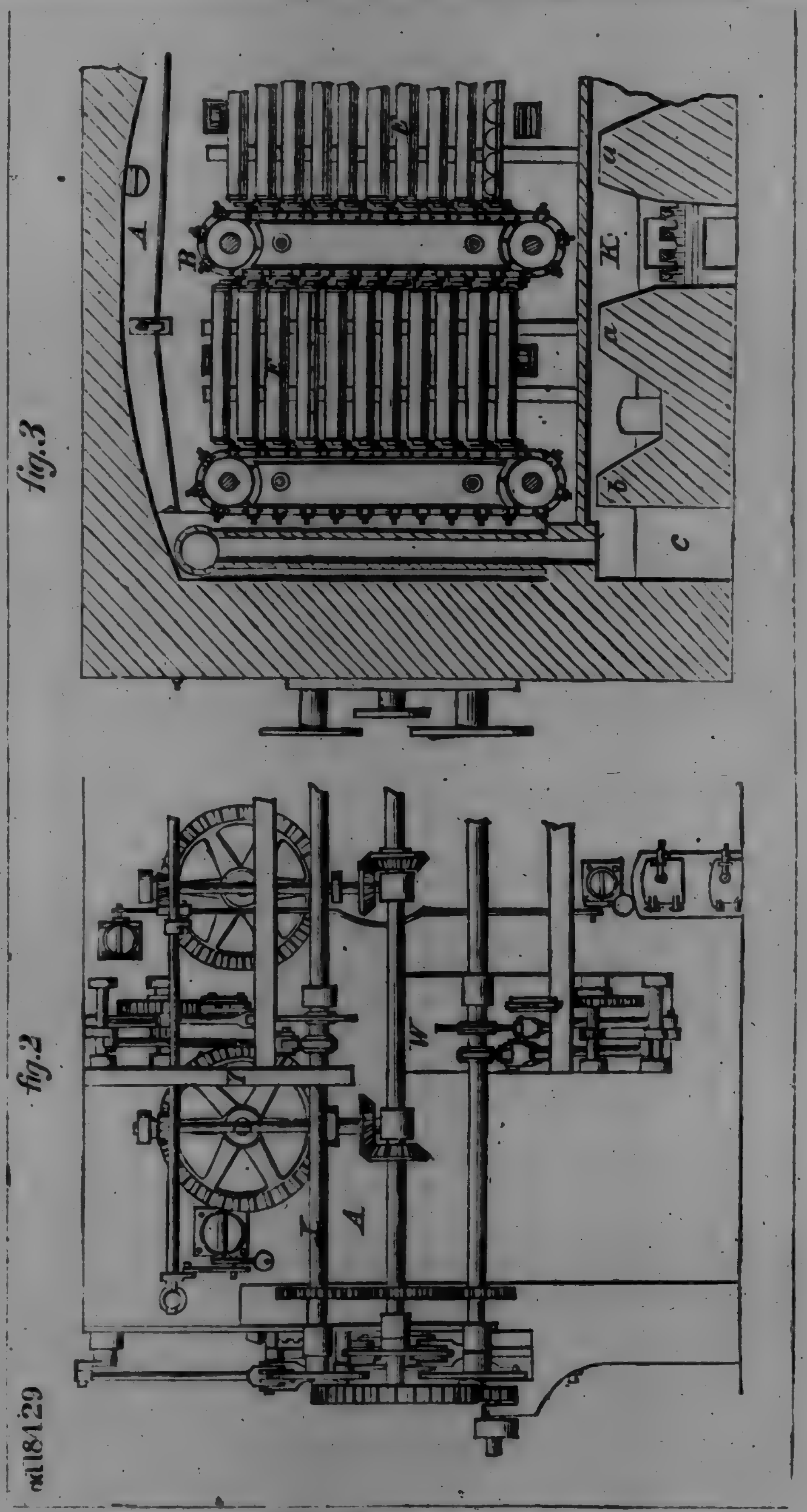

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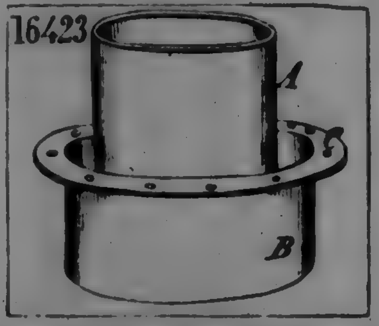

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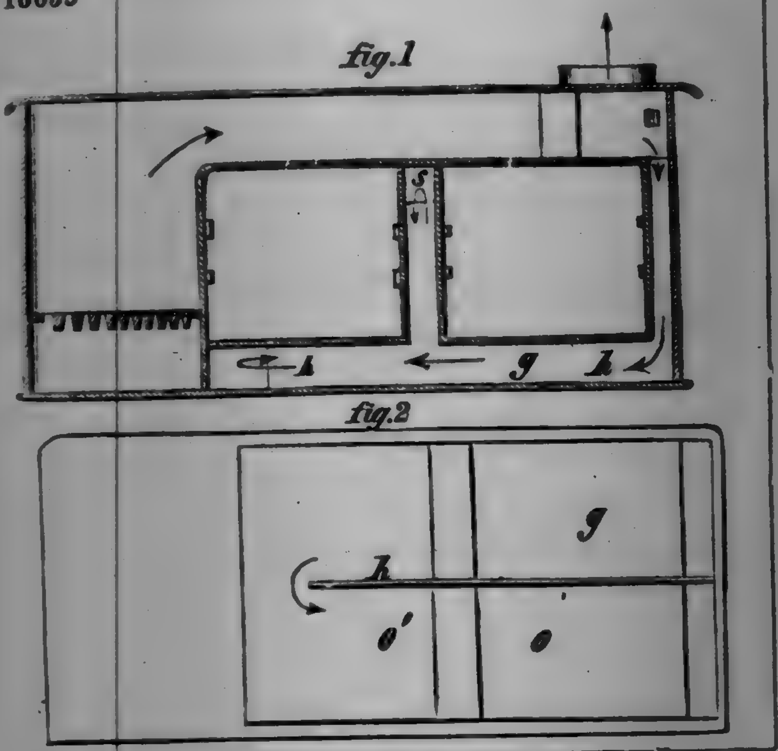

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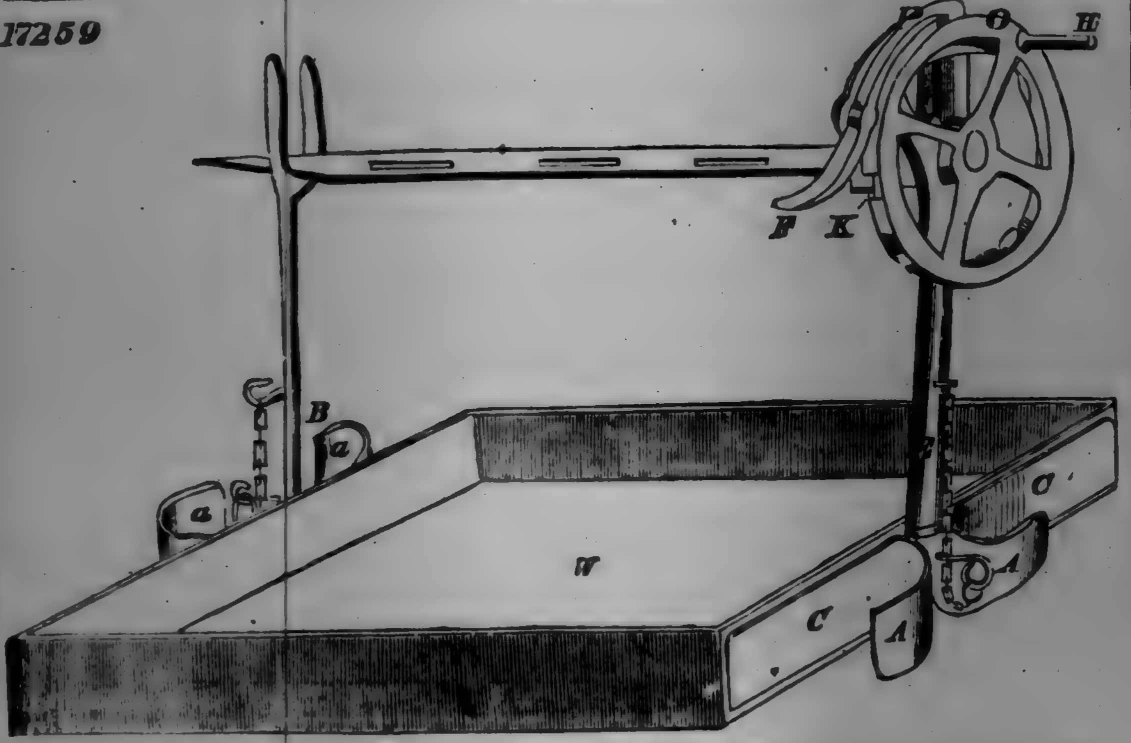

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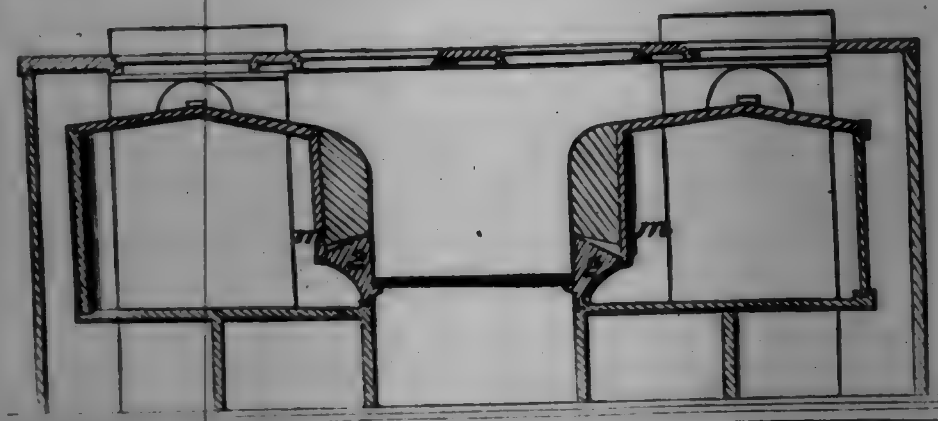

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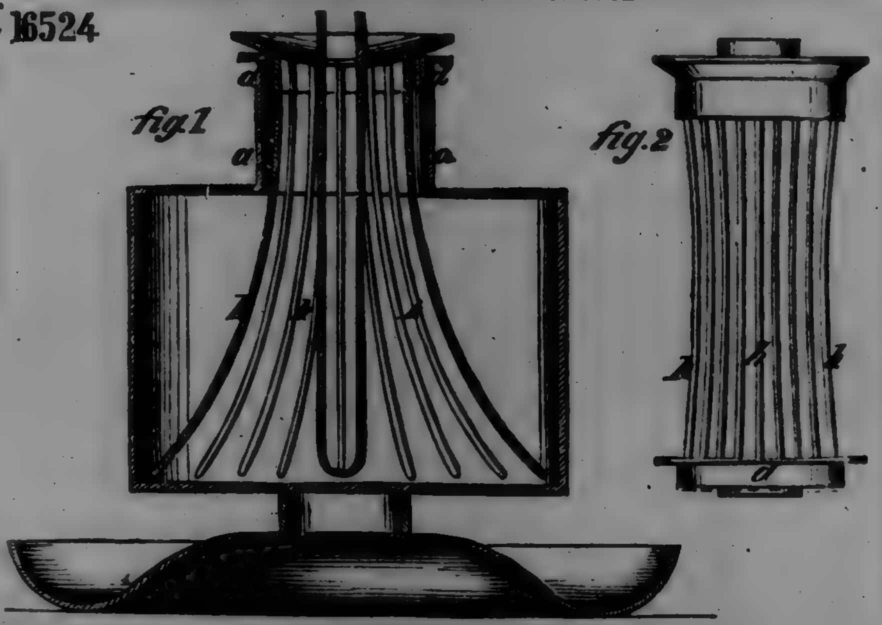

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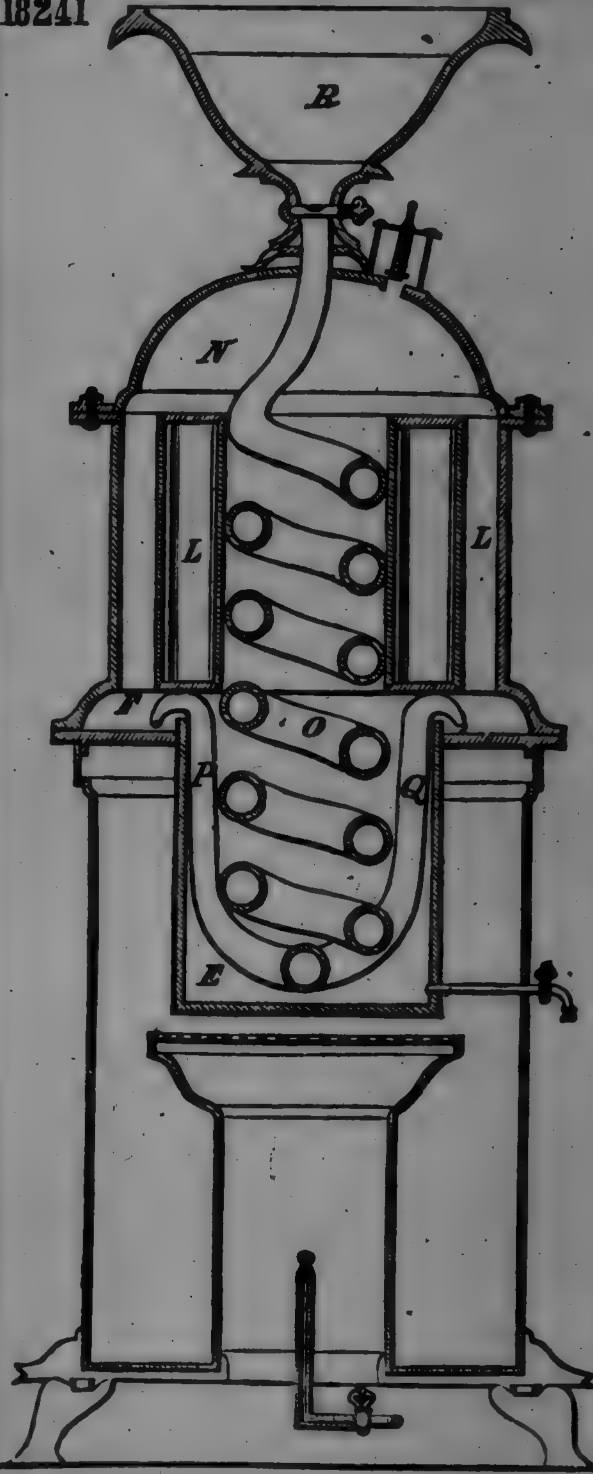

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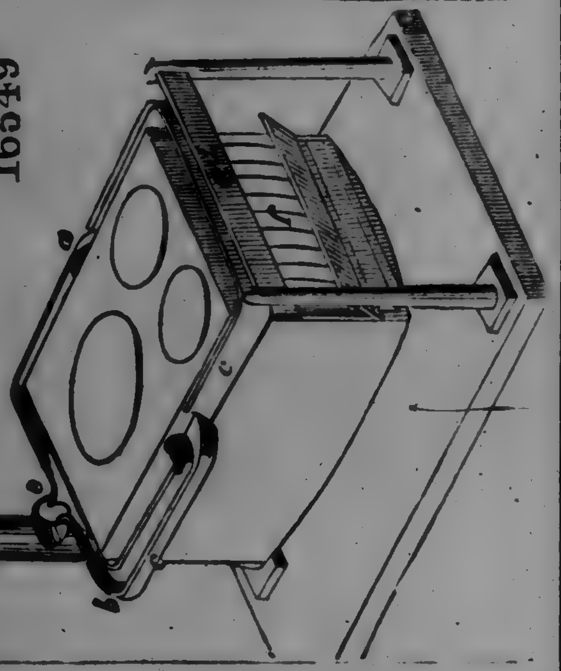

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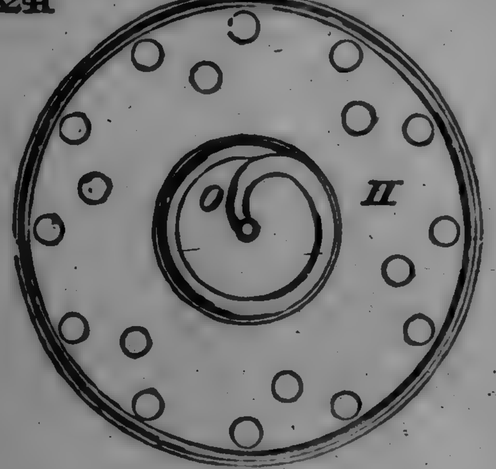

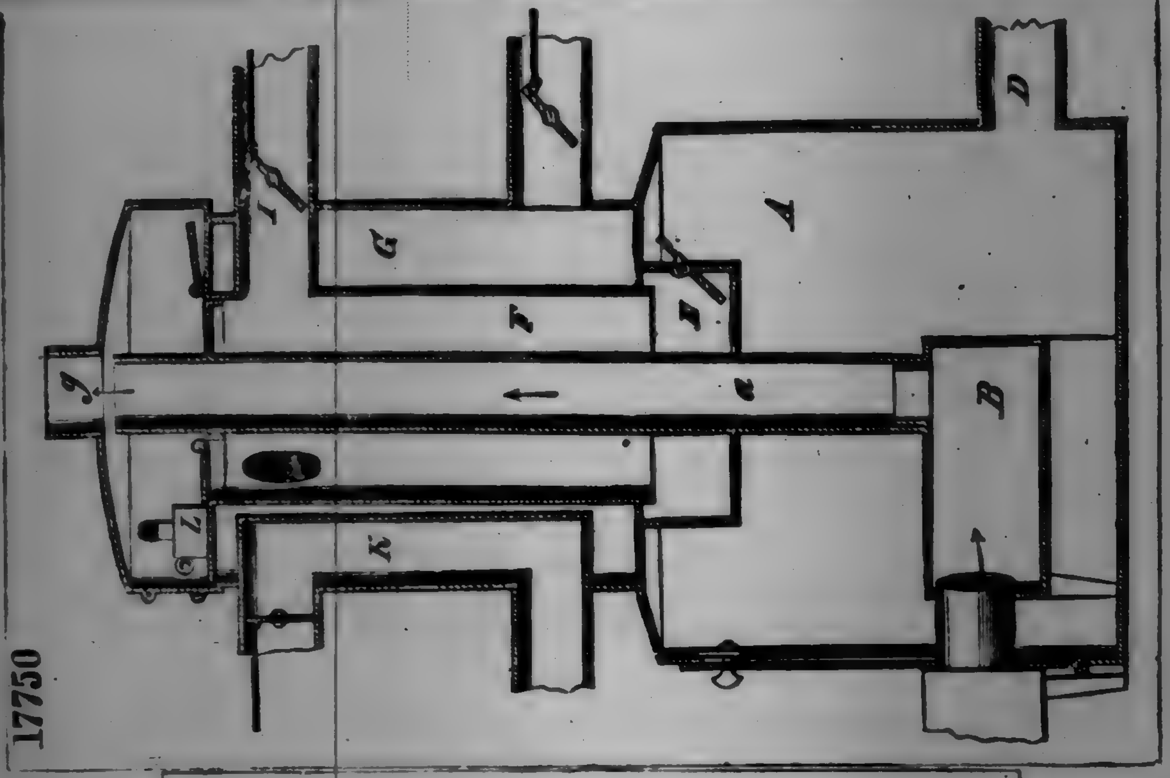
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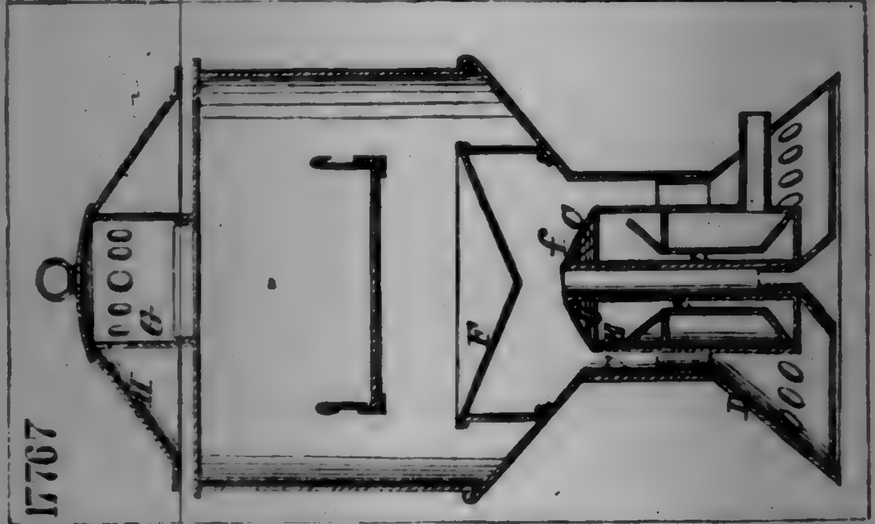
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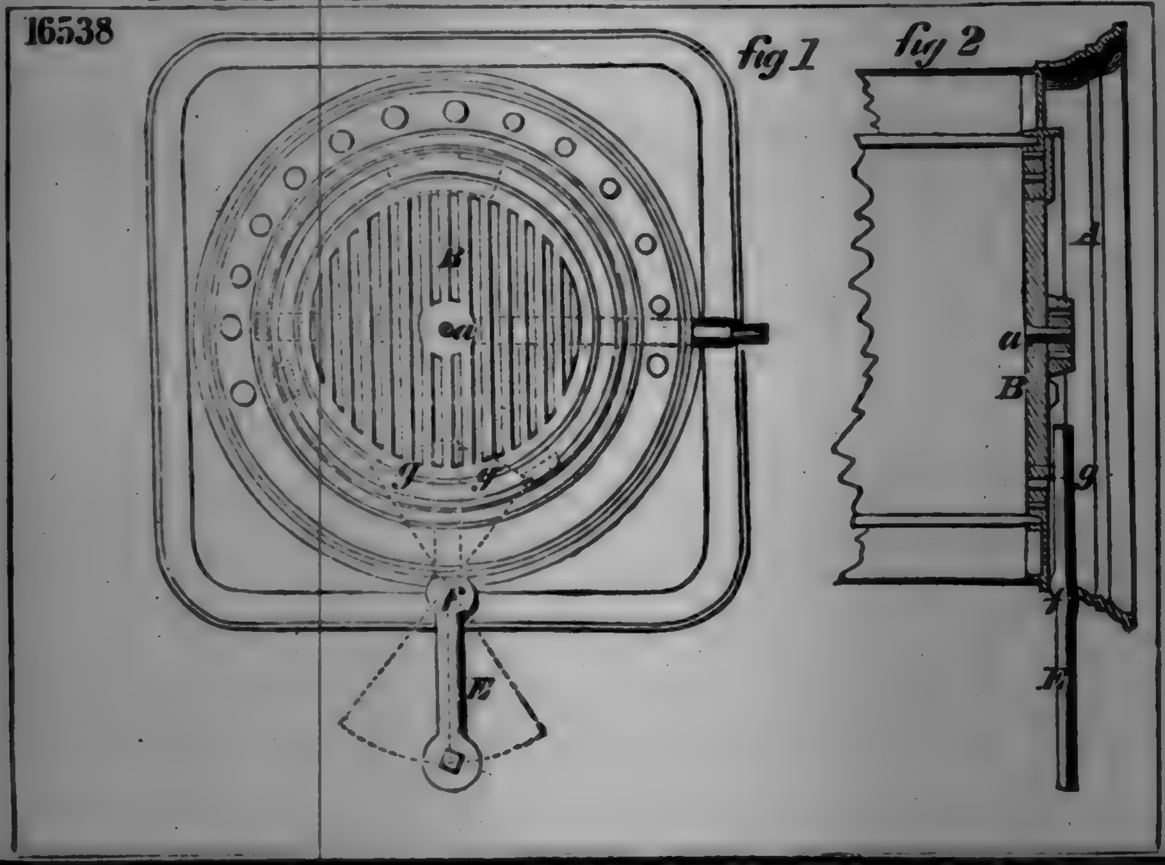
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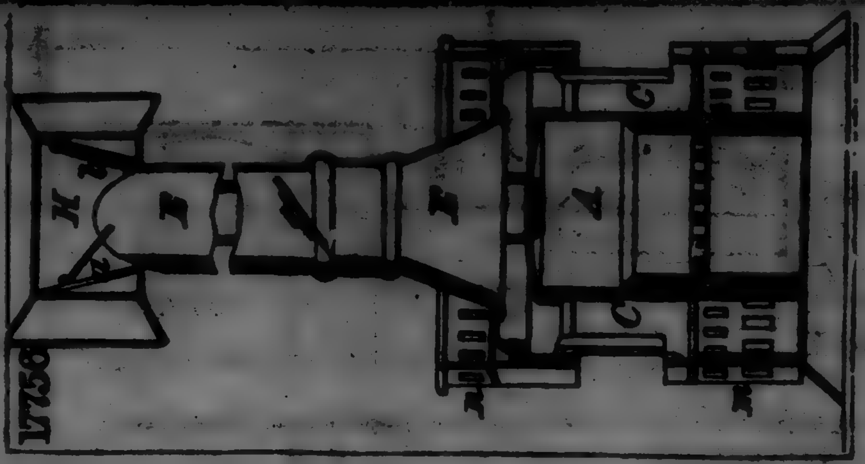
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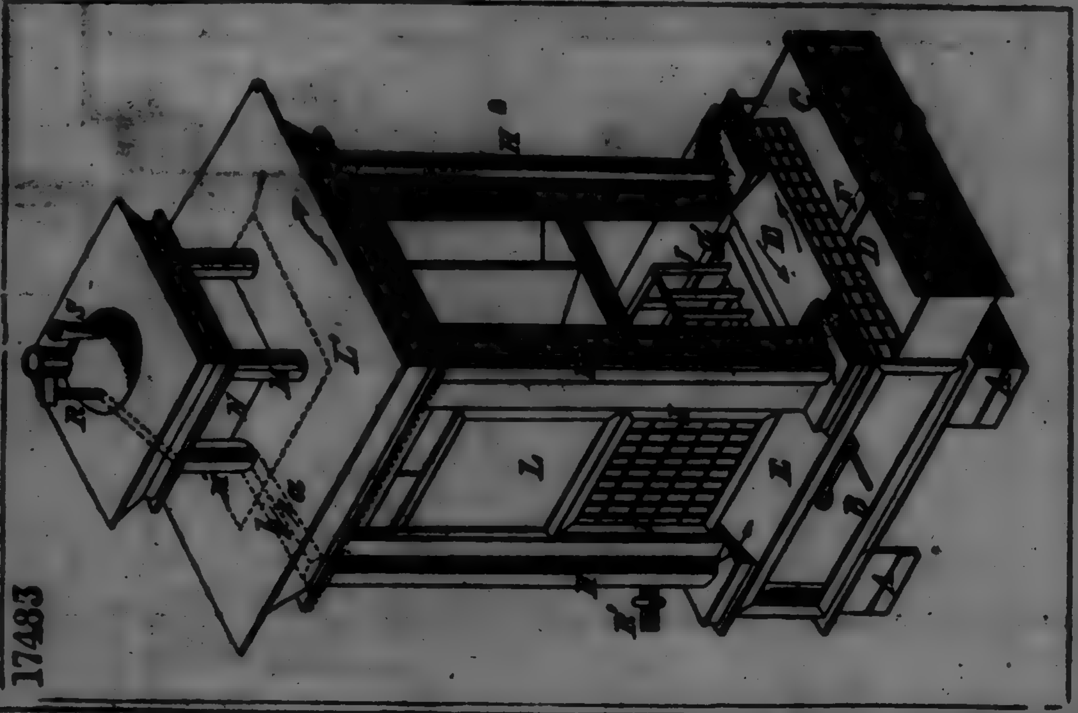
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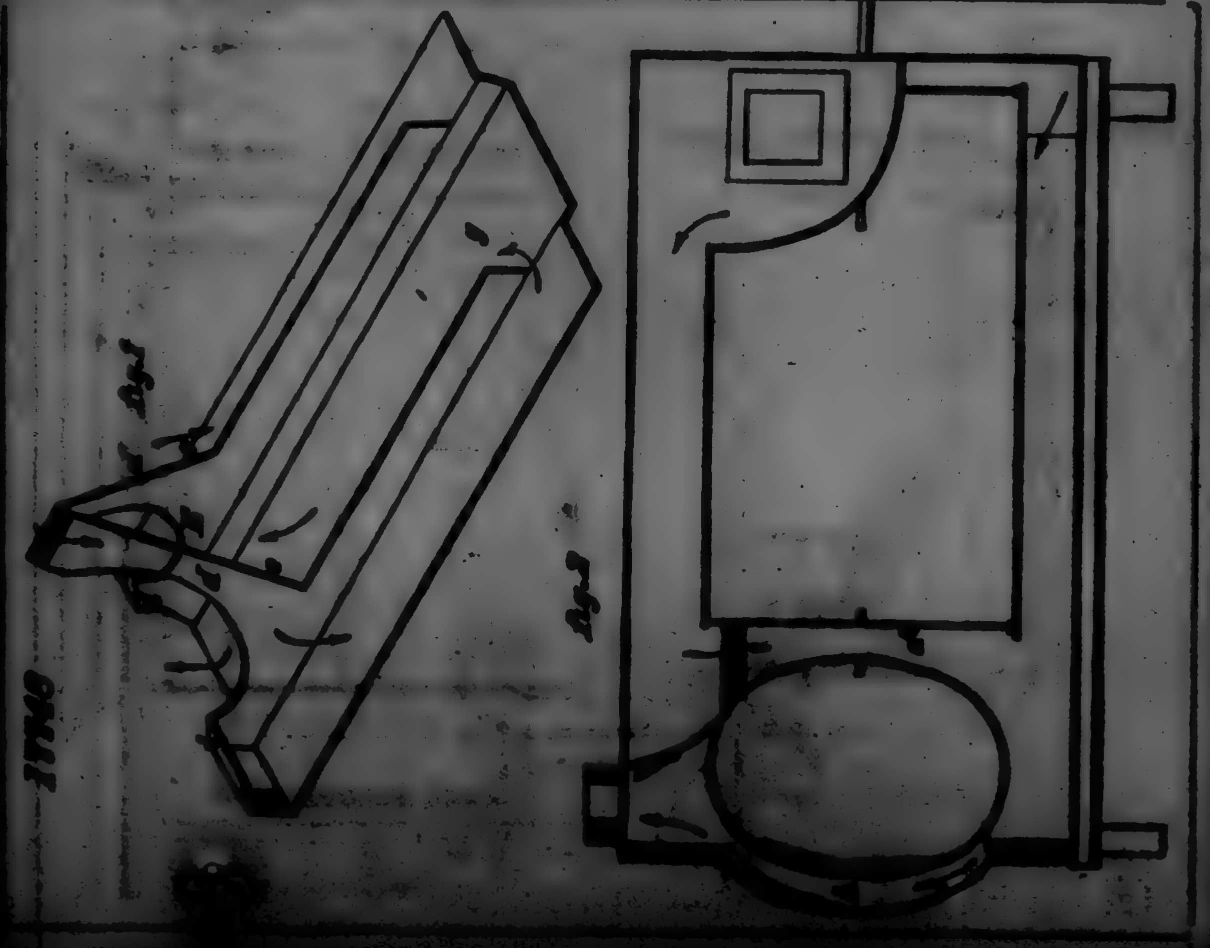

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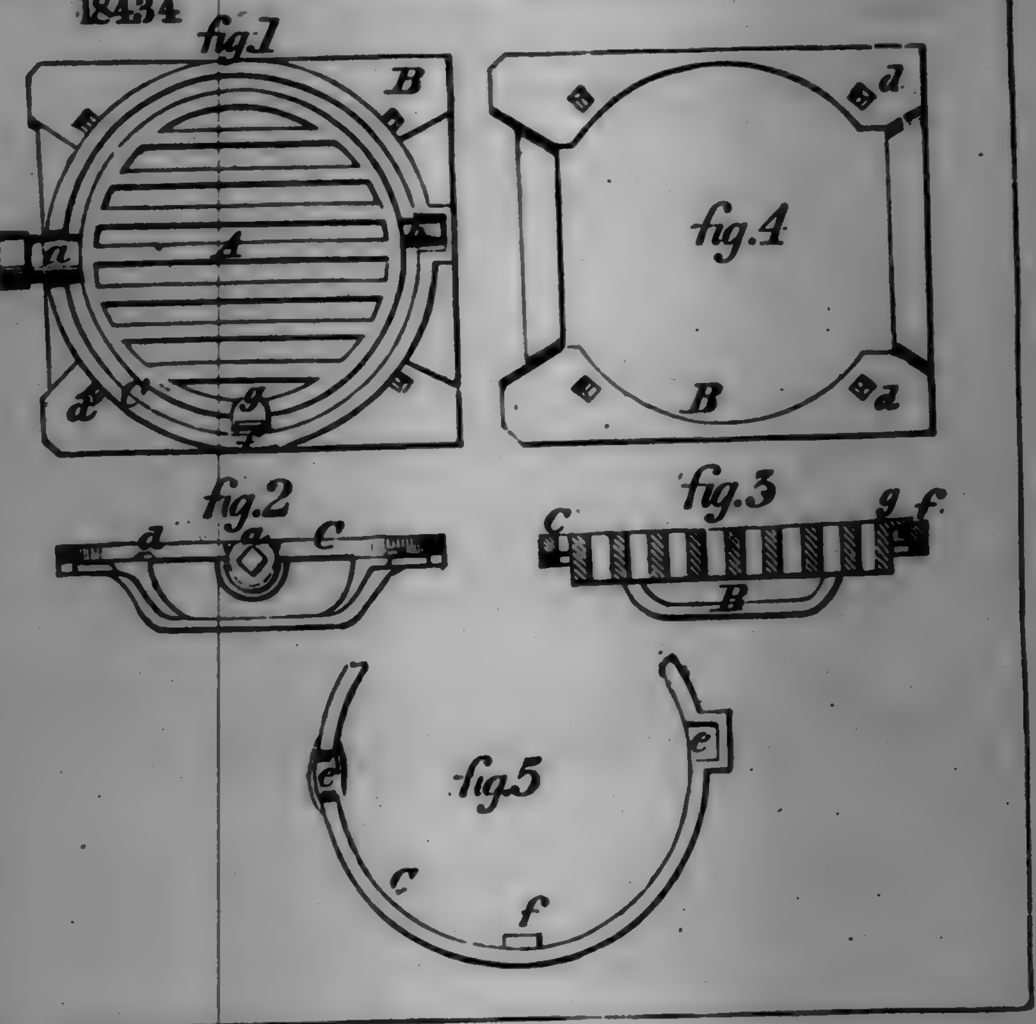

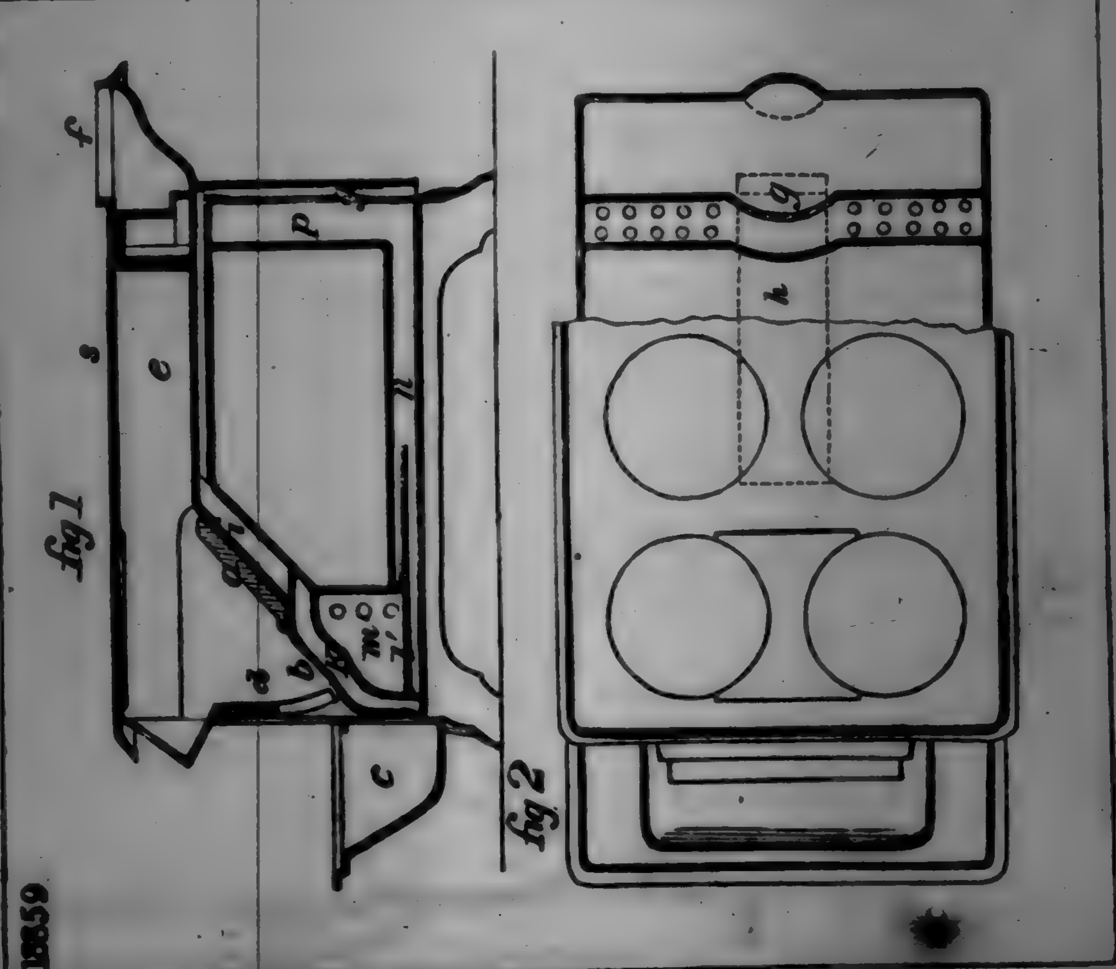

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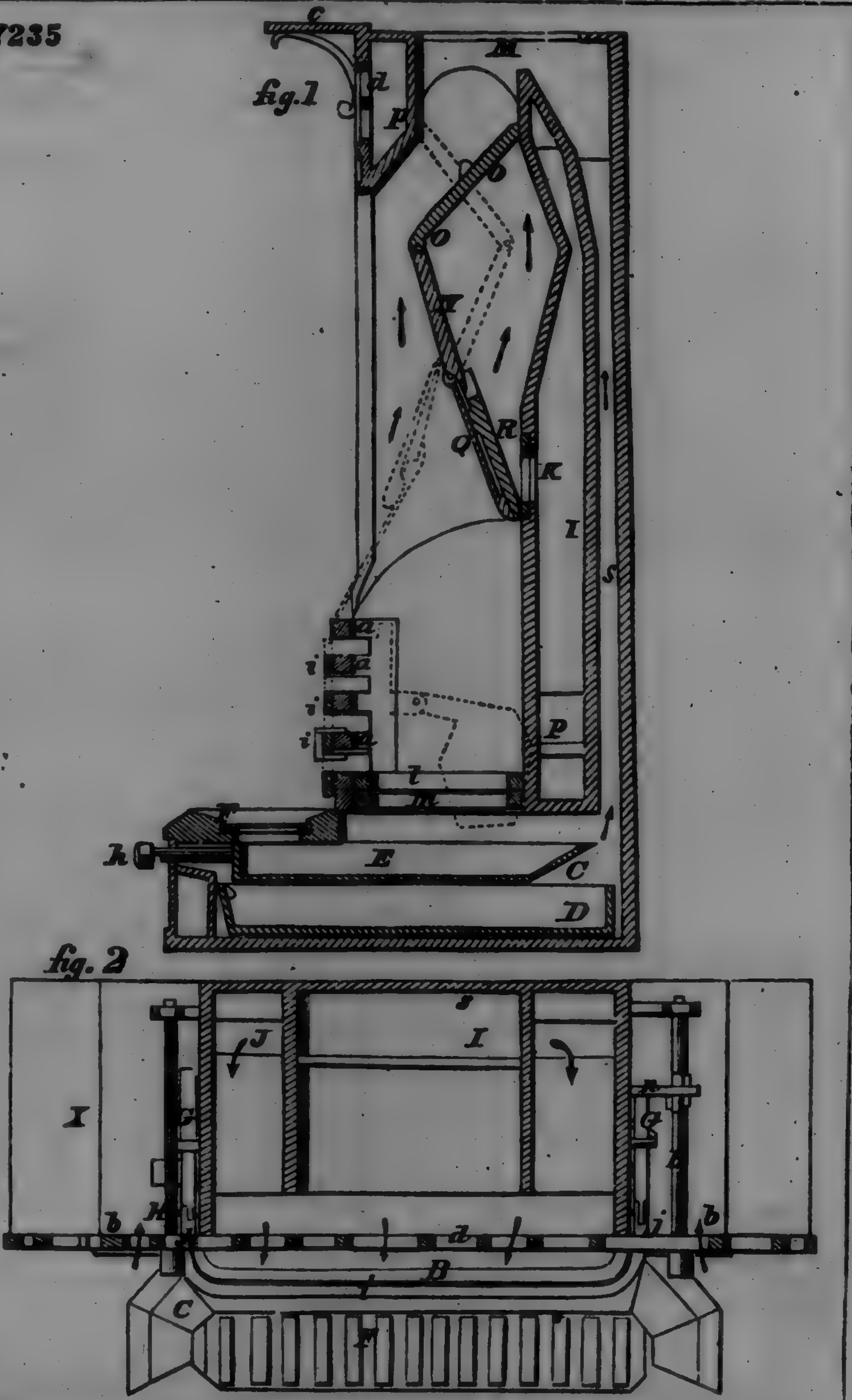

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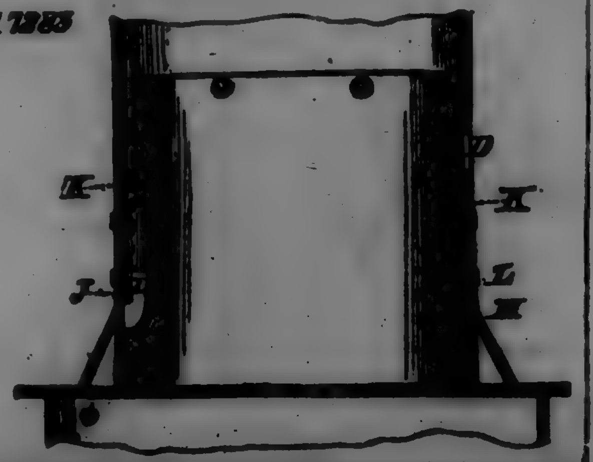

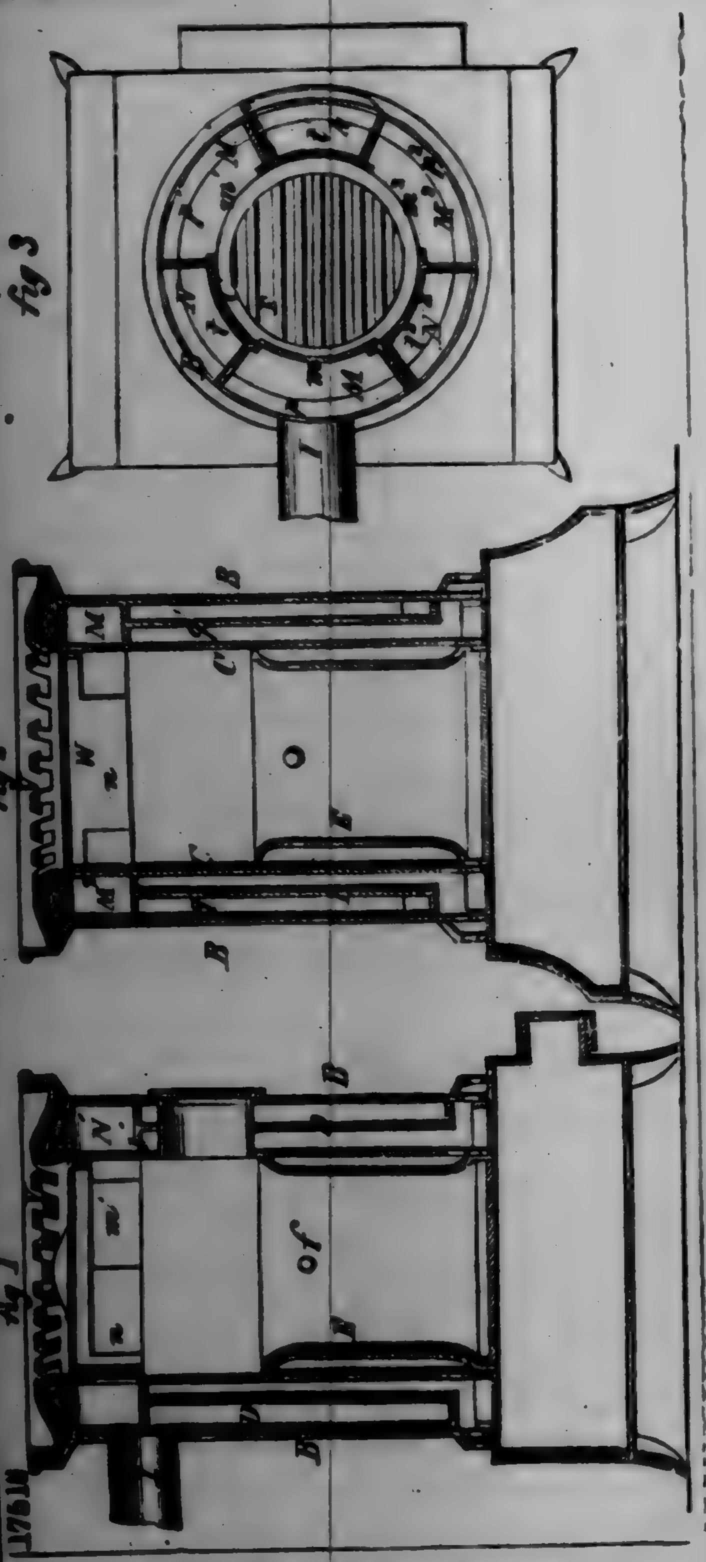
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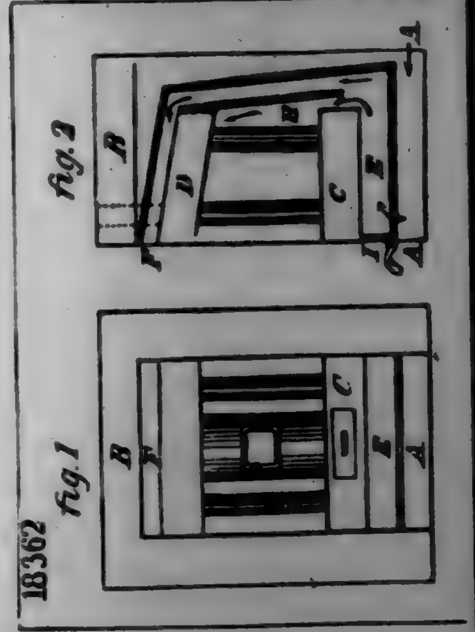
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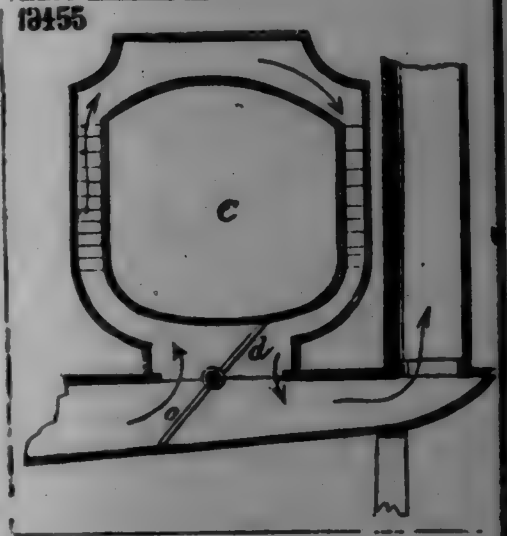
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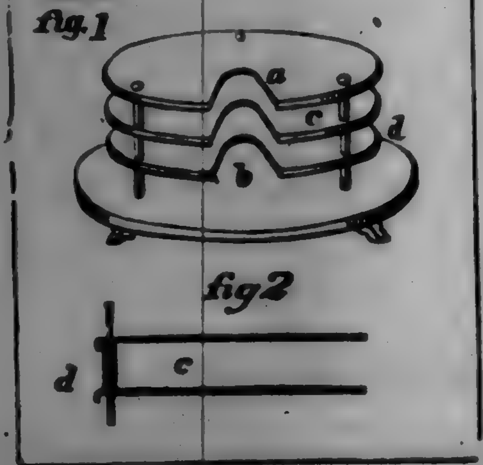
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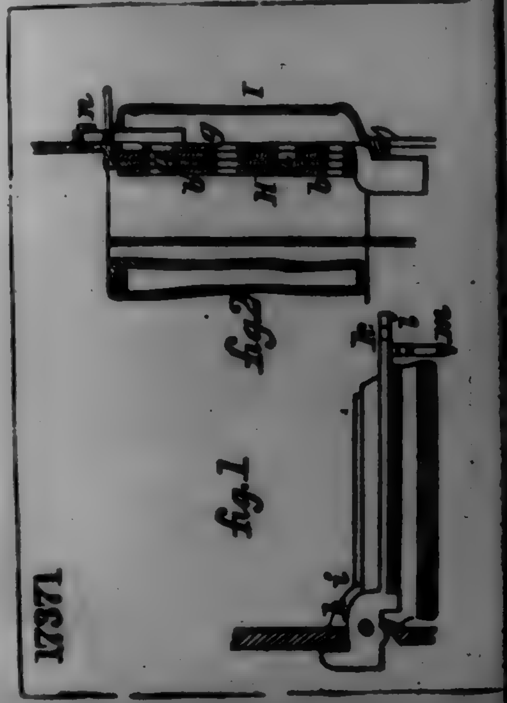
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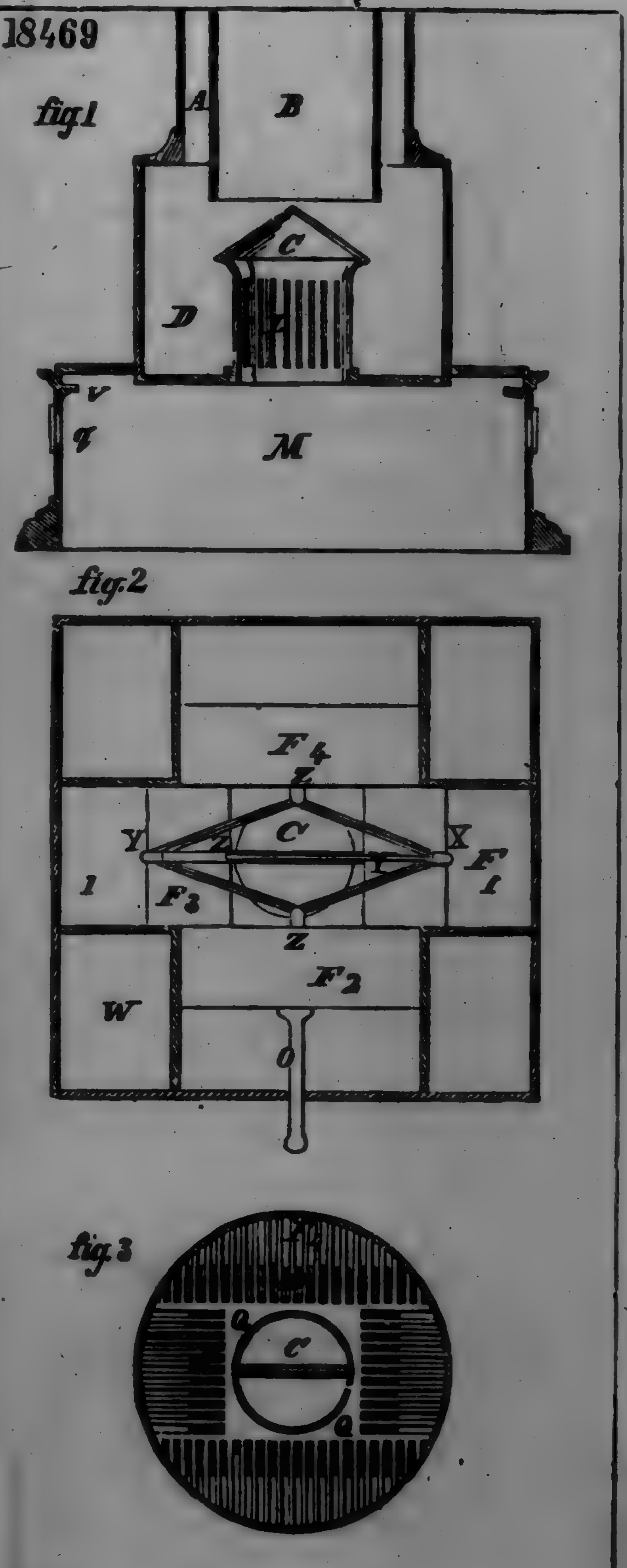
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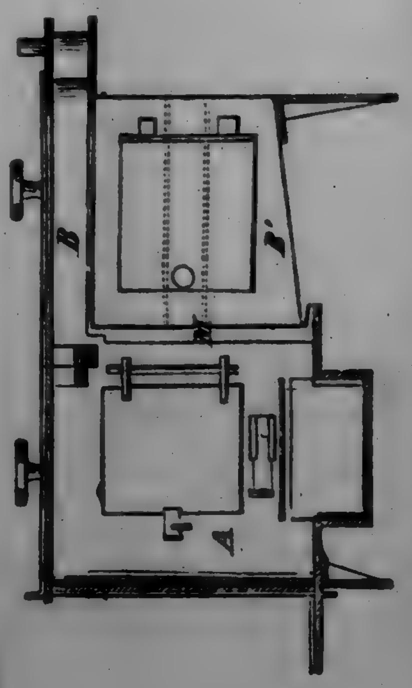
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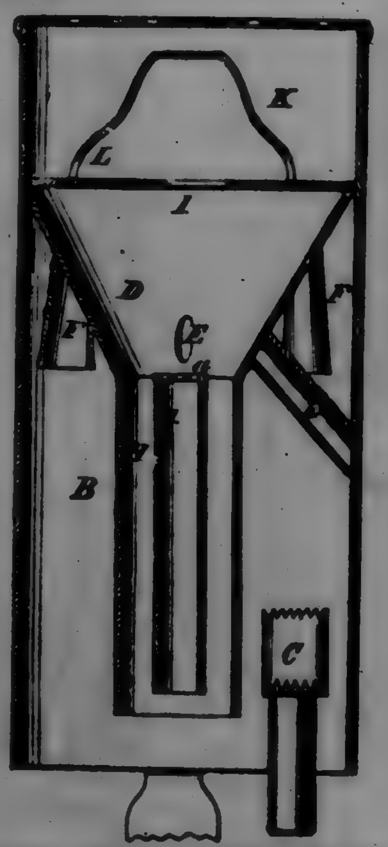
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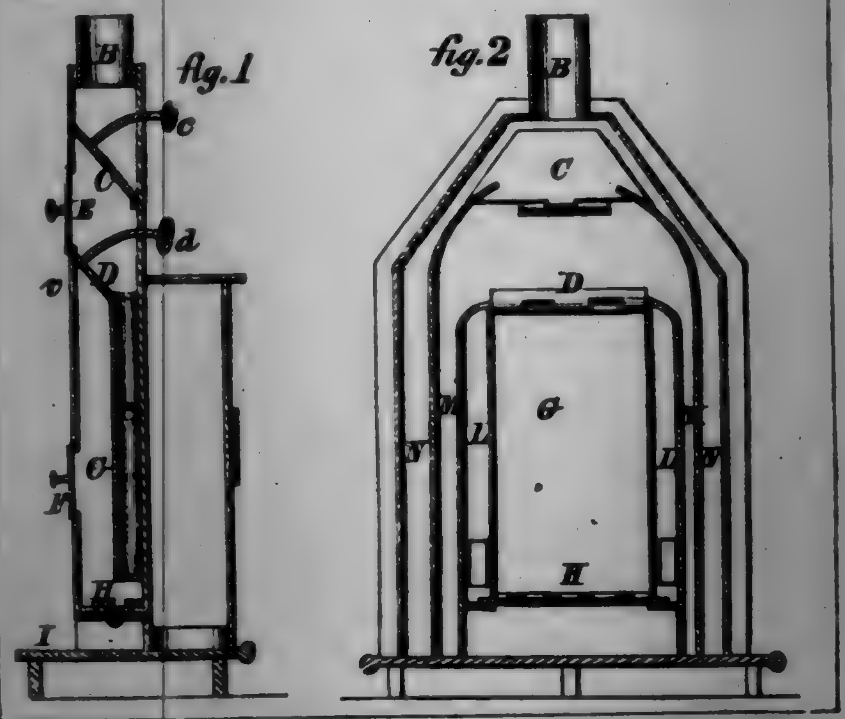

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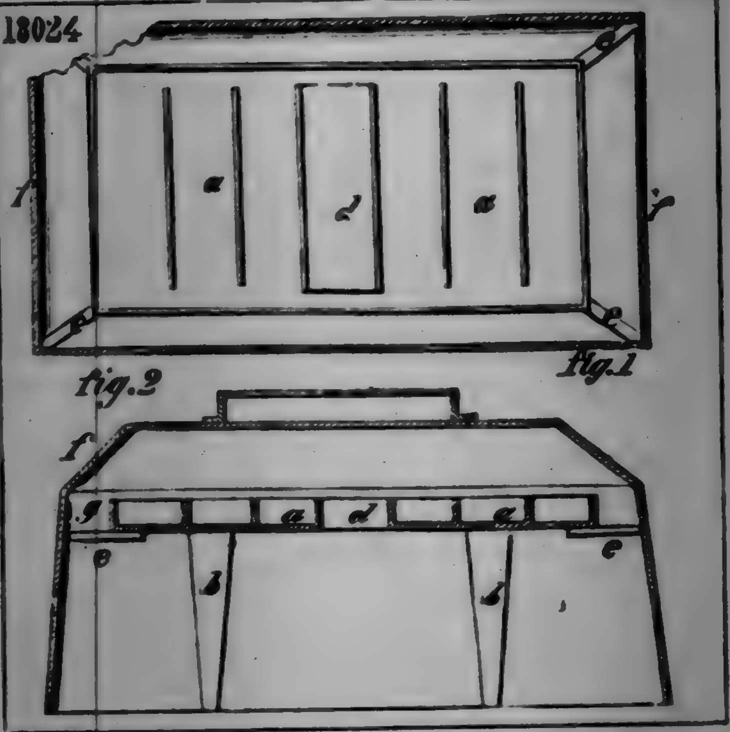

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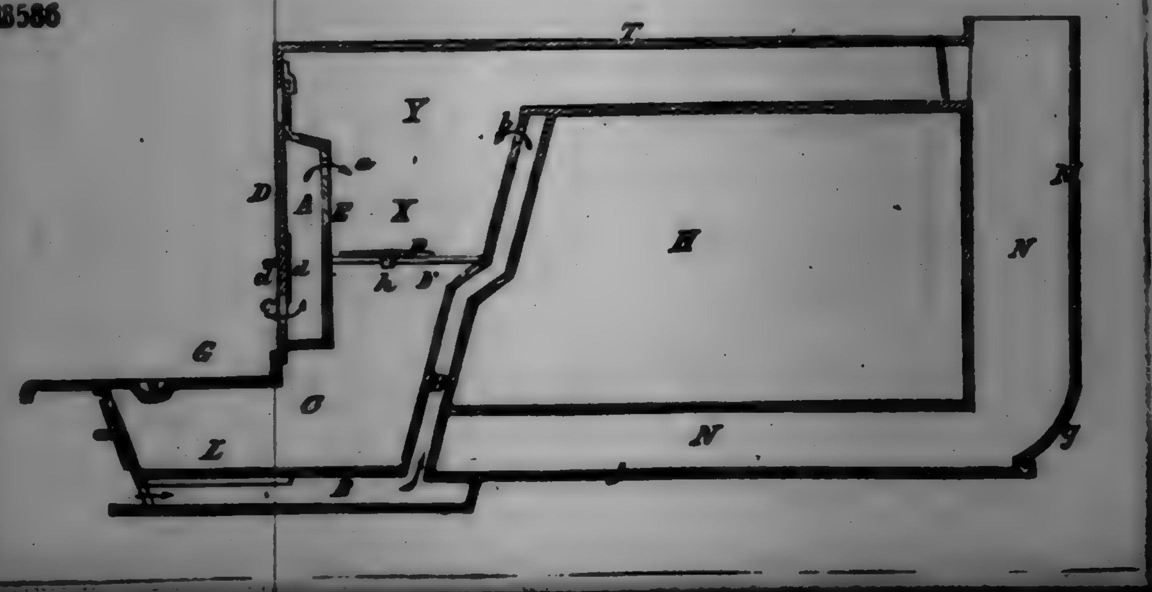

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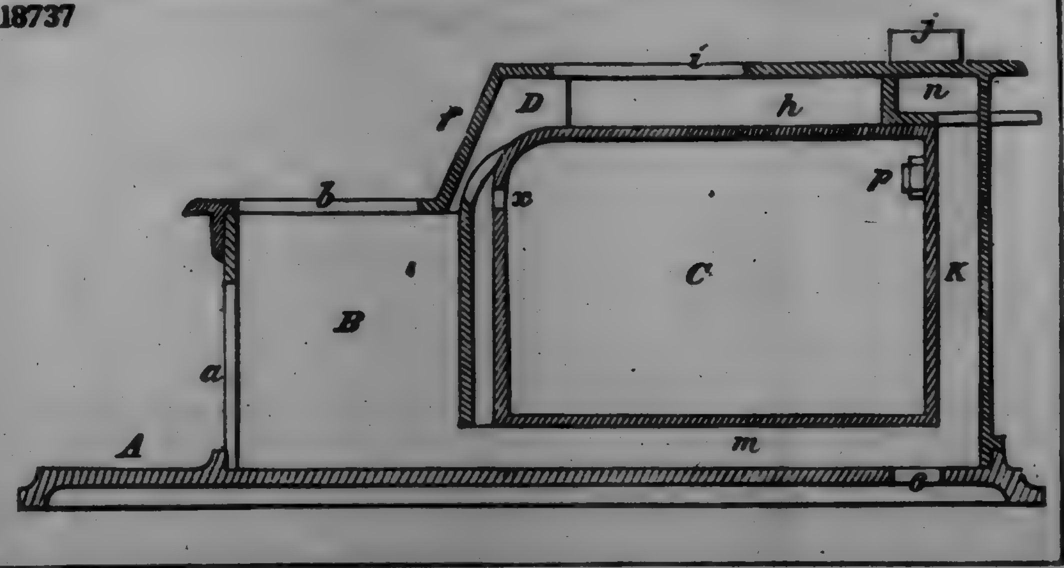

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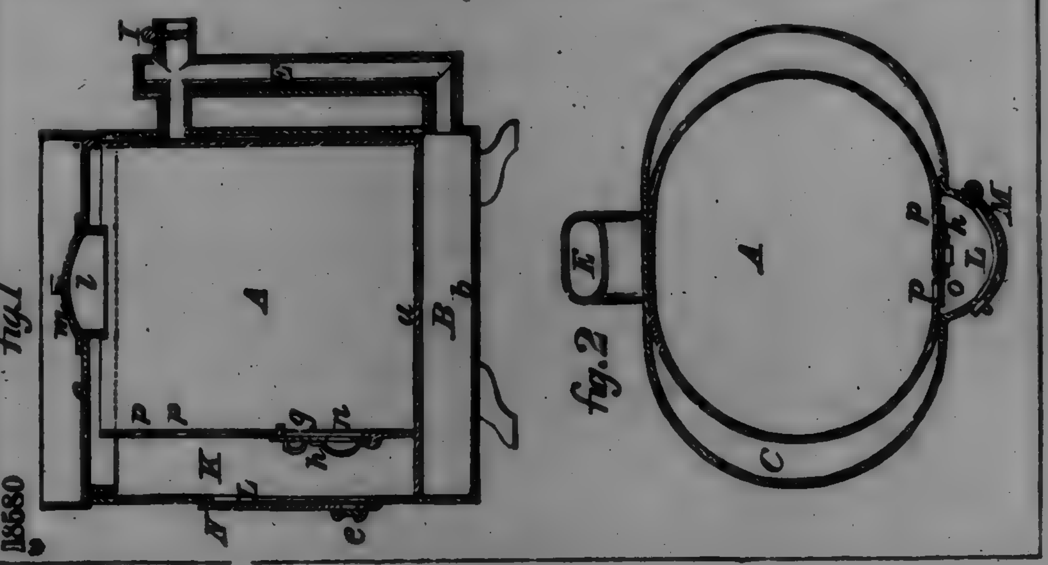

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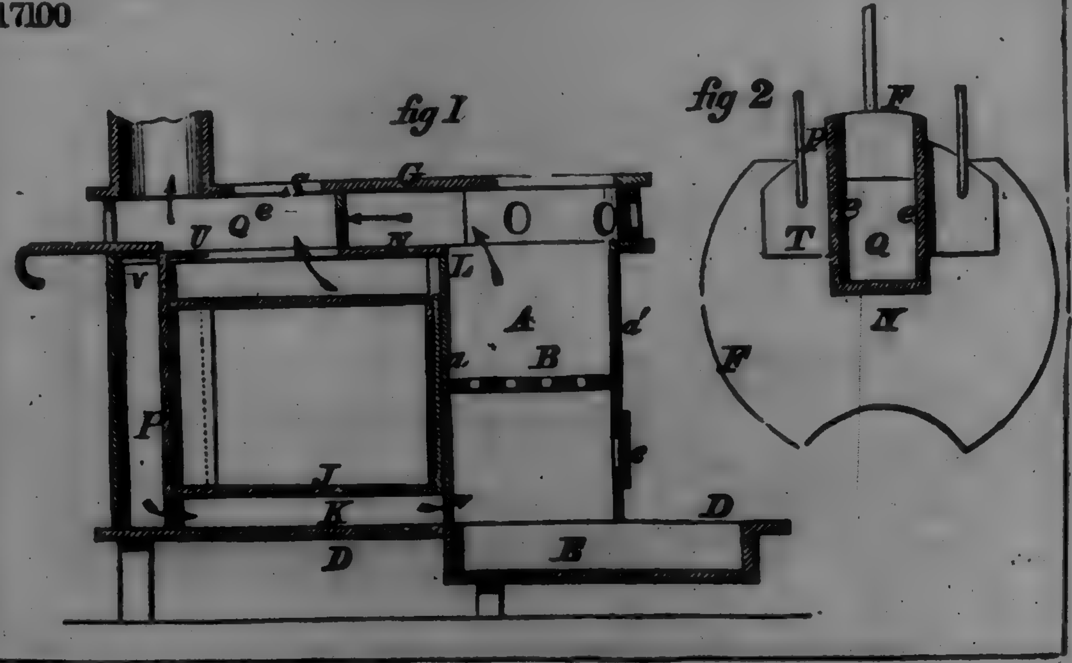

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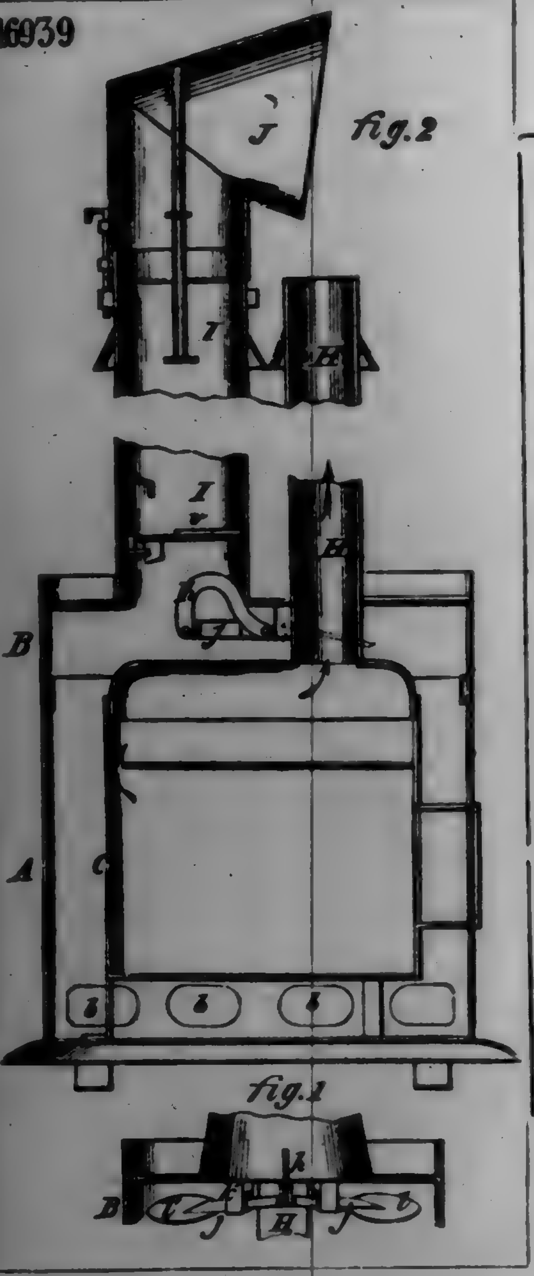

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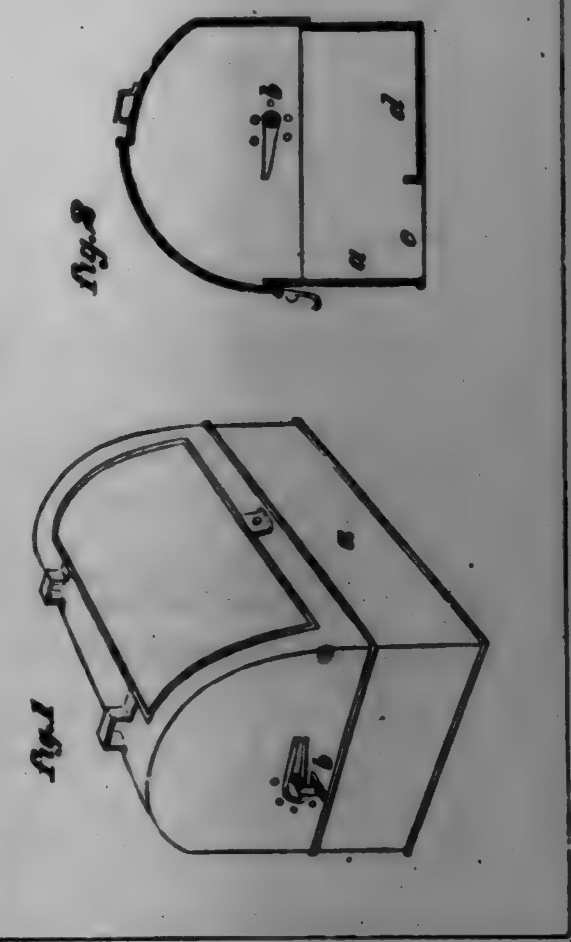

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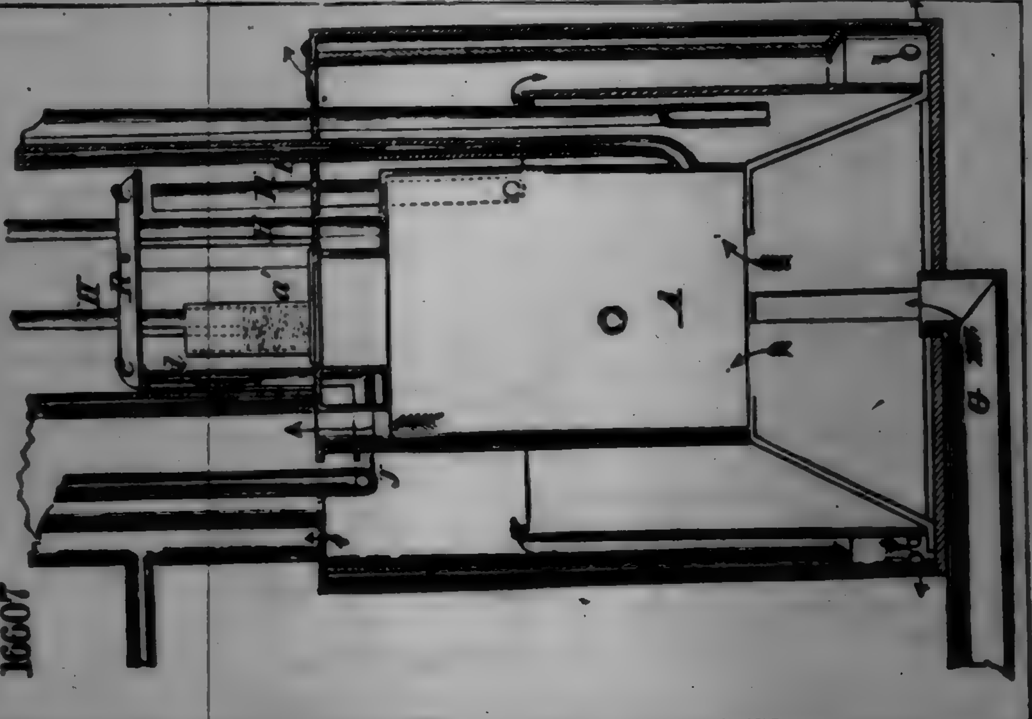

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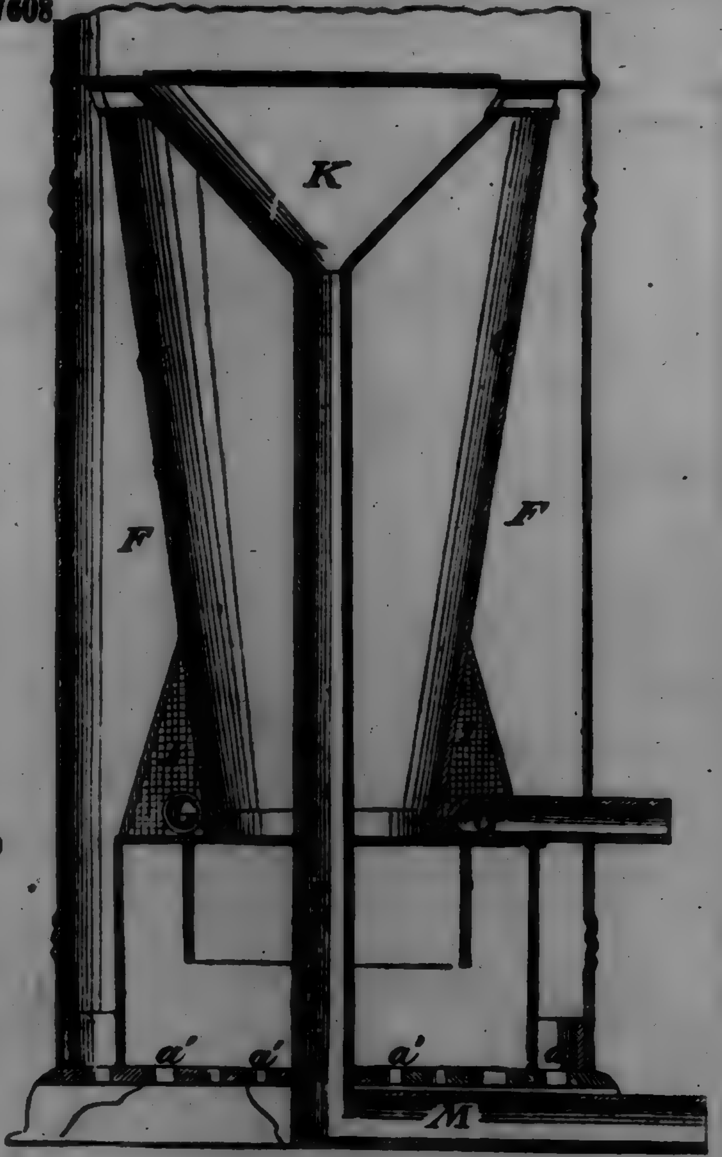

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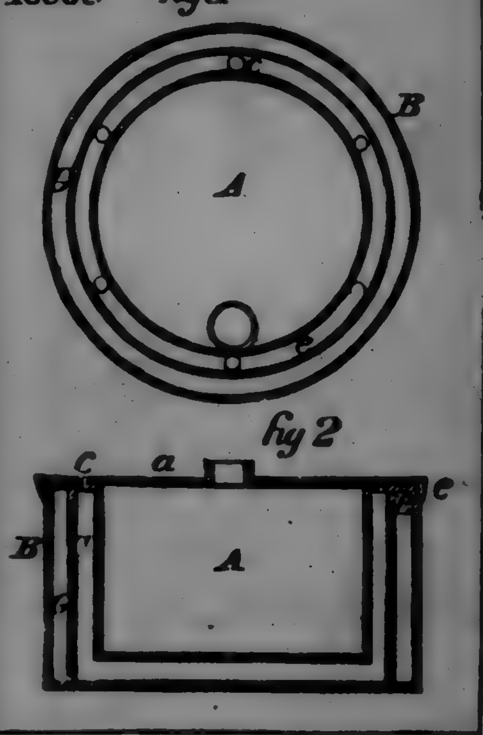

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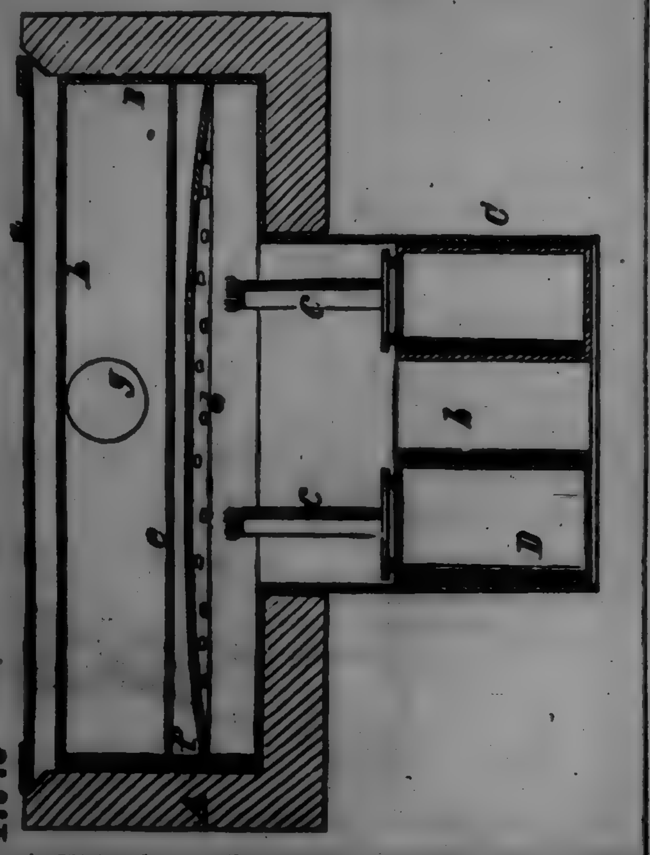

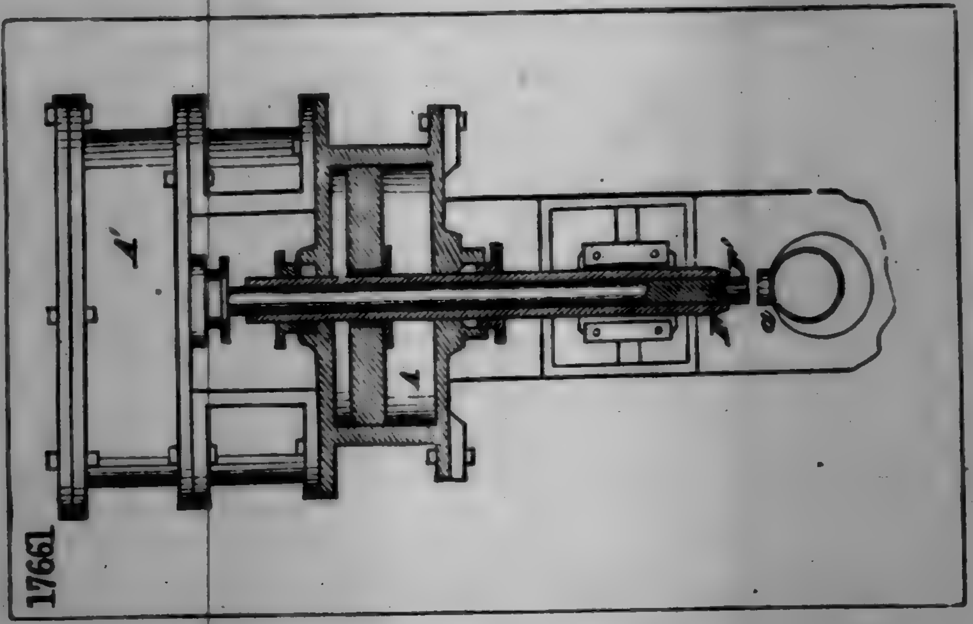

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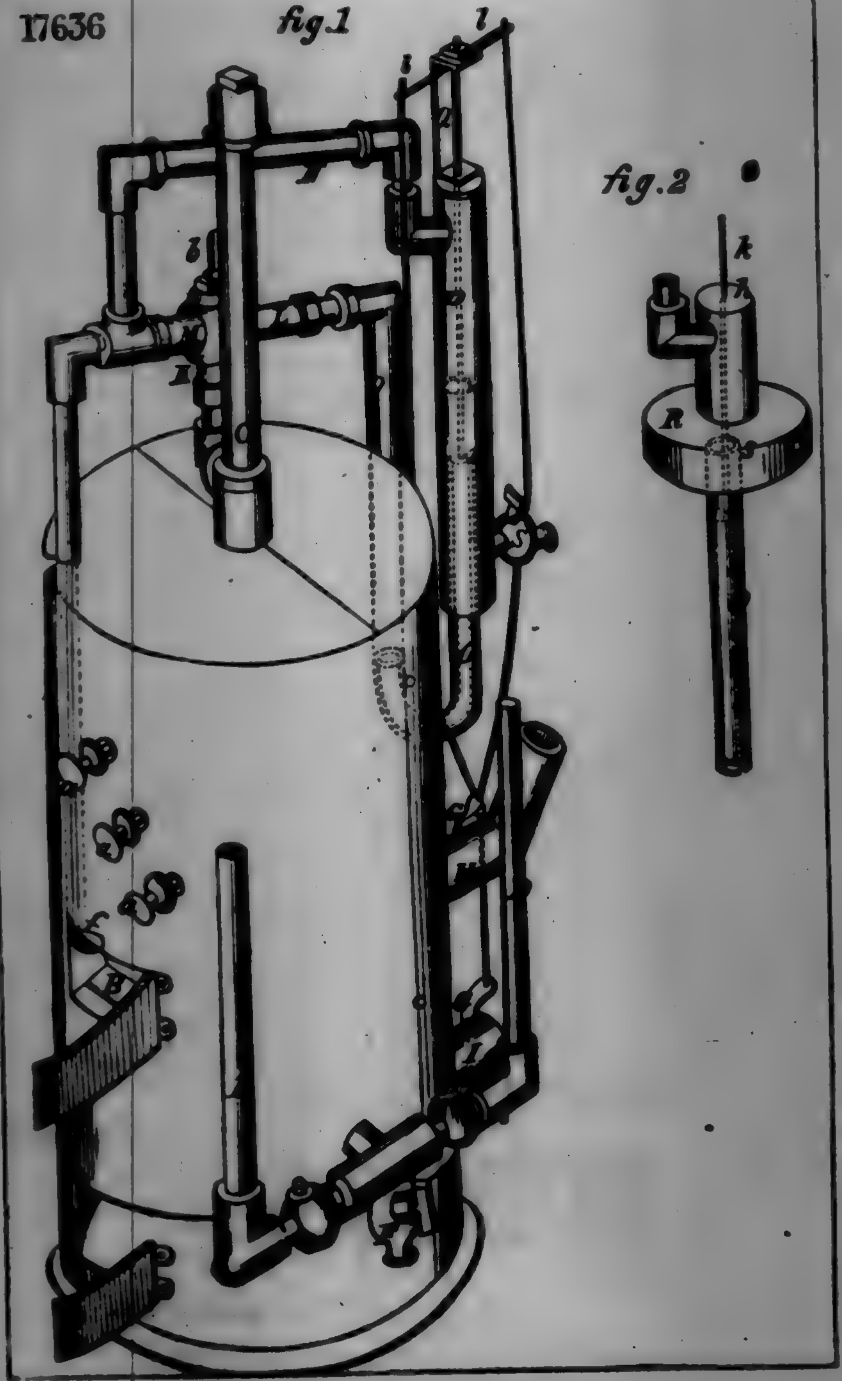

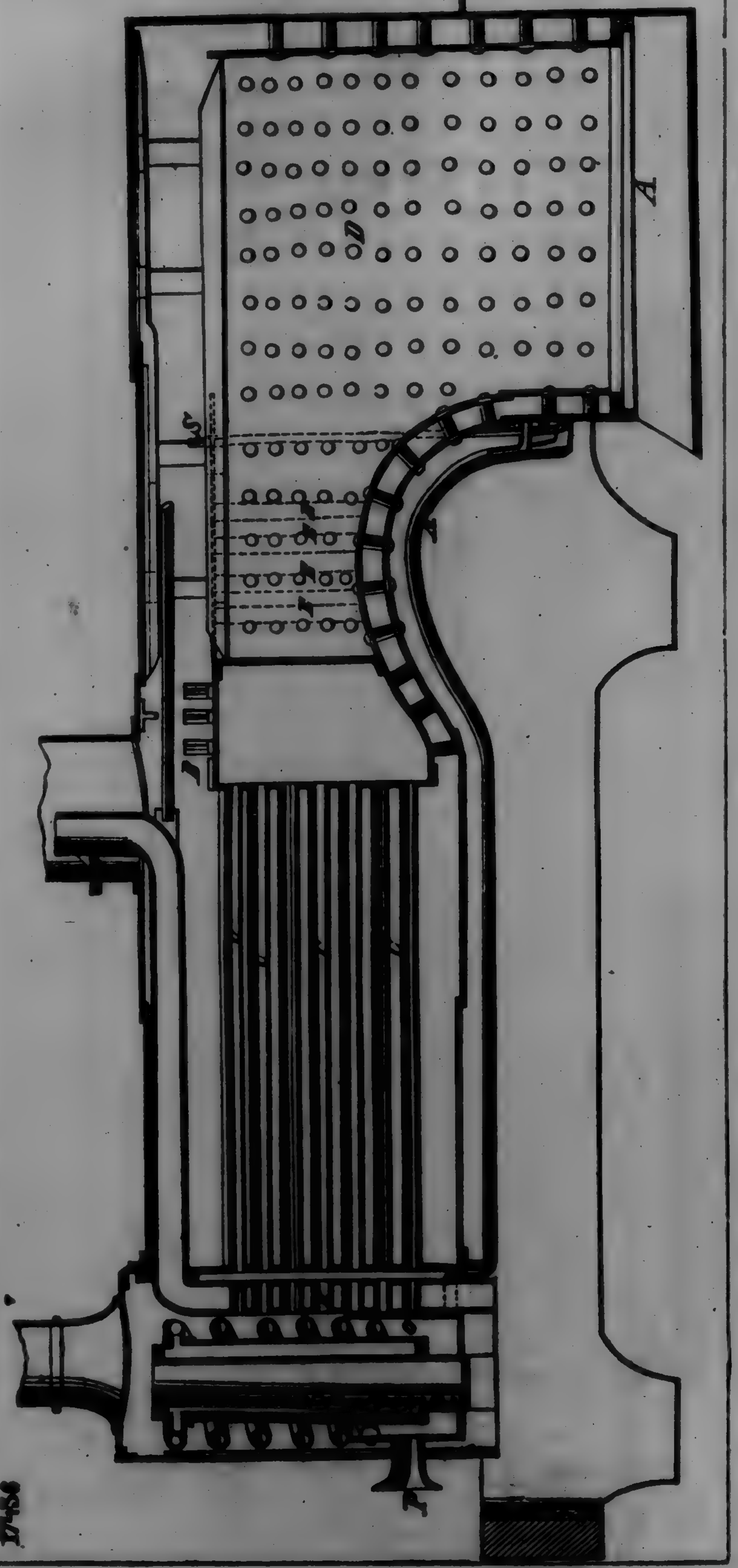

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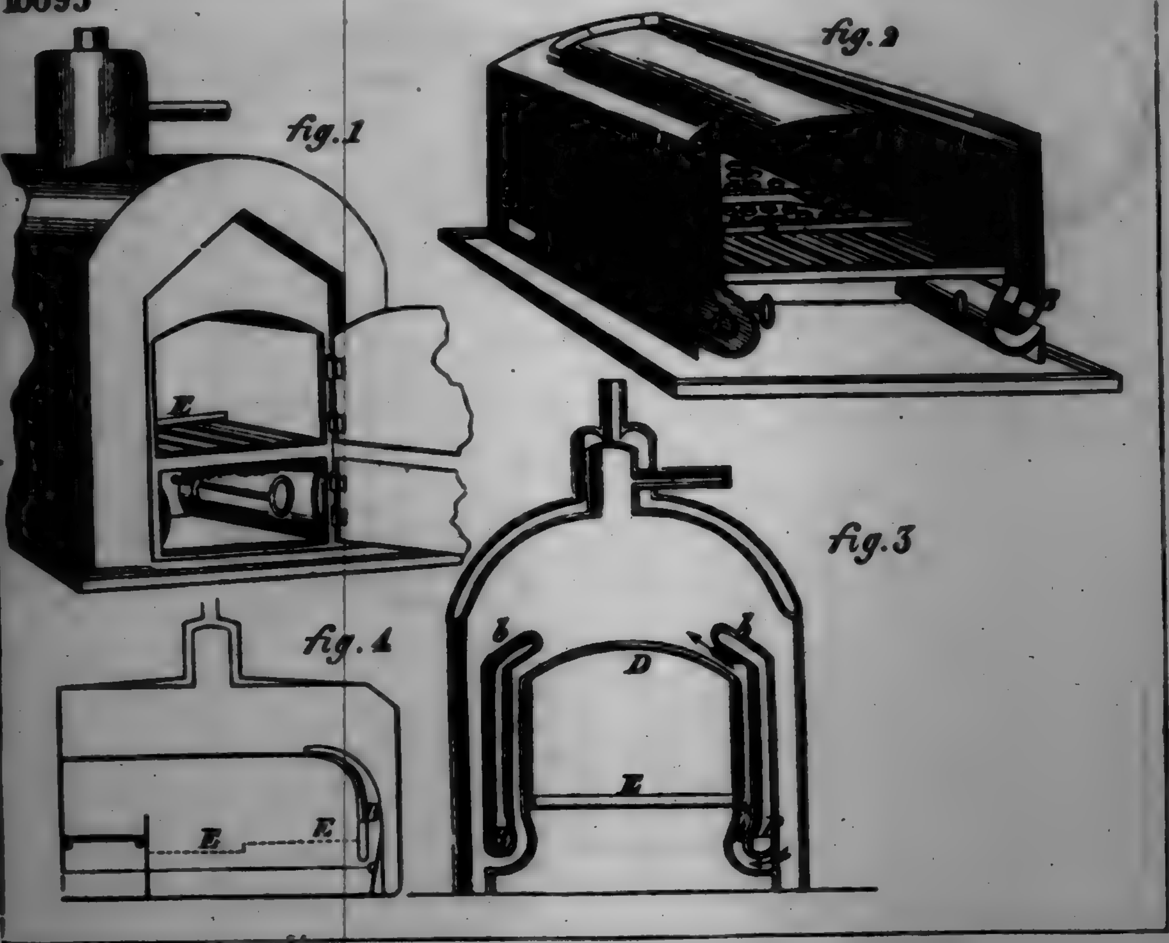

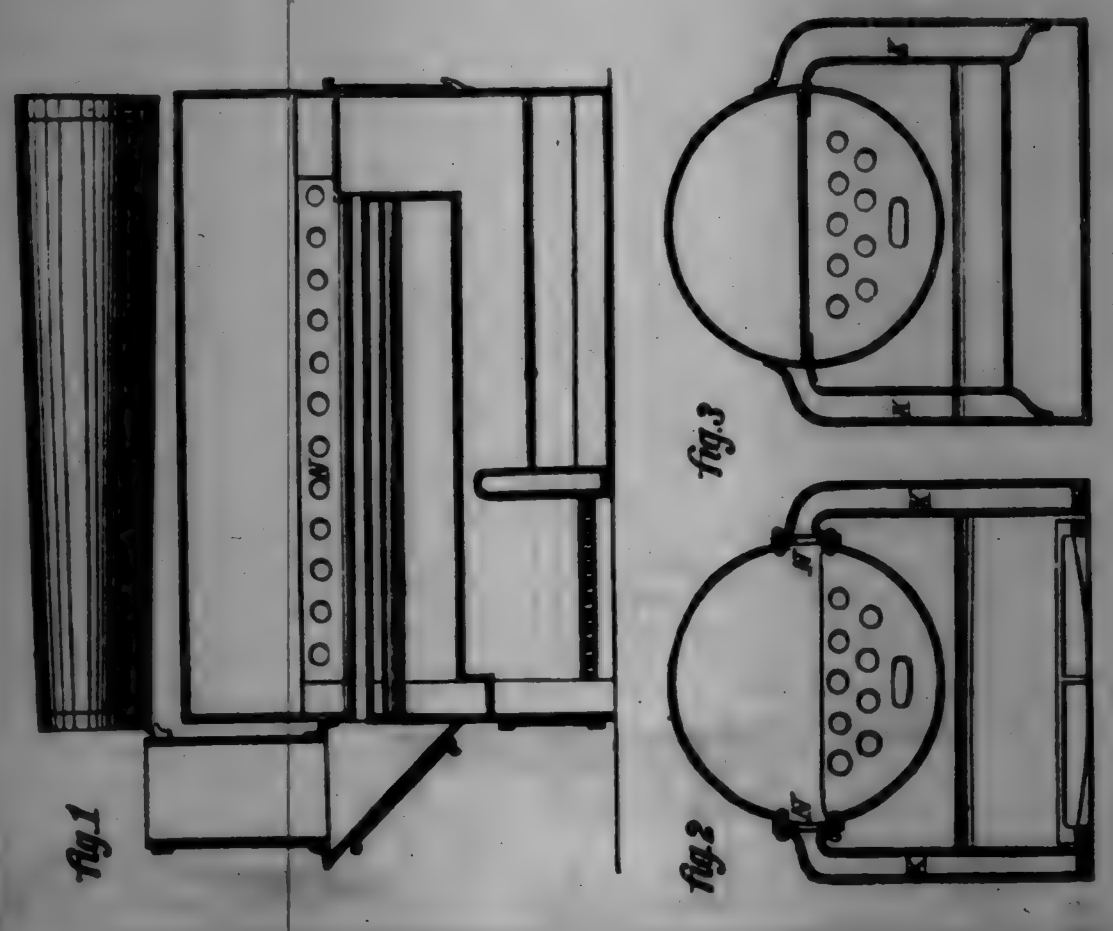

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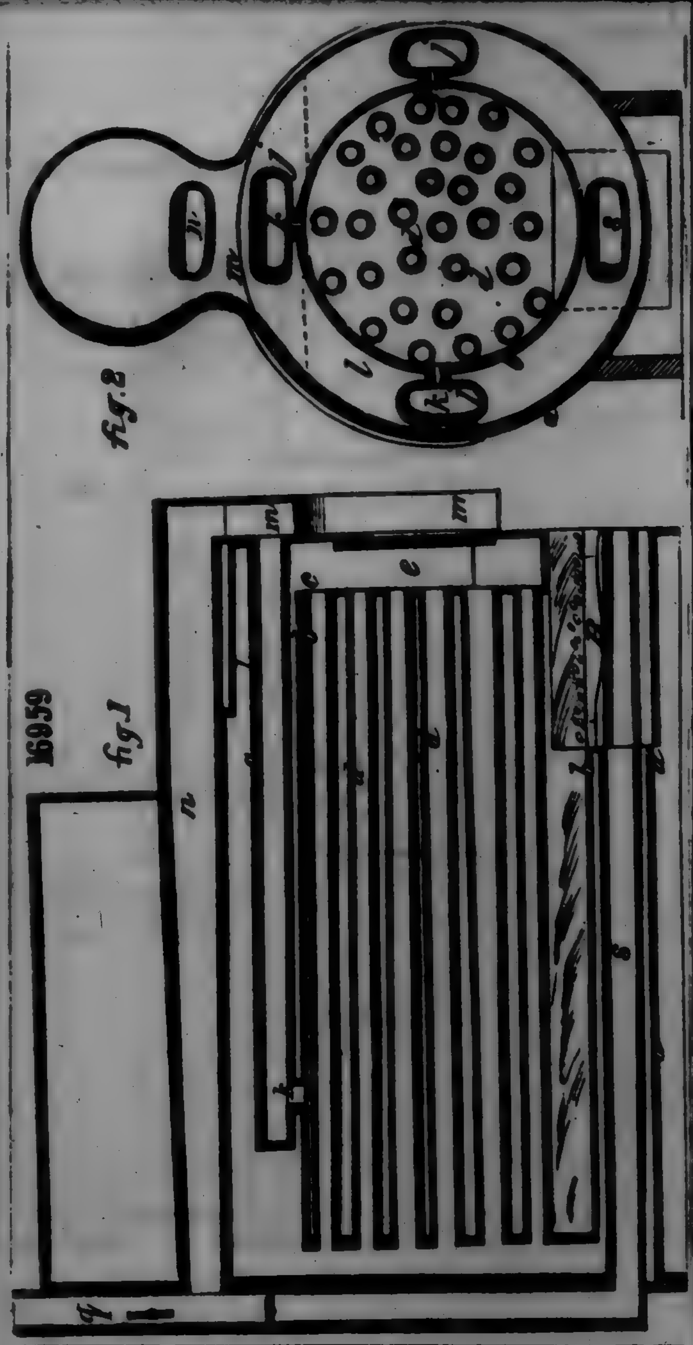

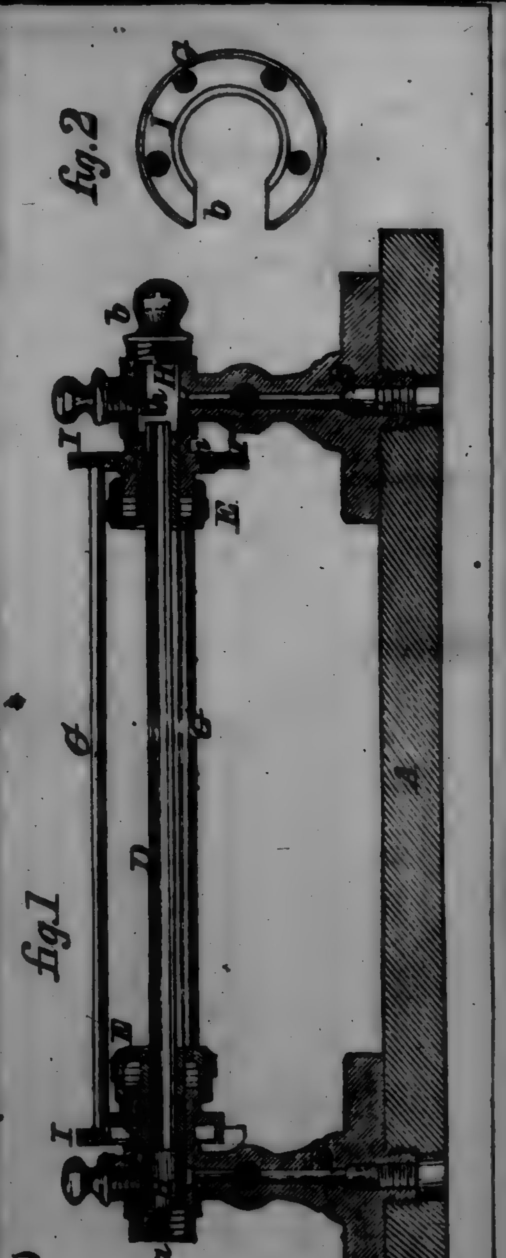

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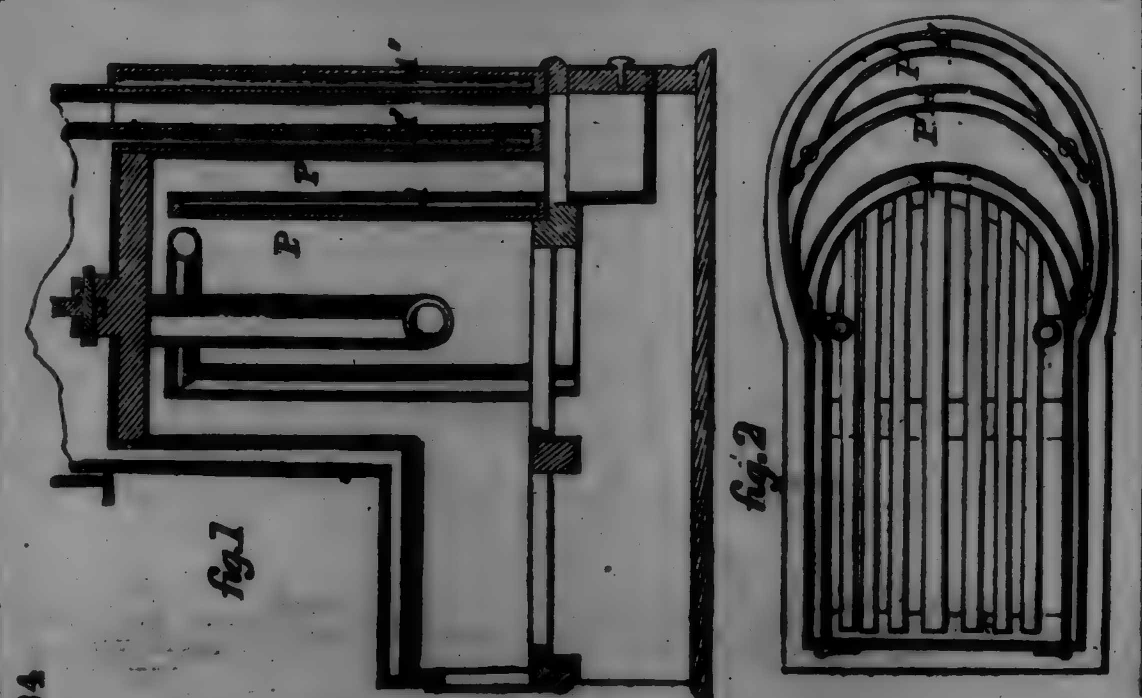

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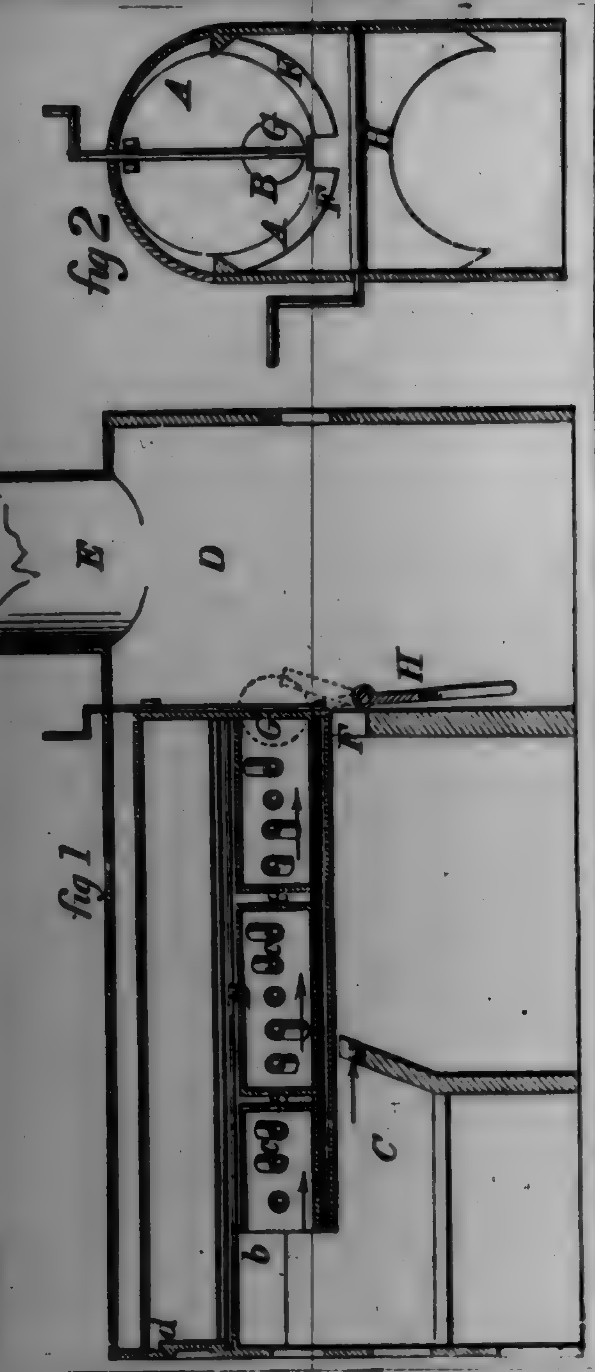

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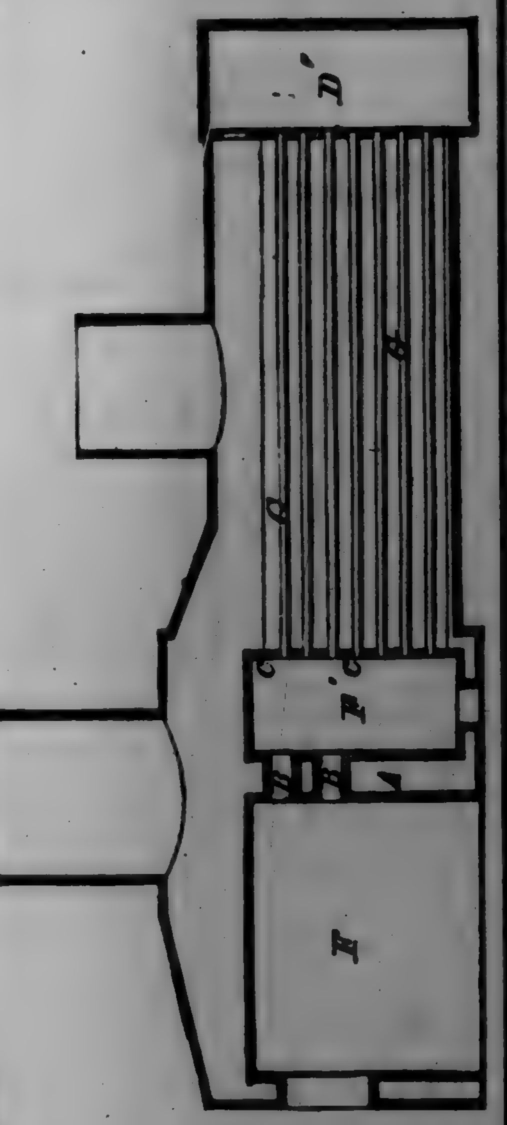

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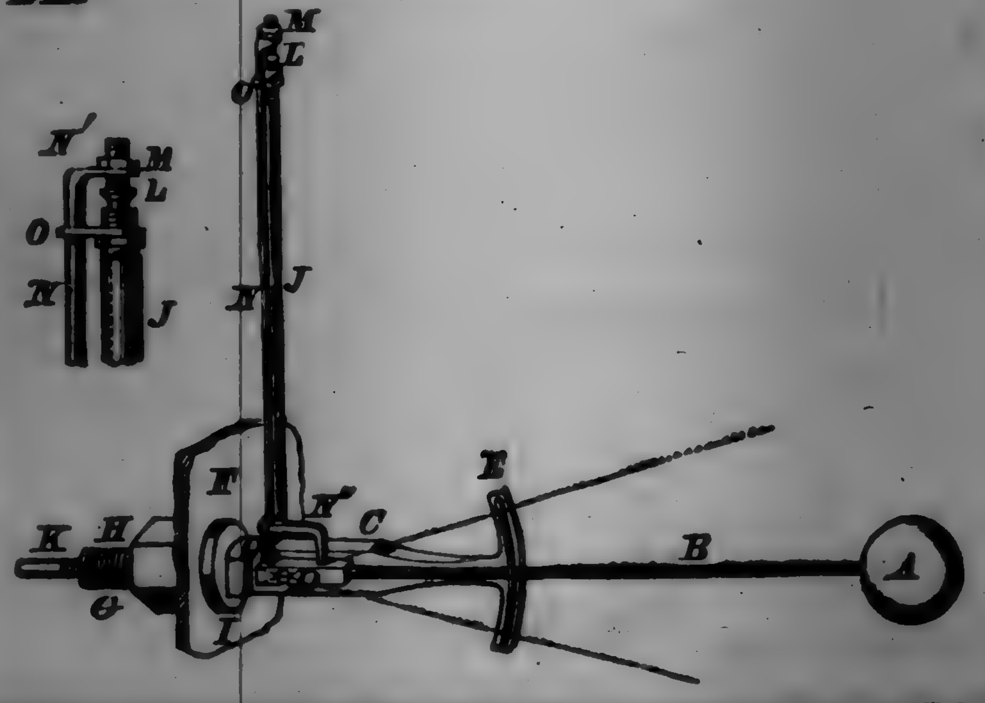

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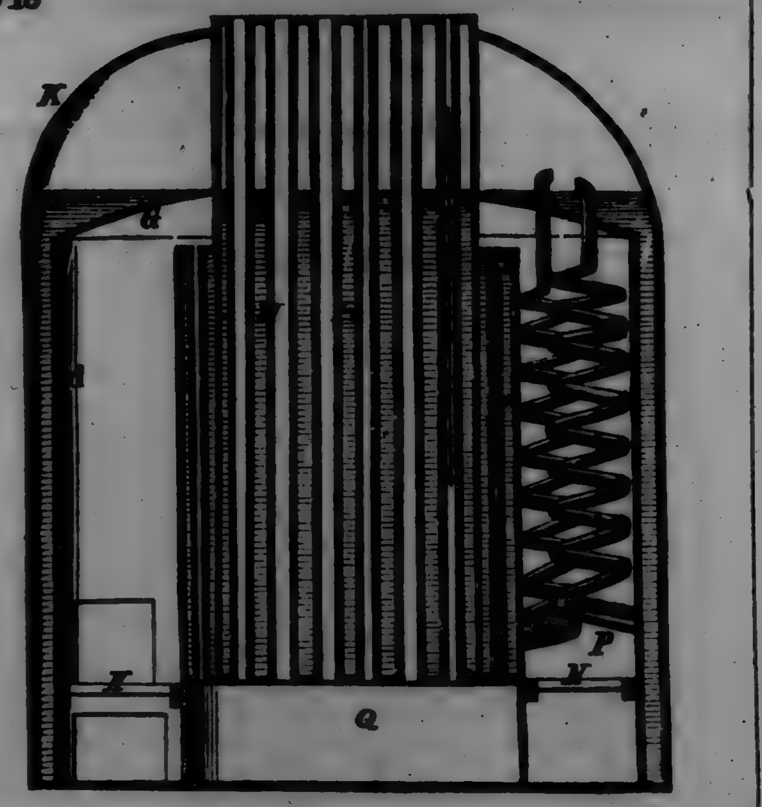

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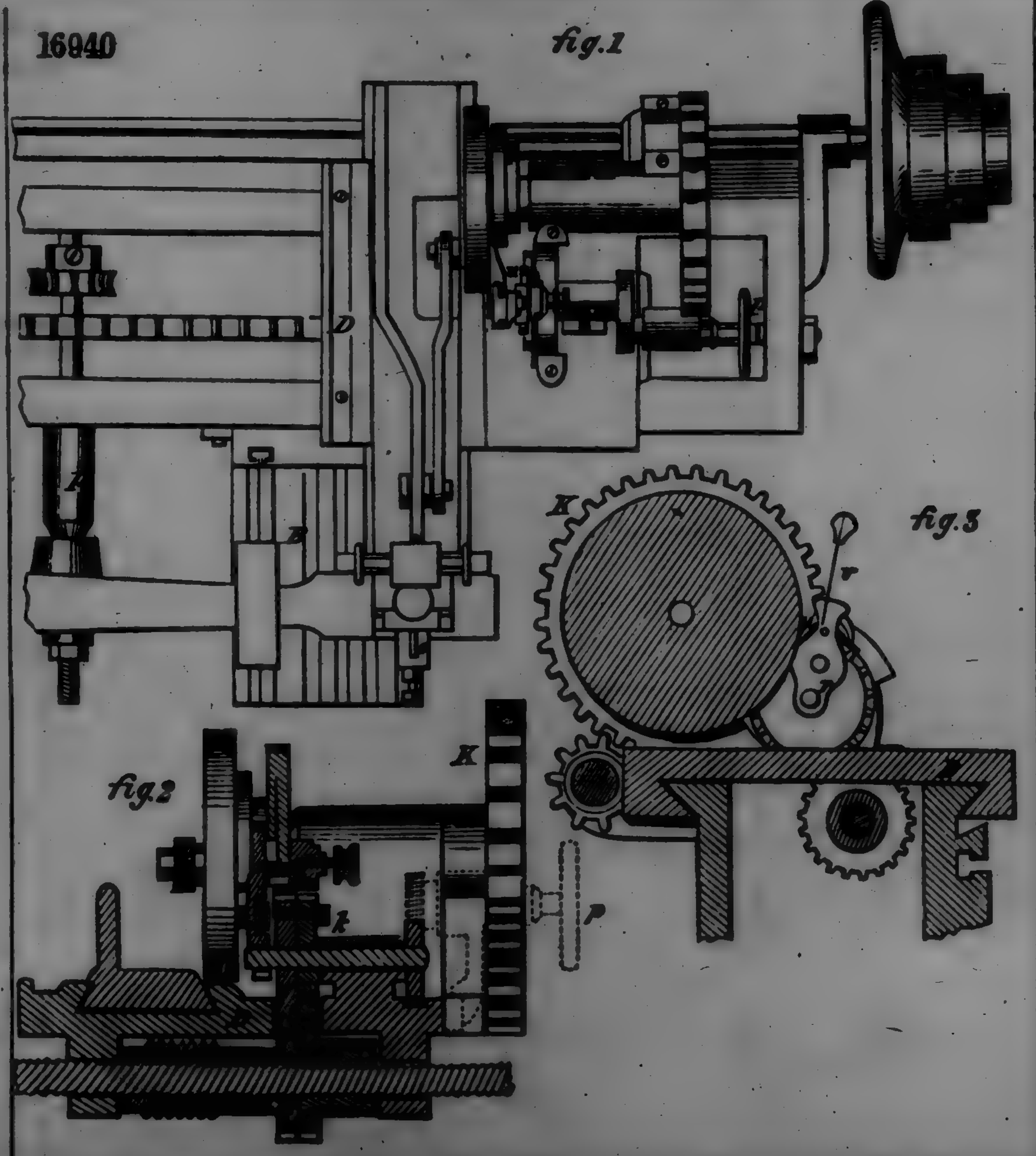

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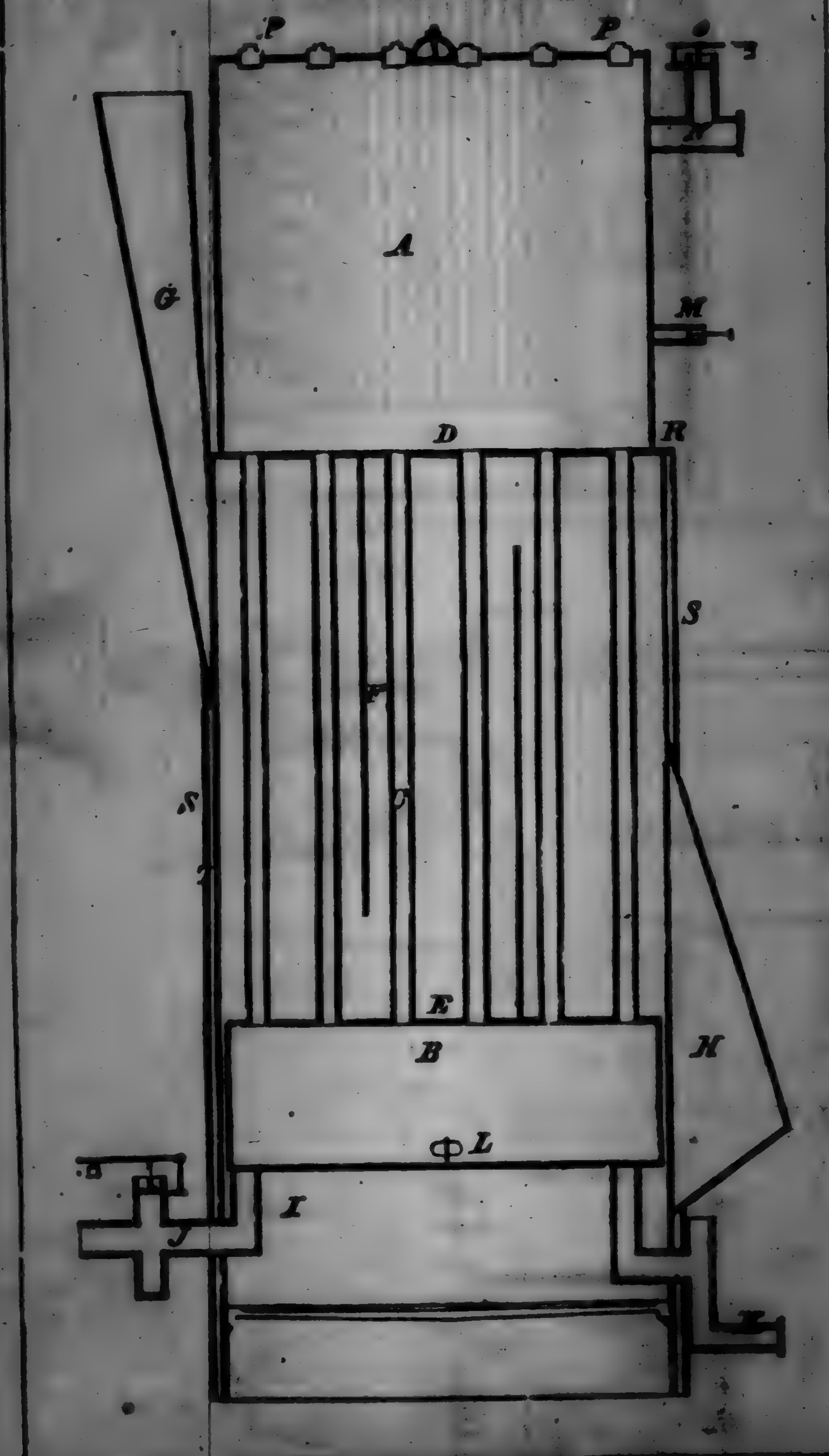

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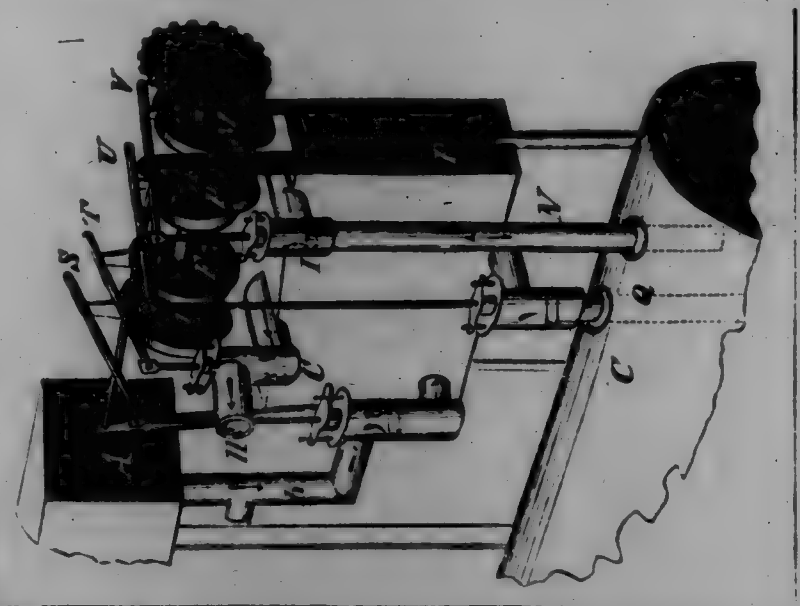

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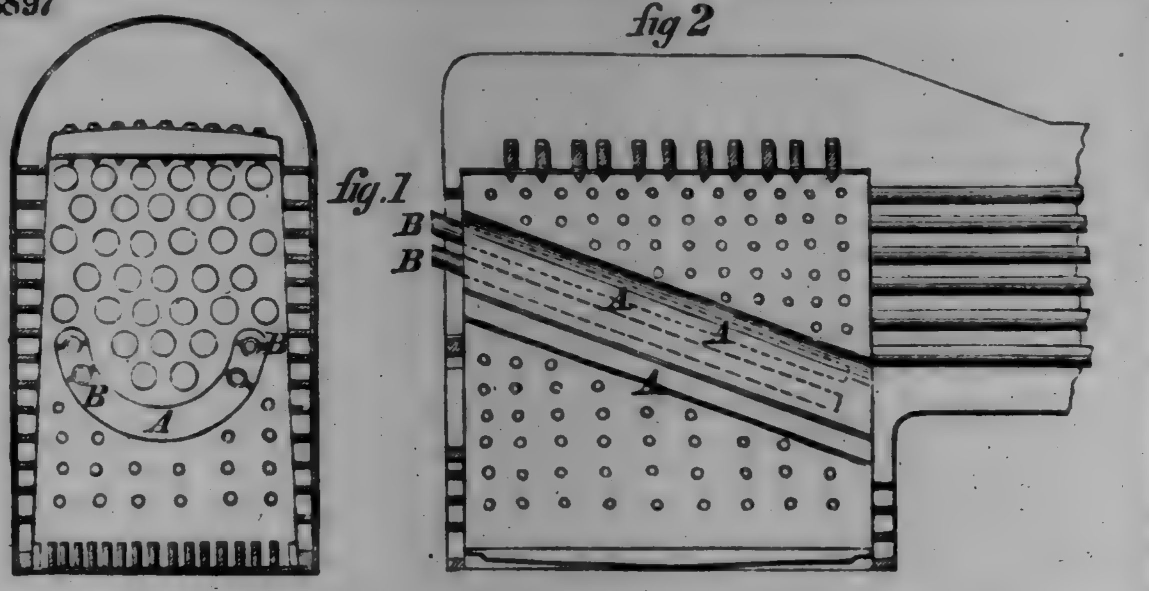

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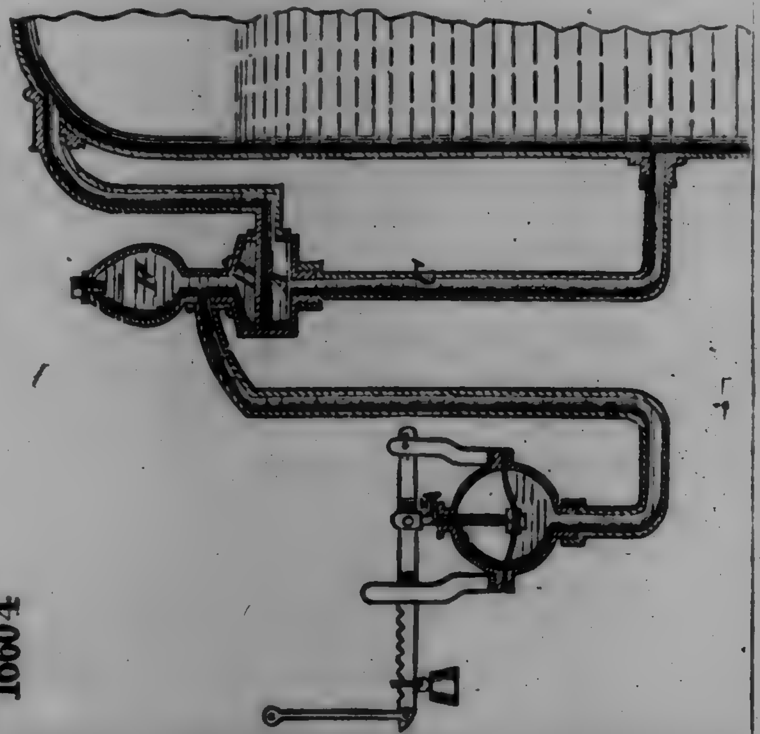

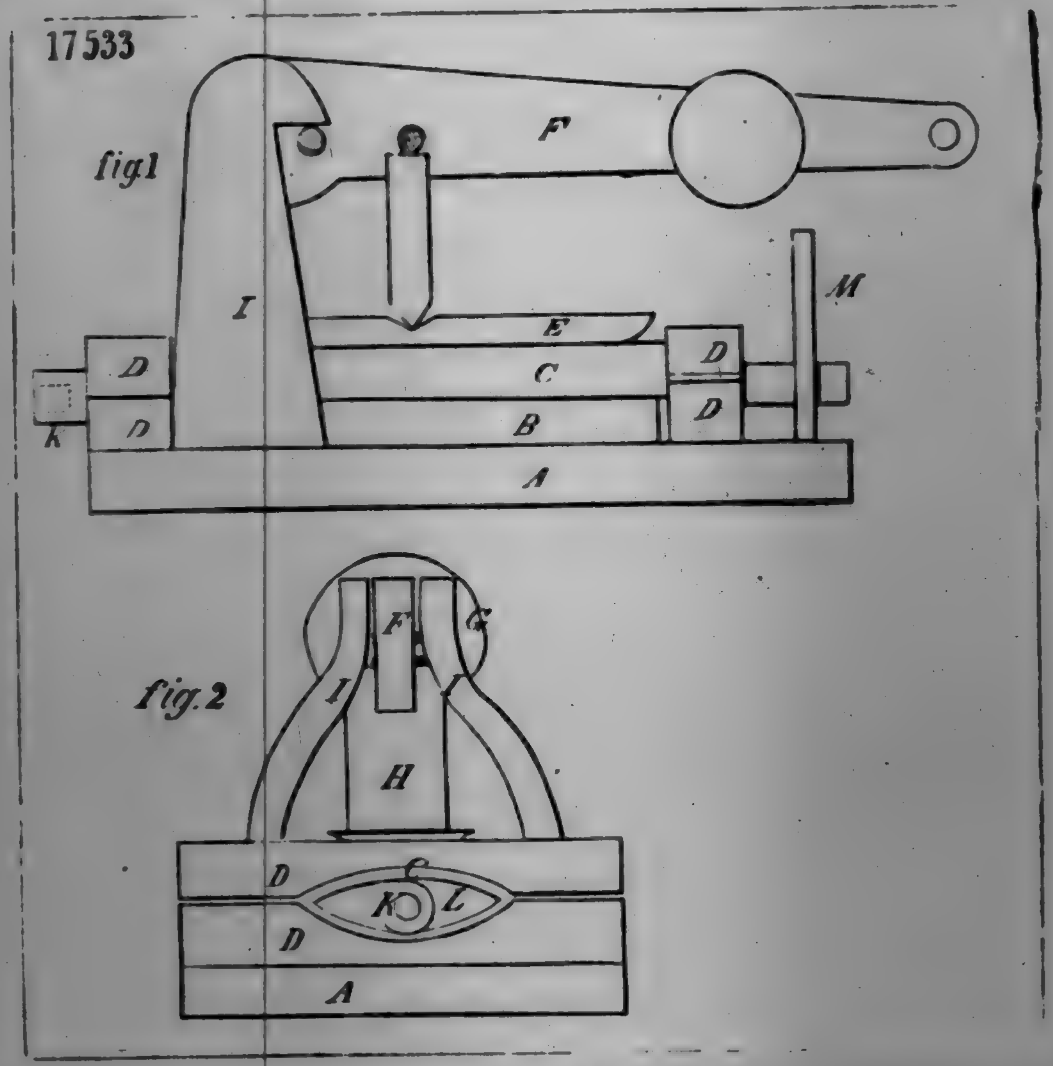
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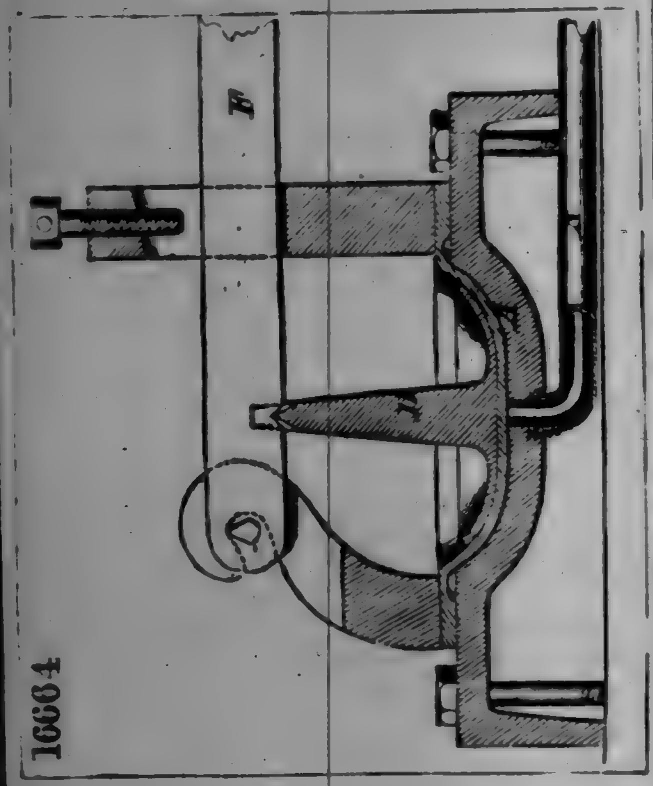
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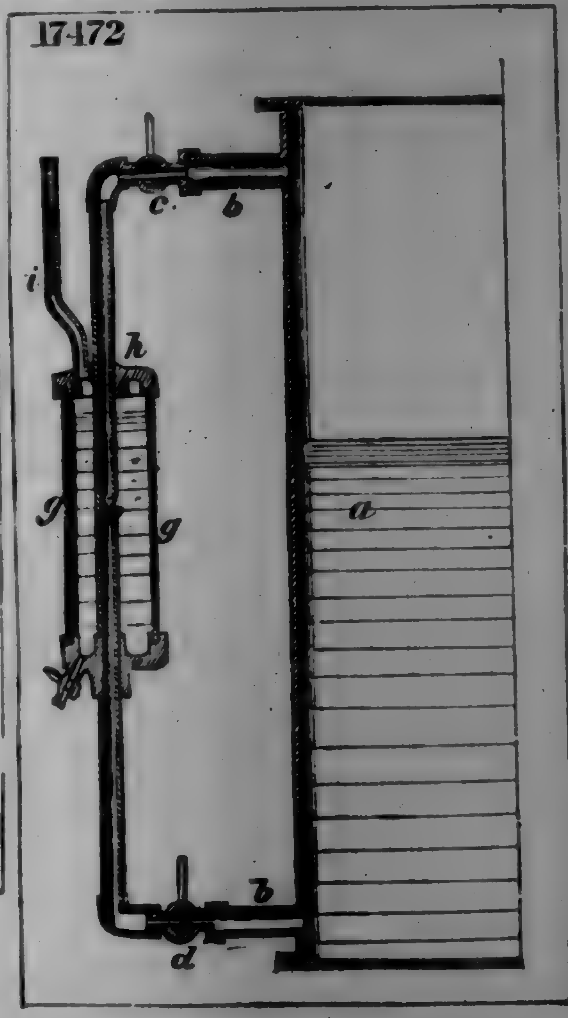
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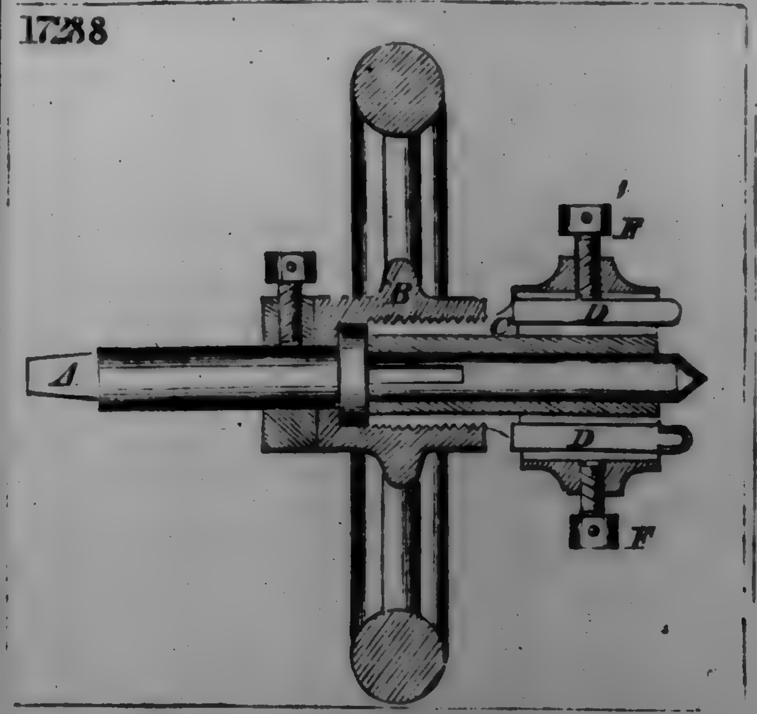
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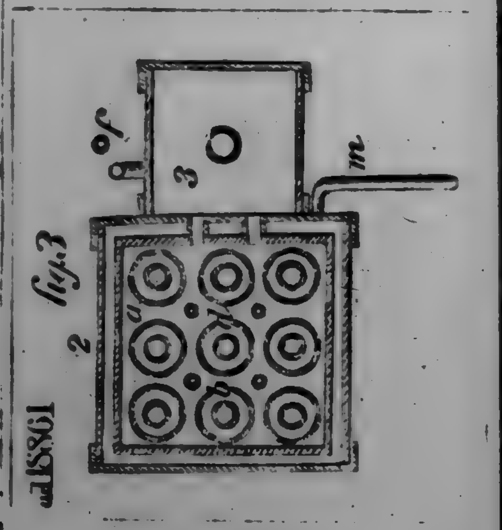
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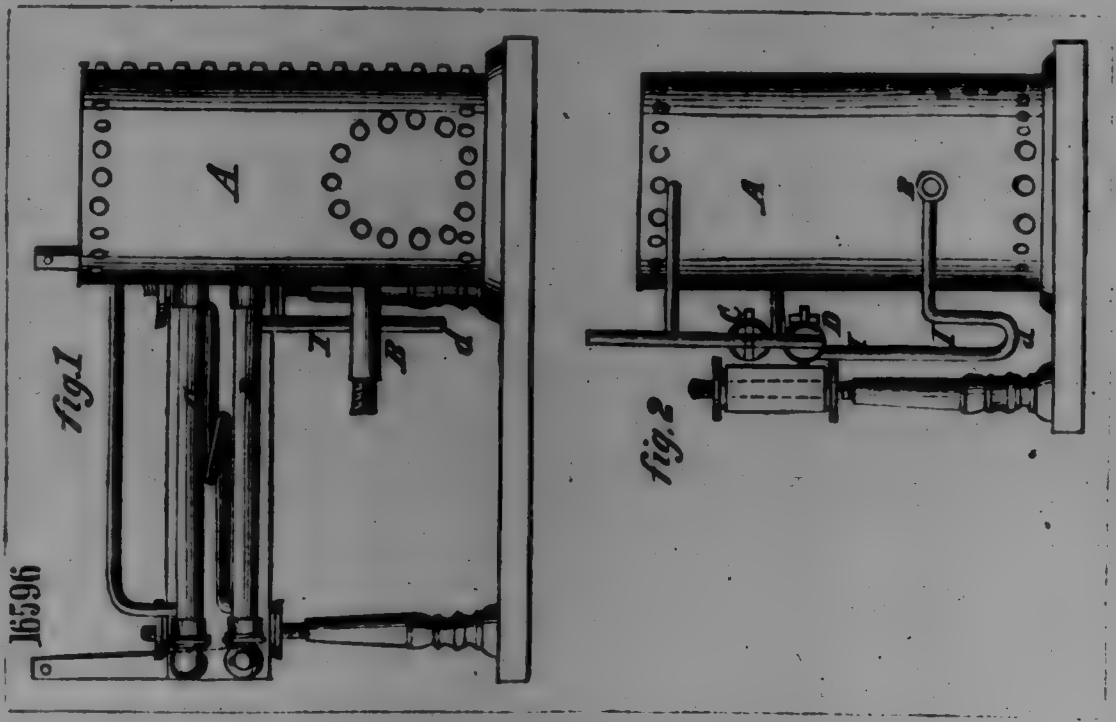
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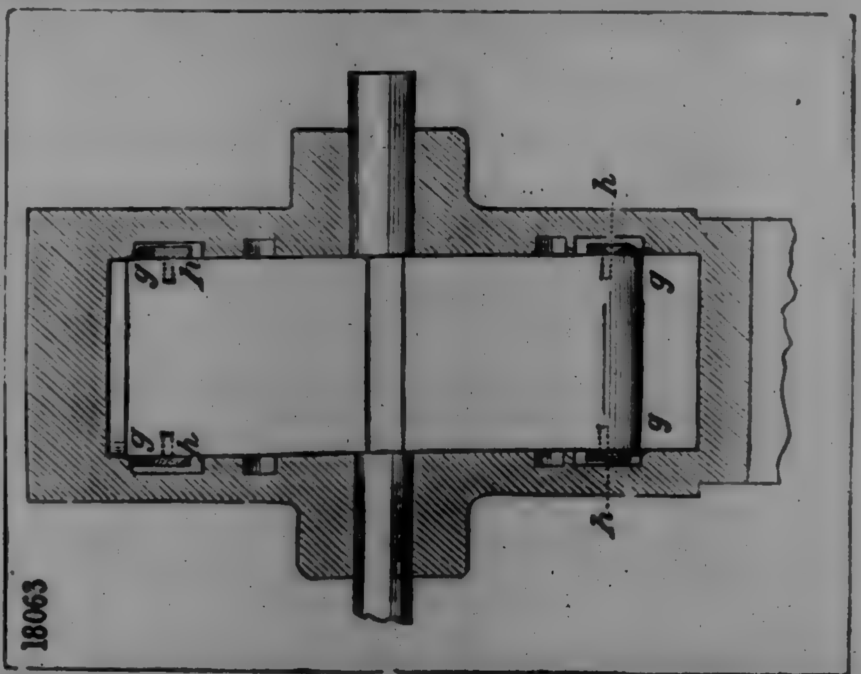
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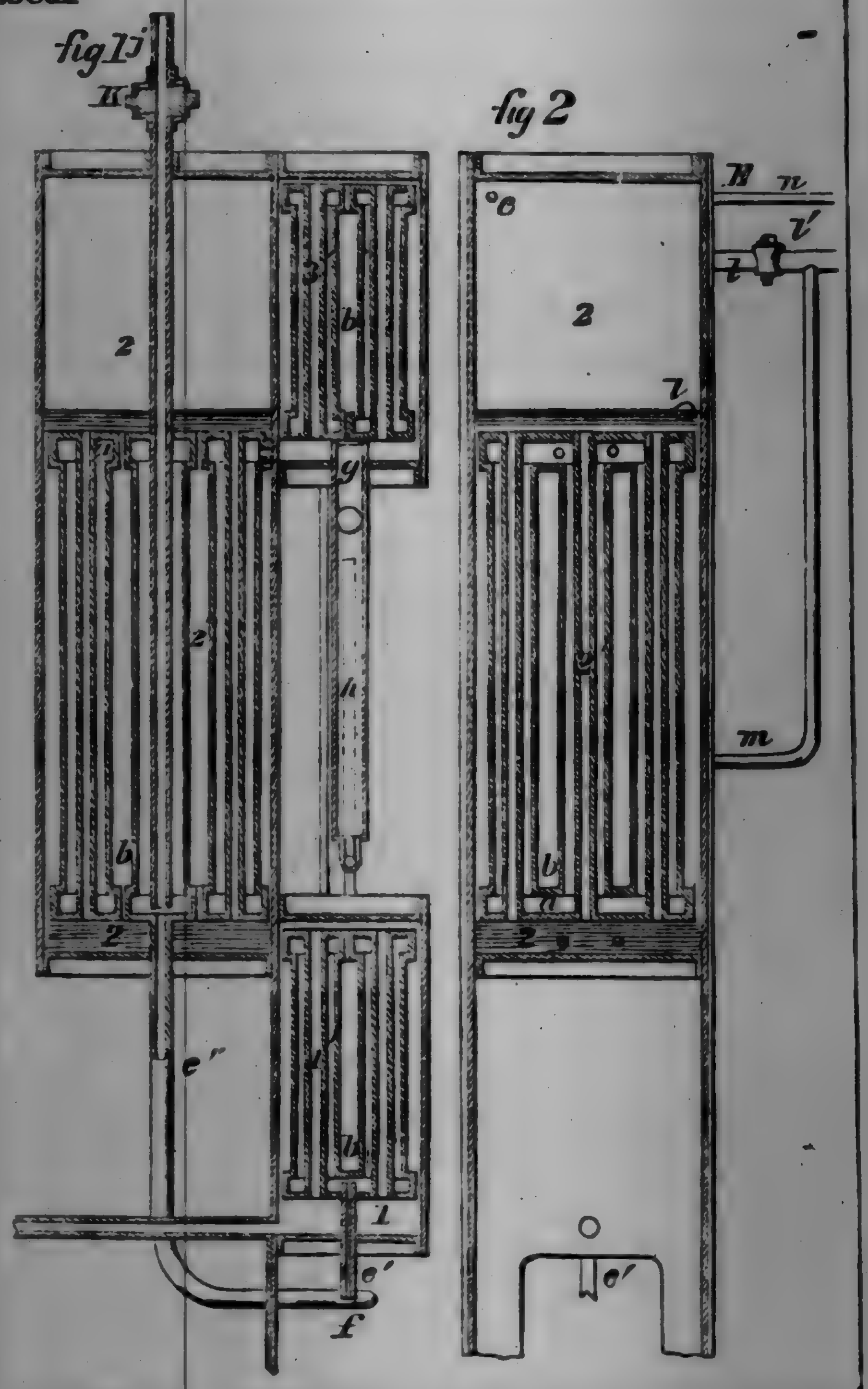

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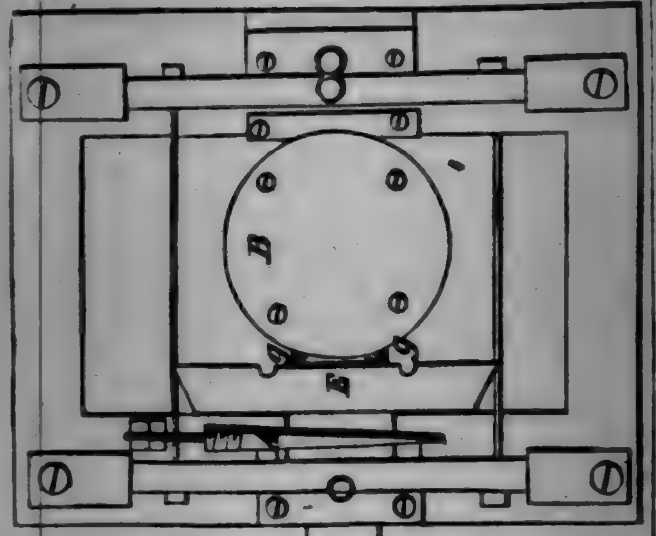

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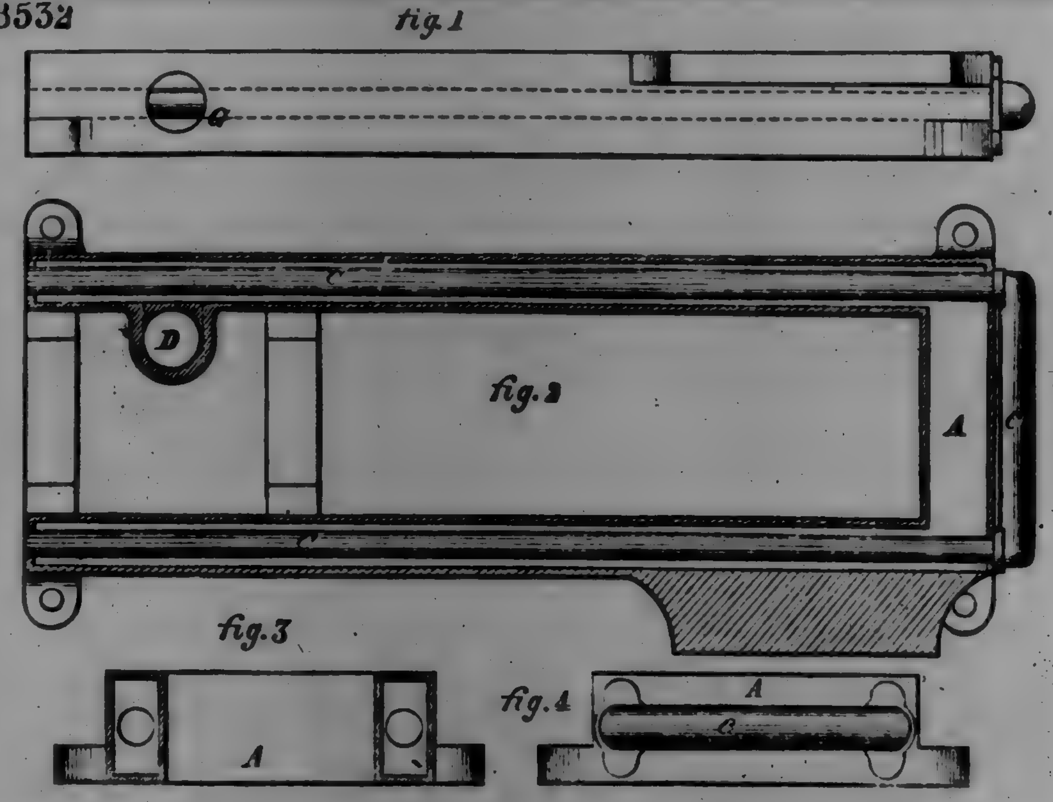

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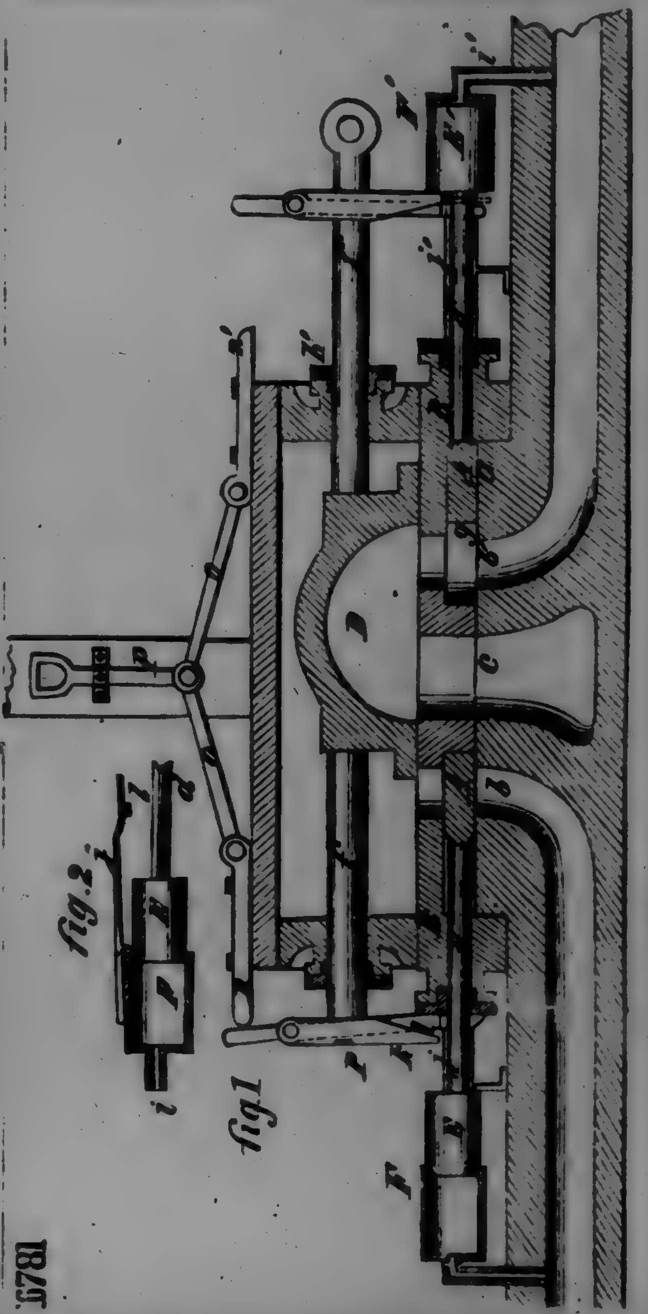

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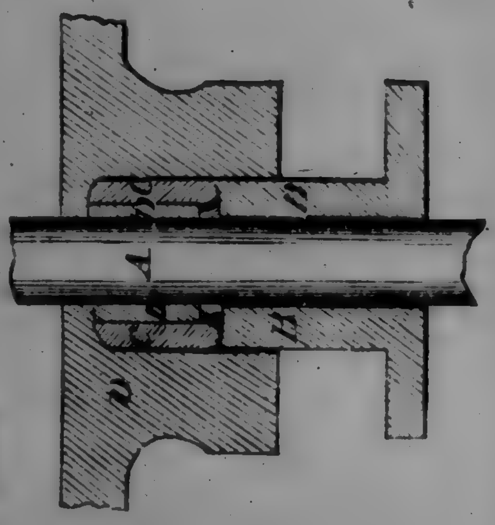

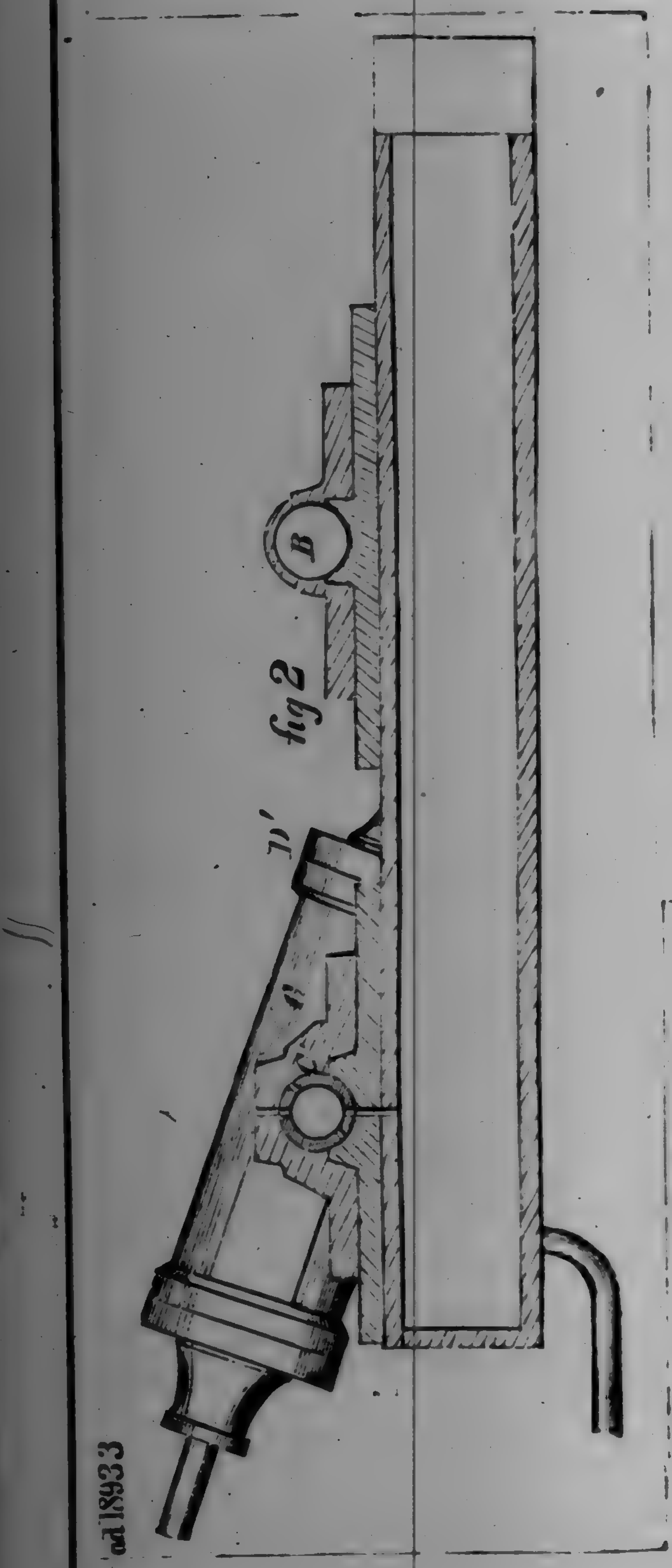
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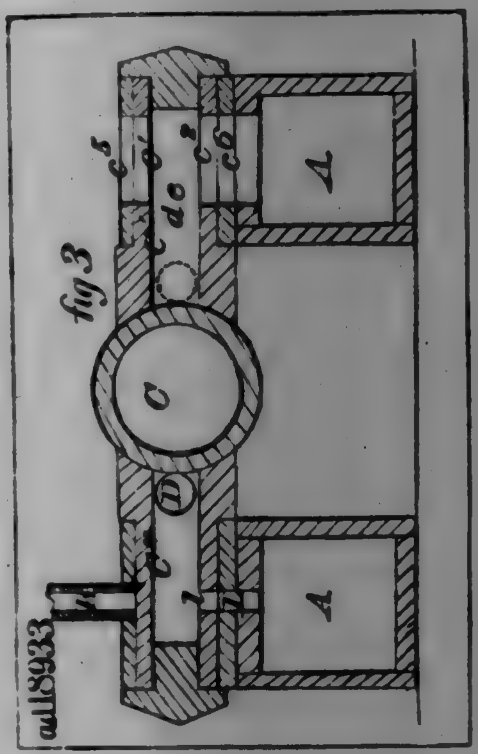
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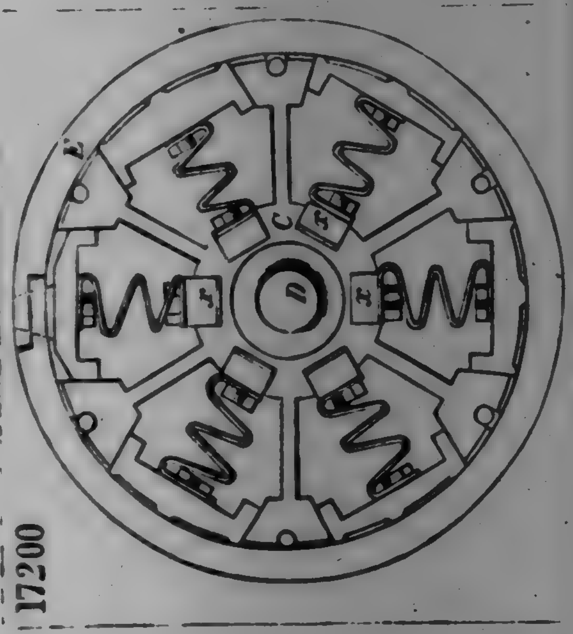
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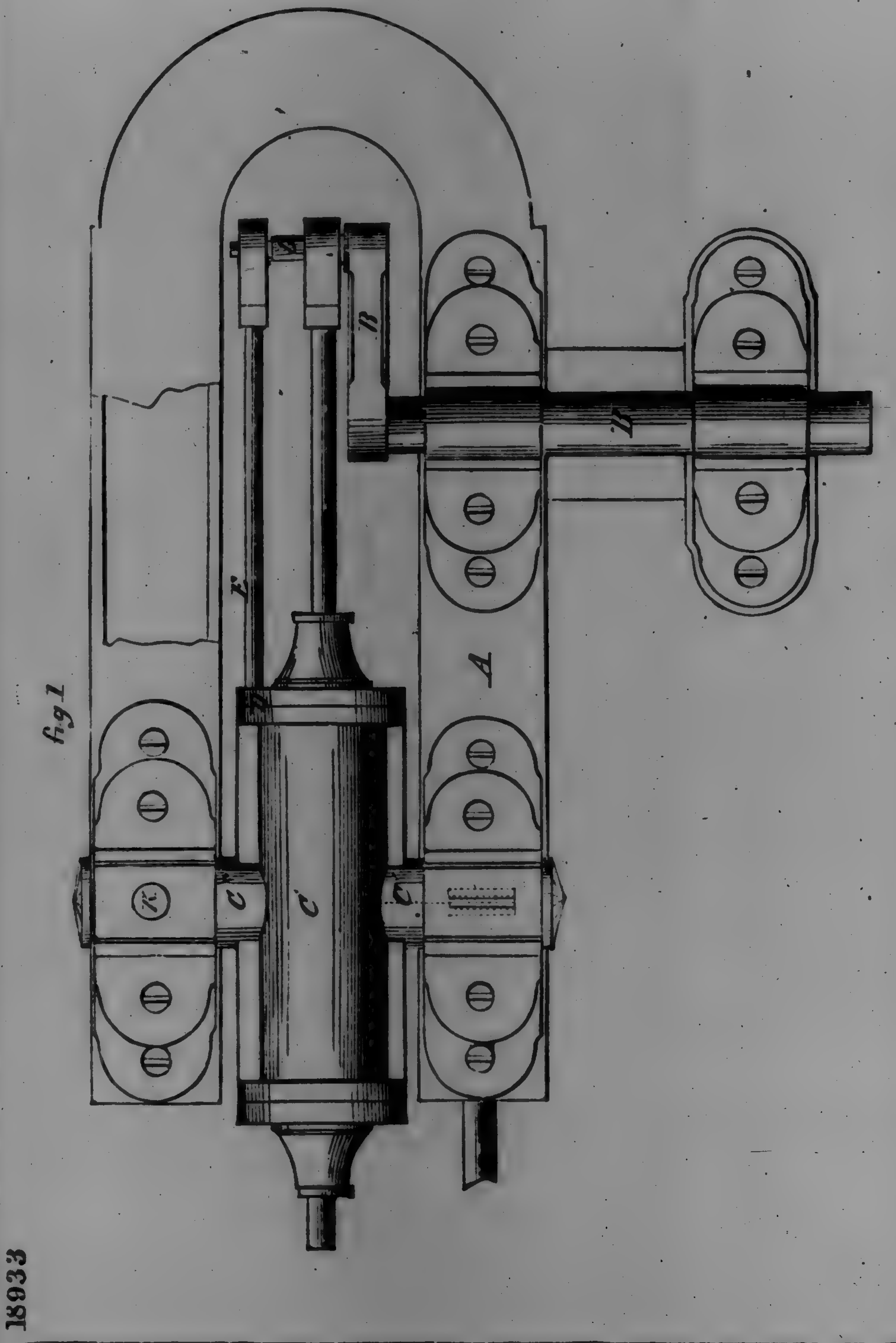
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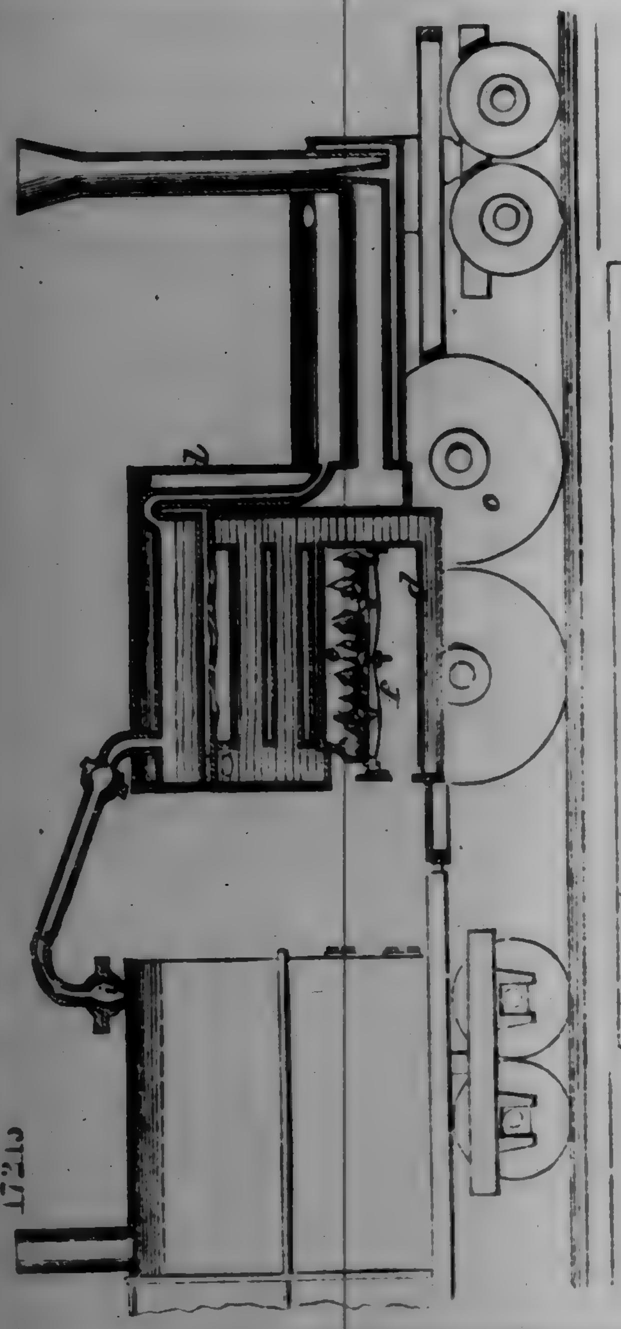

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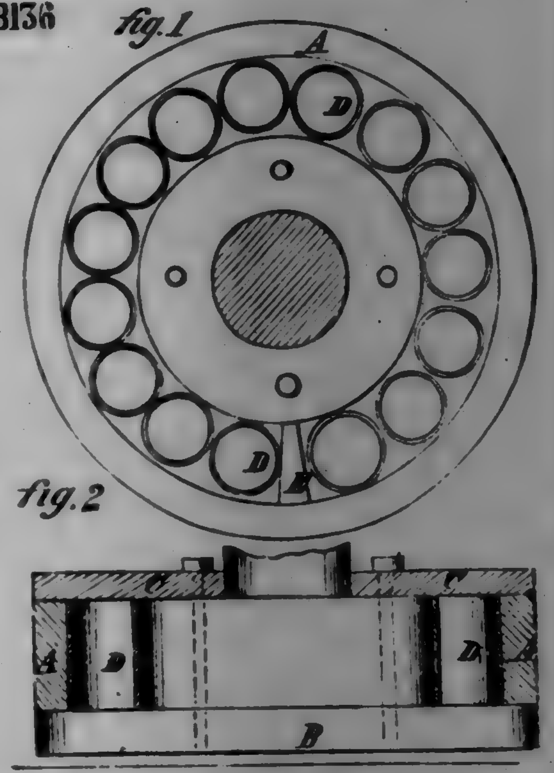

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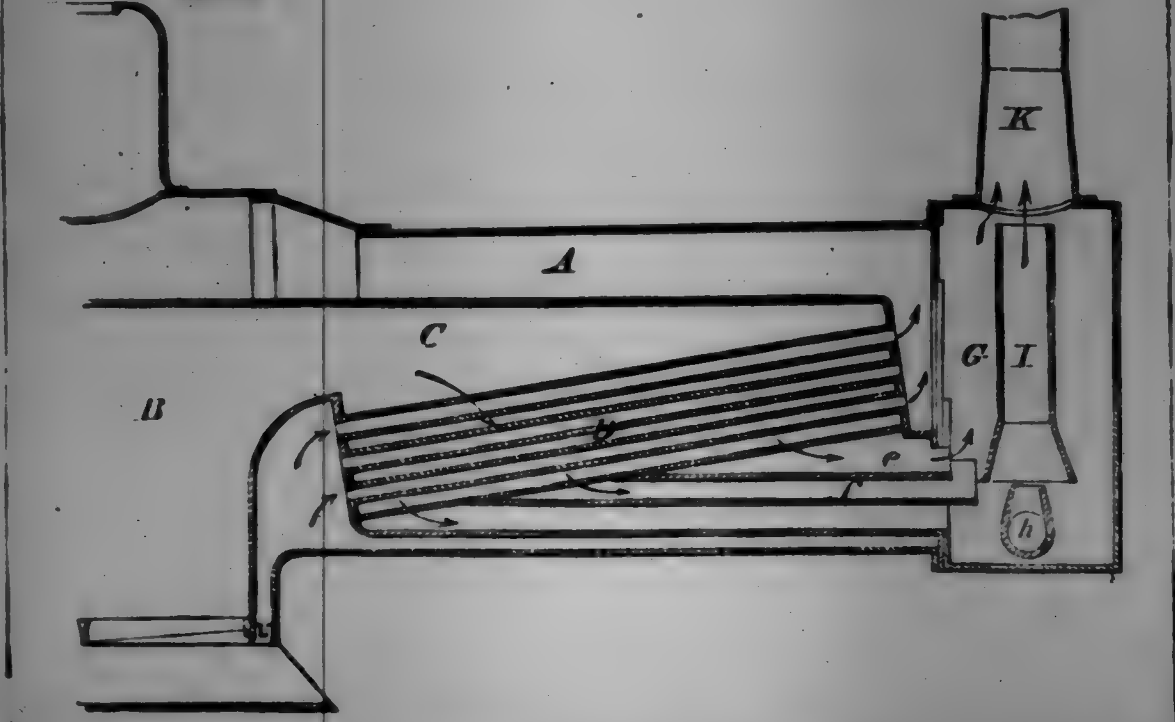

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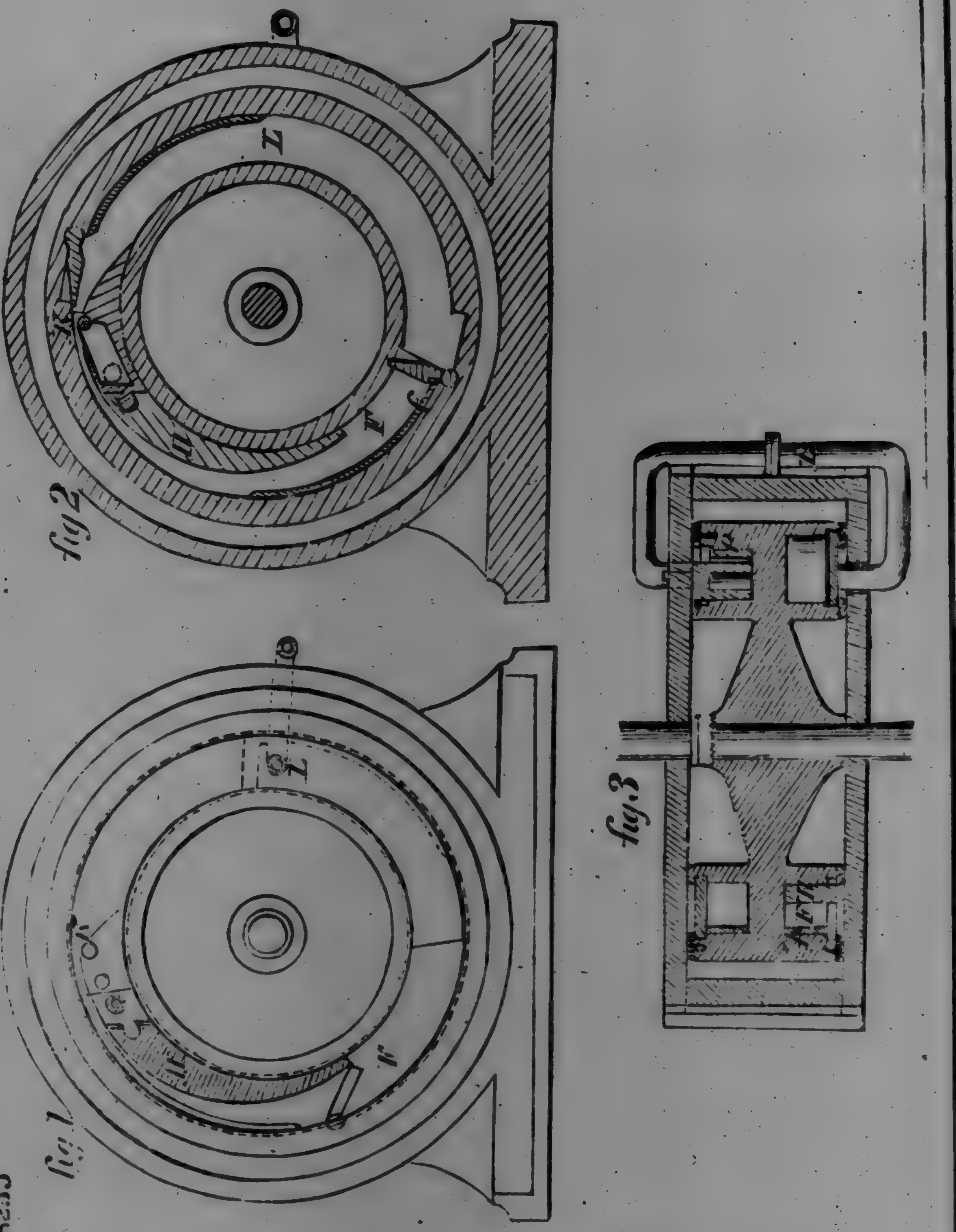

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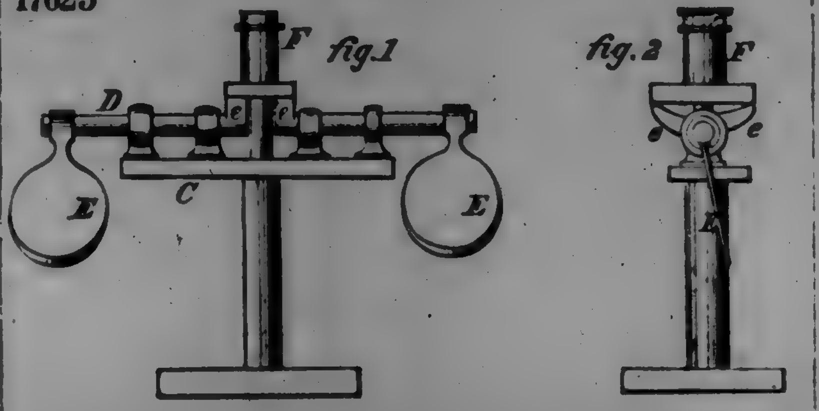

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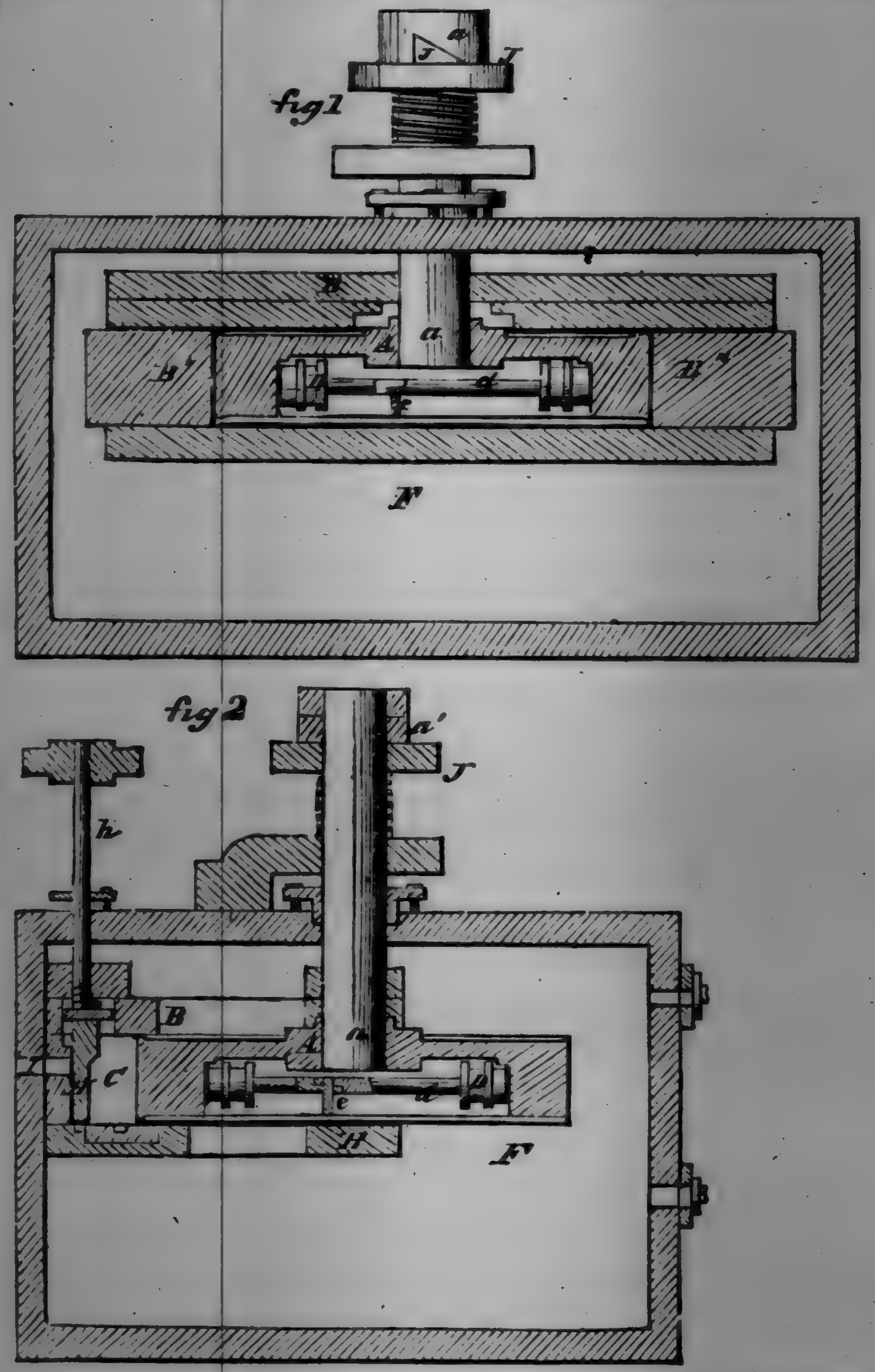

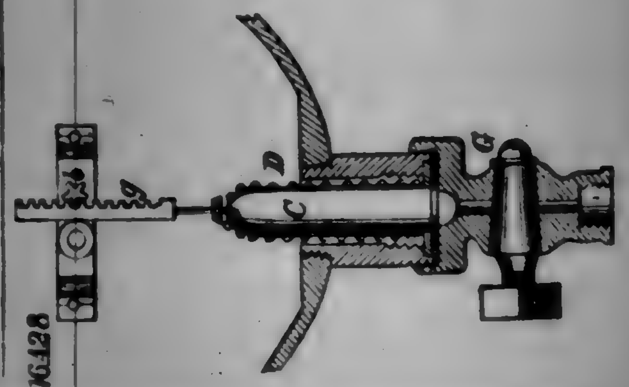

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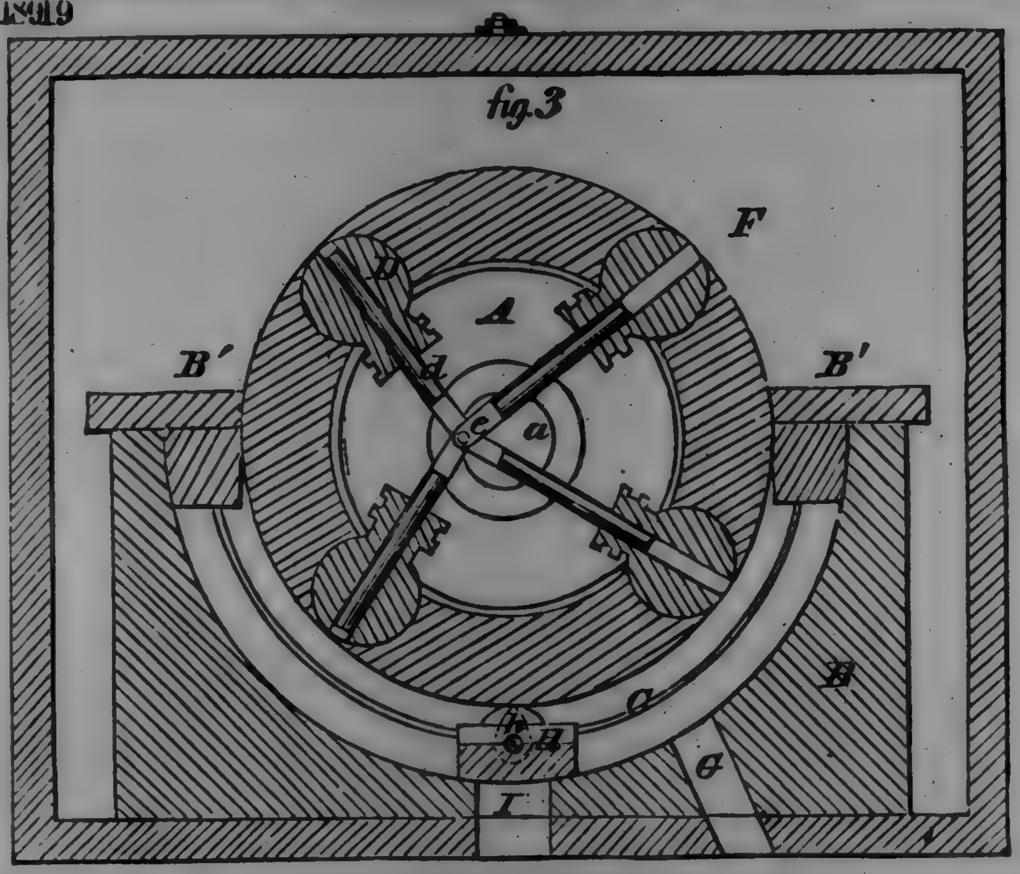

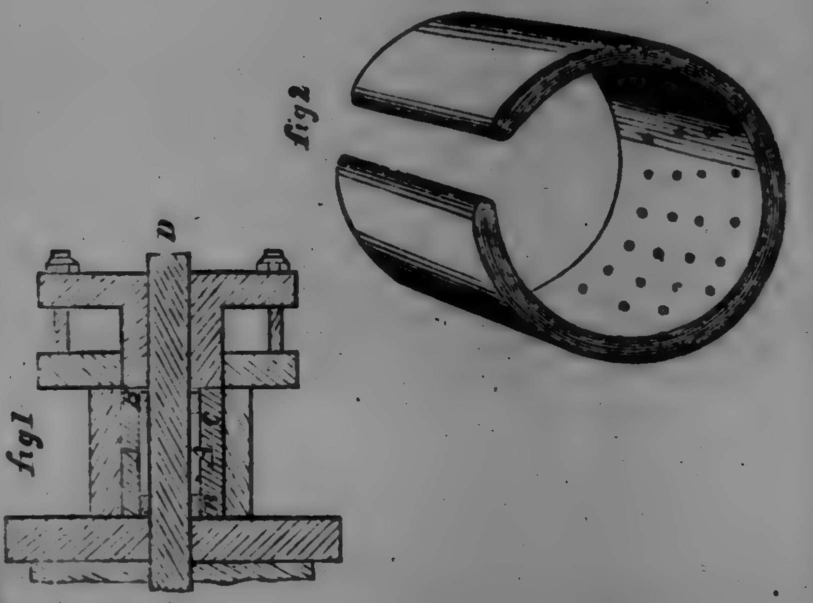

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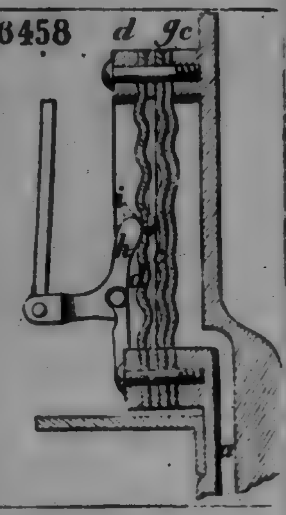

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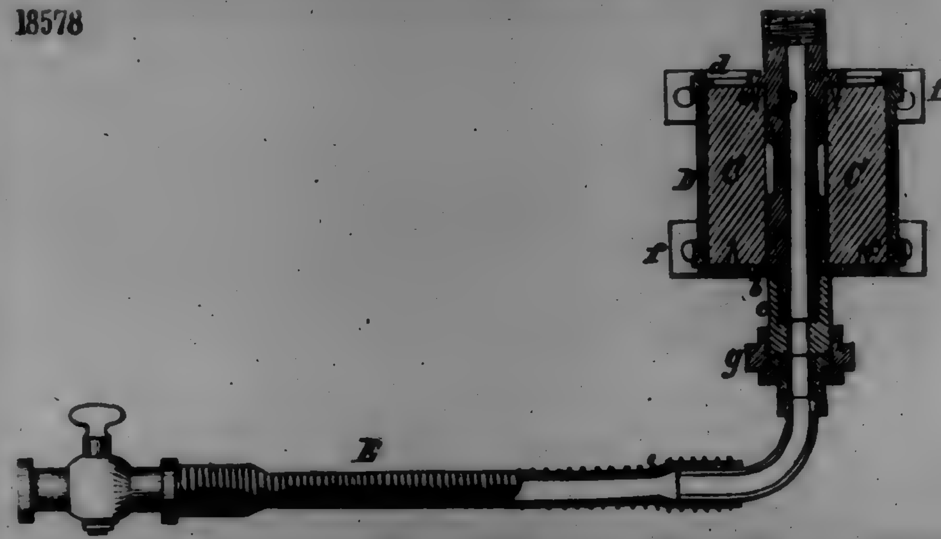

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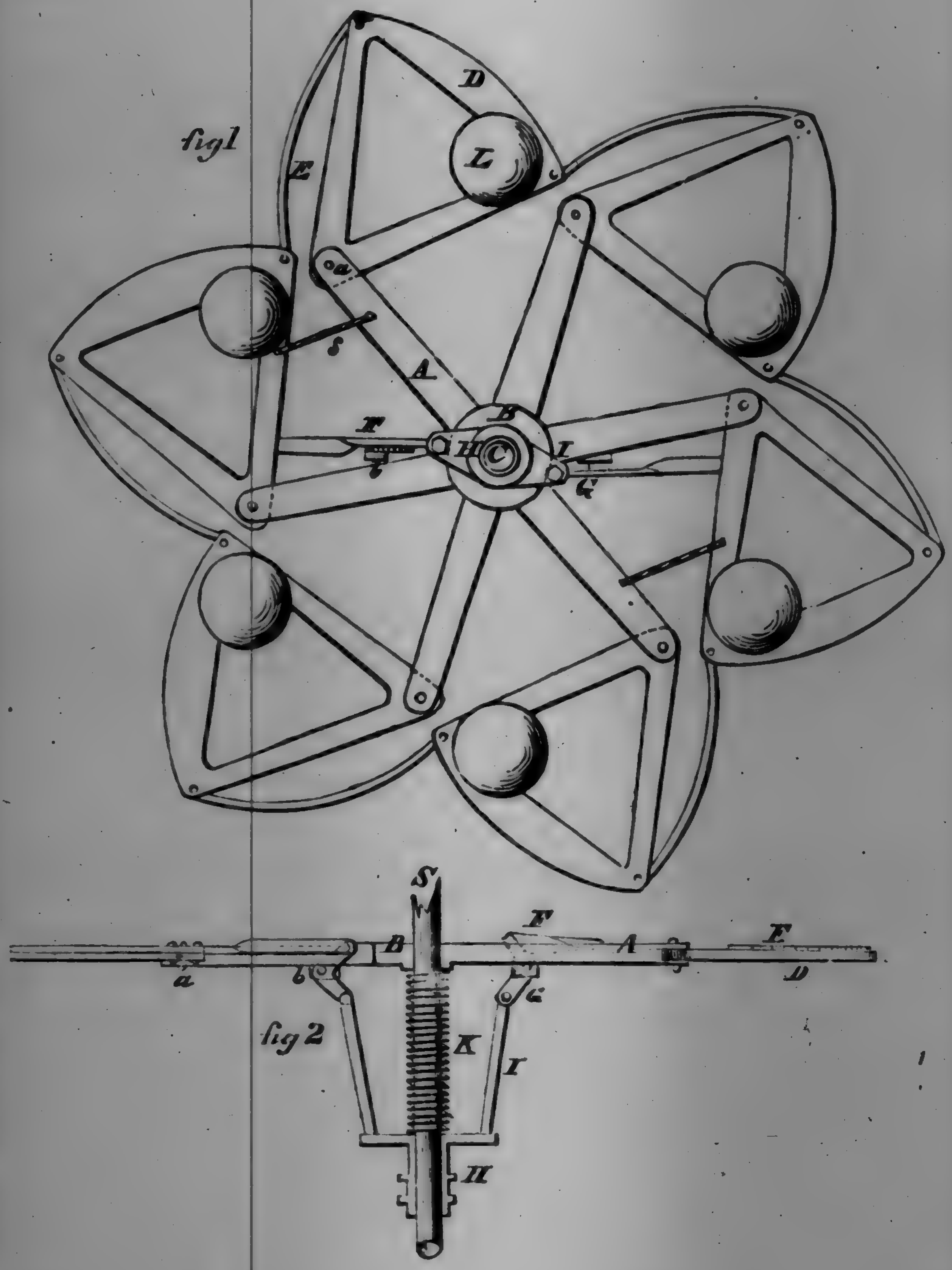

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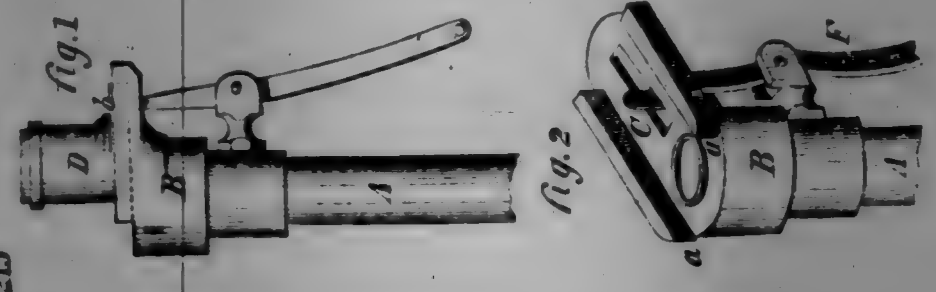

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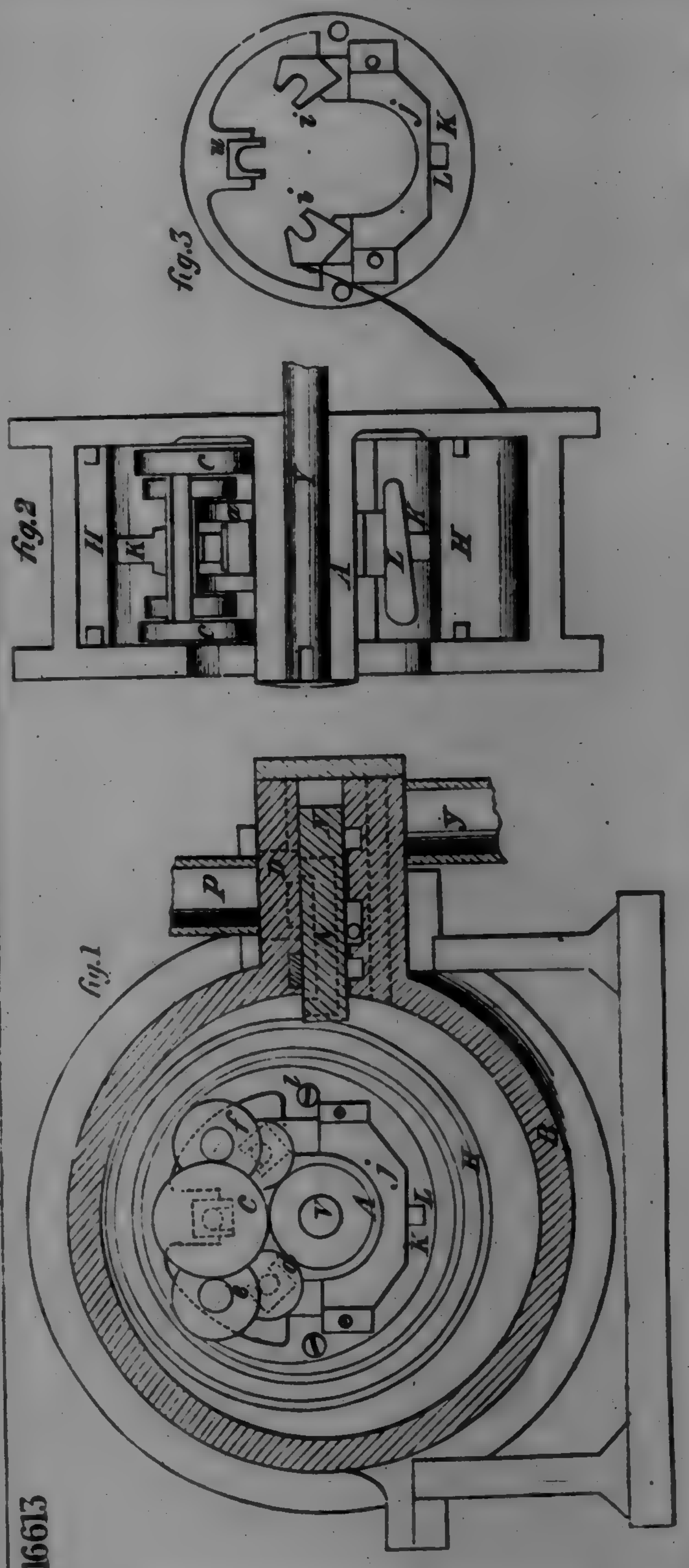

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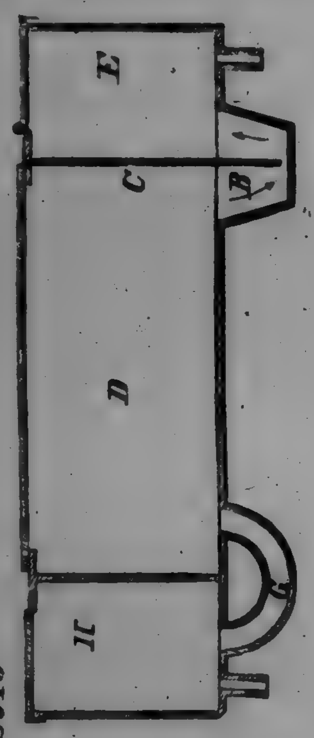

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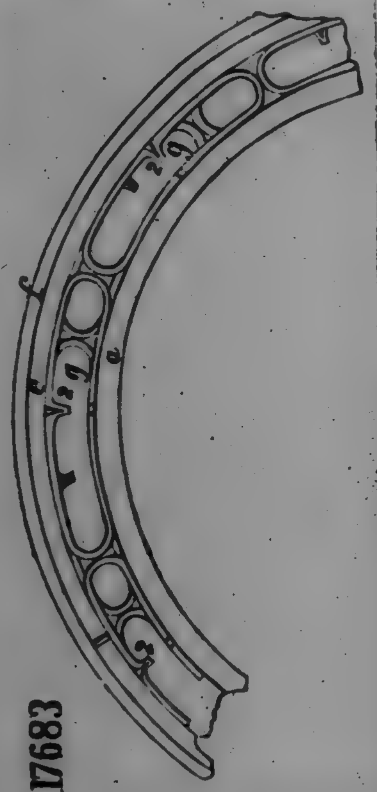

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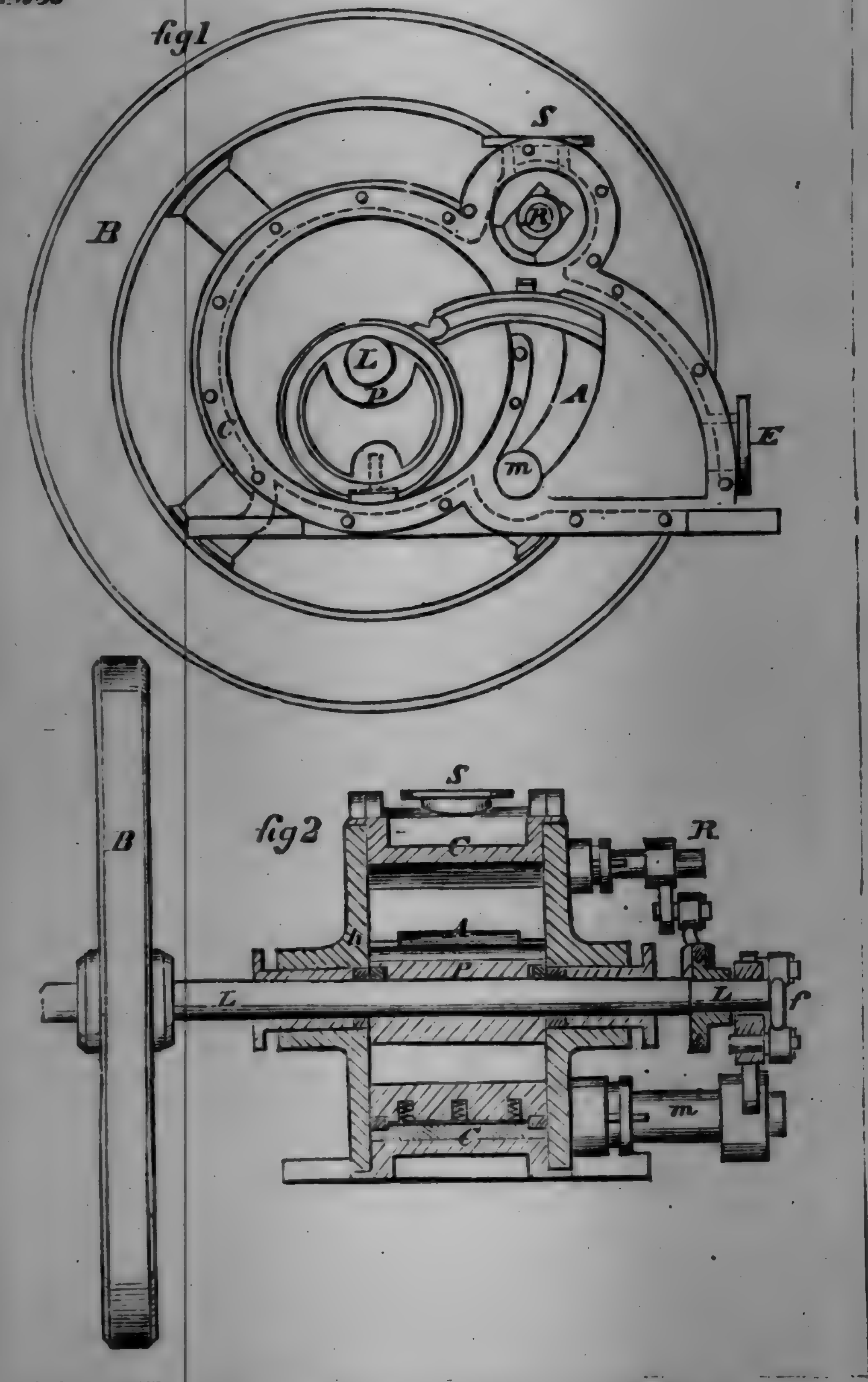

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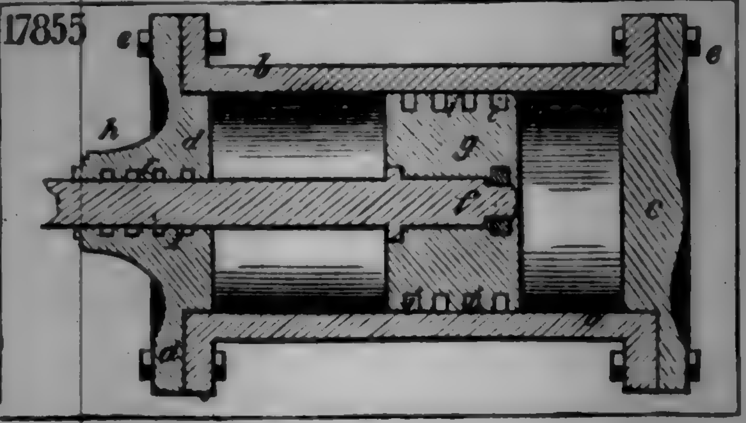

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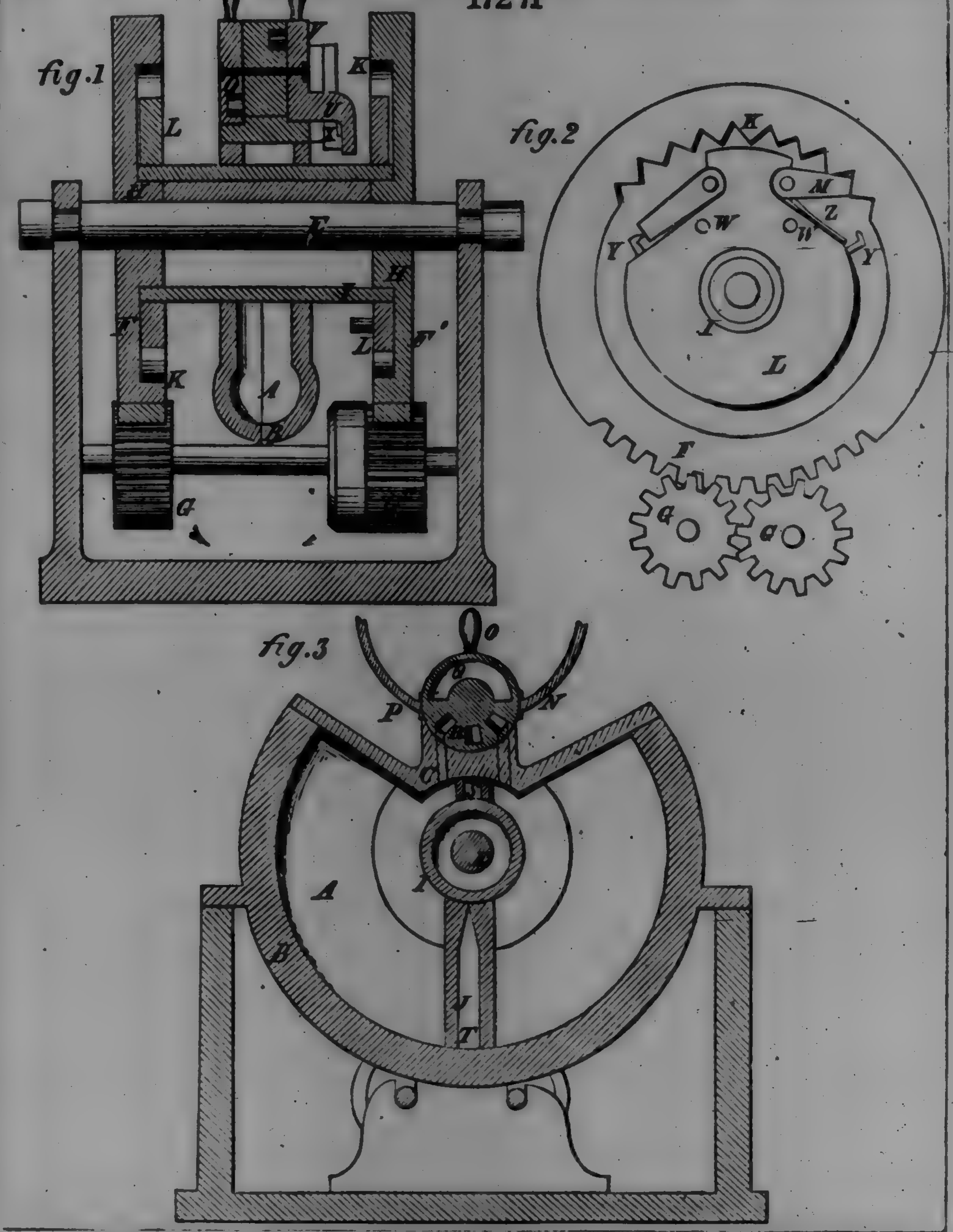

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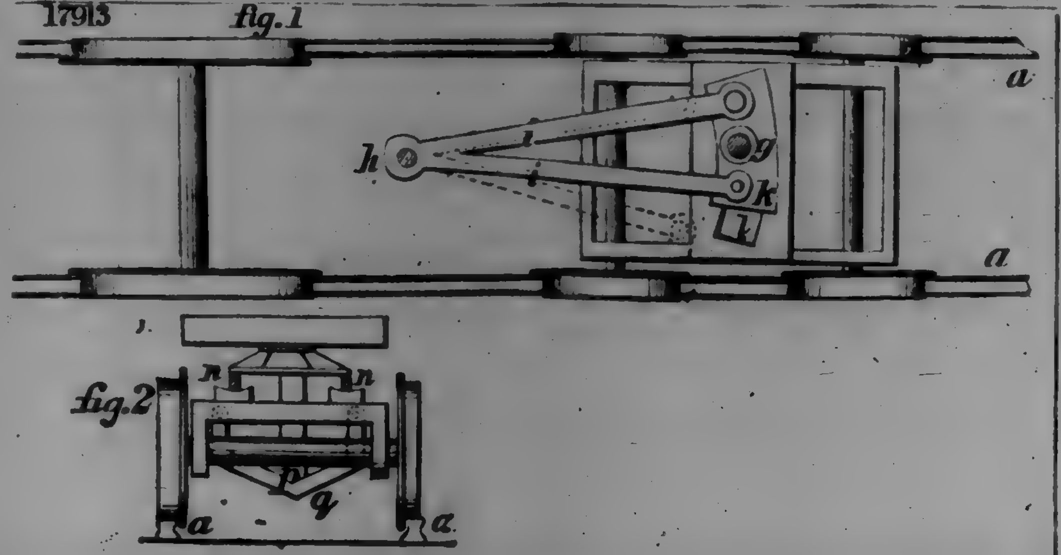

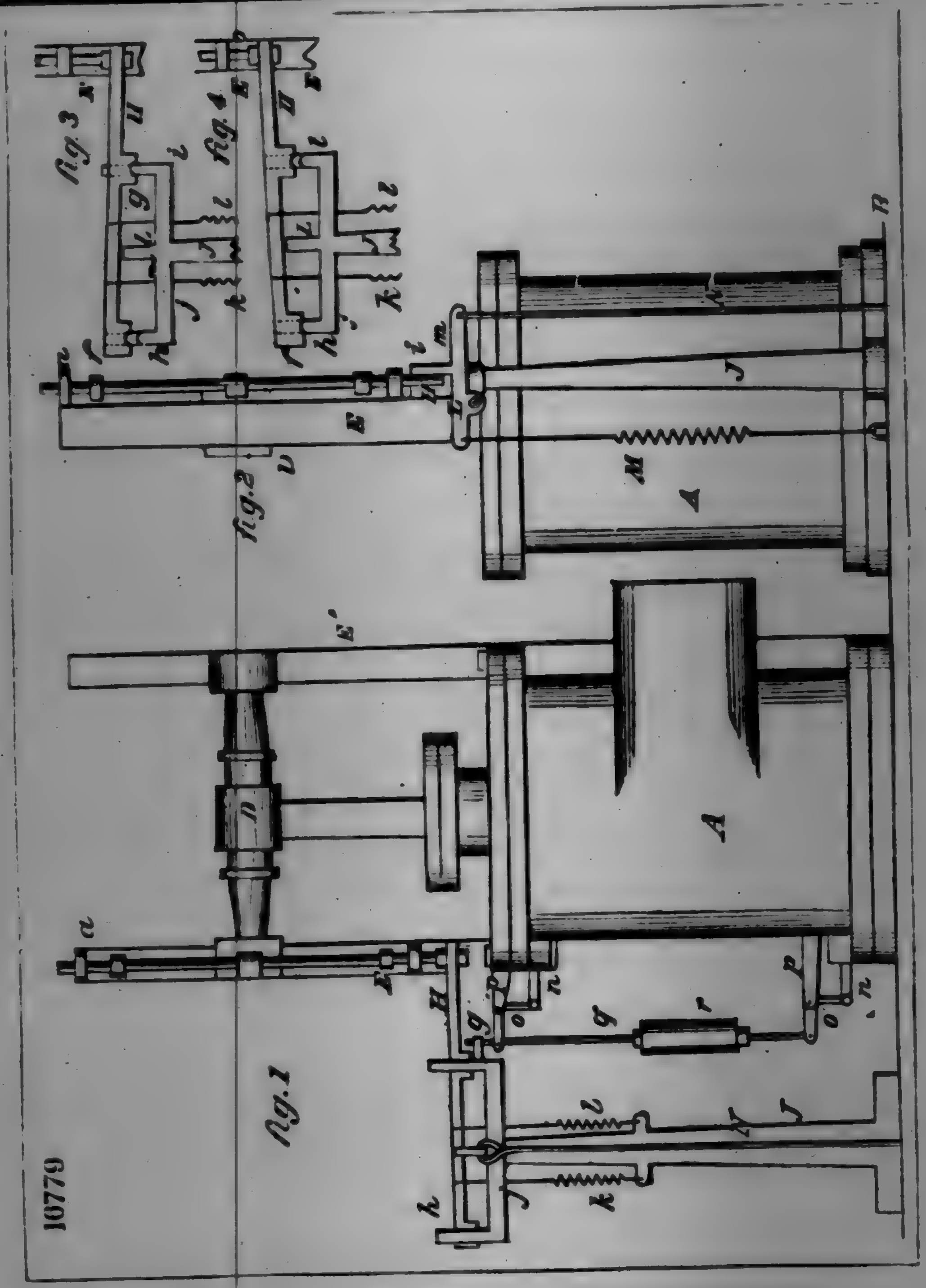
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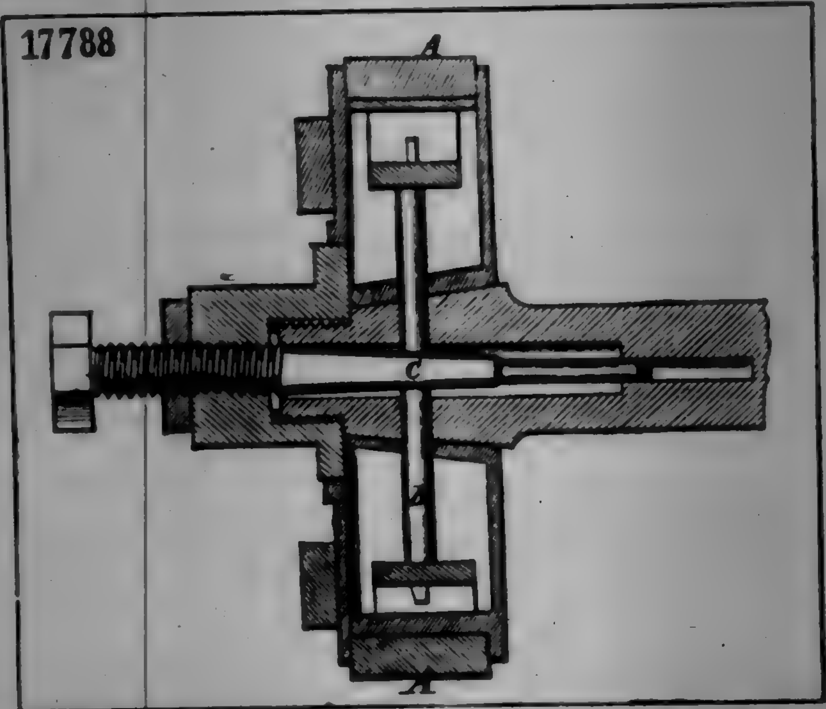
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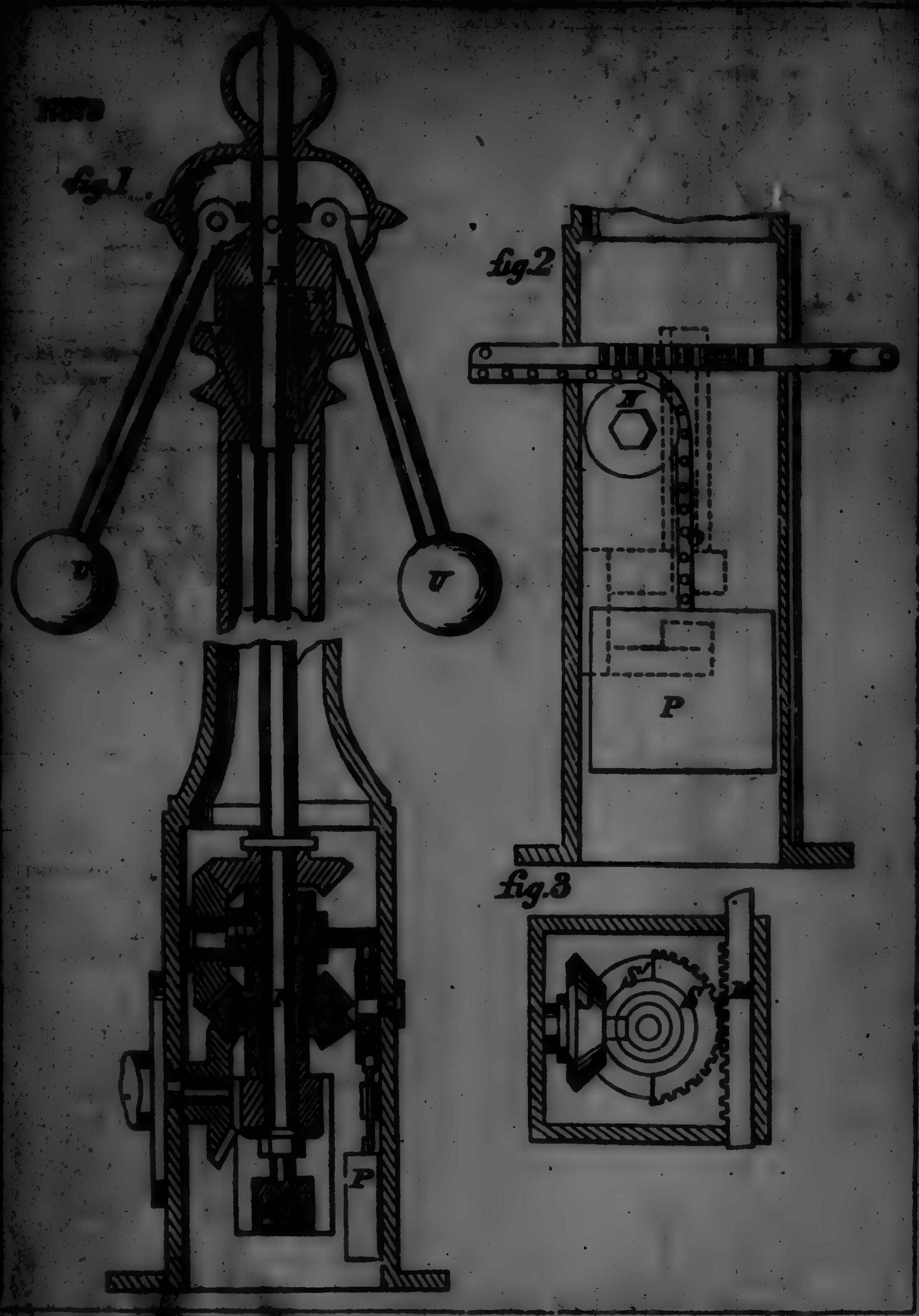
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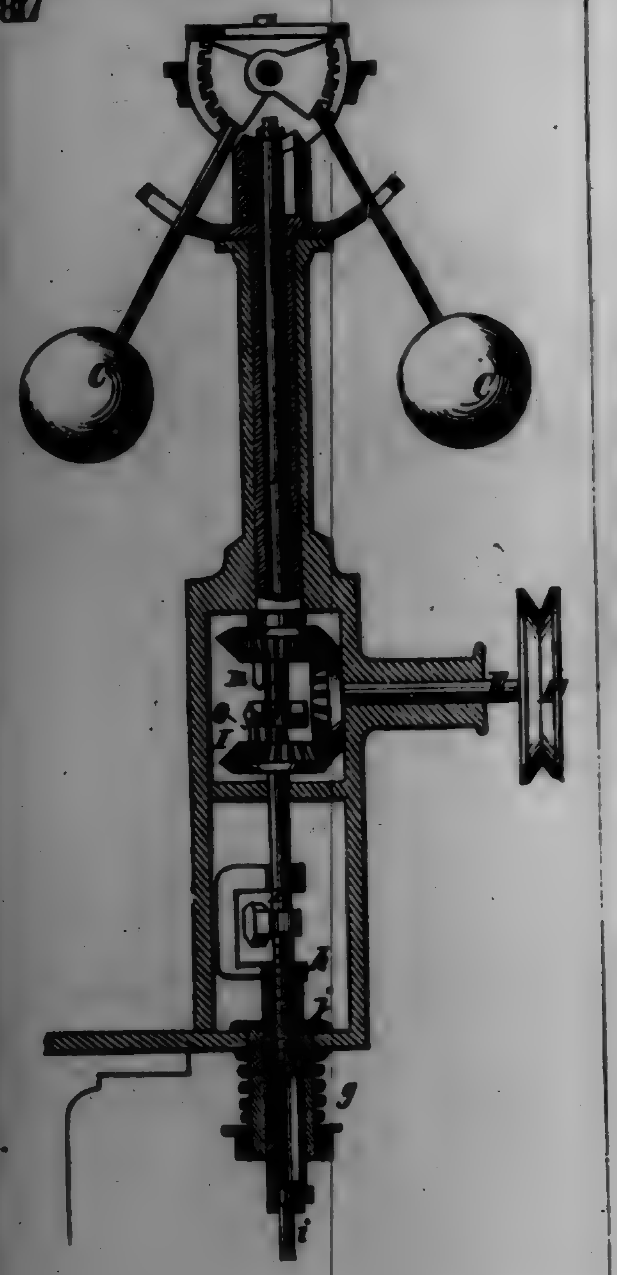

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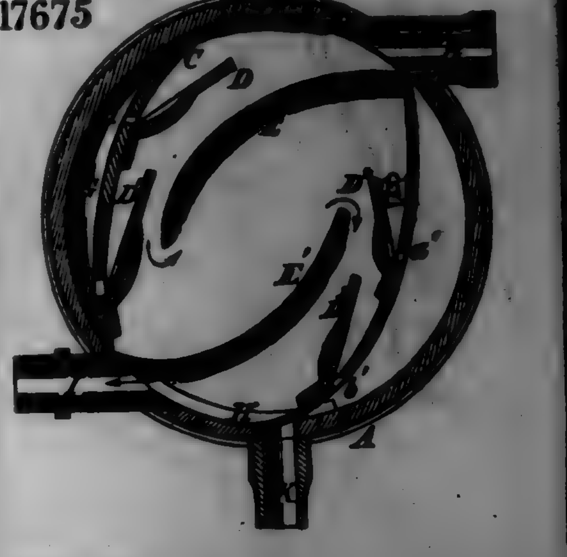

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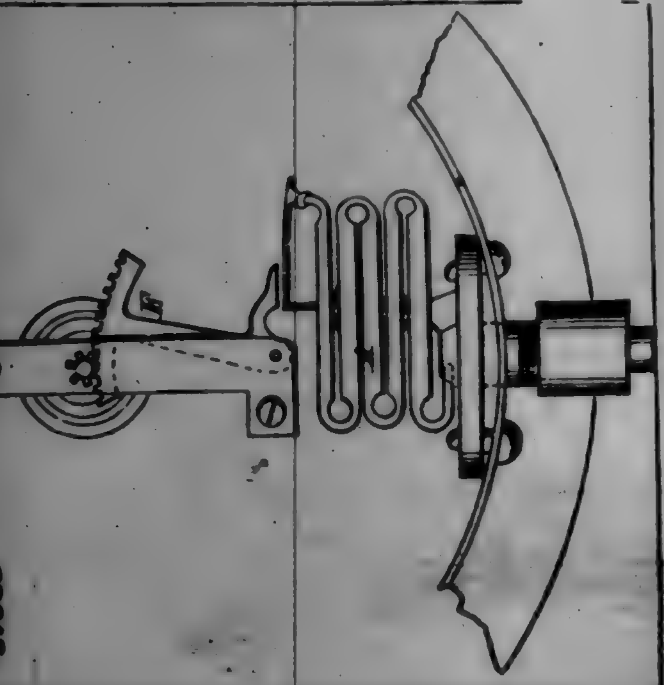

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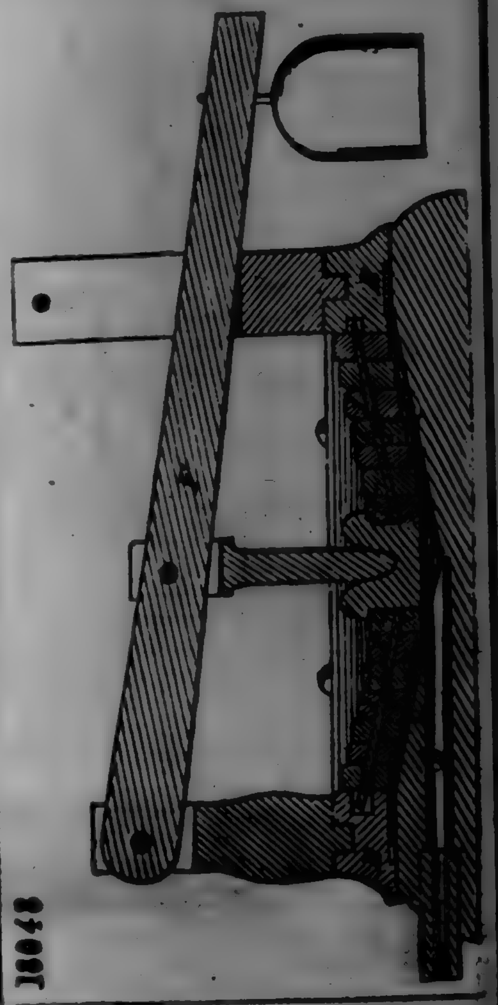

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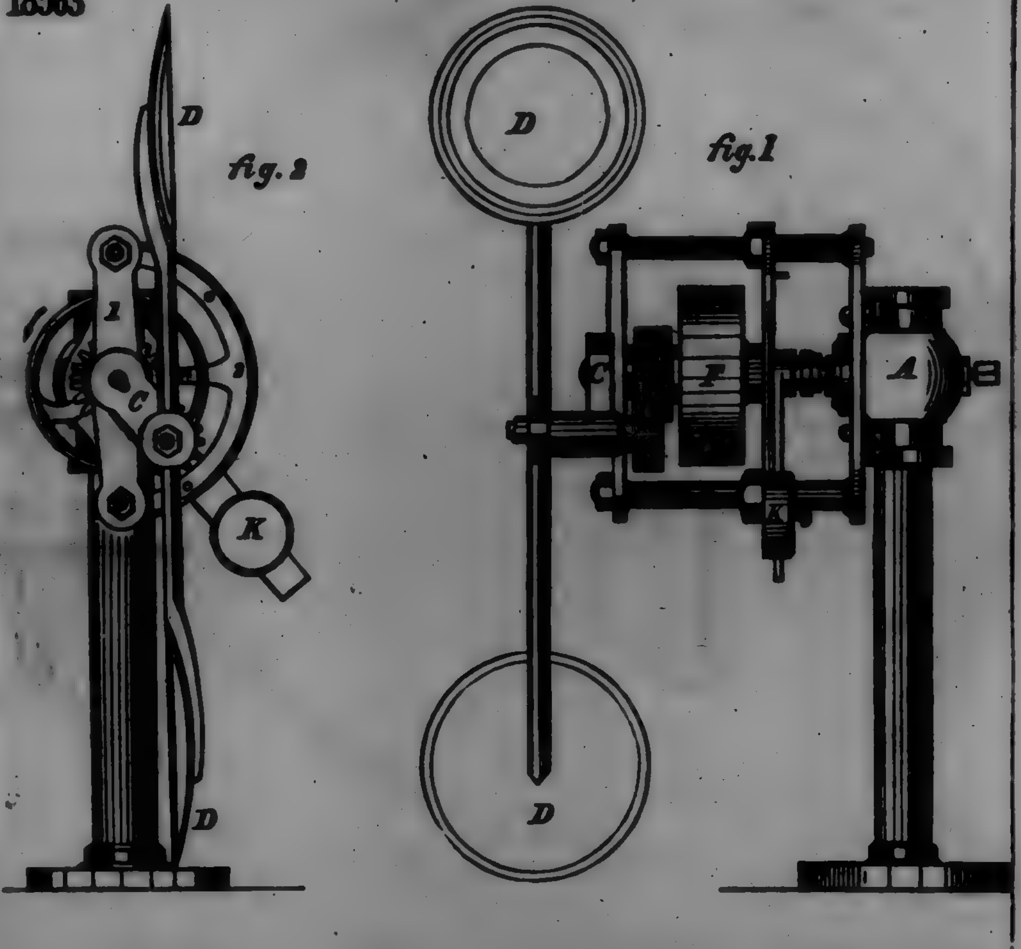

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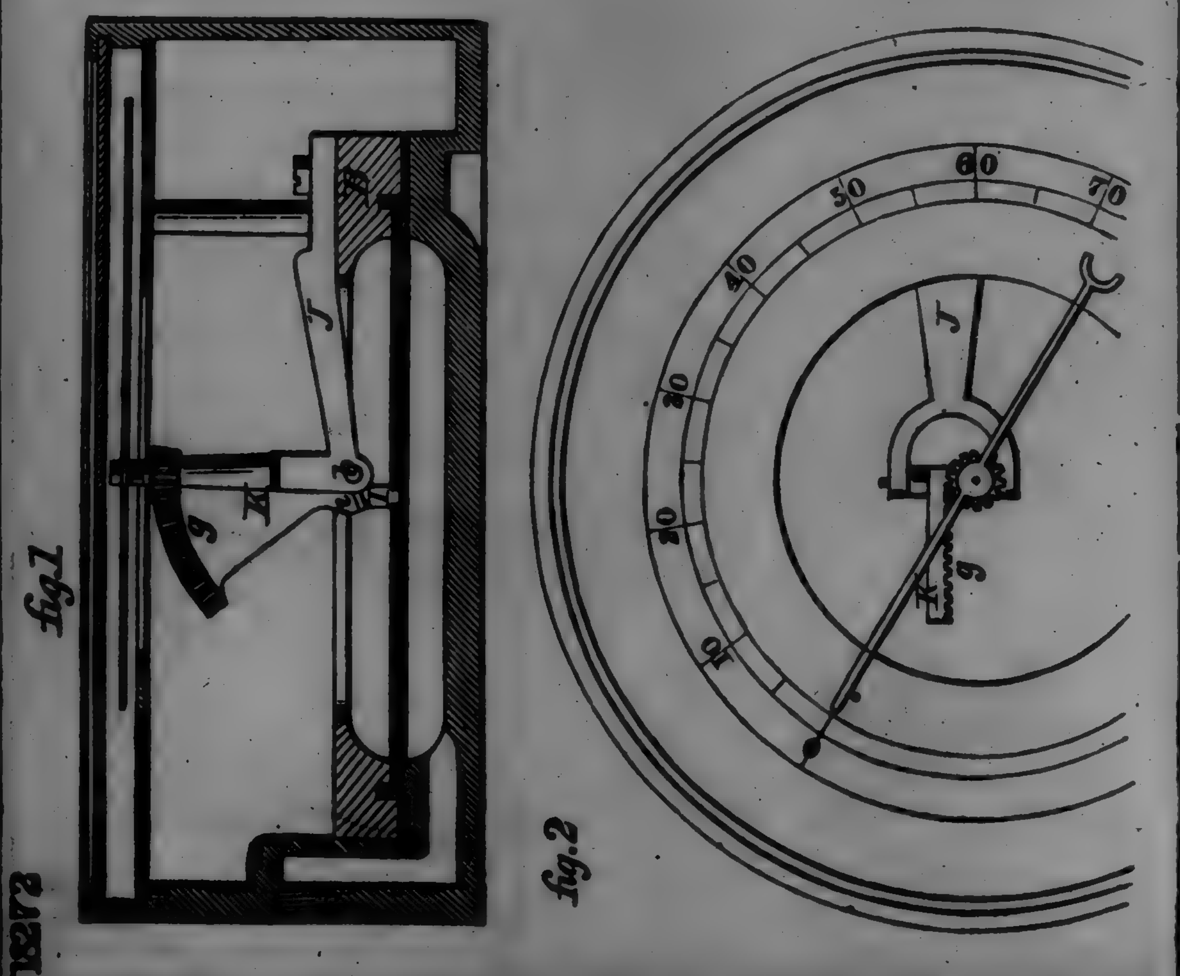

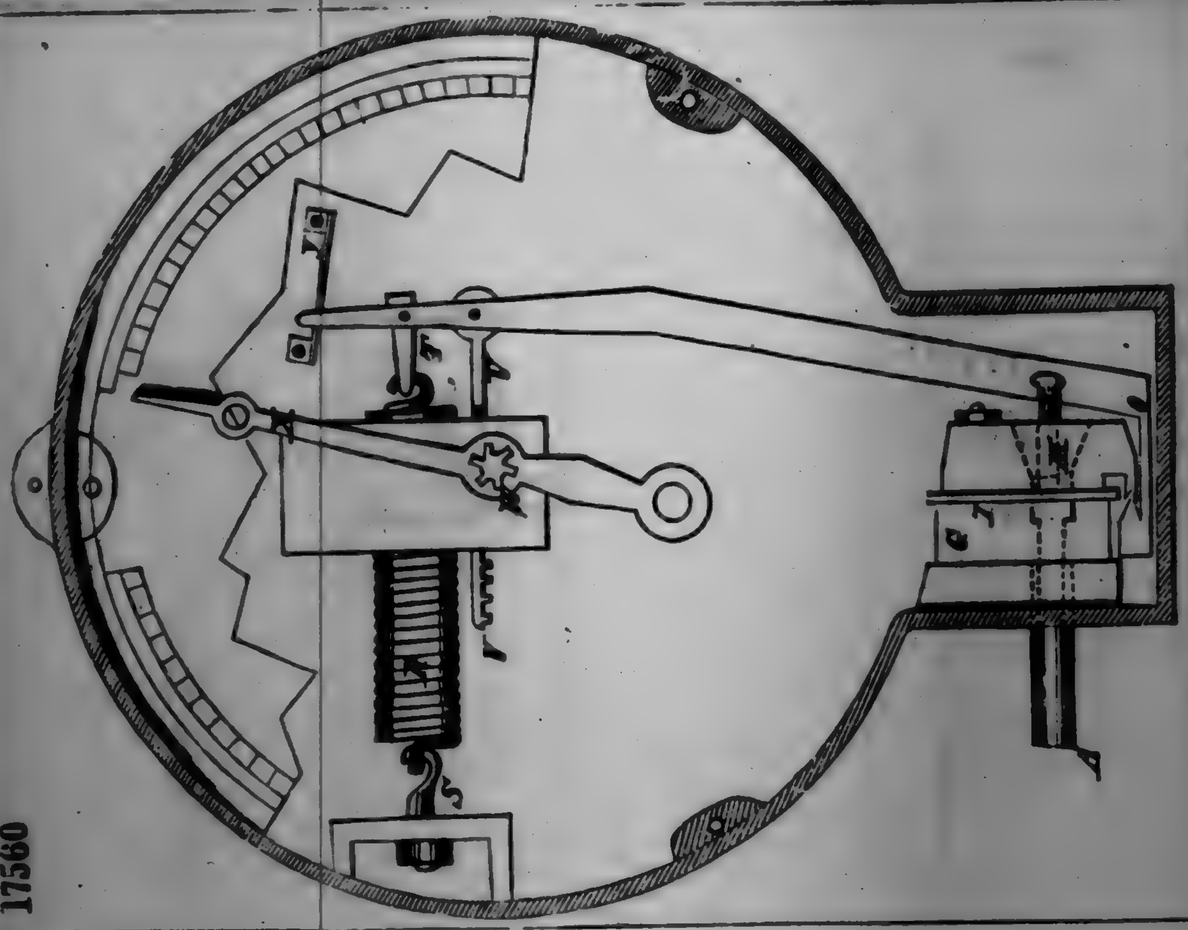
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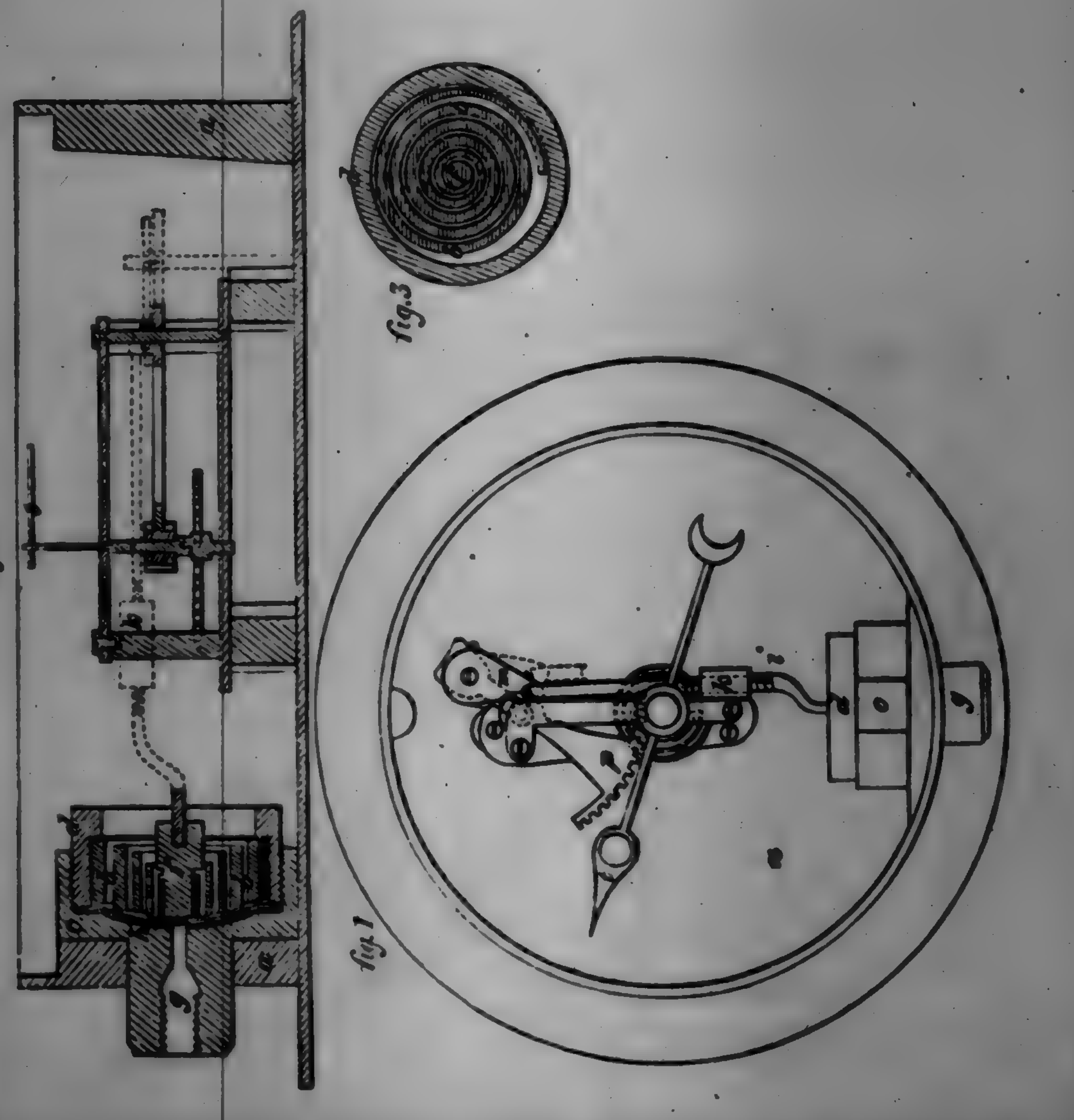
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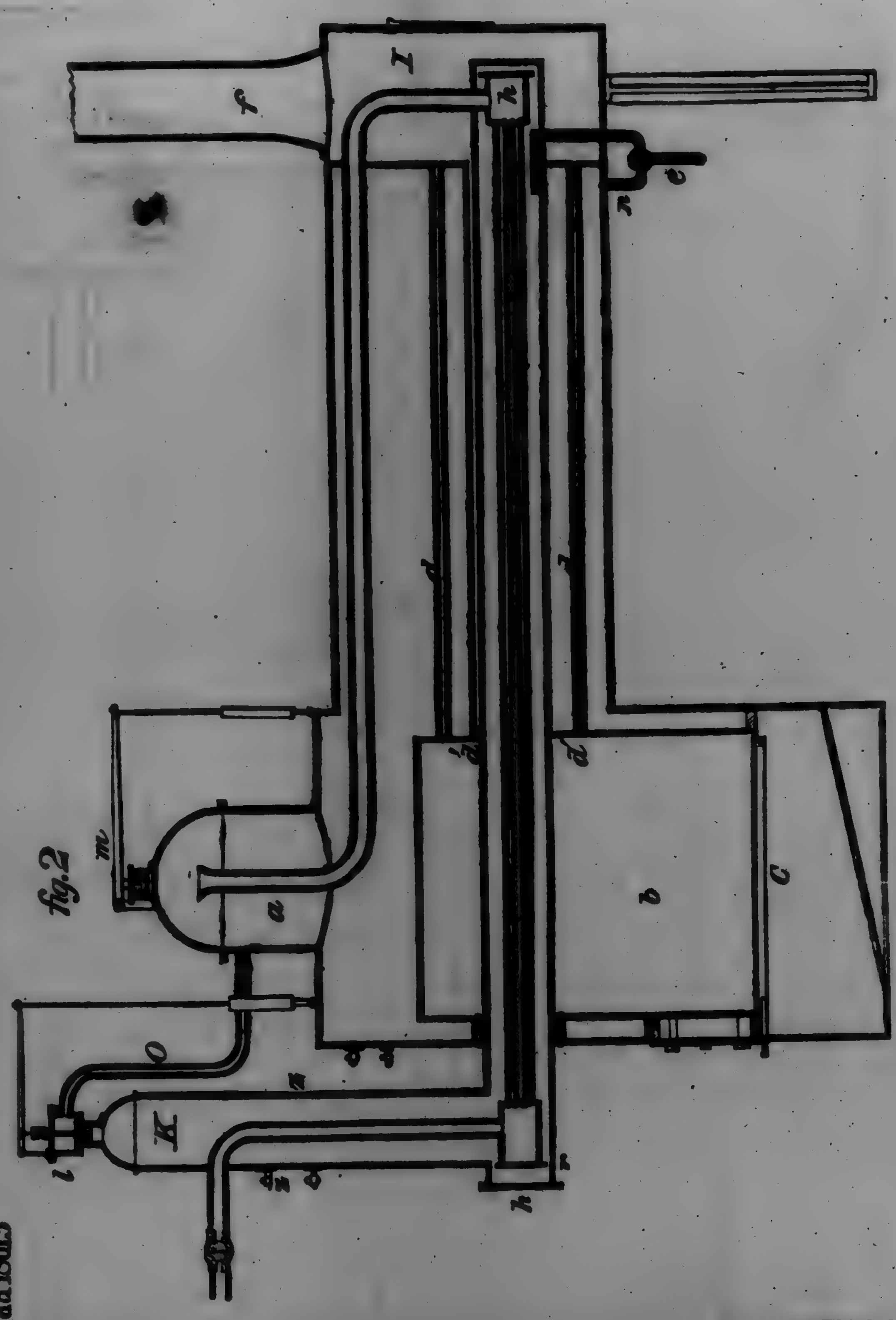
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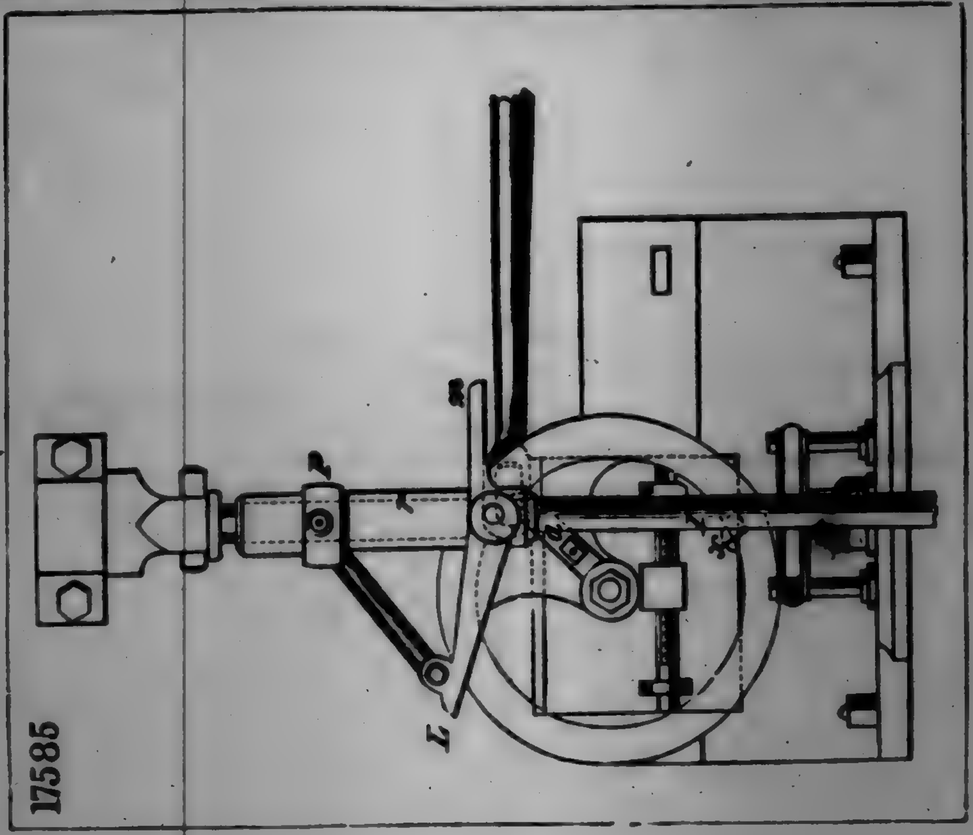
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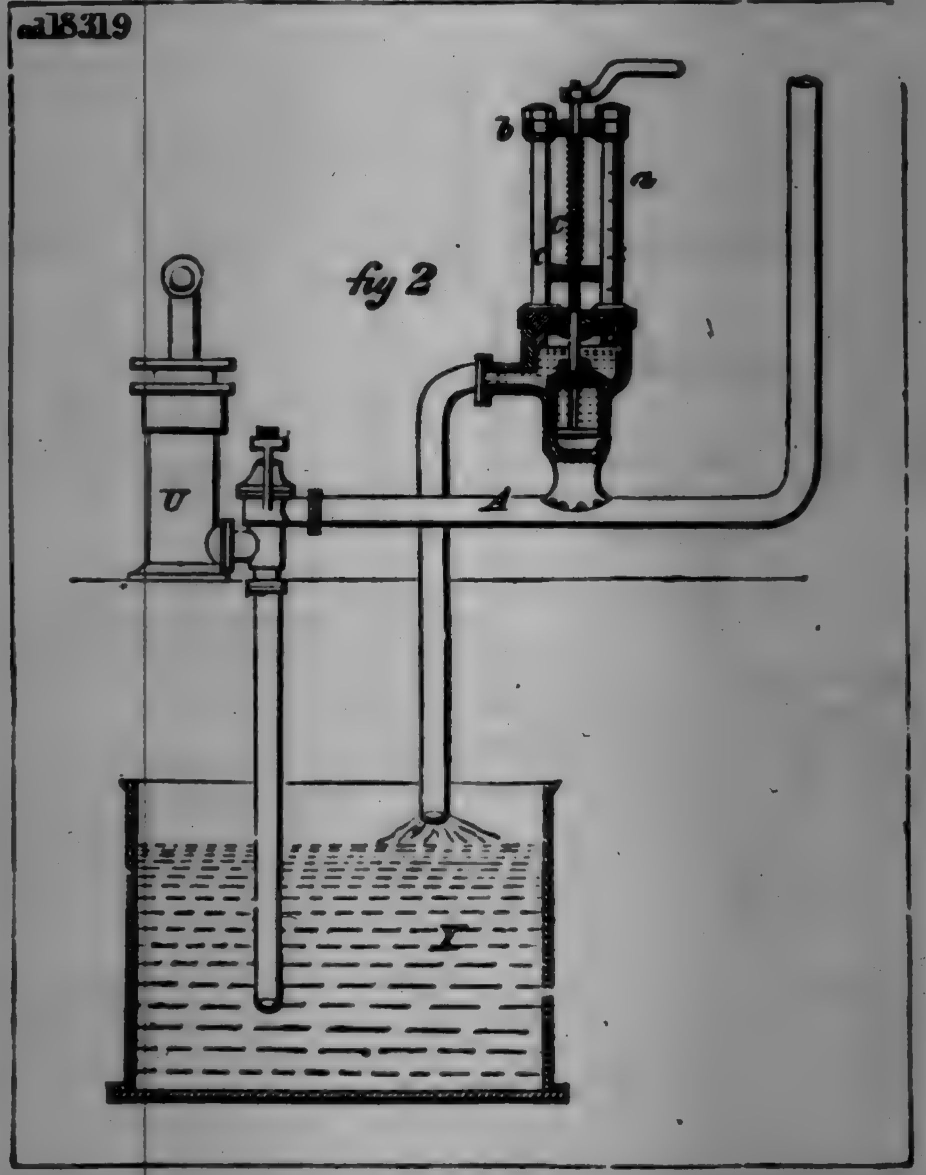
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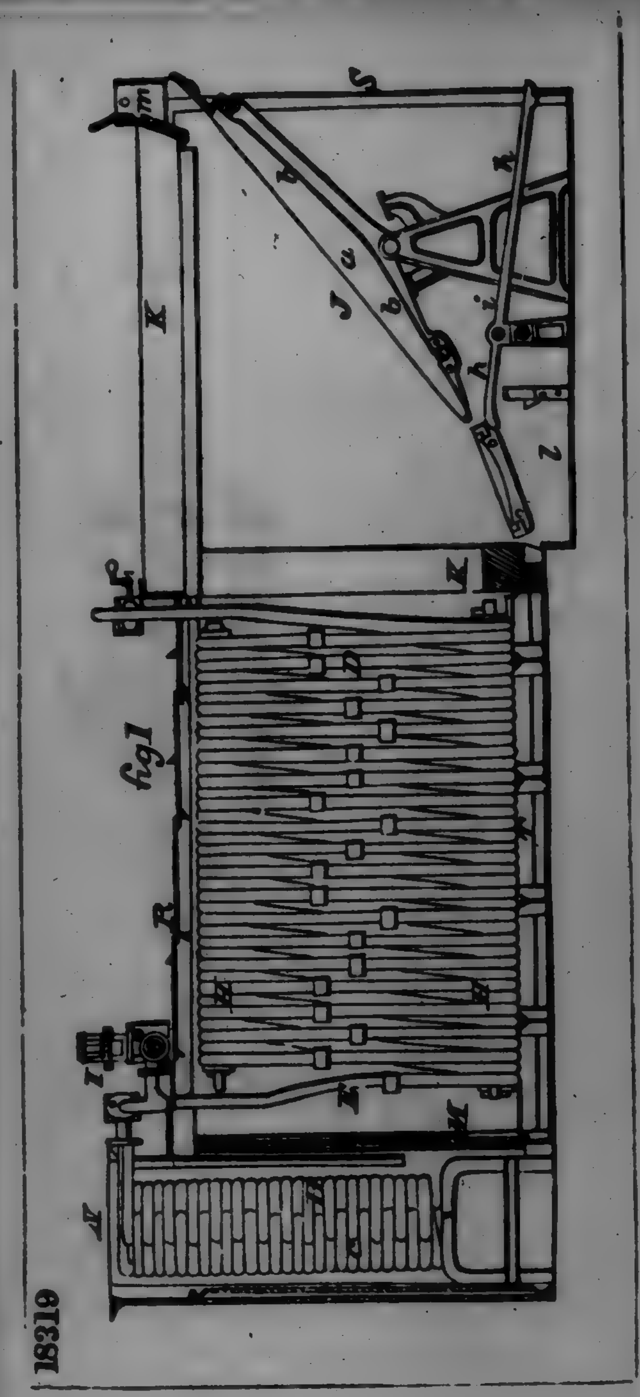
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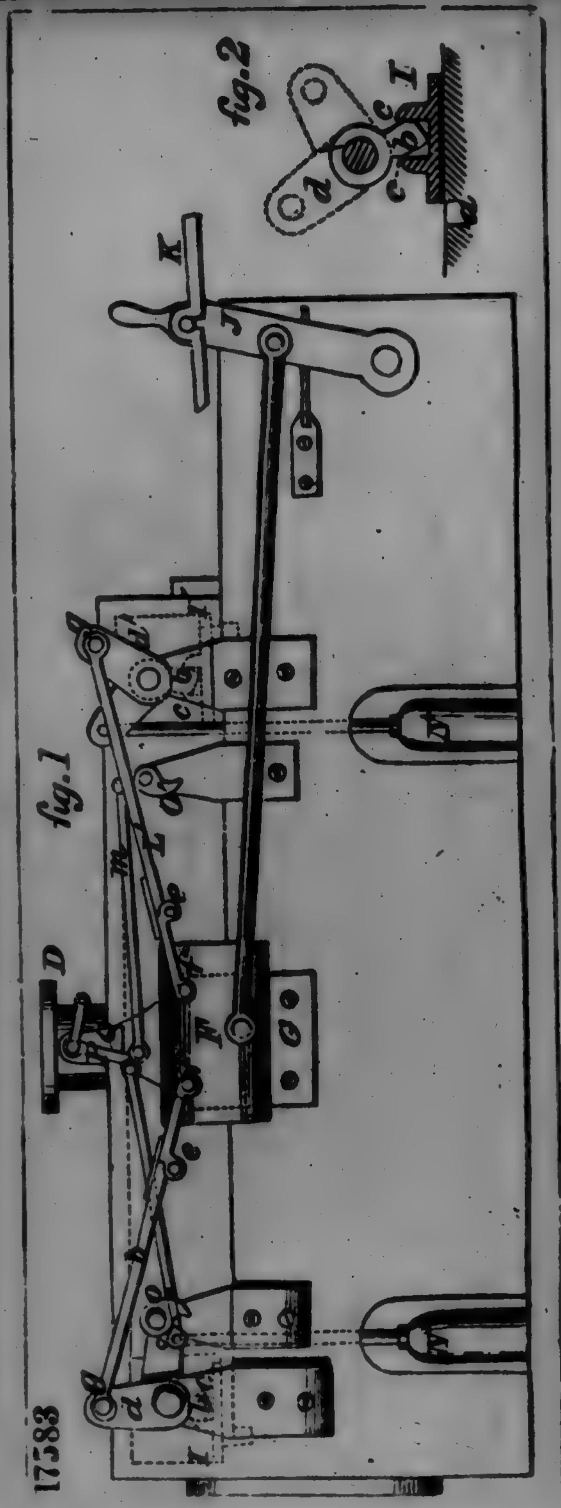
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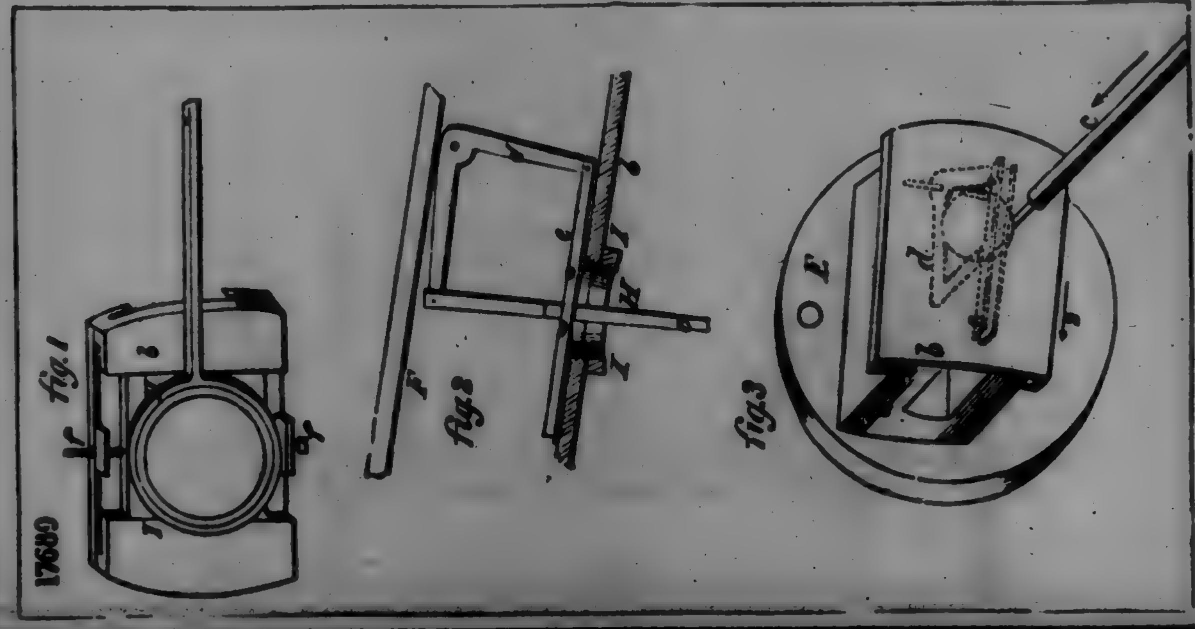
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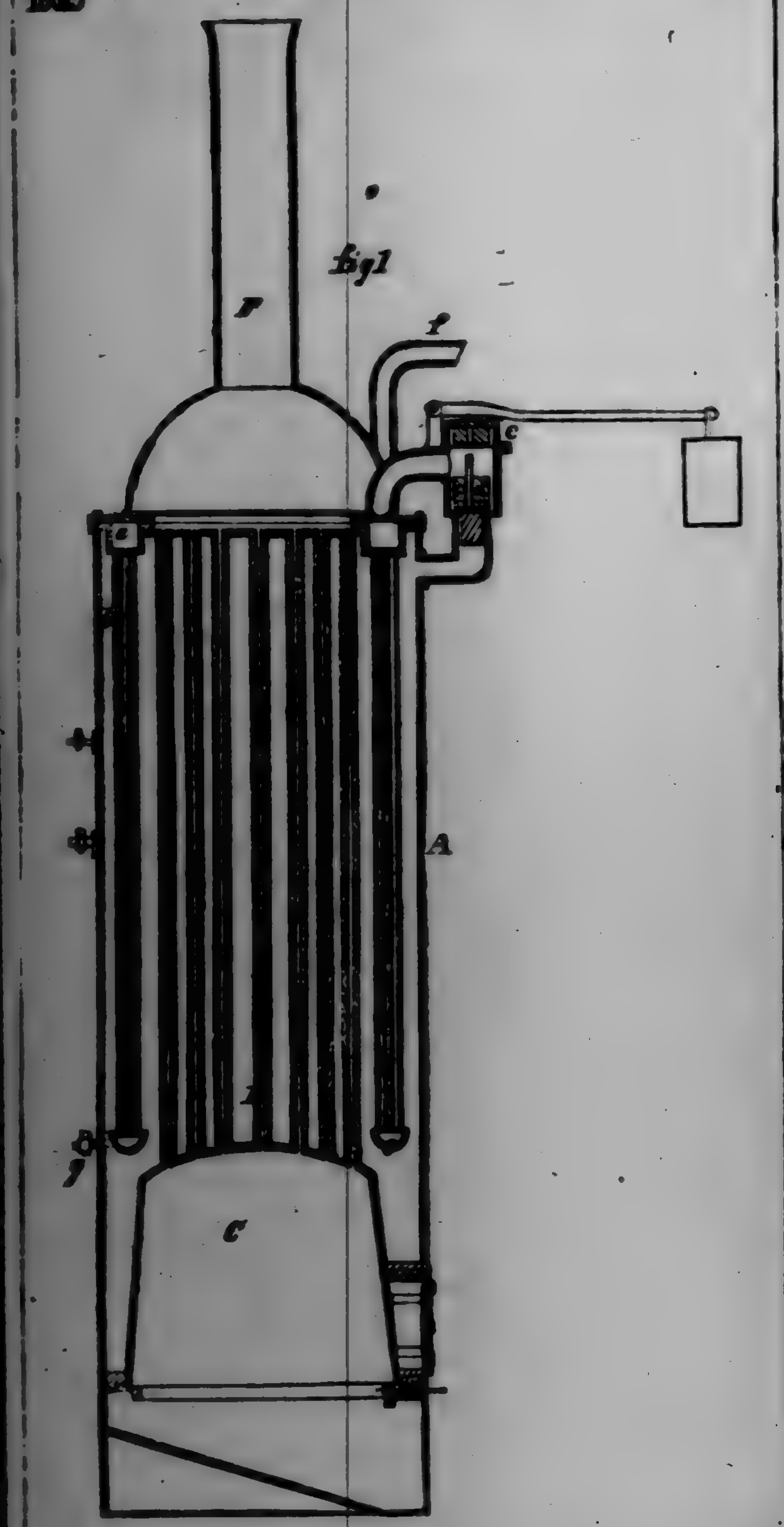

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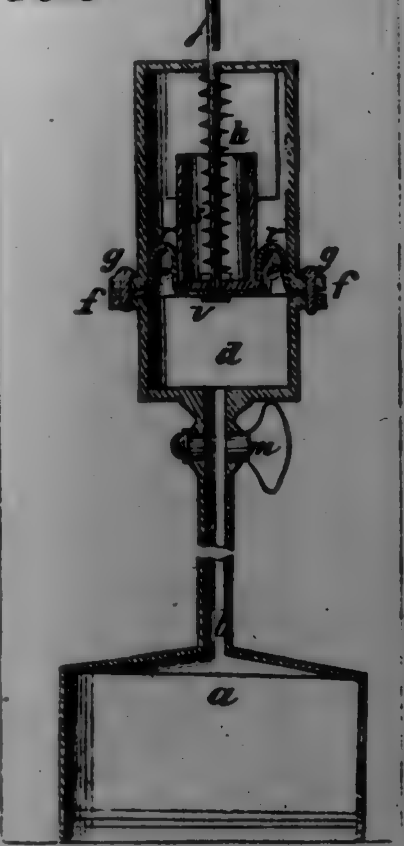

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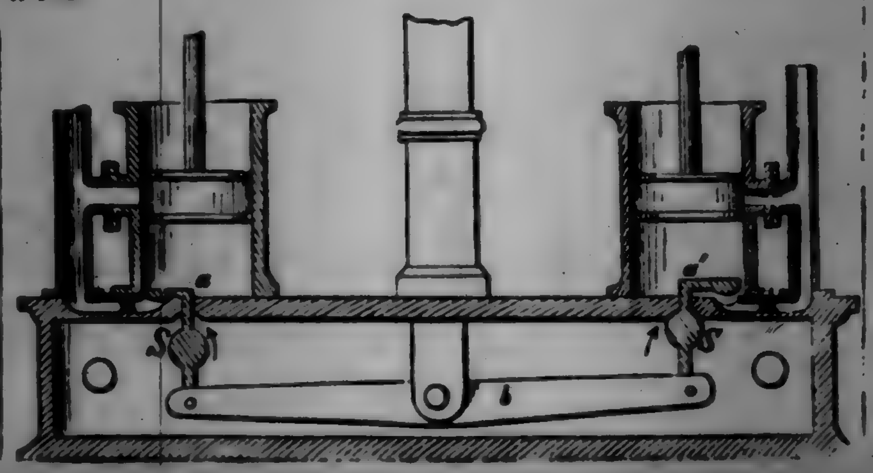

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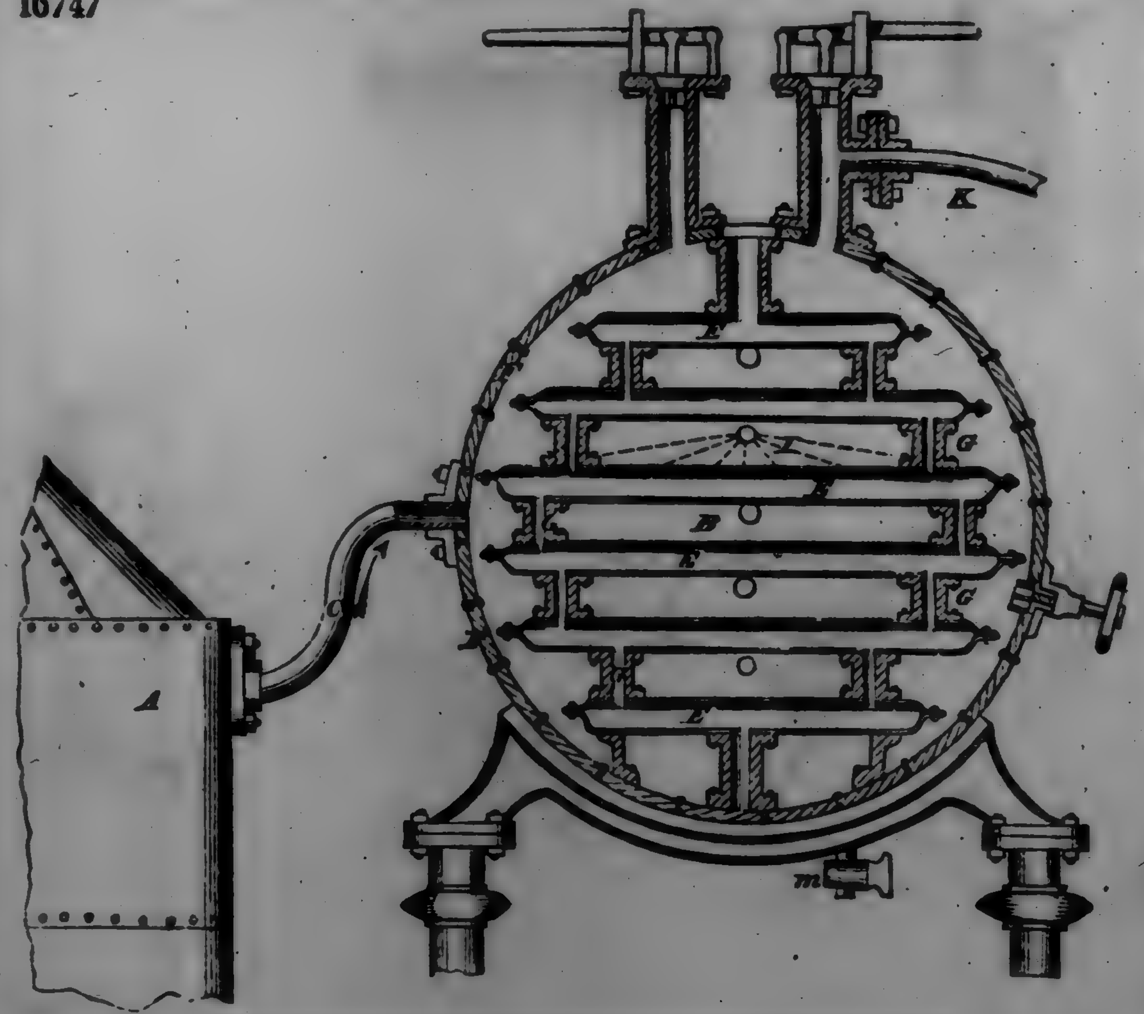

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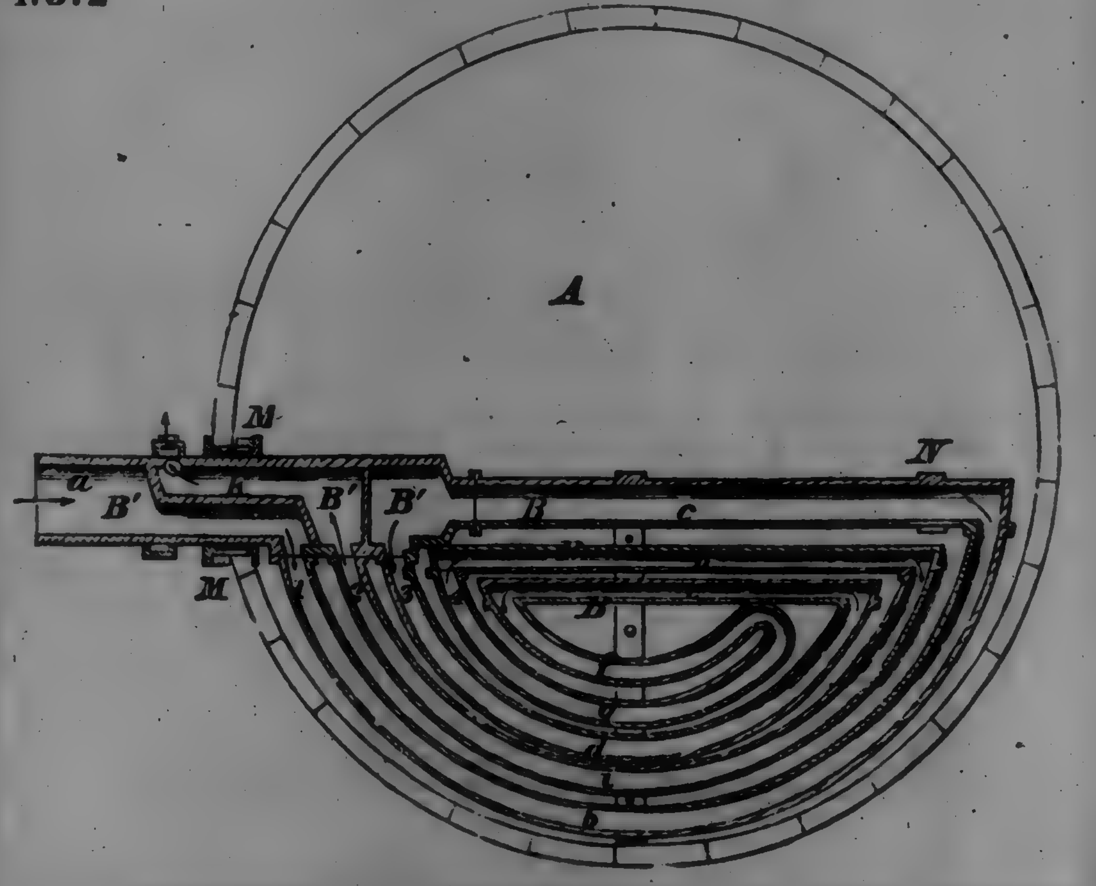

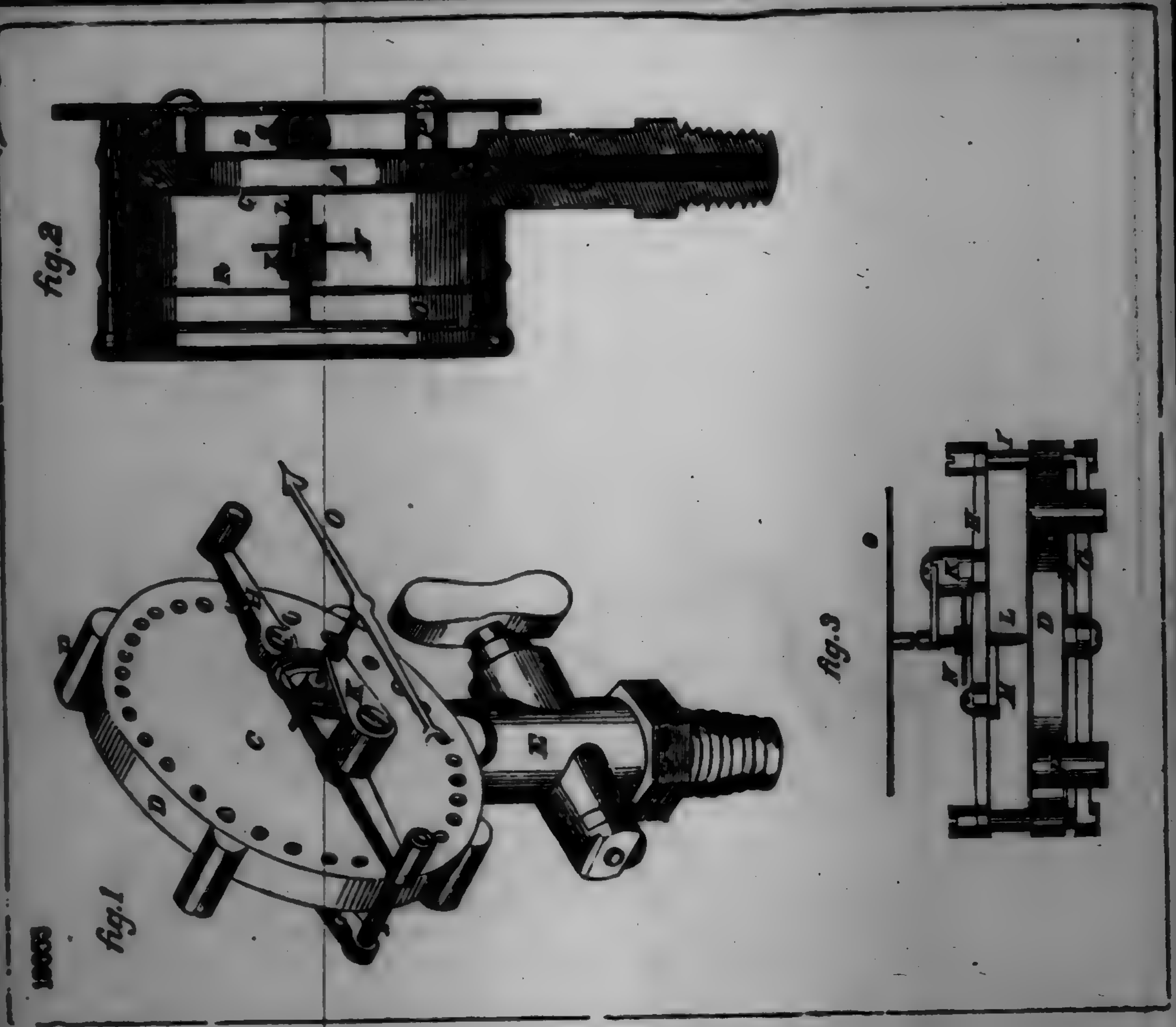
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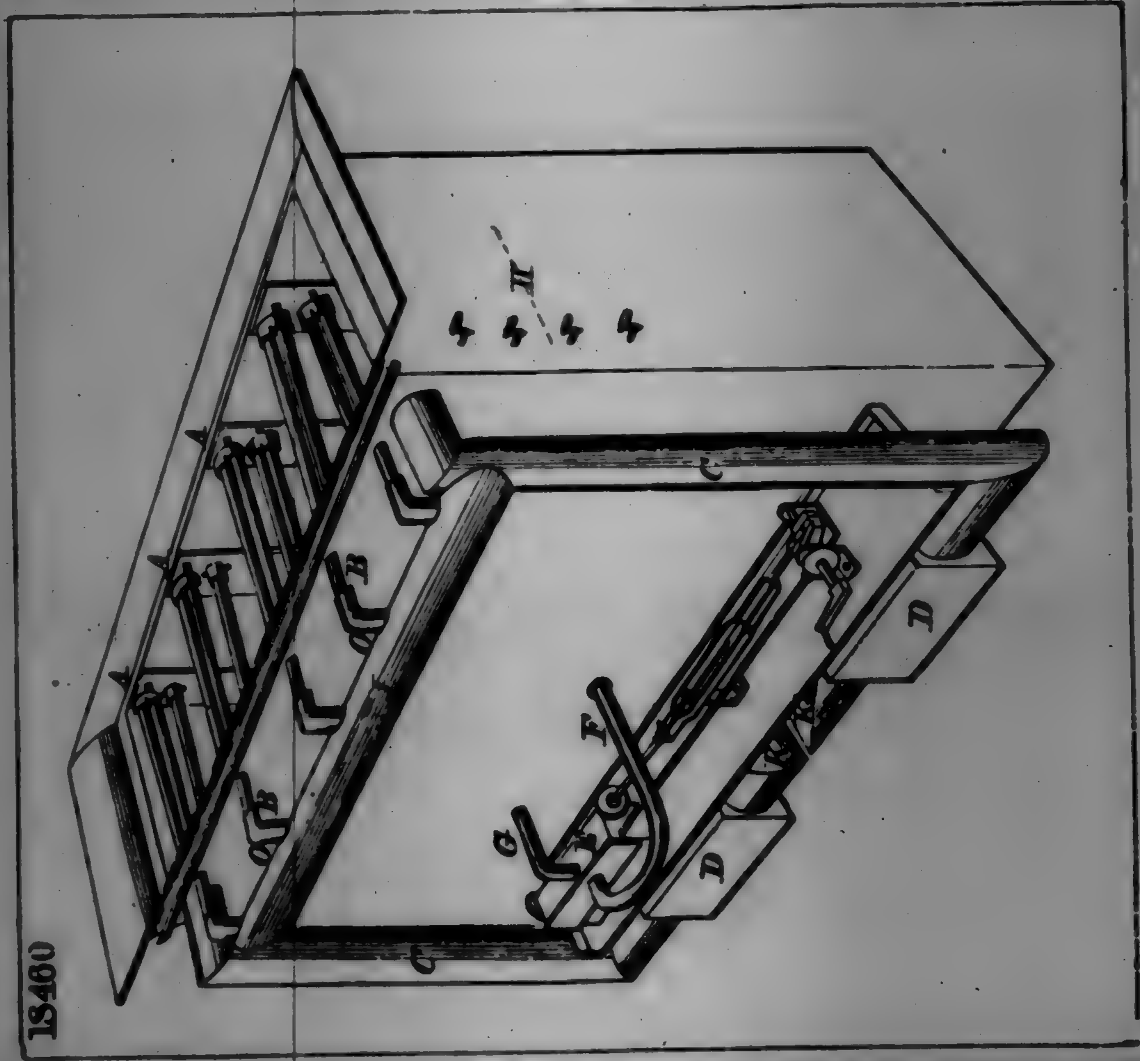
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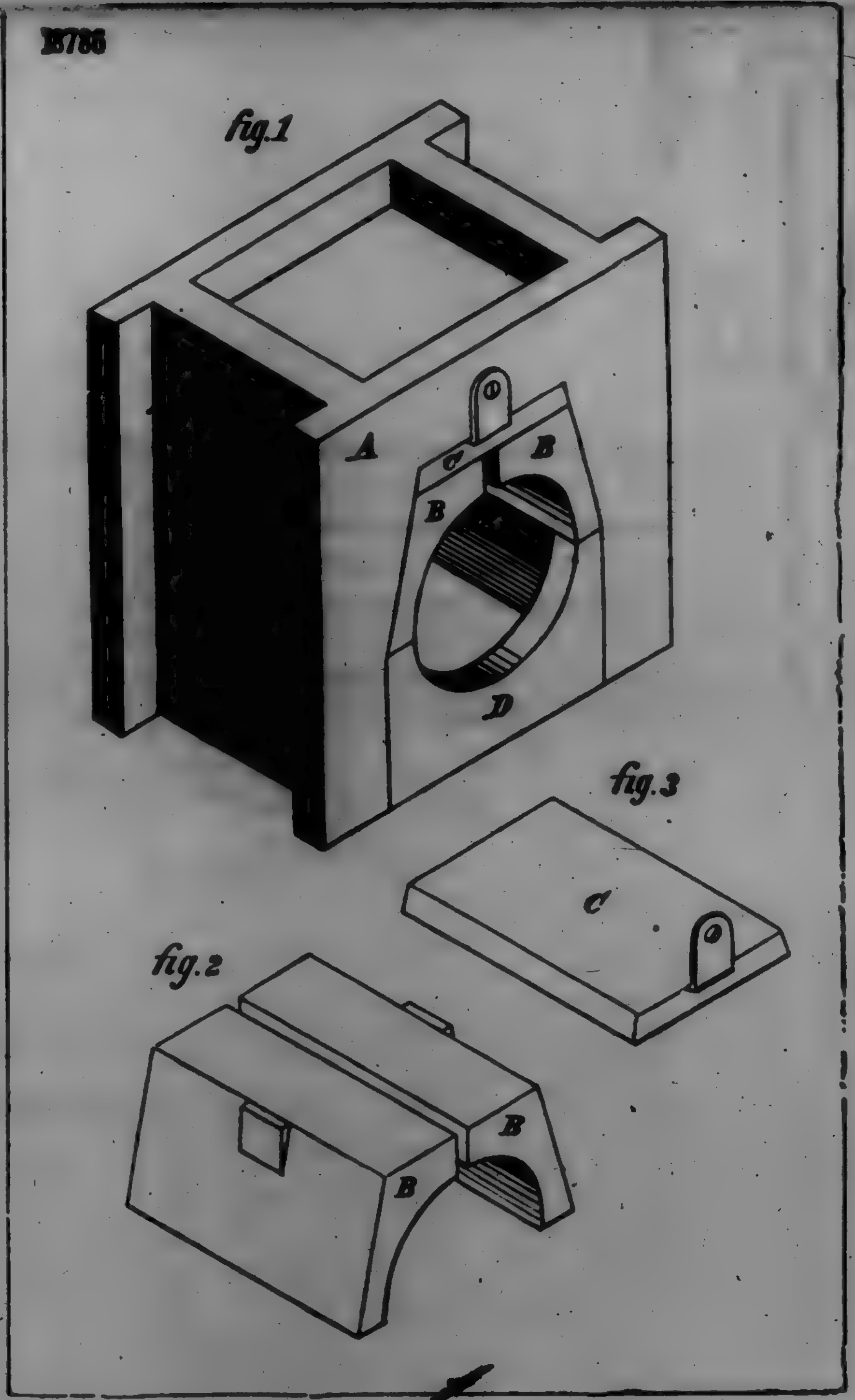
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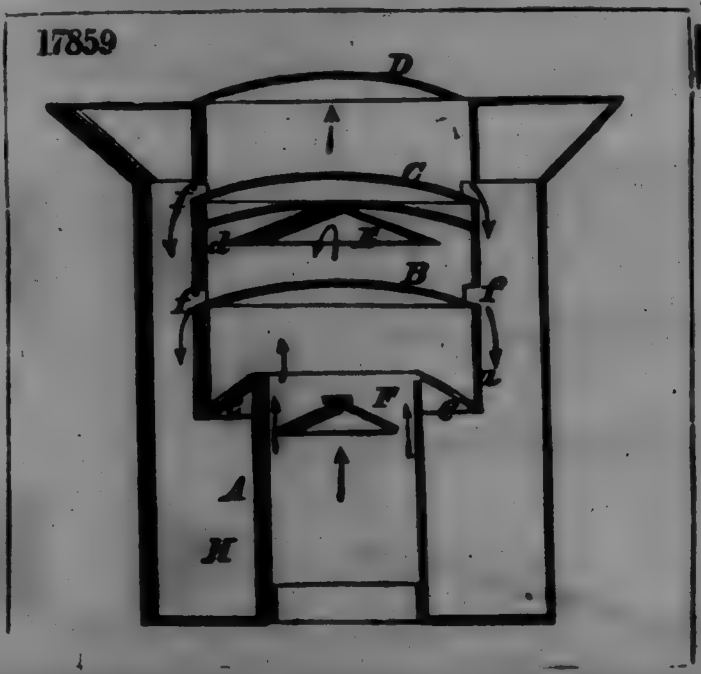
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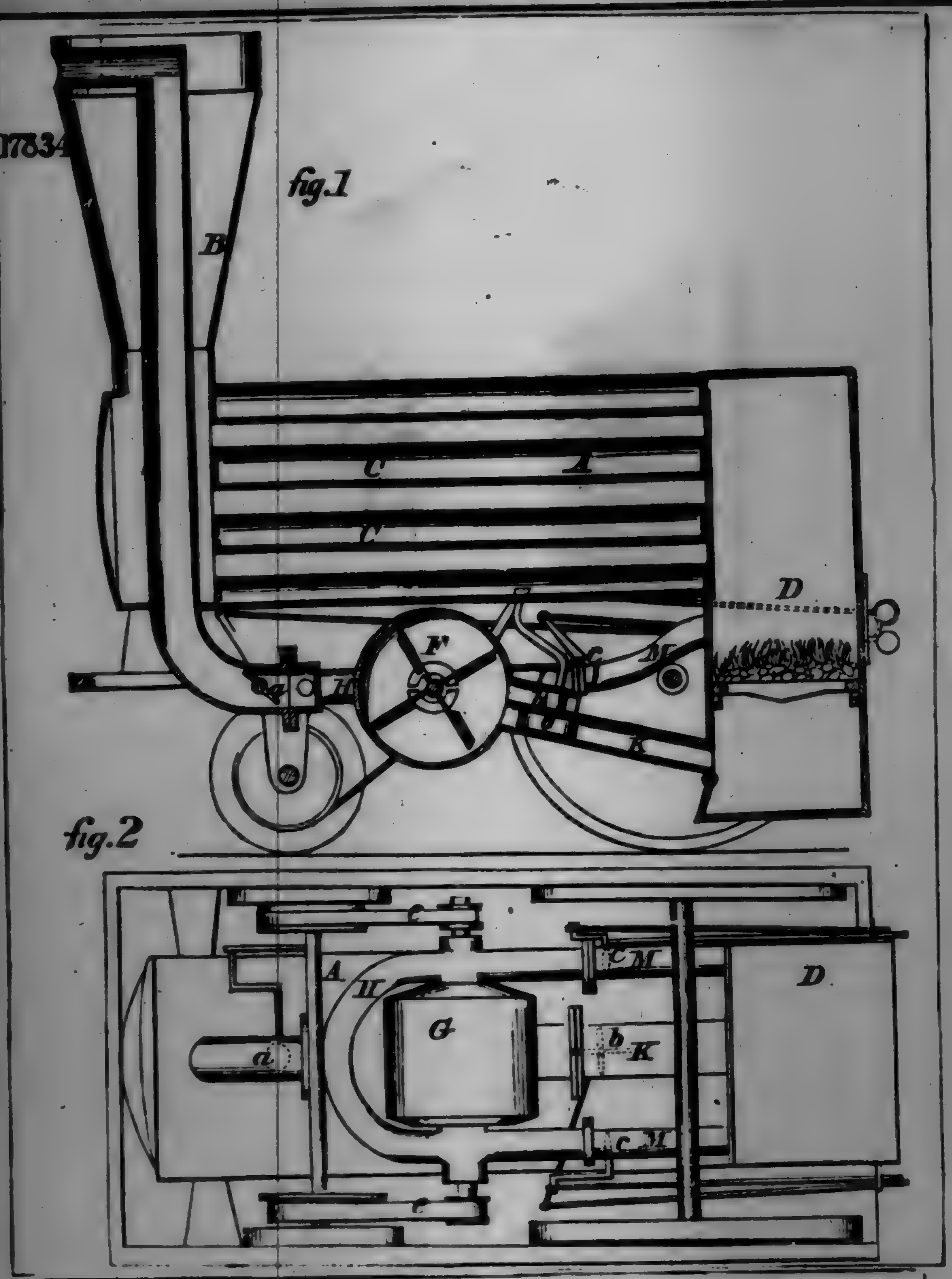
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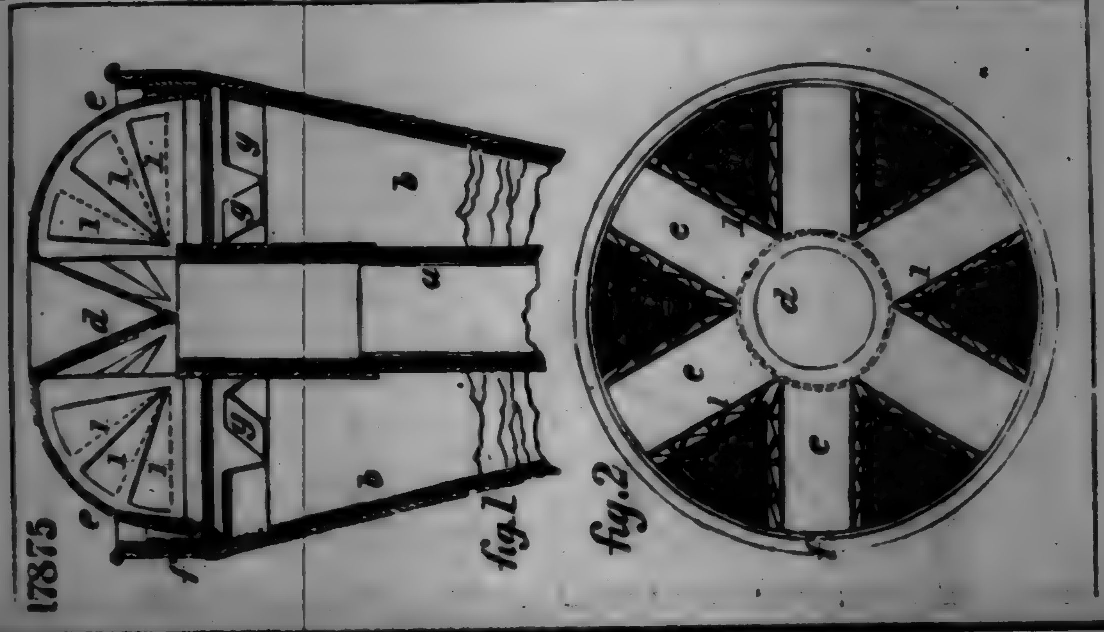
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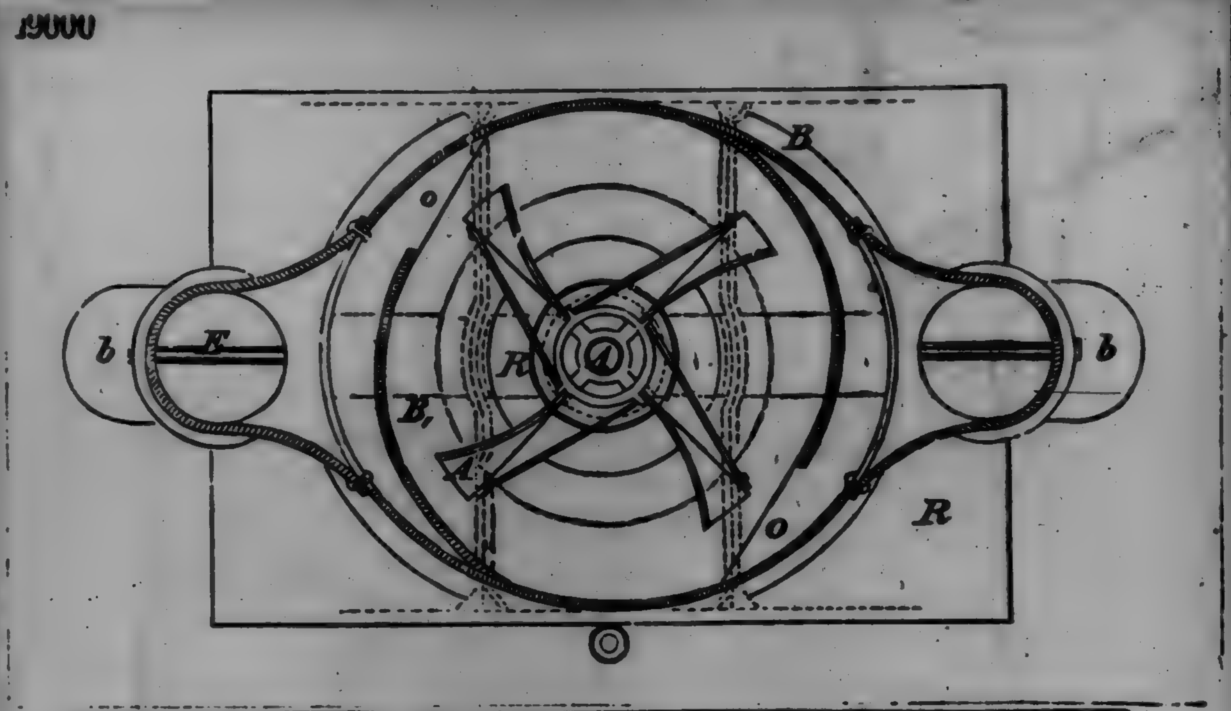
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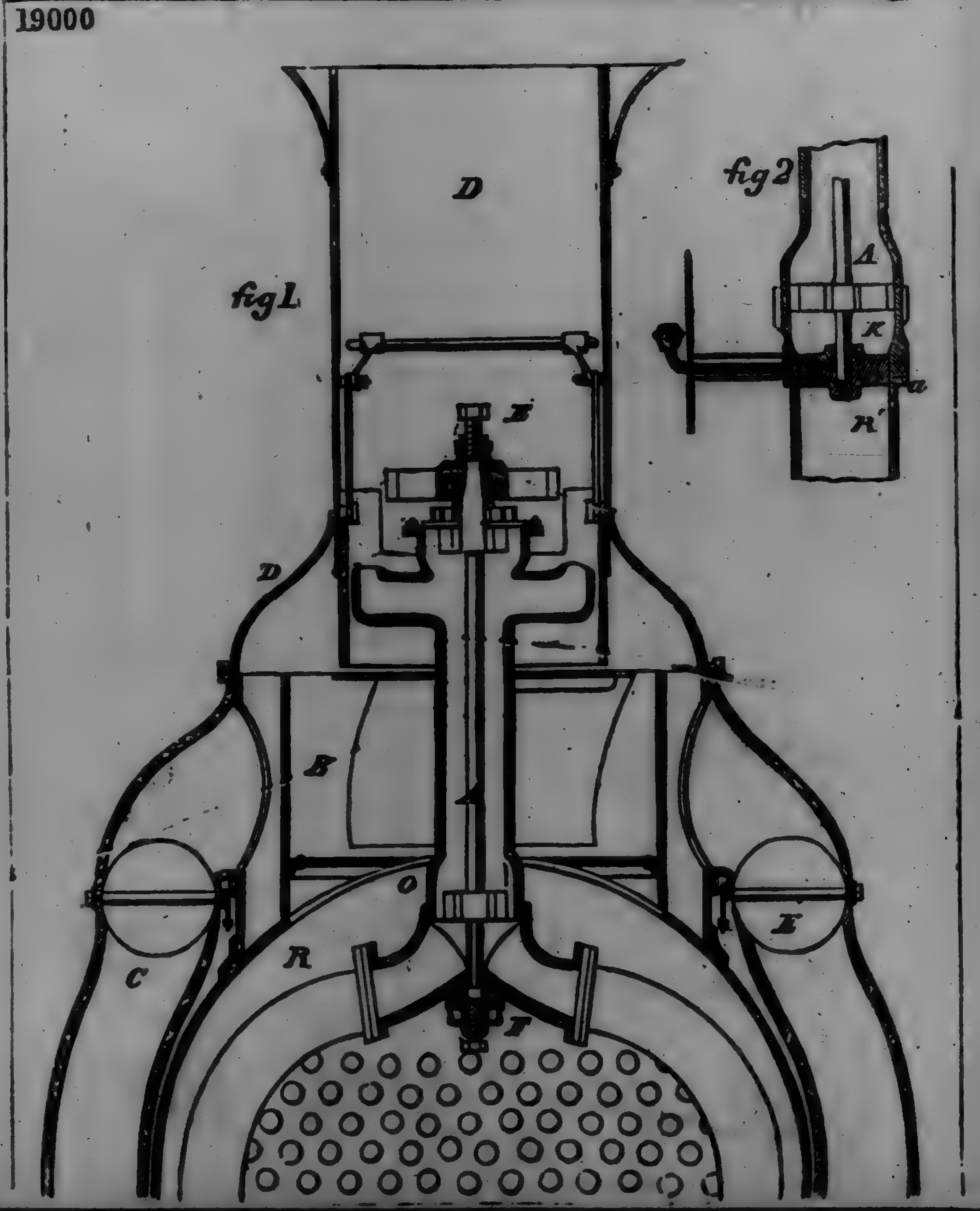
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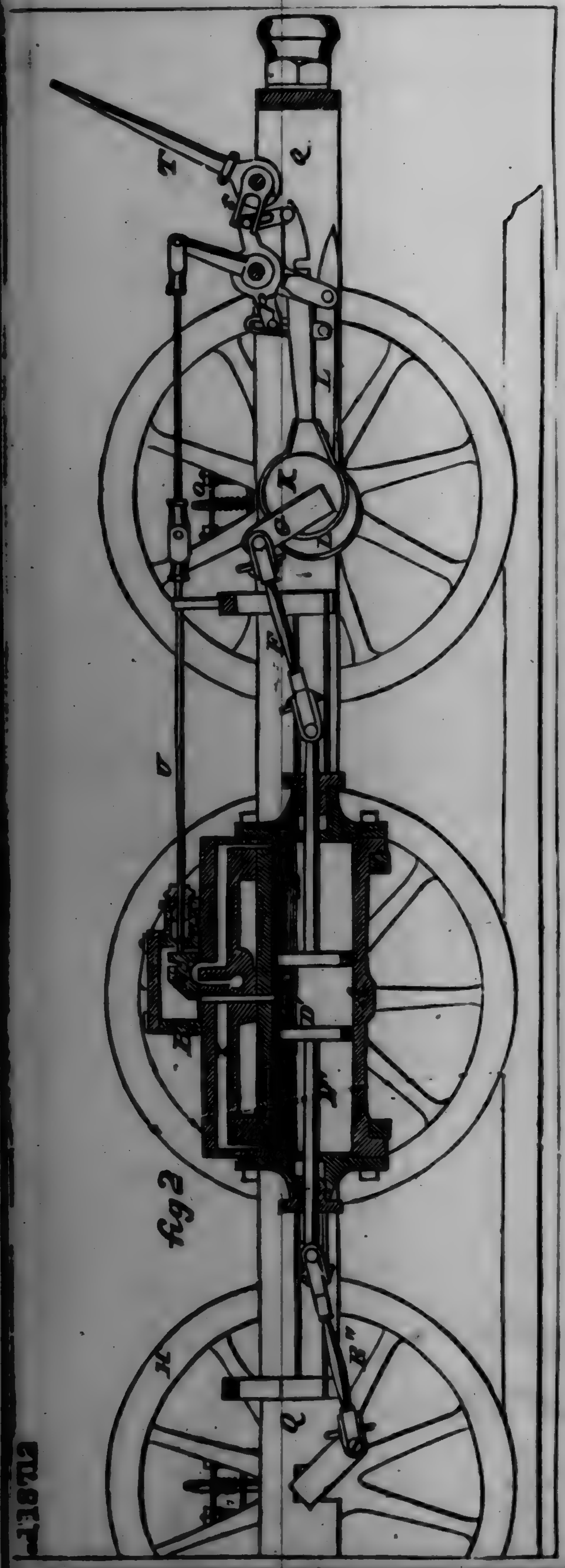

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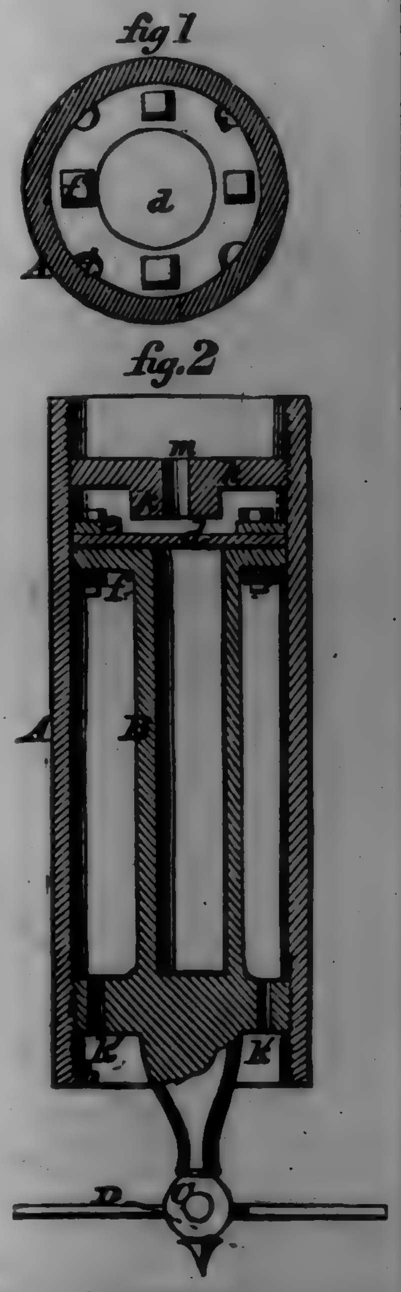

fig 1

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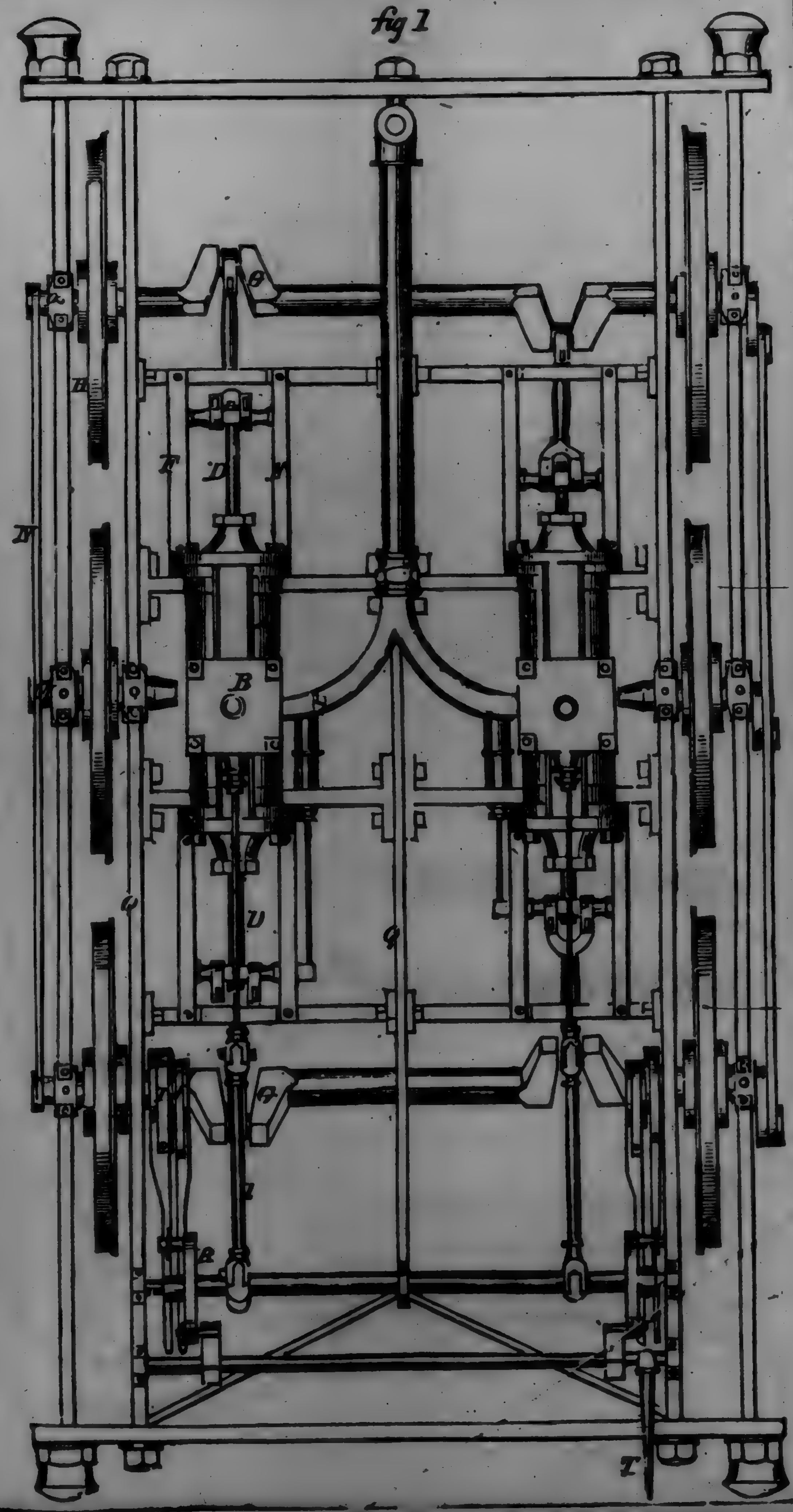
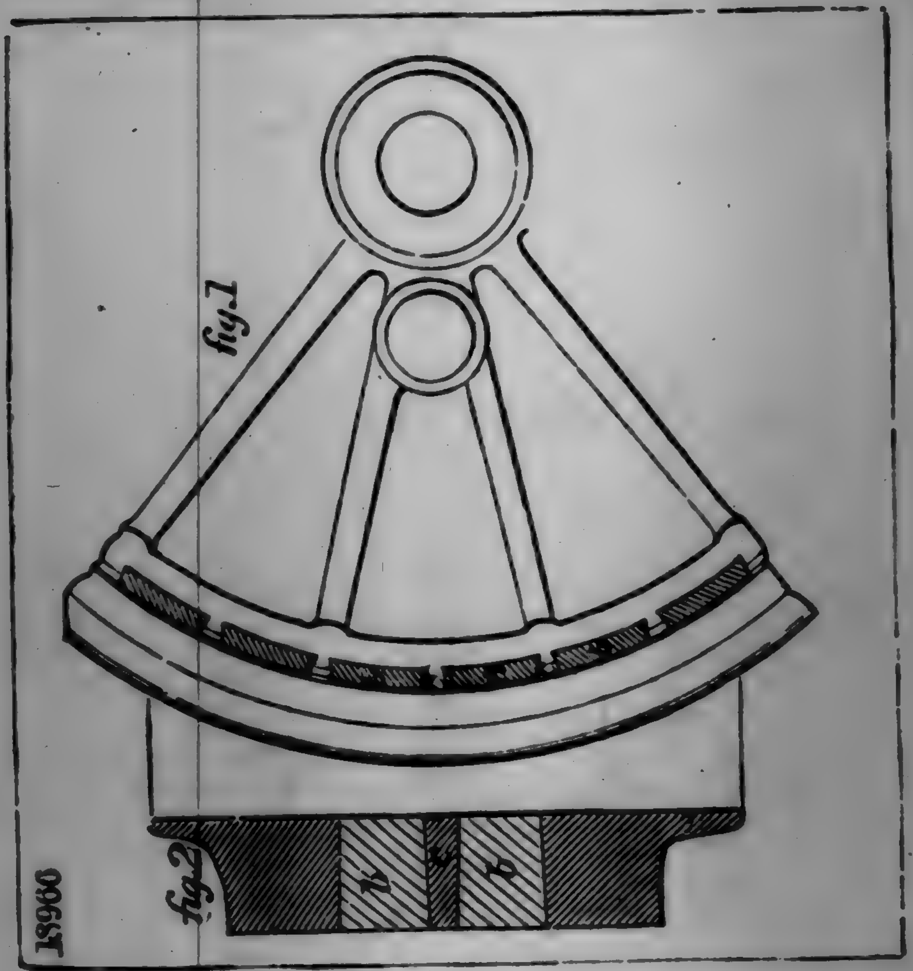
fig 1

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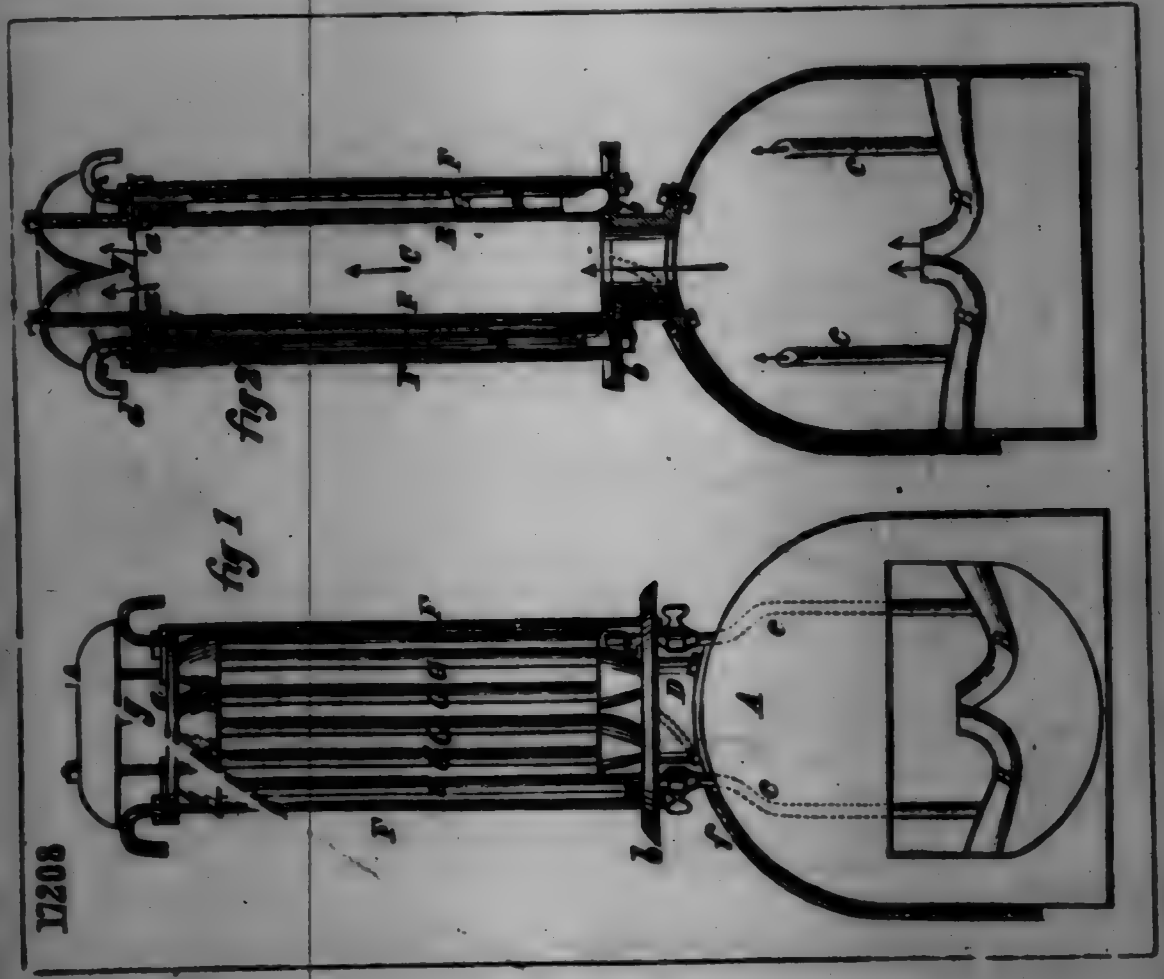
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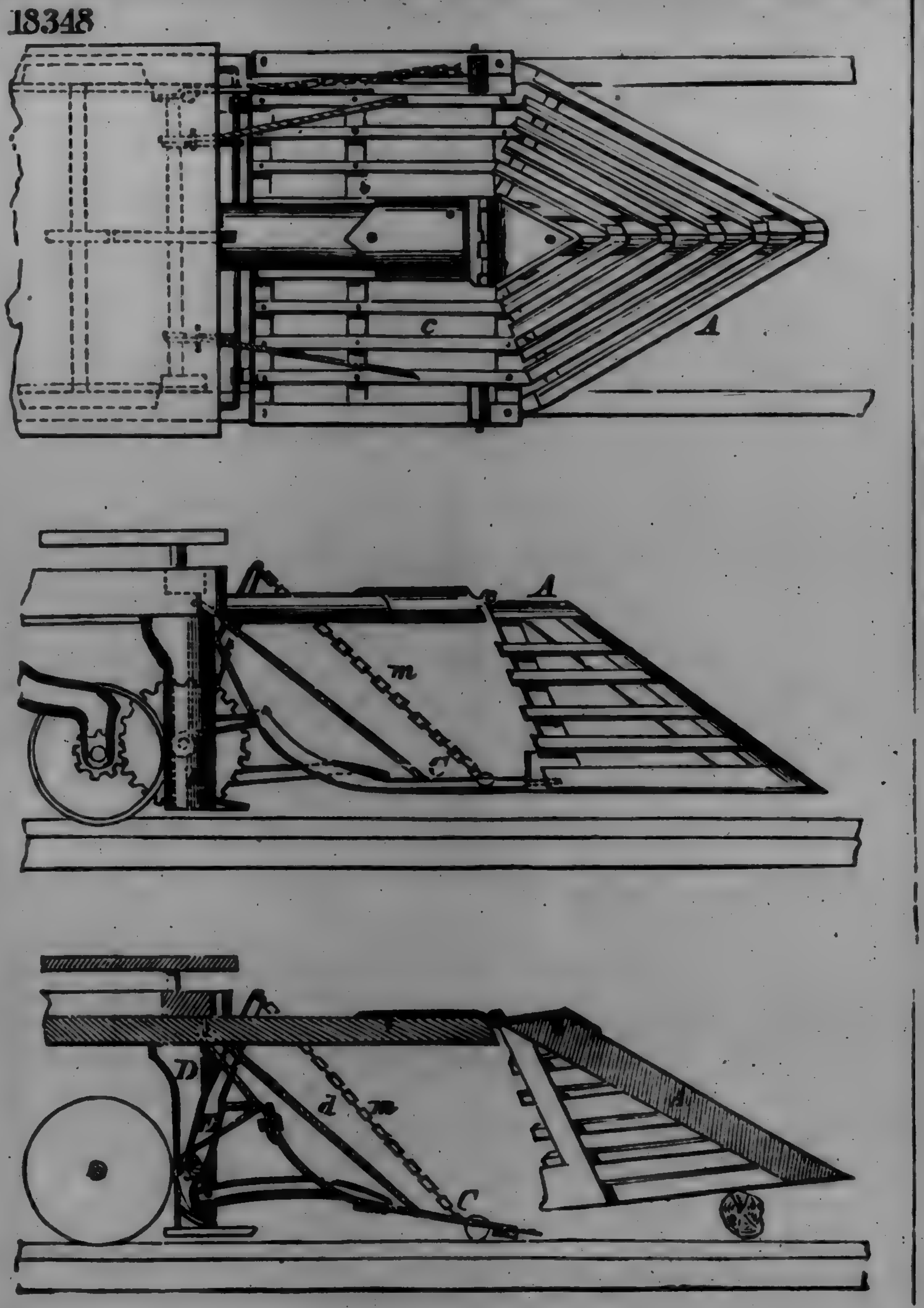
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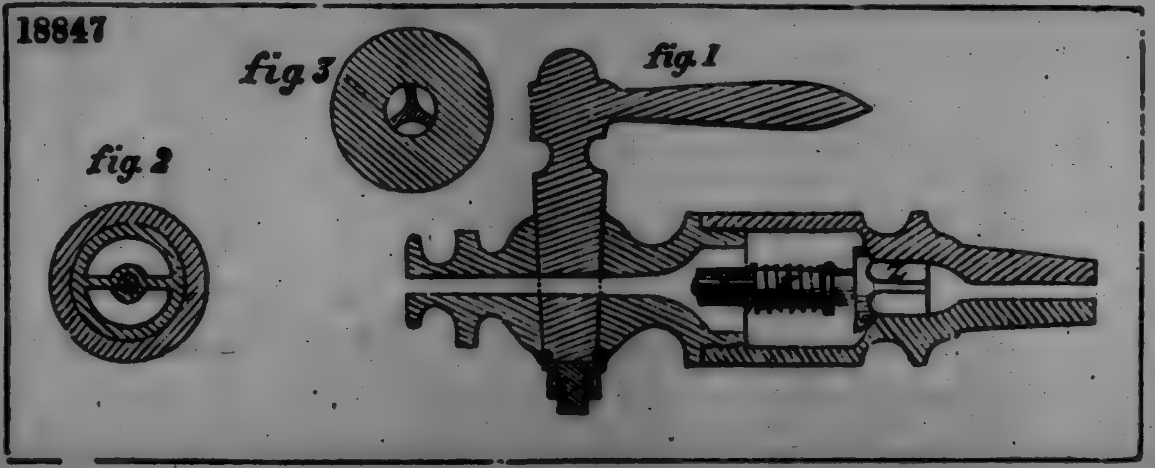
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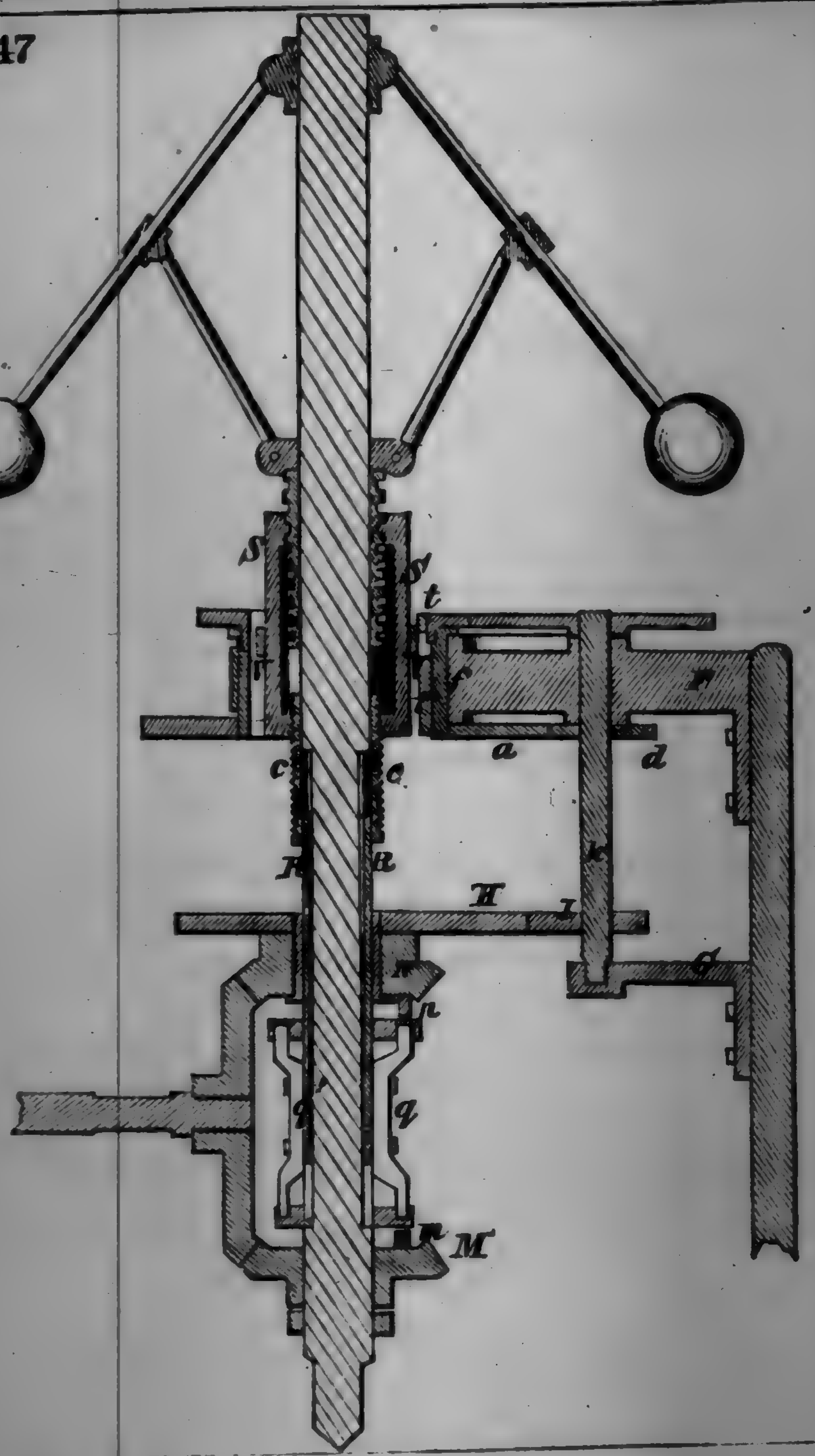

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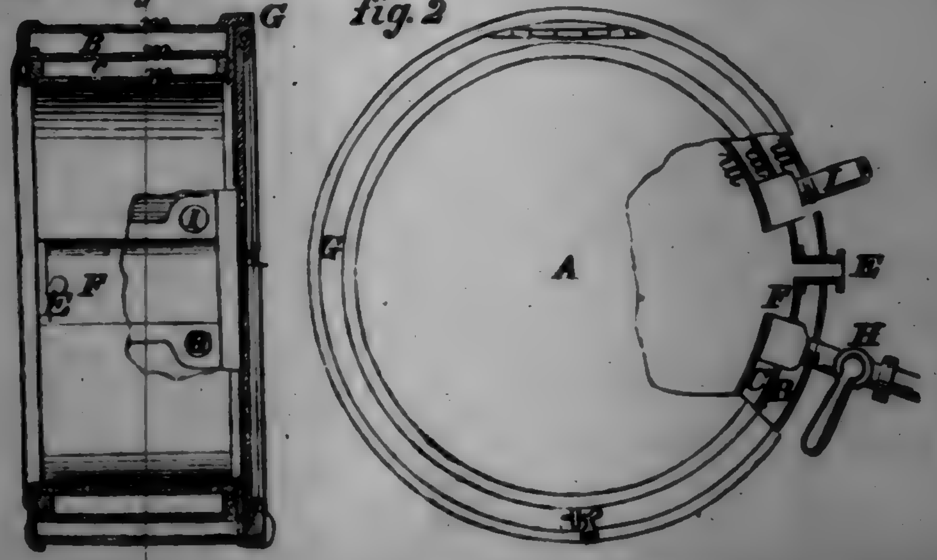
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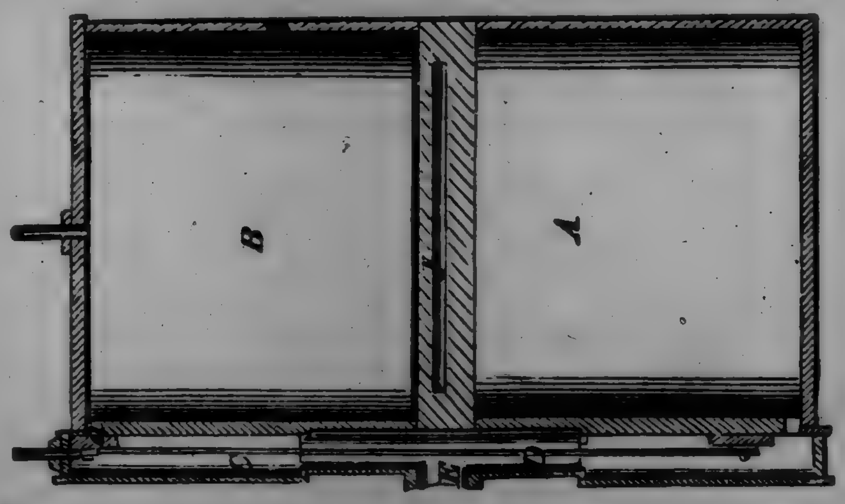

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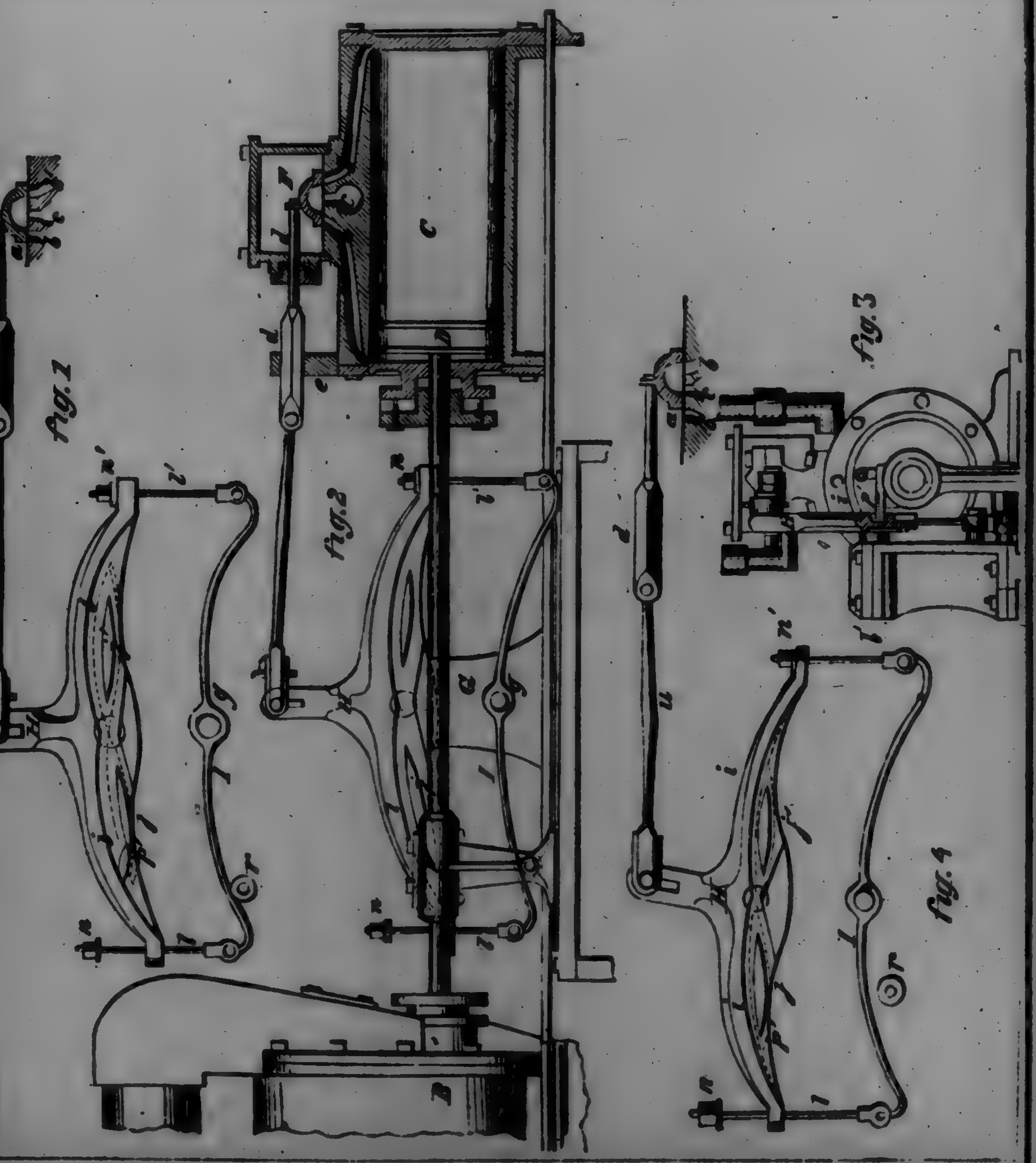

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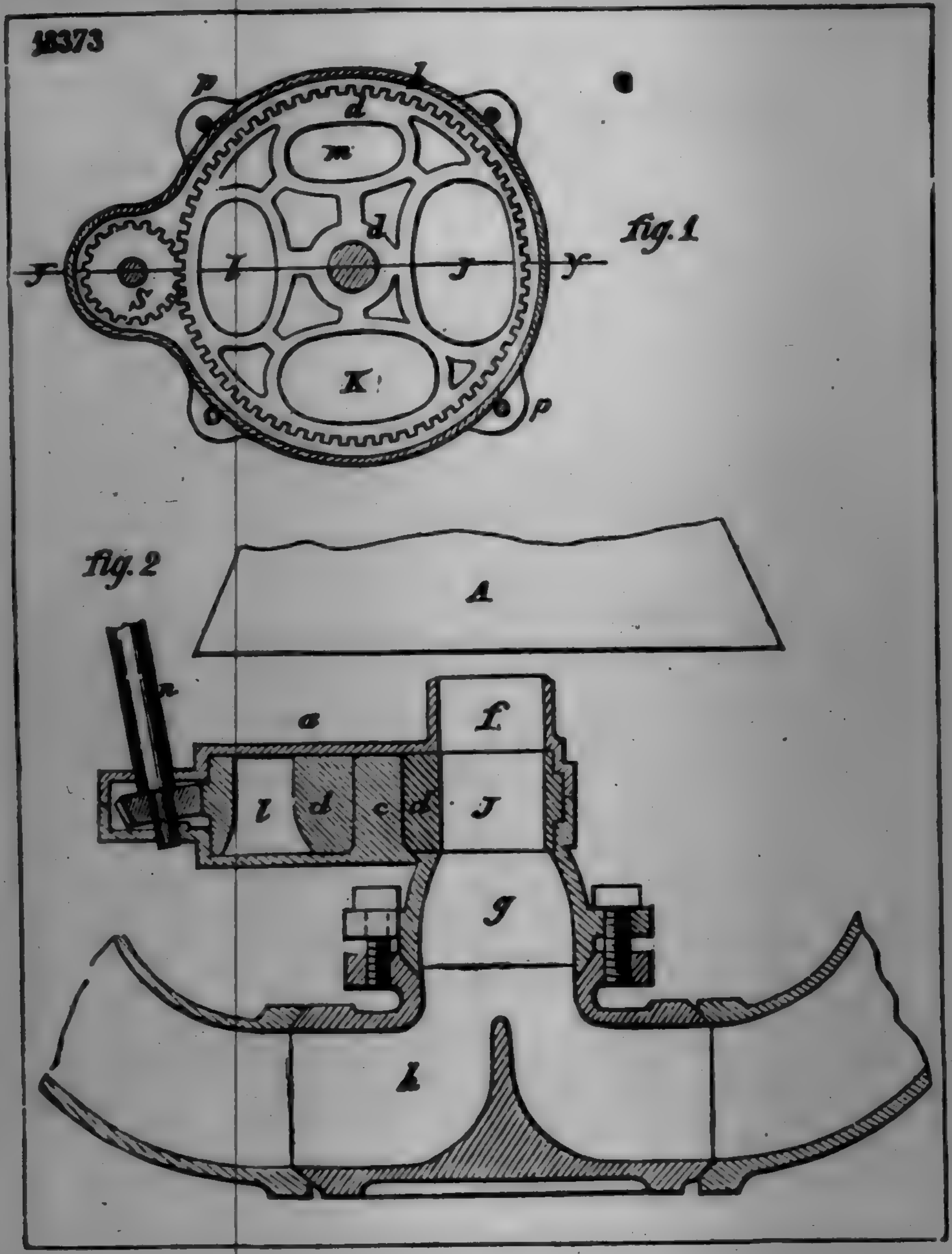

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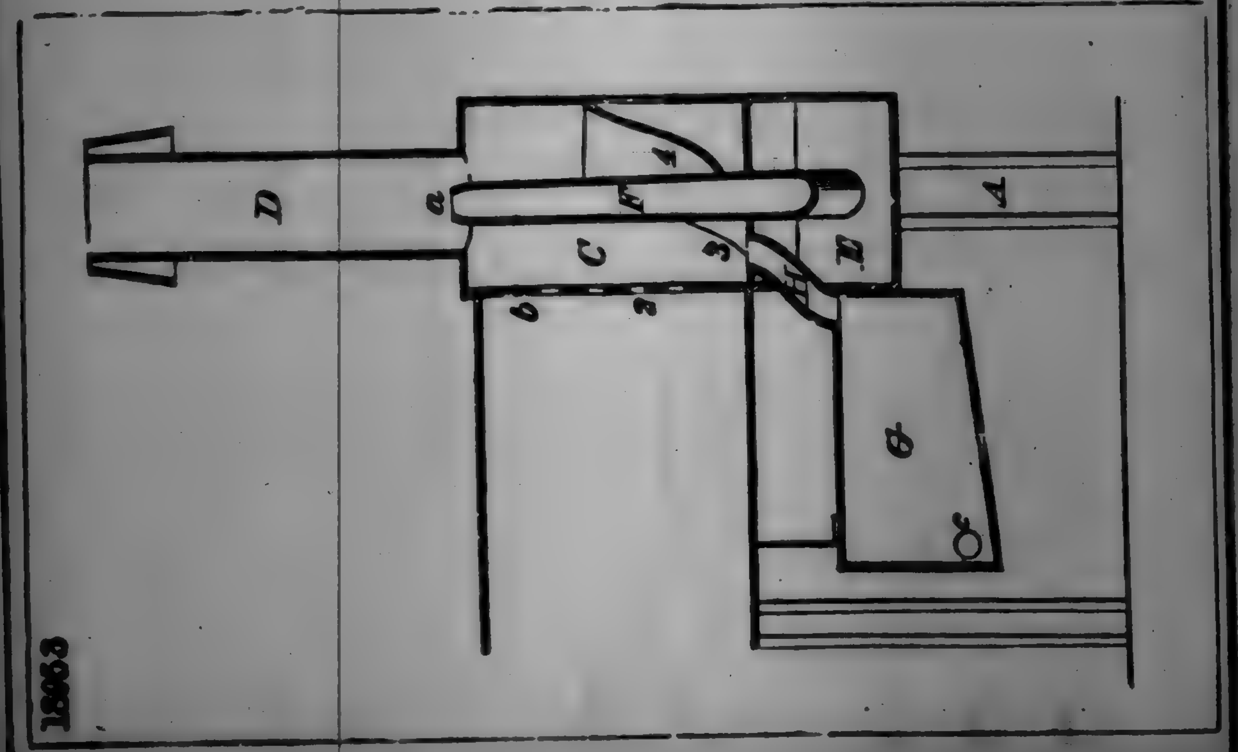

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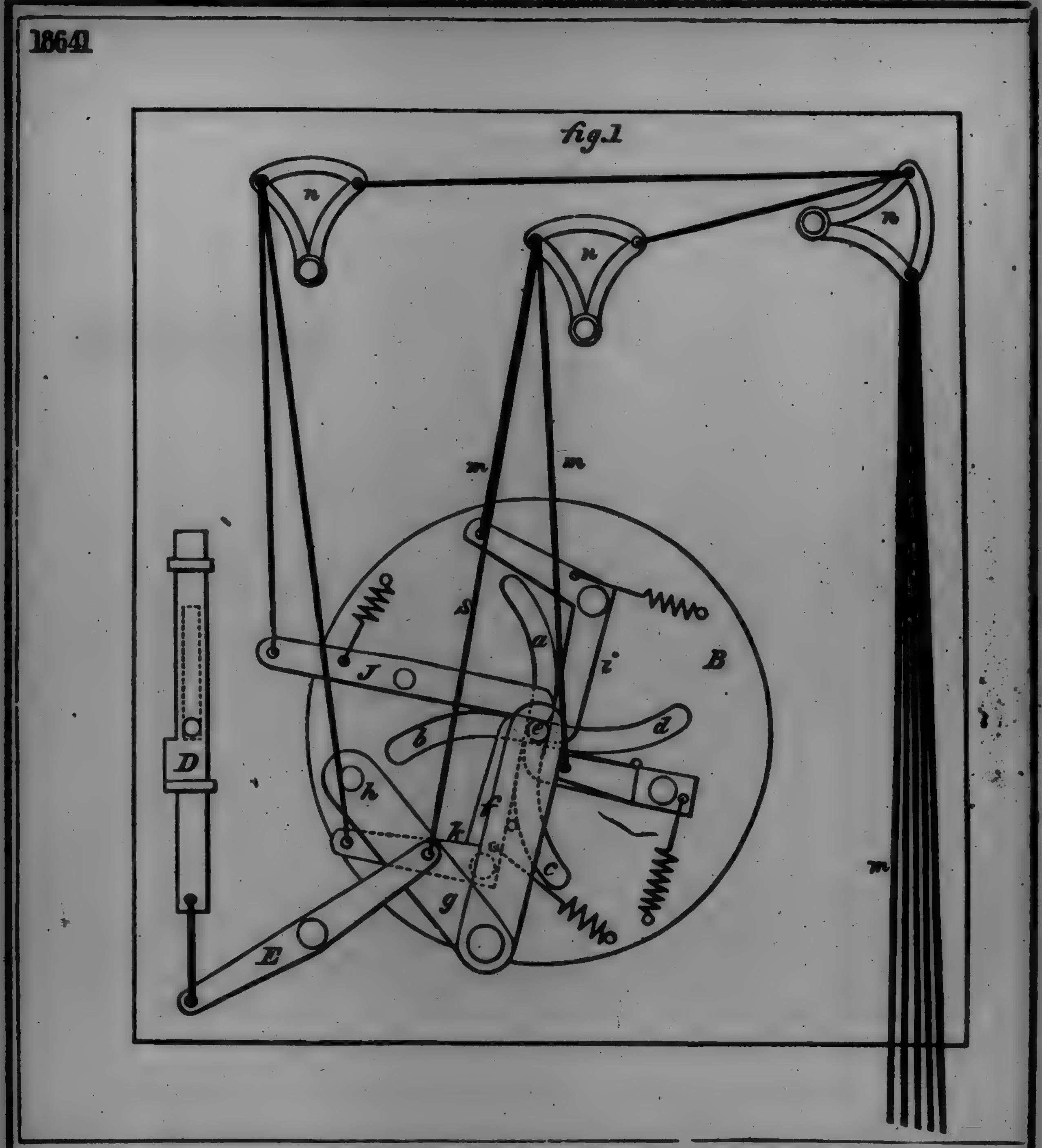

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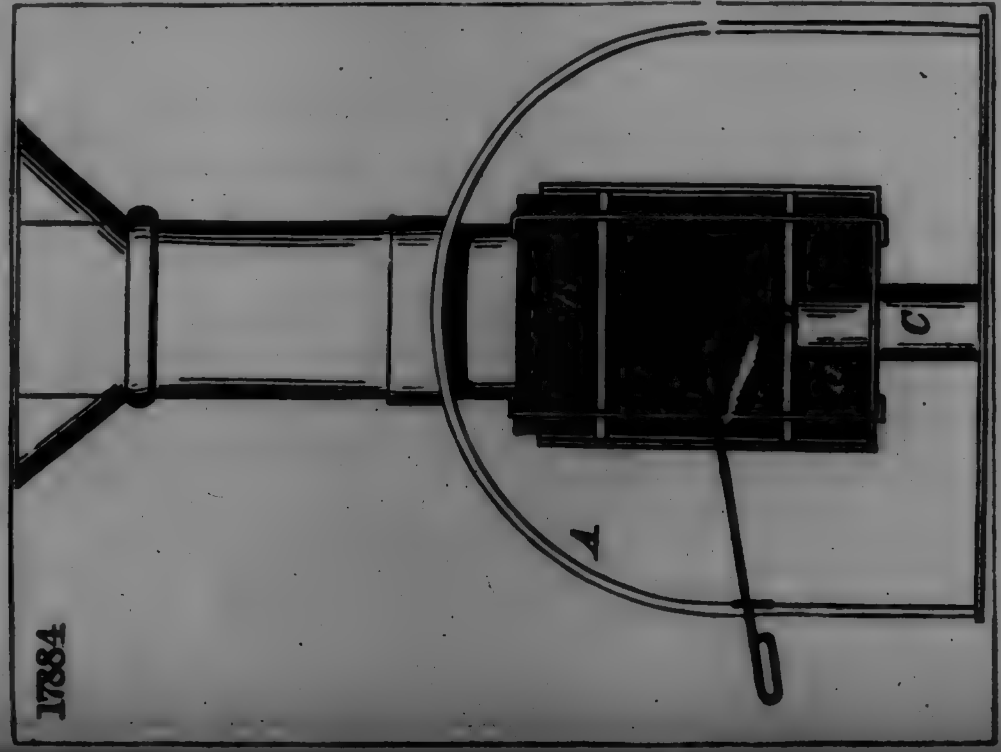

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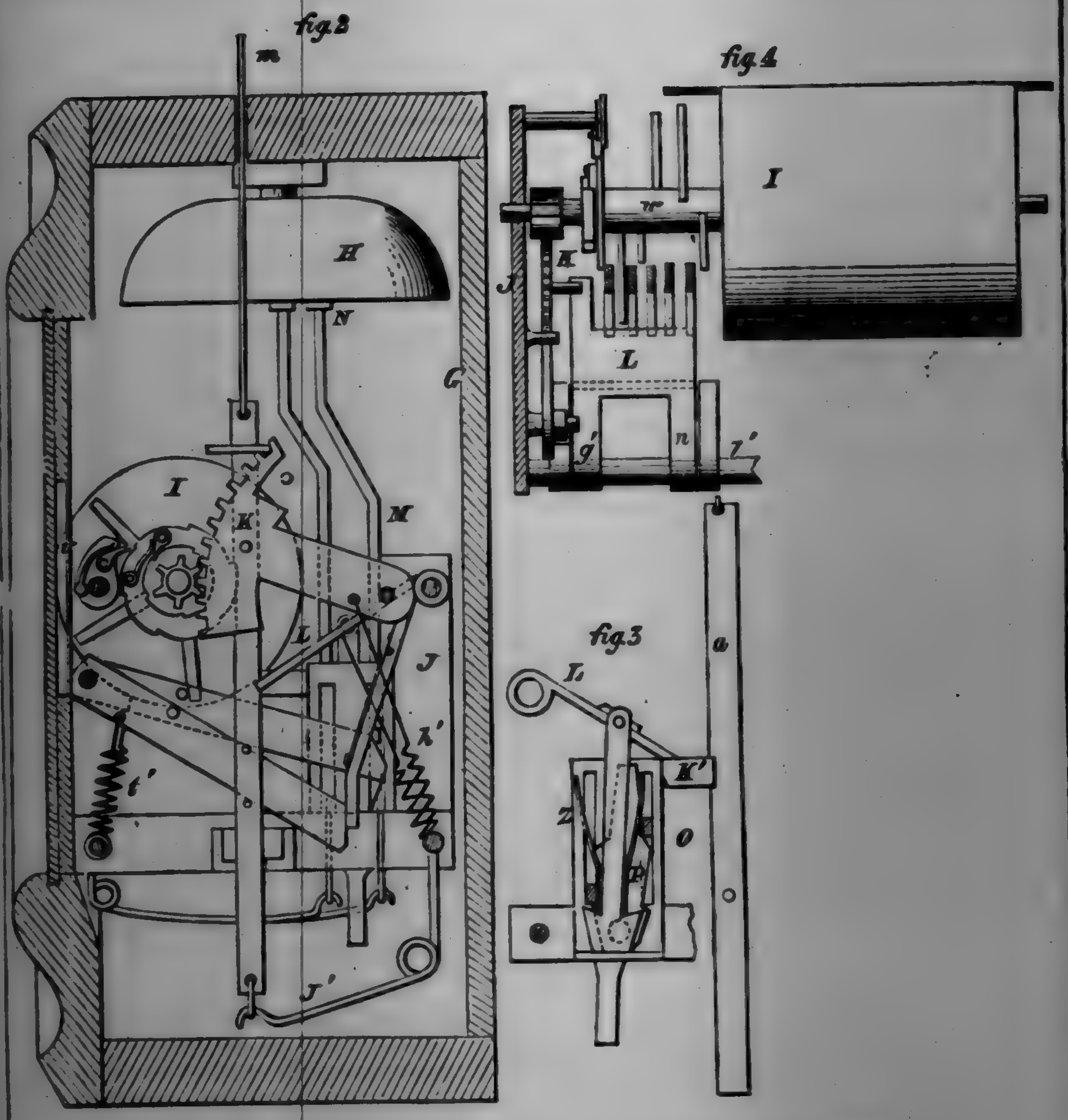

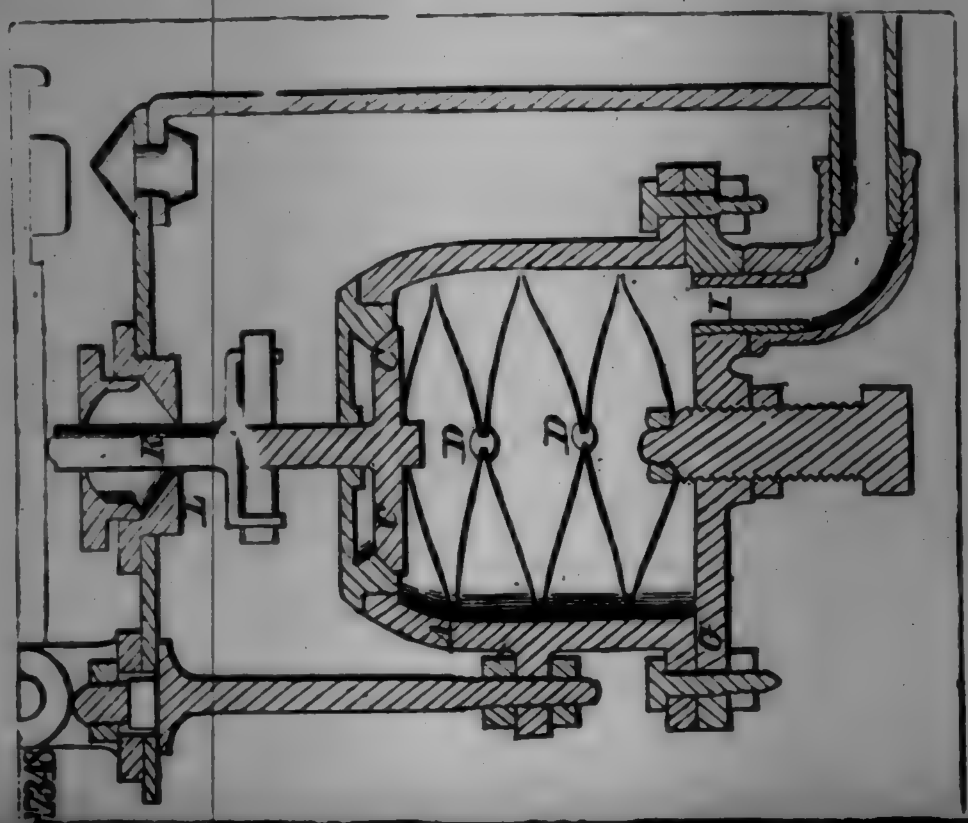

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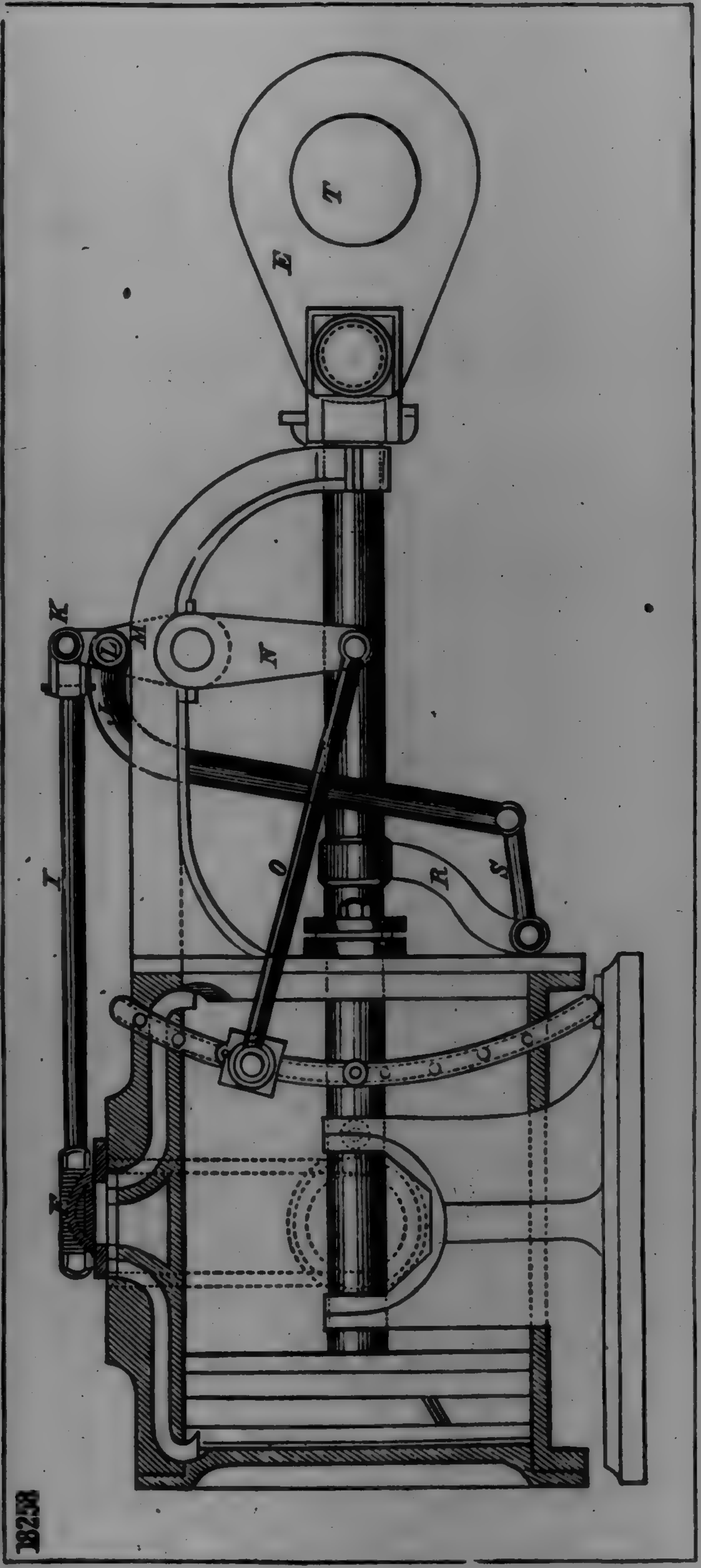

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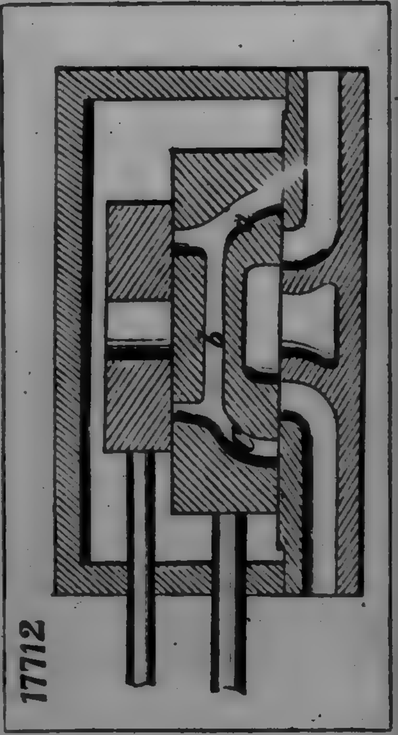

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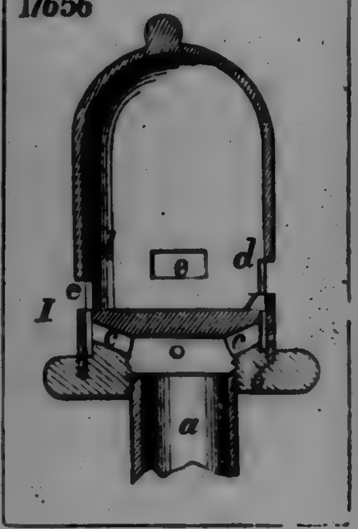

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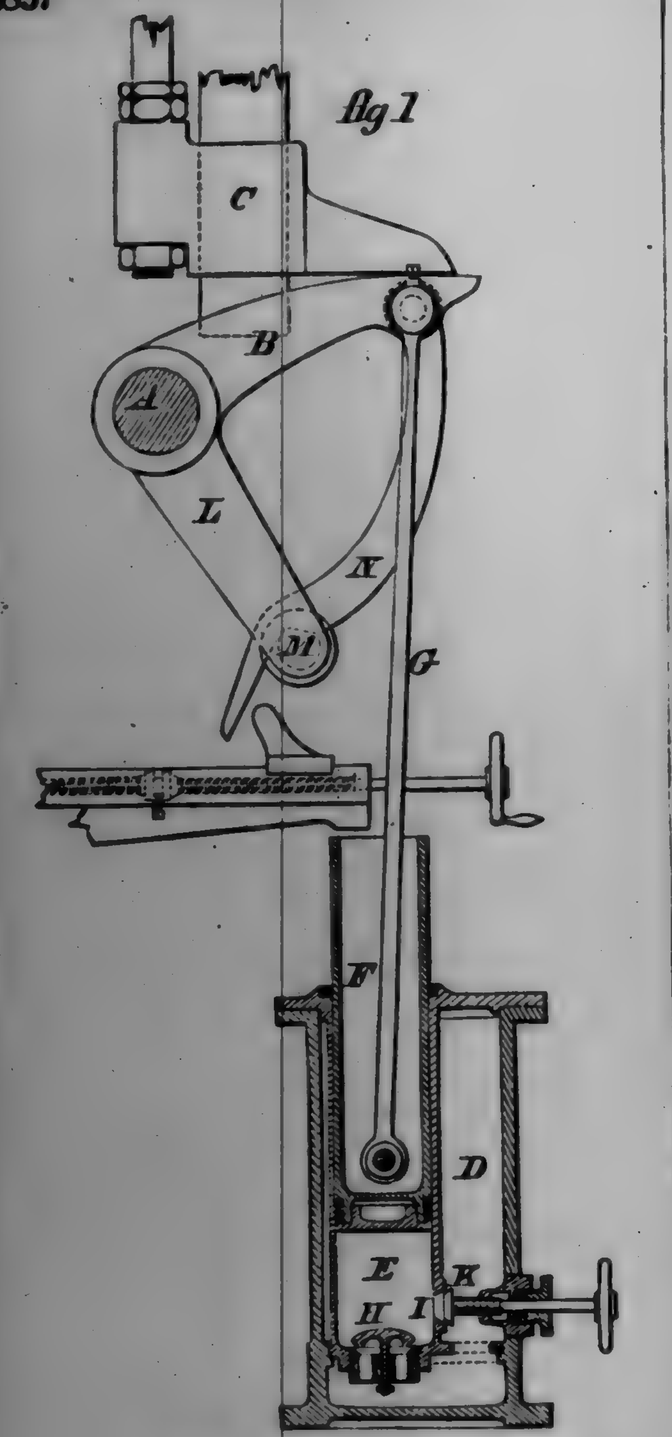

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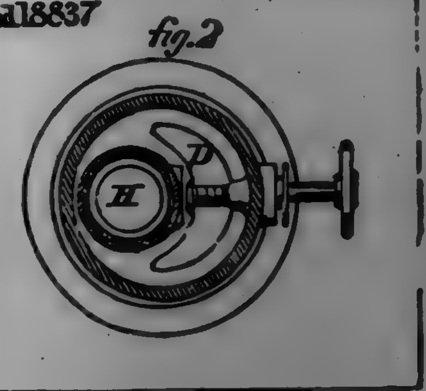

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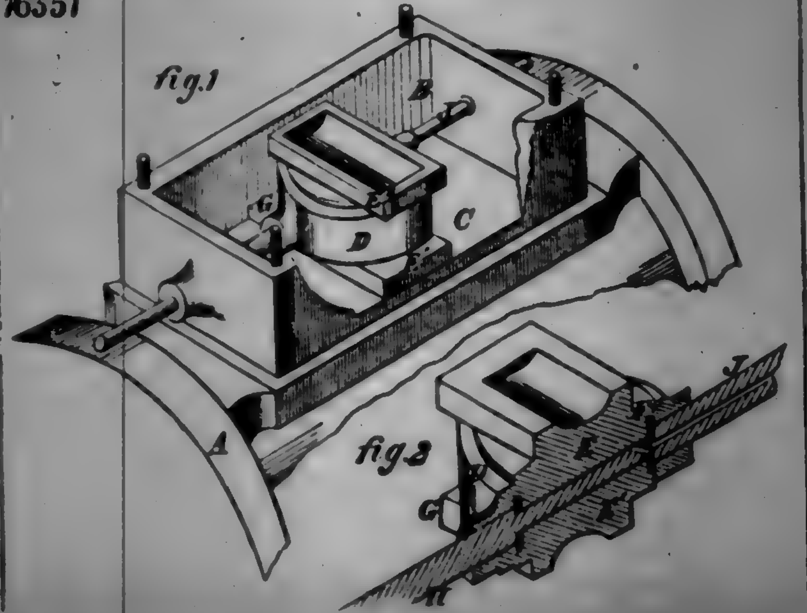

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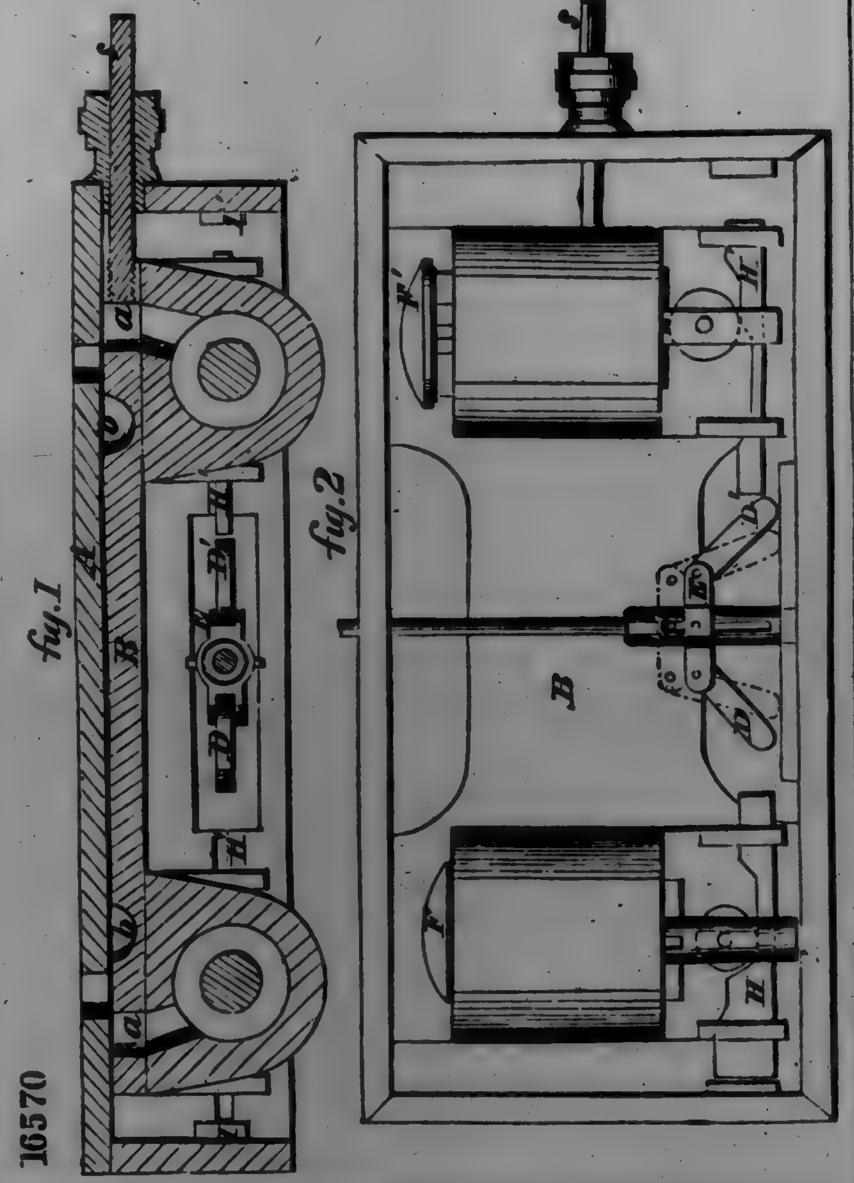

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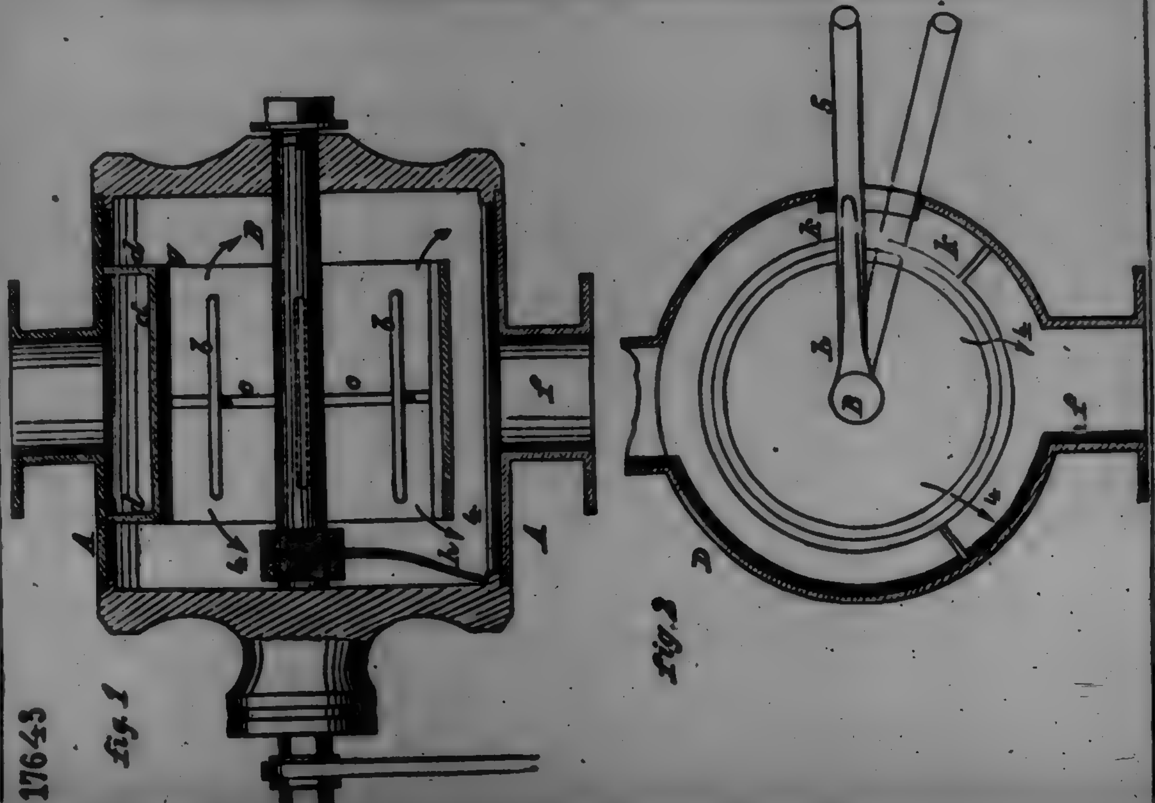

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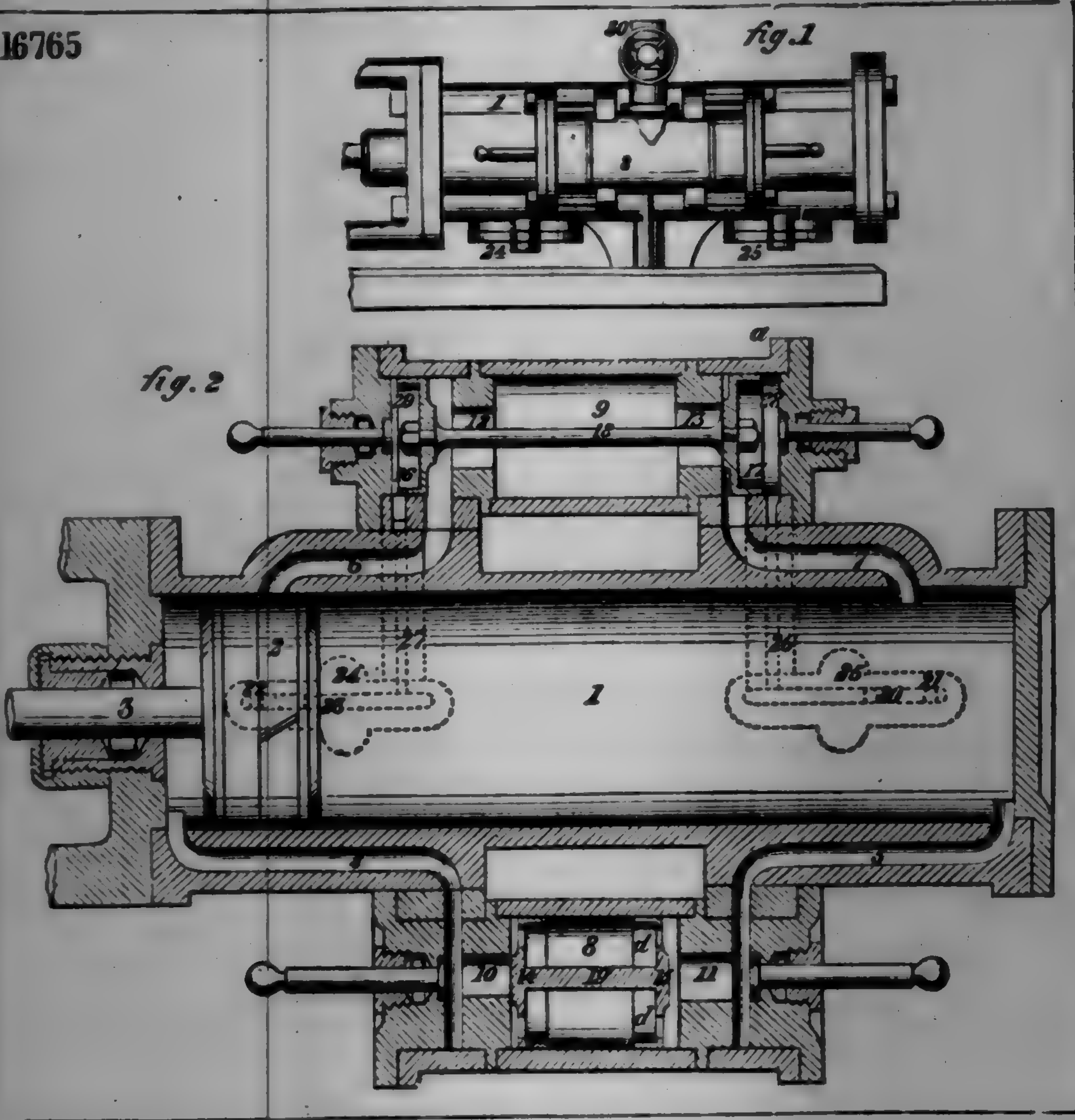

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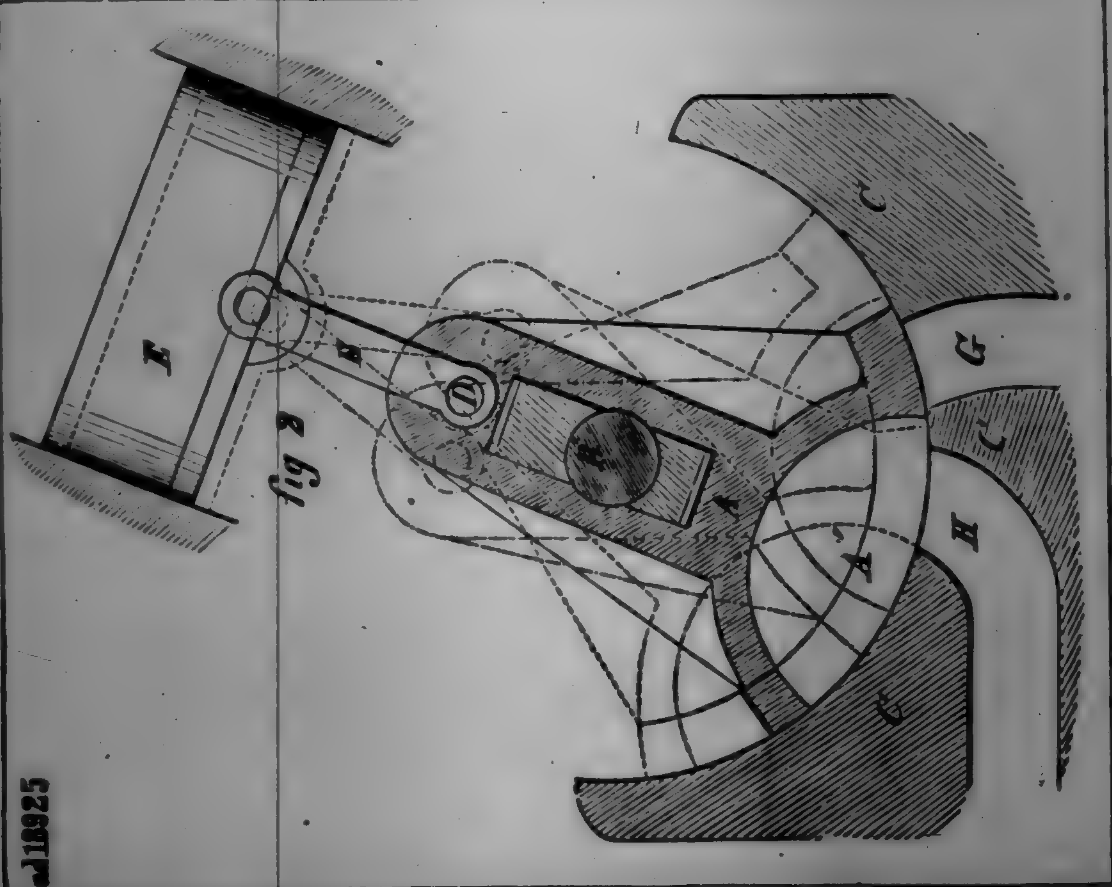

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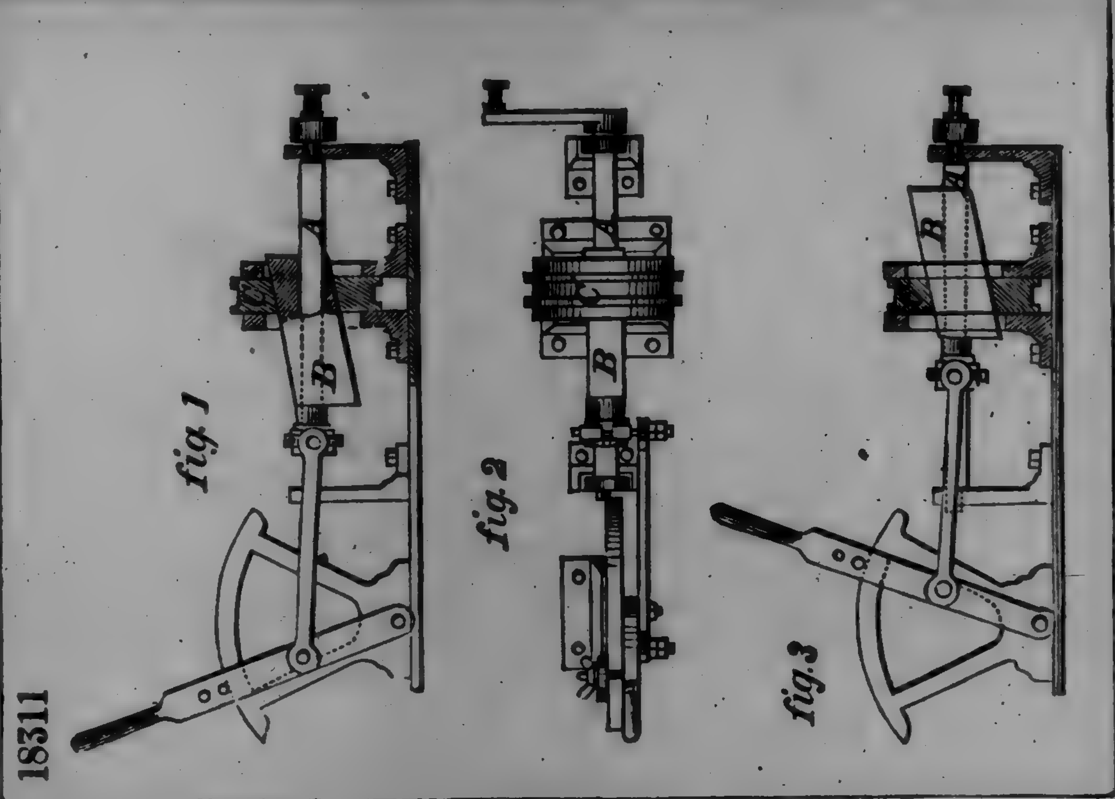

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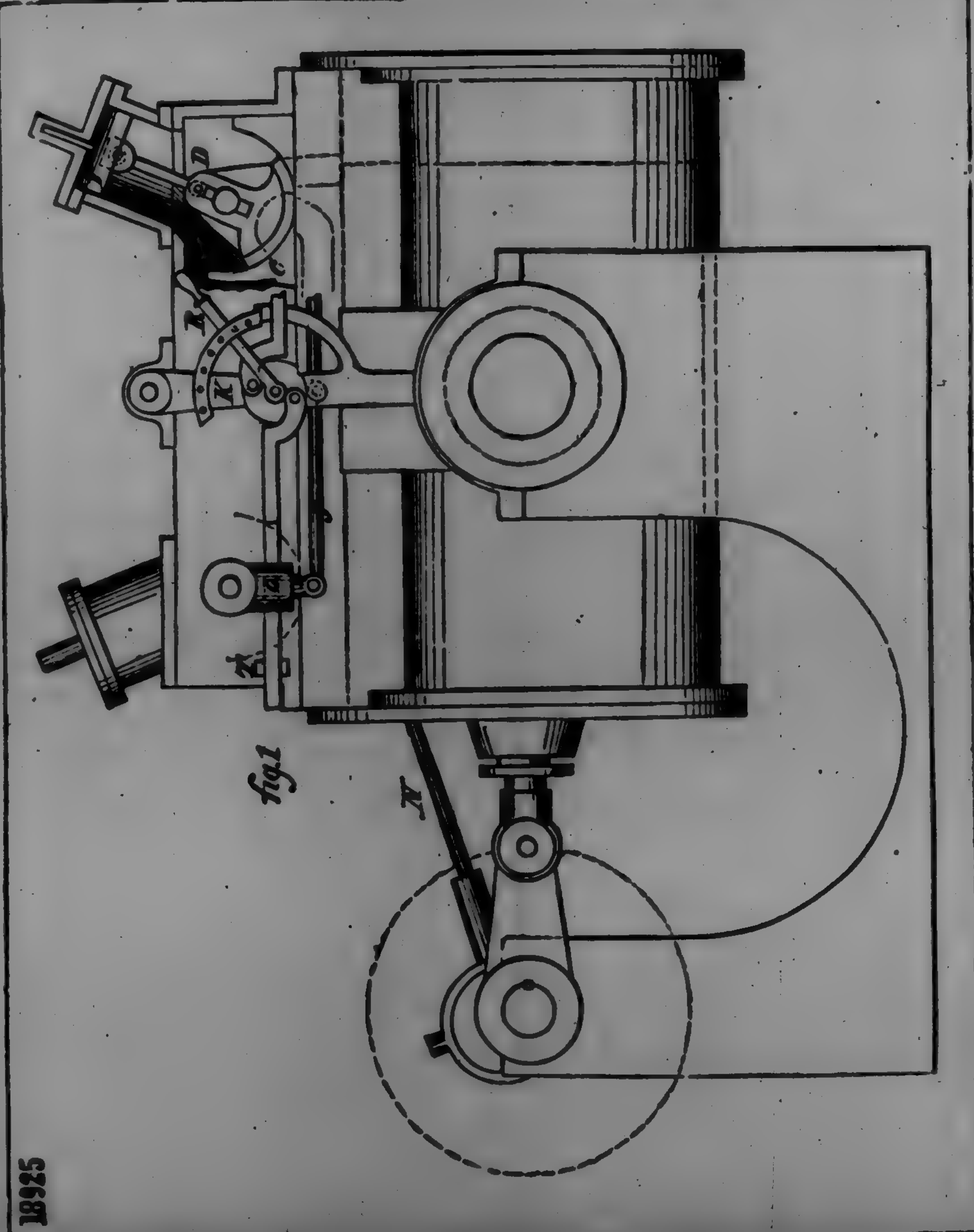

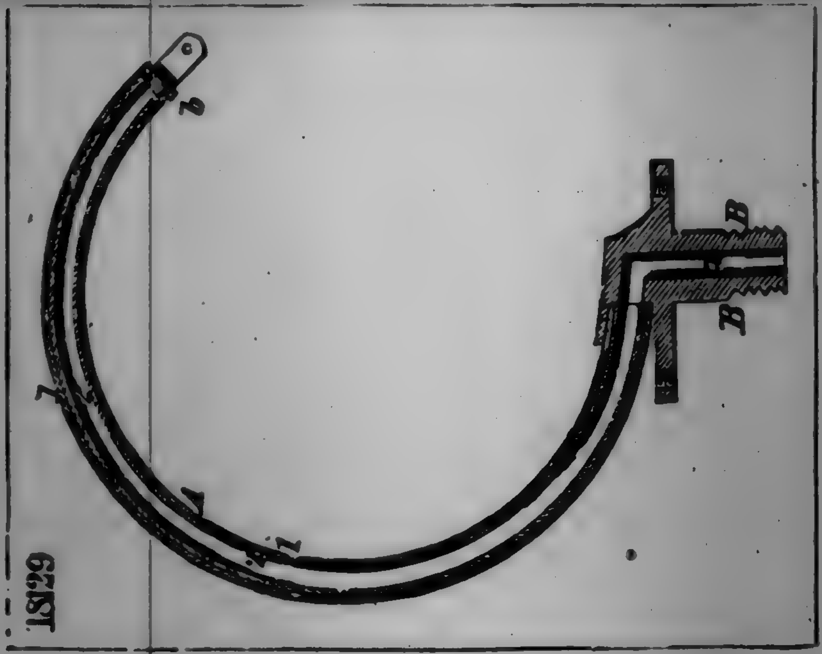

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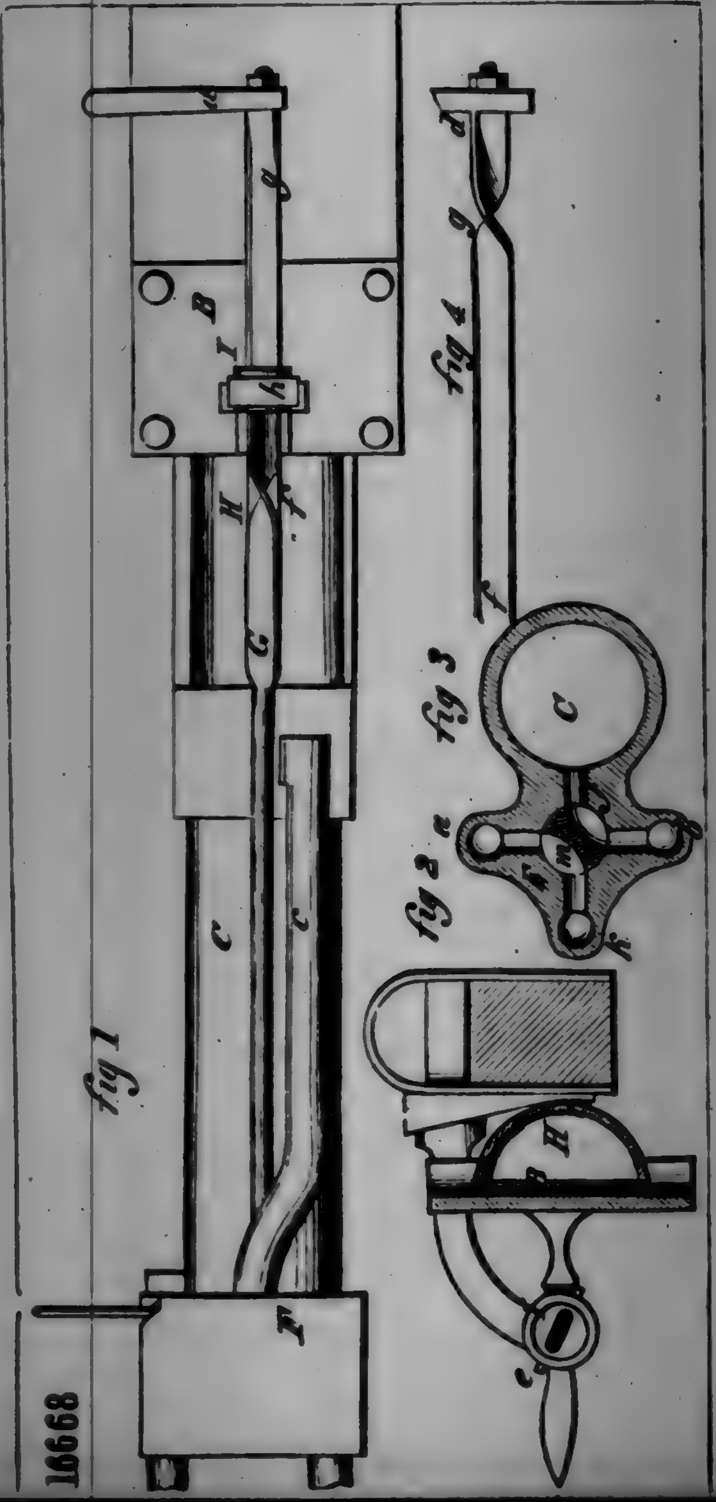

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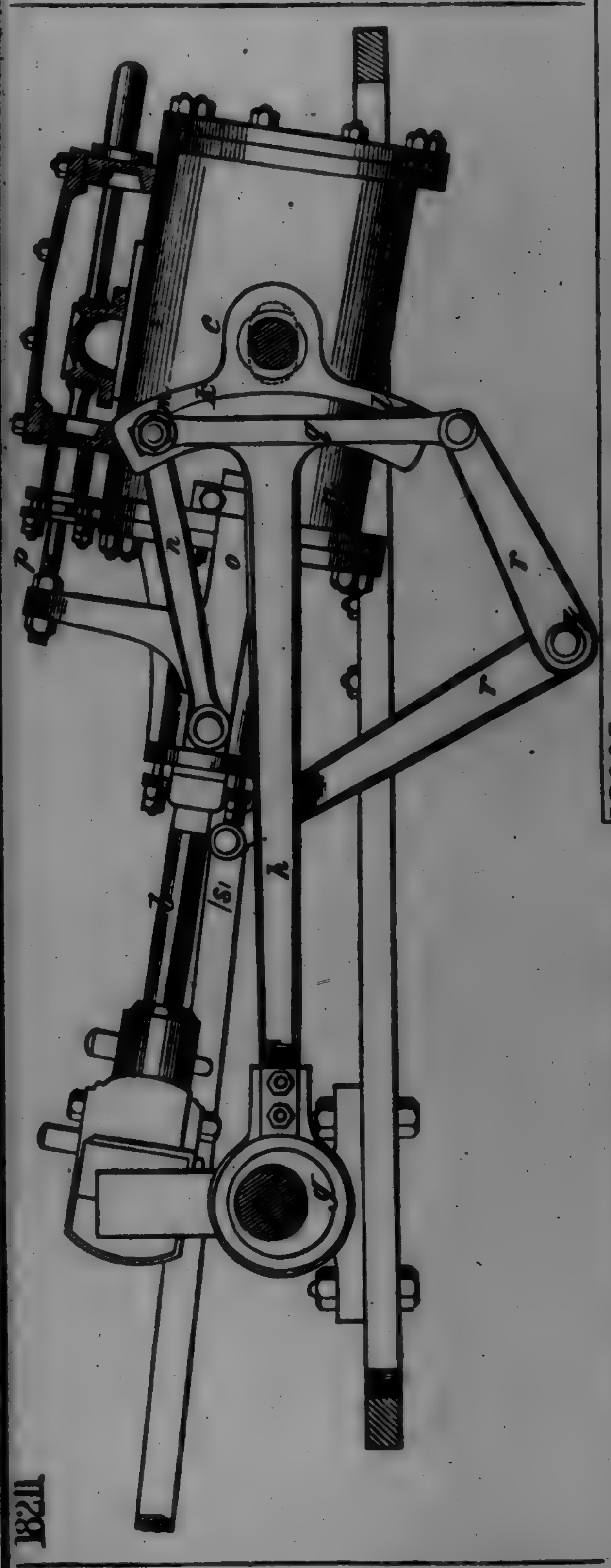

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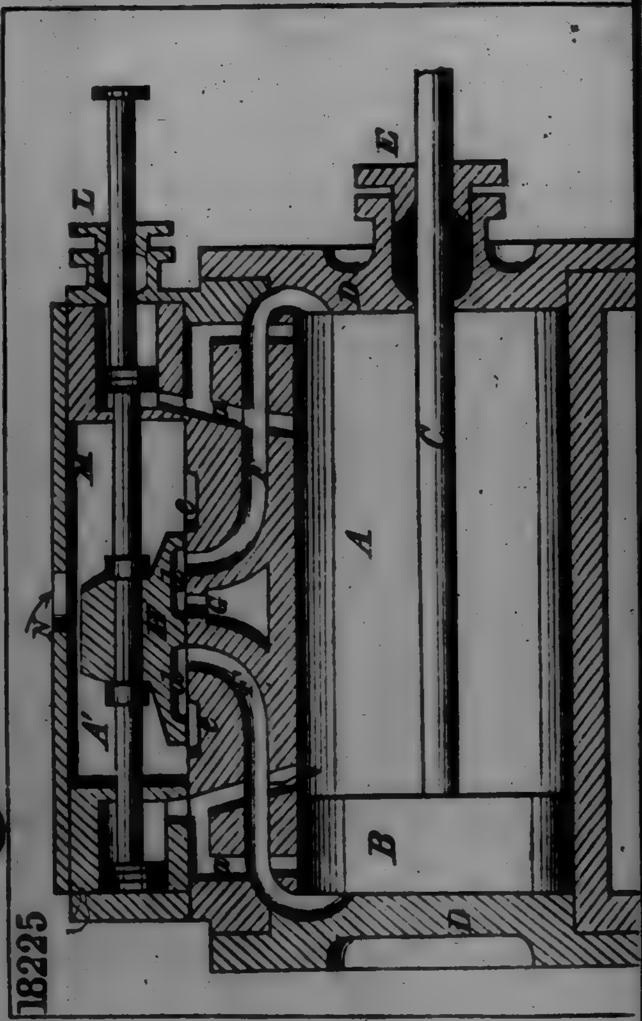

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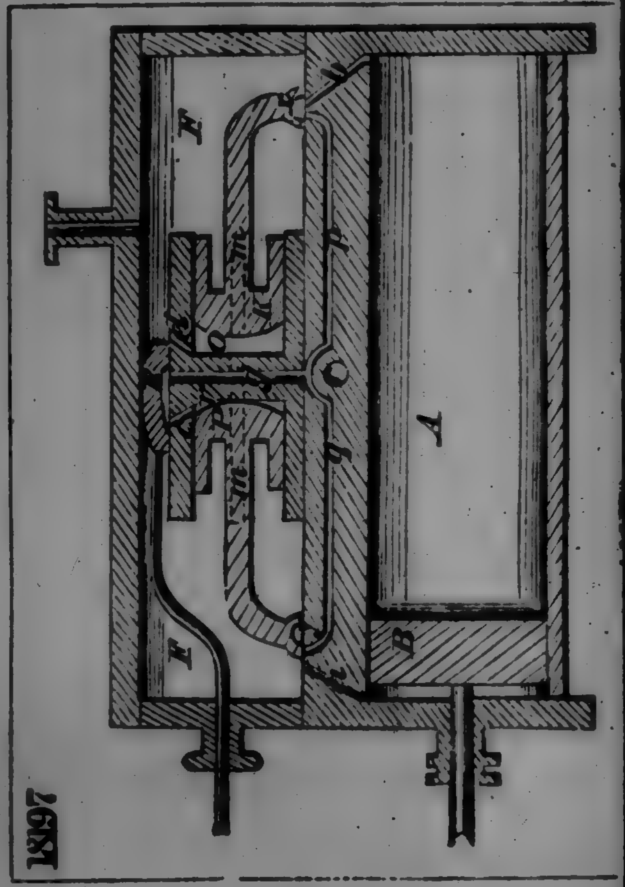

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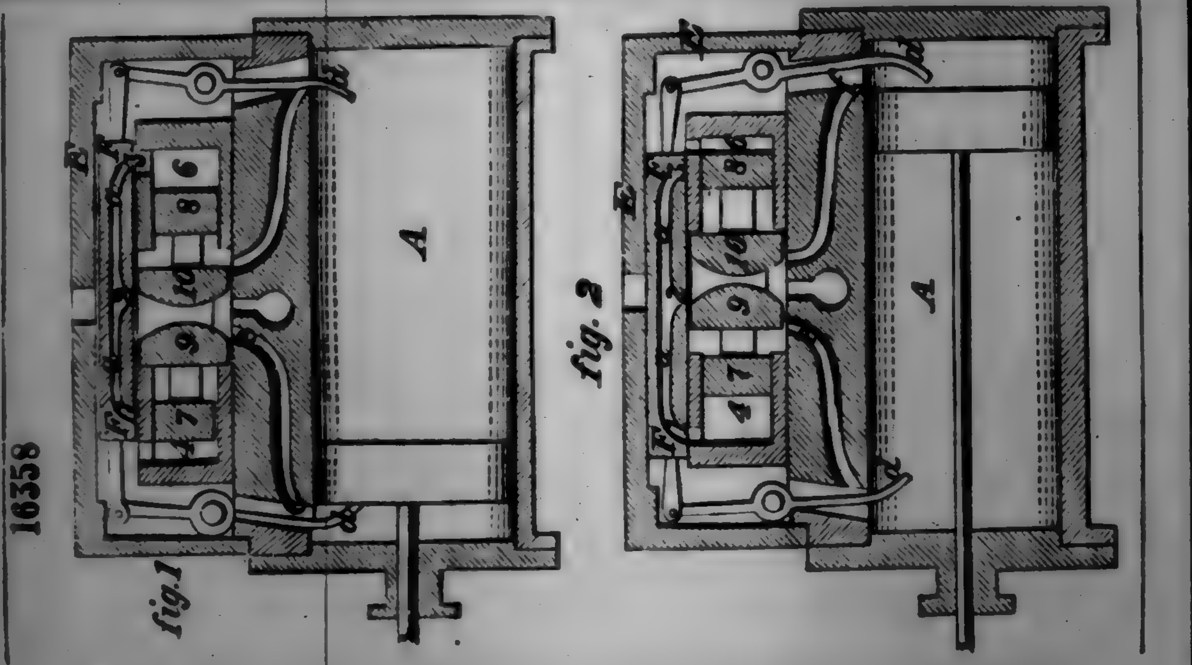

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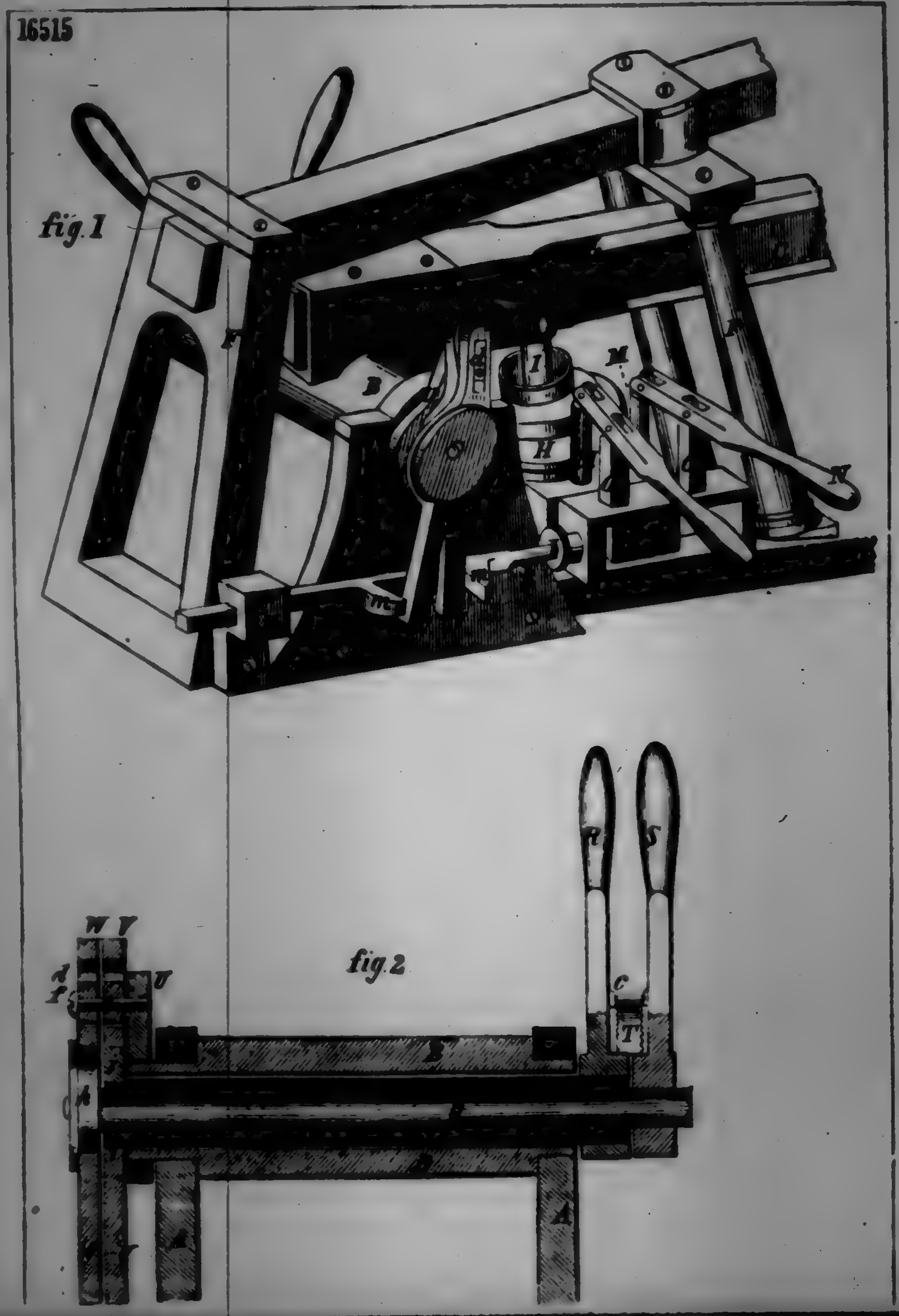

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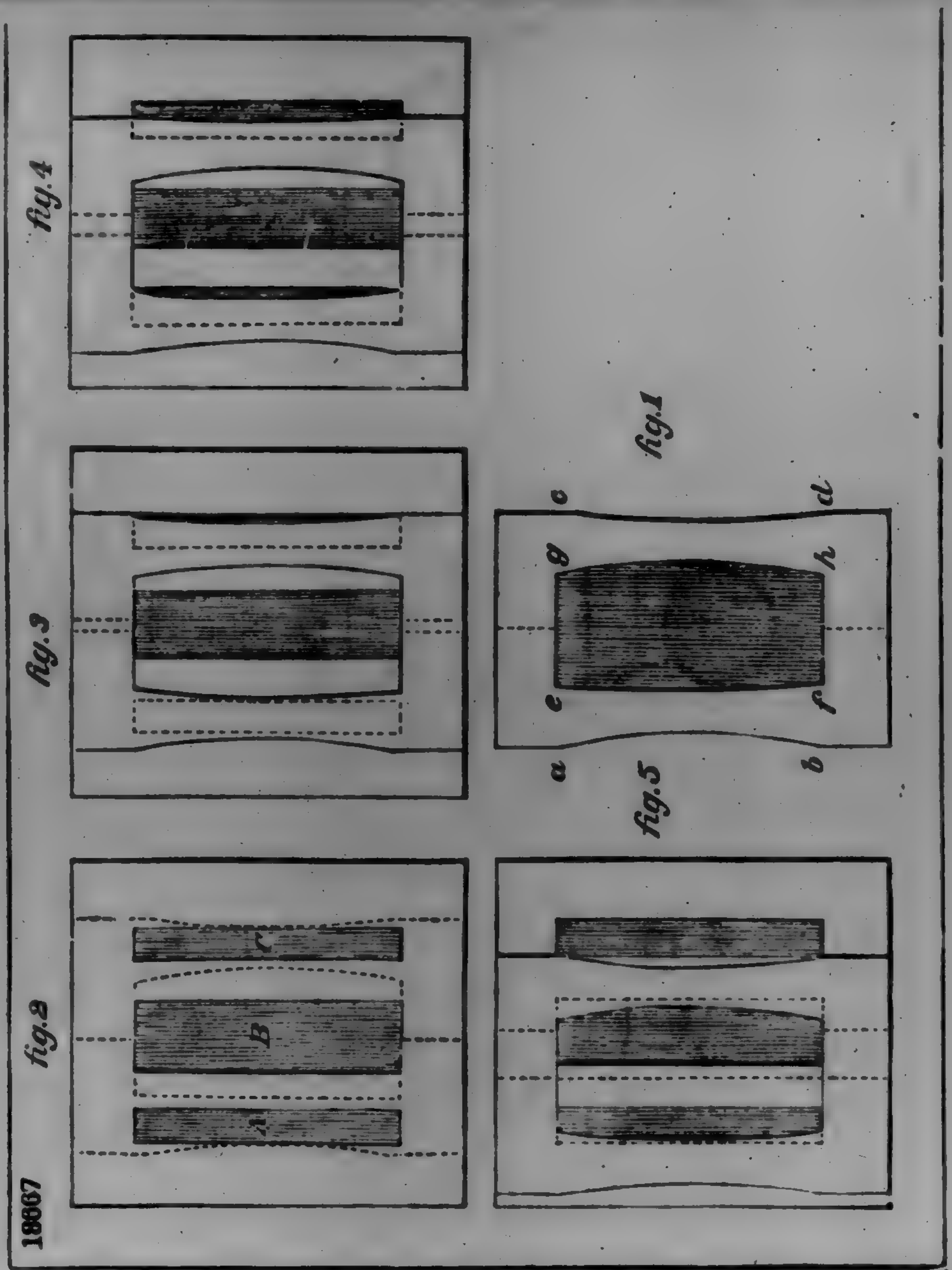

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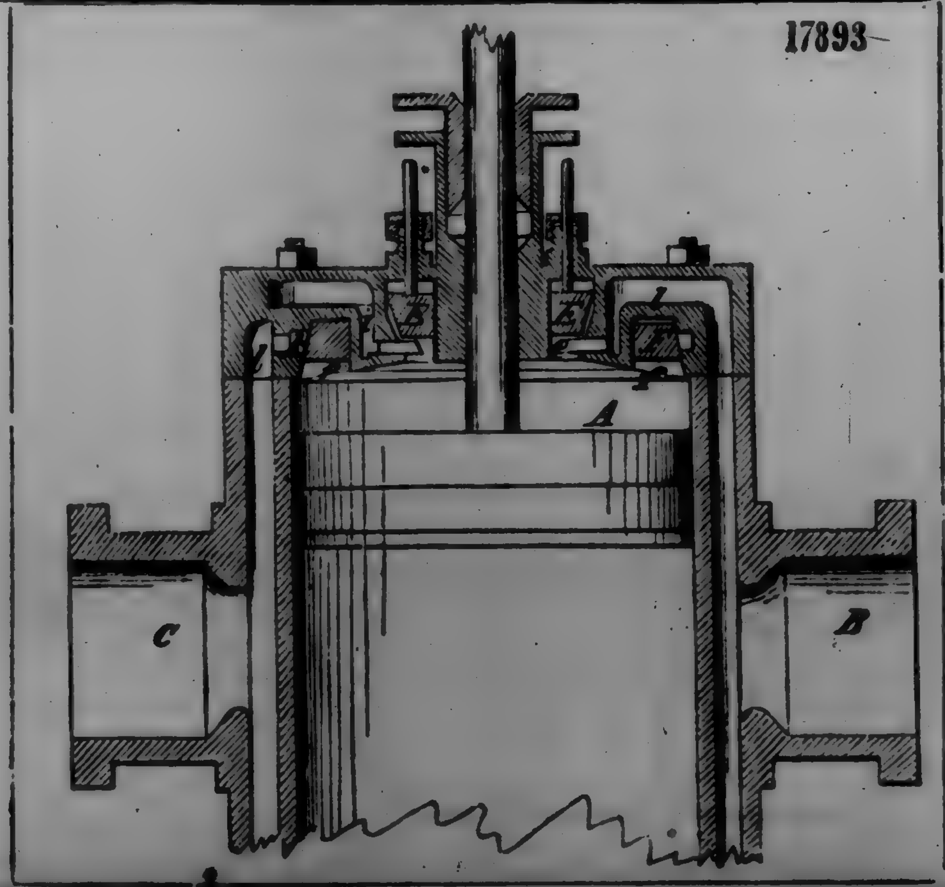

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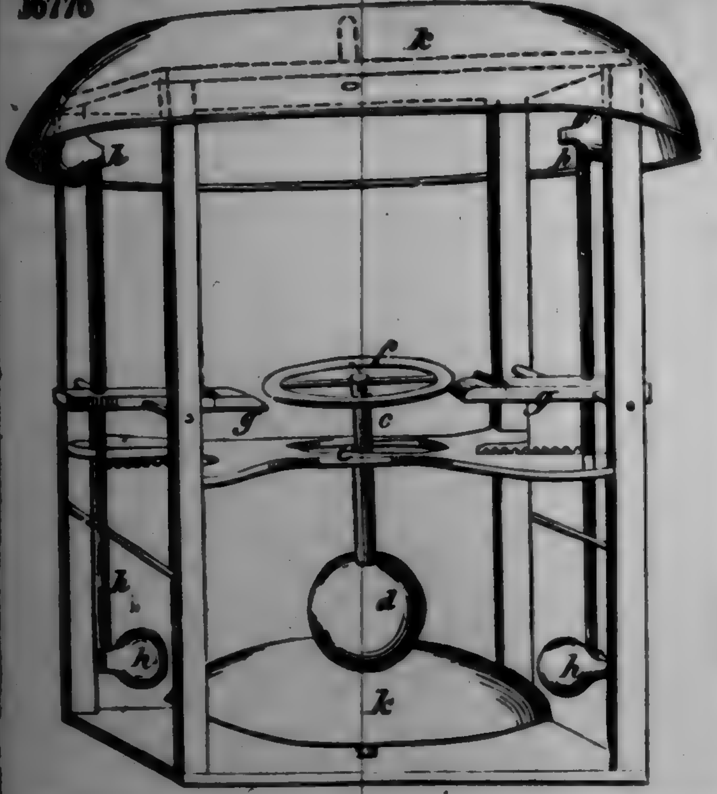

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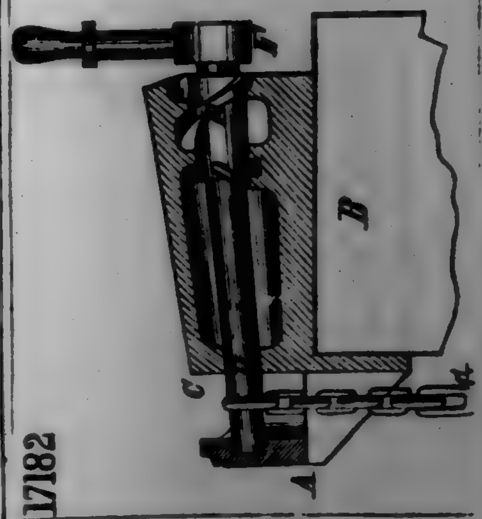

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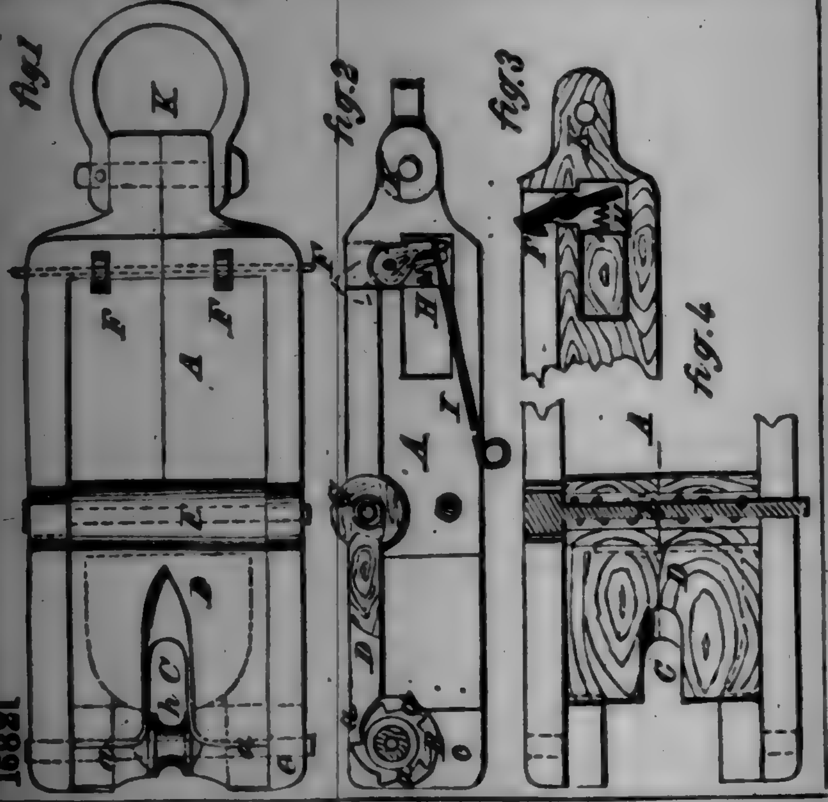

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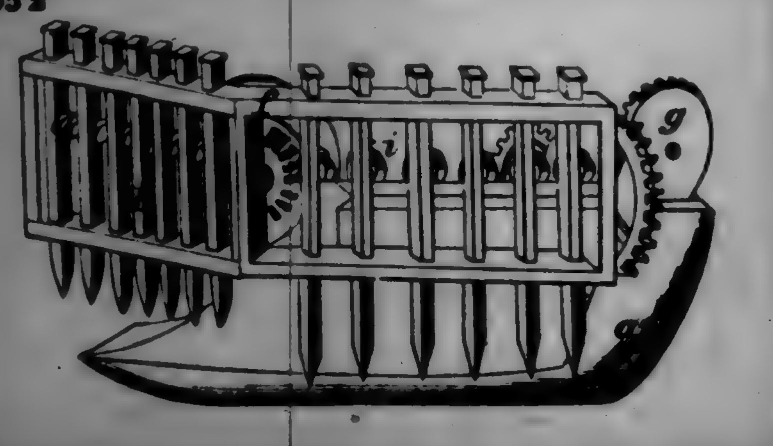

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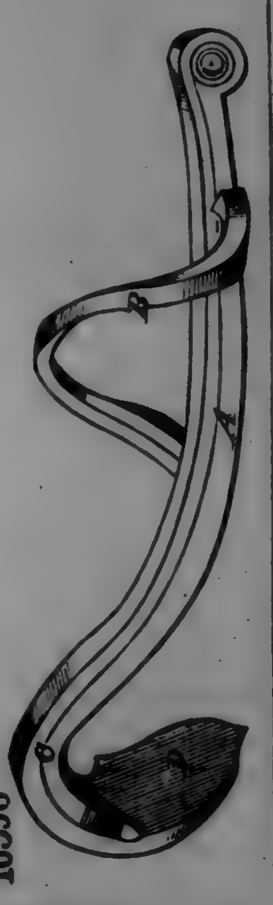

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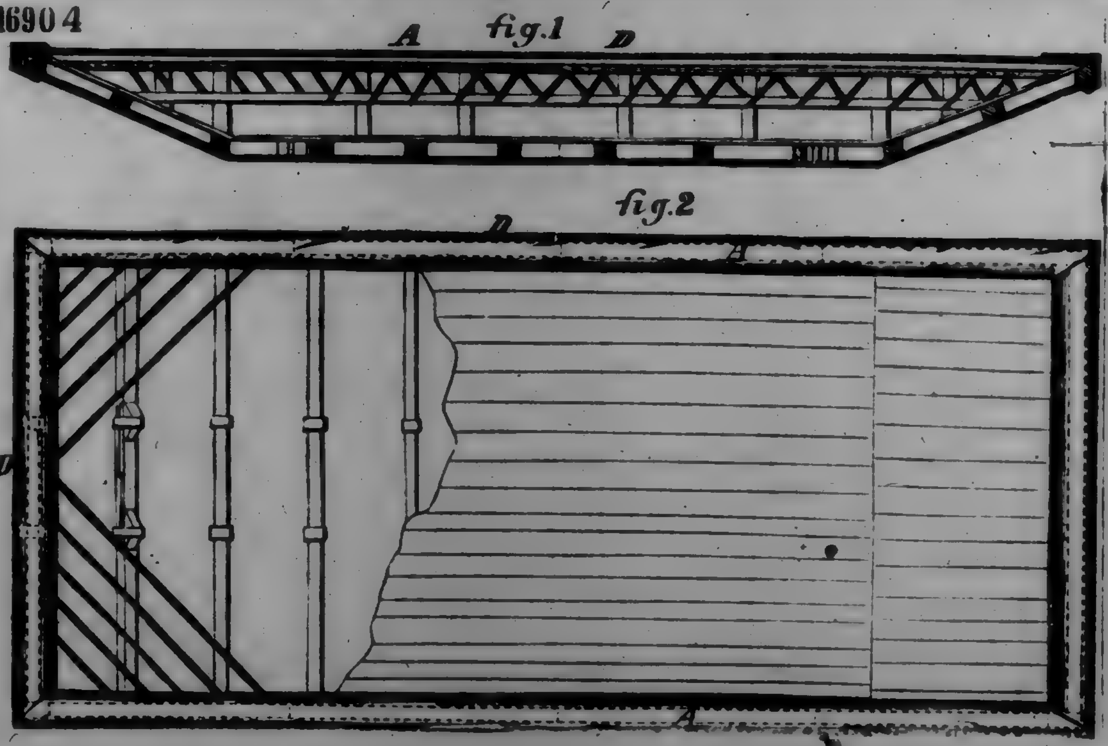

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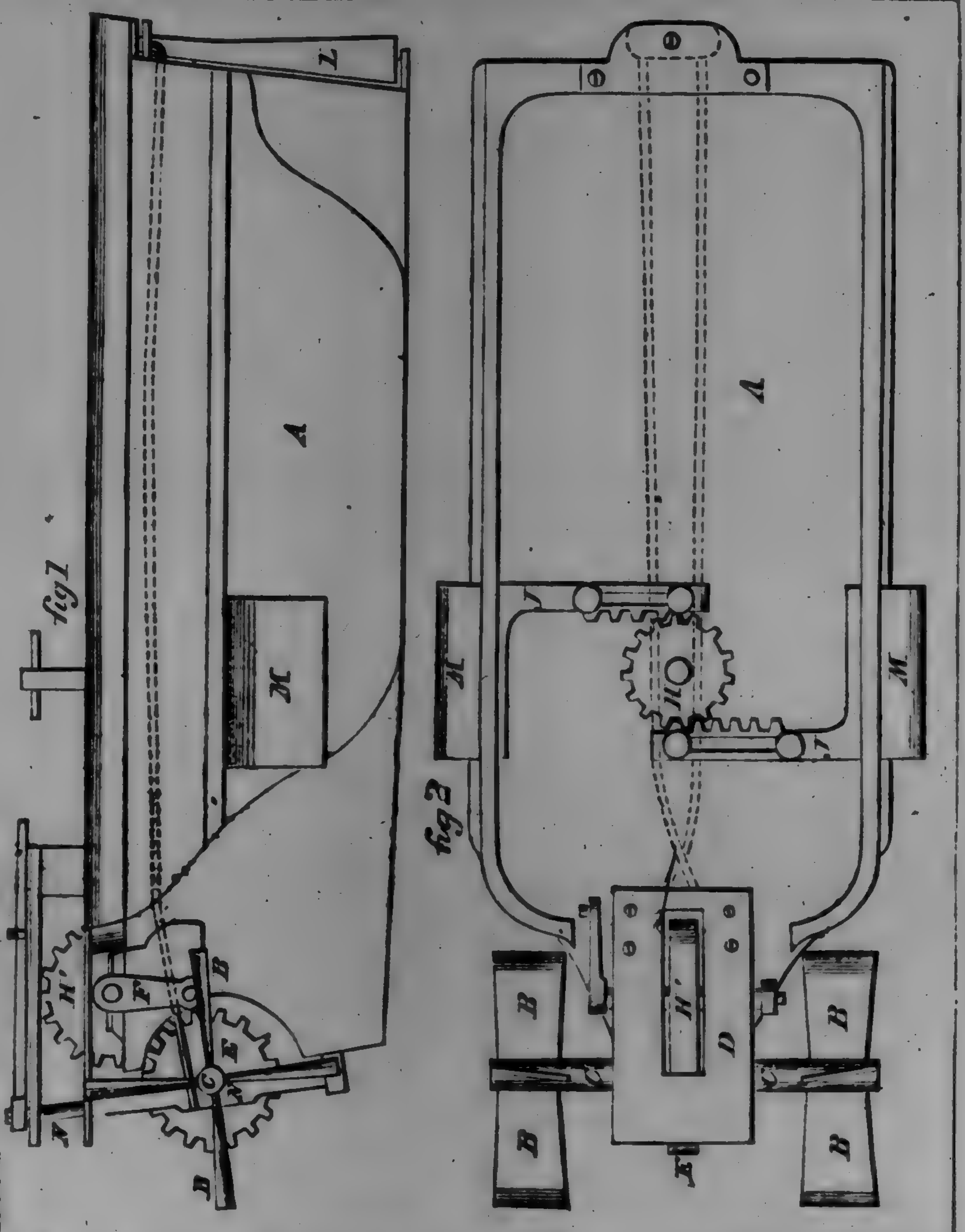

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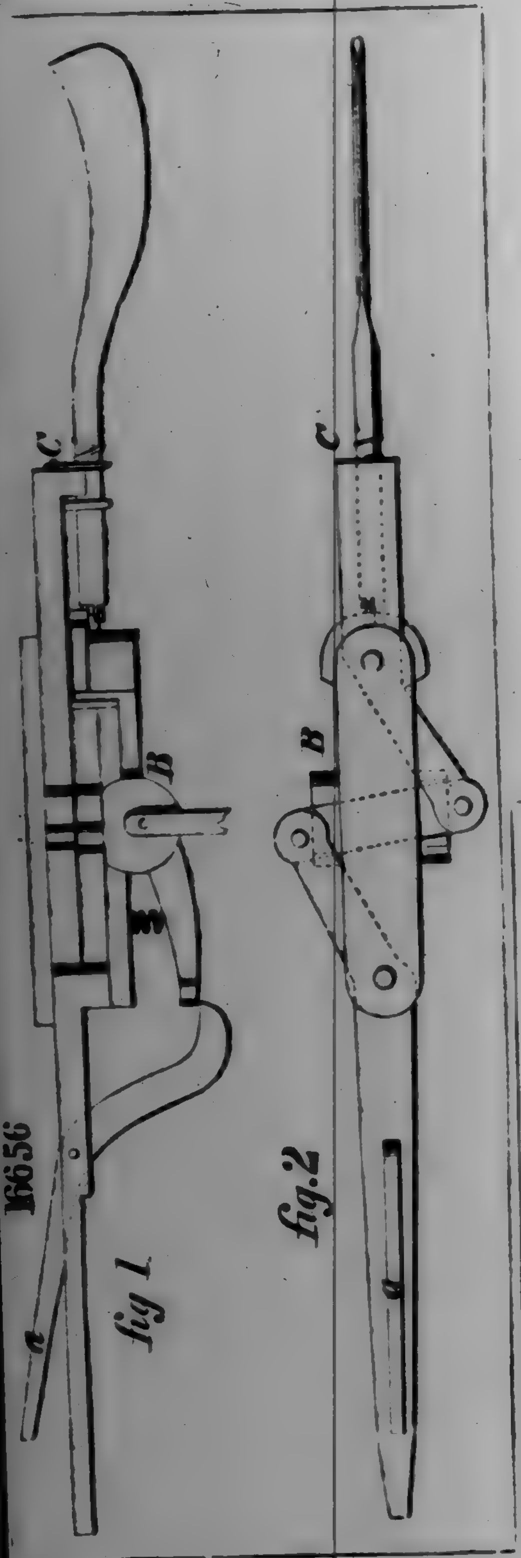

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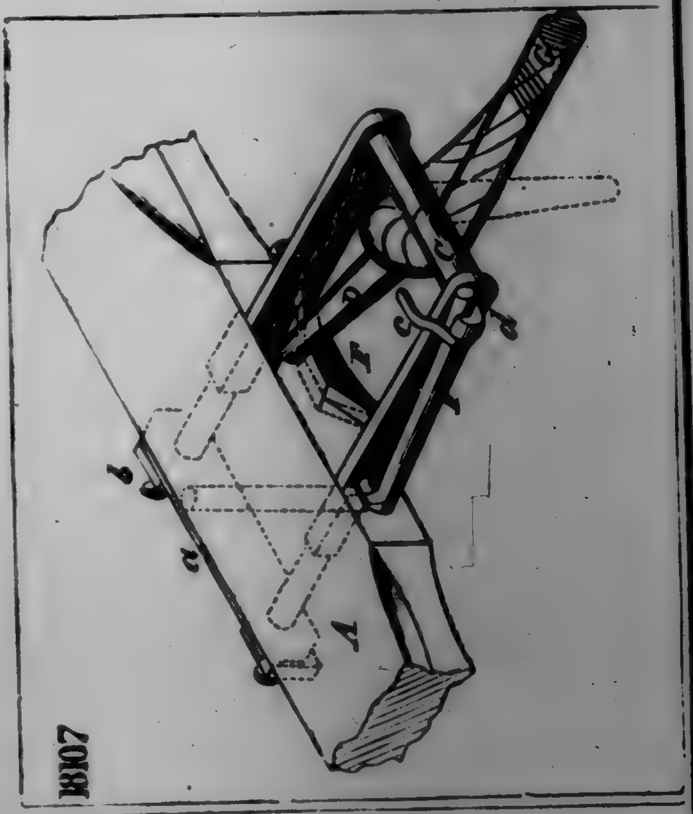

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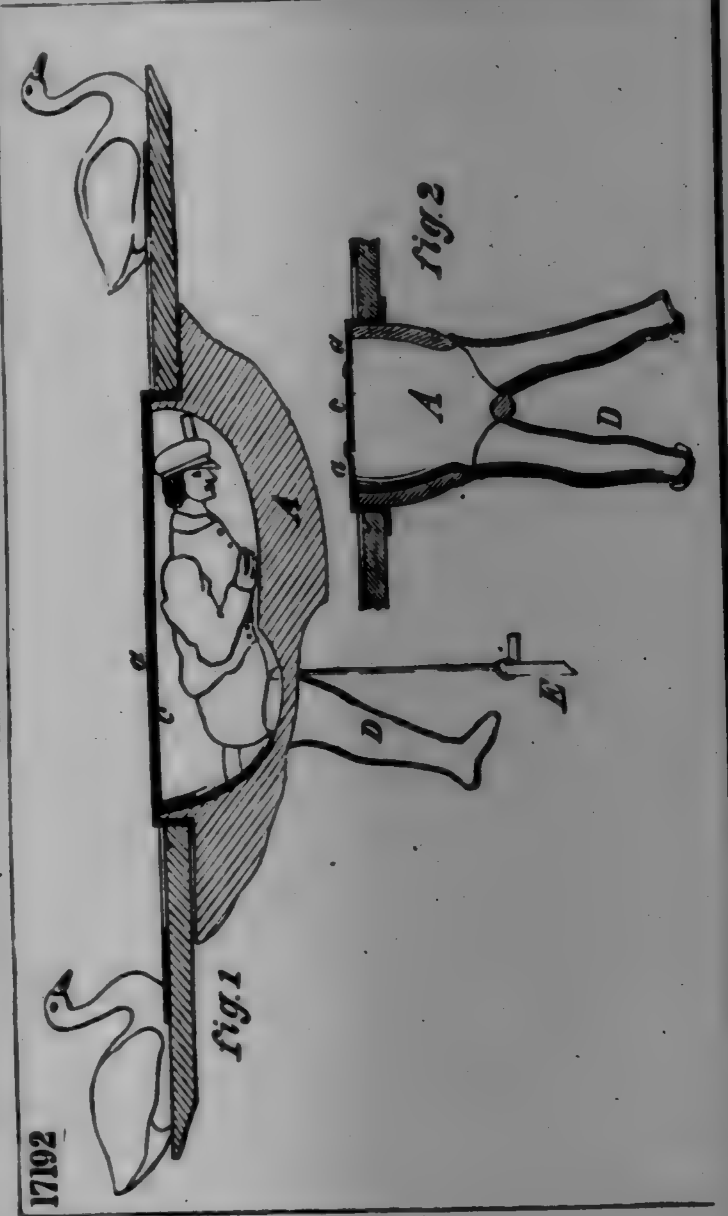

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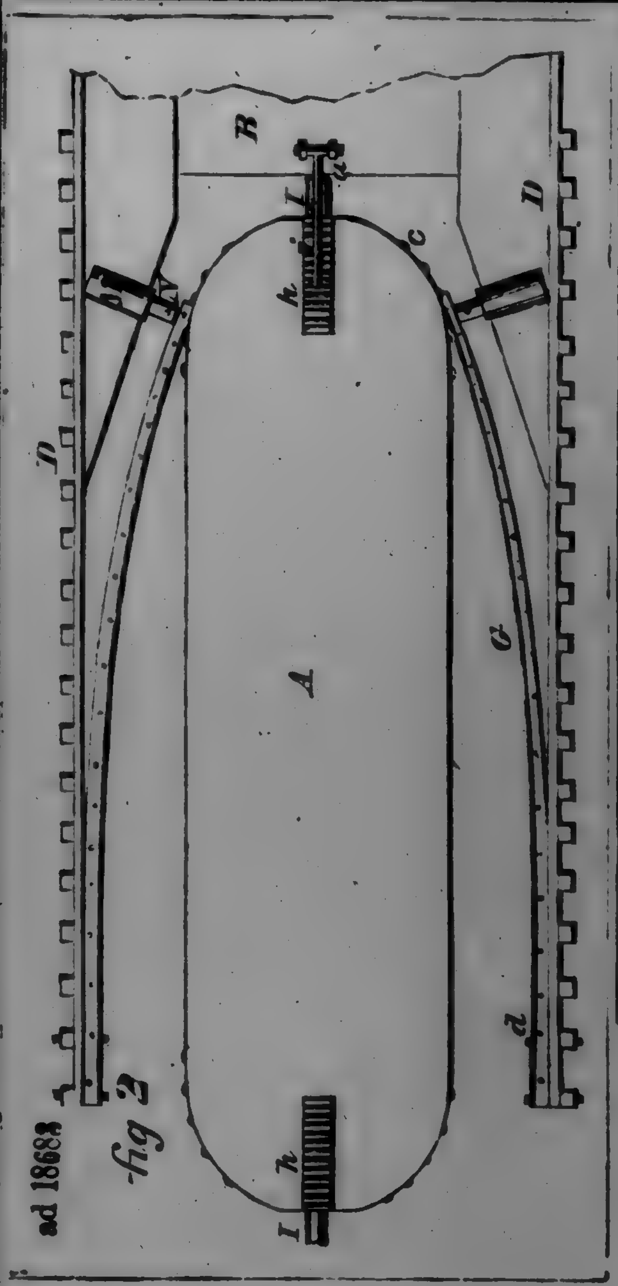

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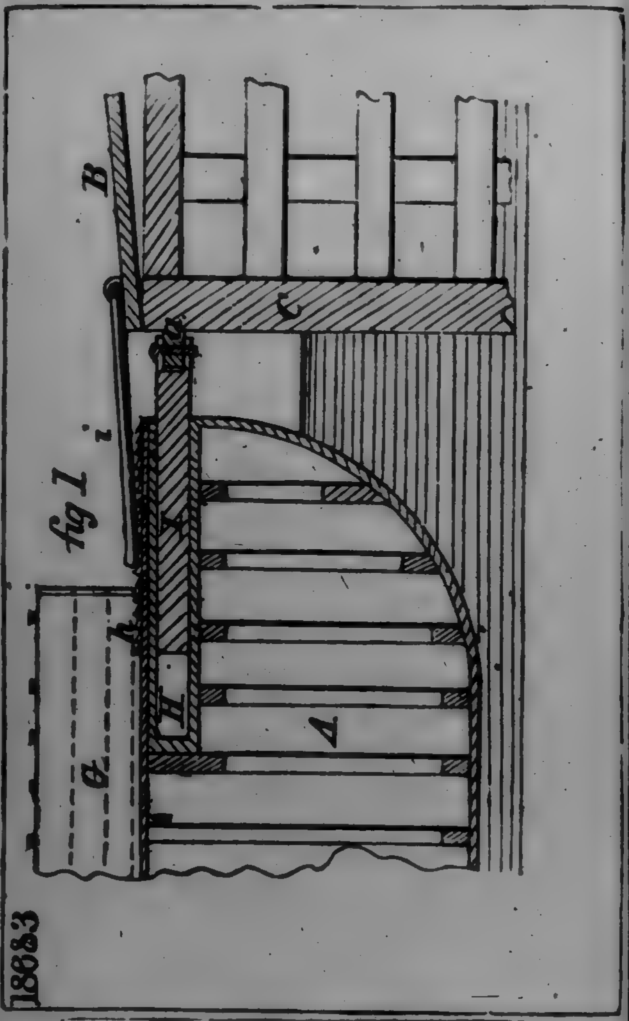

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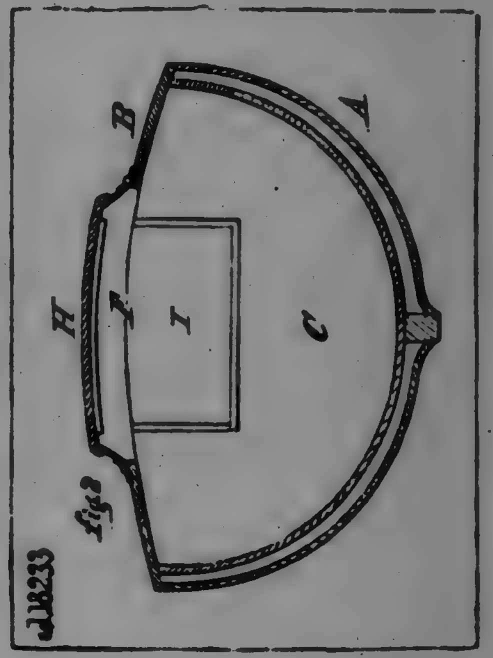

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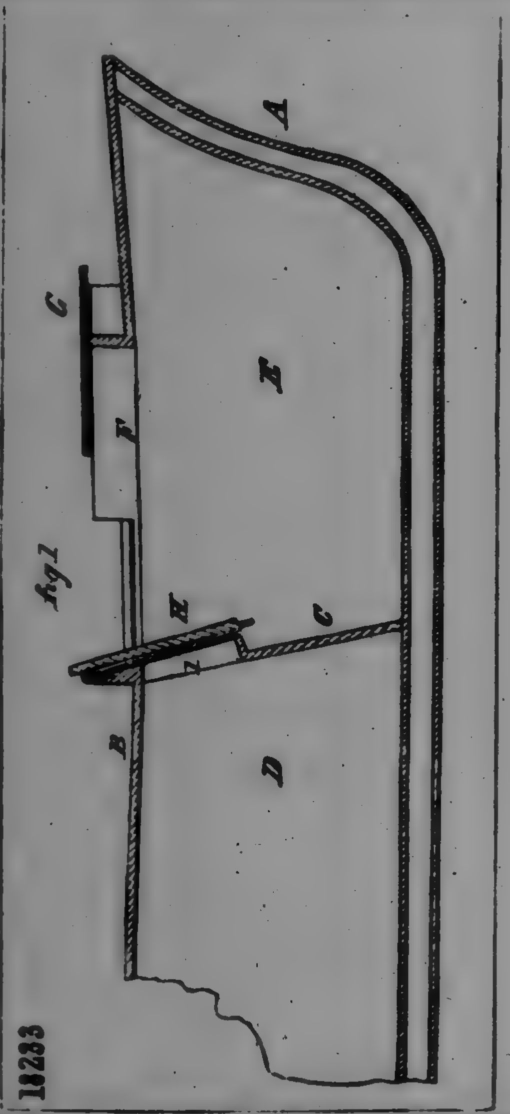

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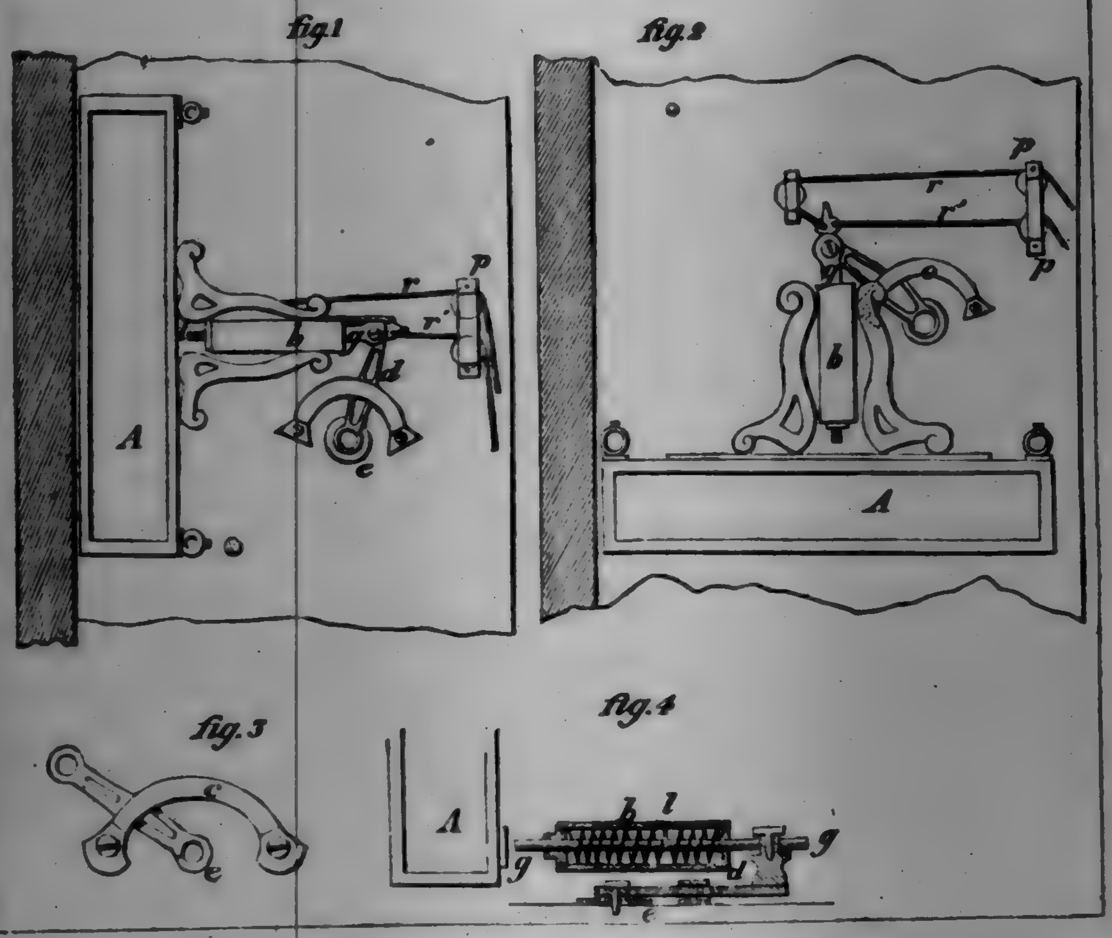

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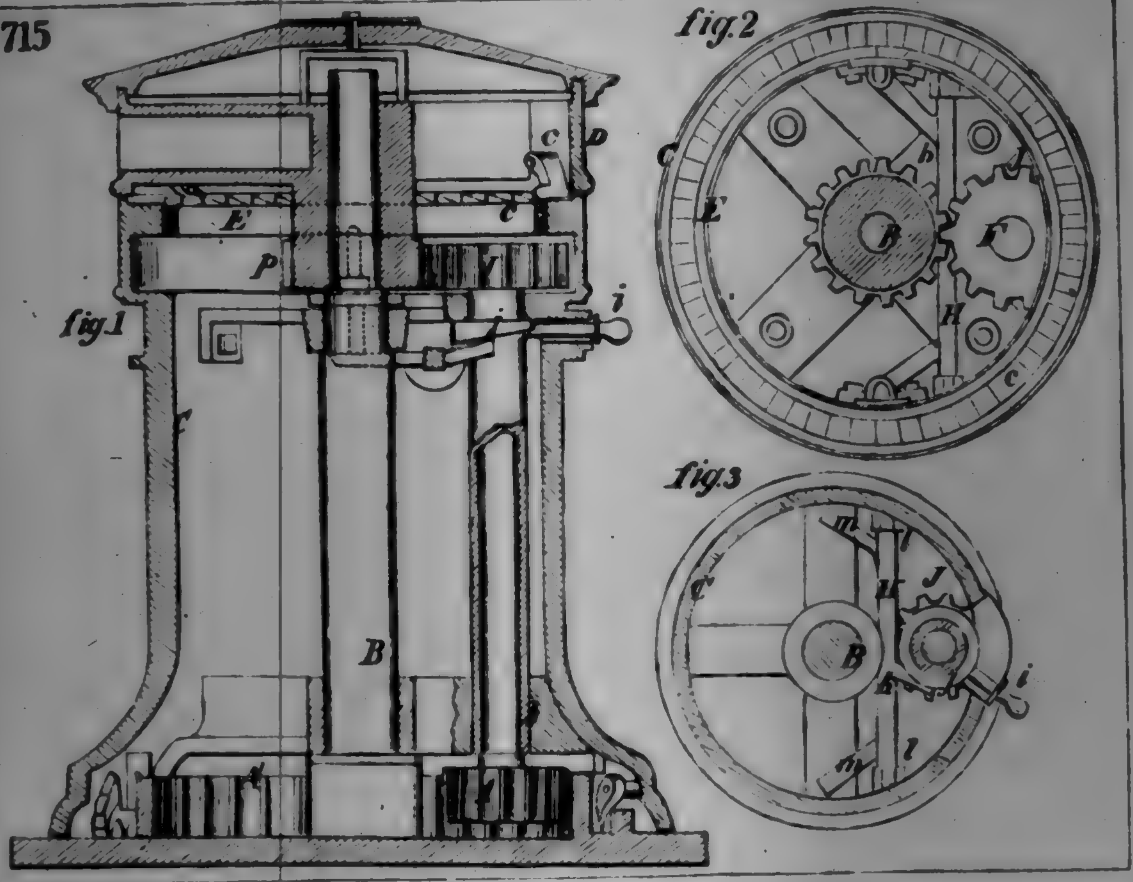

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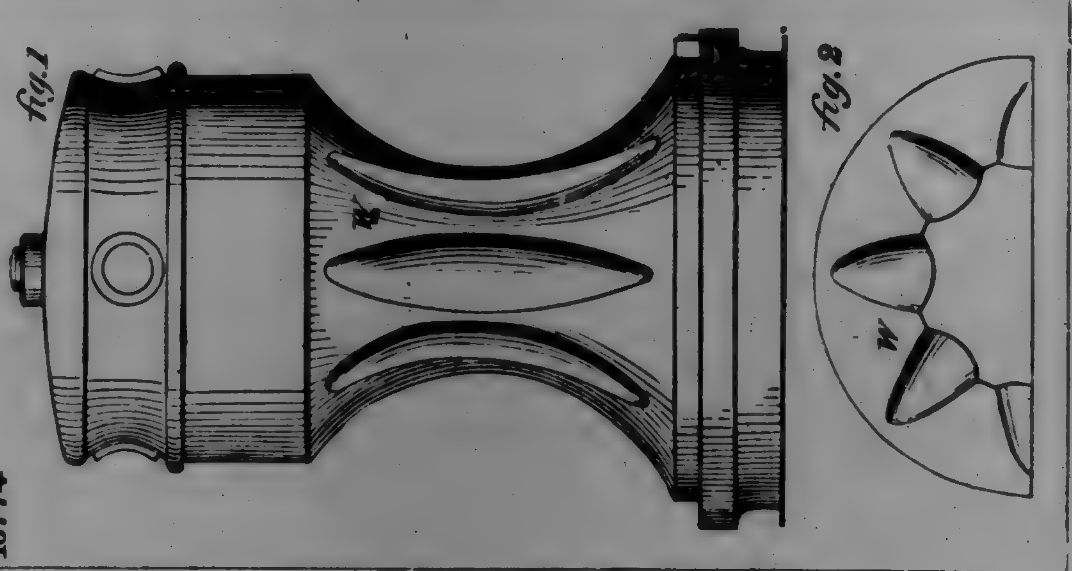

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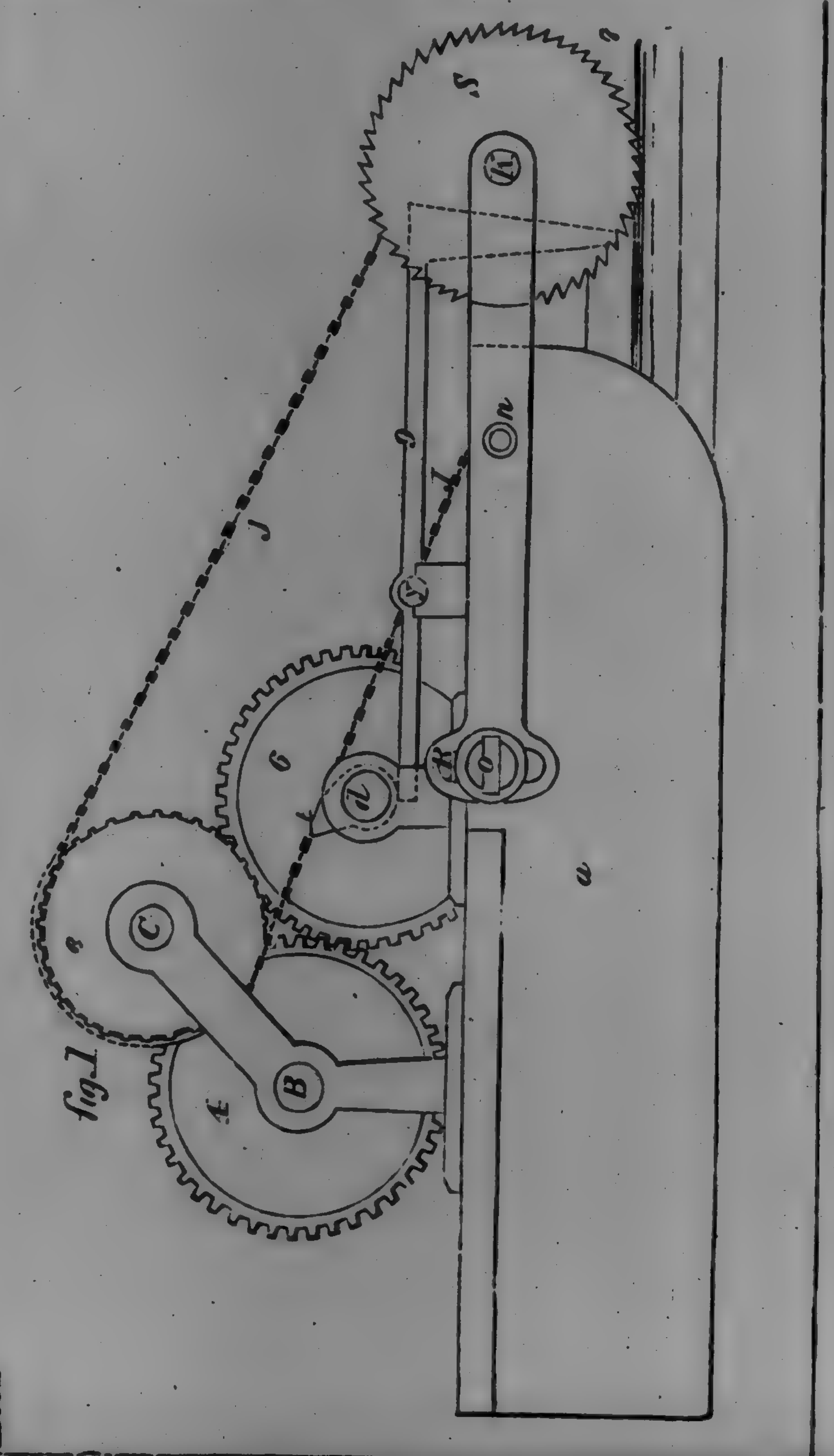

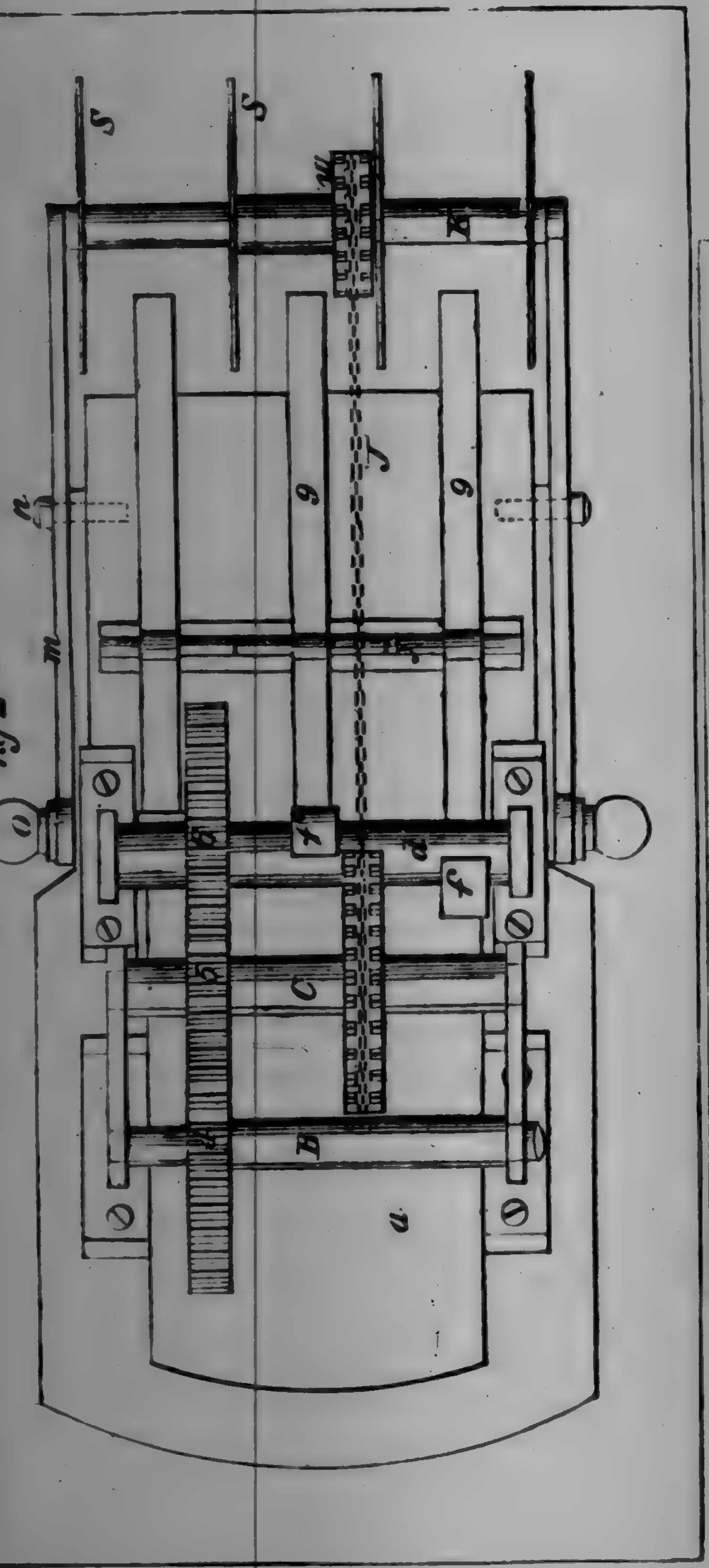

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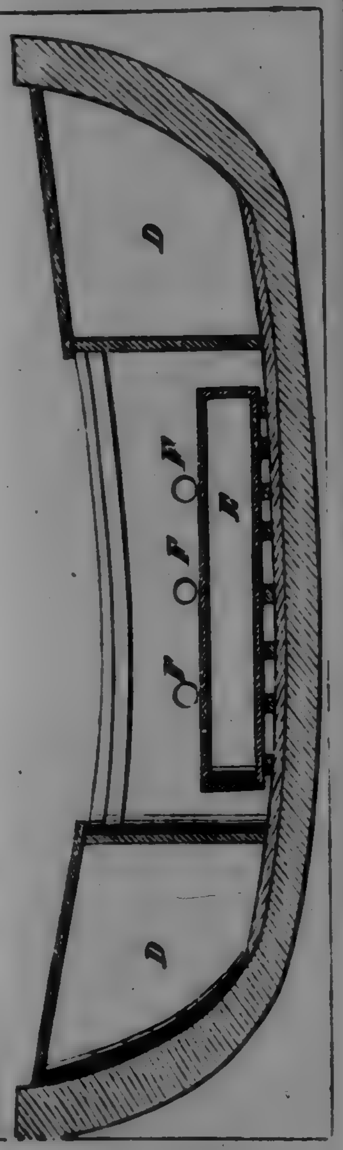

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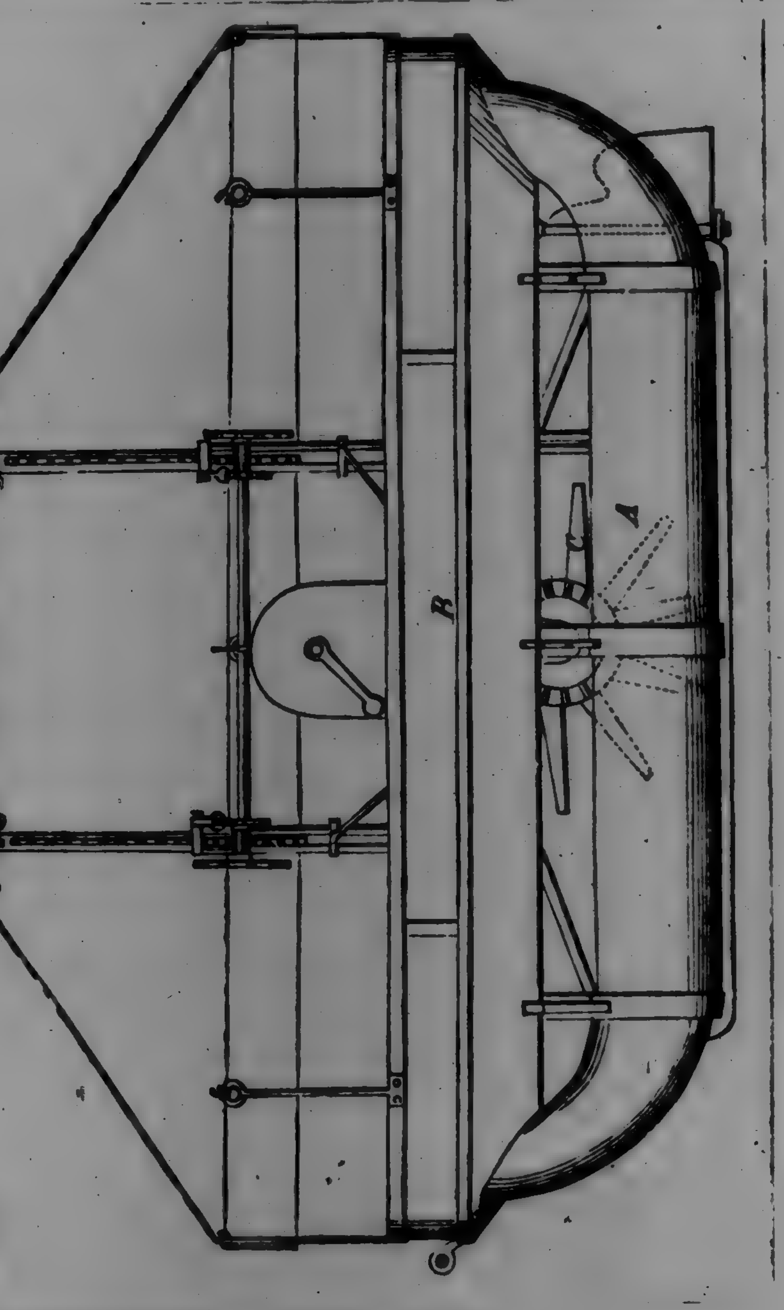

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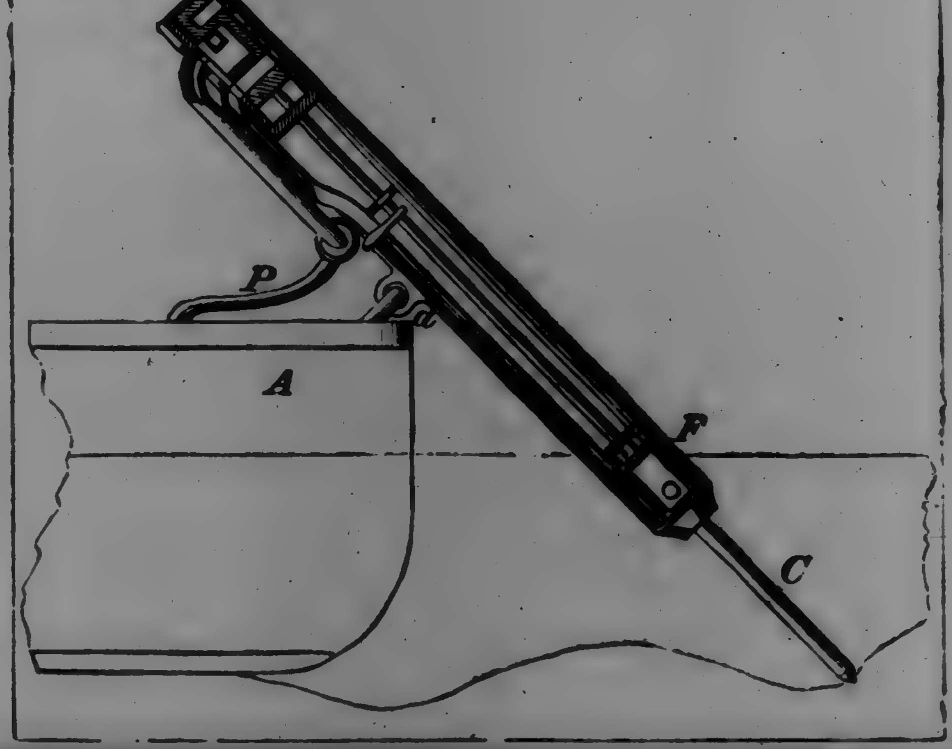

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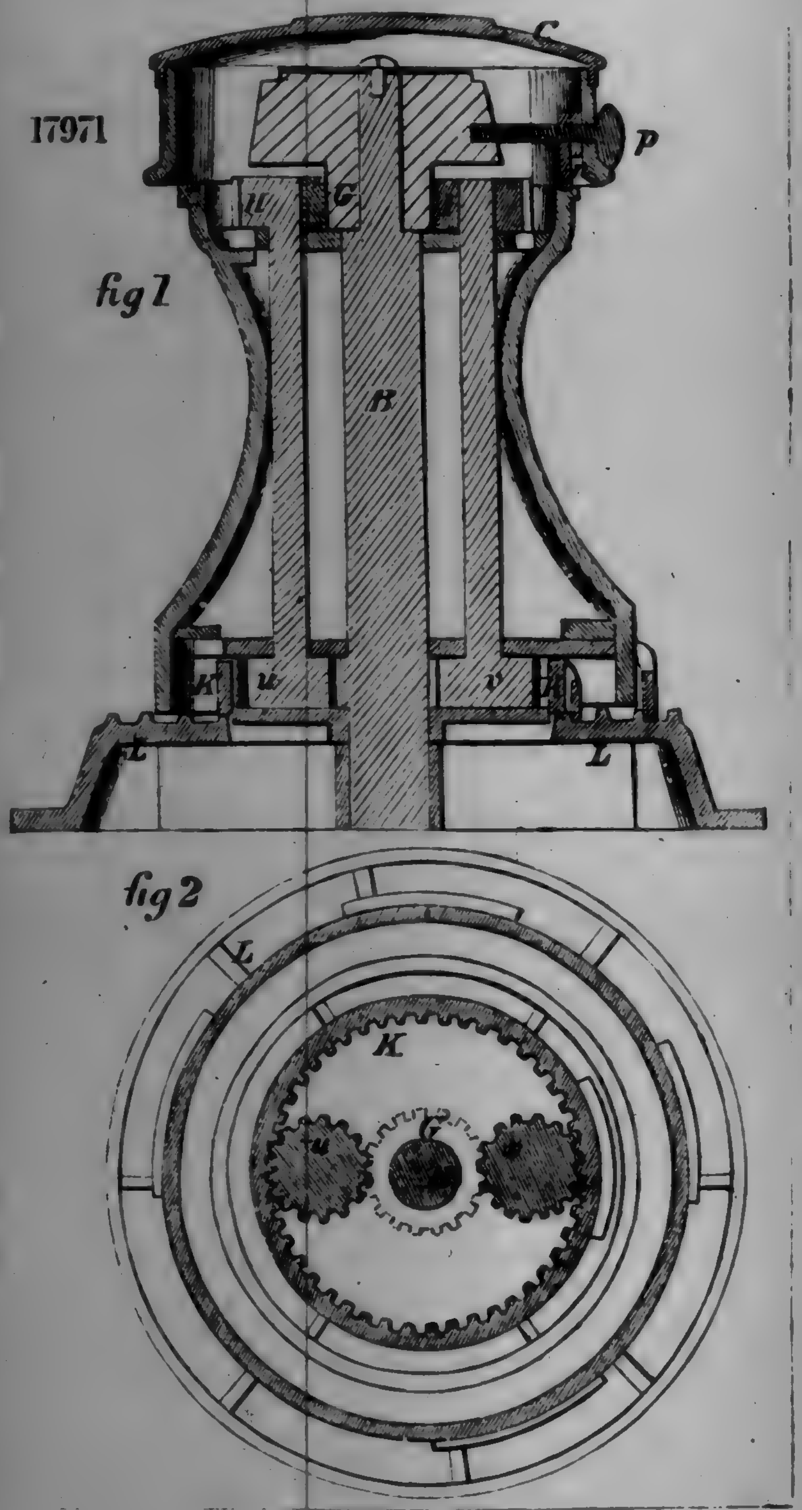

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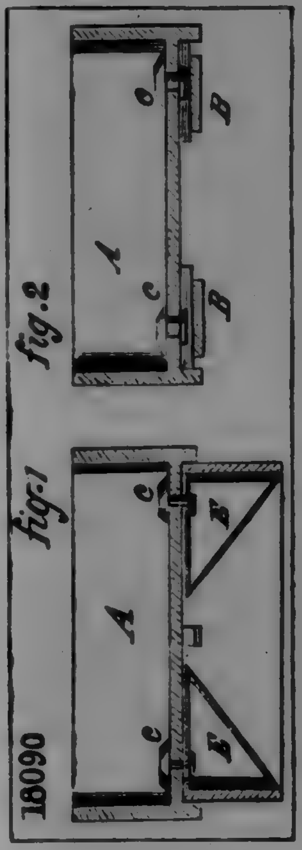

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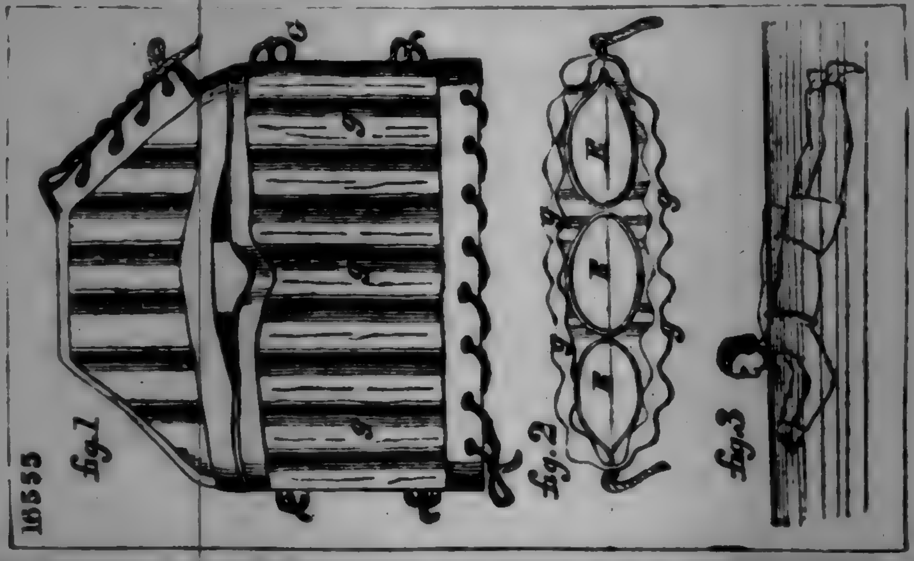

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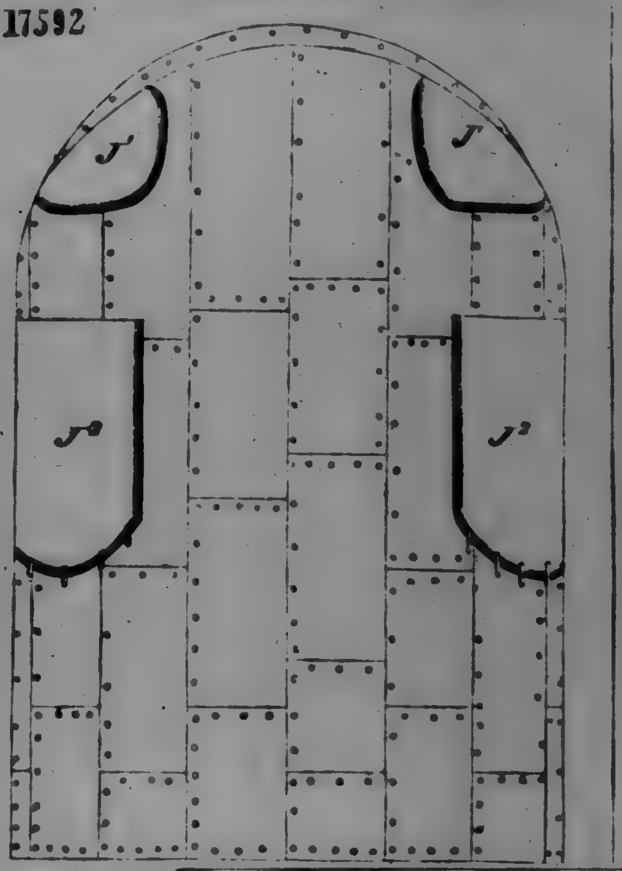

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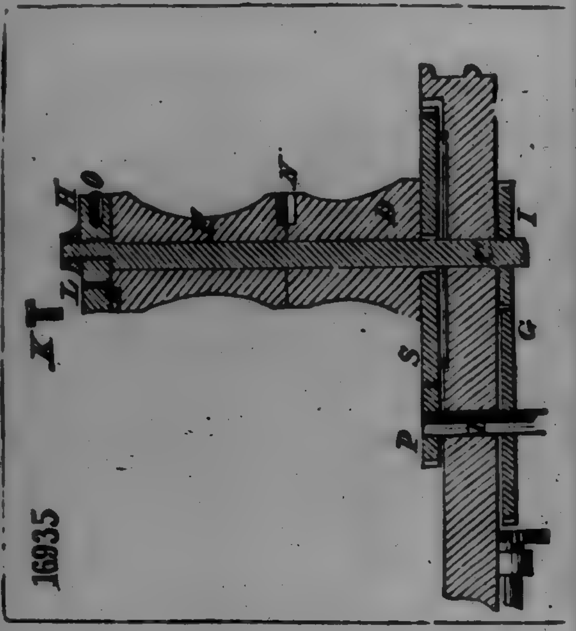

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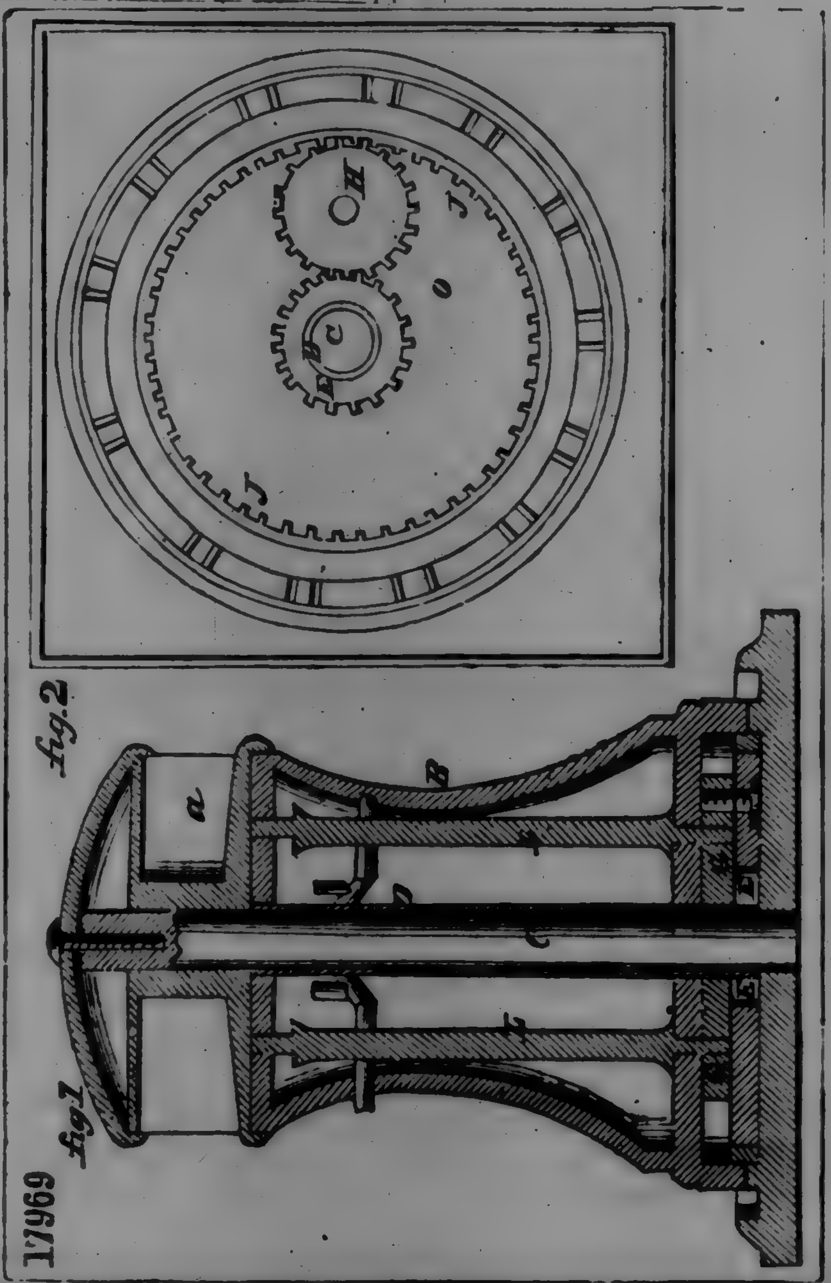

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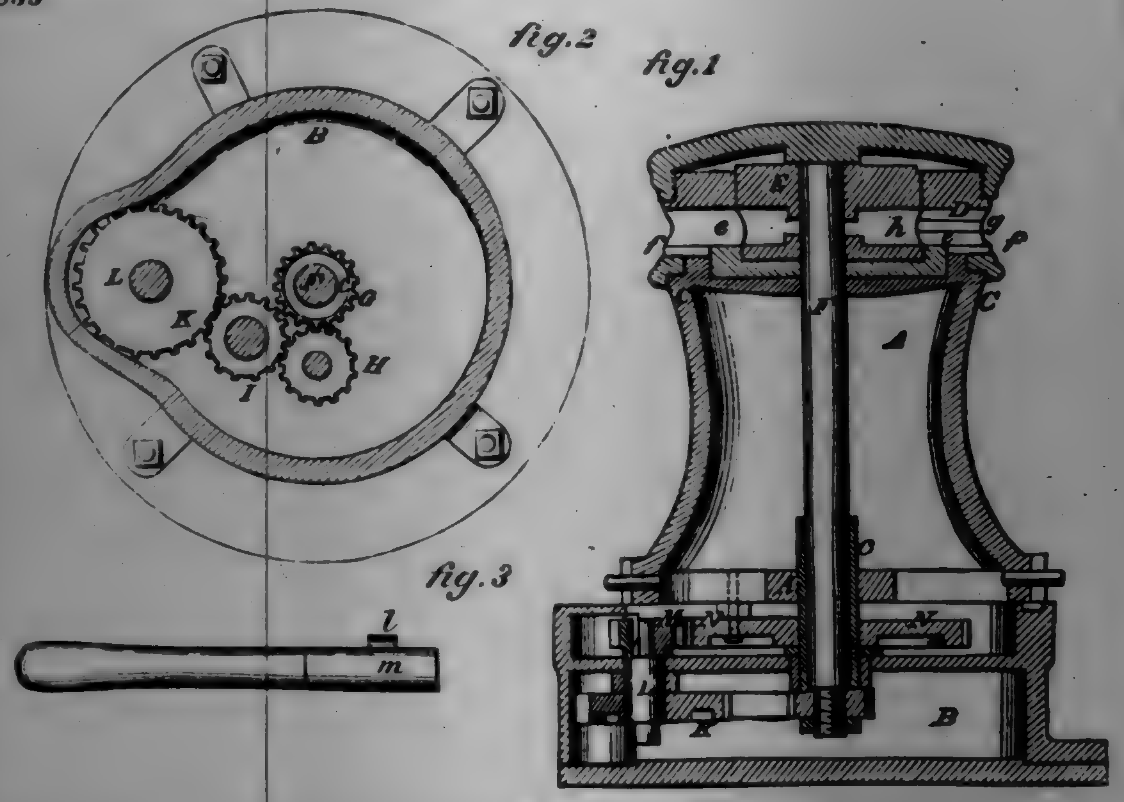

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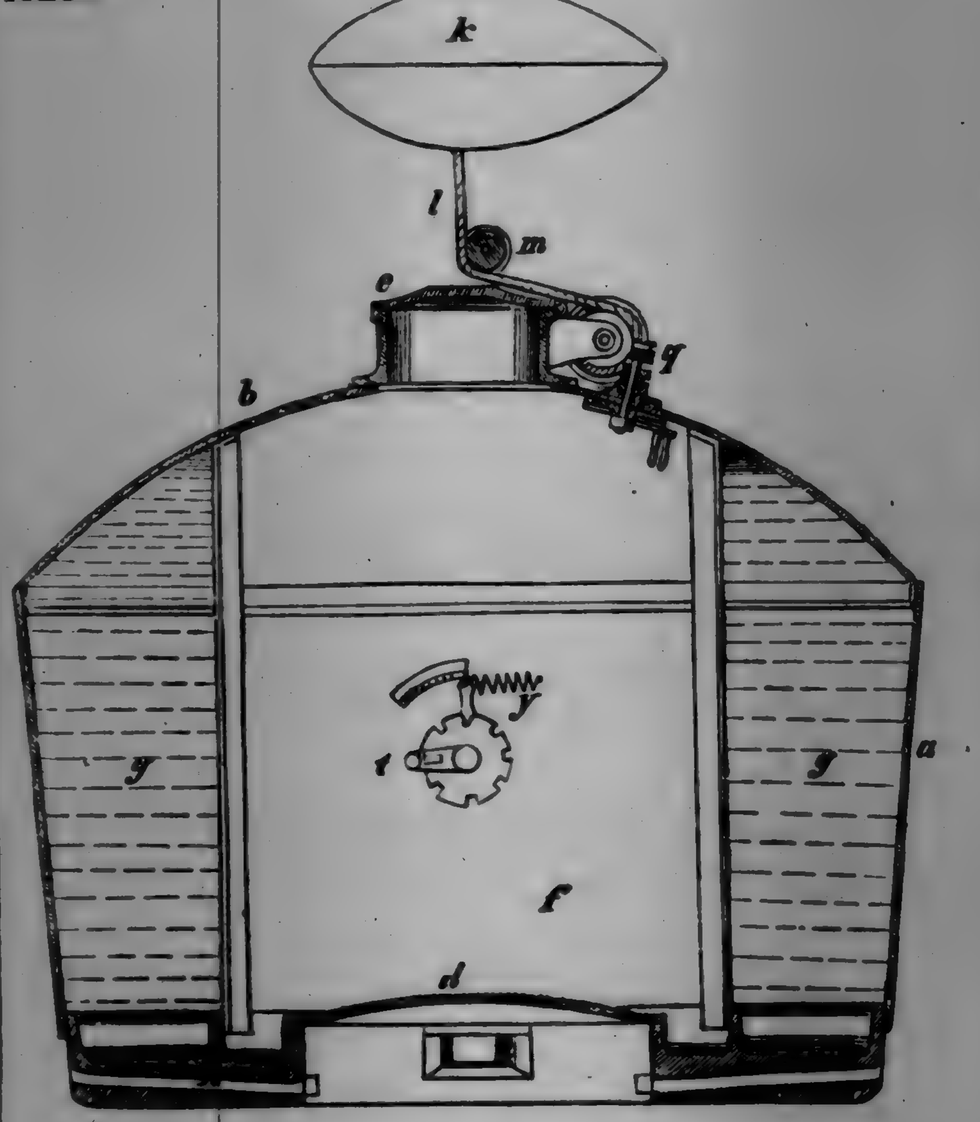

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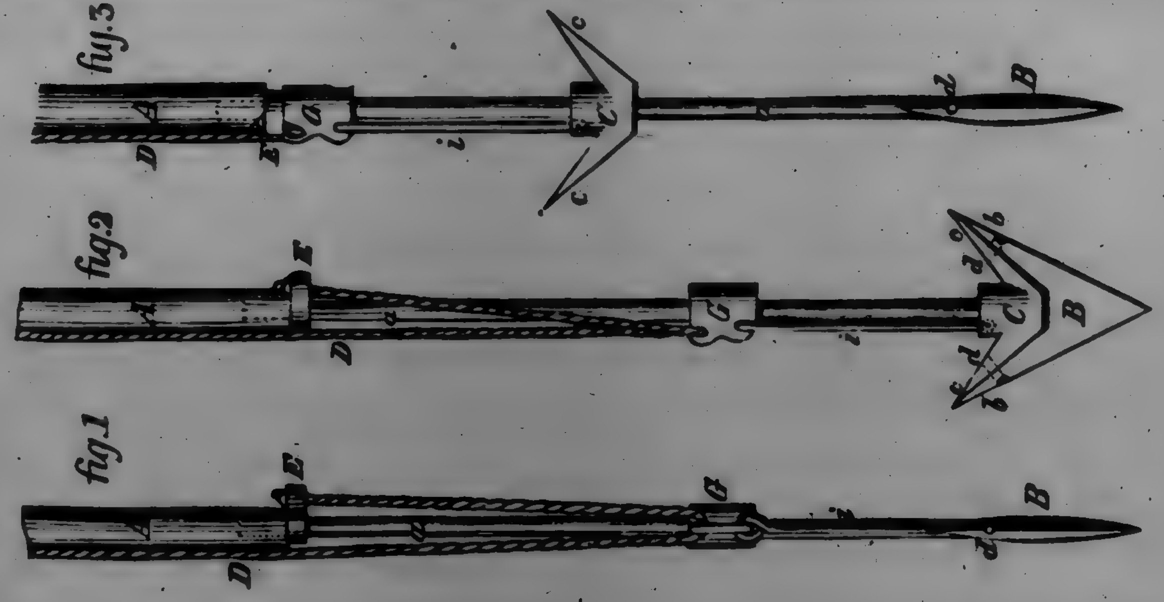

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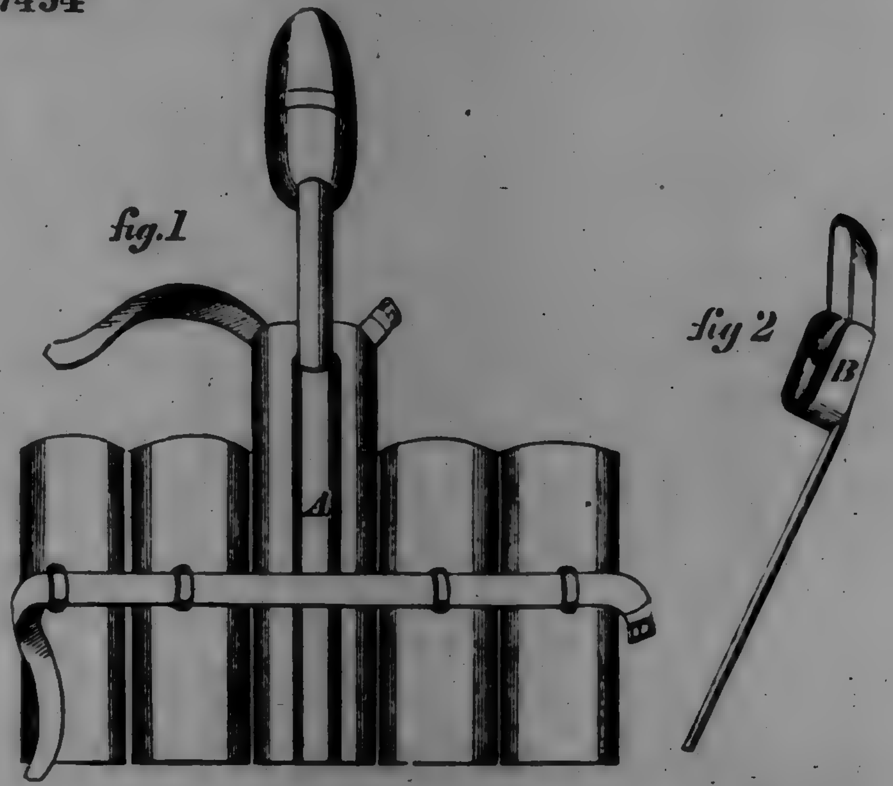

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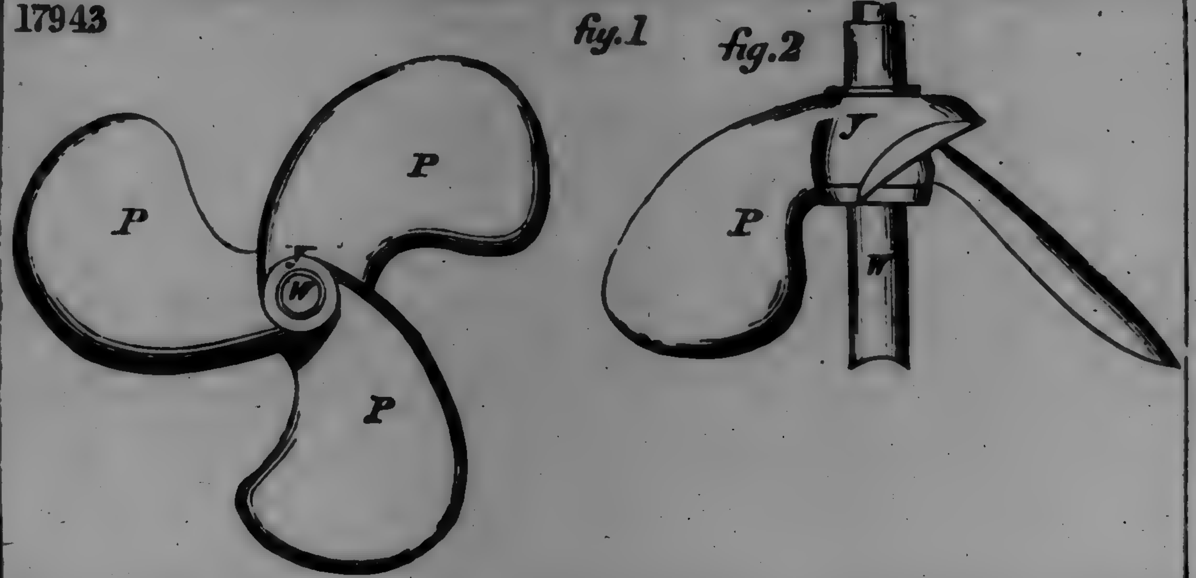

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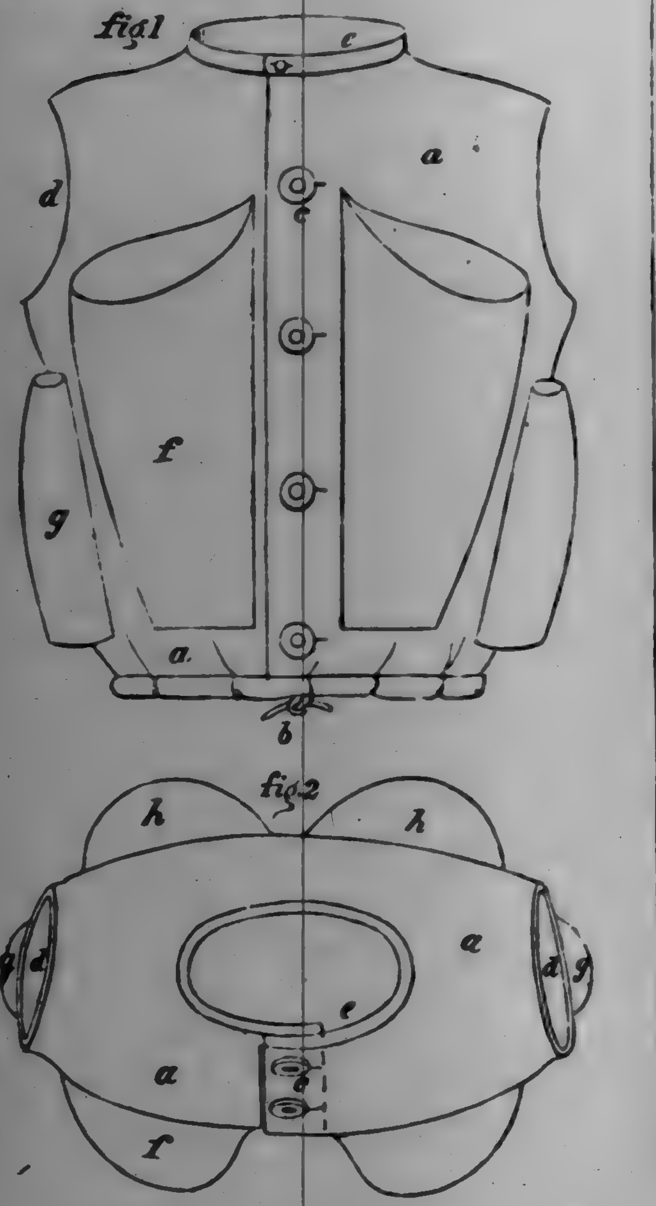

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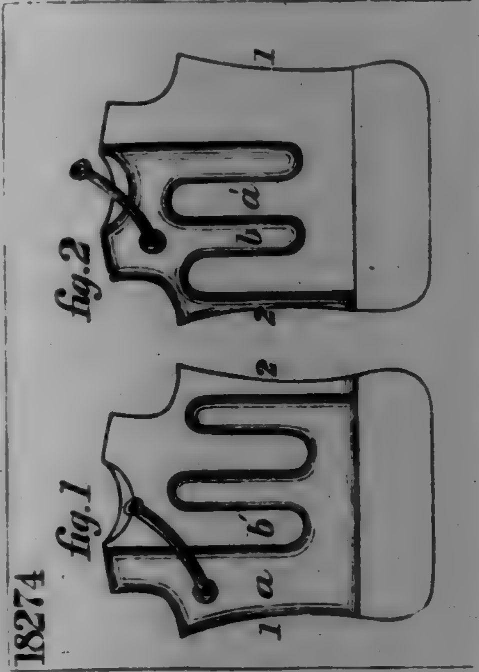

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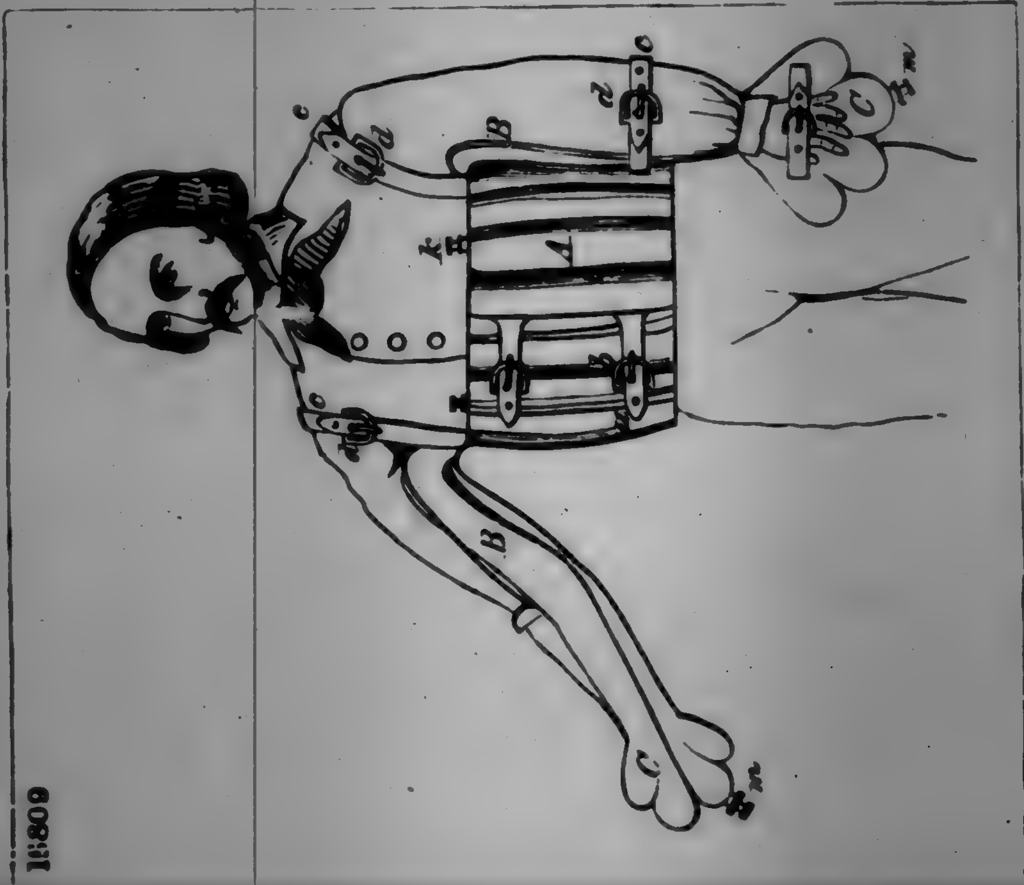

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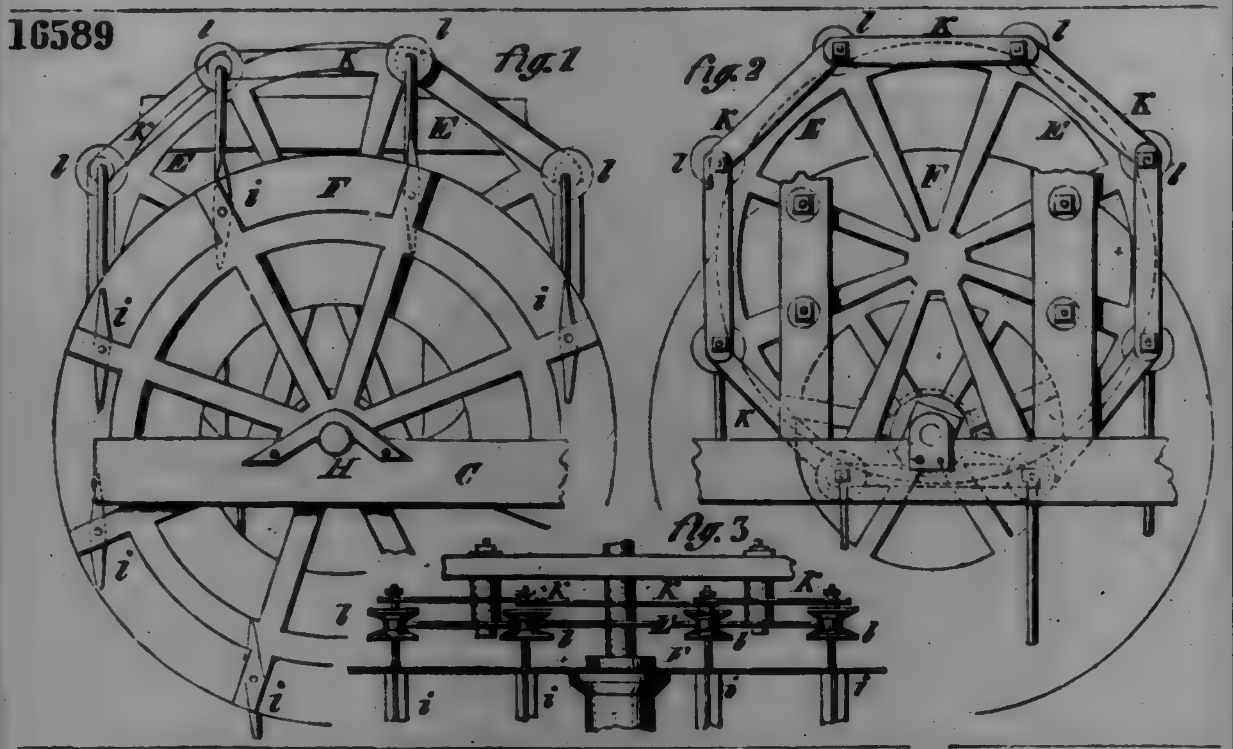

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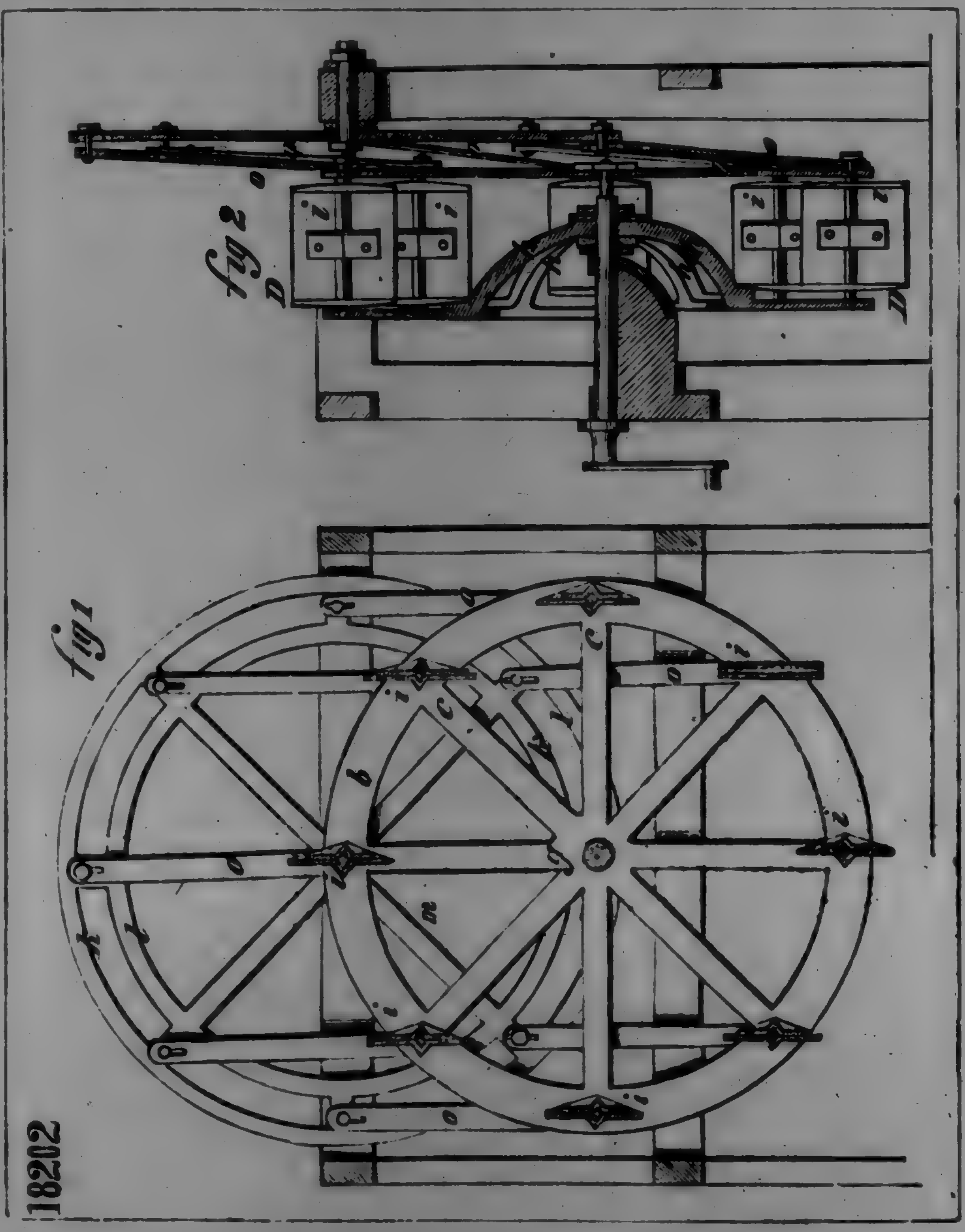

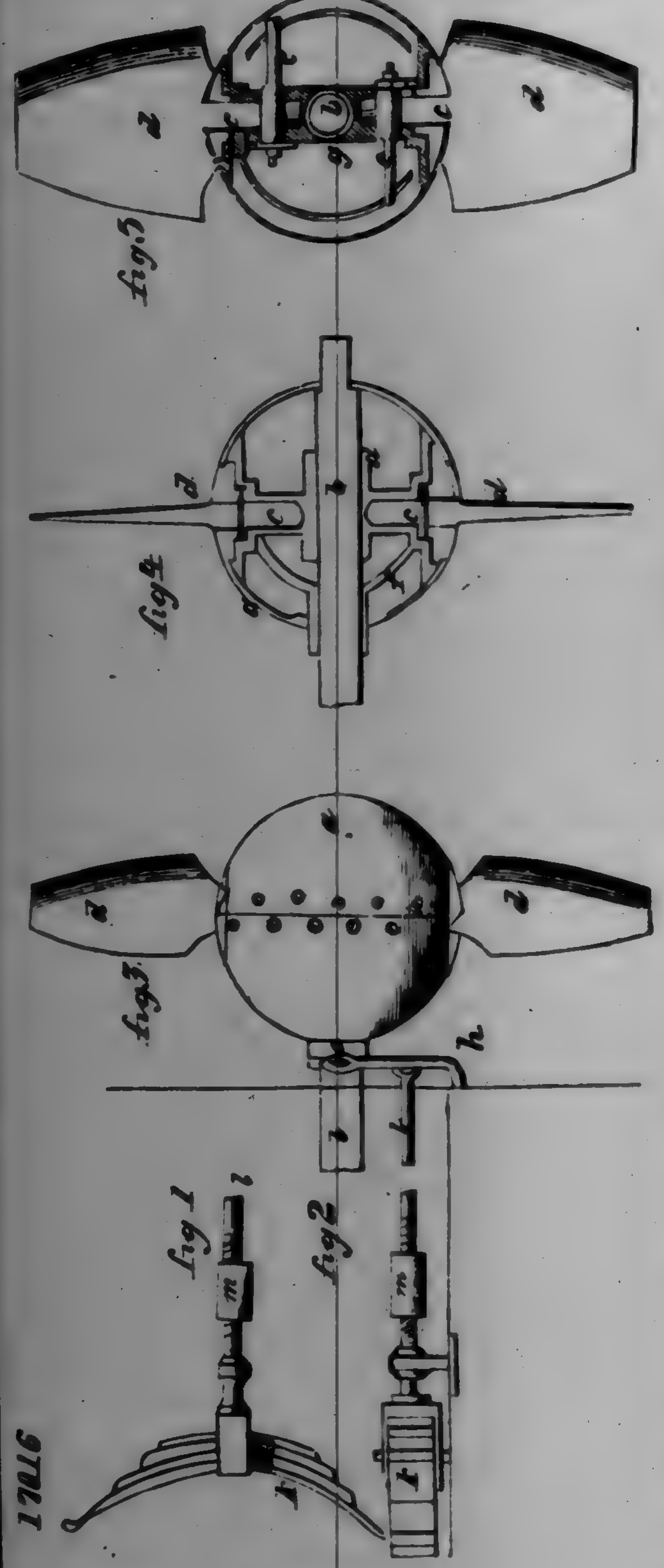
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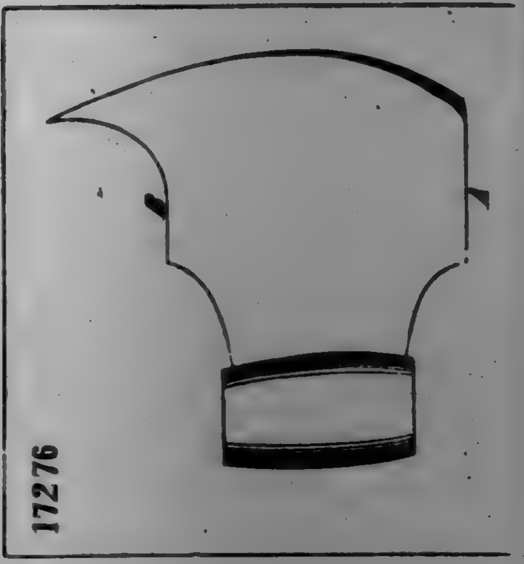
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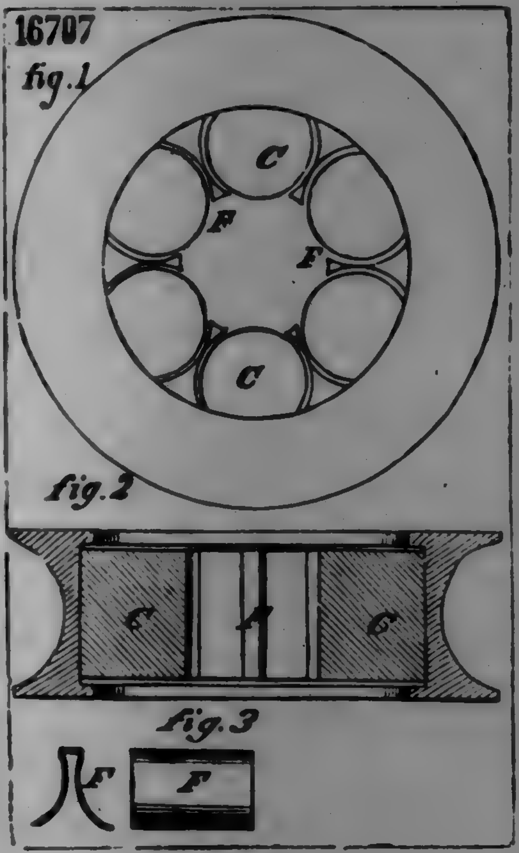
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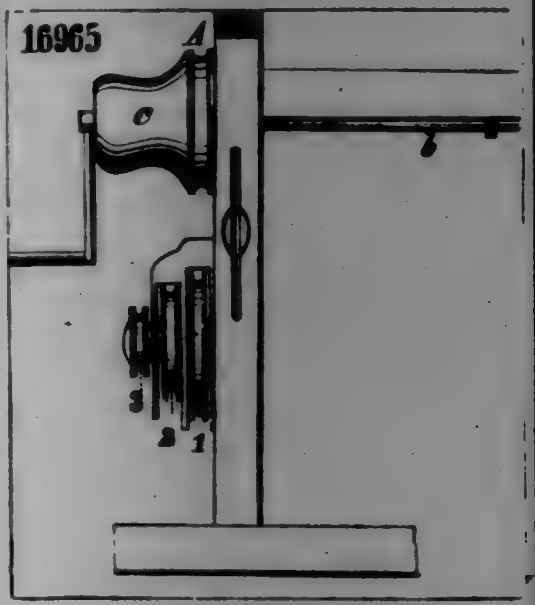
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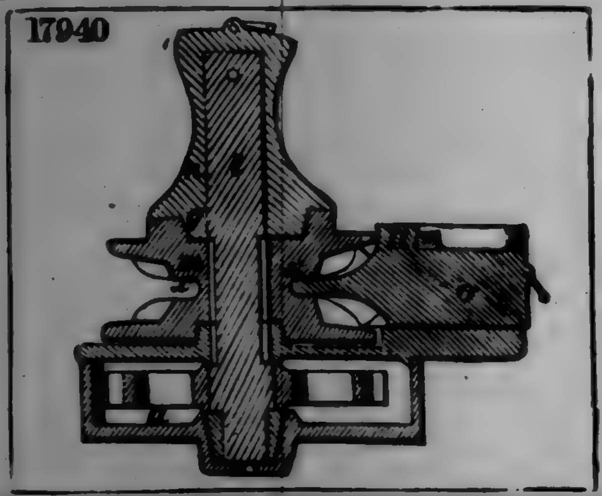
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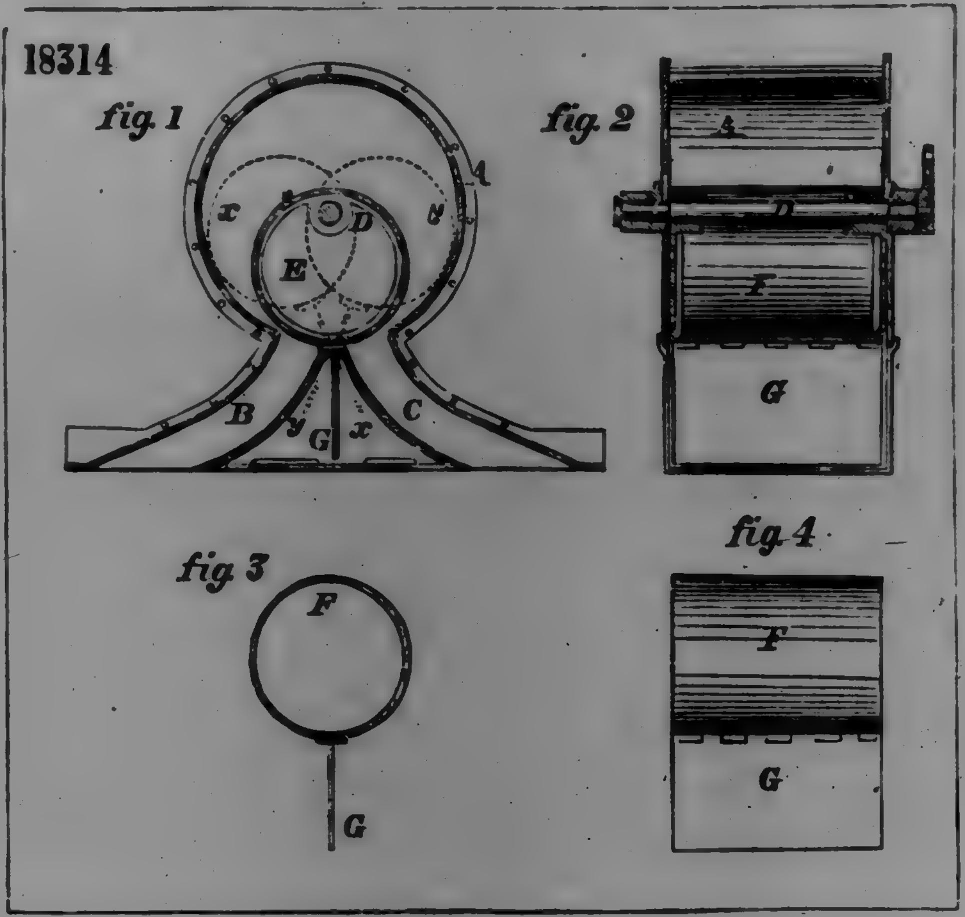
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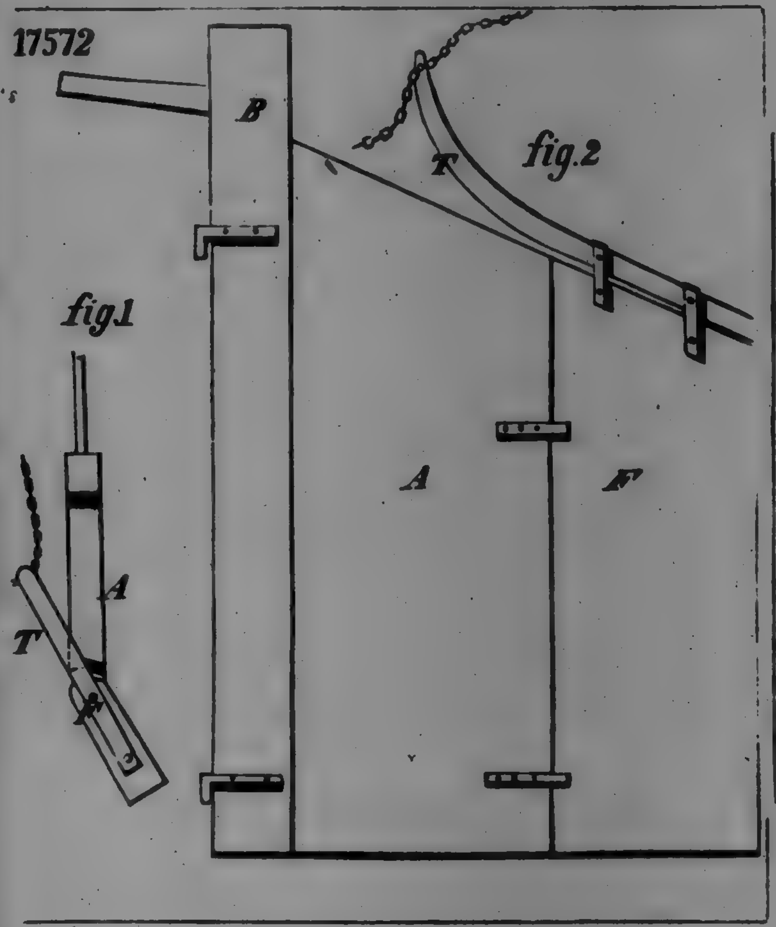
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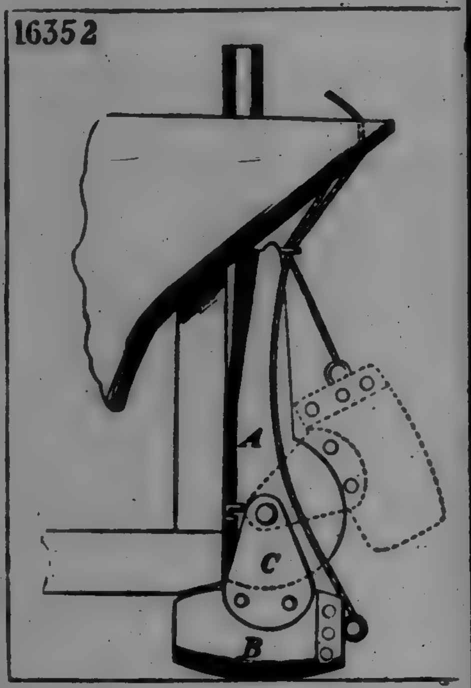
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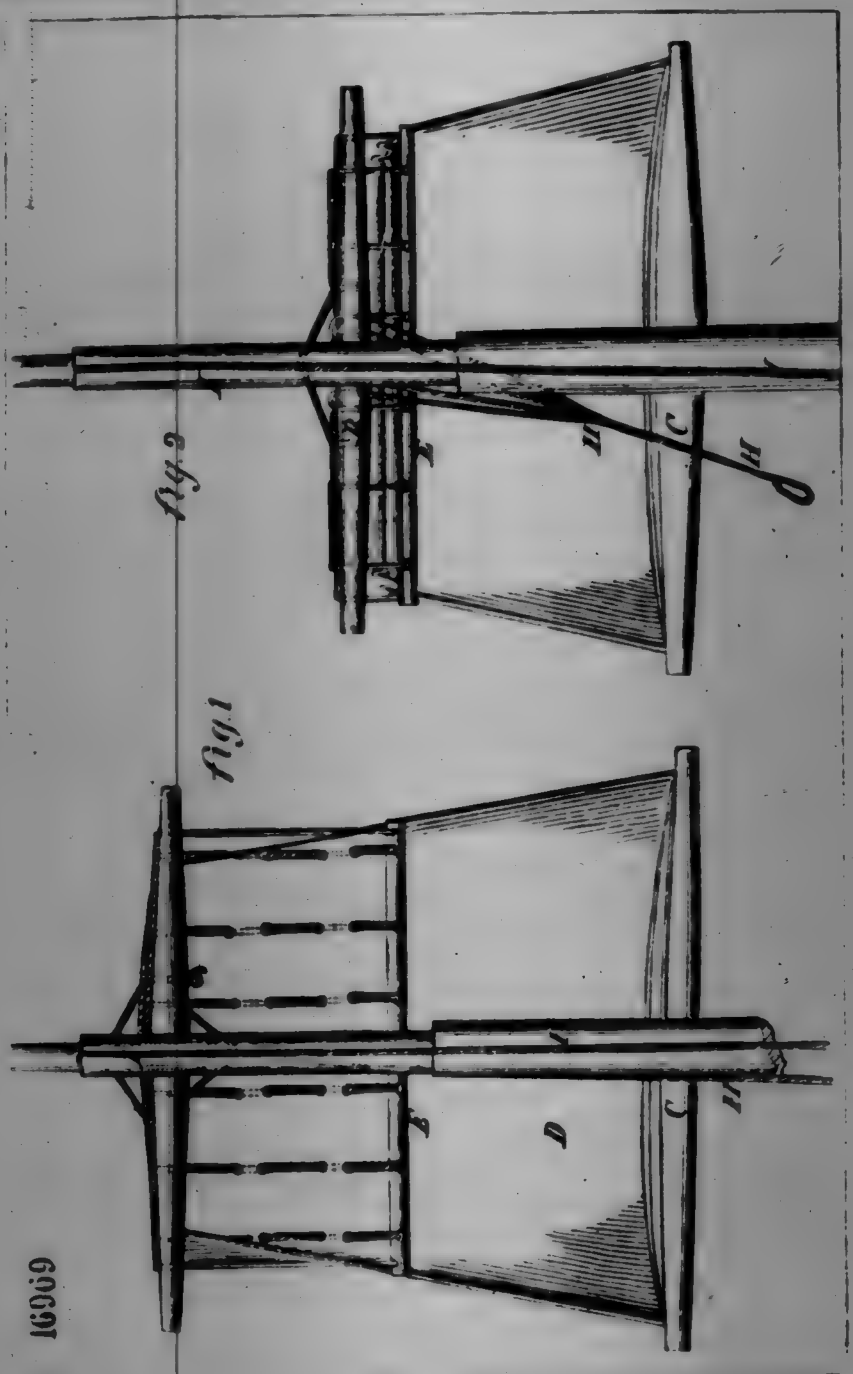
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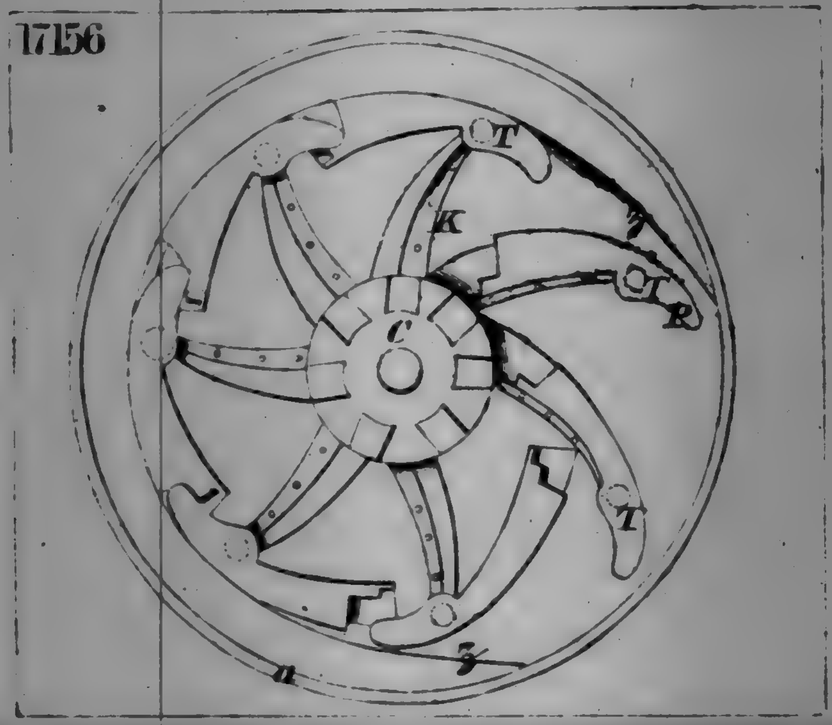
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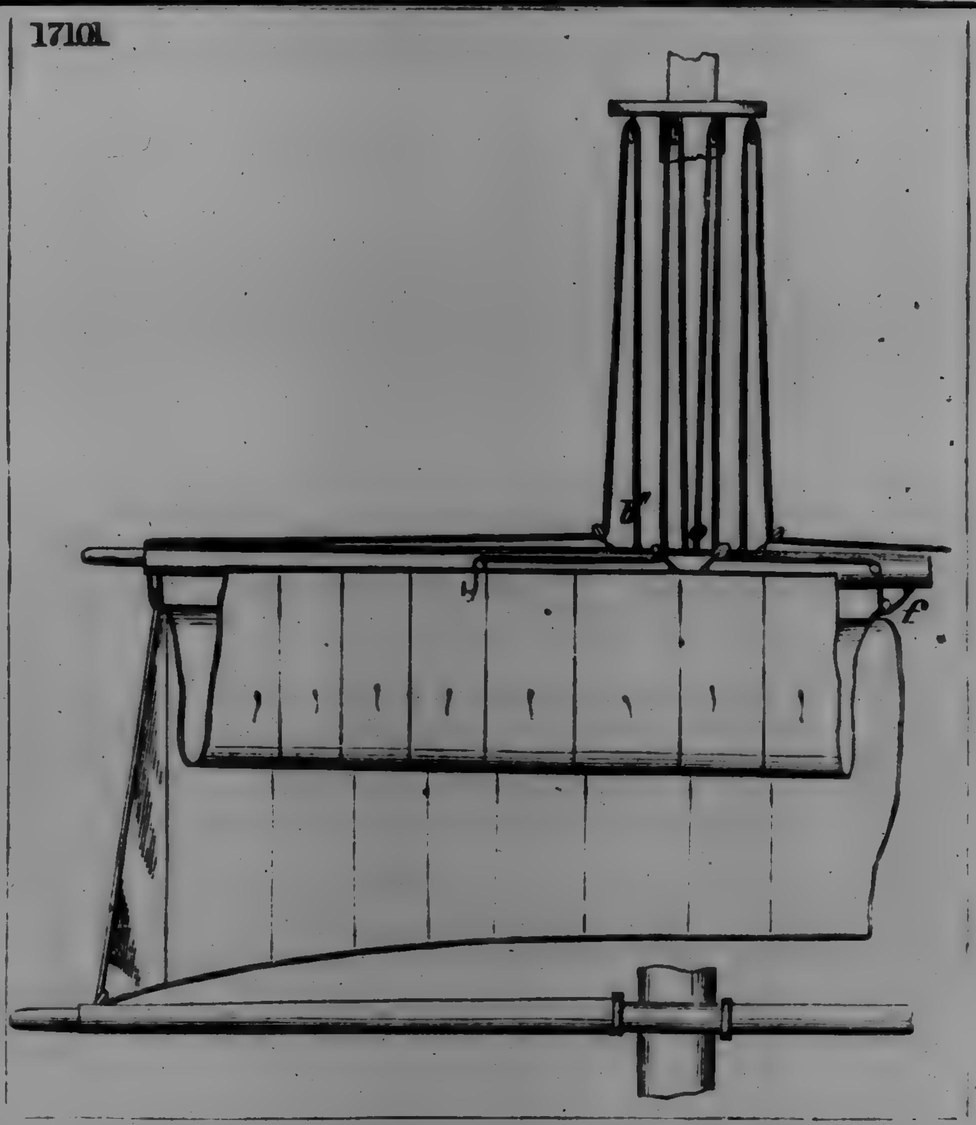
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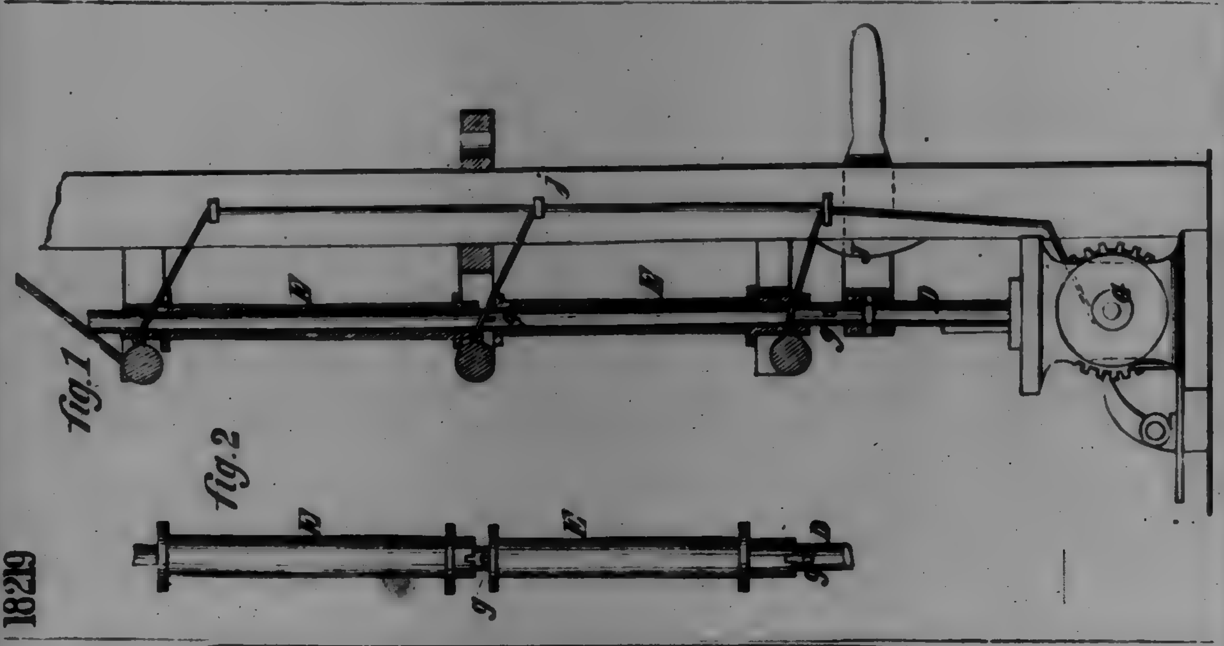
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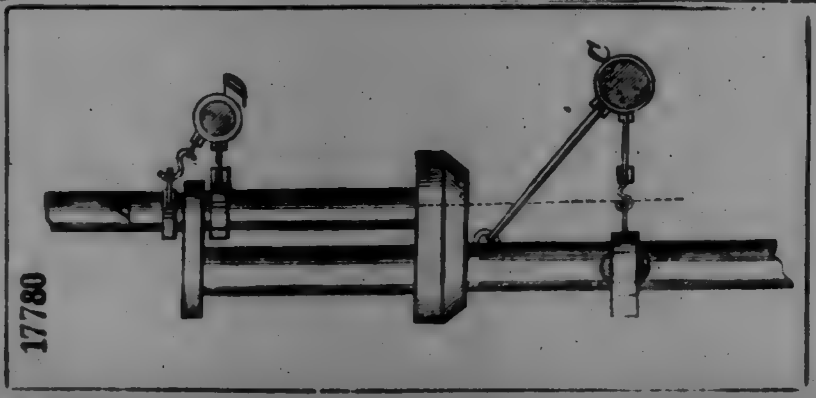
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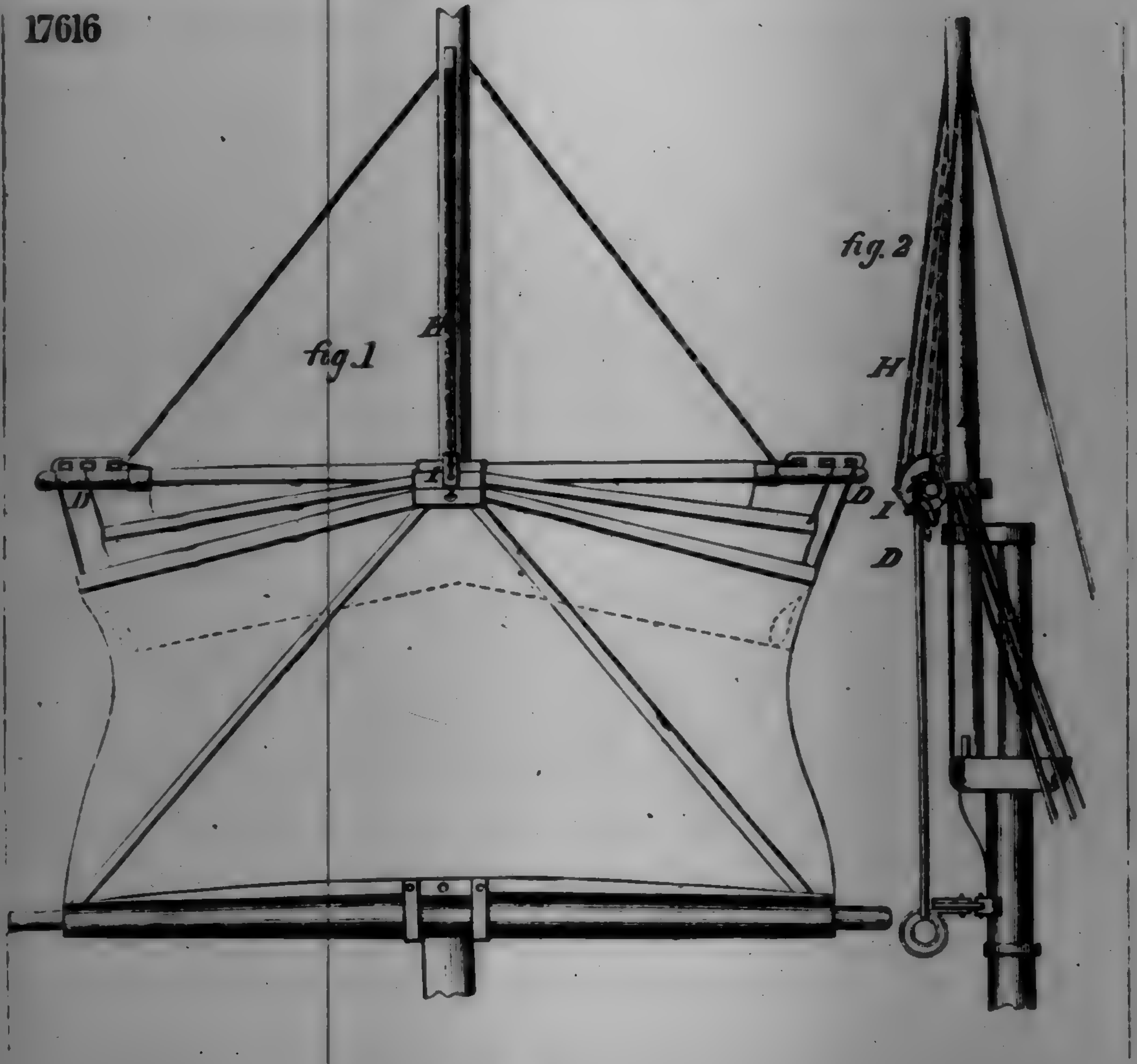

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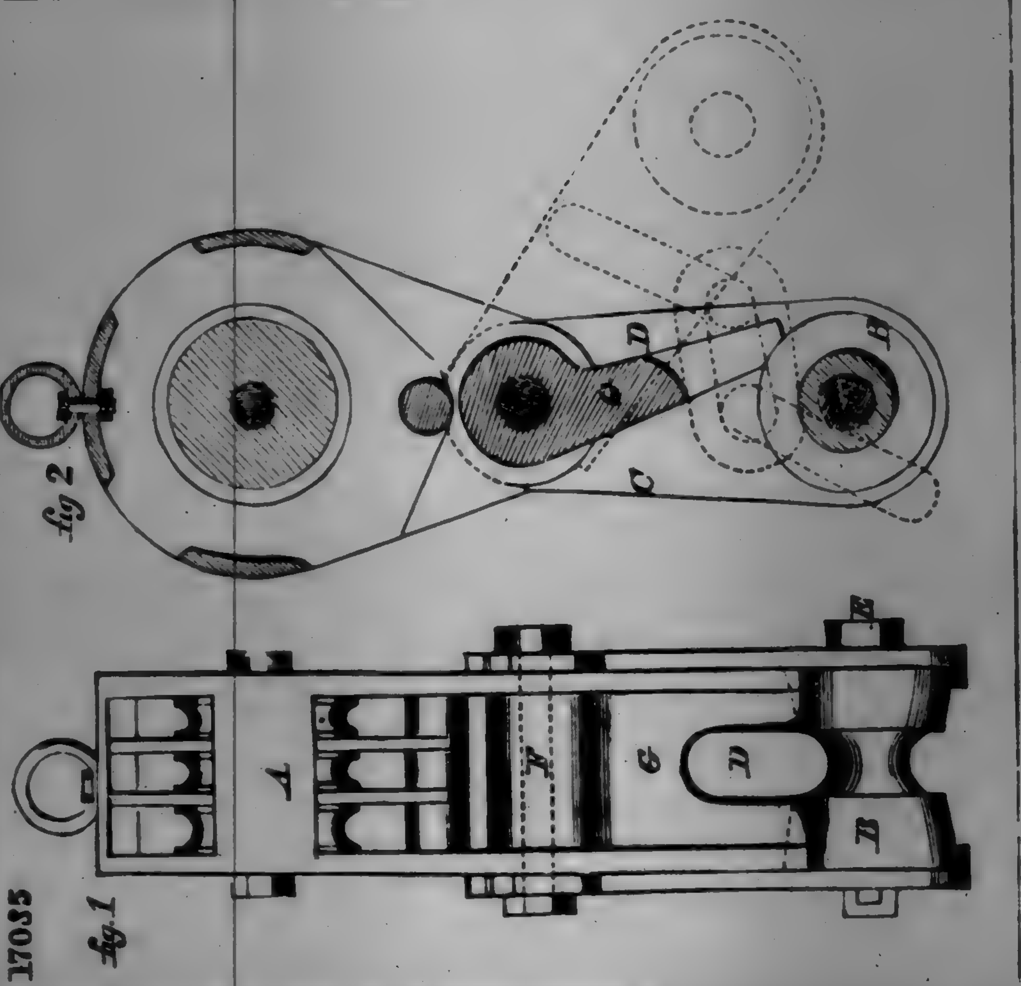

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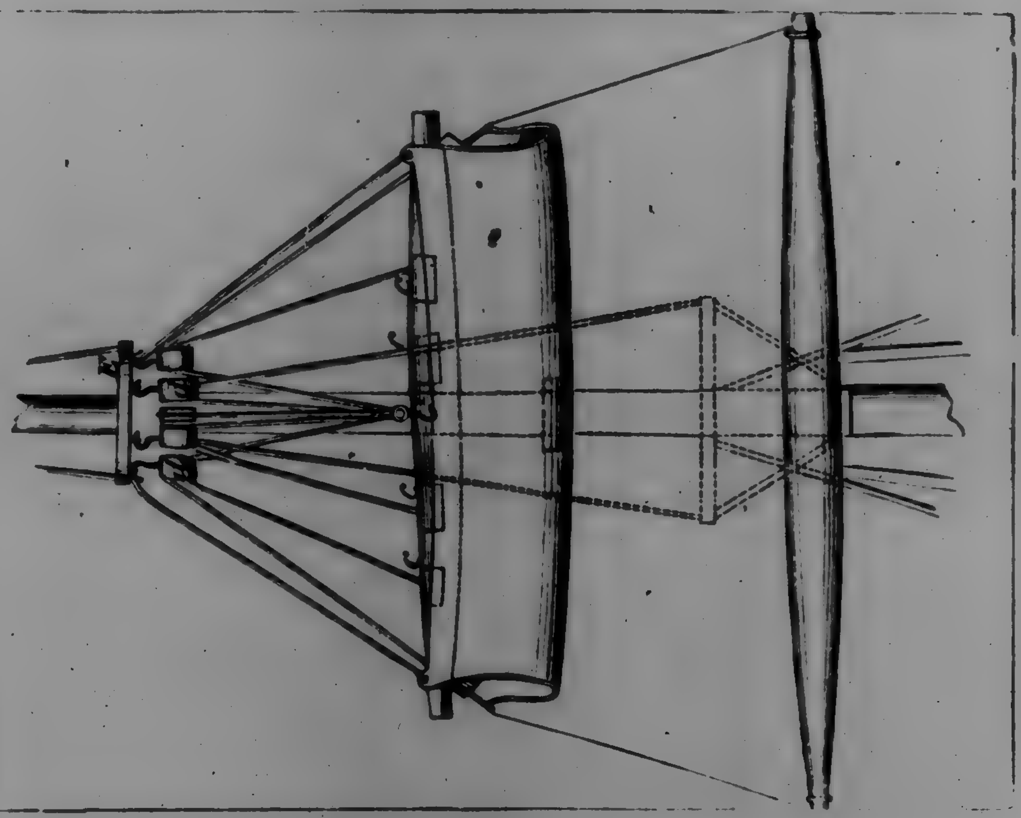

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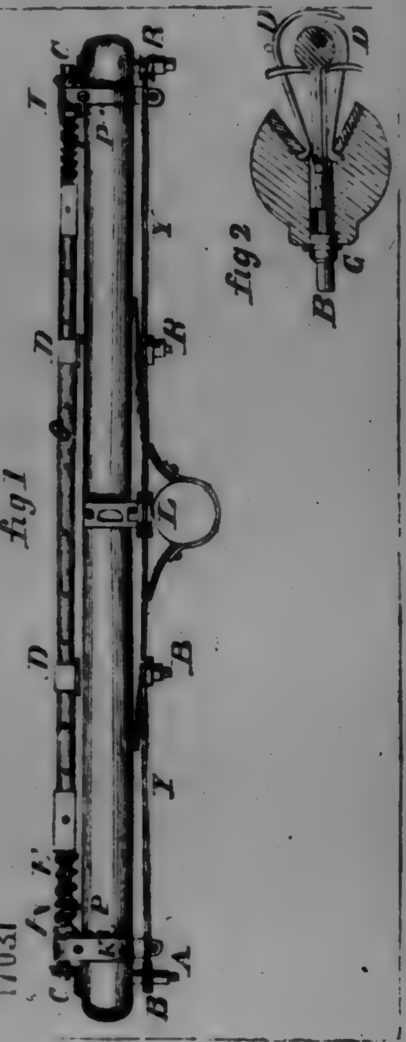

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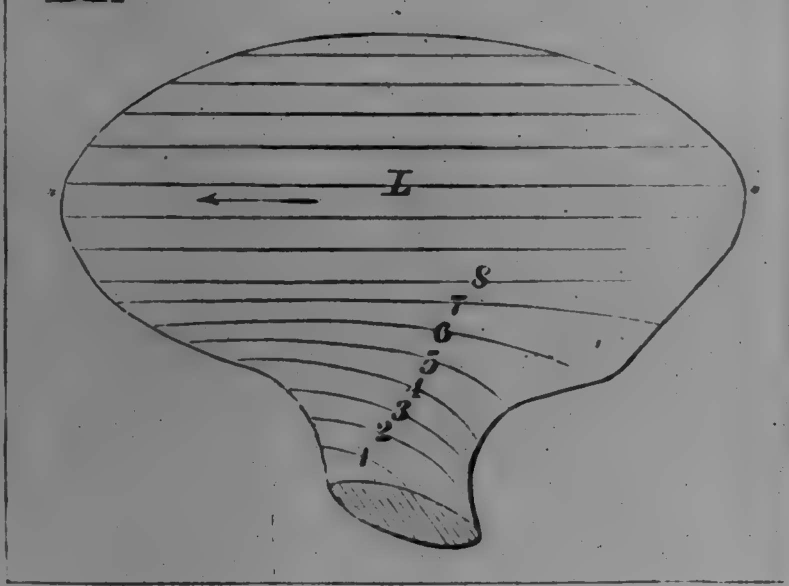

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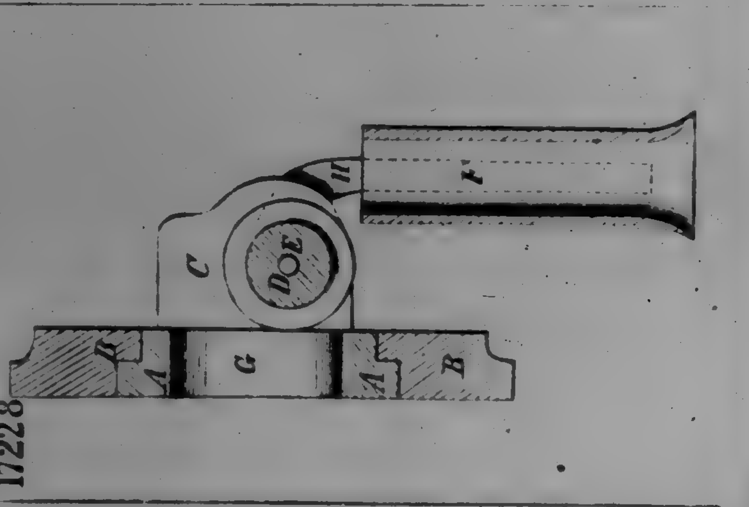

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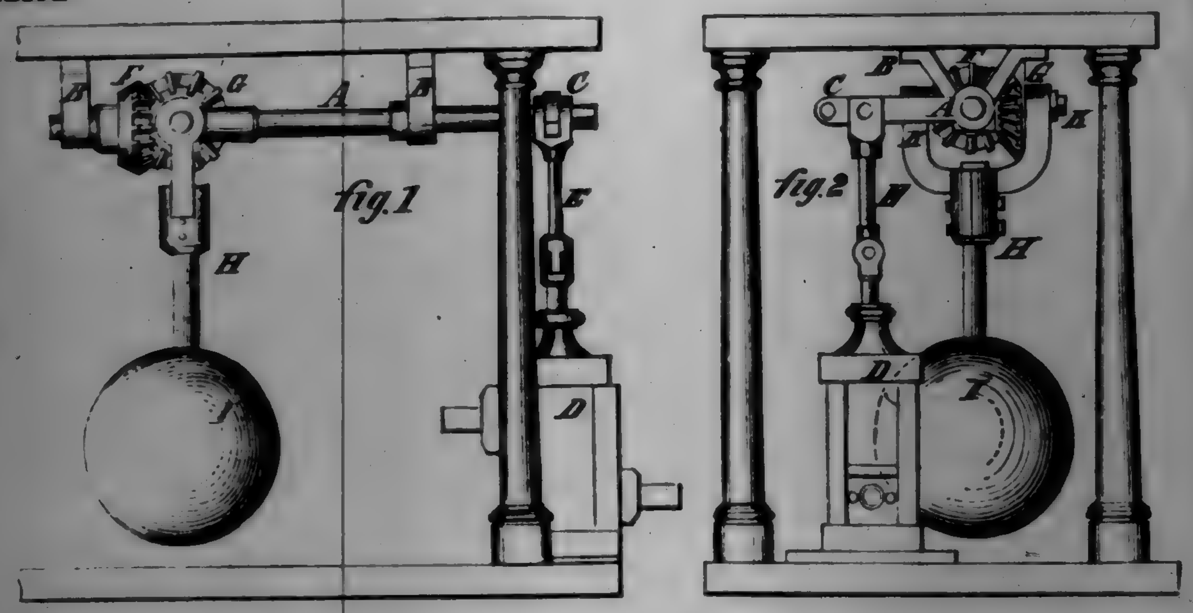

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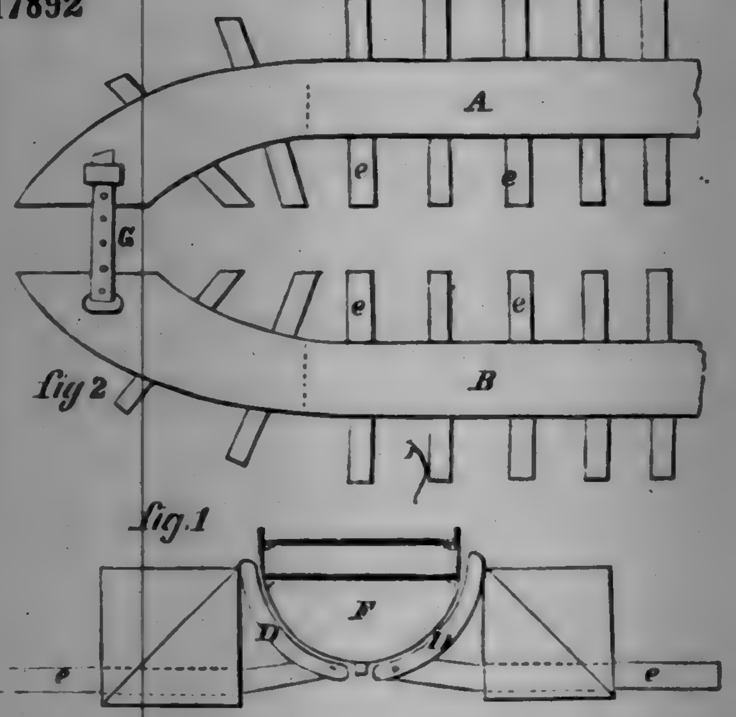

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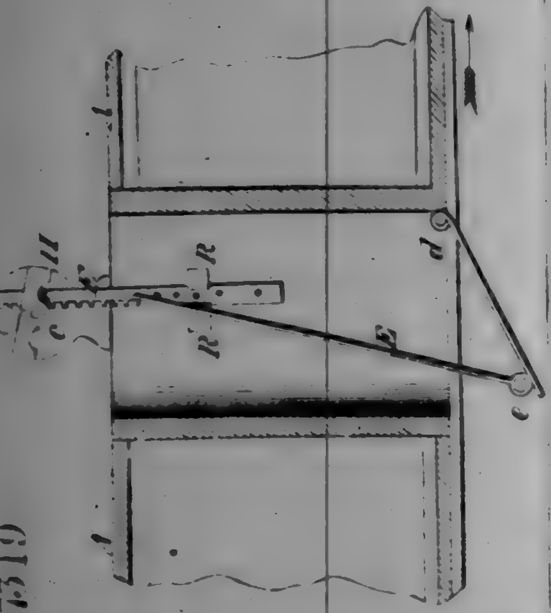

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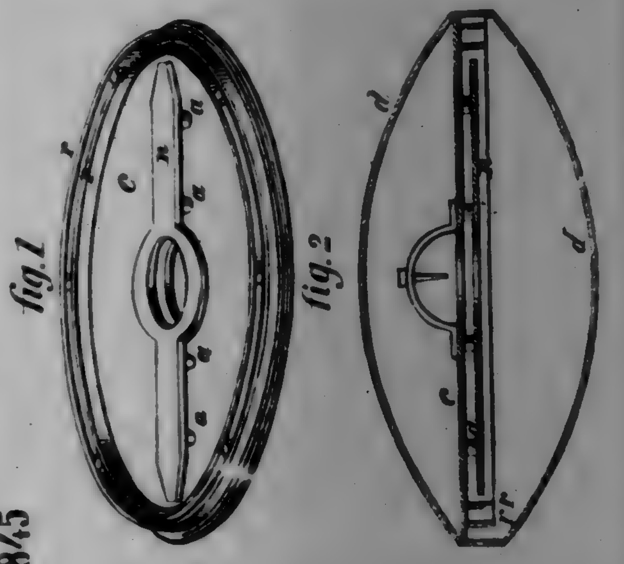

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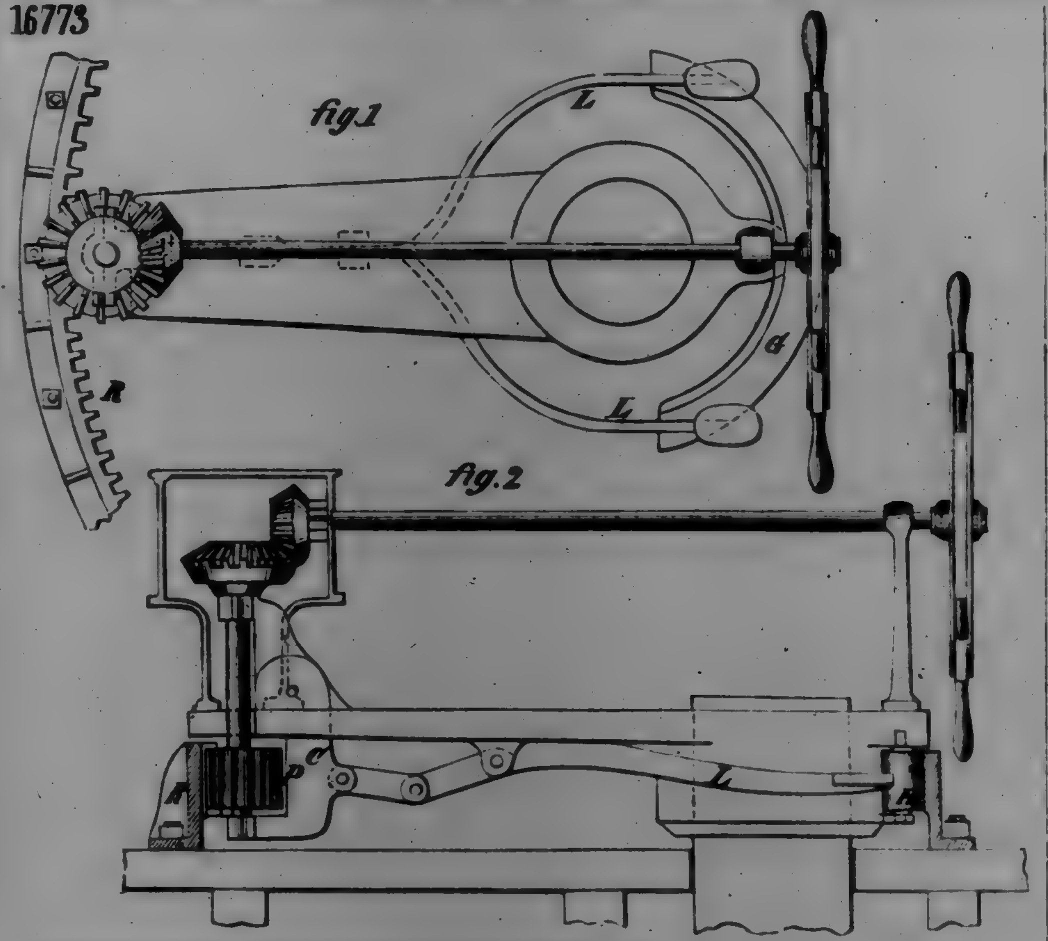

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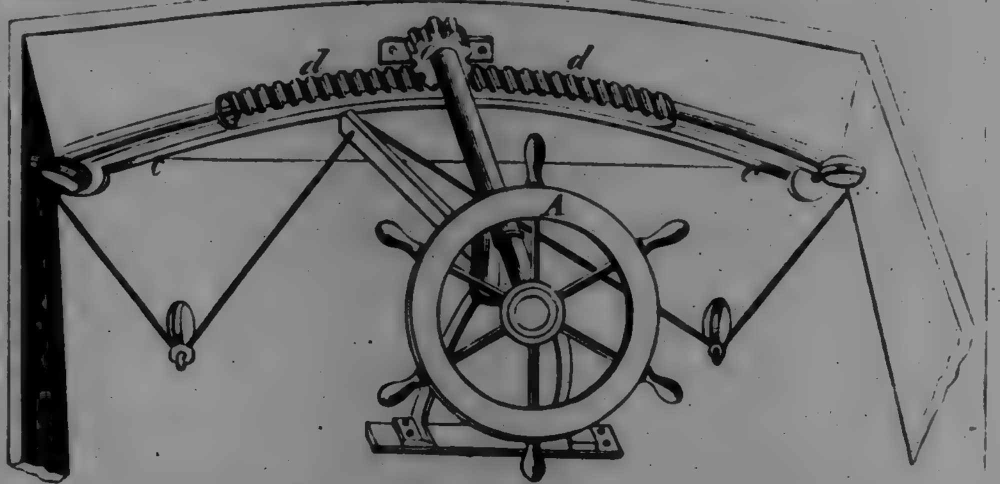

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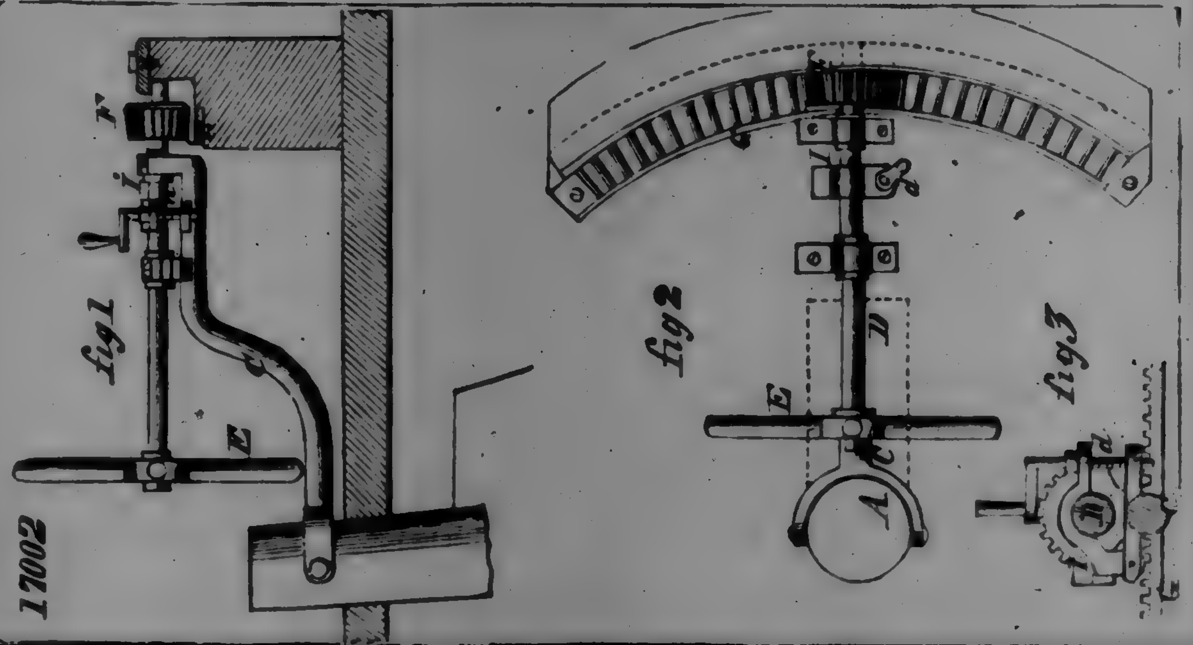

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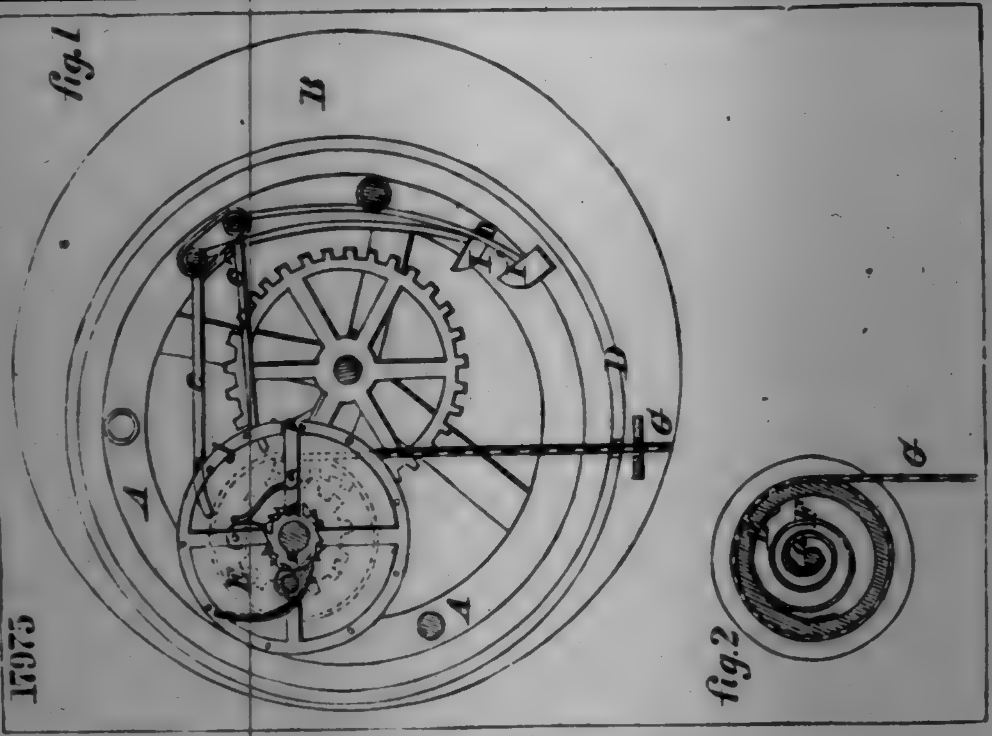

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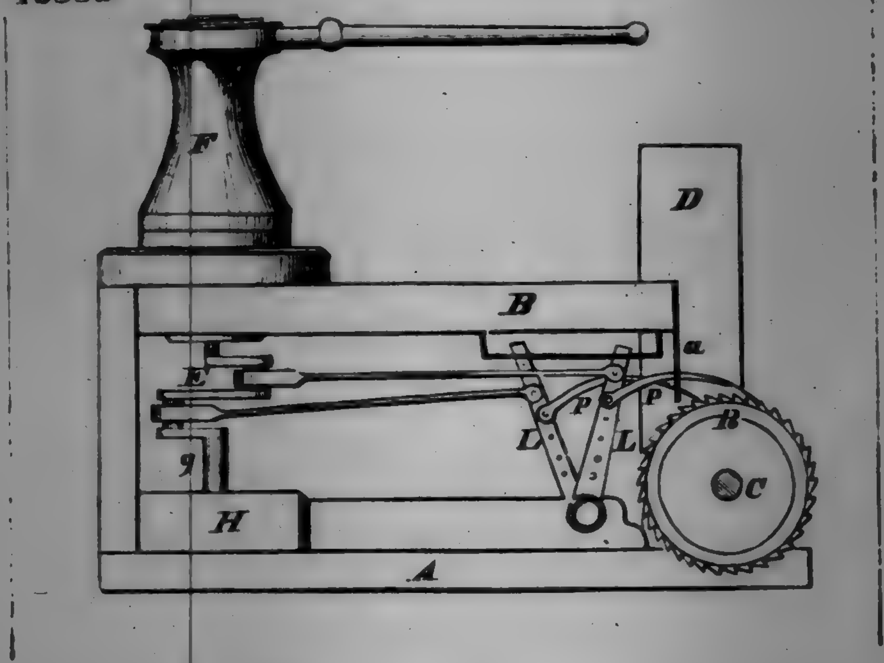

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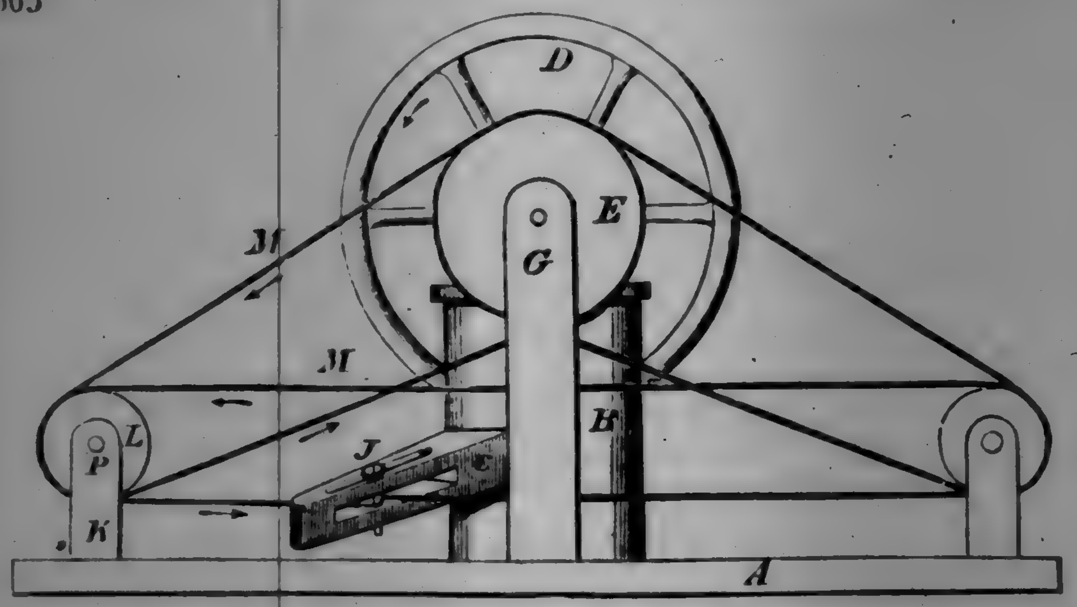

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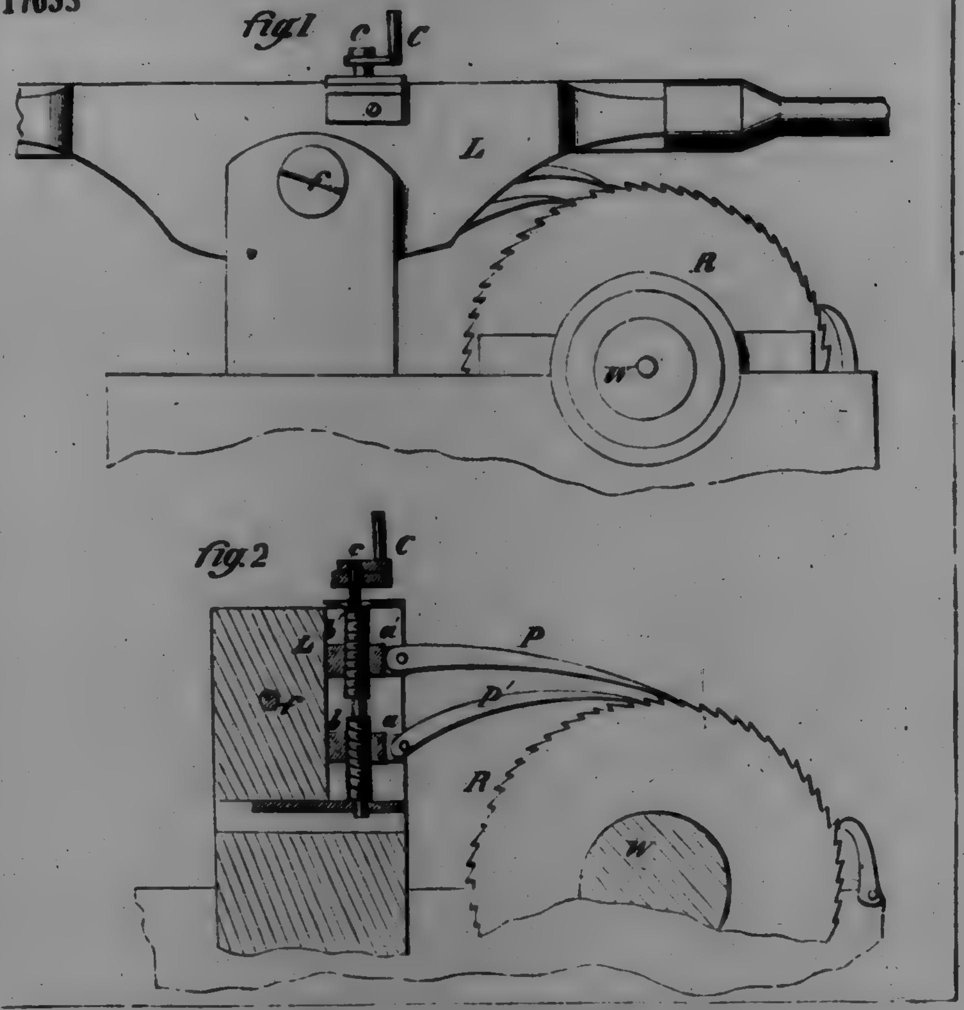

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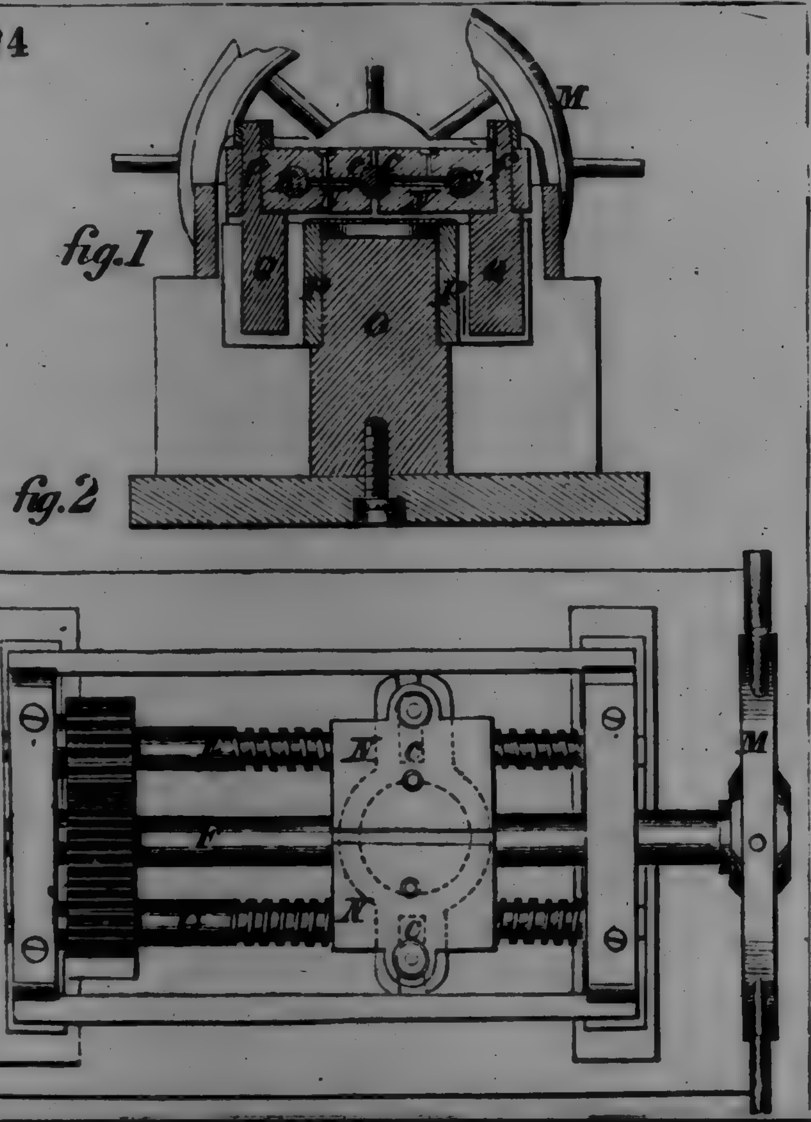

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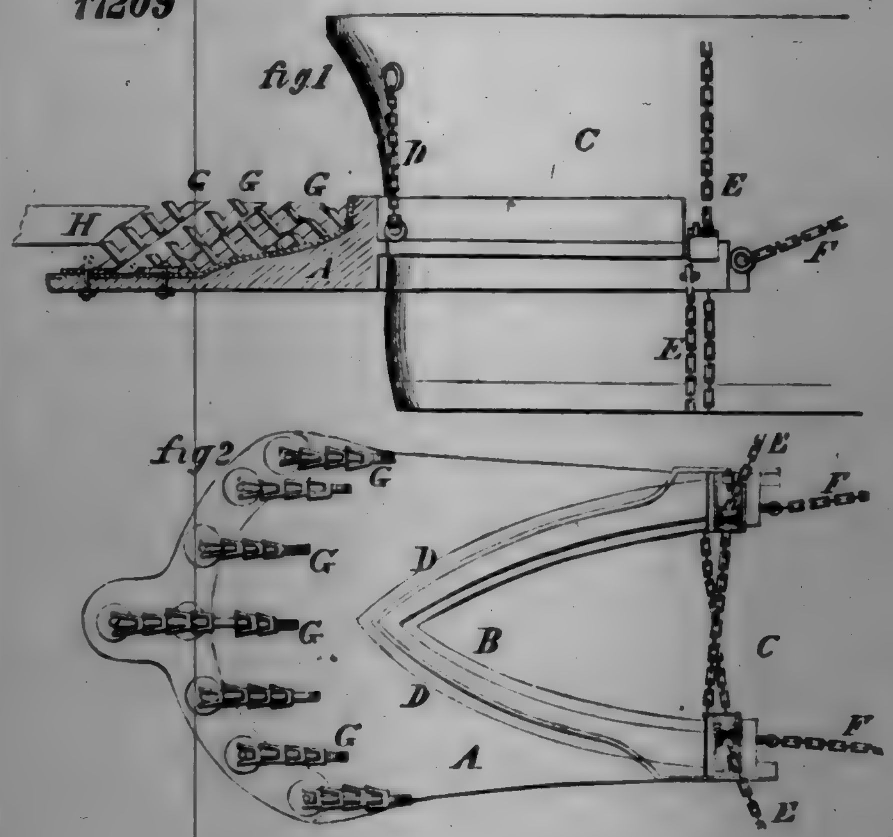

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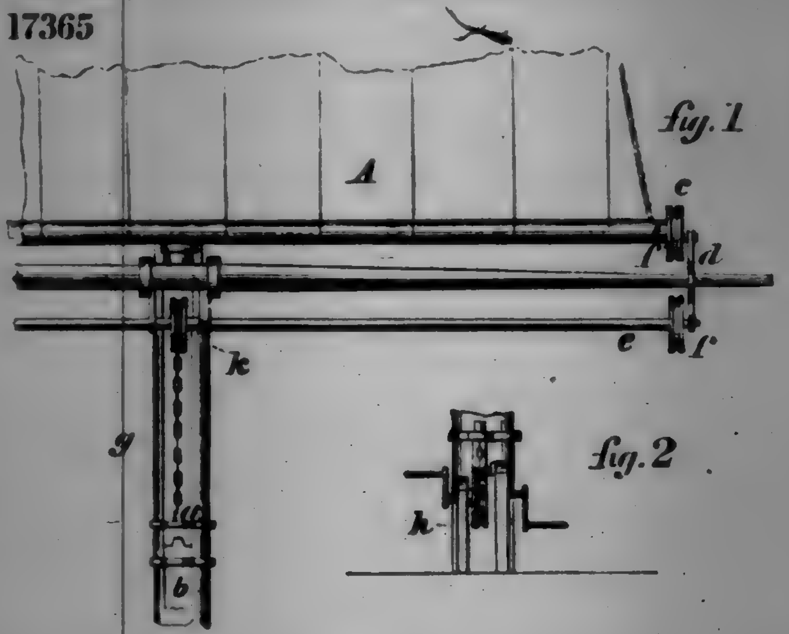

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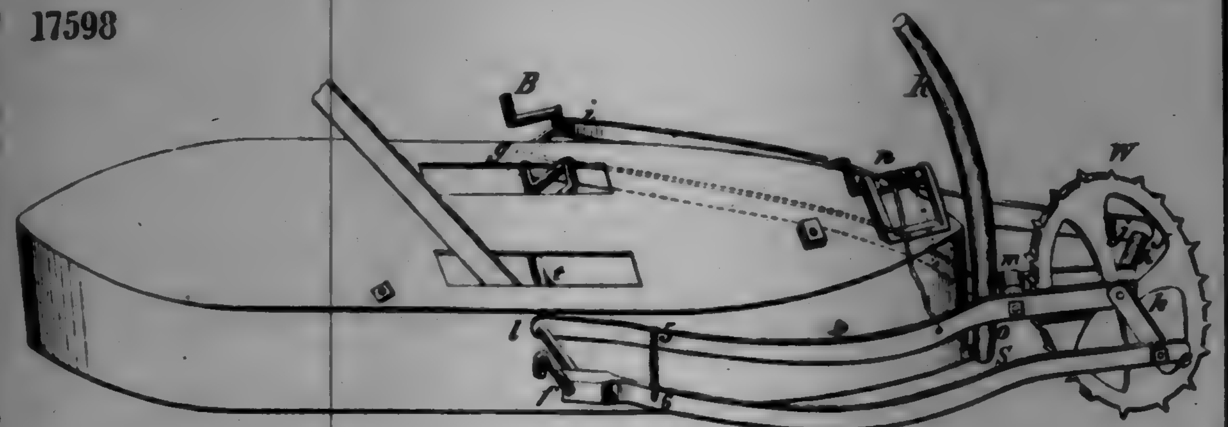

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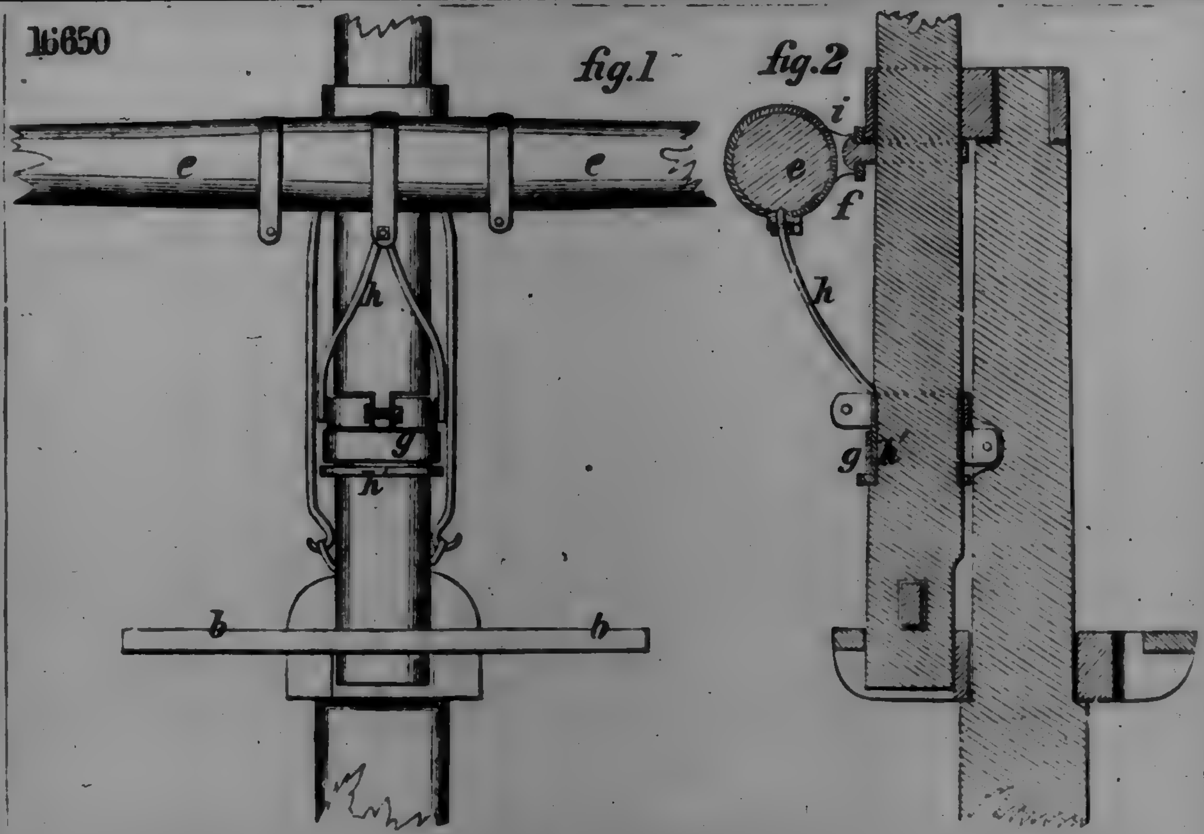

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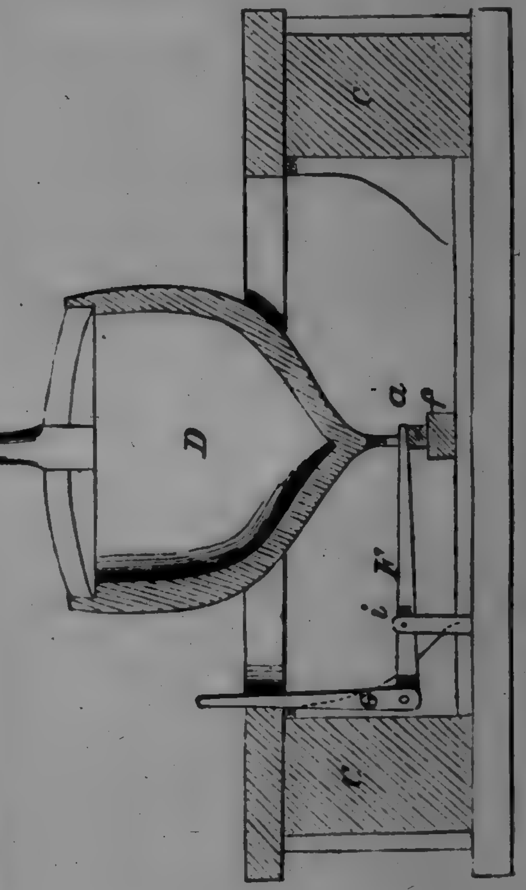

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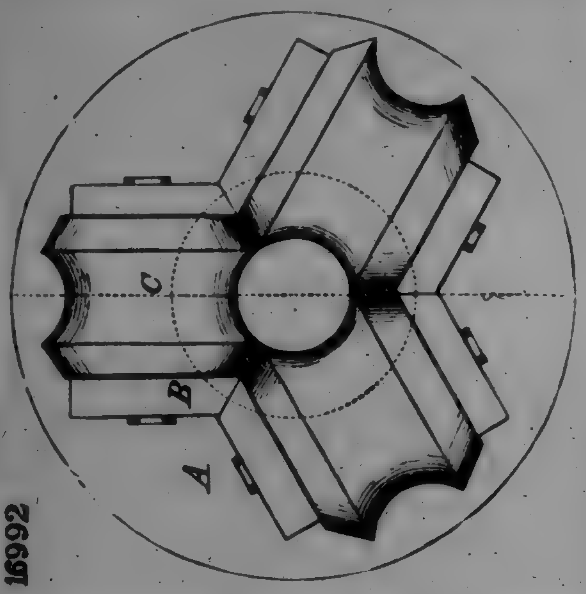

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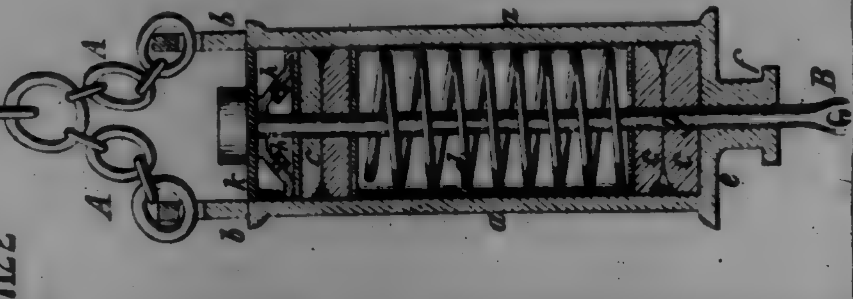

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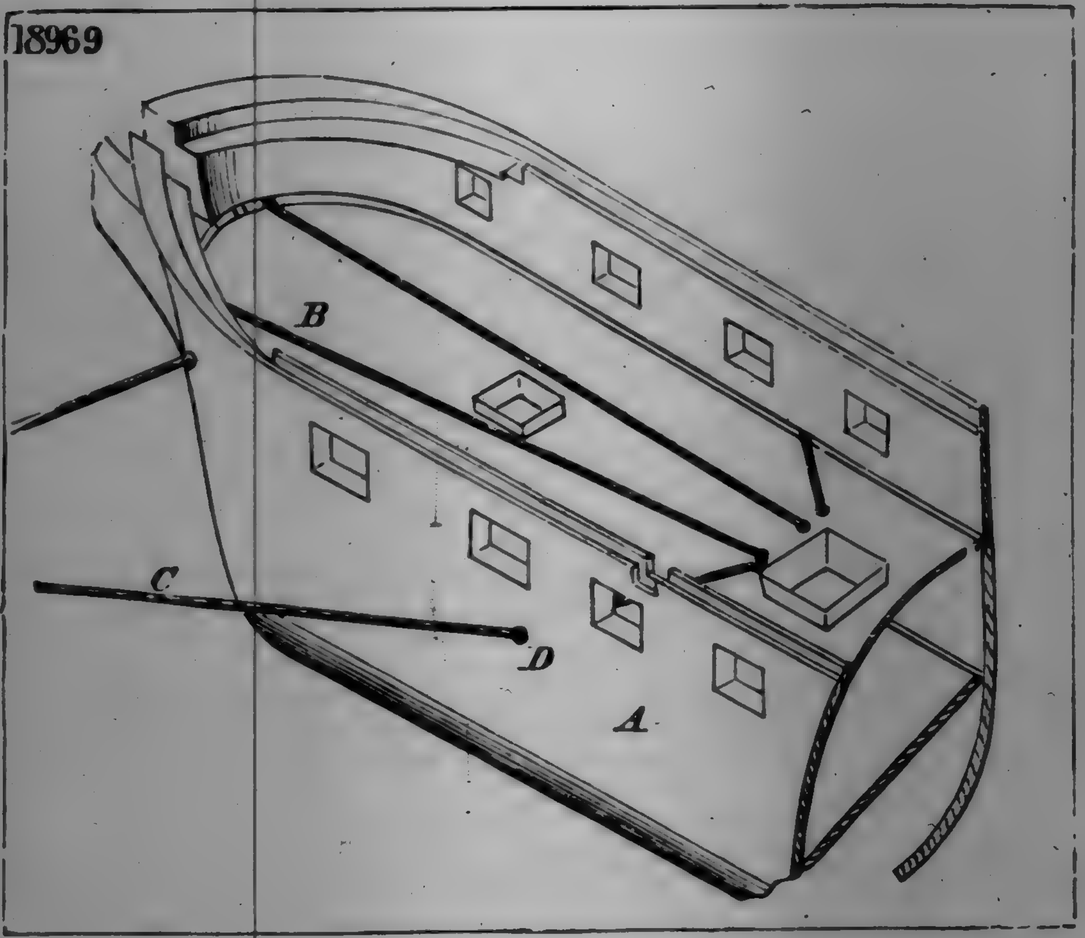

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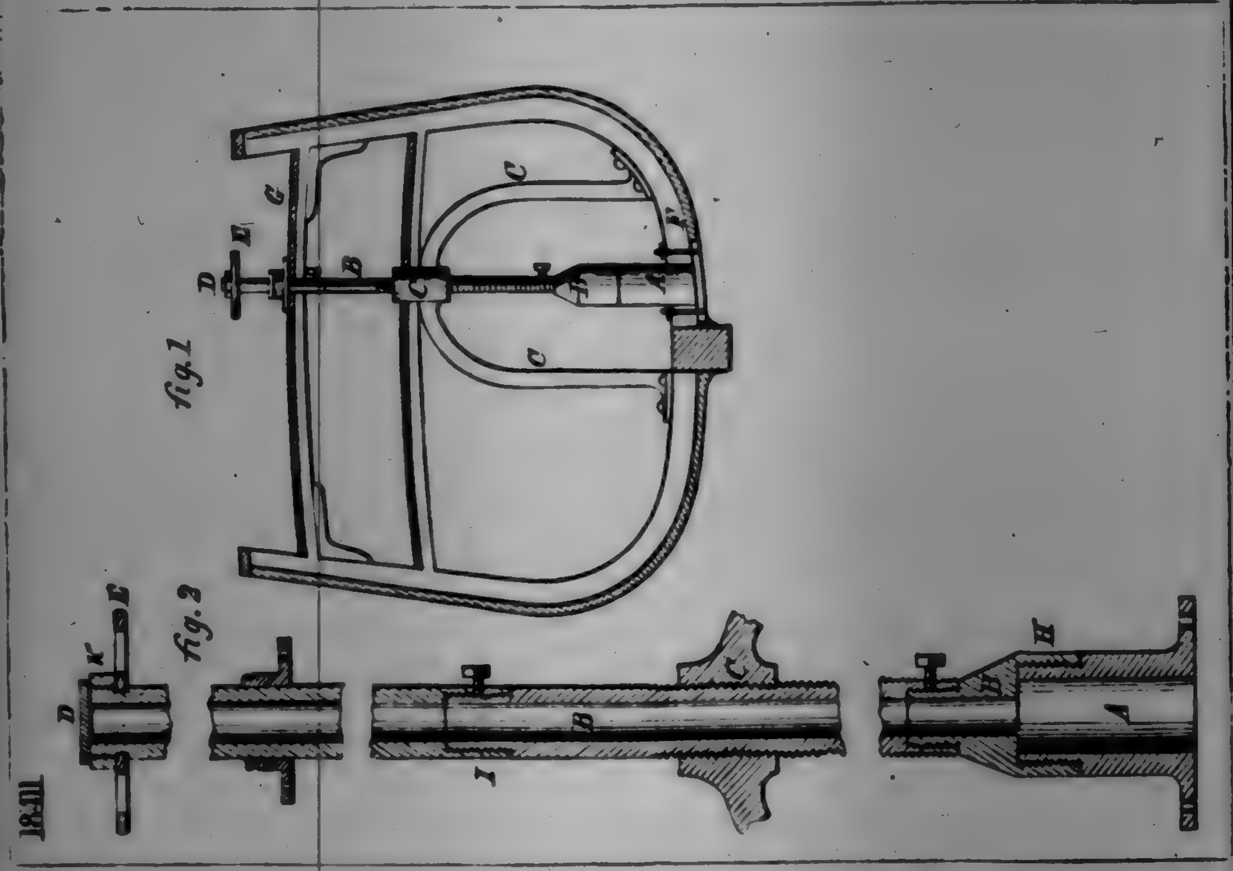

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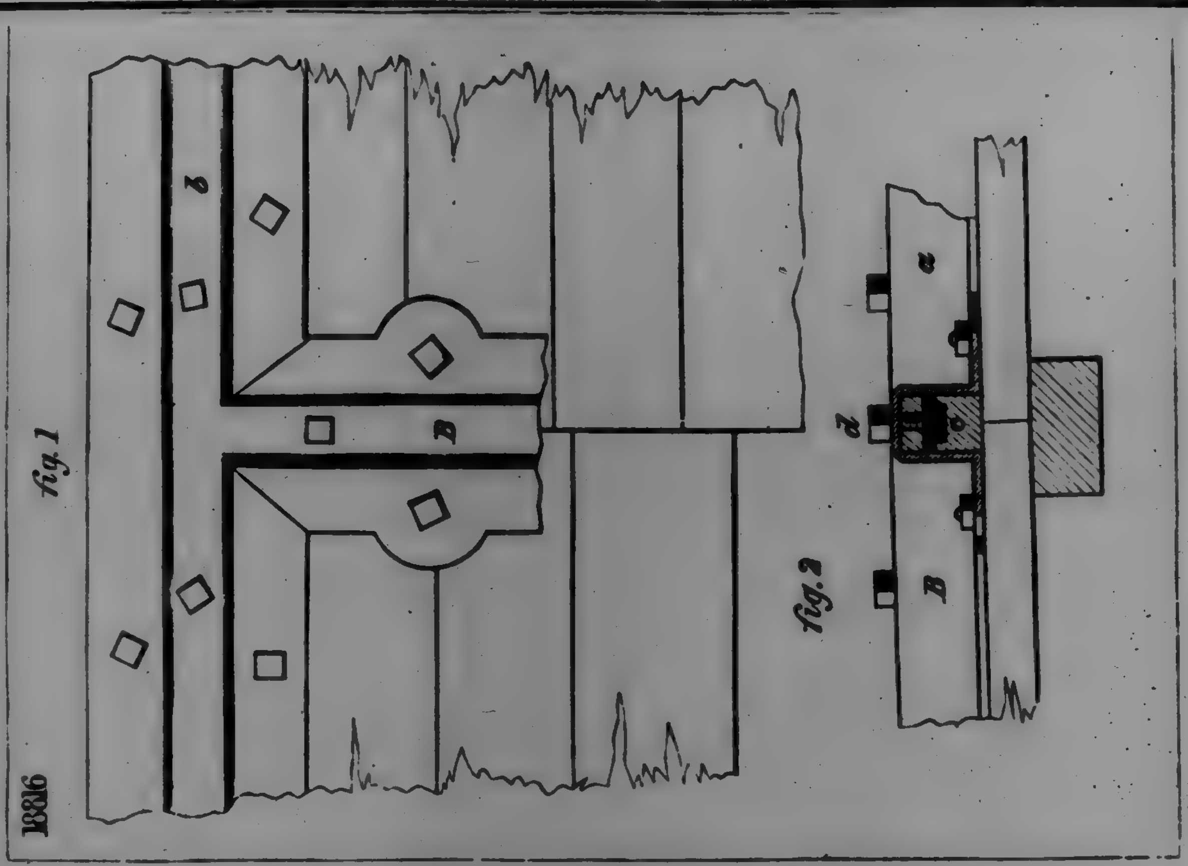

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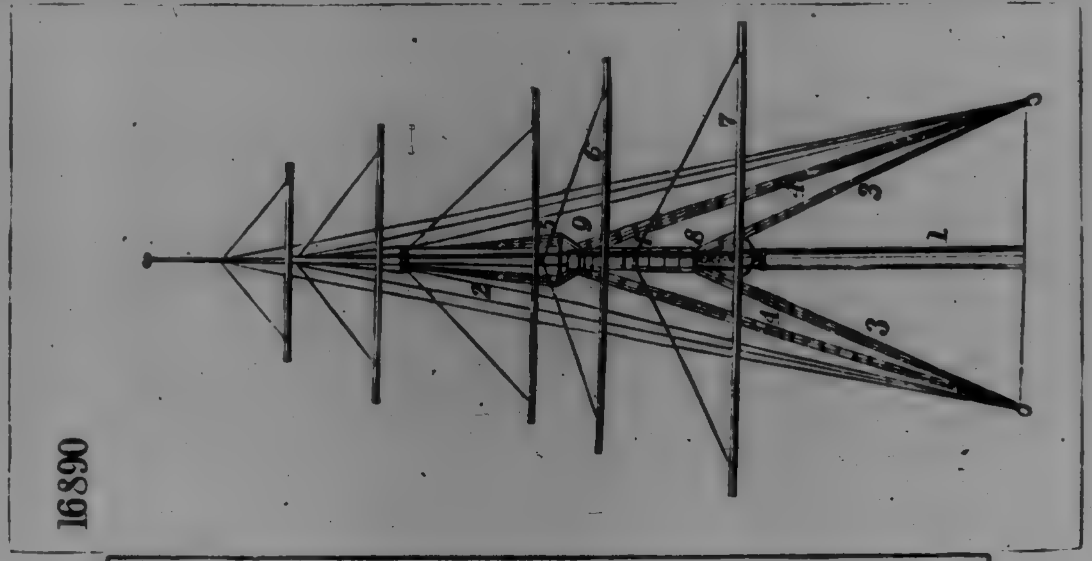

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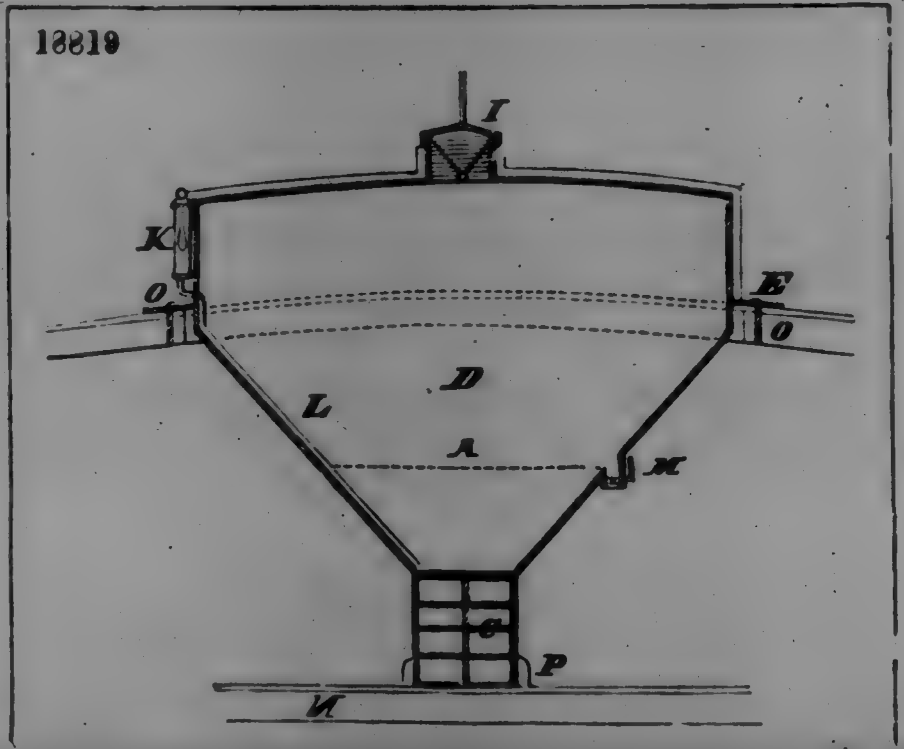

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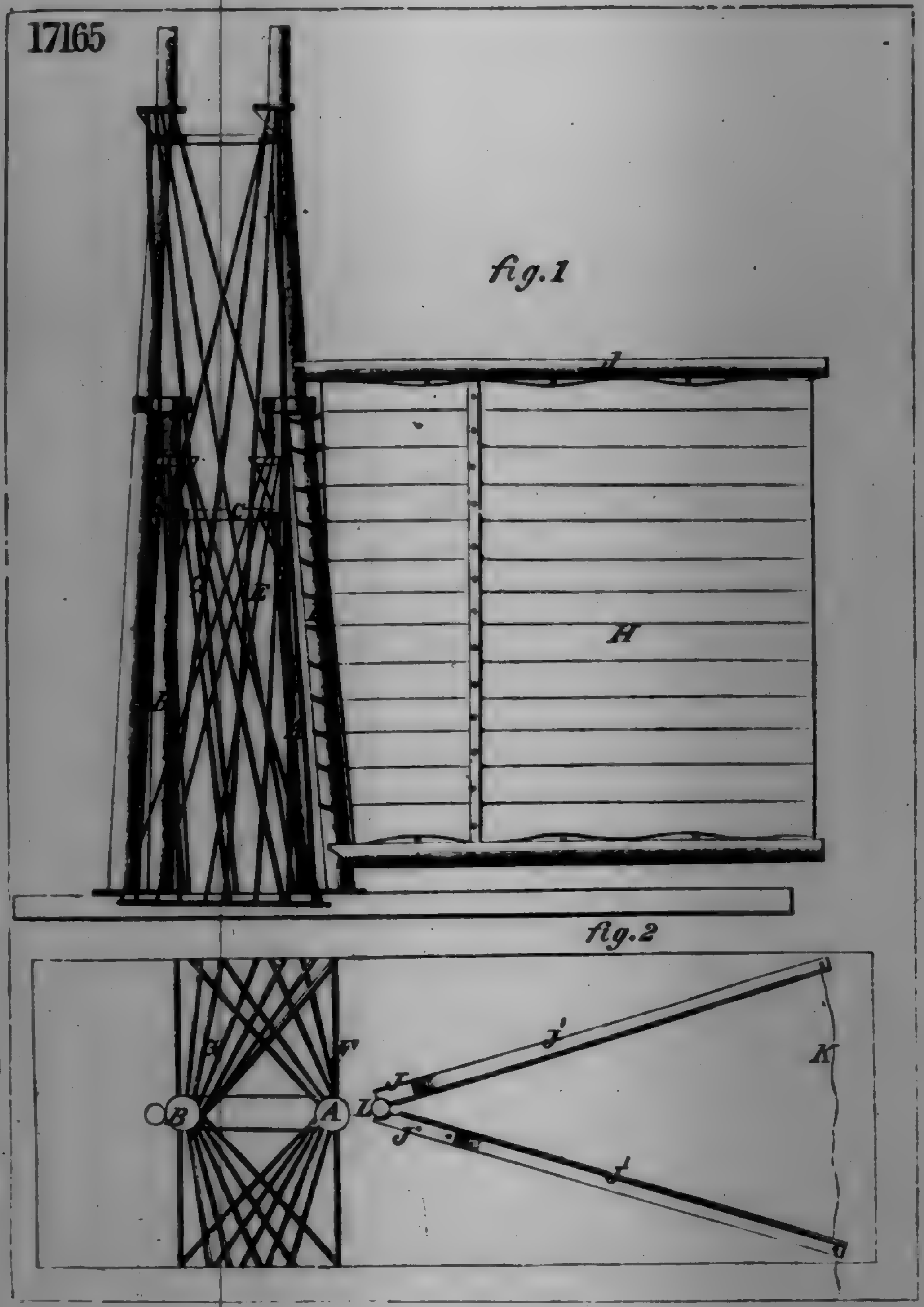

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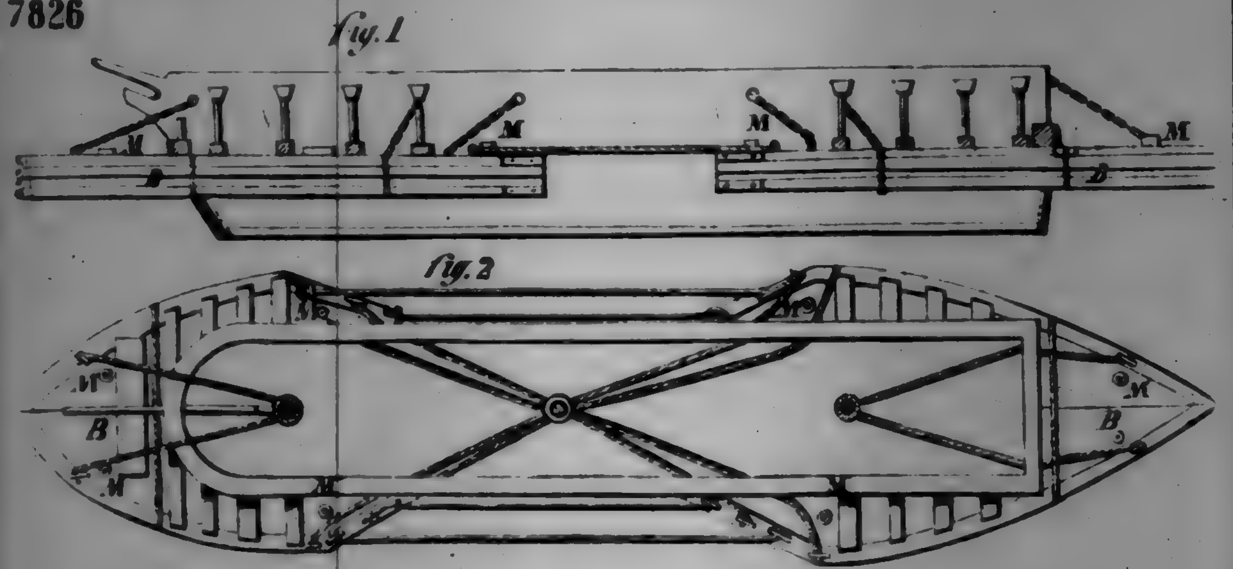

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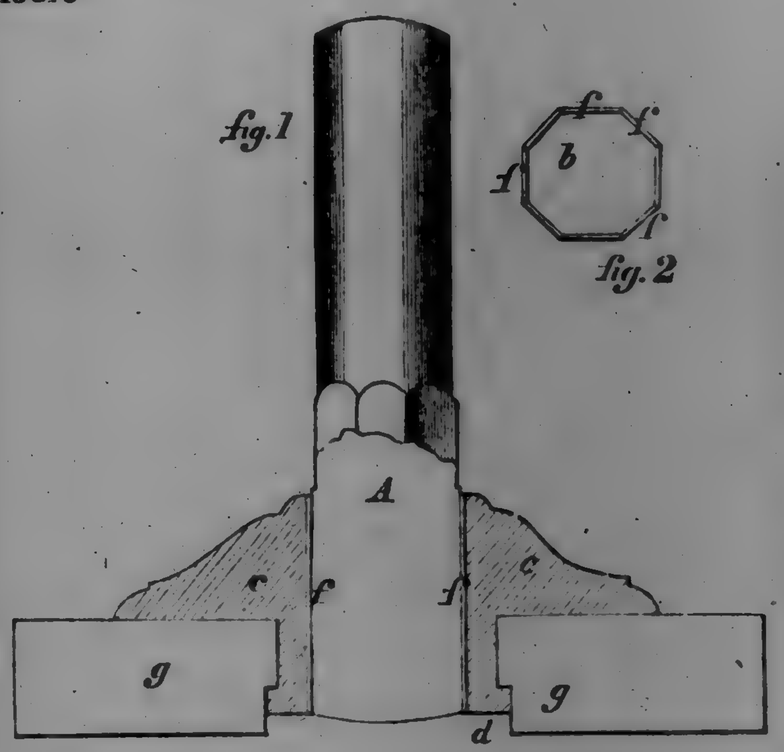

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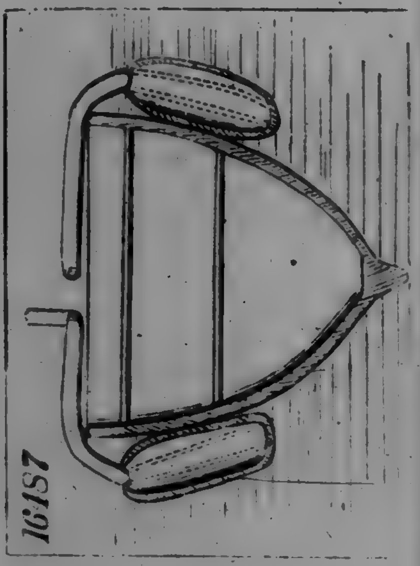

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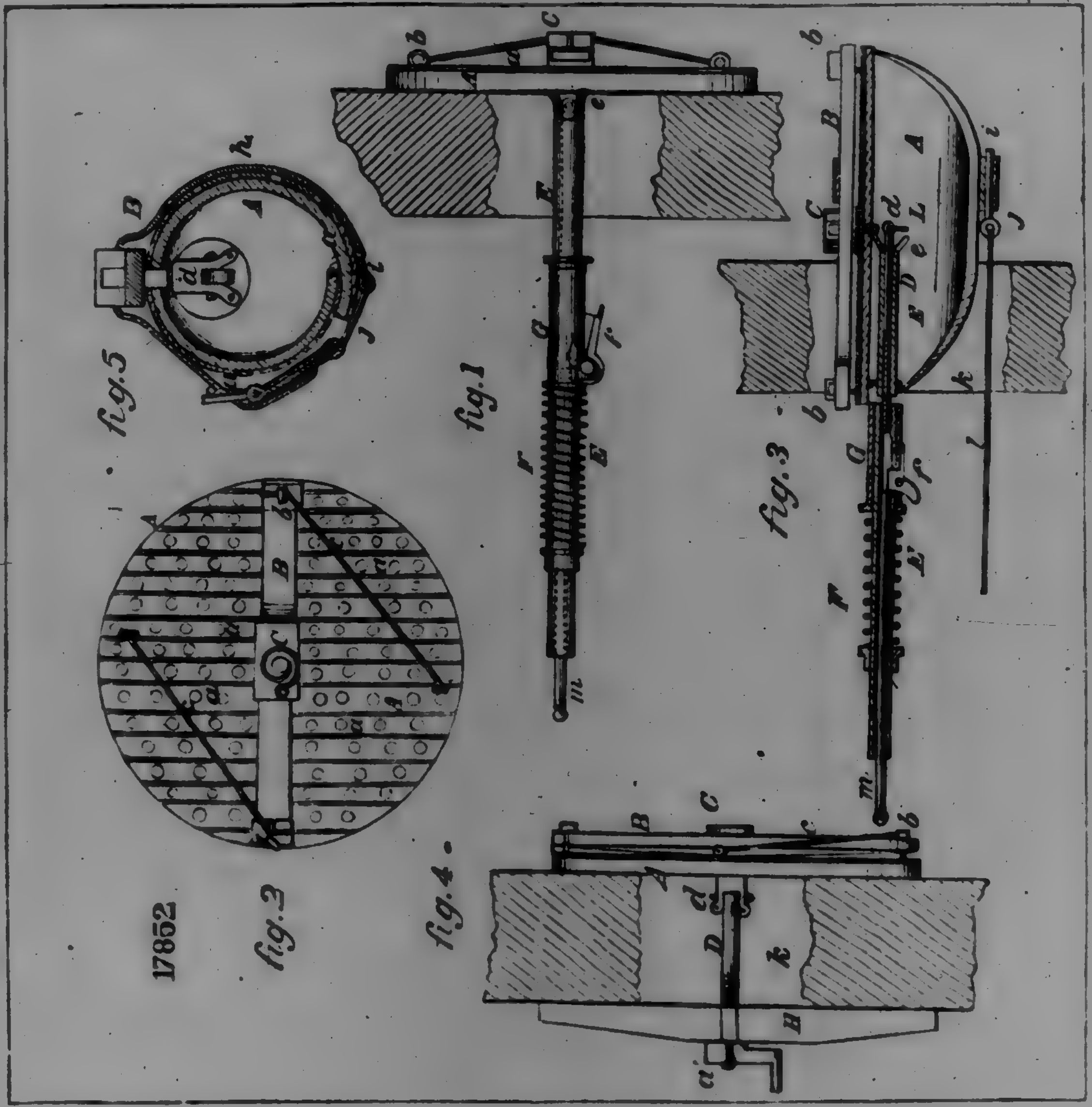

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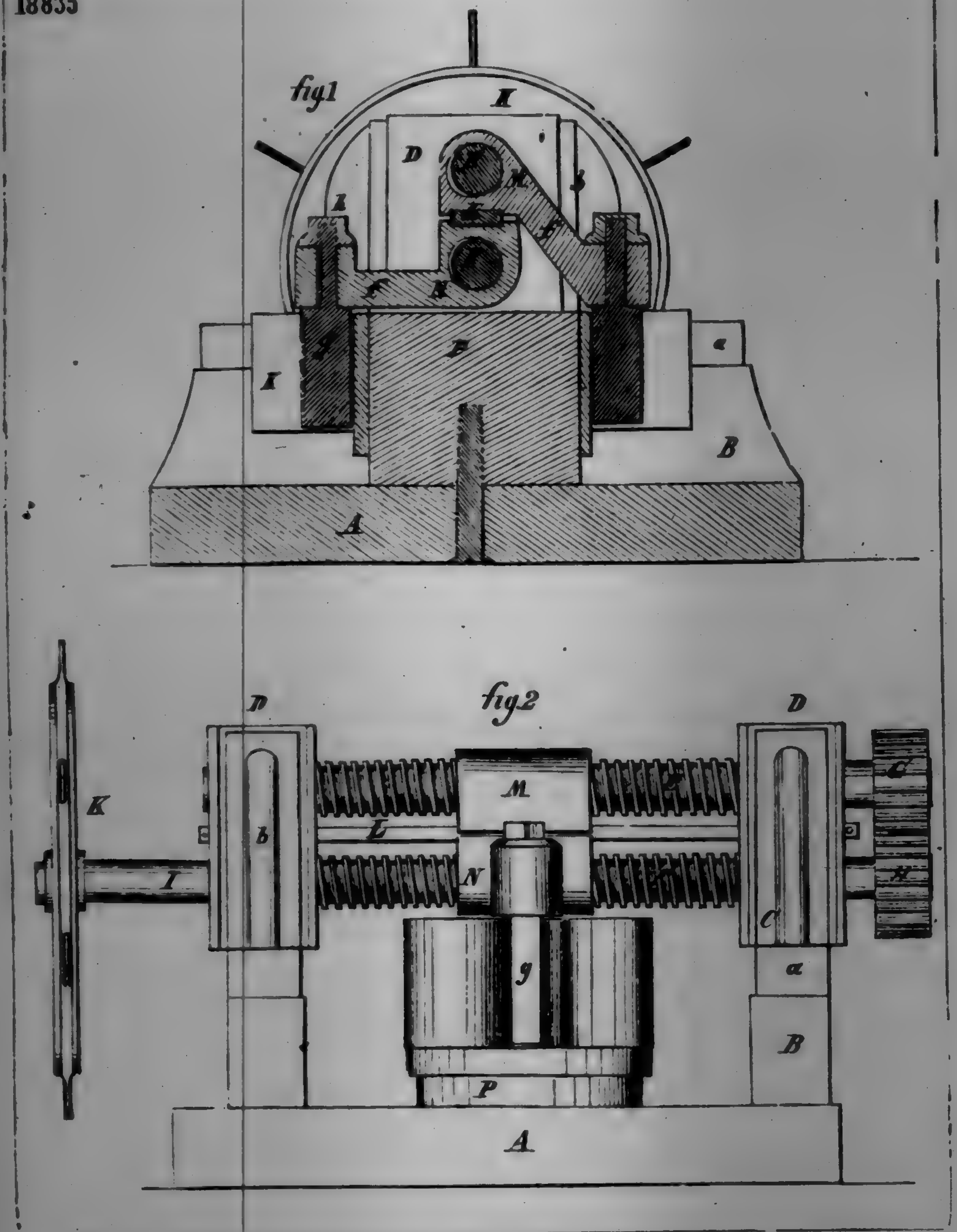

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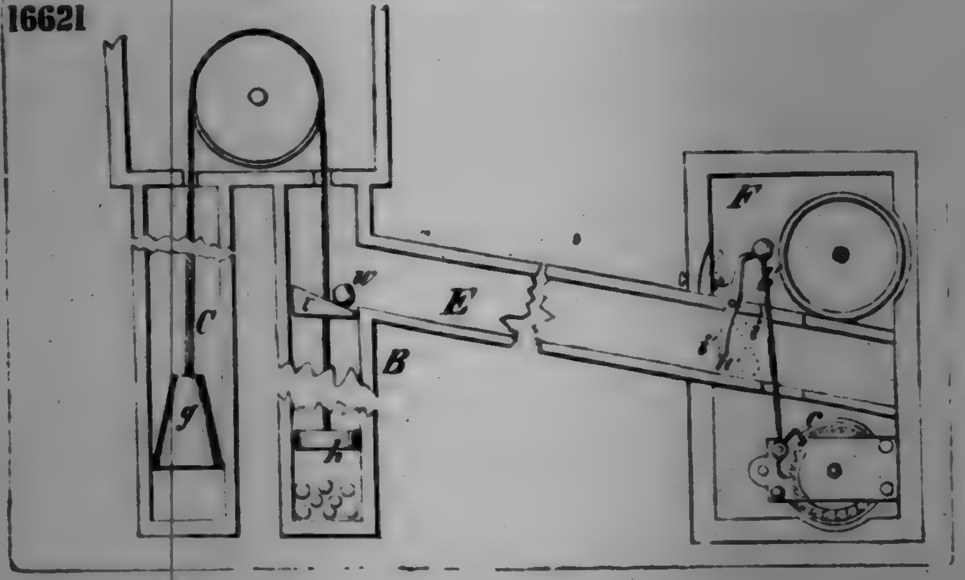

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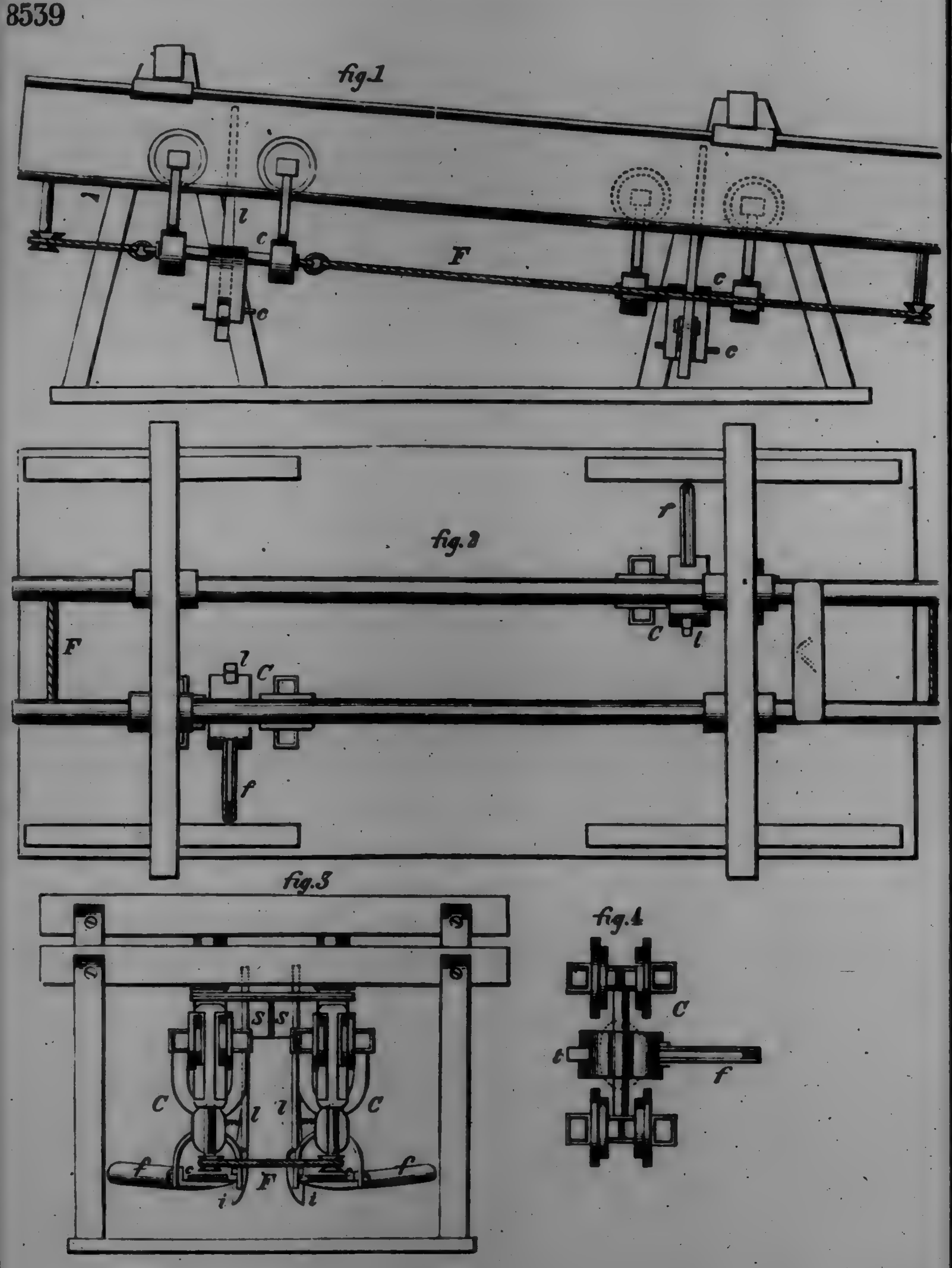

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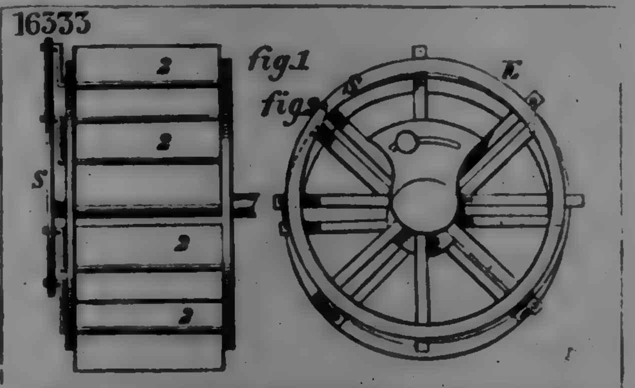

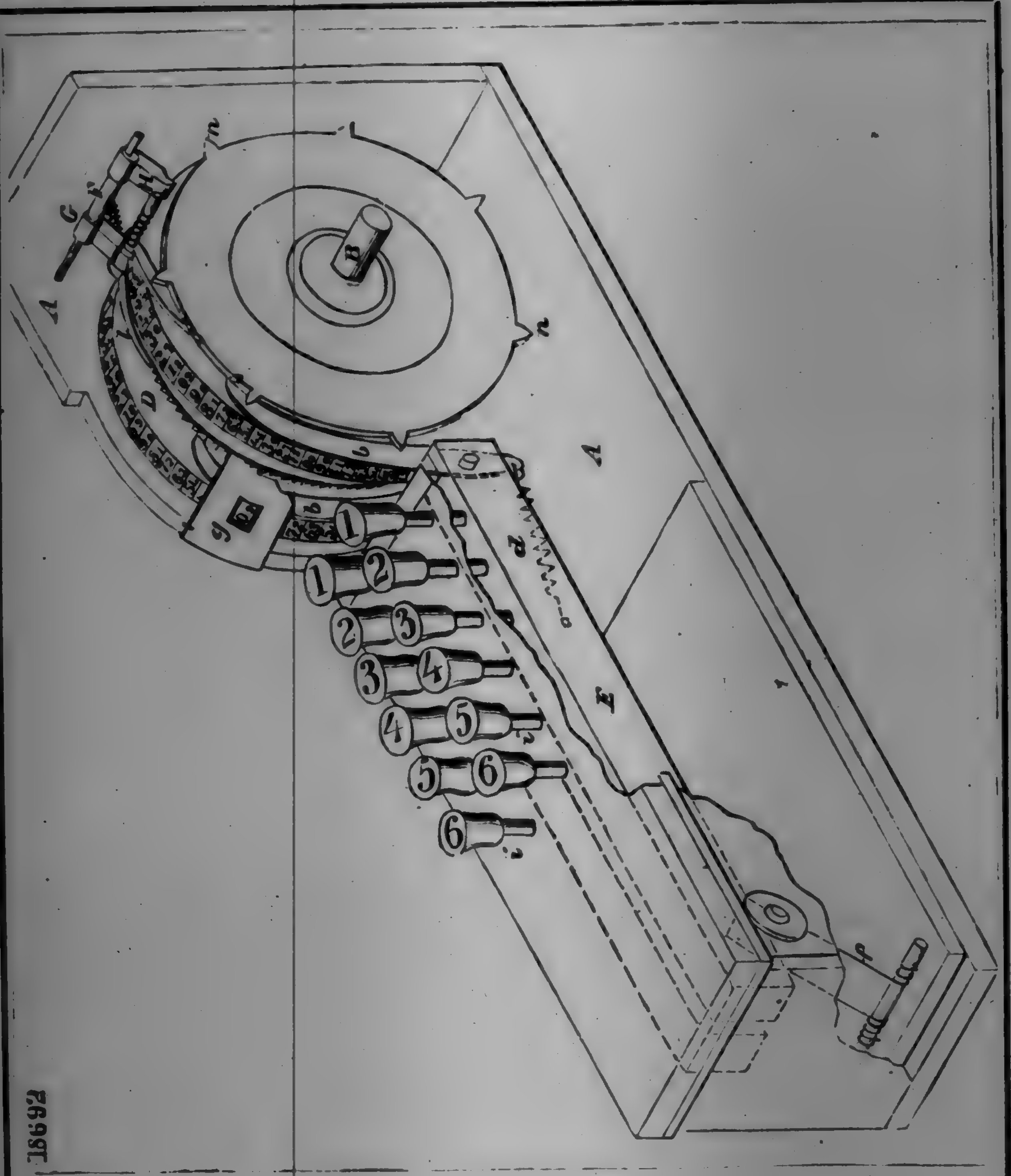
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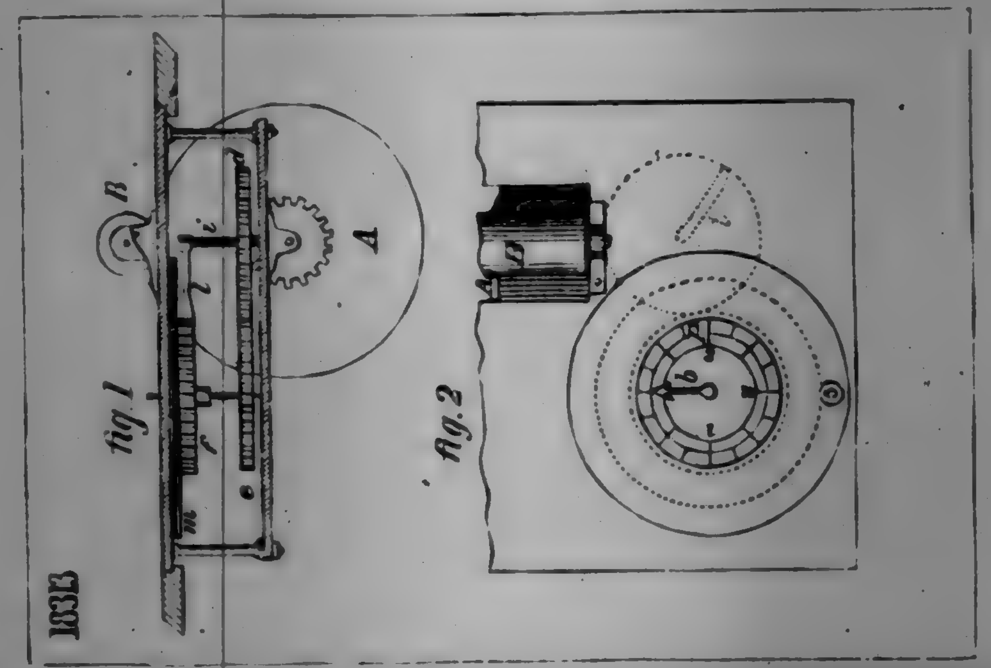
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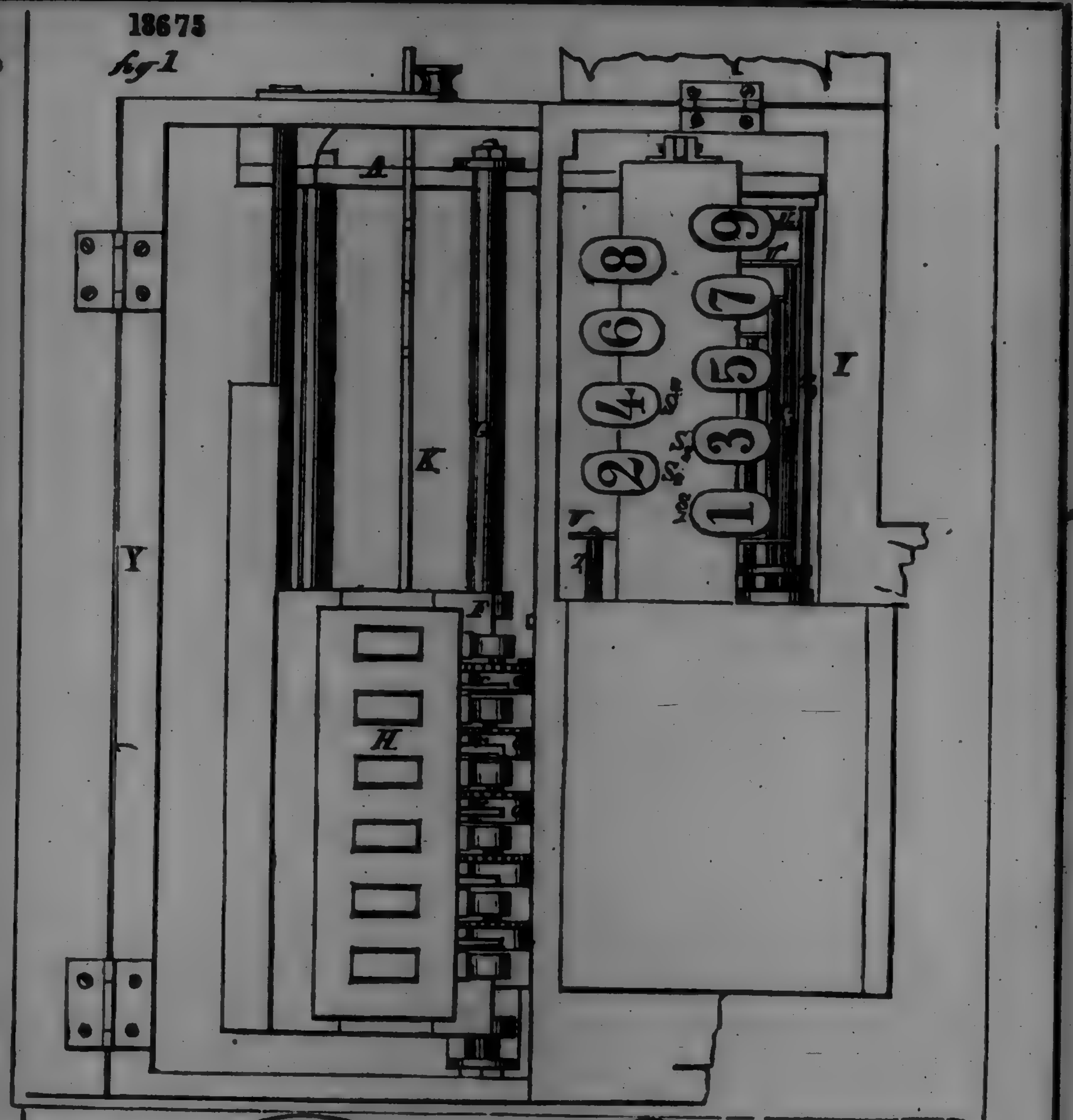
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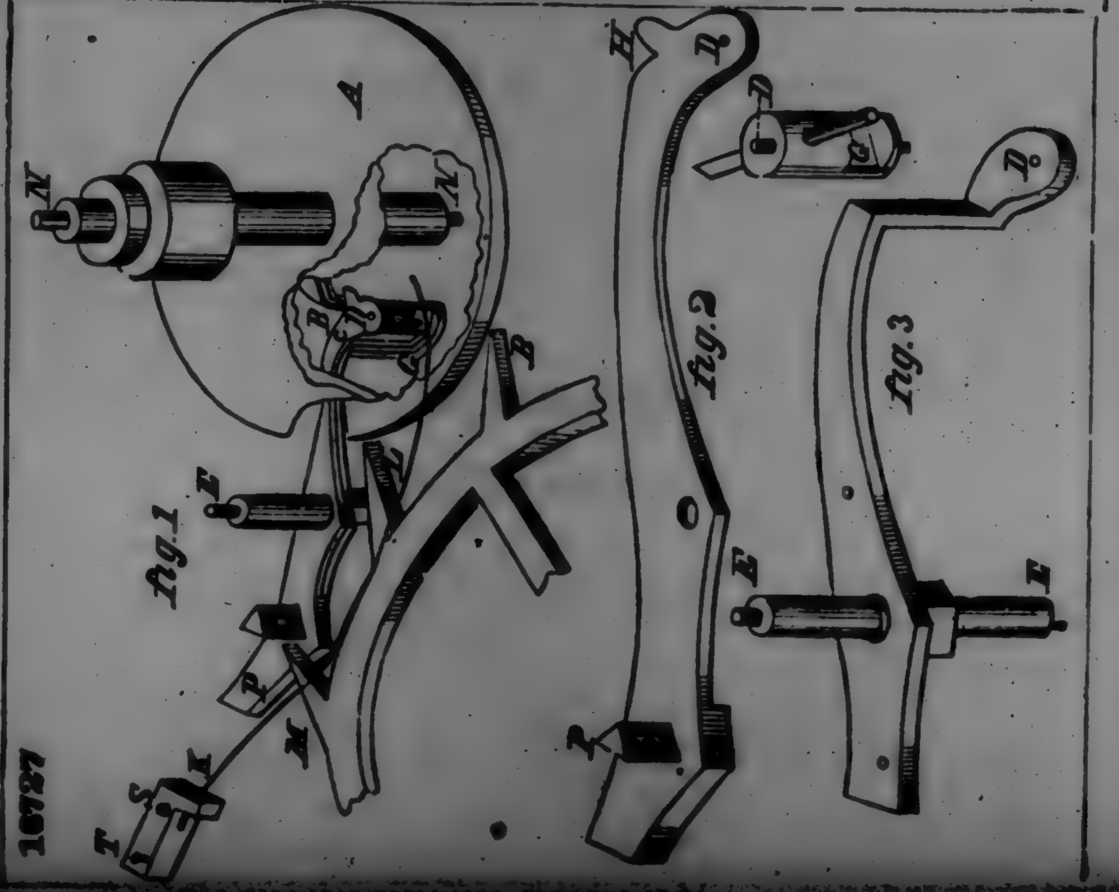
fig. 1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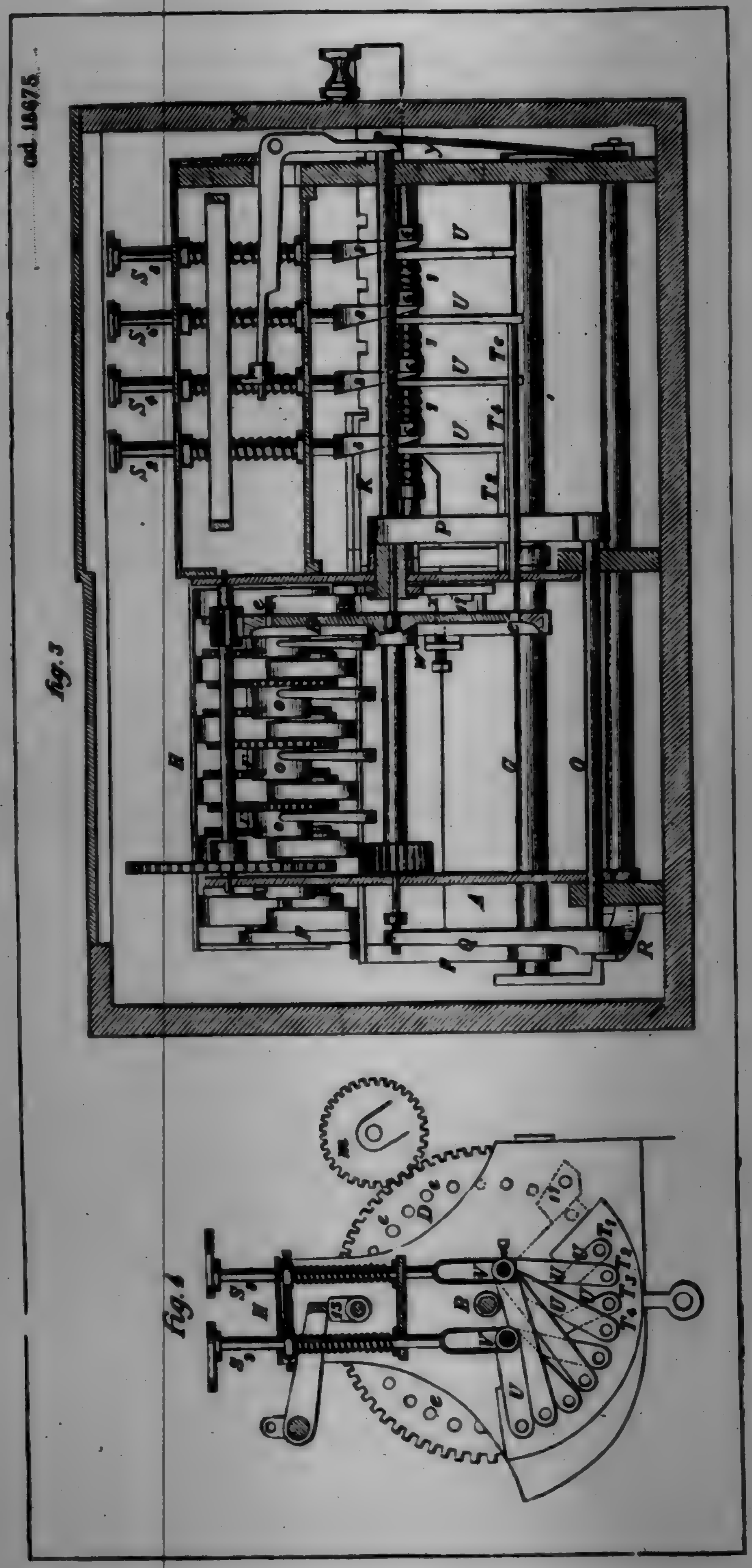

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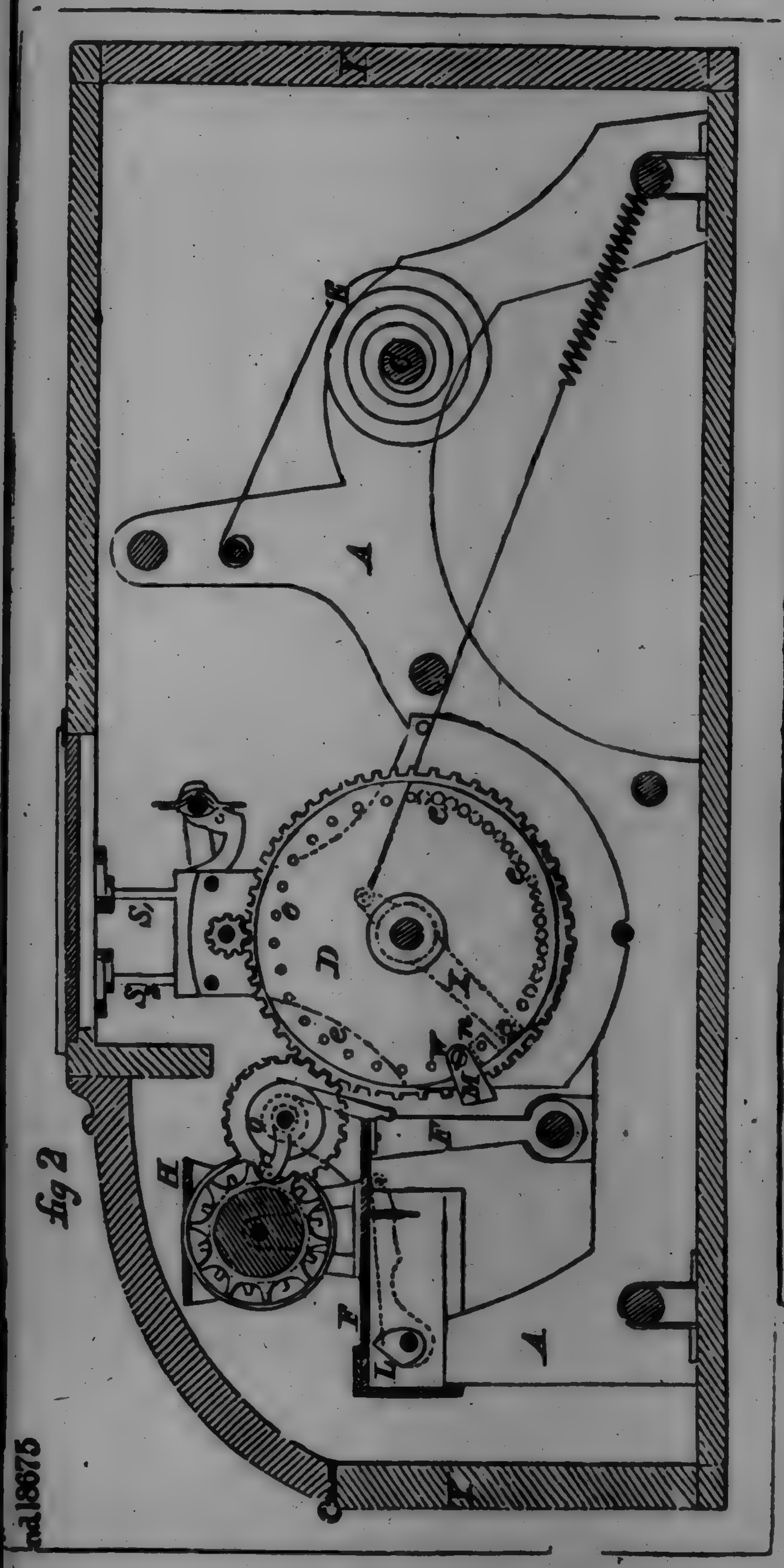
fig. 3

Fig. 1



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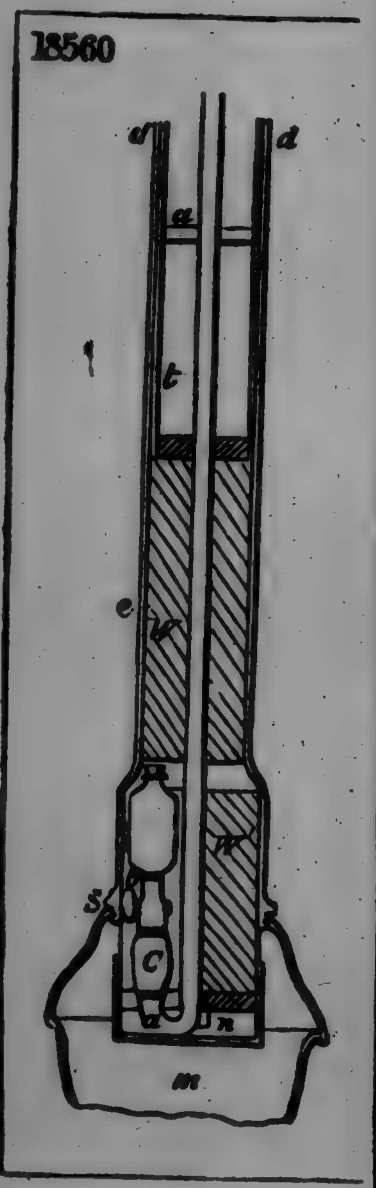

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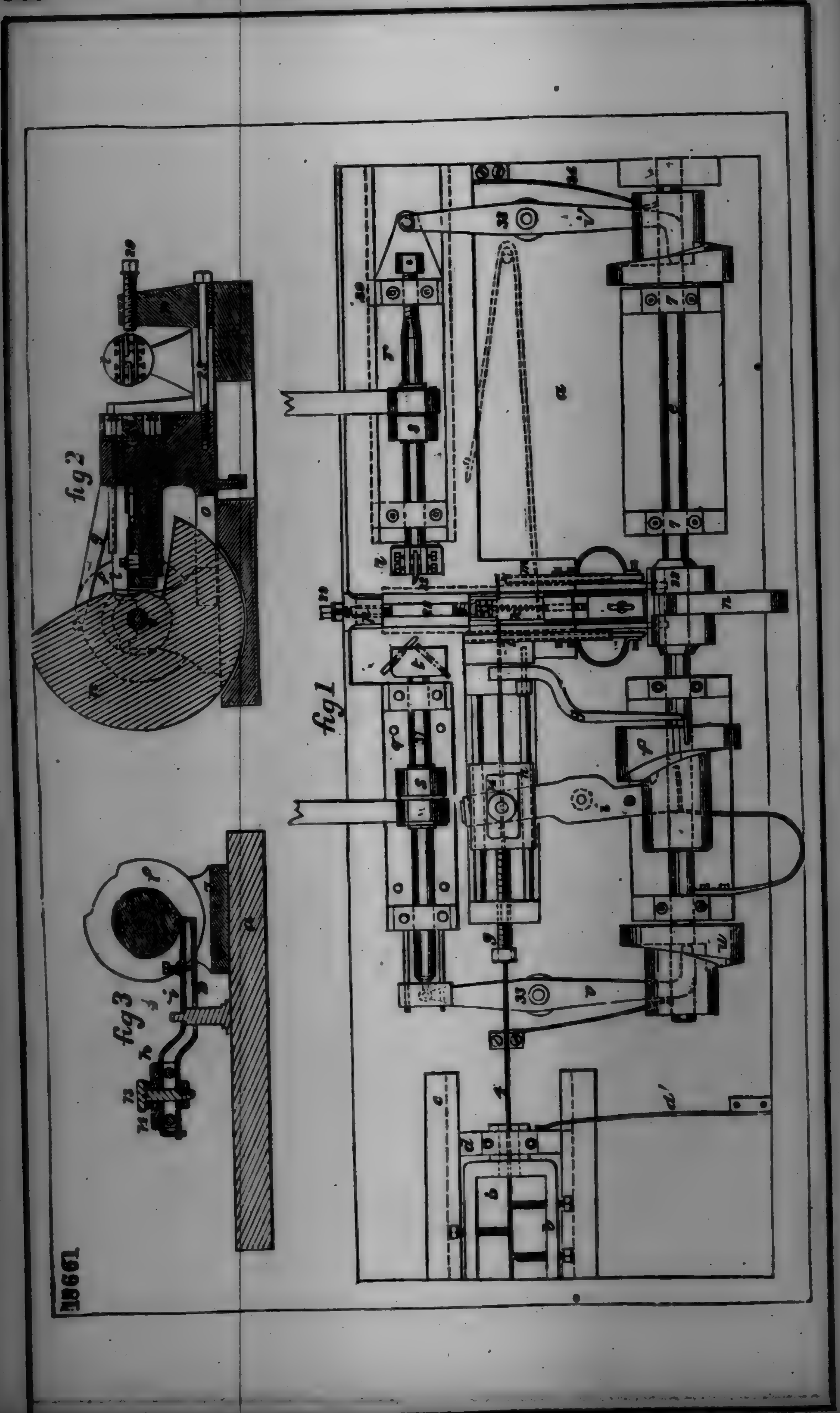
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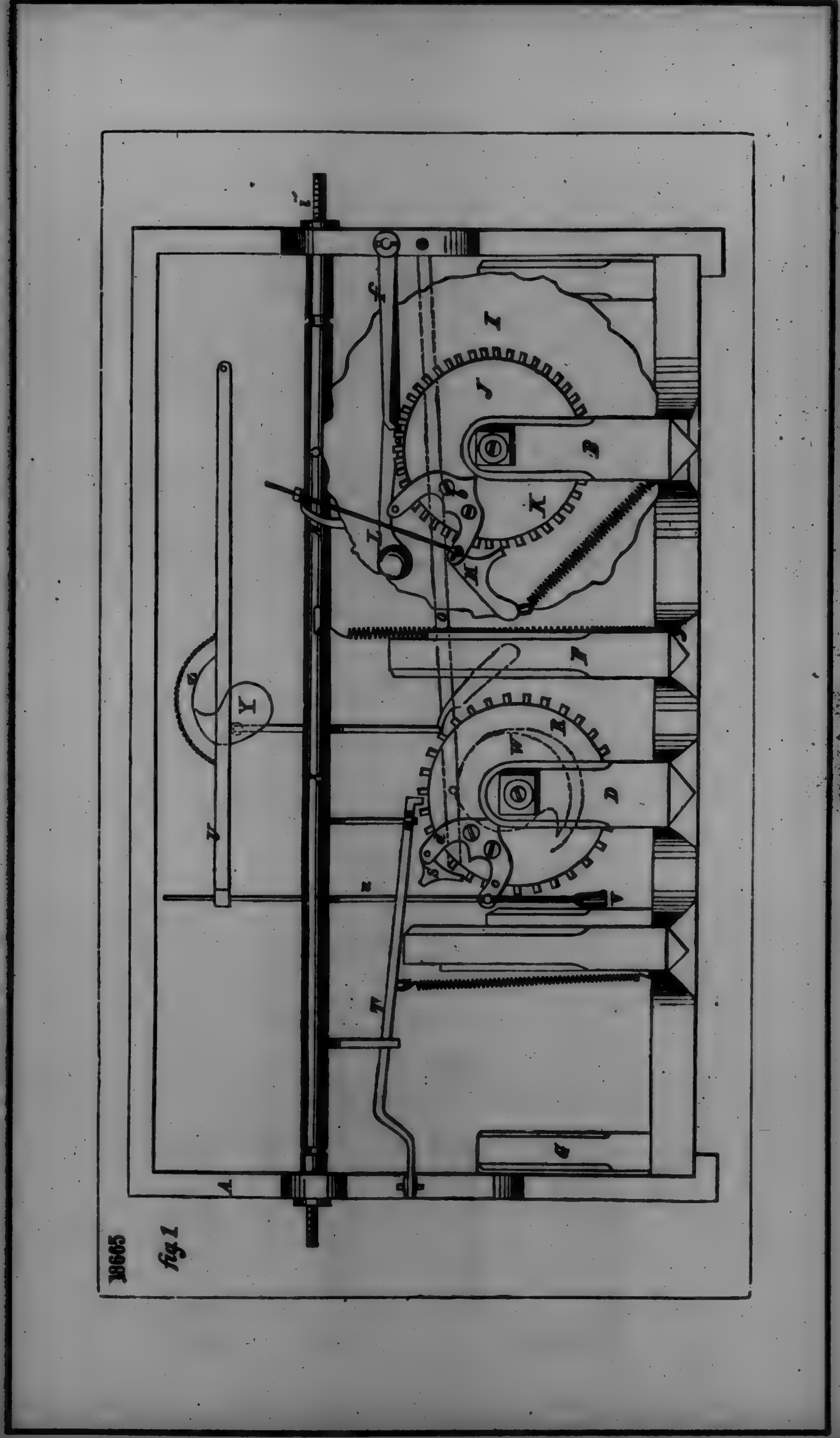
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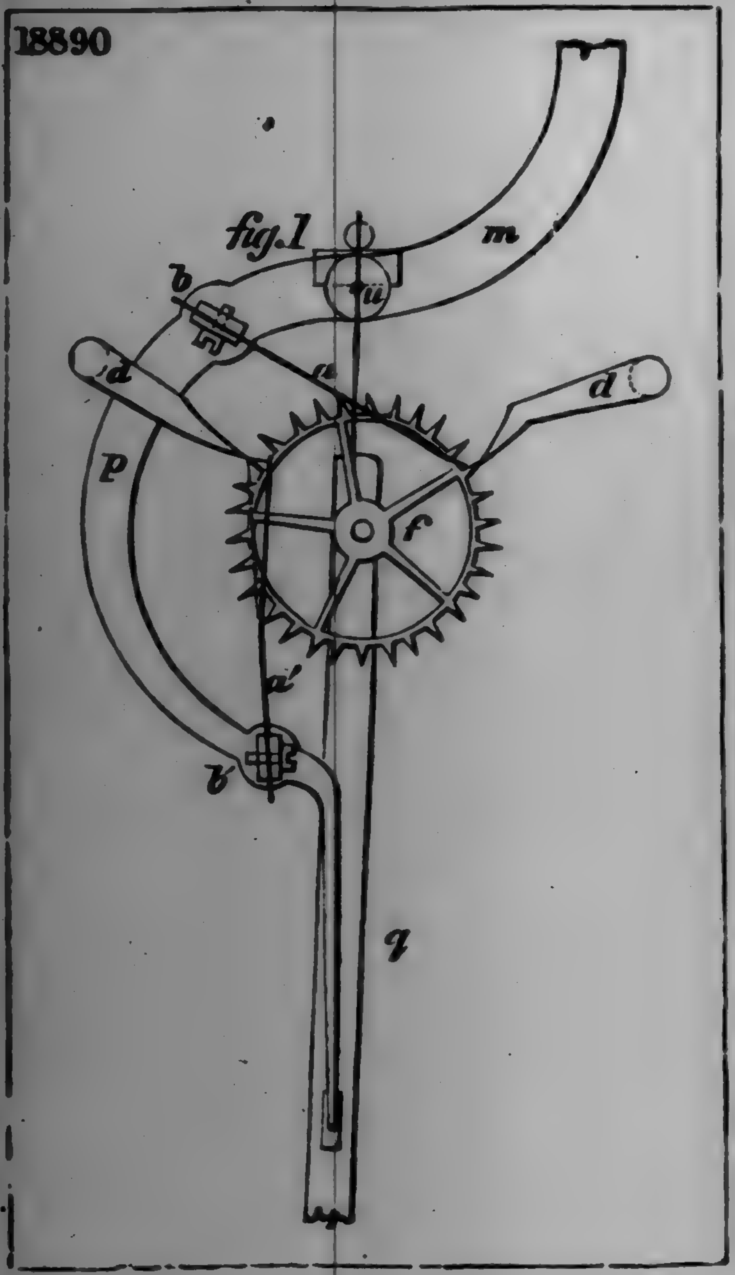

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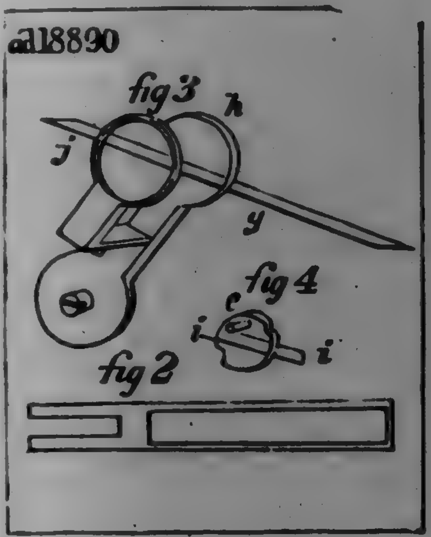

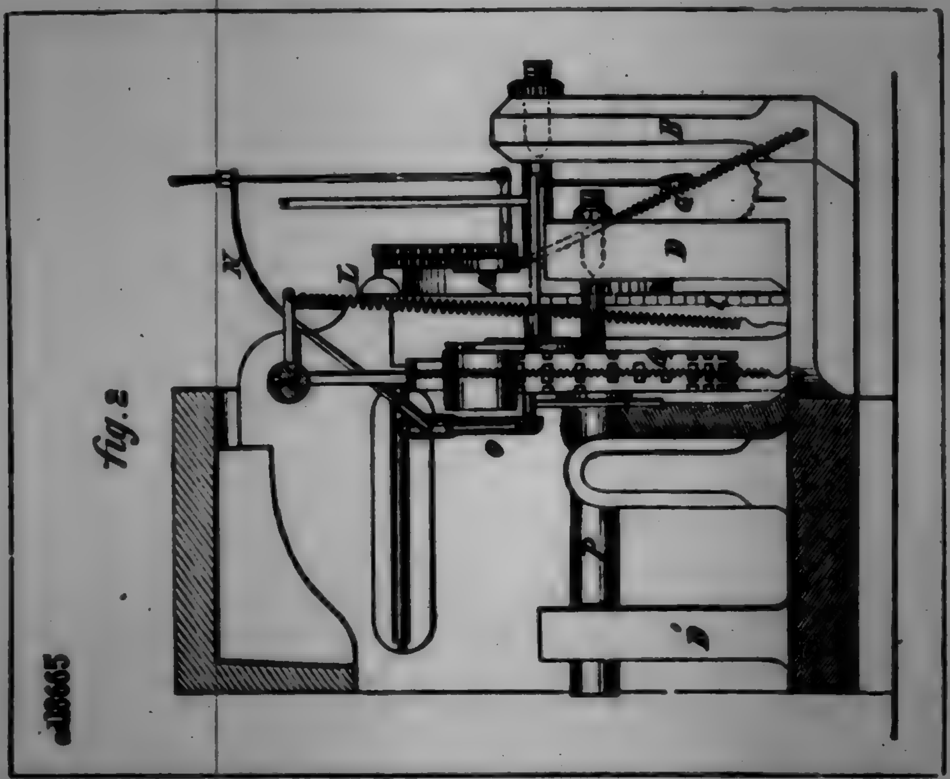

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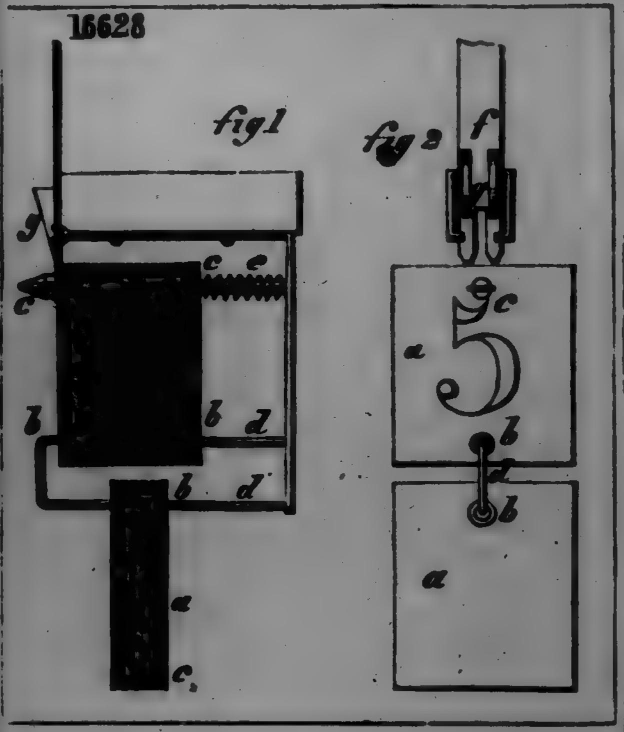

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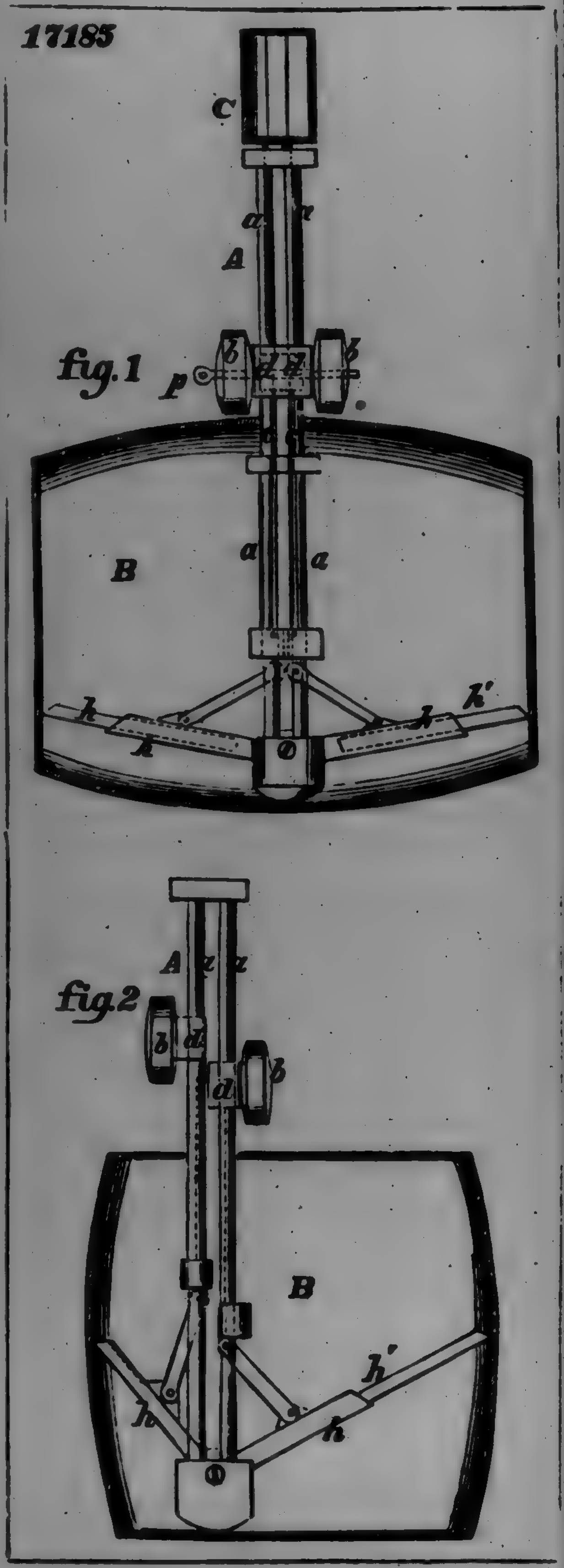

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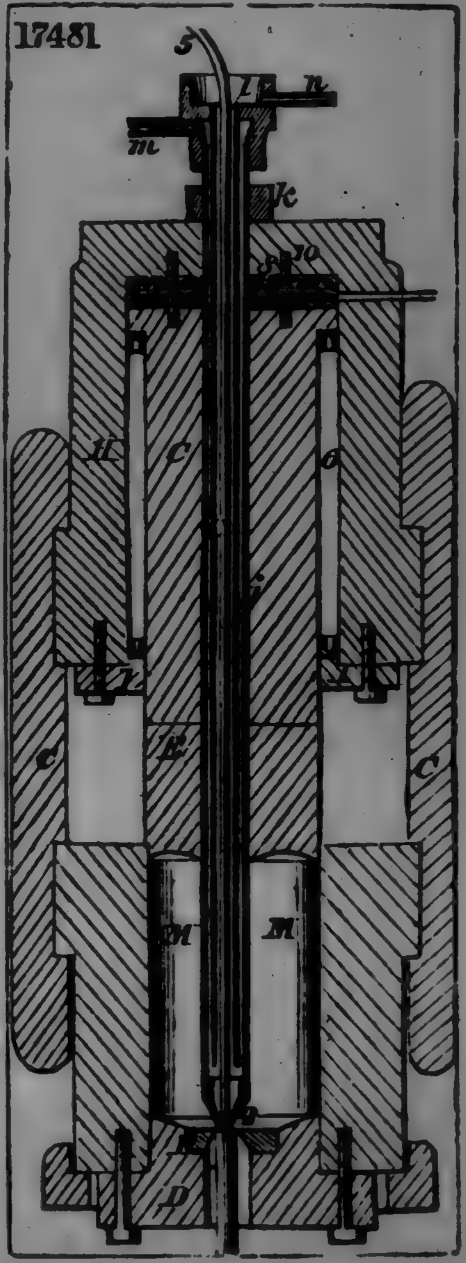

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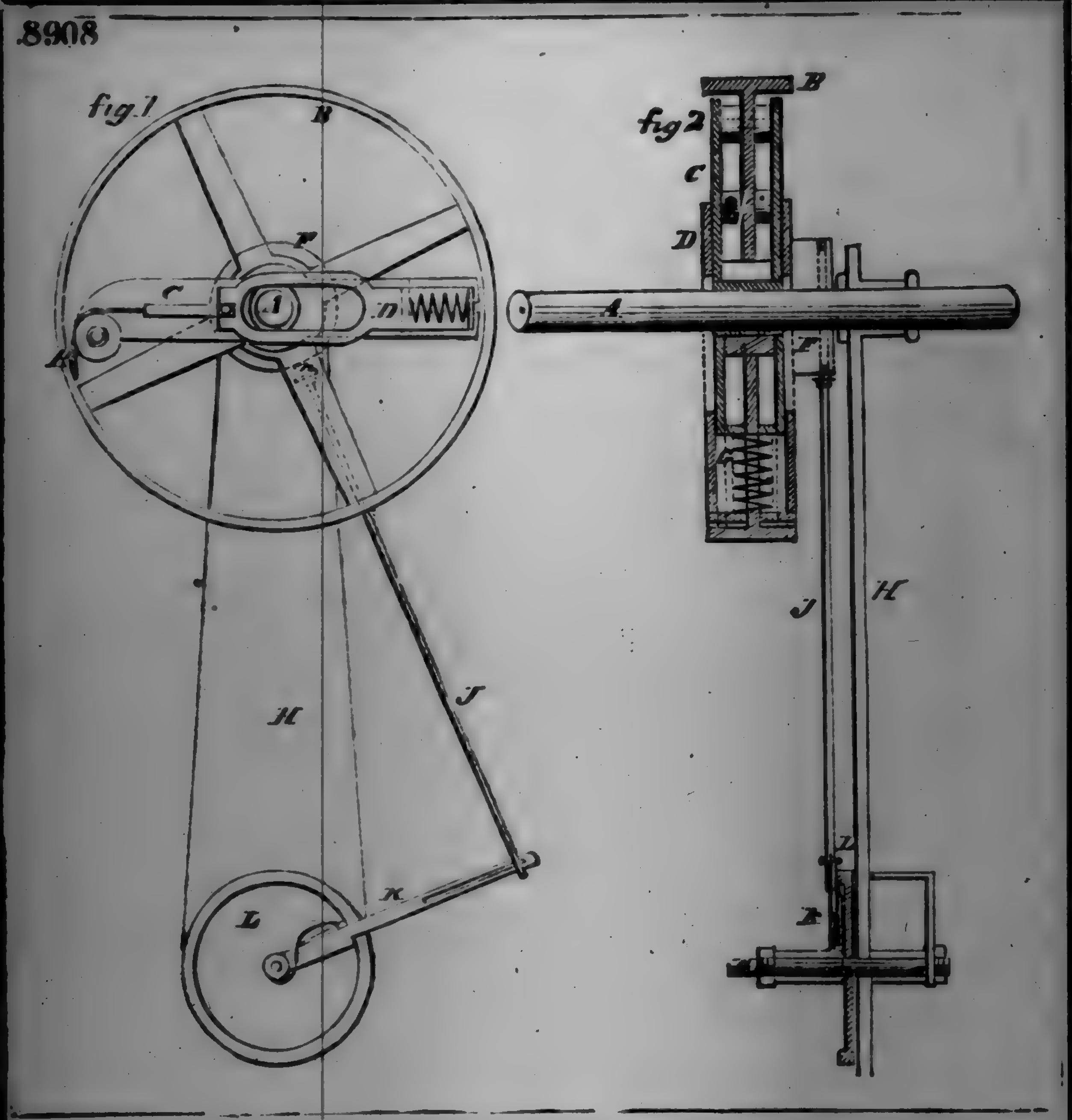

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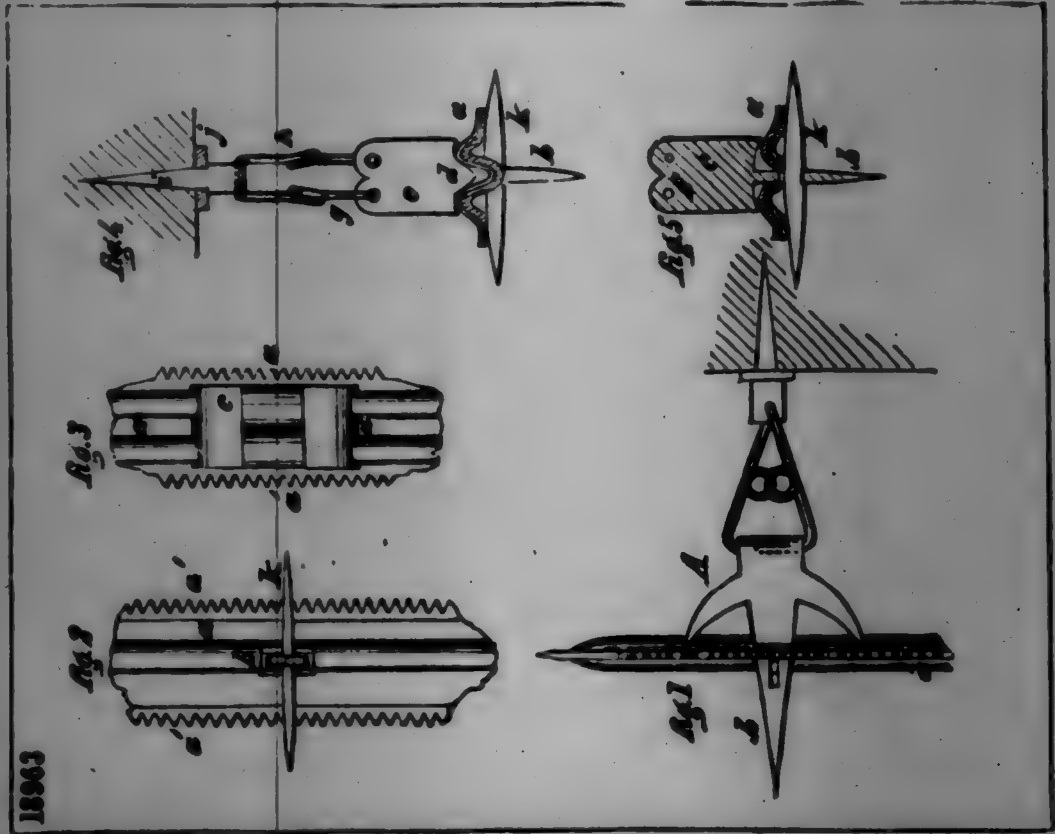

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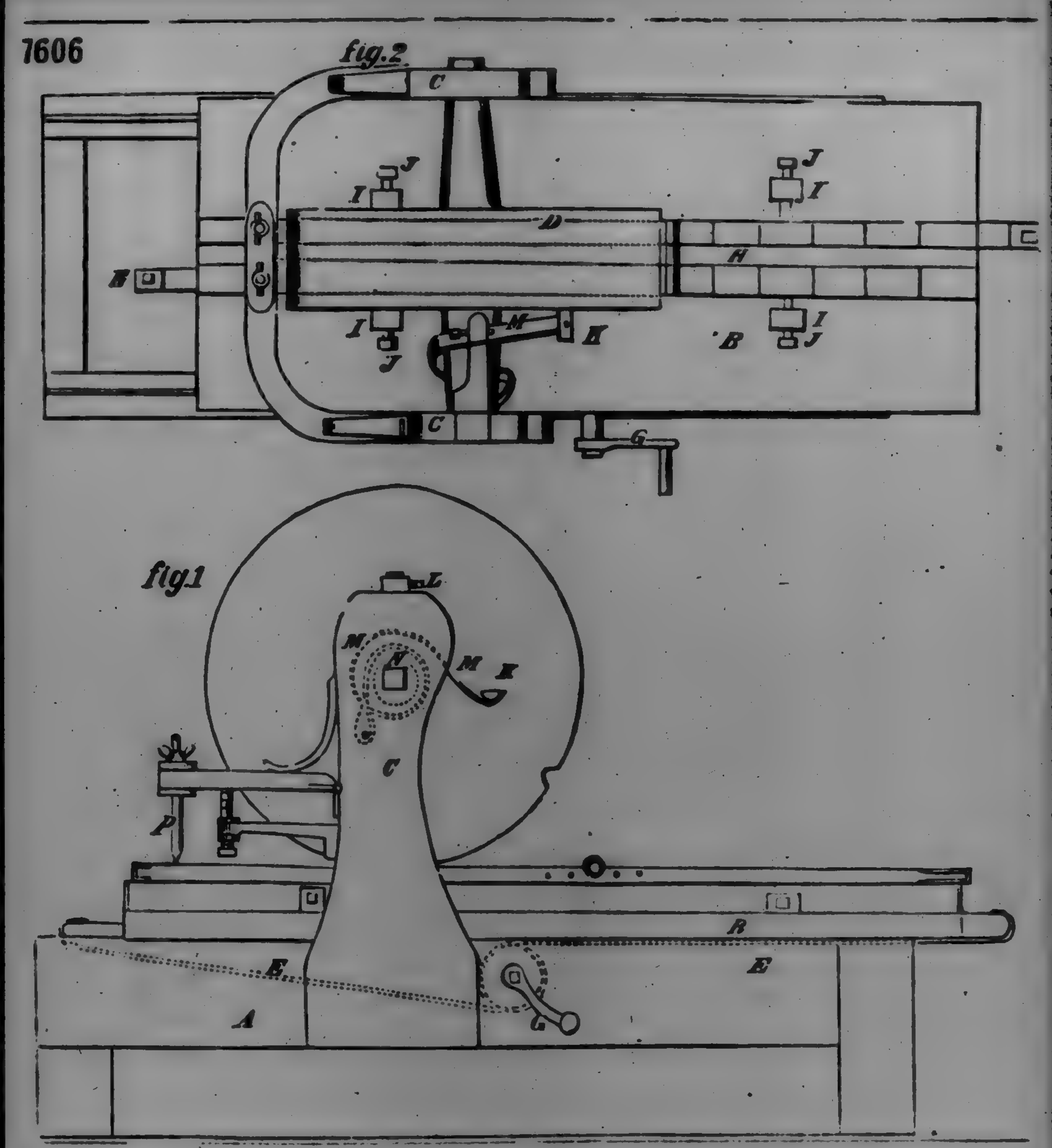

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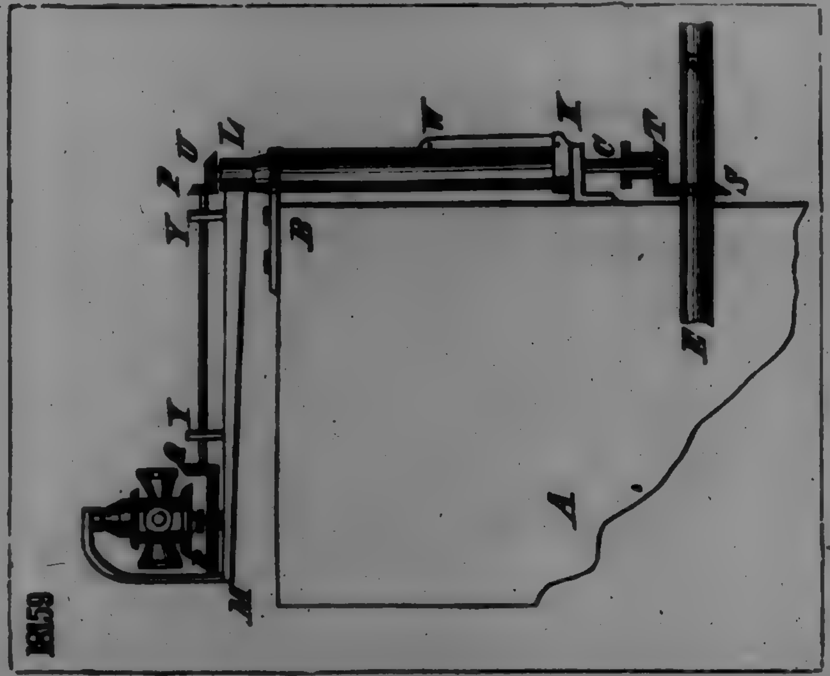

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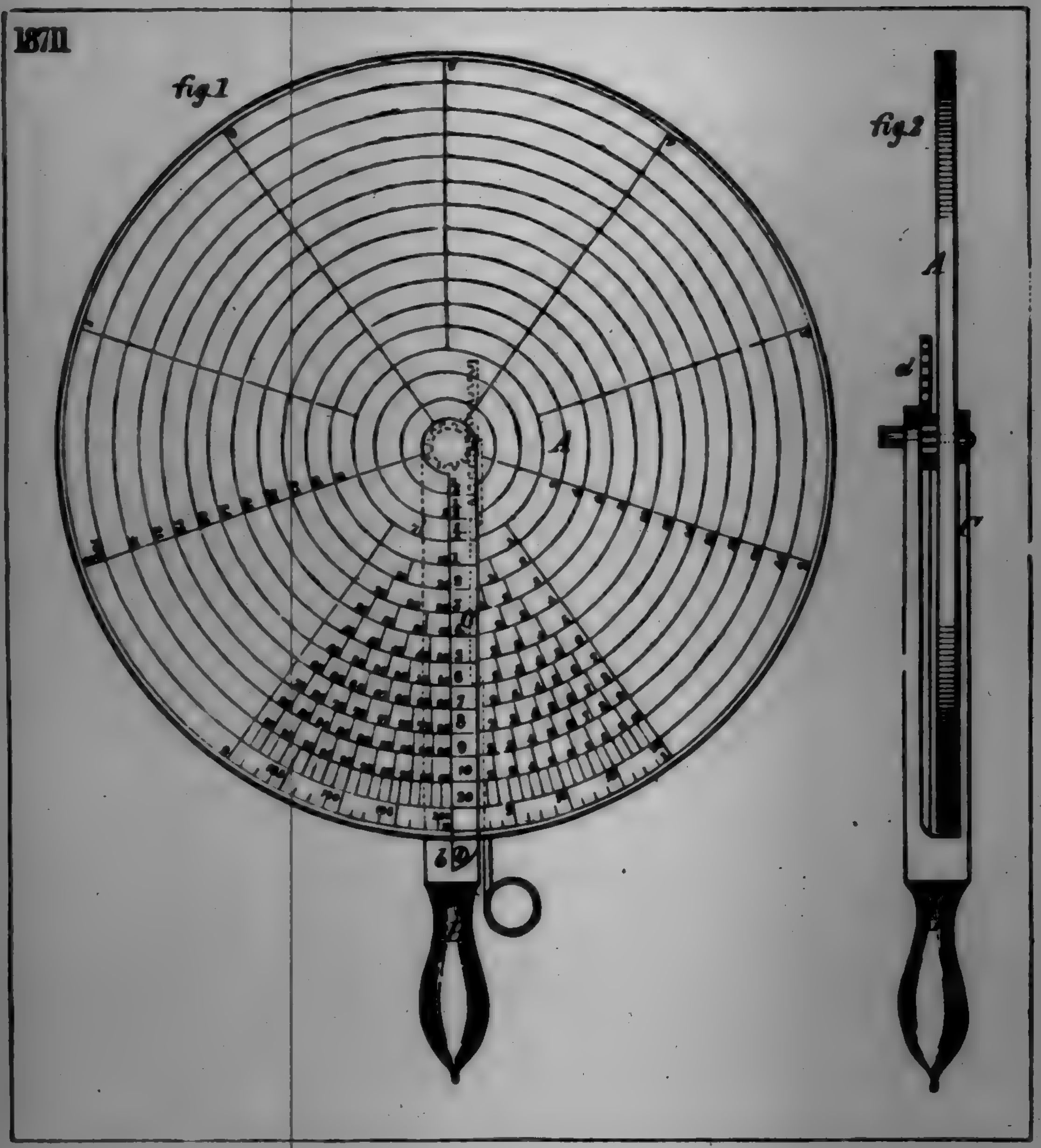

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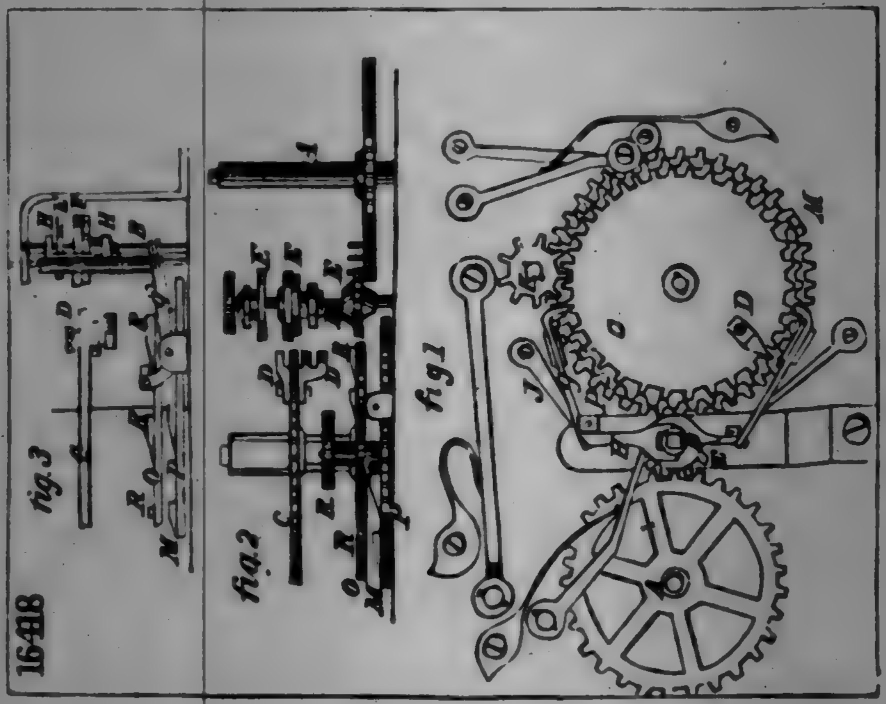

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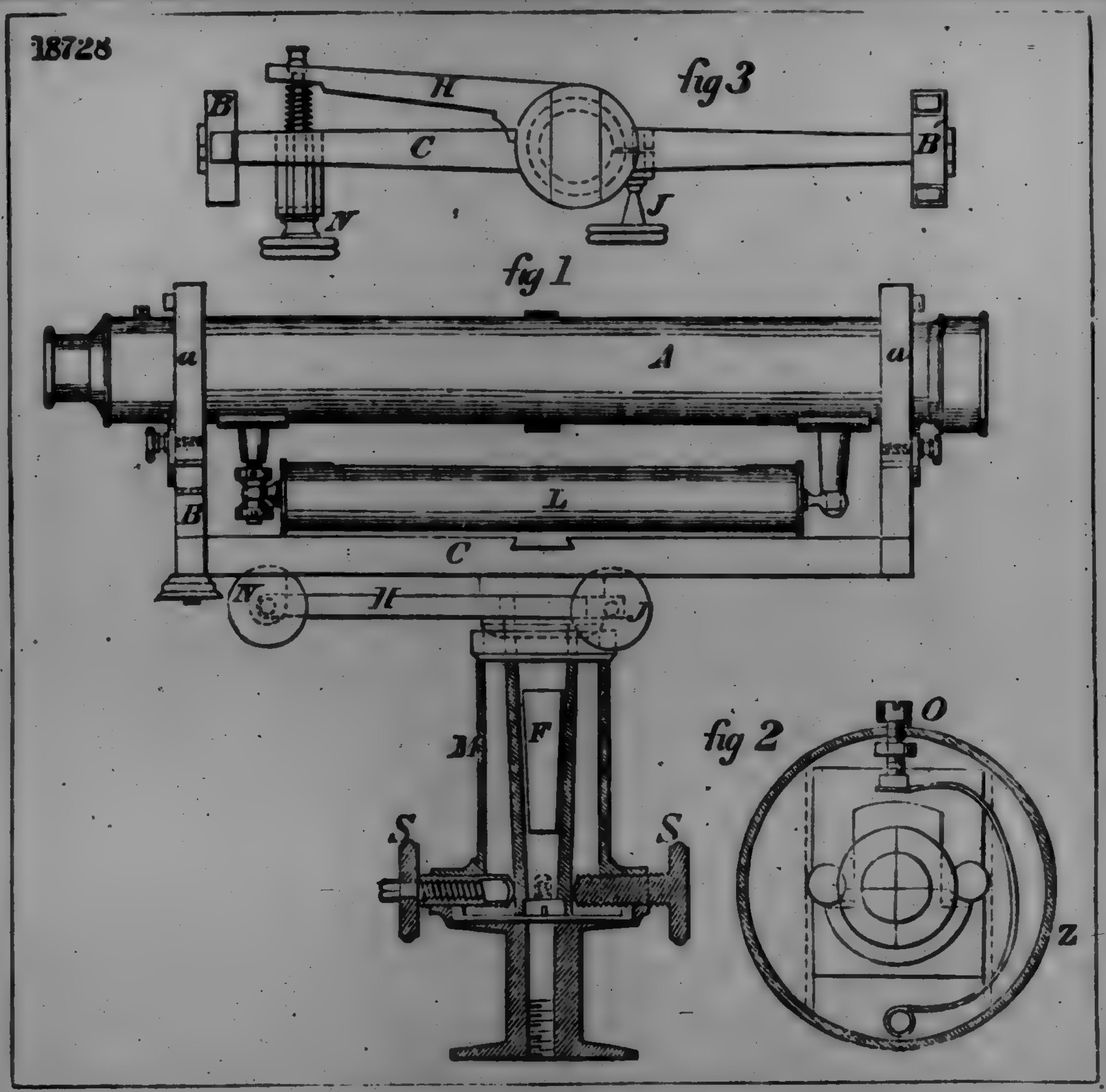

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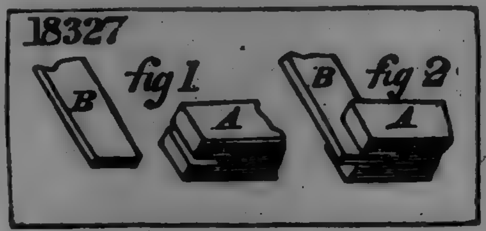

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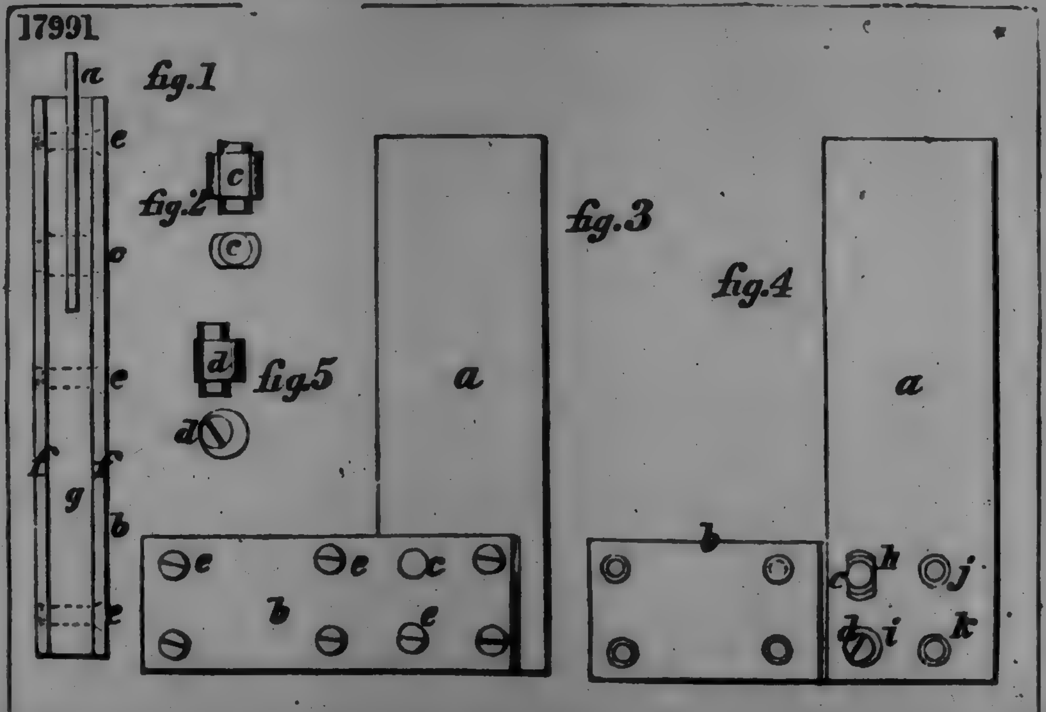

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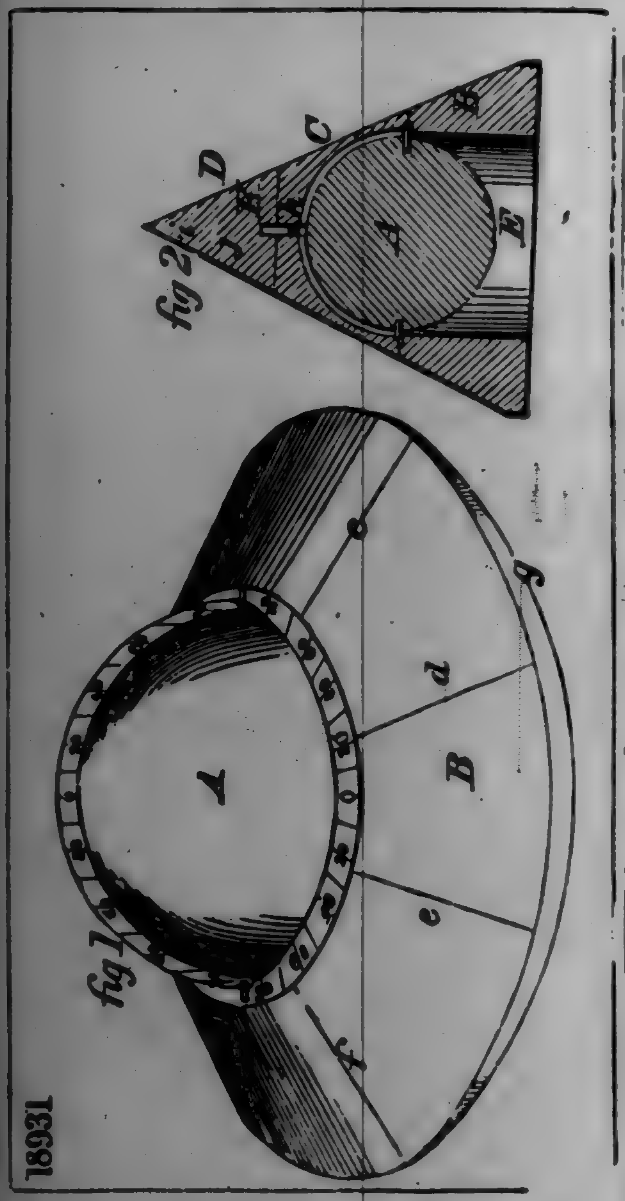

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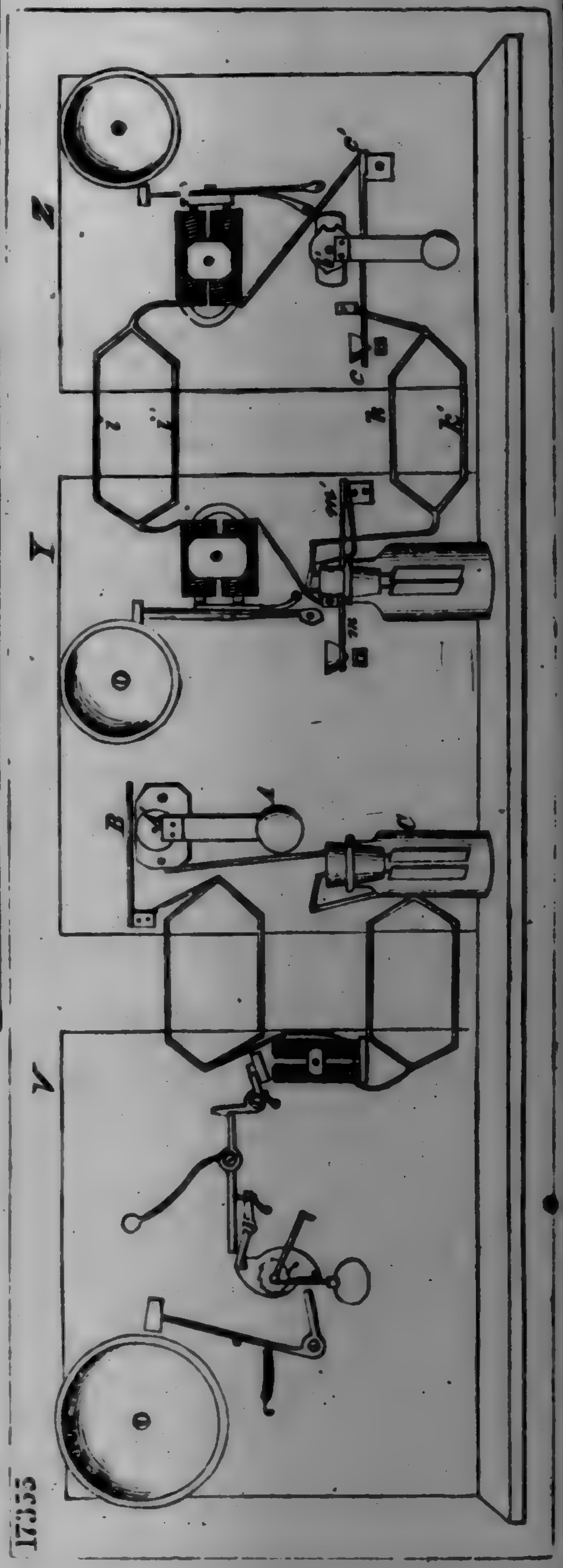

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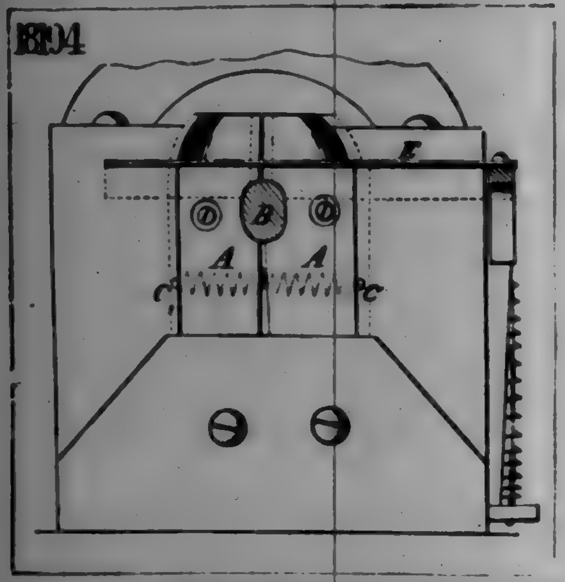

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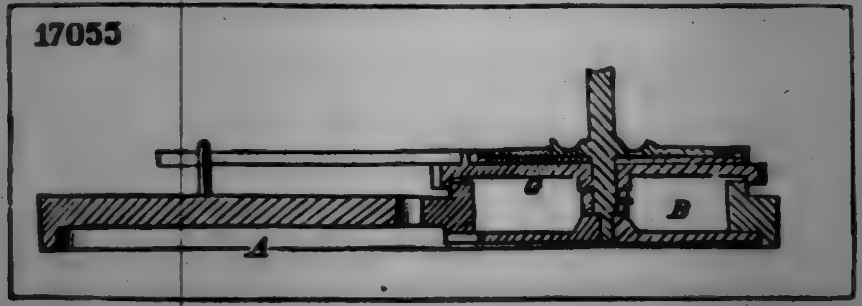

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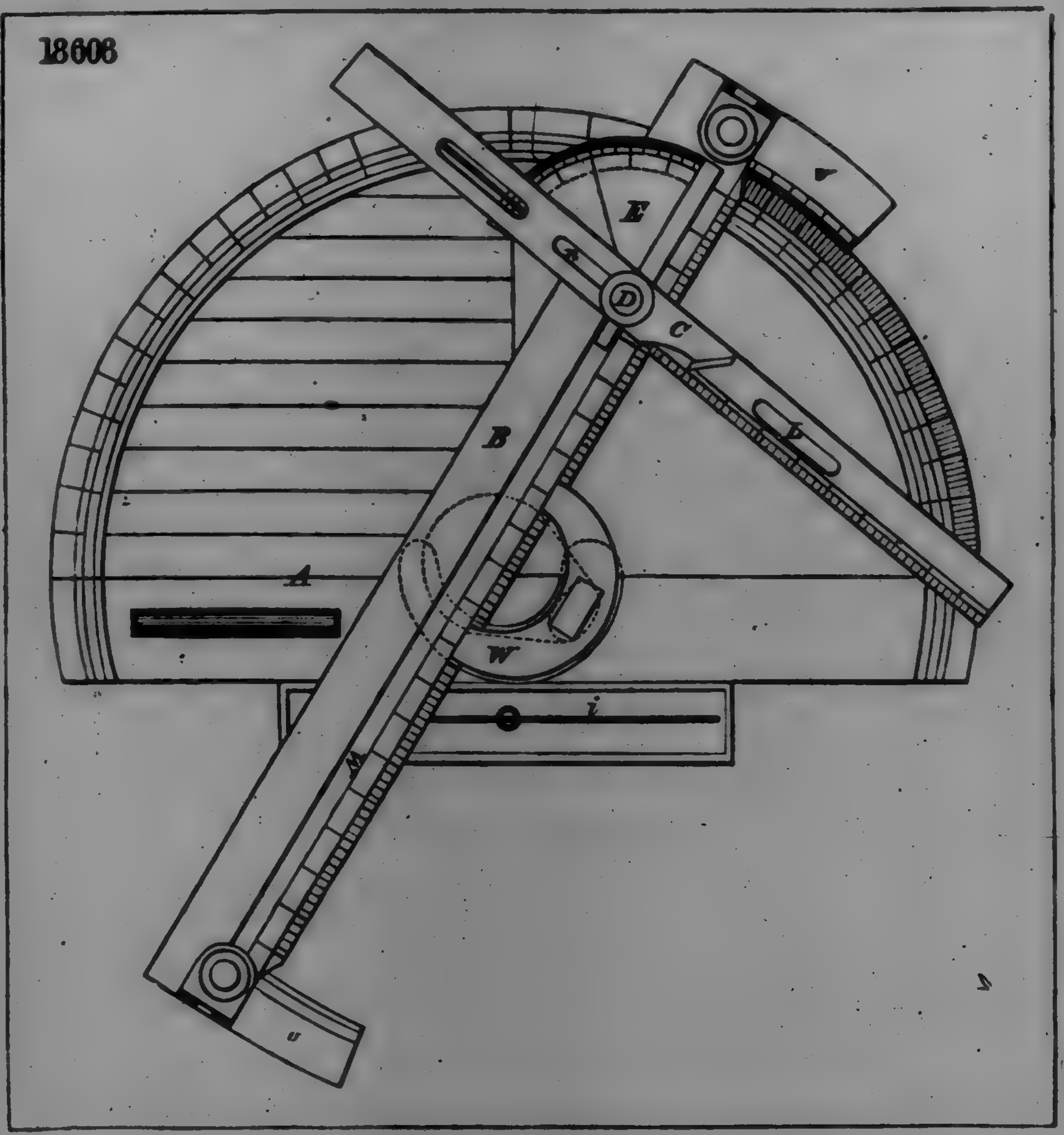

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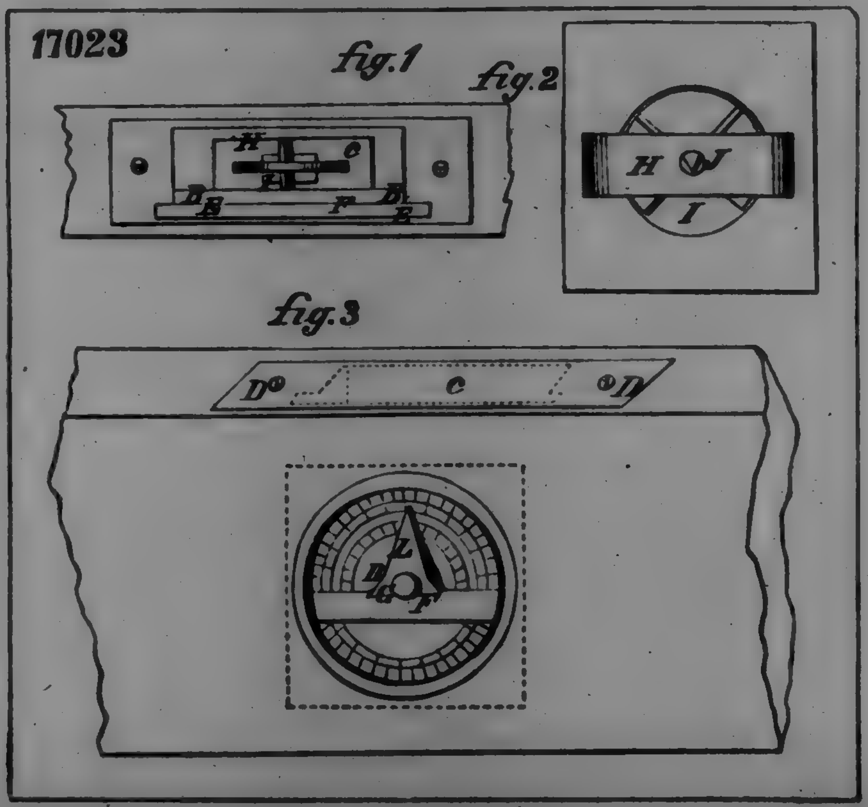

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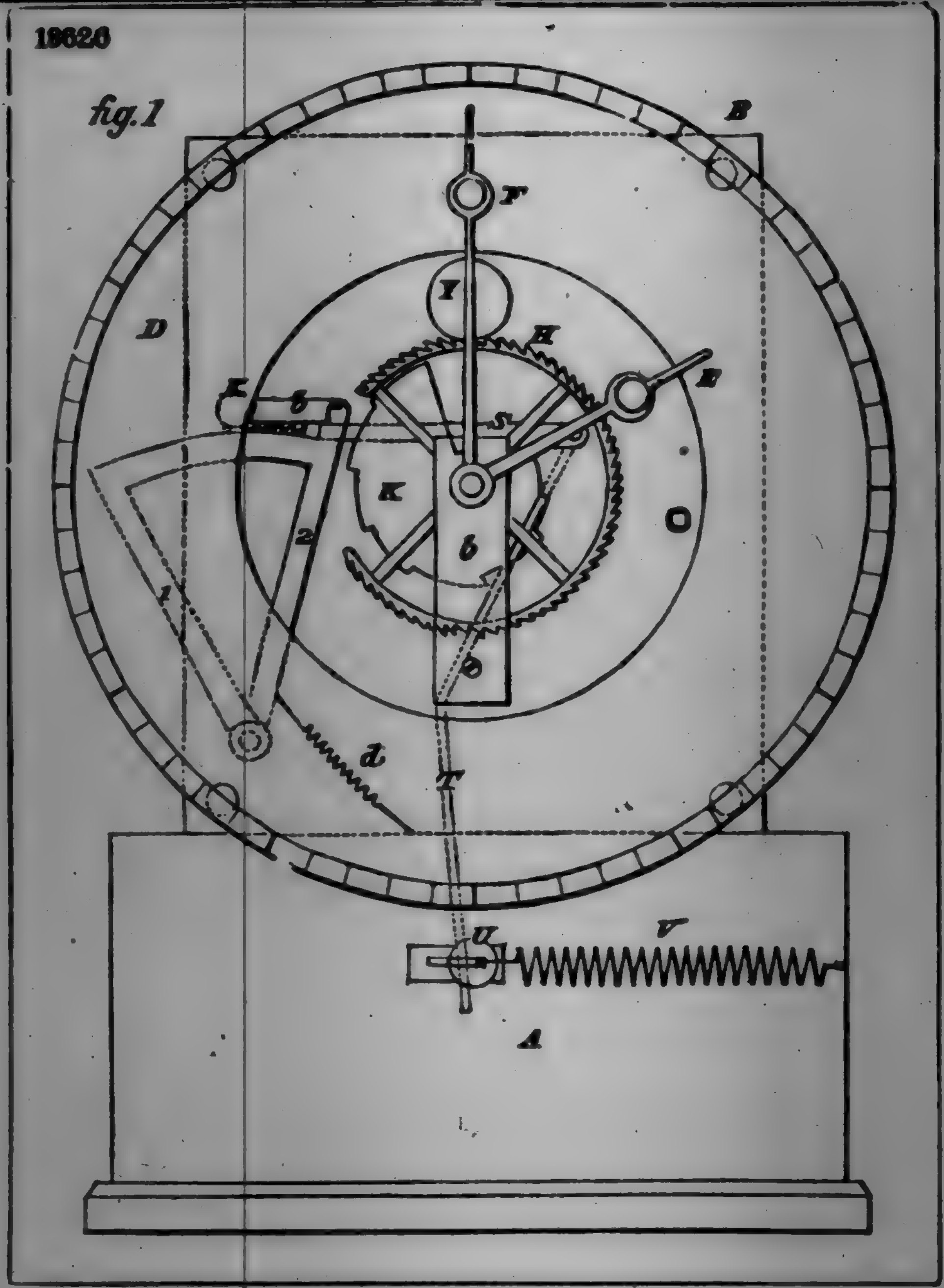

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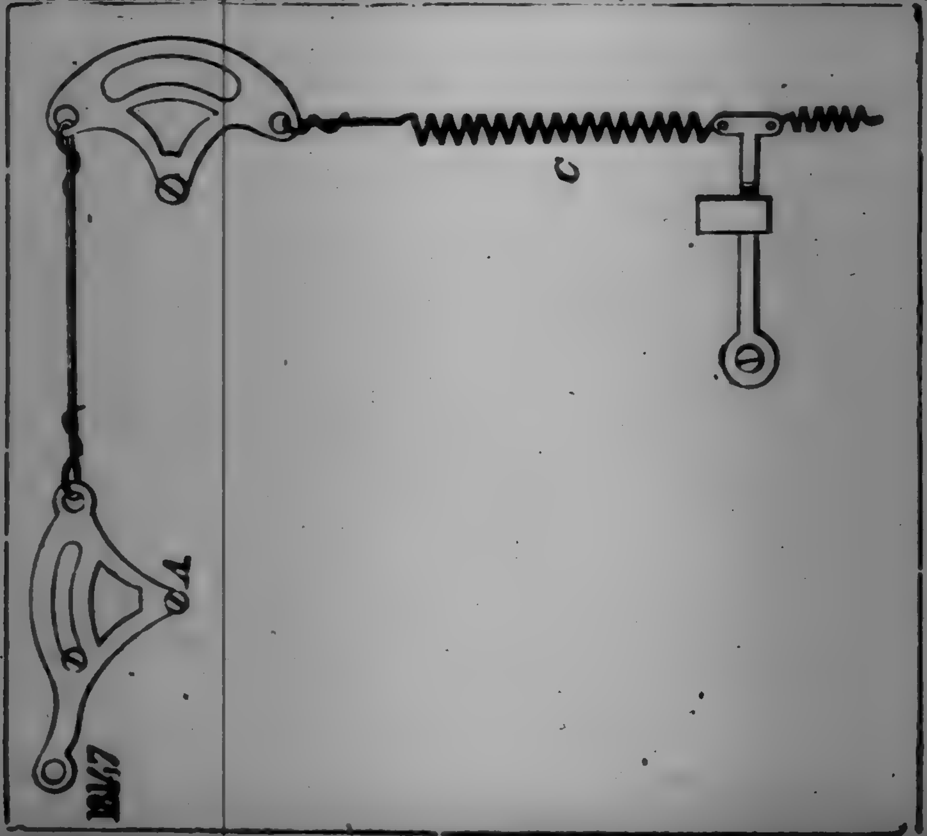

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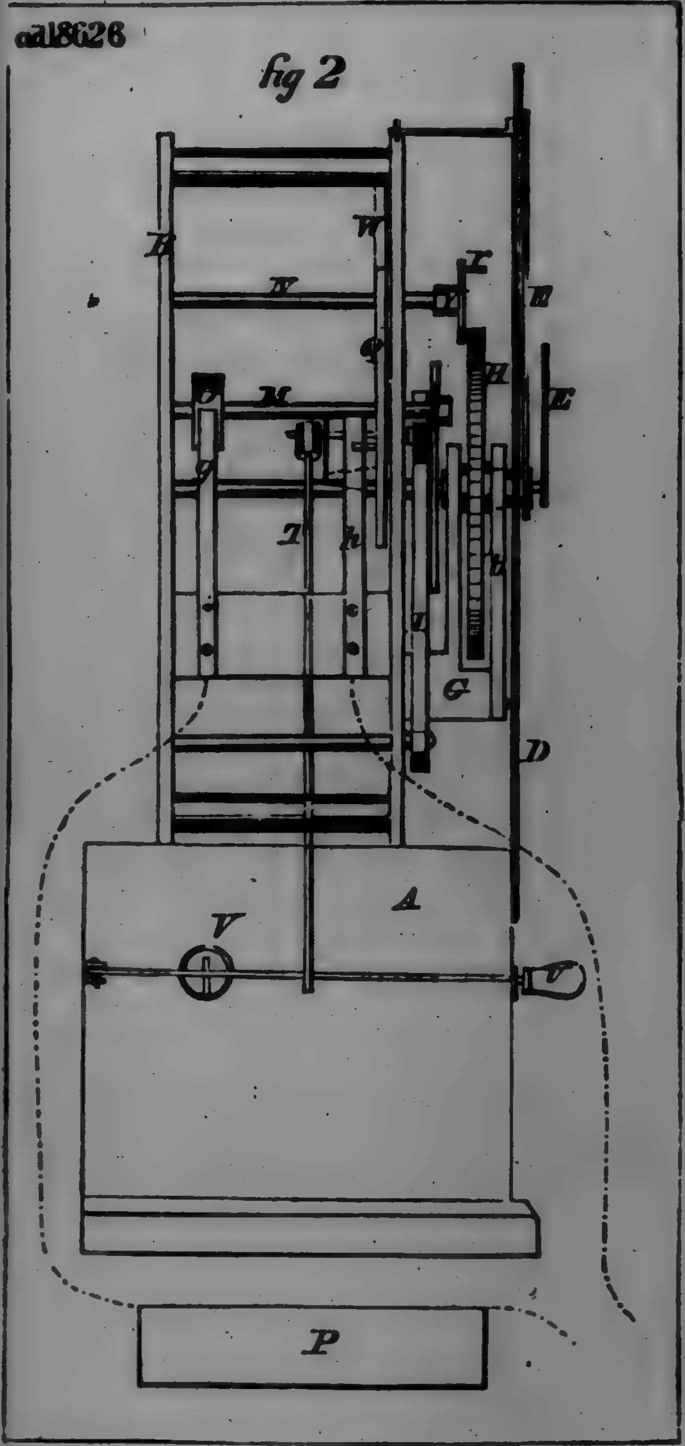

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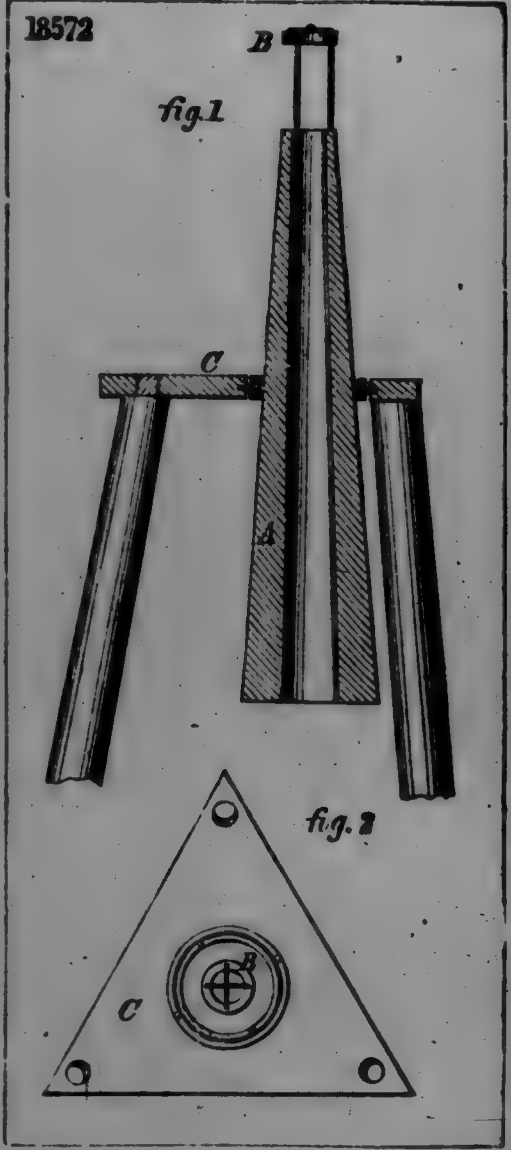

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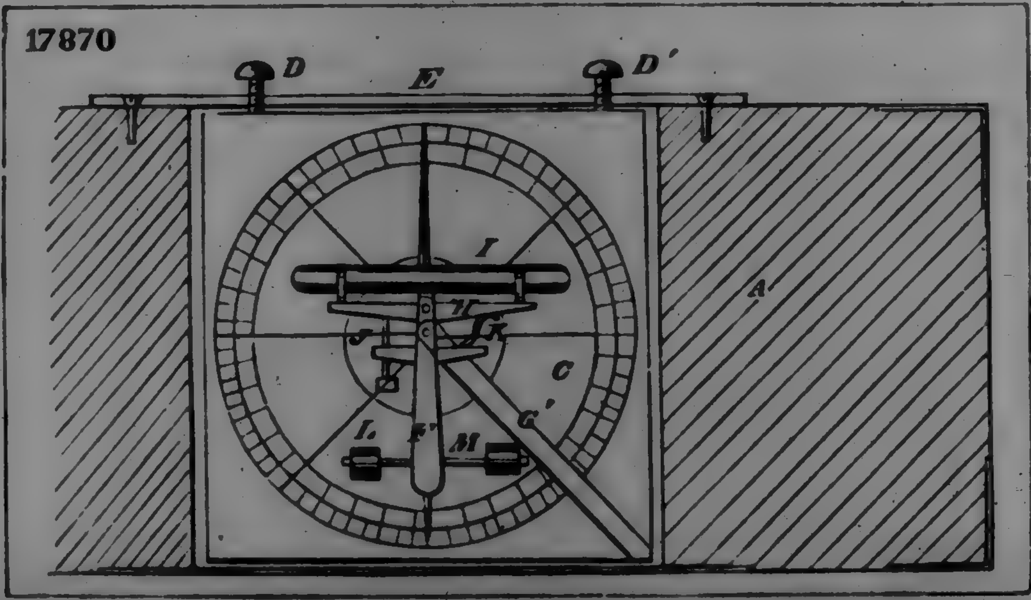

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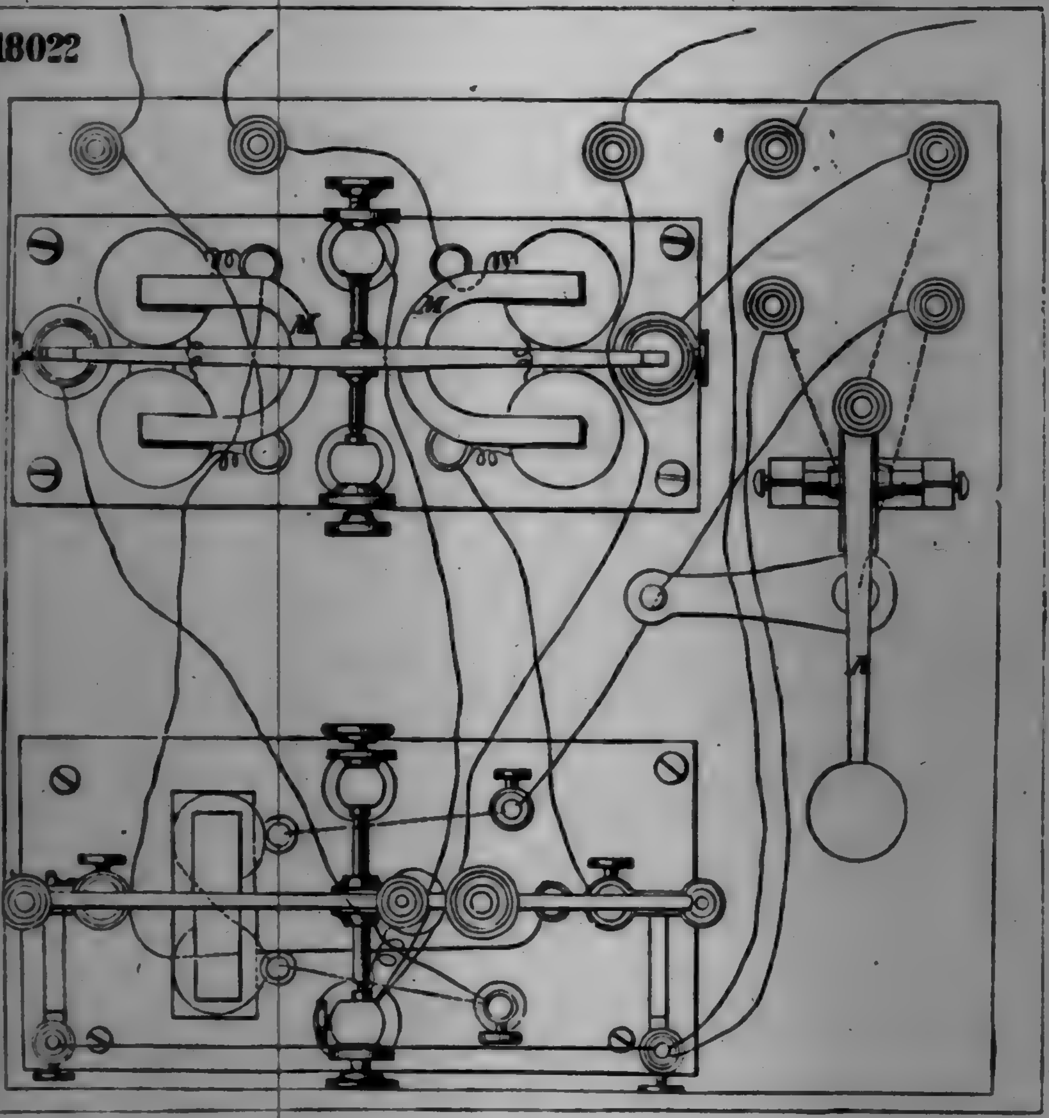

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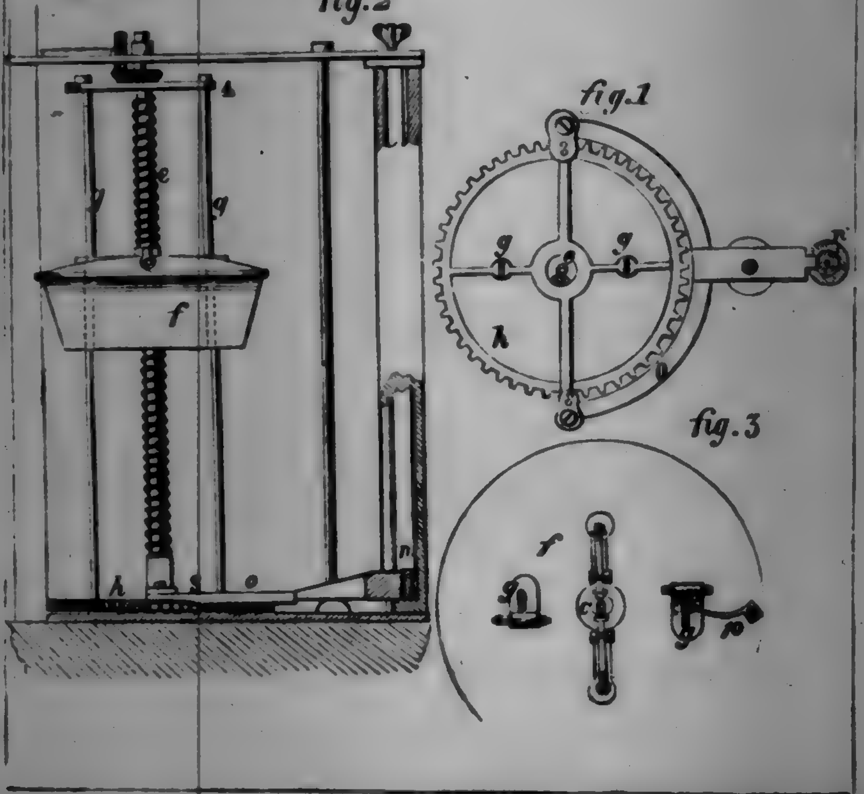

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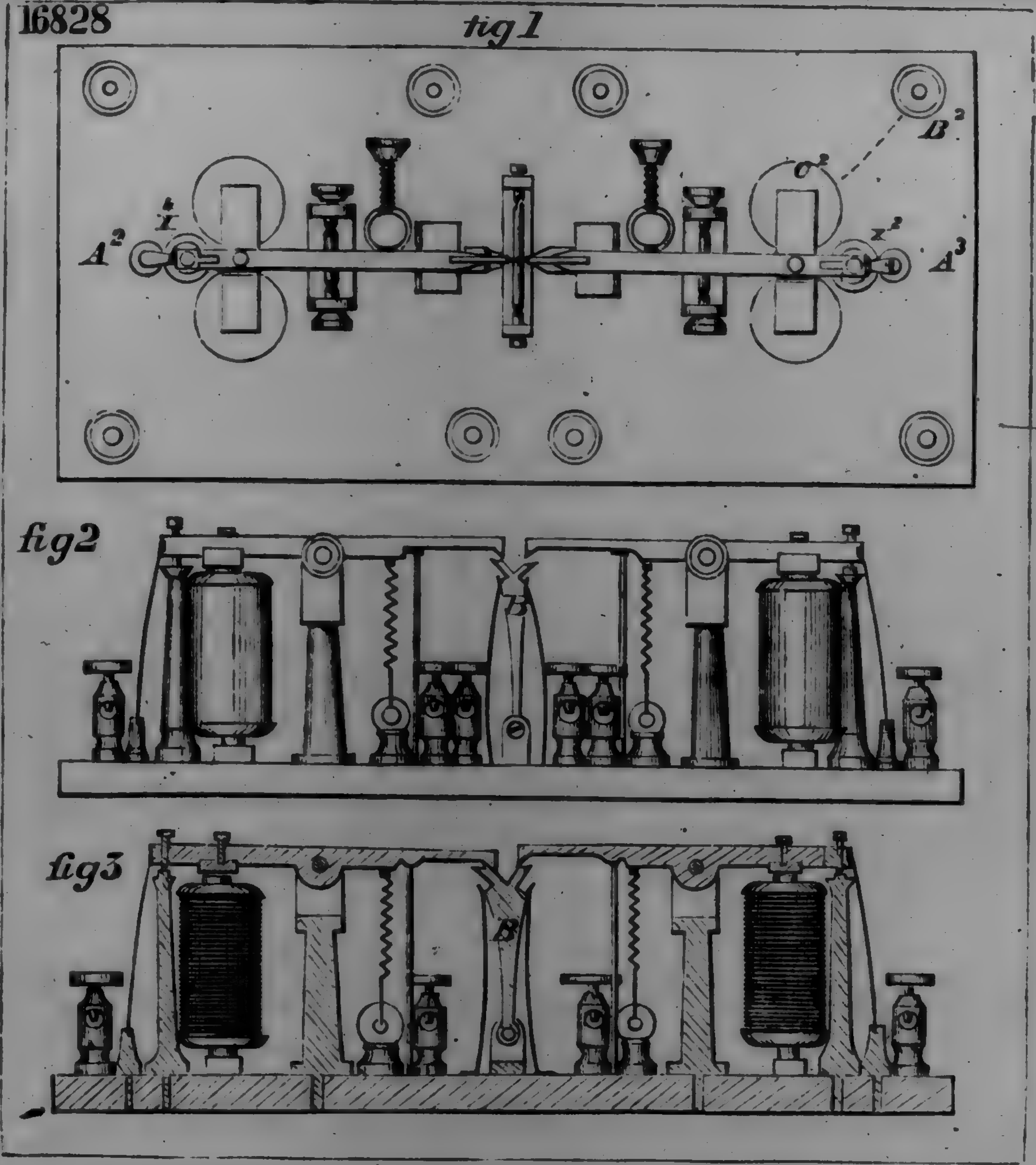

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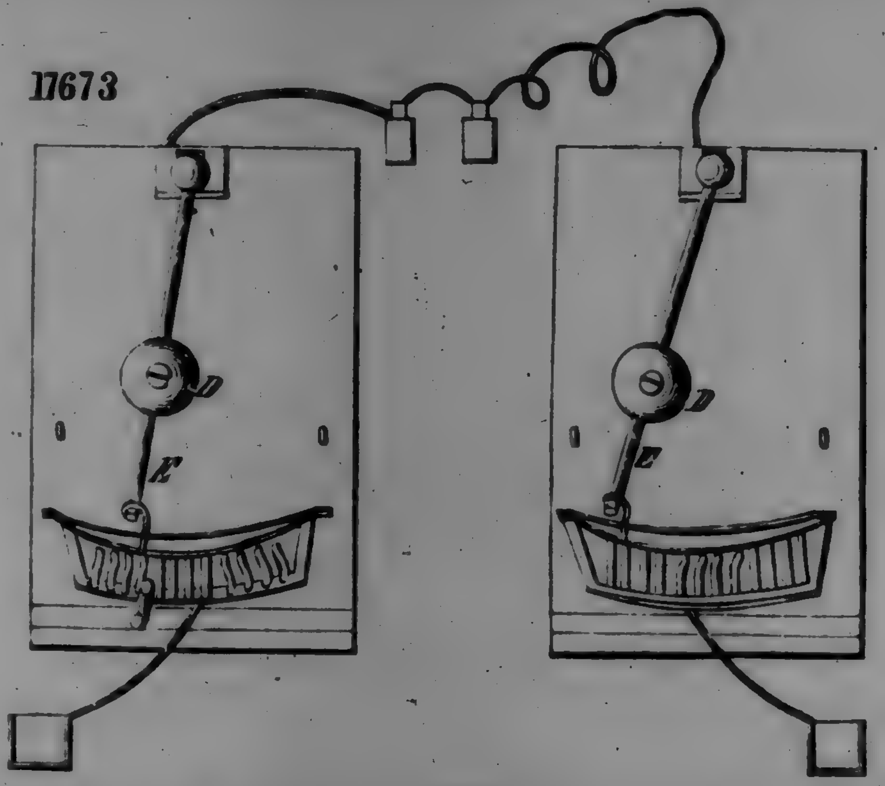

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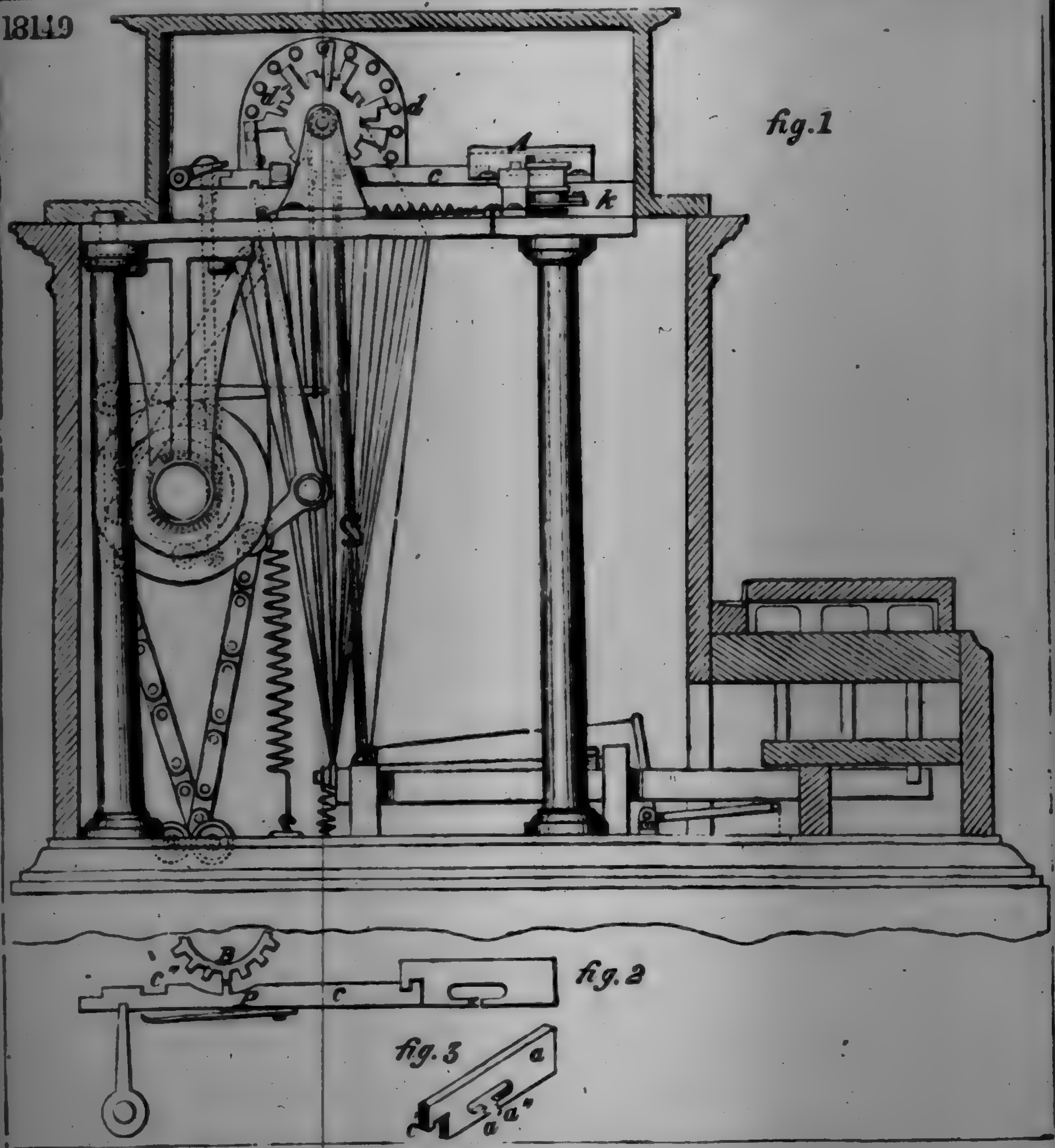

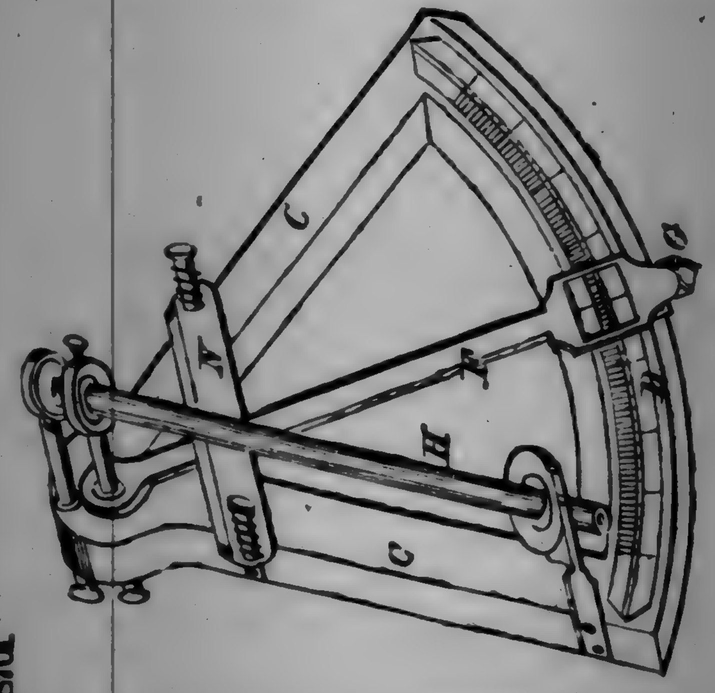

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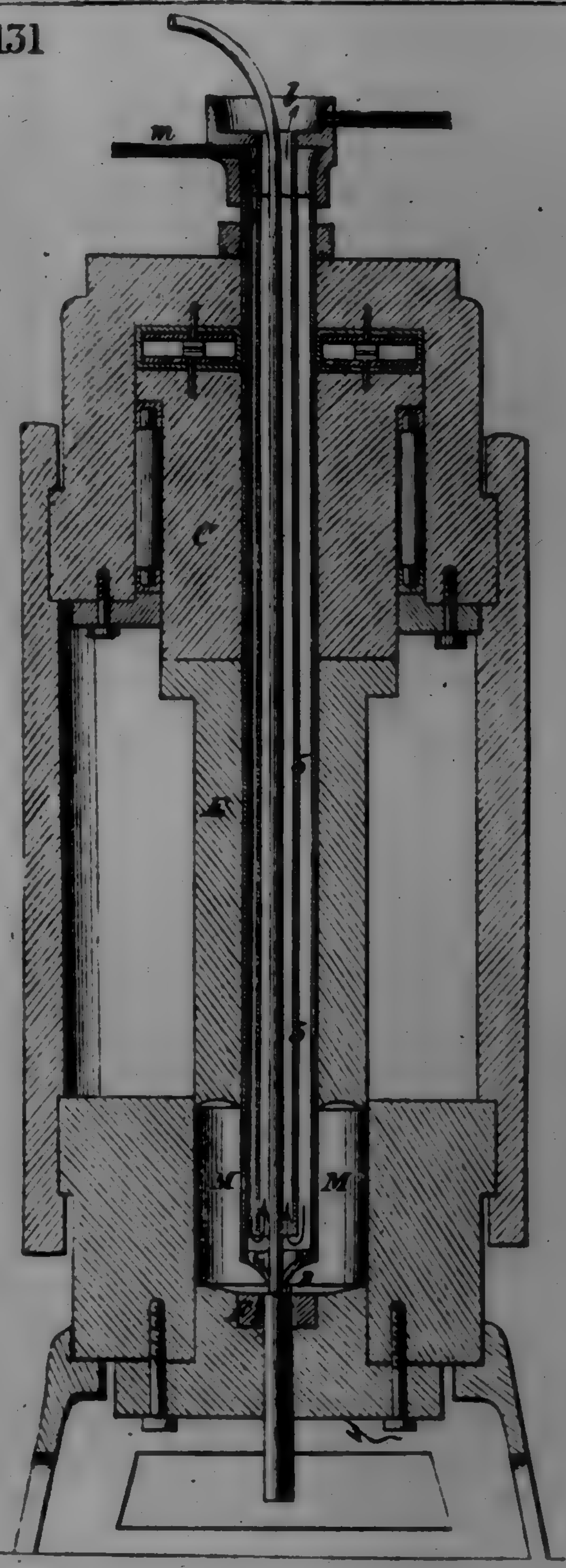

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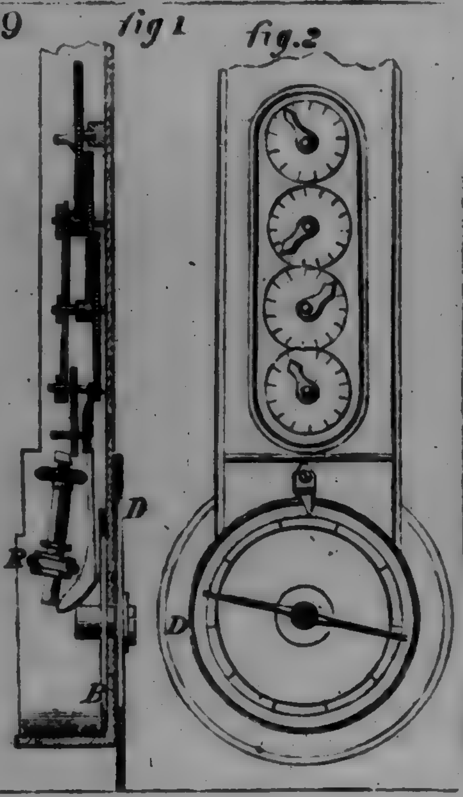

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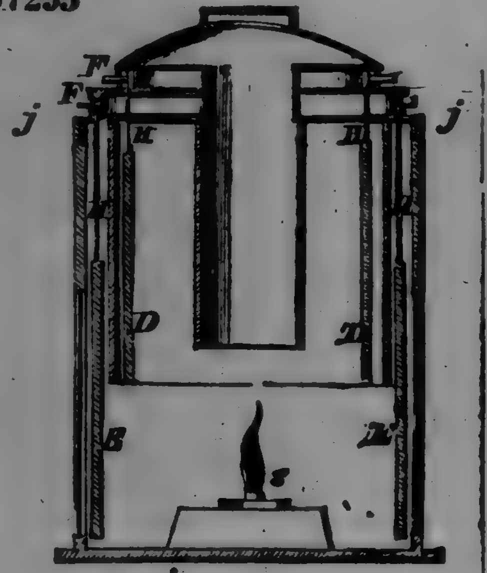

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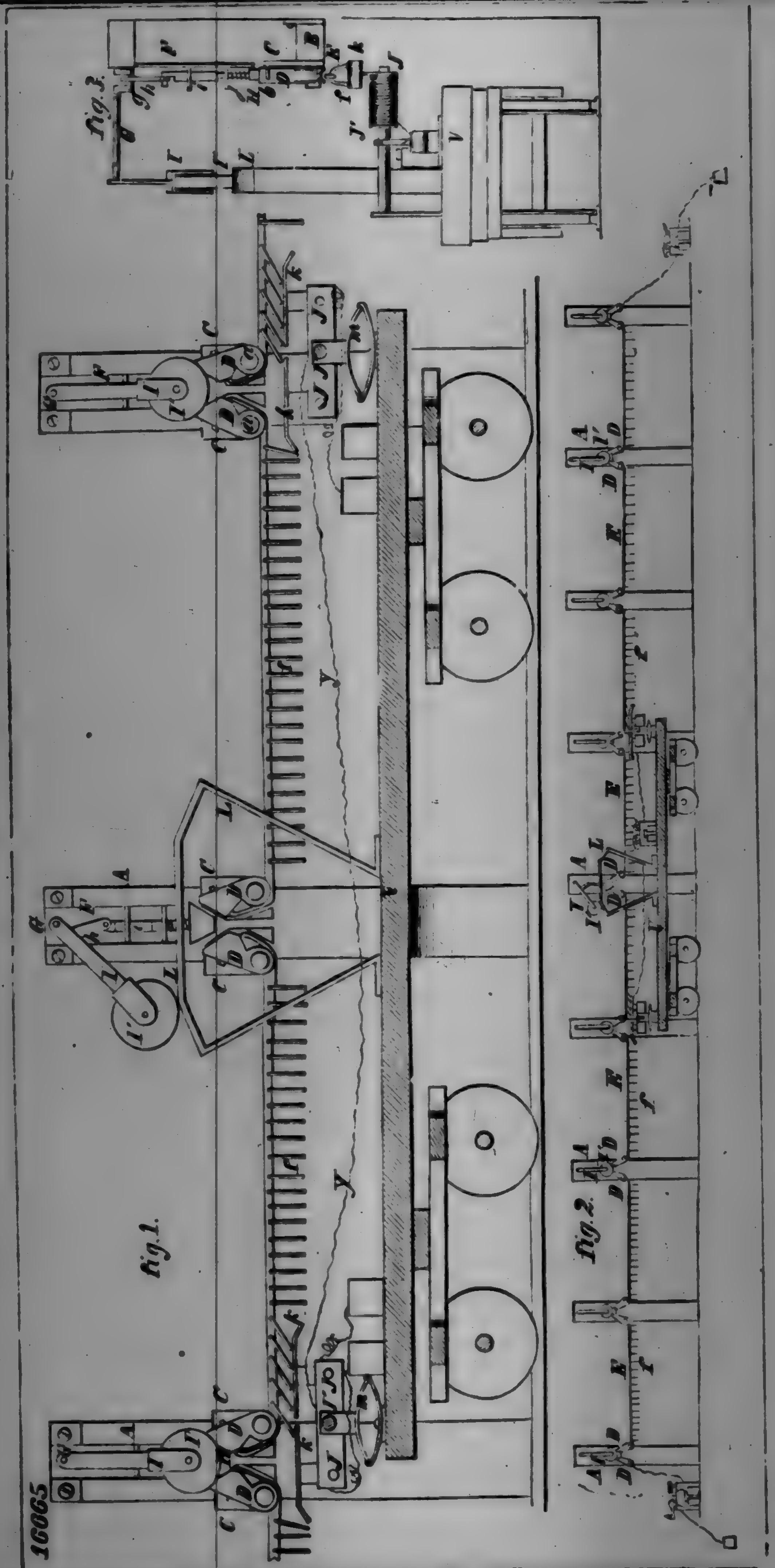

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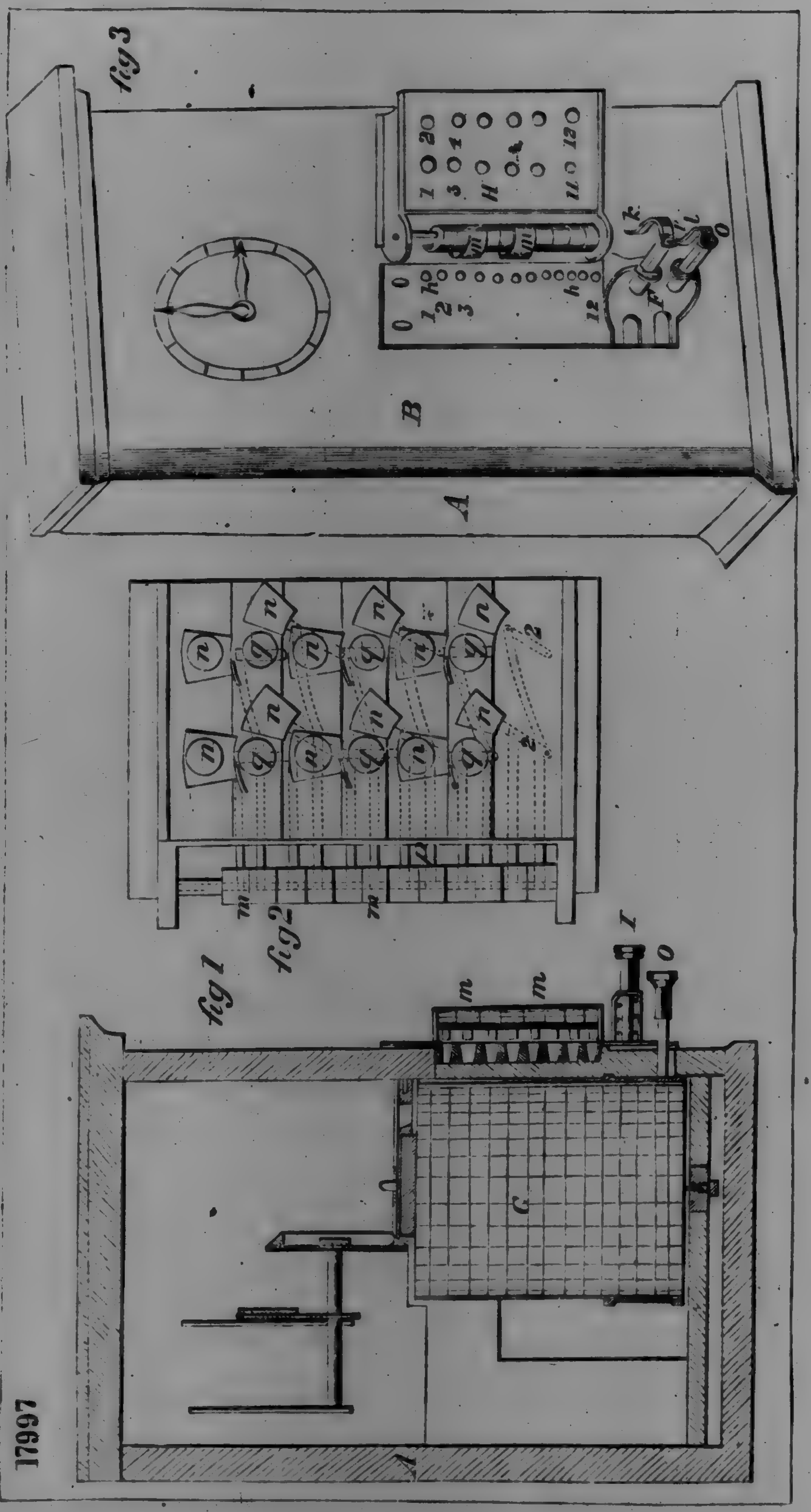

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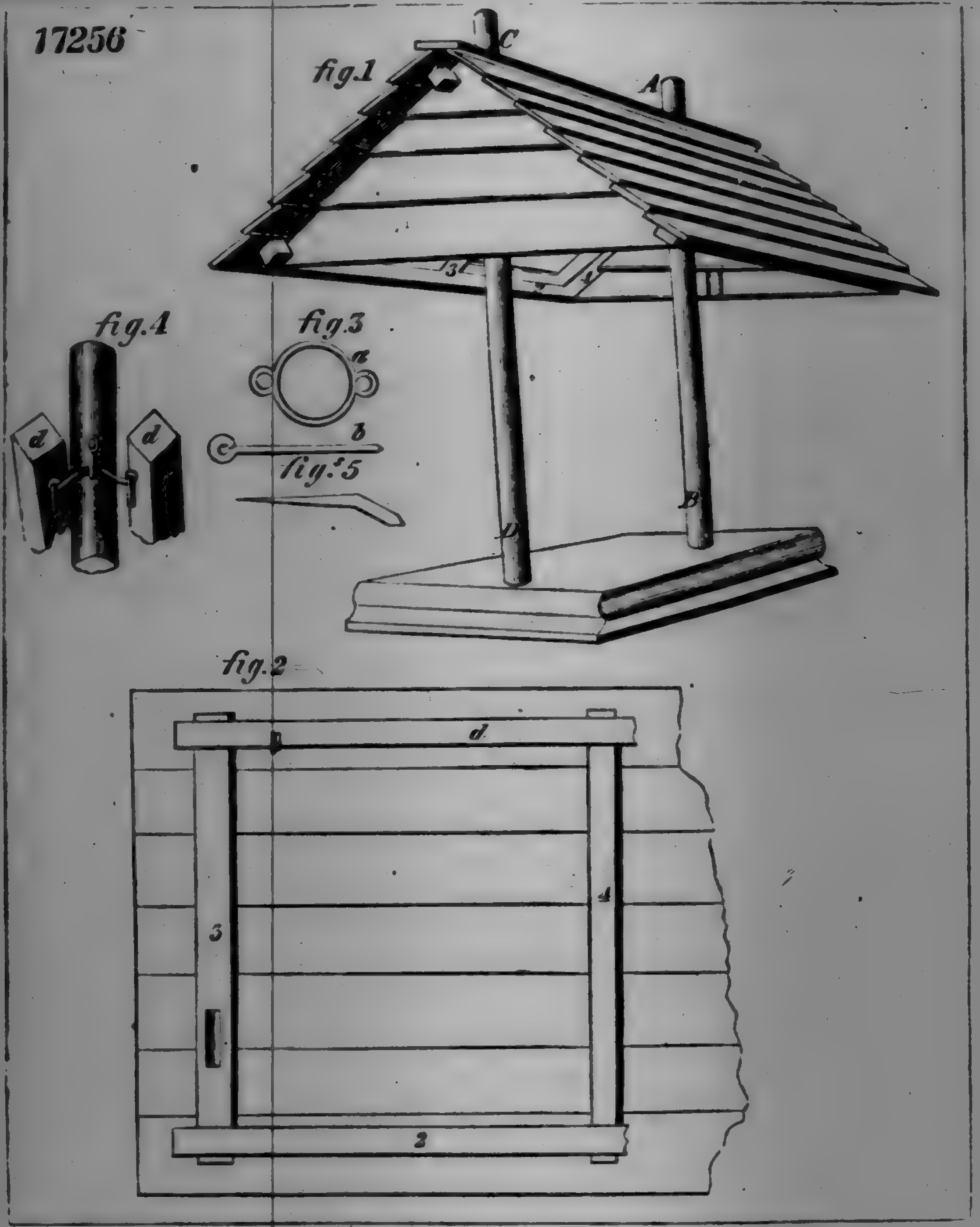

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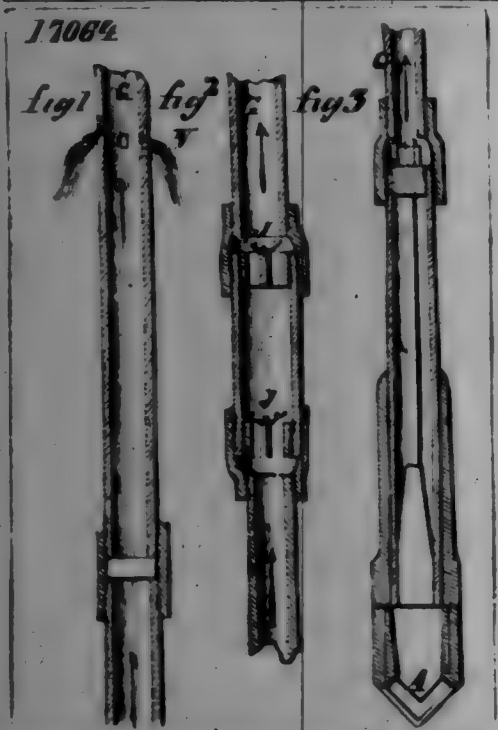

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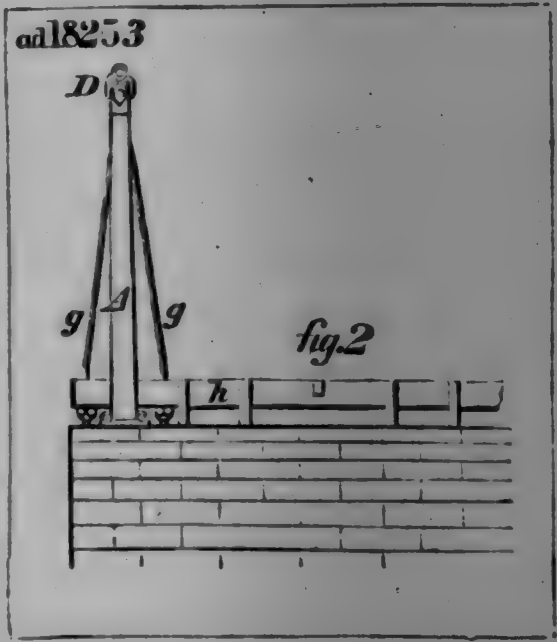

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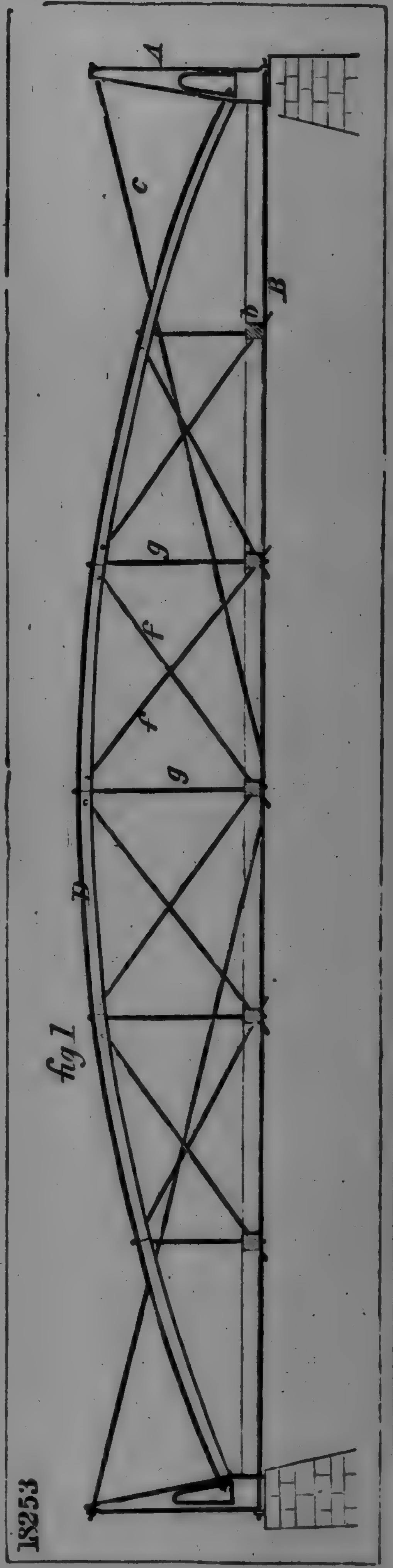

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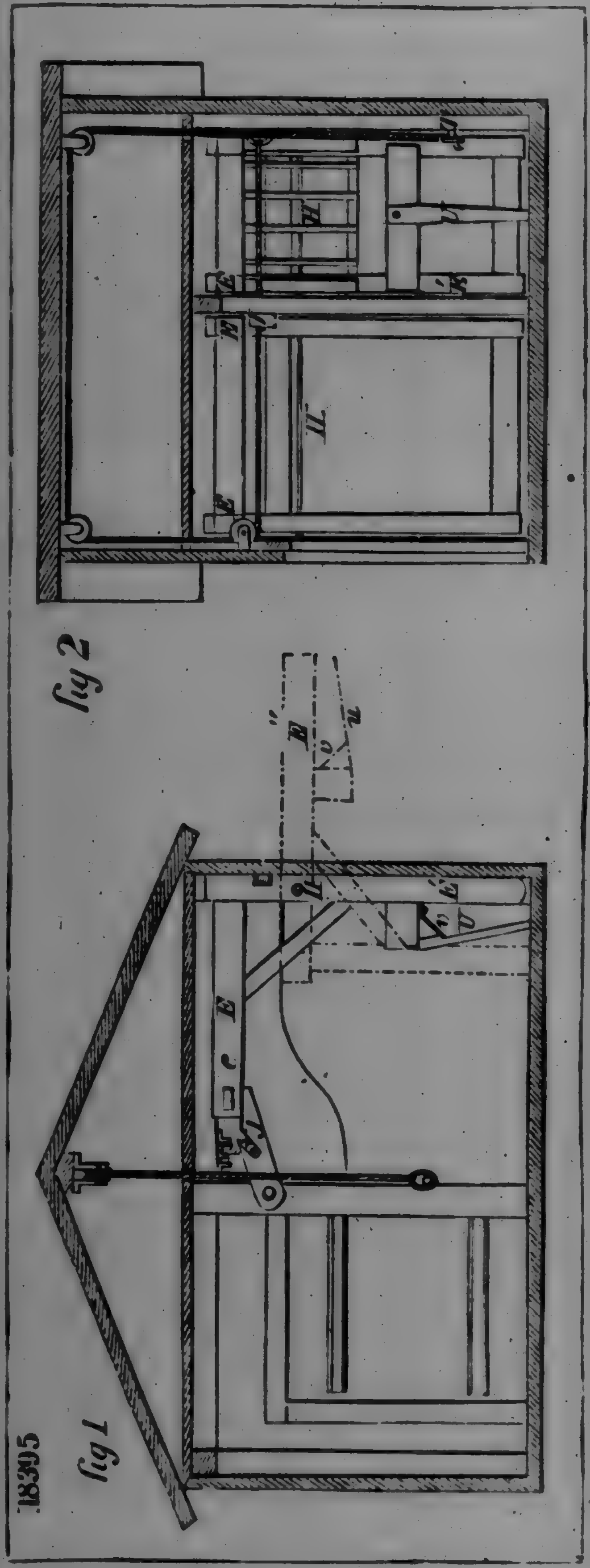

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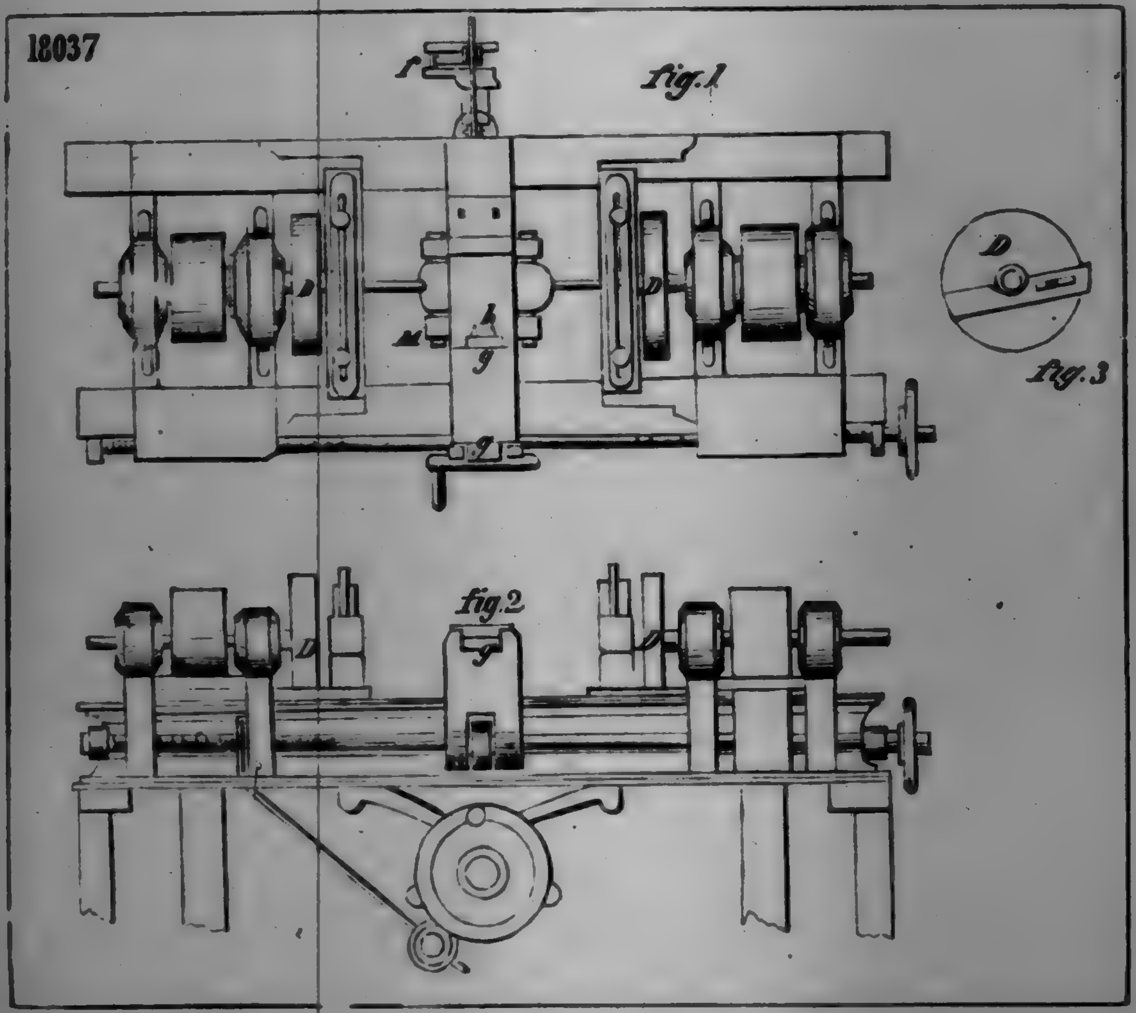

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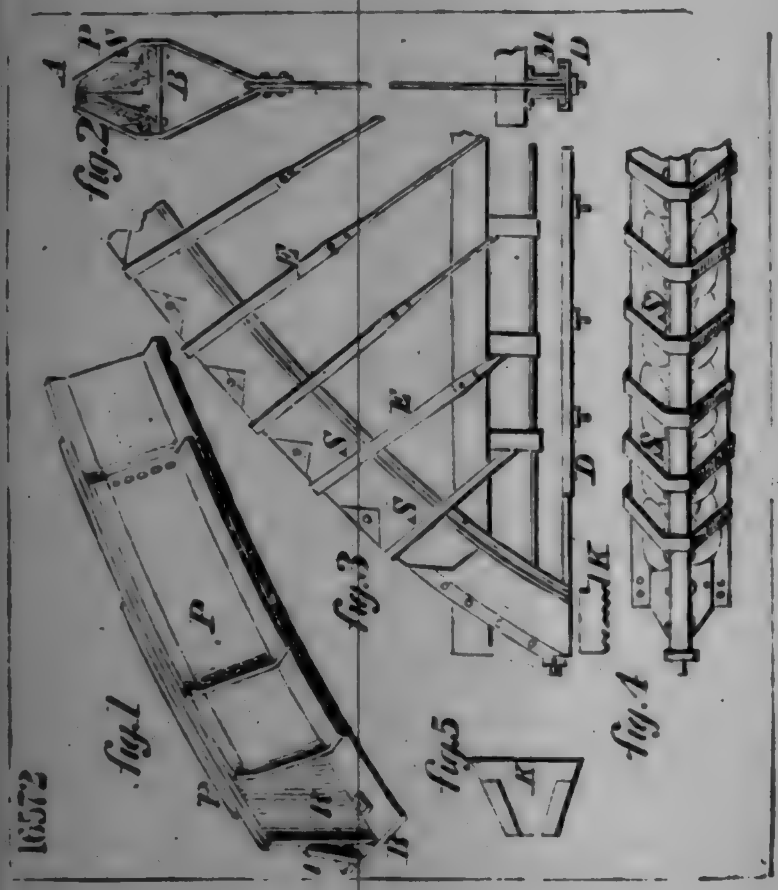

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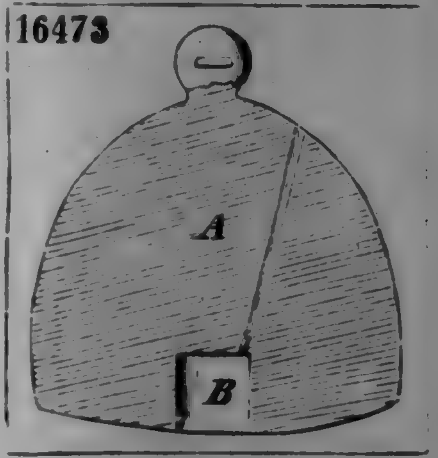

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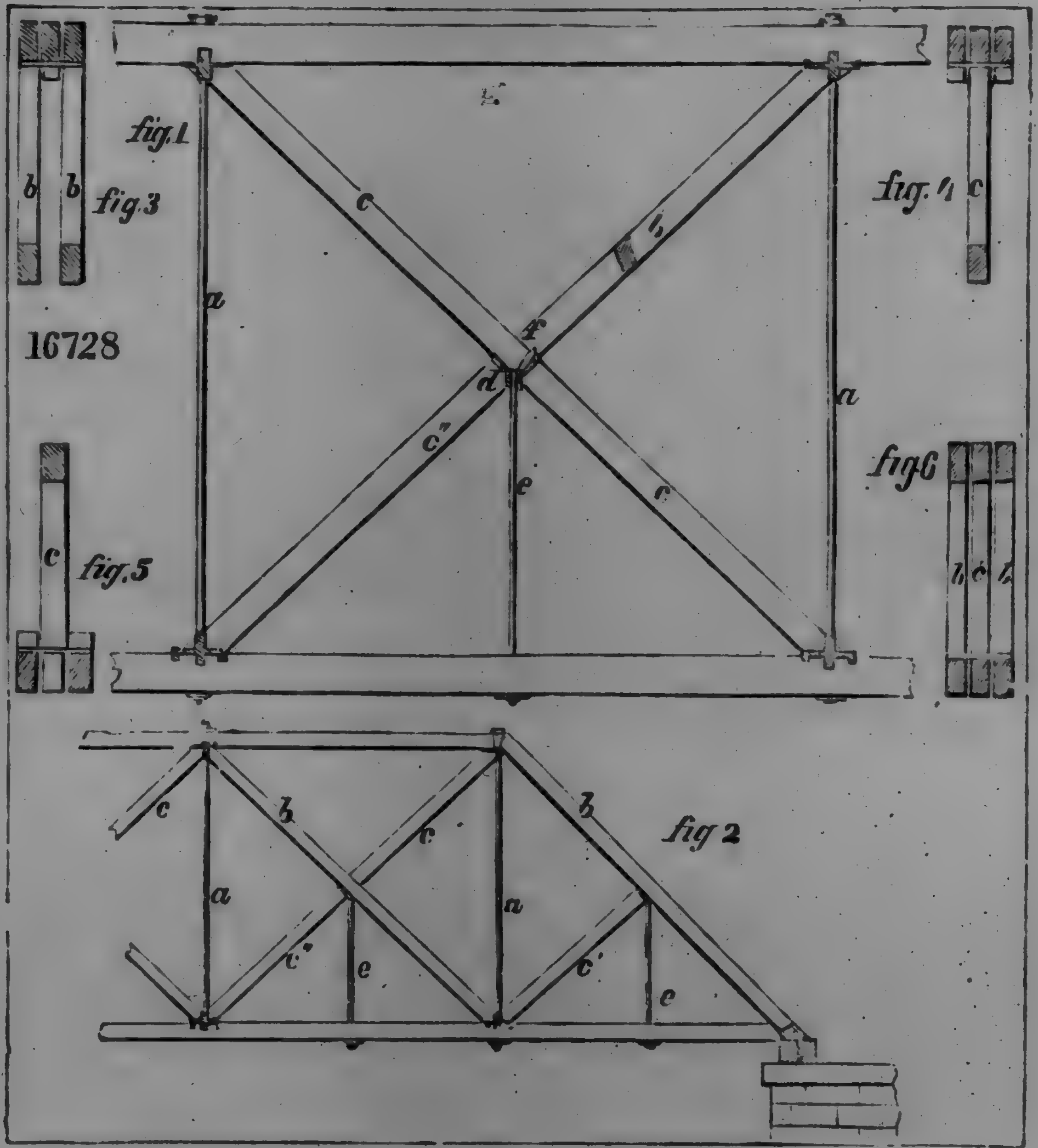

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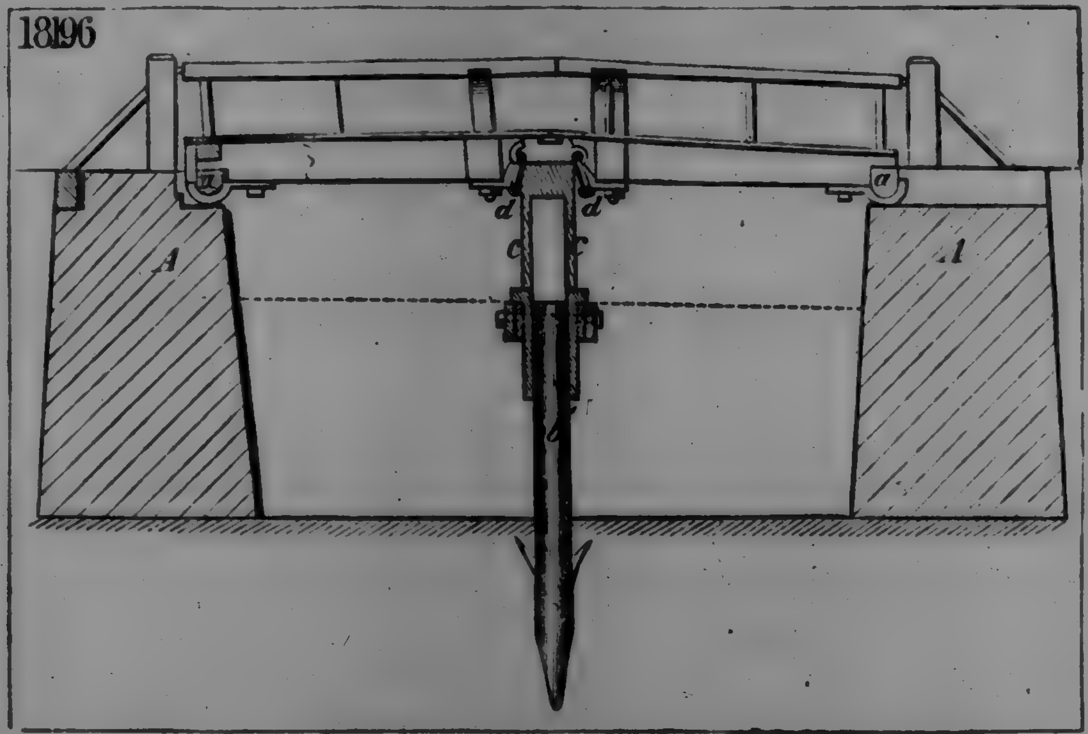

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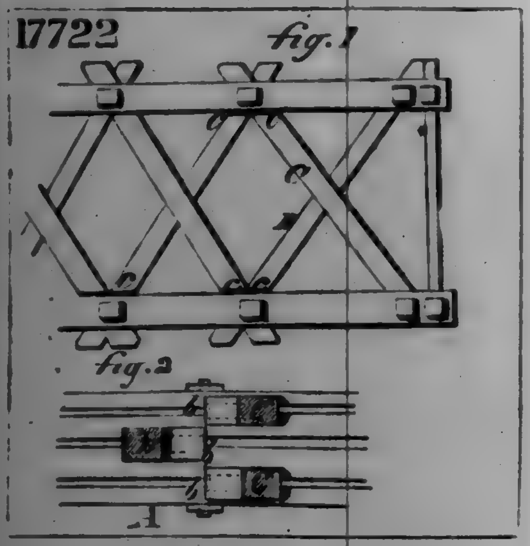

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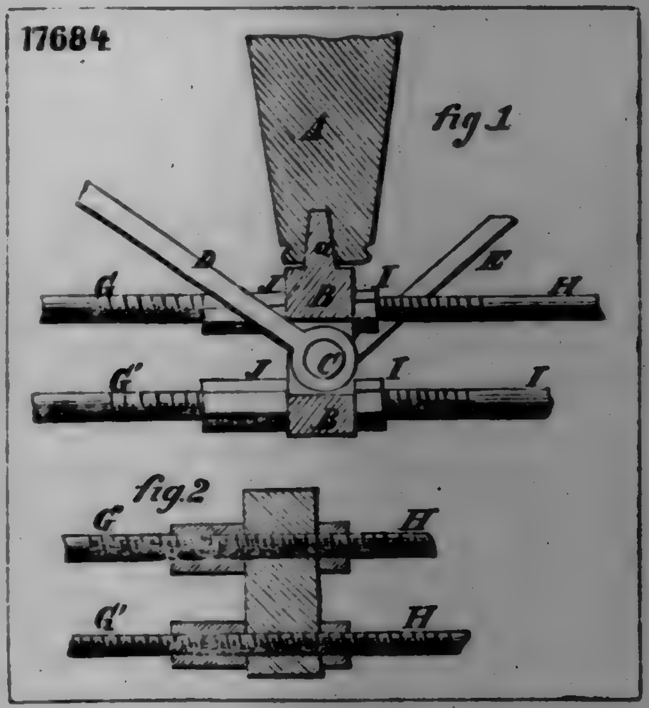

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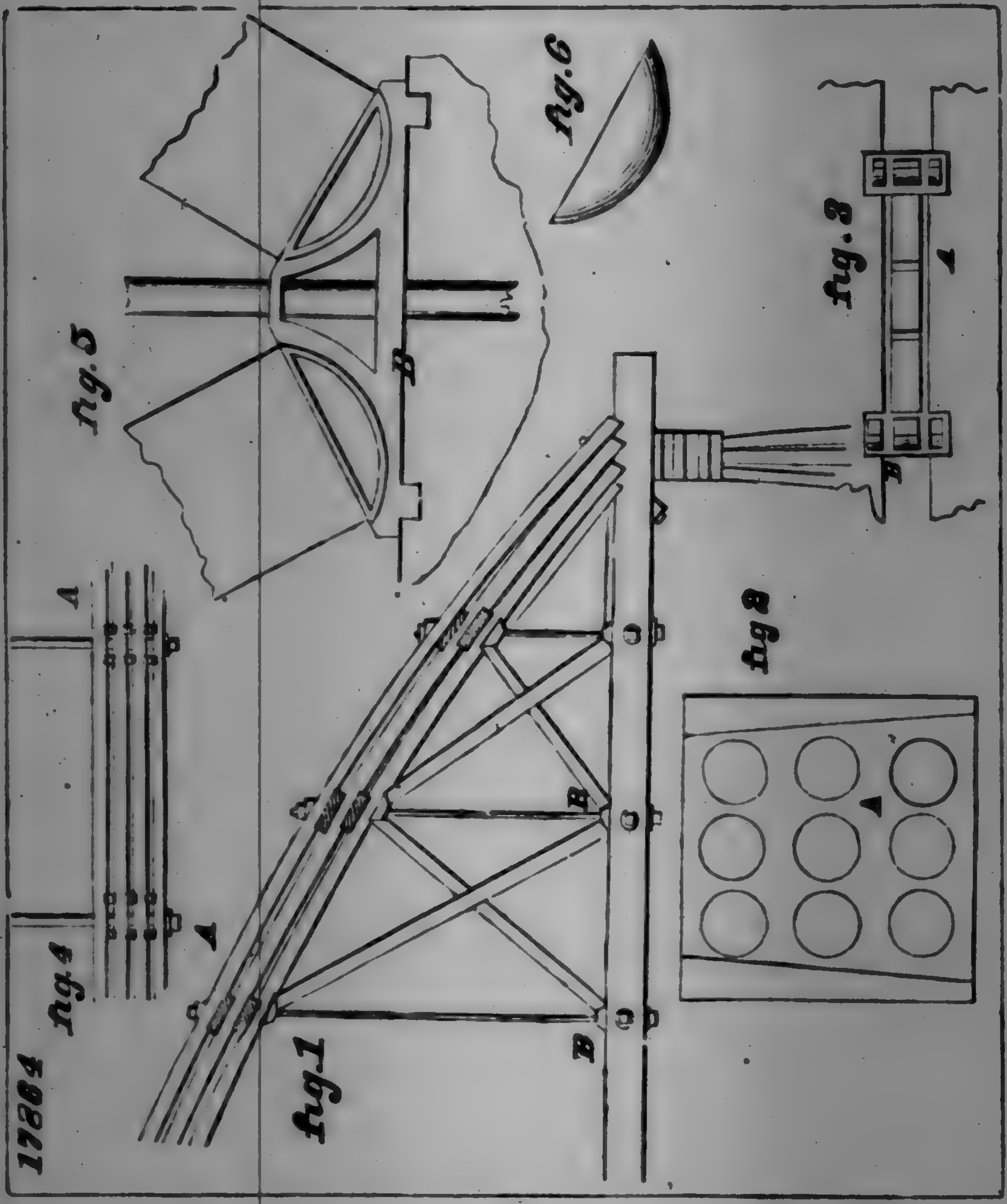

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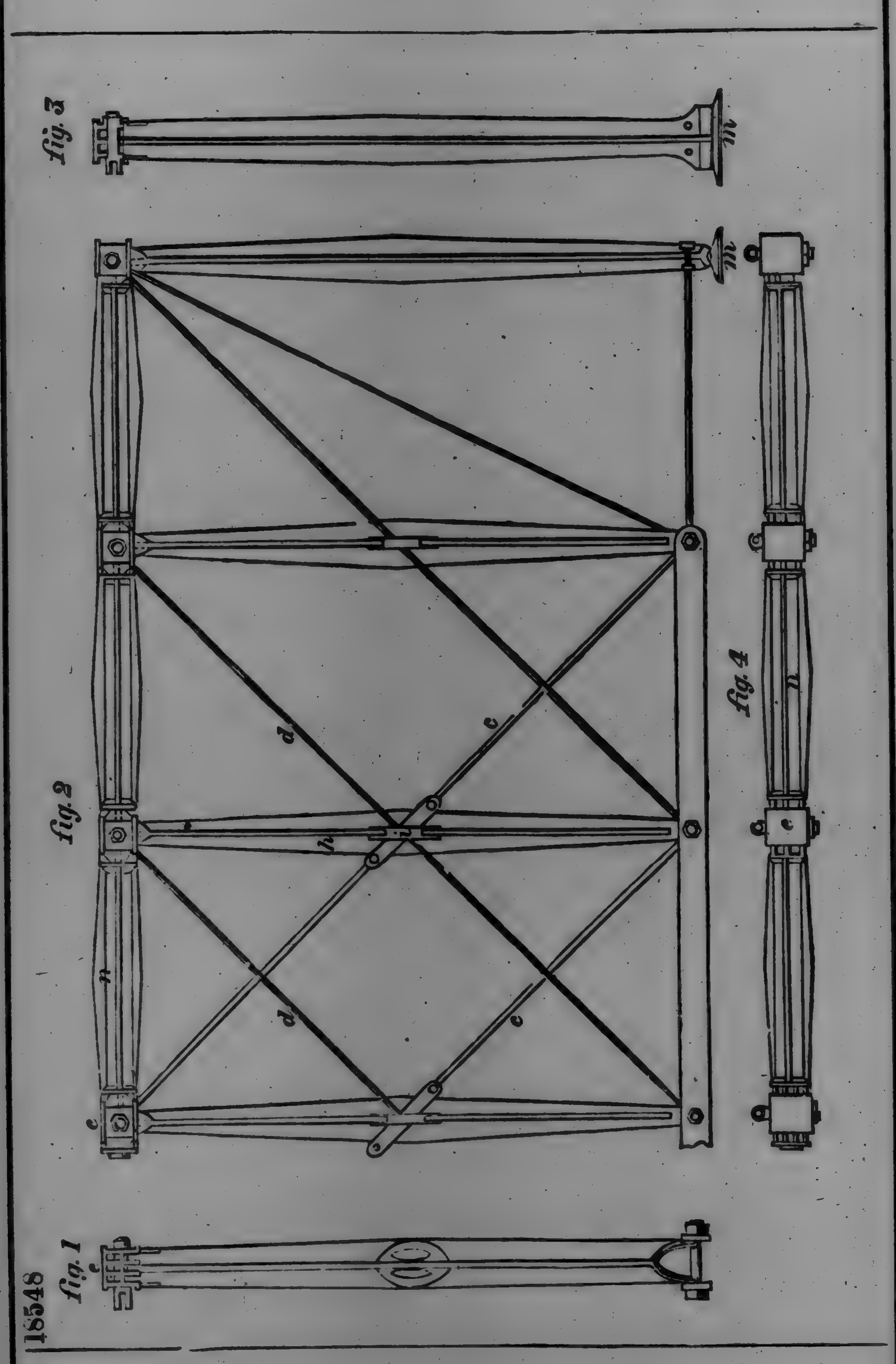

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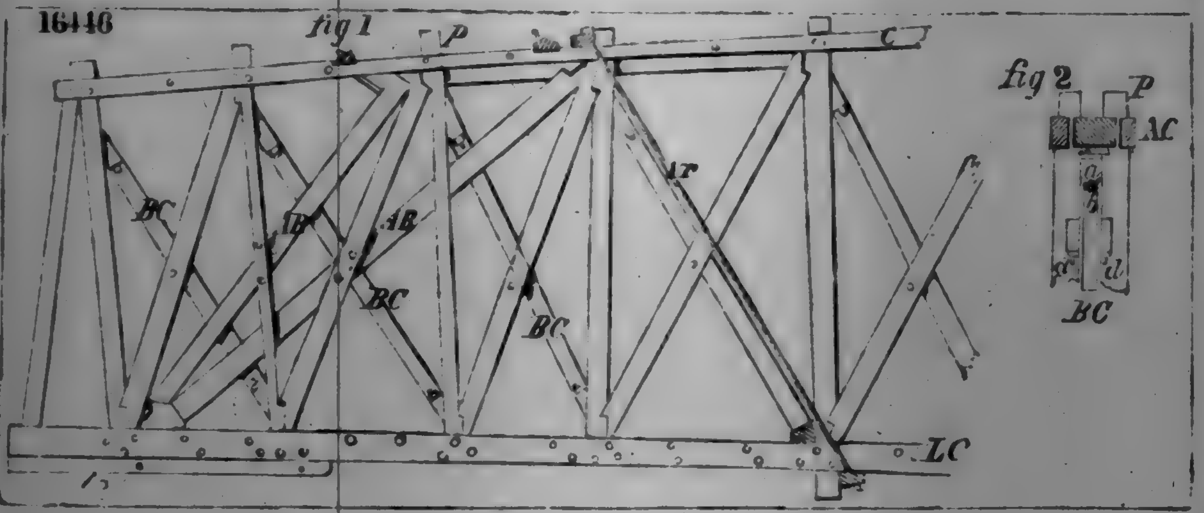

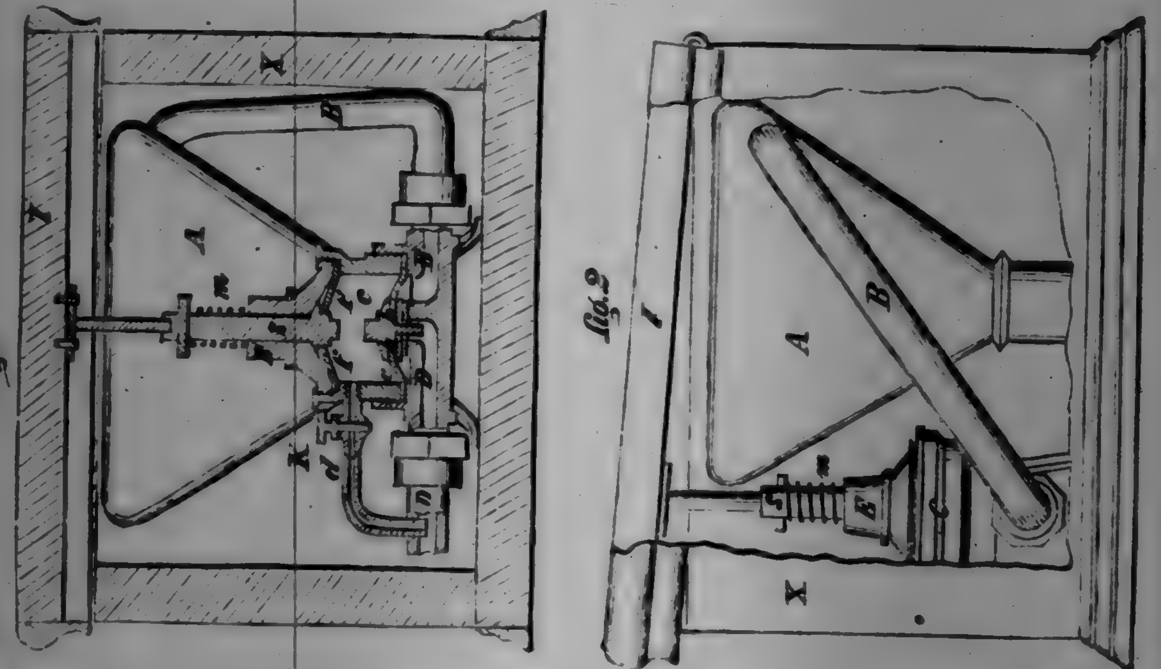

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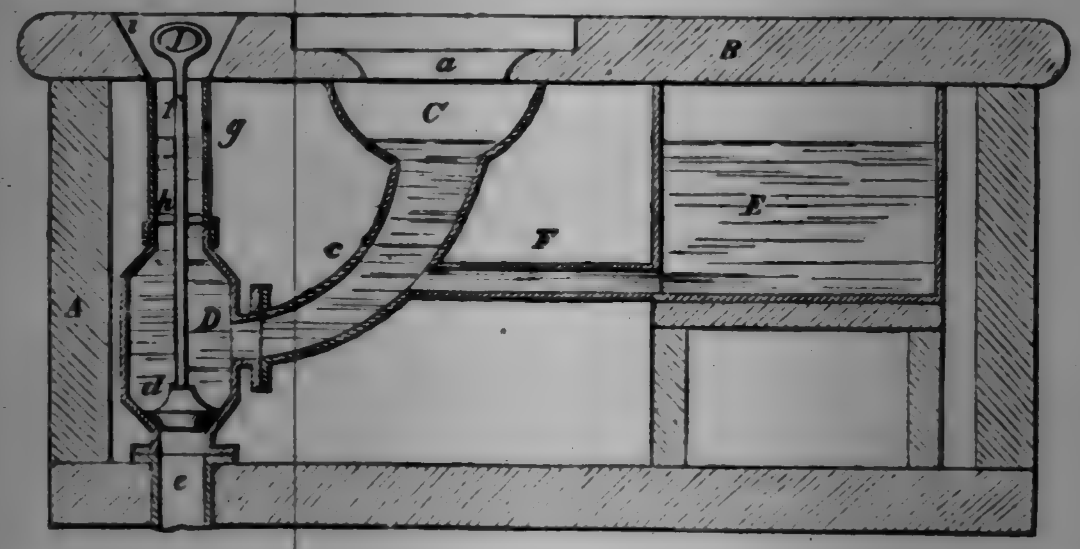

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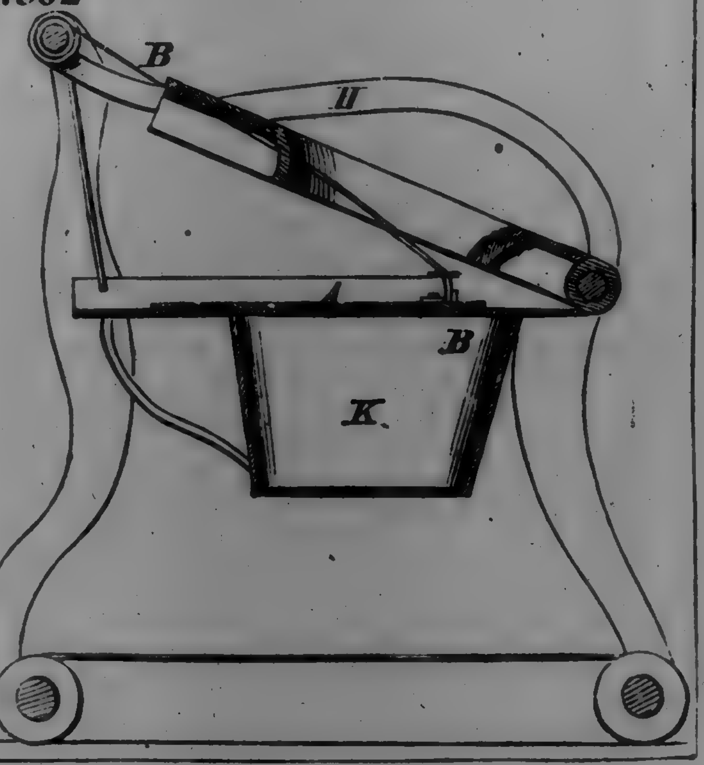

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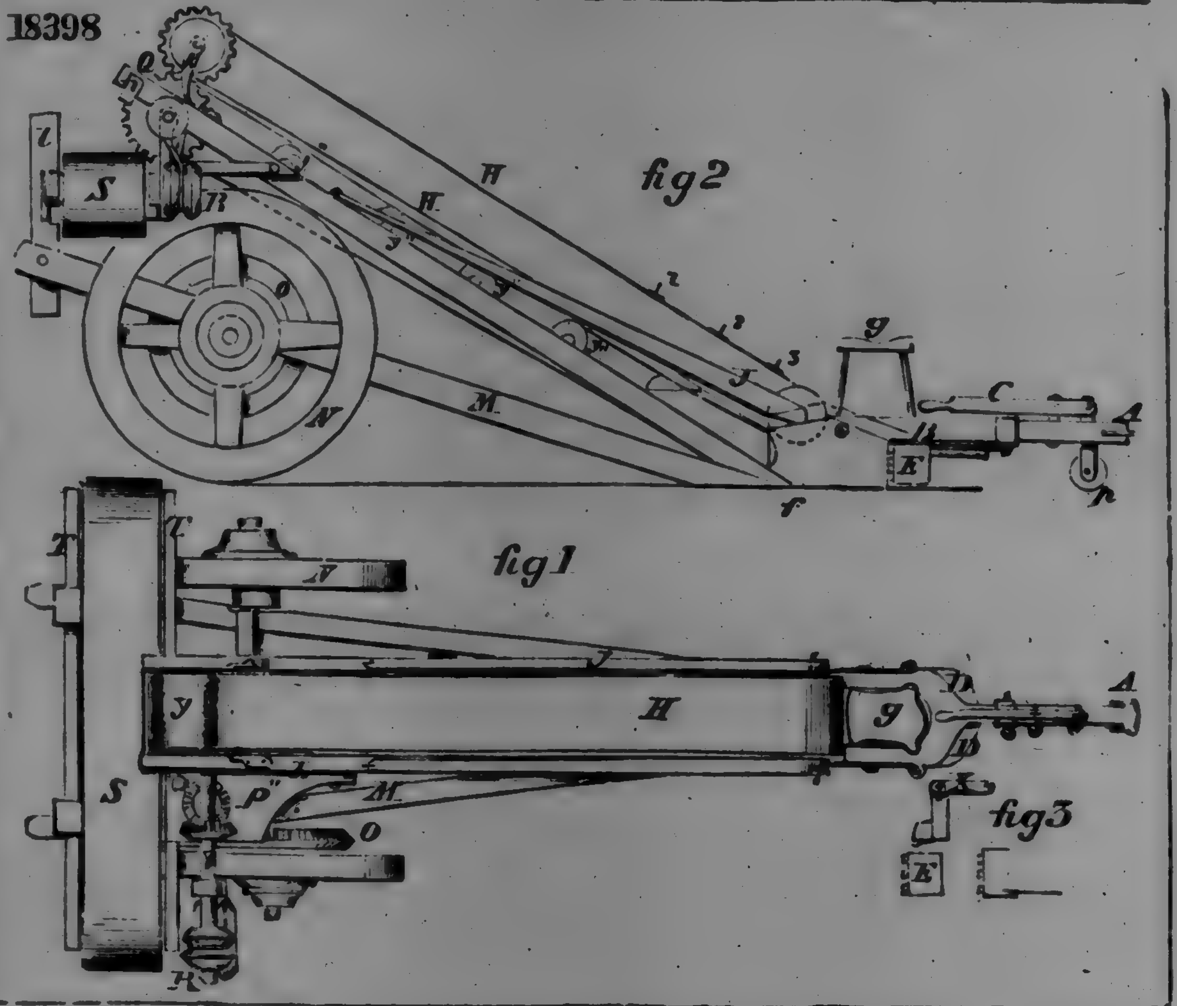

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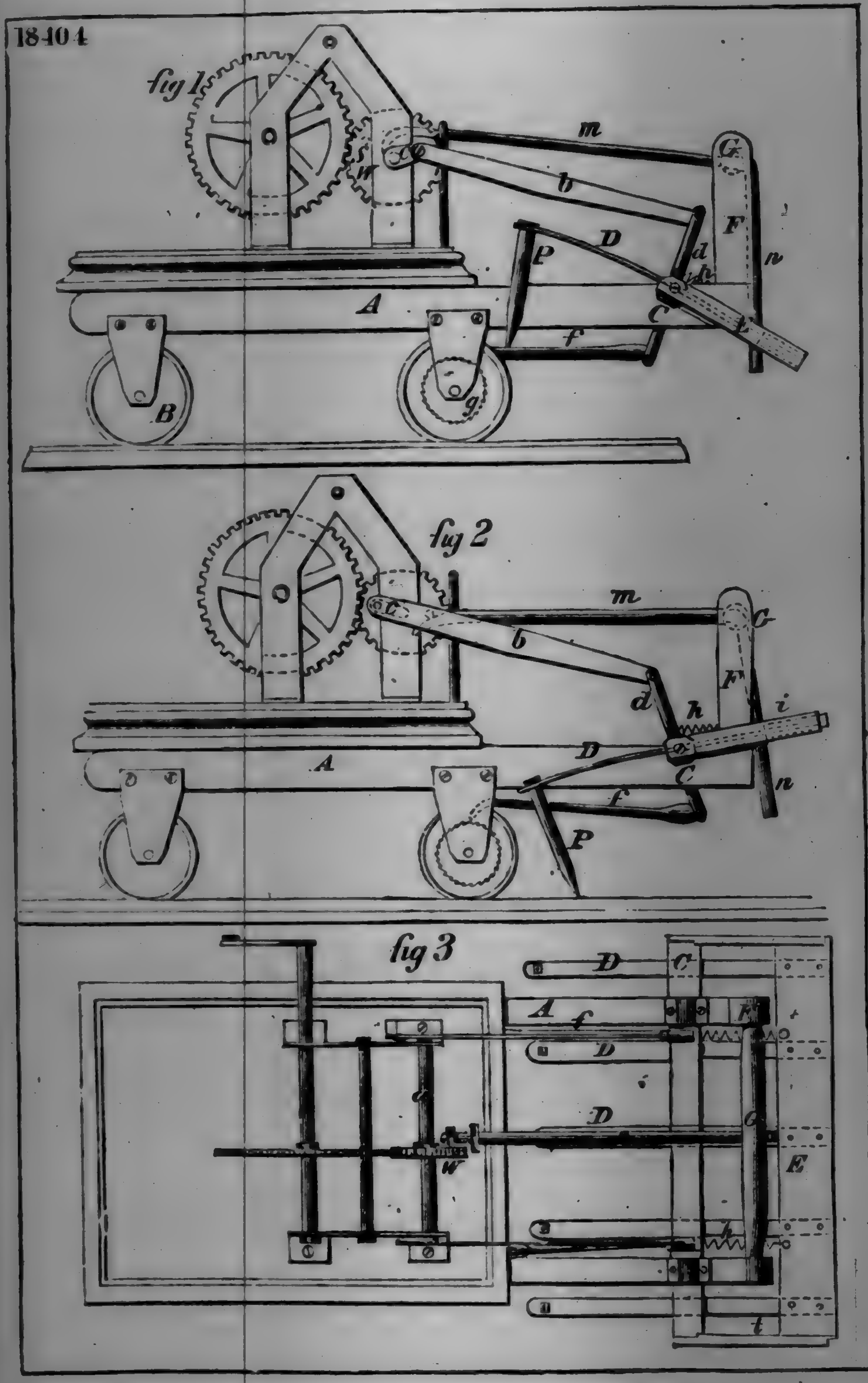
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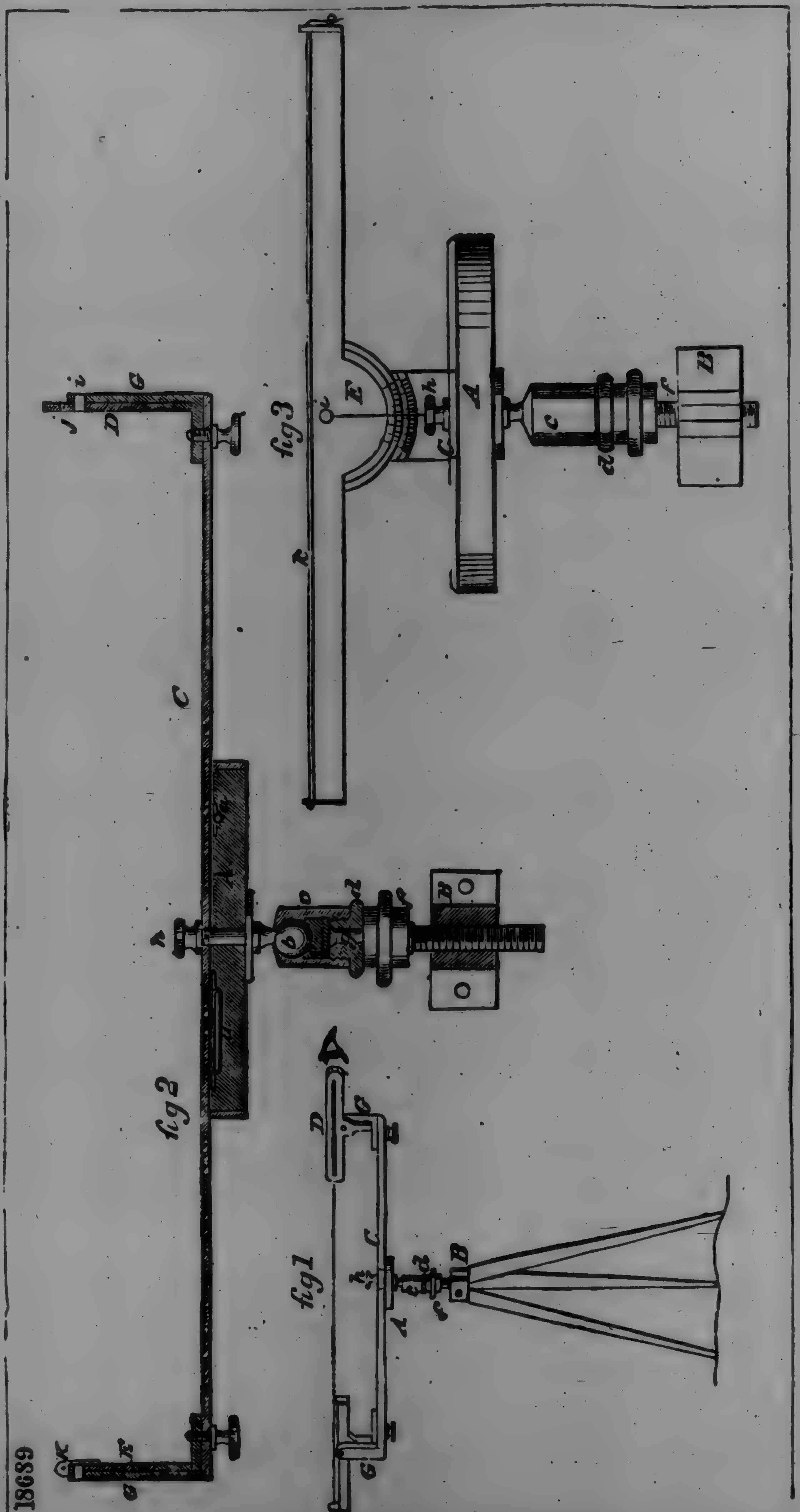
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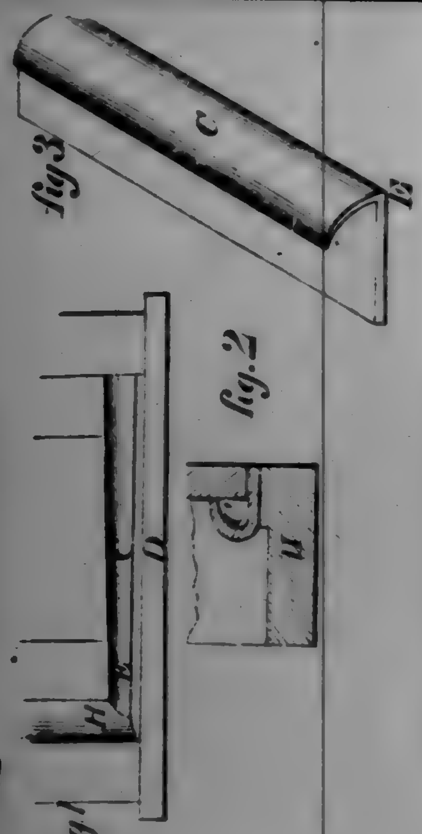

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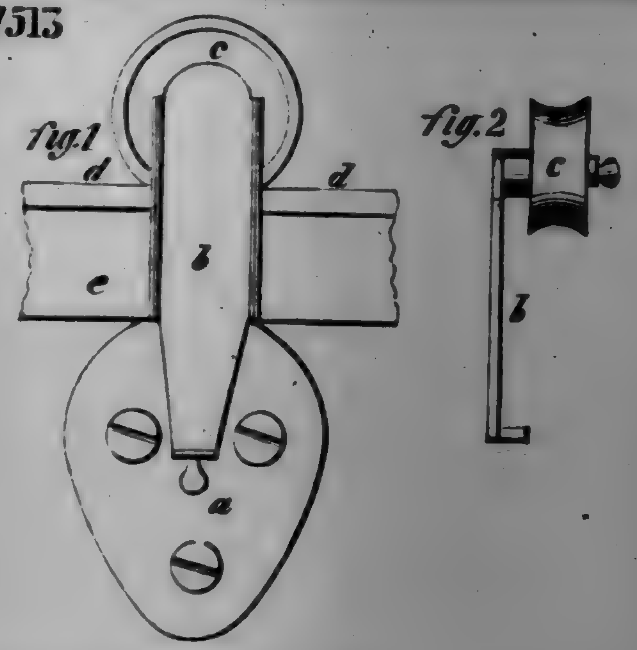

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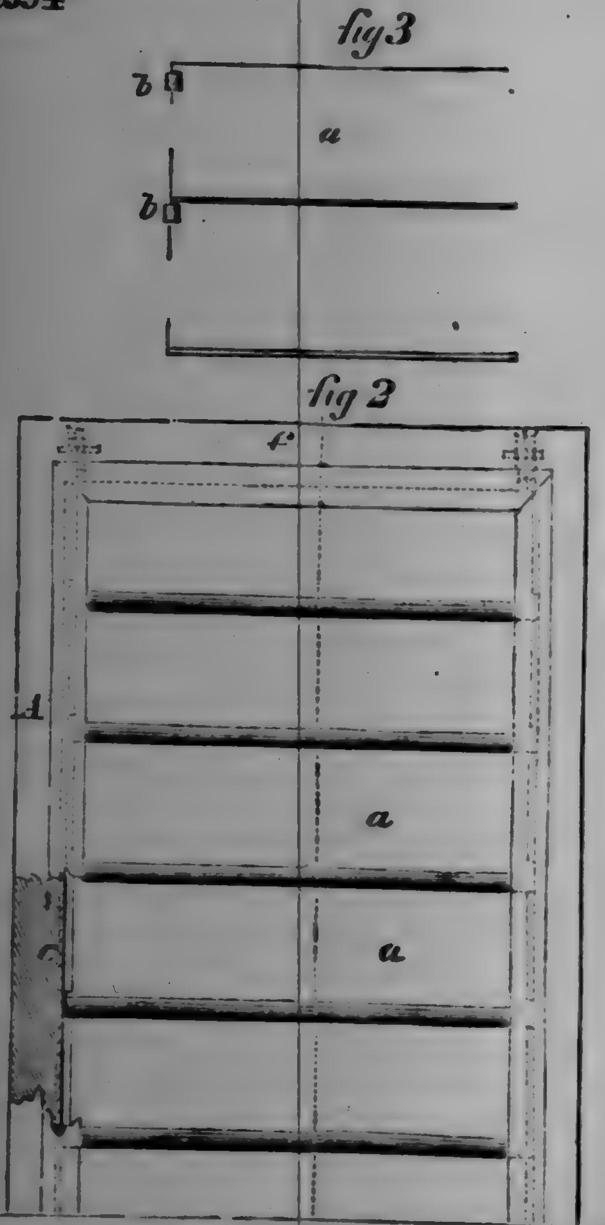

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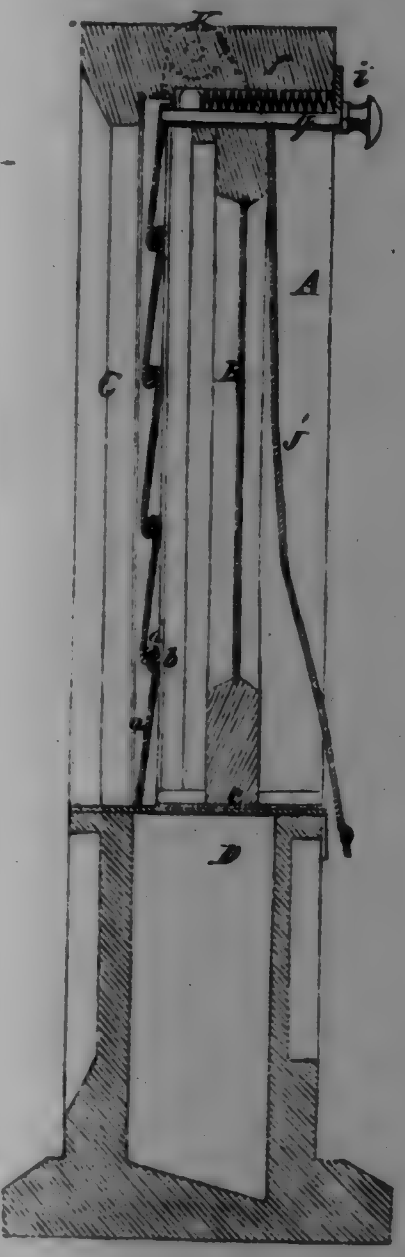

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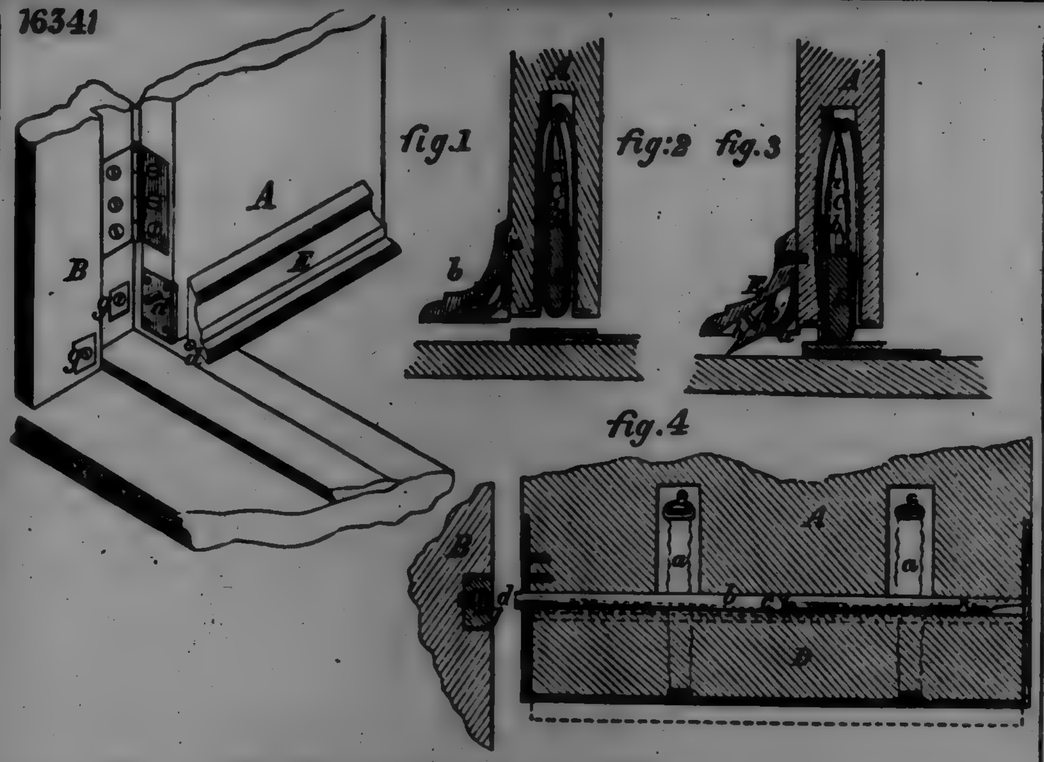

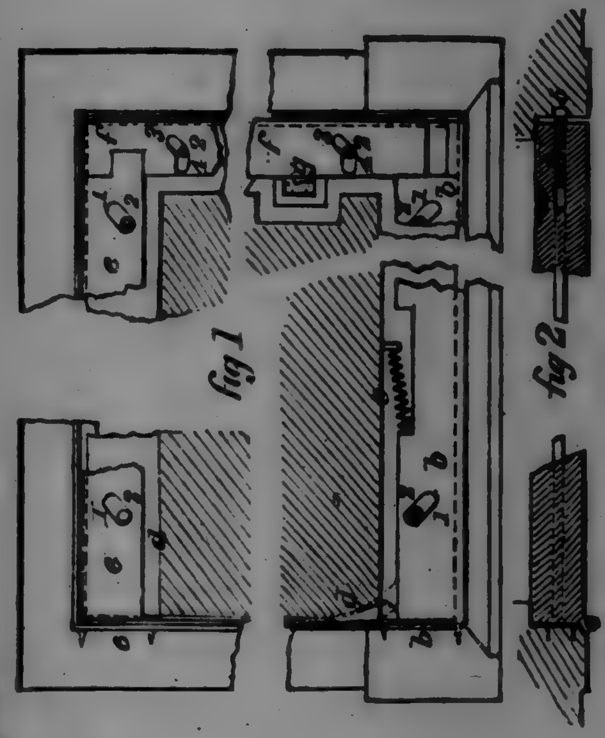

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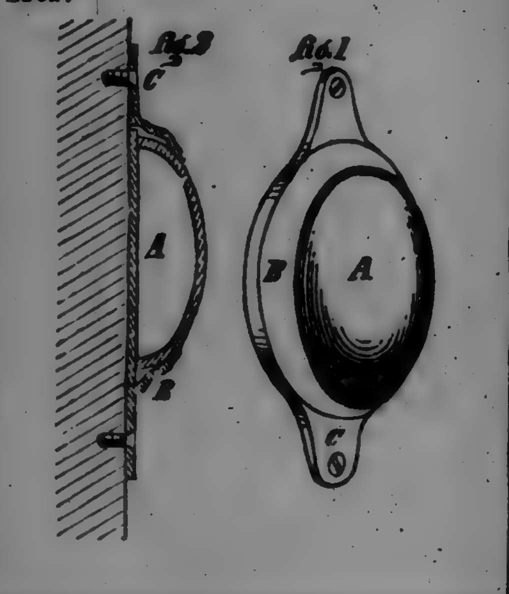

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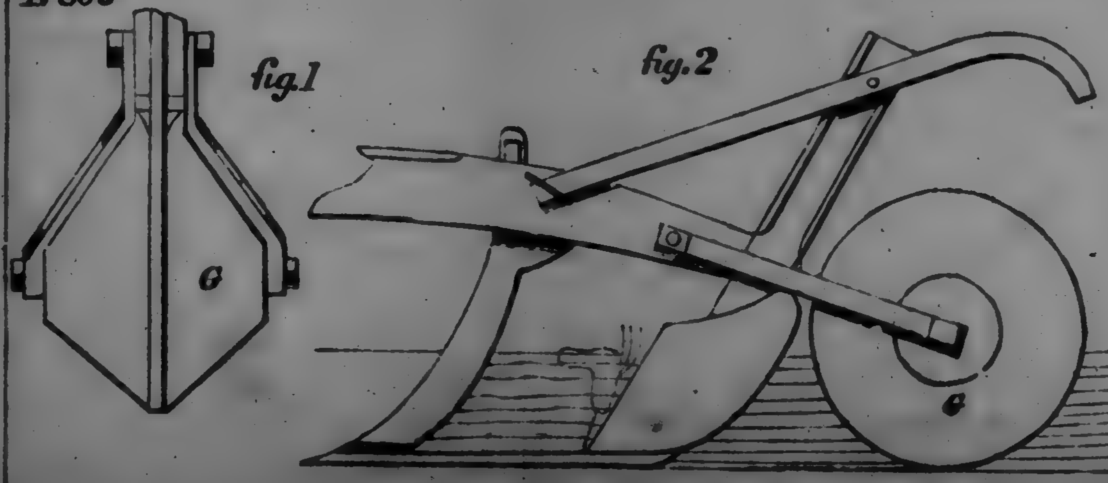

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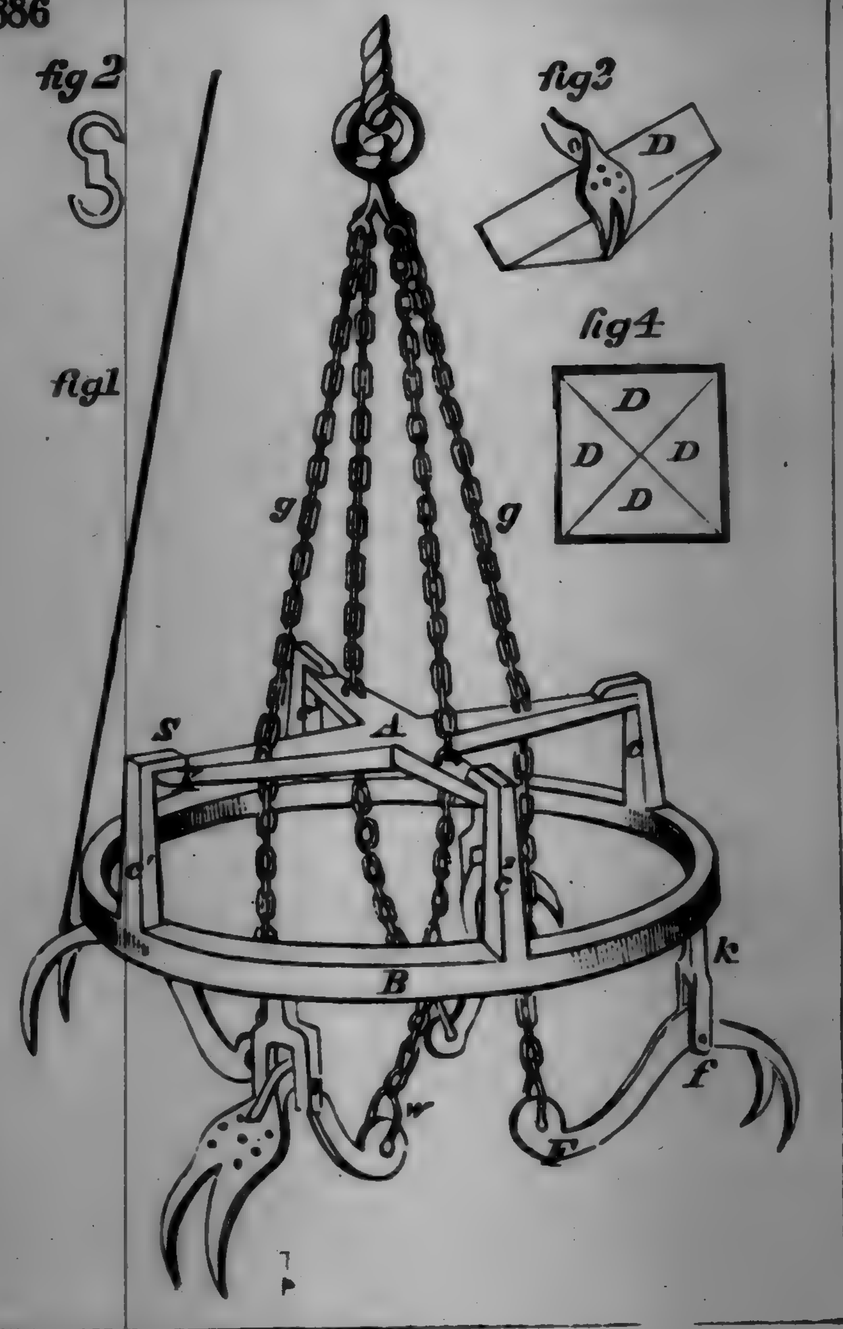

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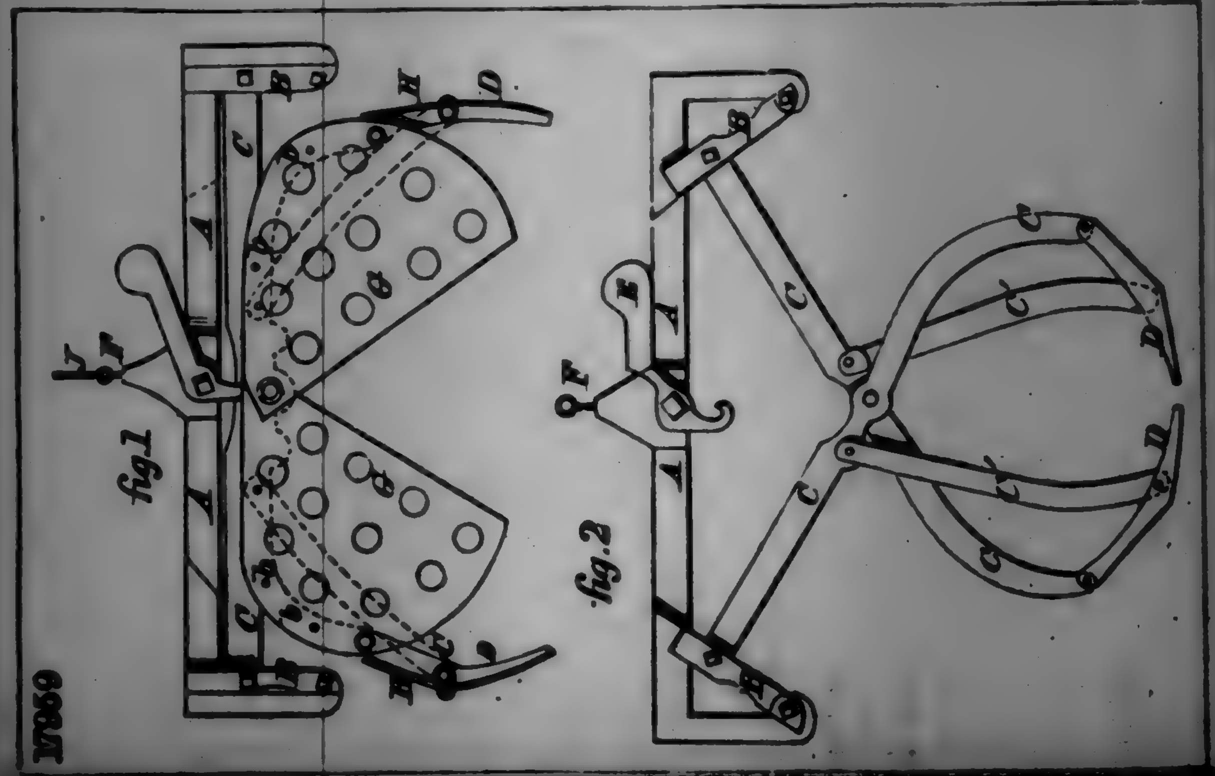

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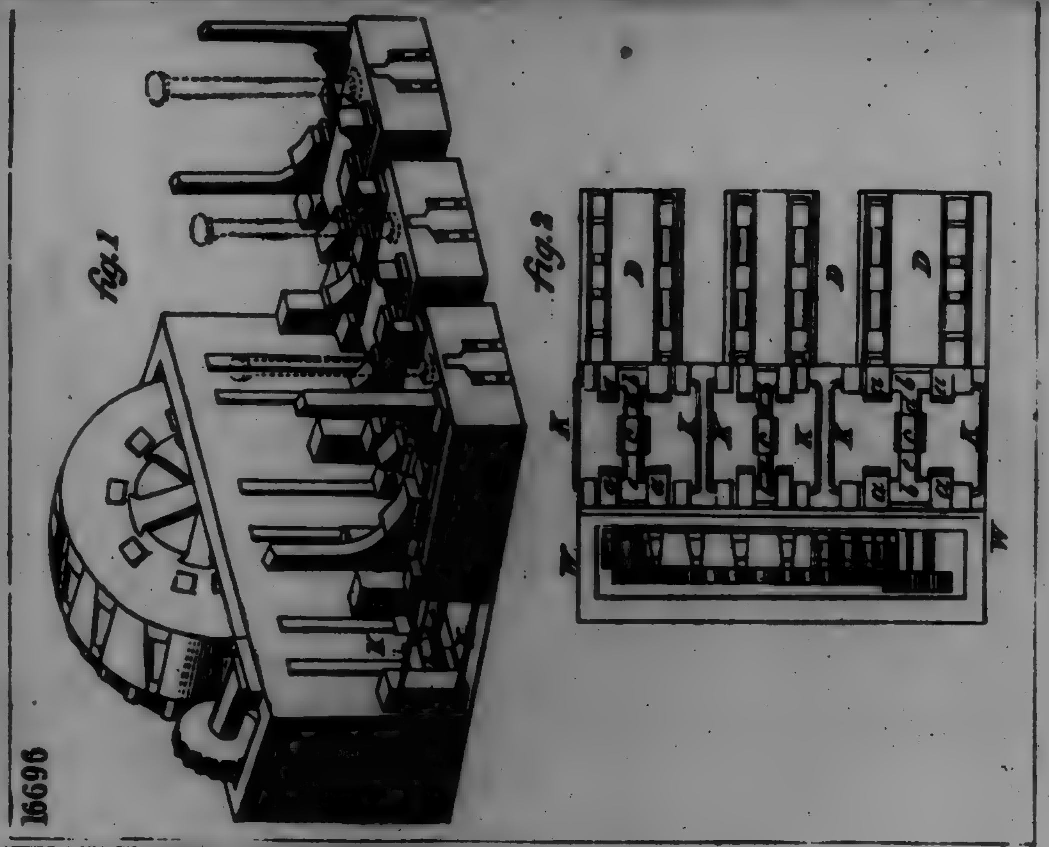

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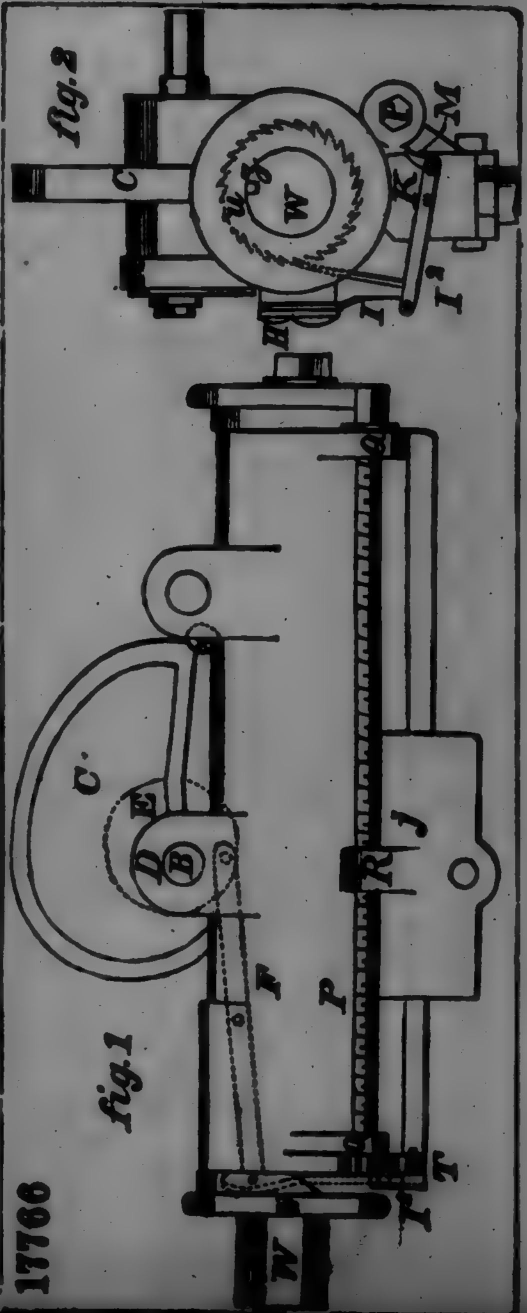

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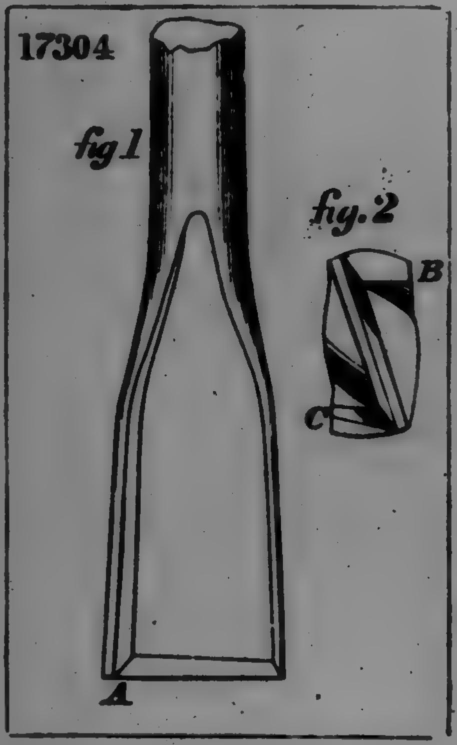

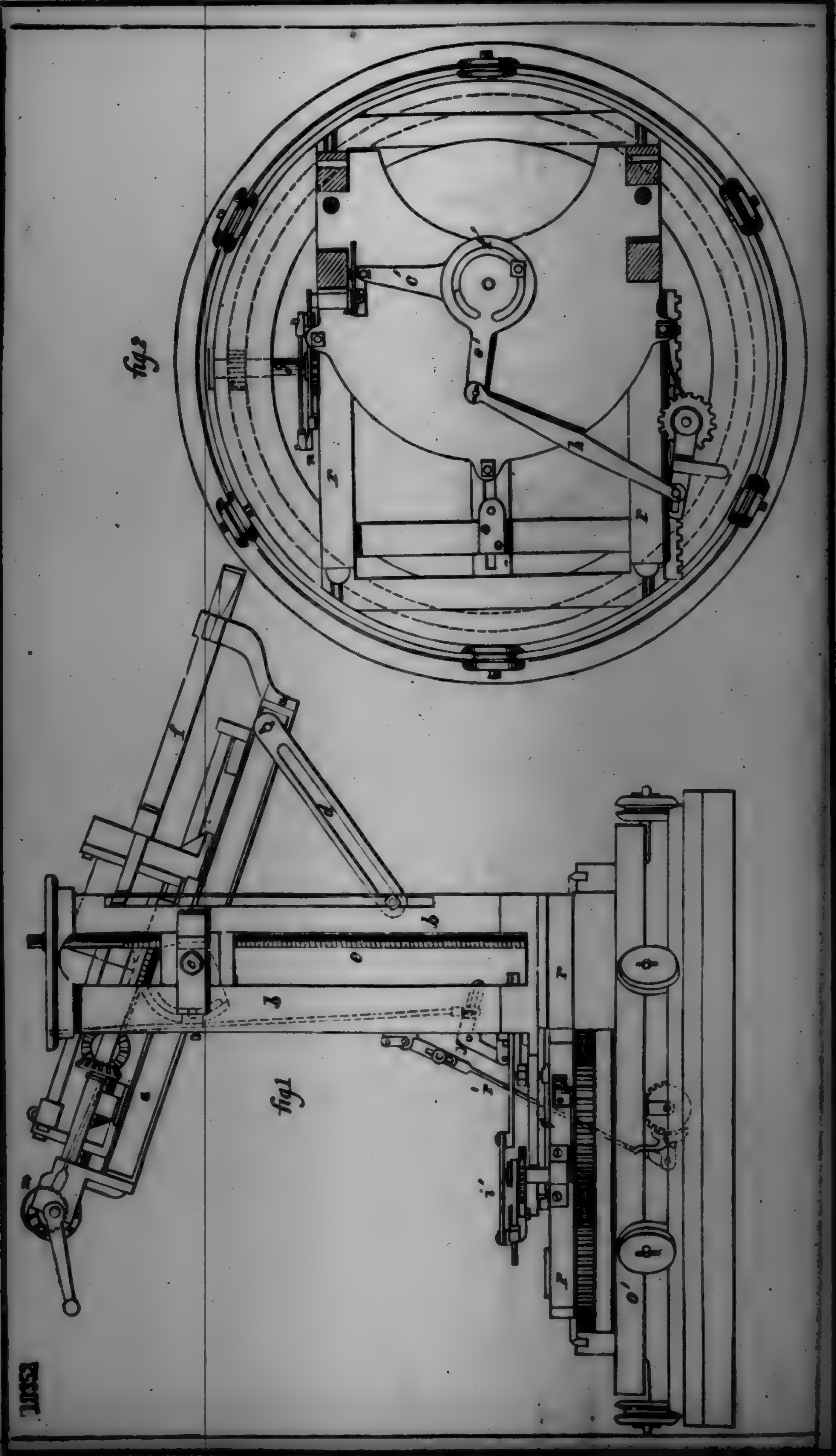

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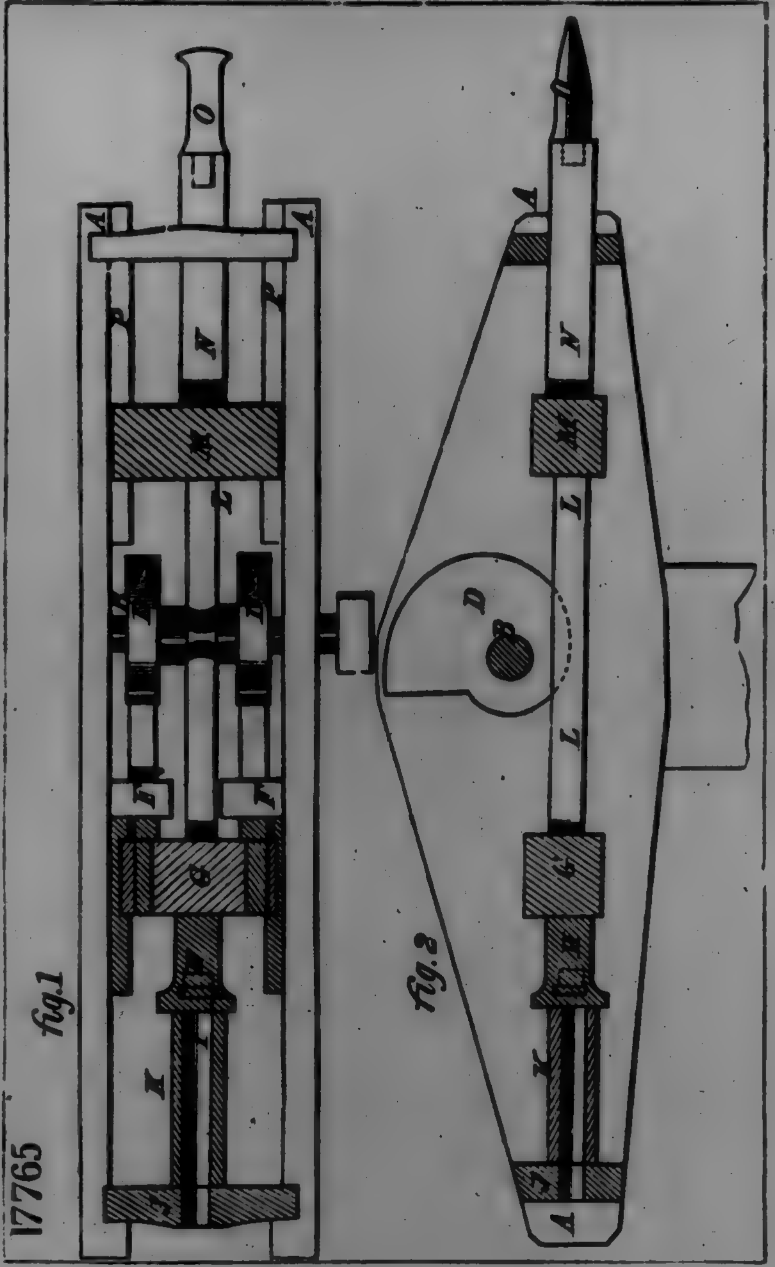

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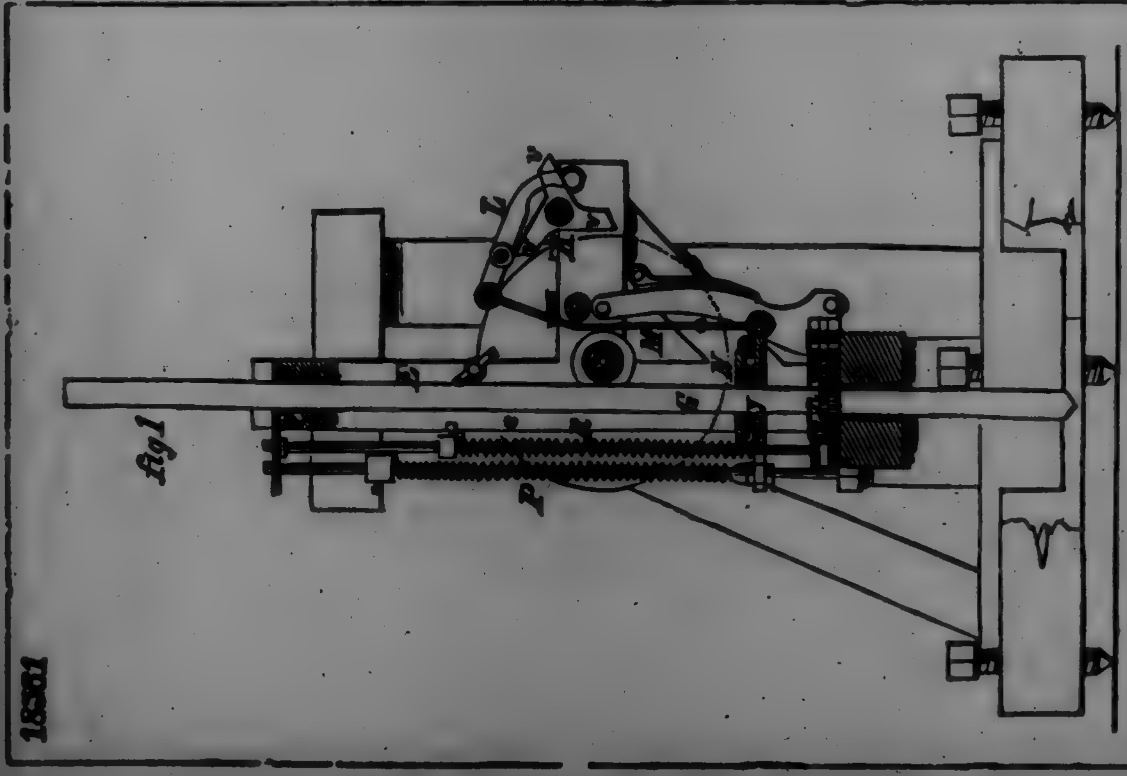

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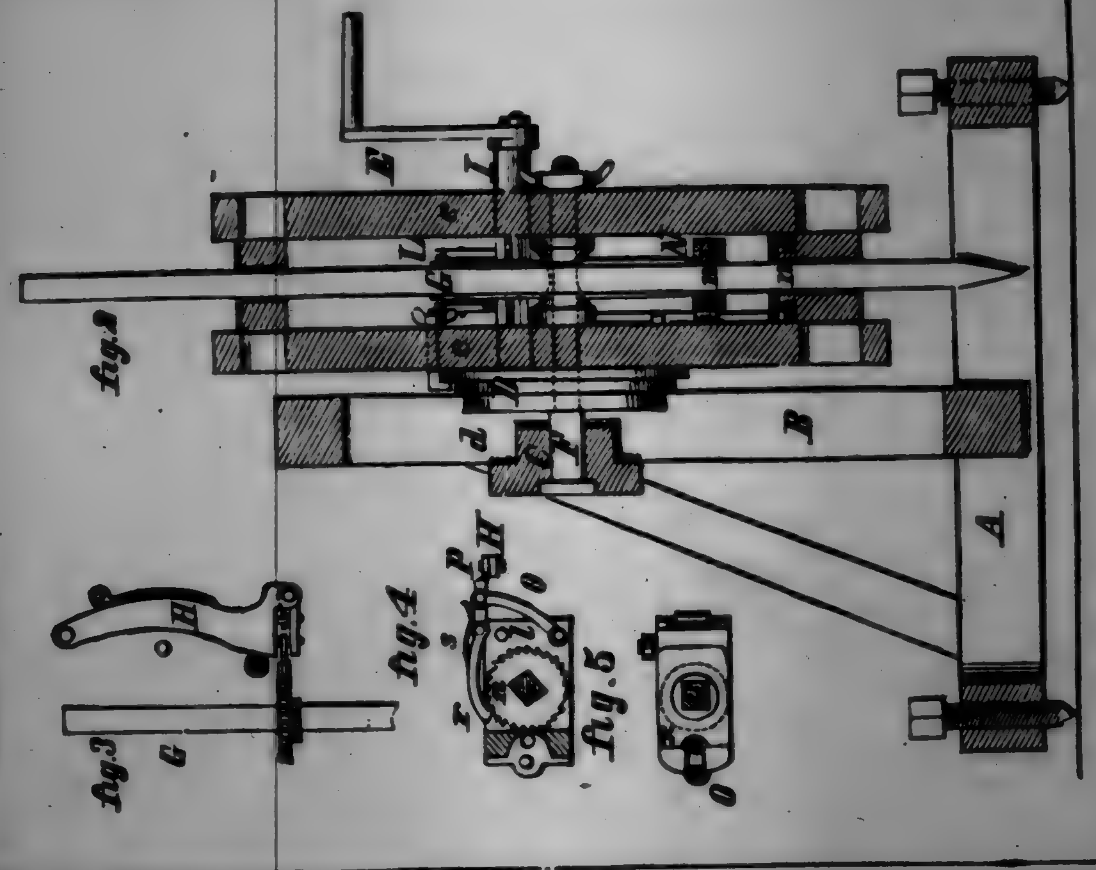

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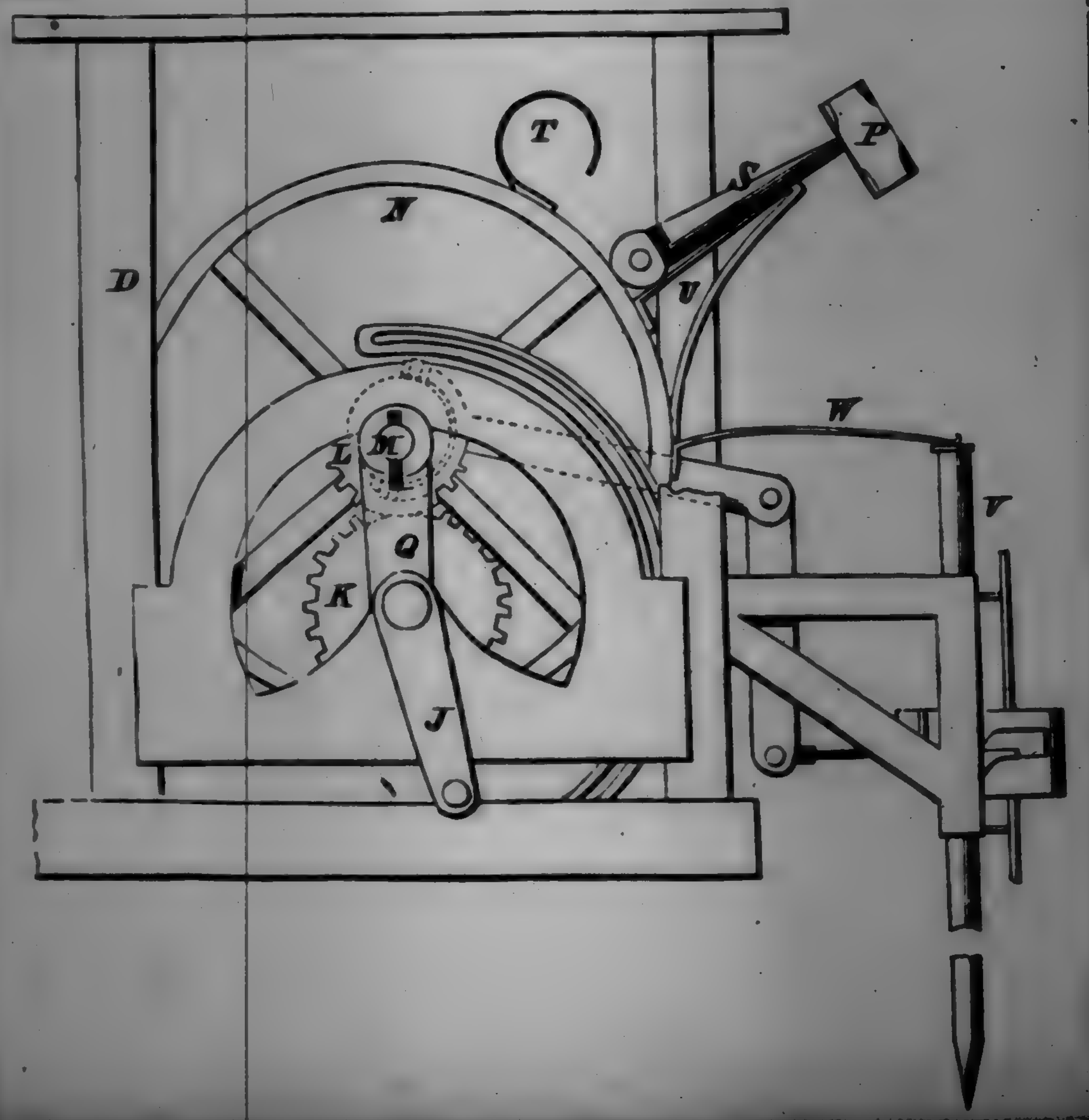

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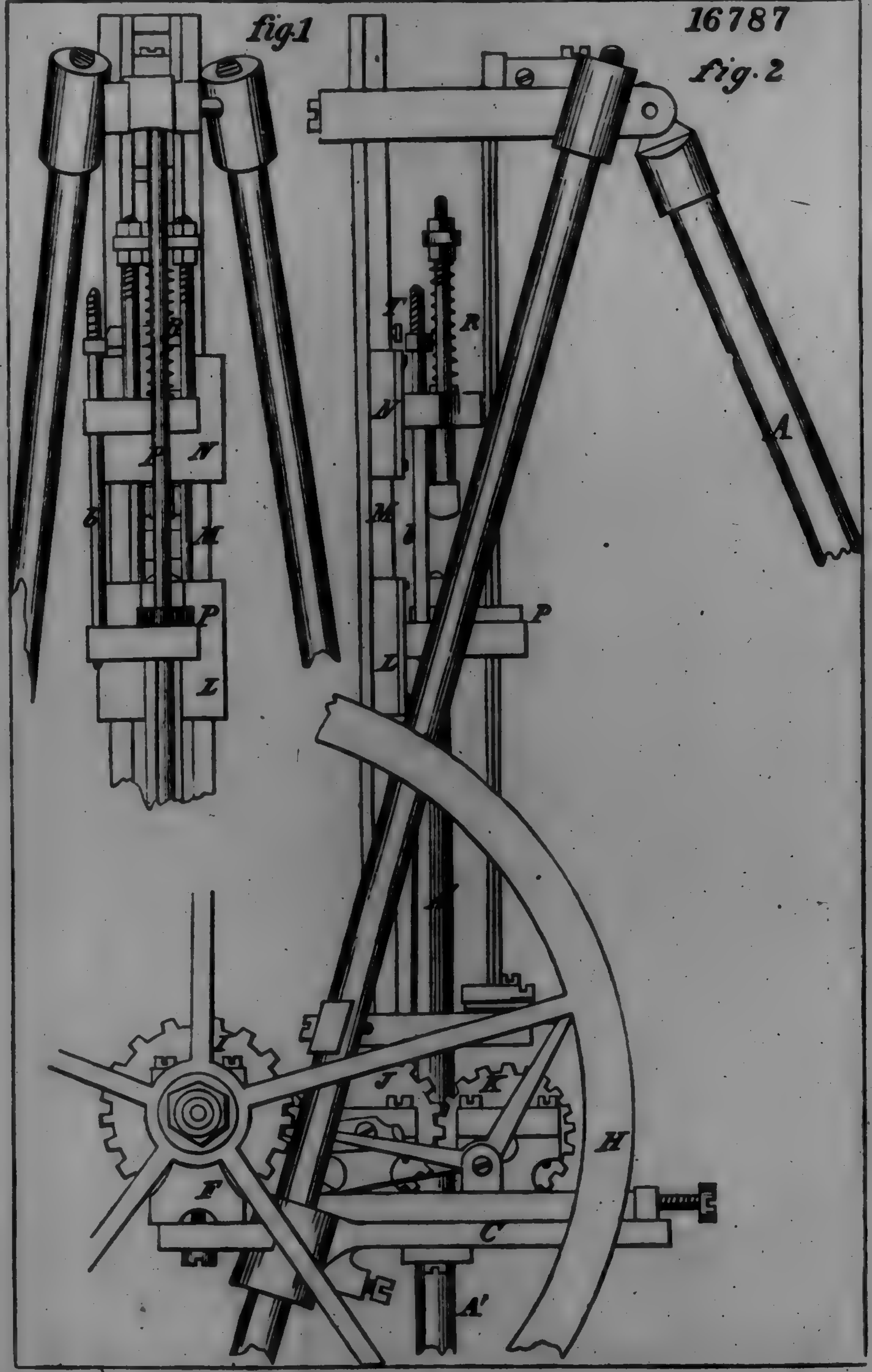

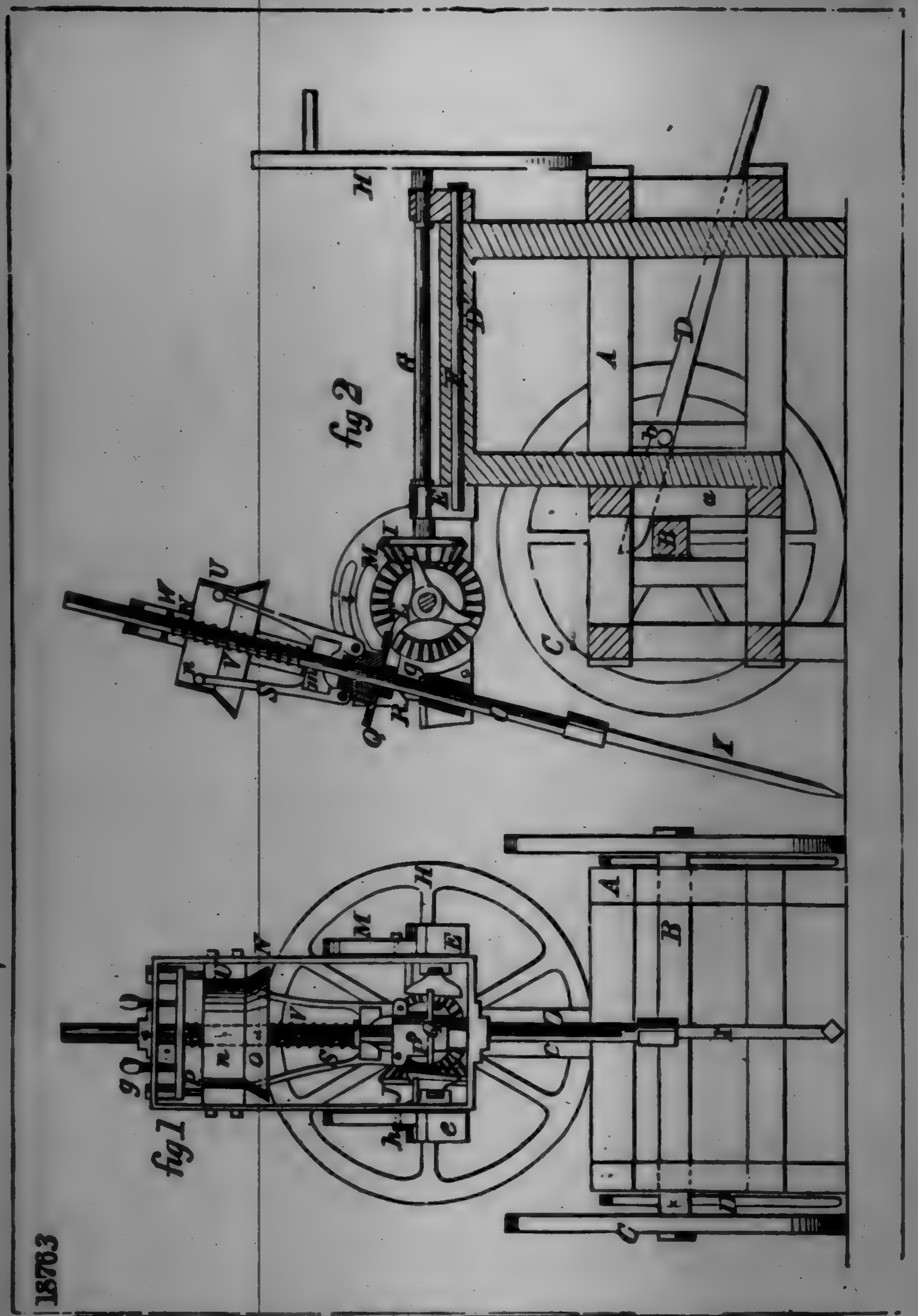
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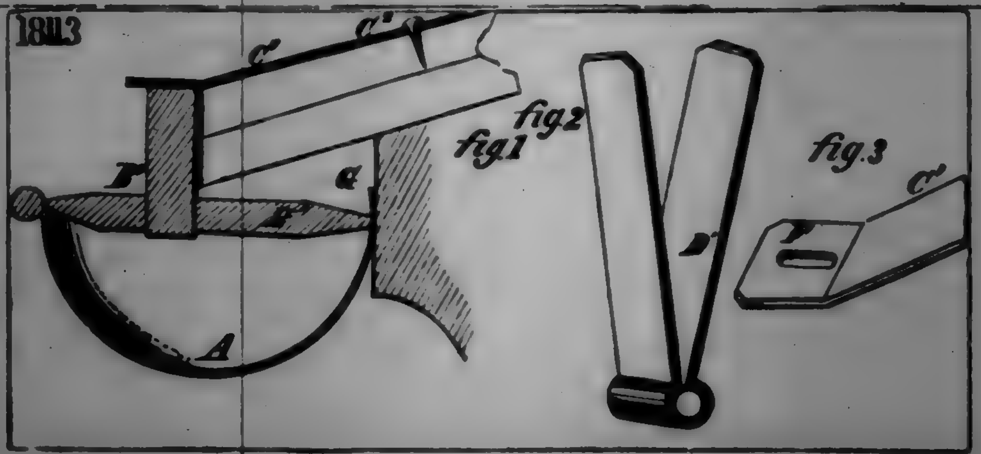
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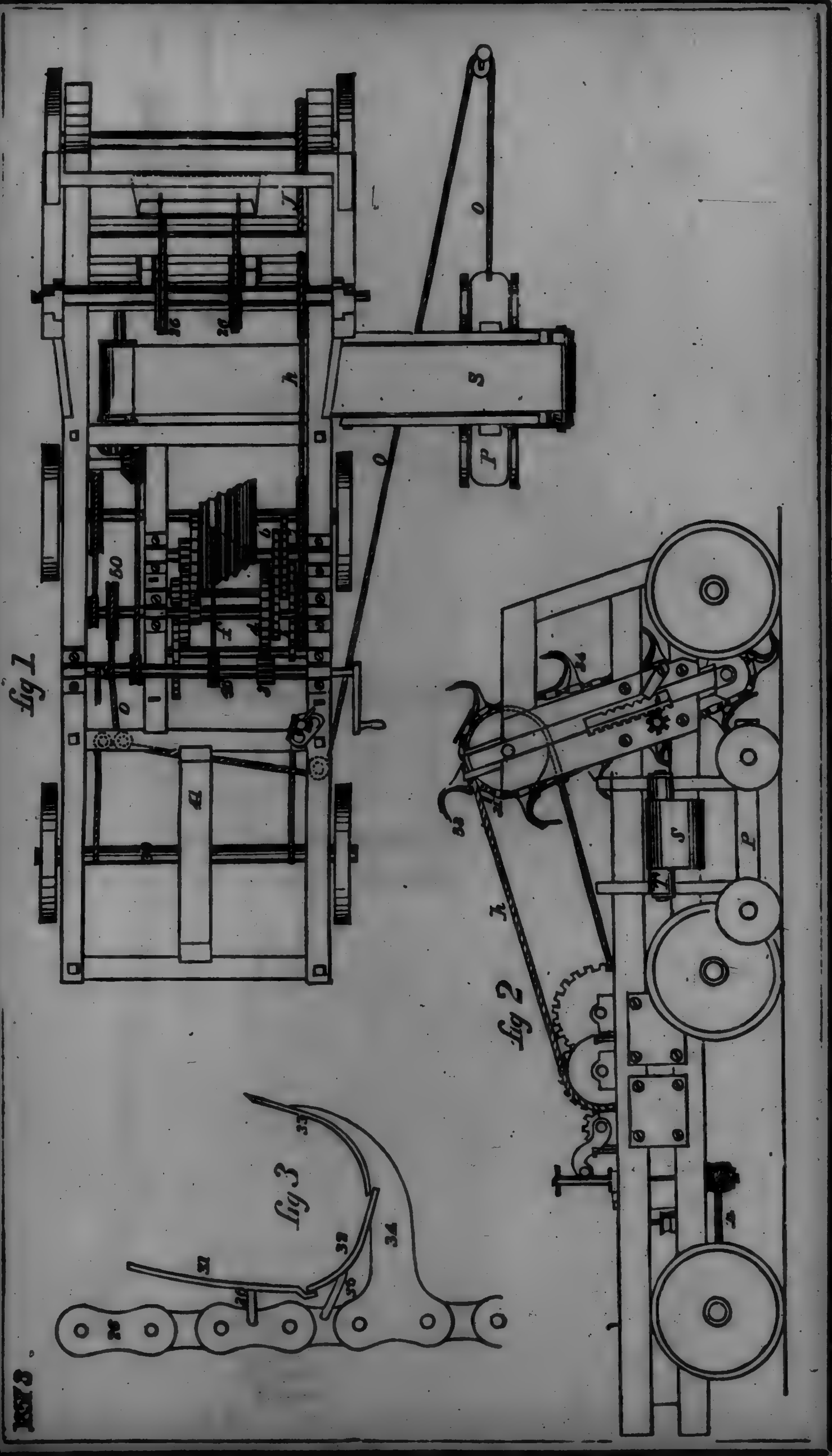
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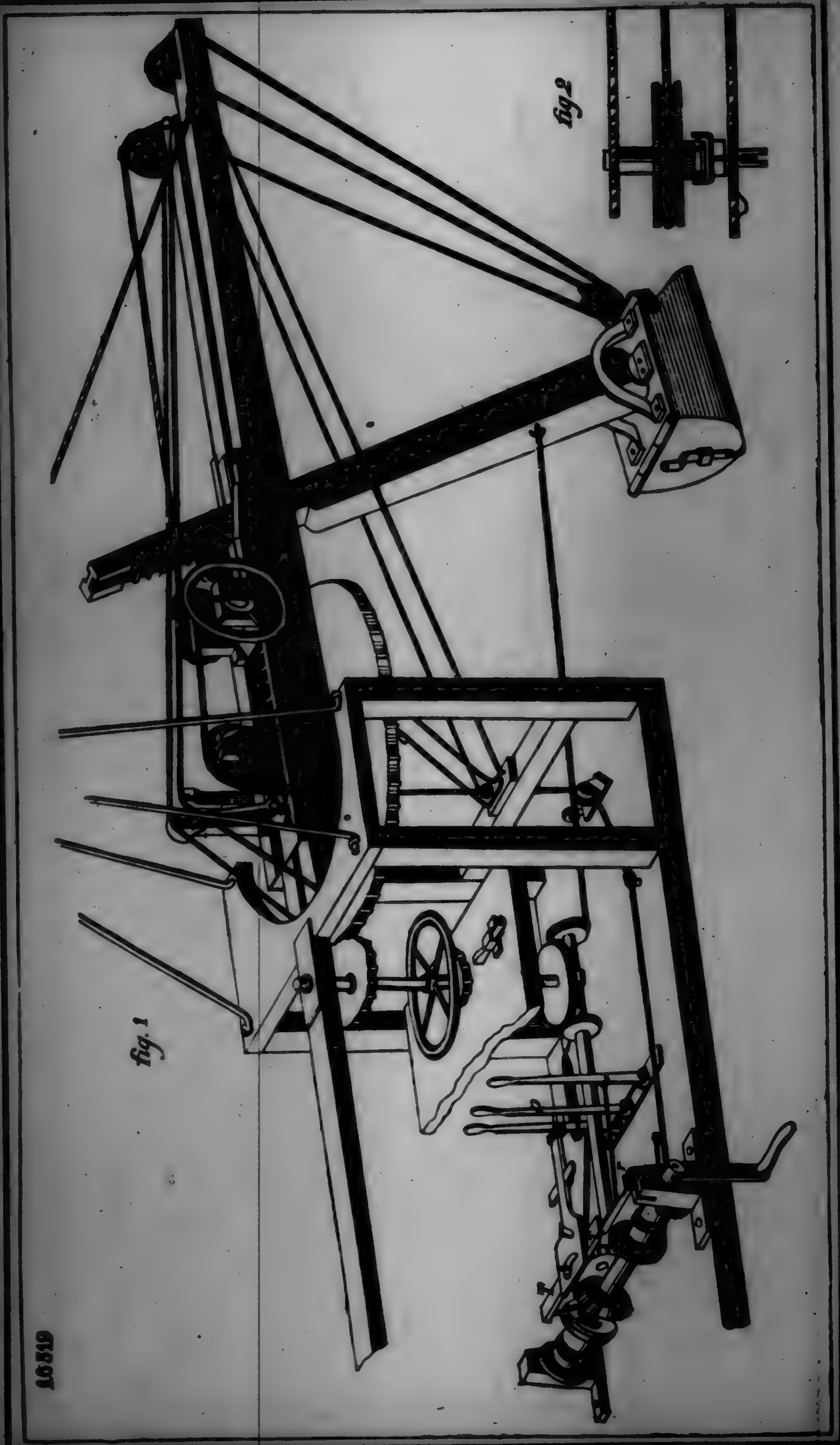

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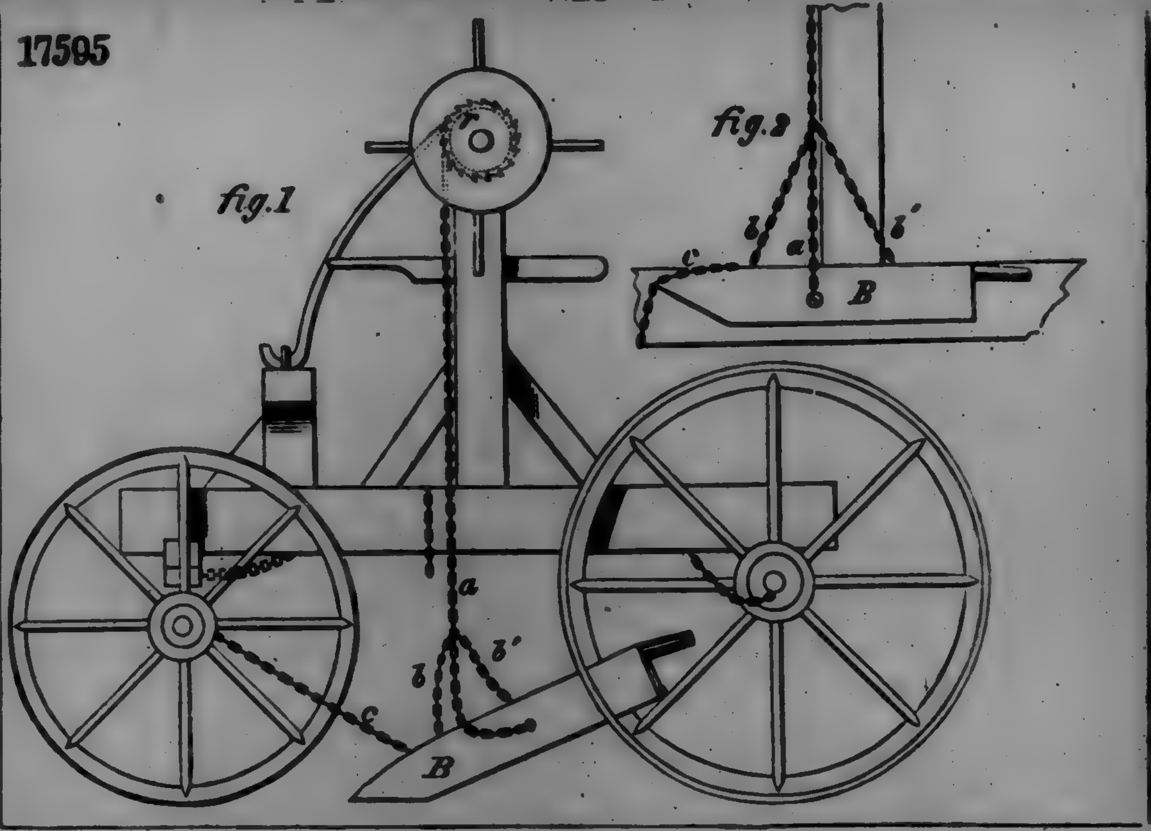

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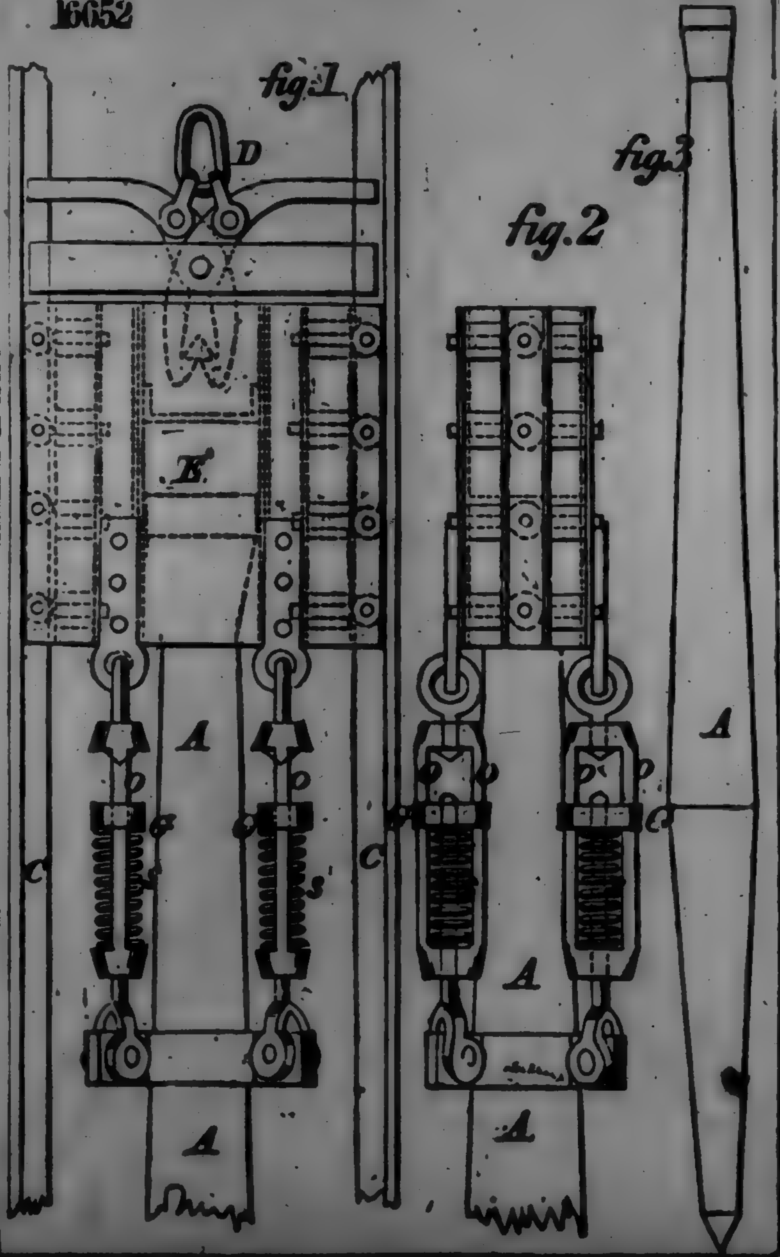

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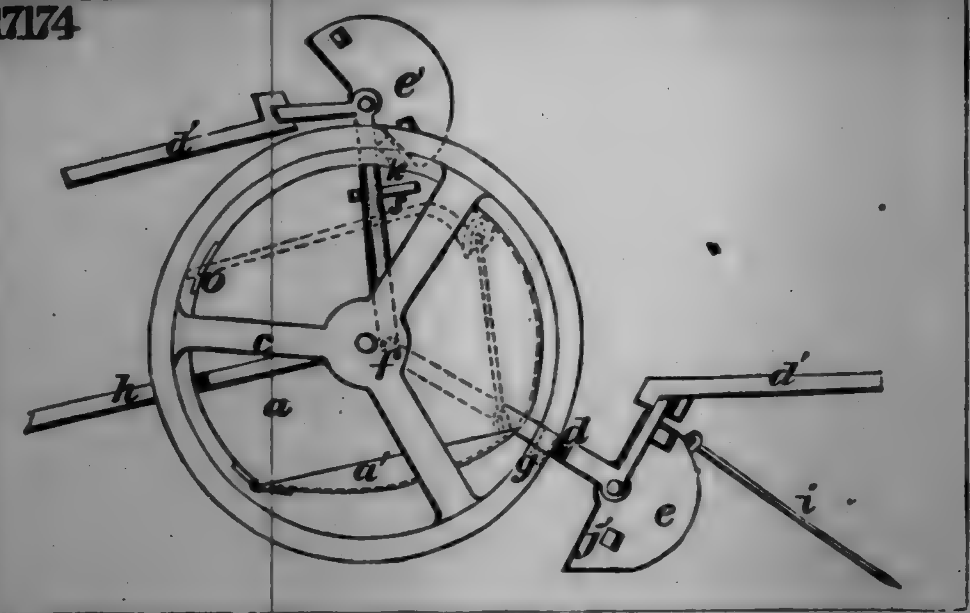

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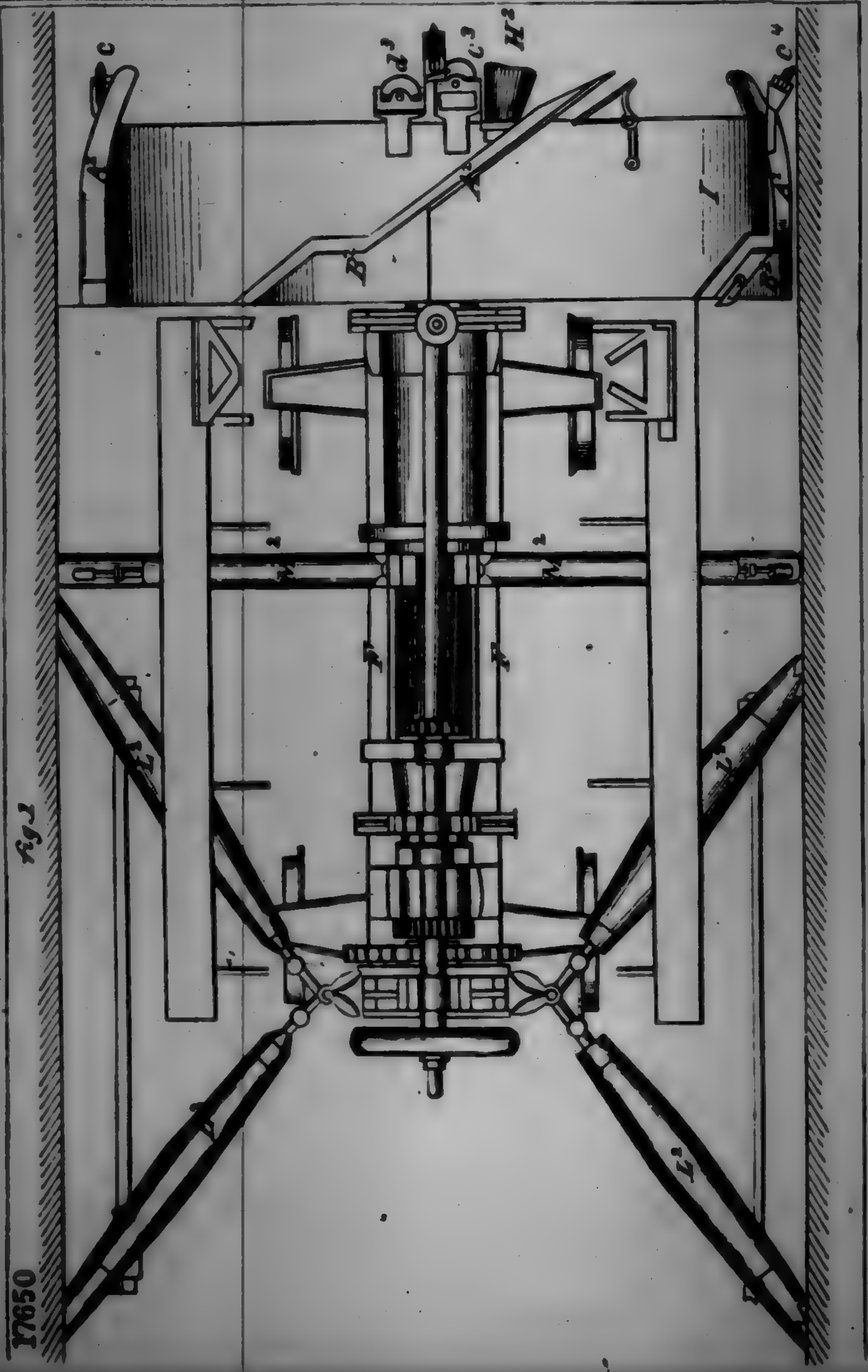

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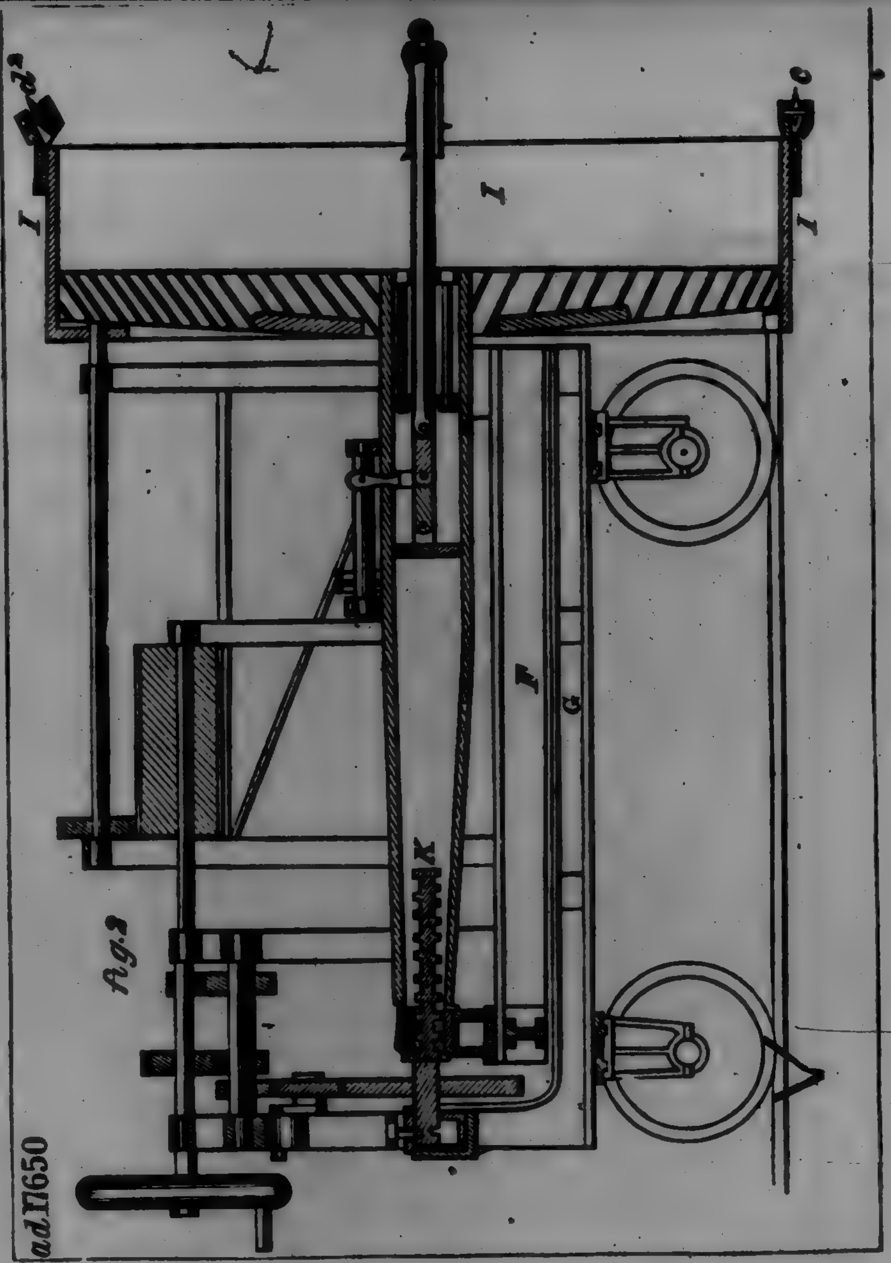

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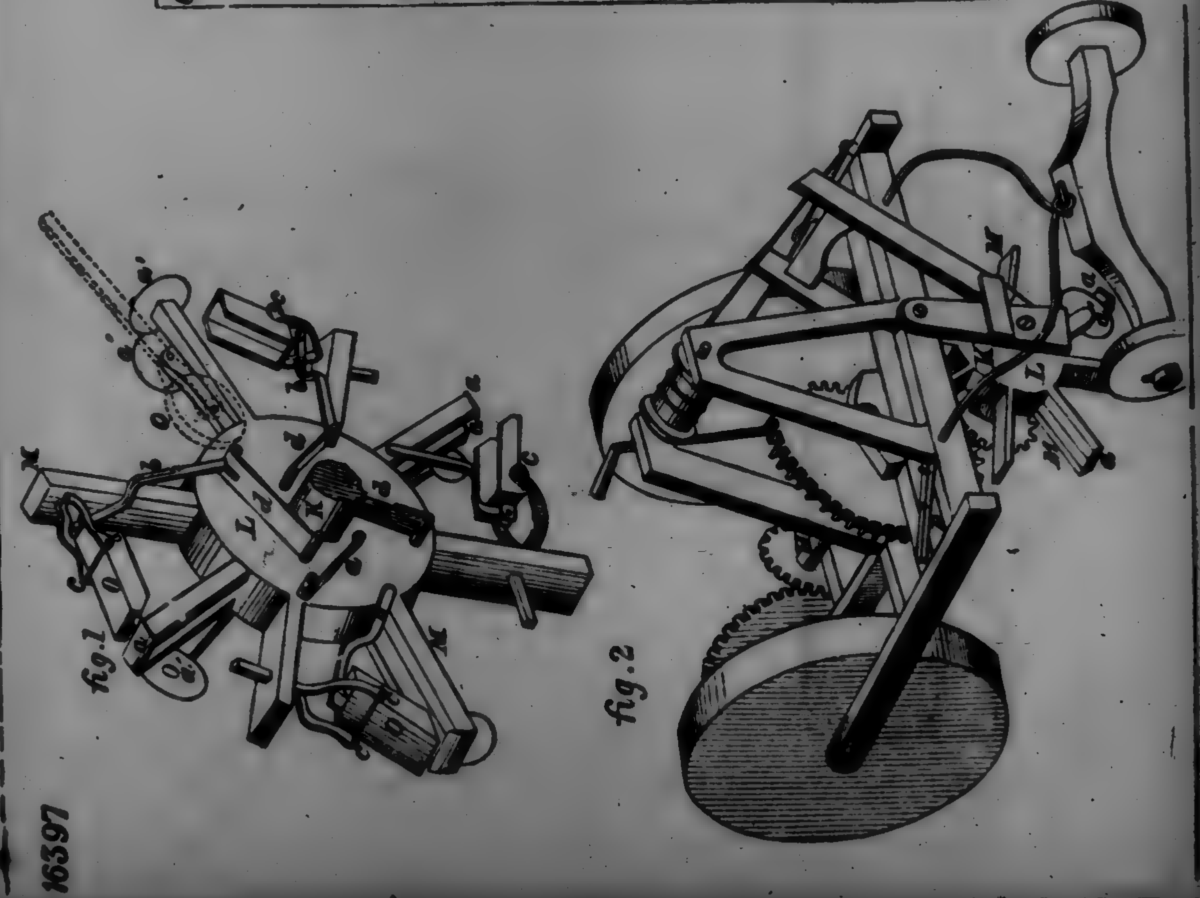

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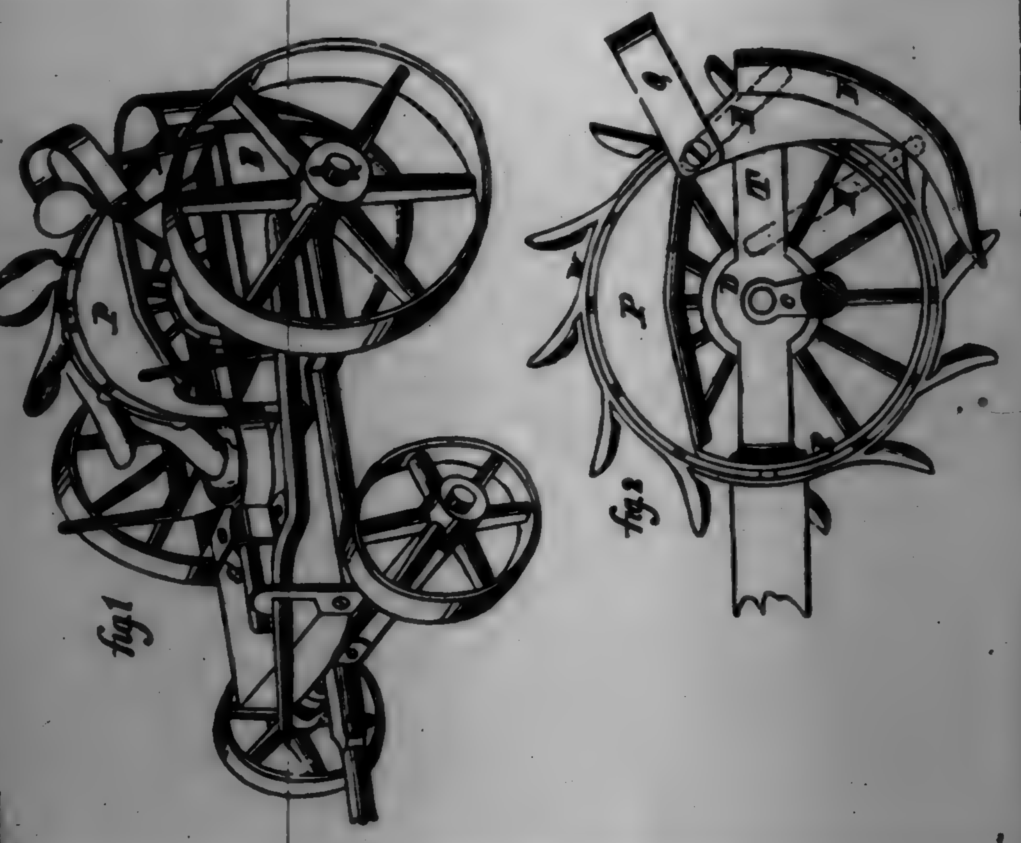

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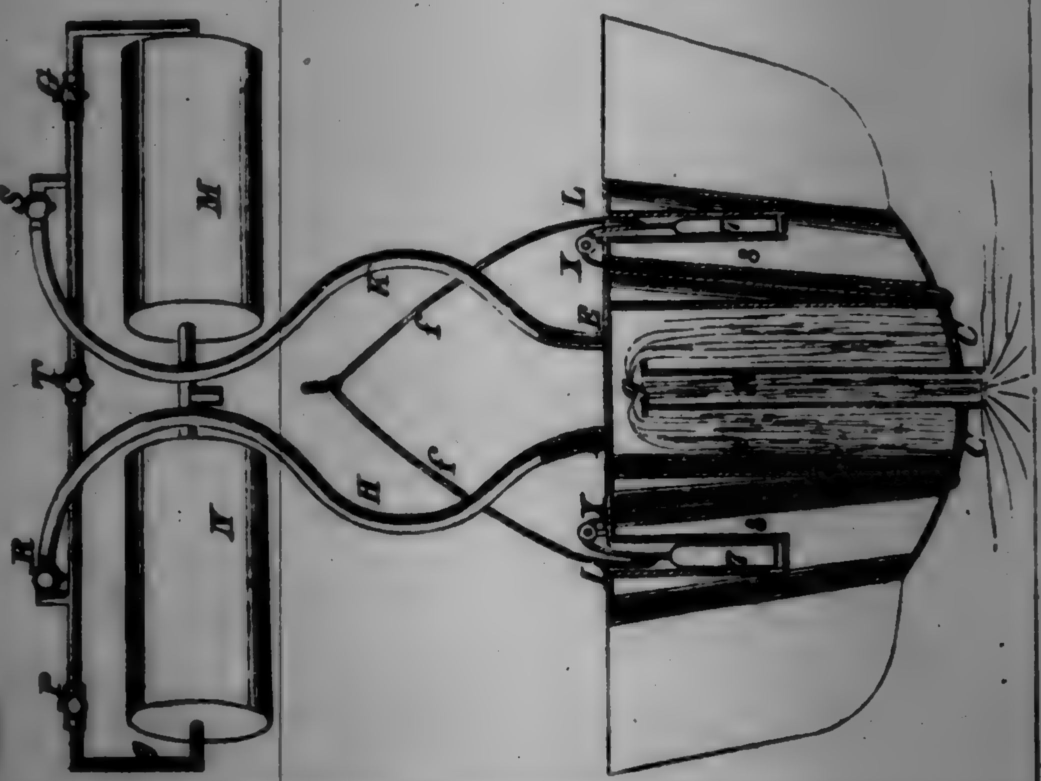

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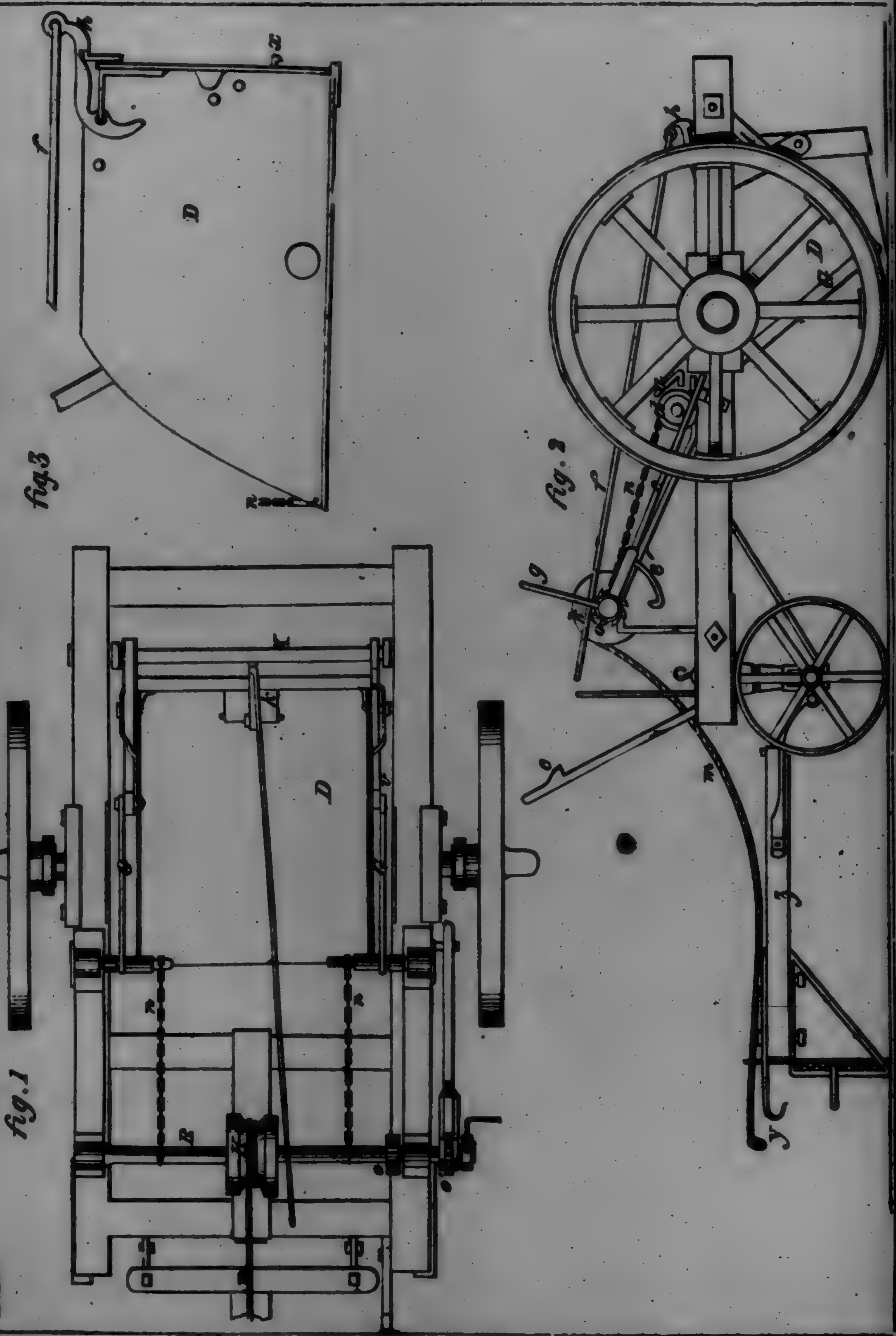

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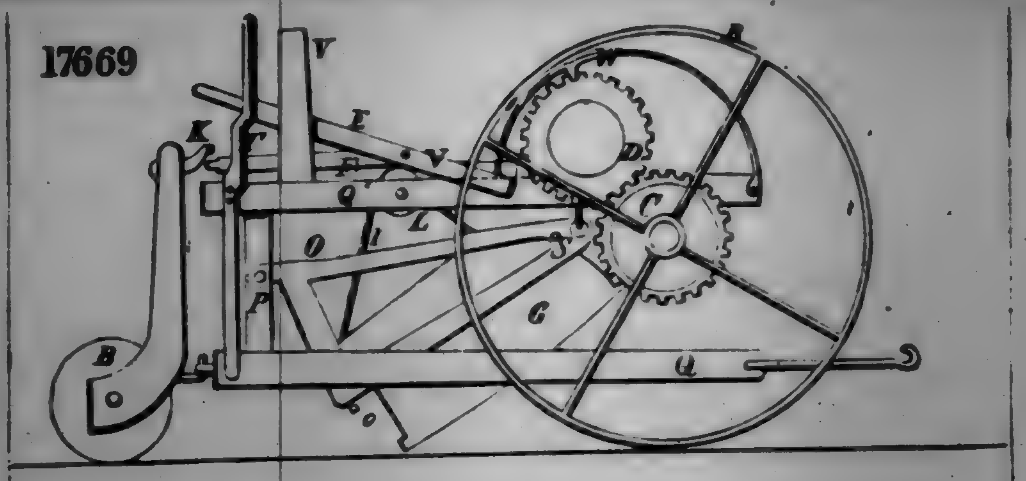

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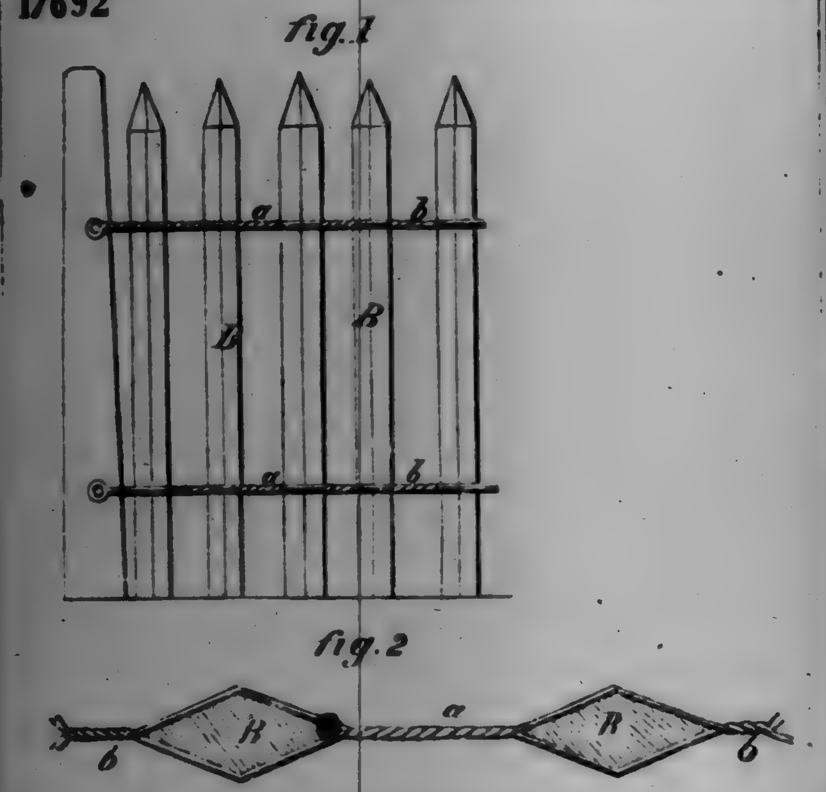

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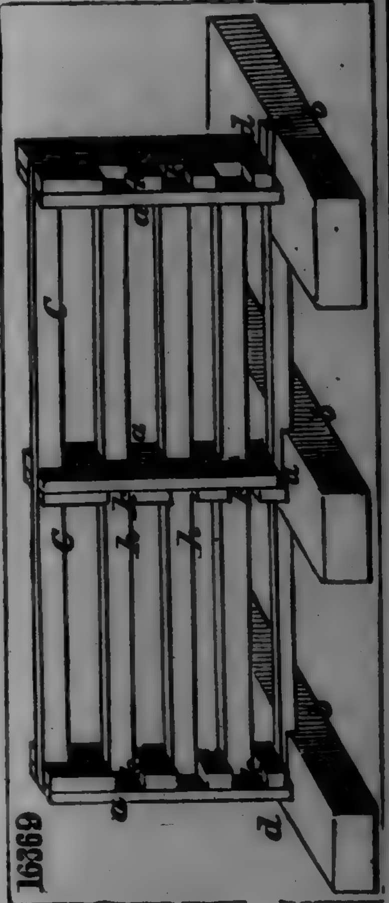

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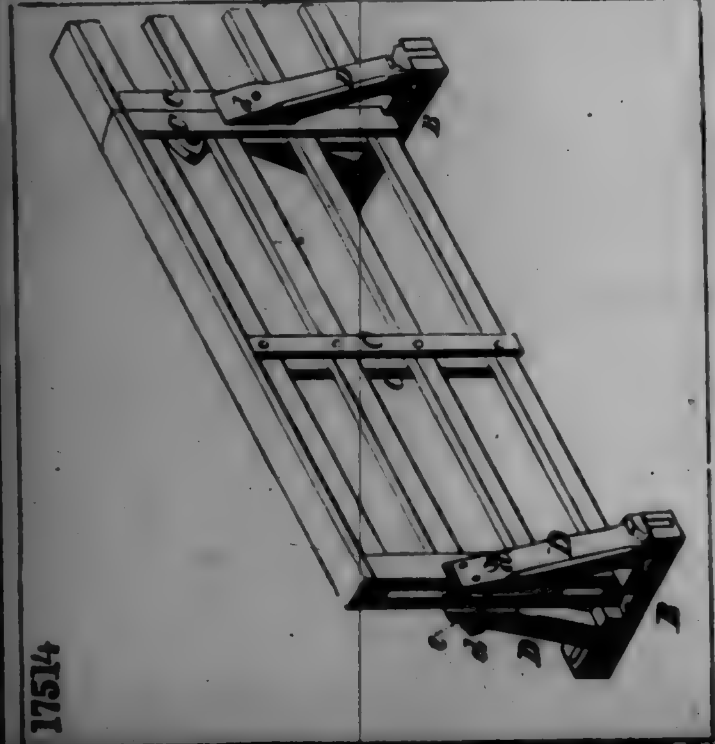

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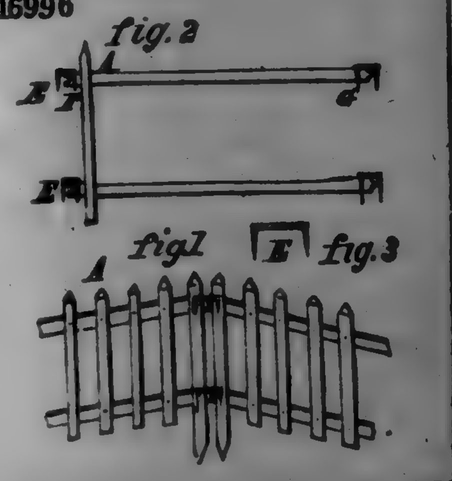

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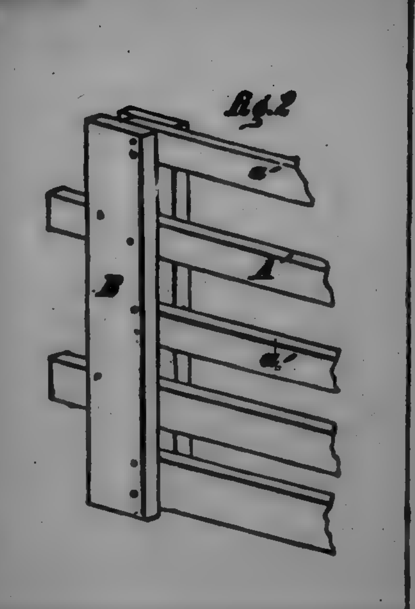

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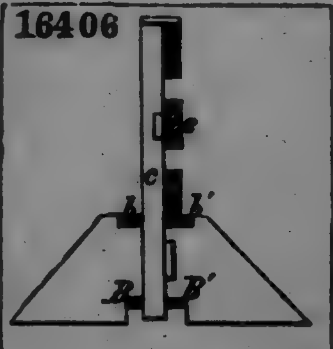

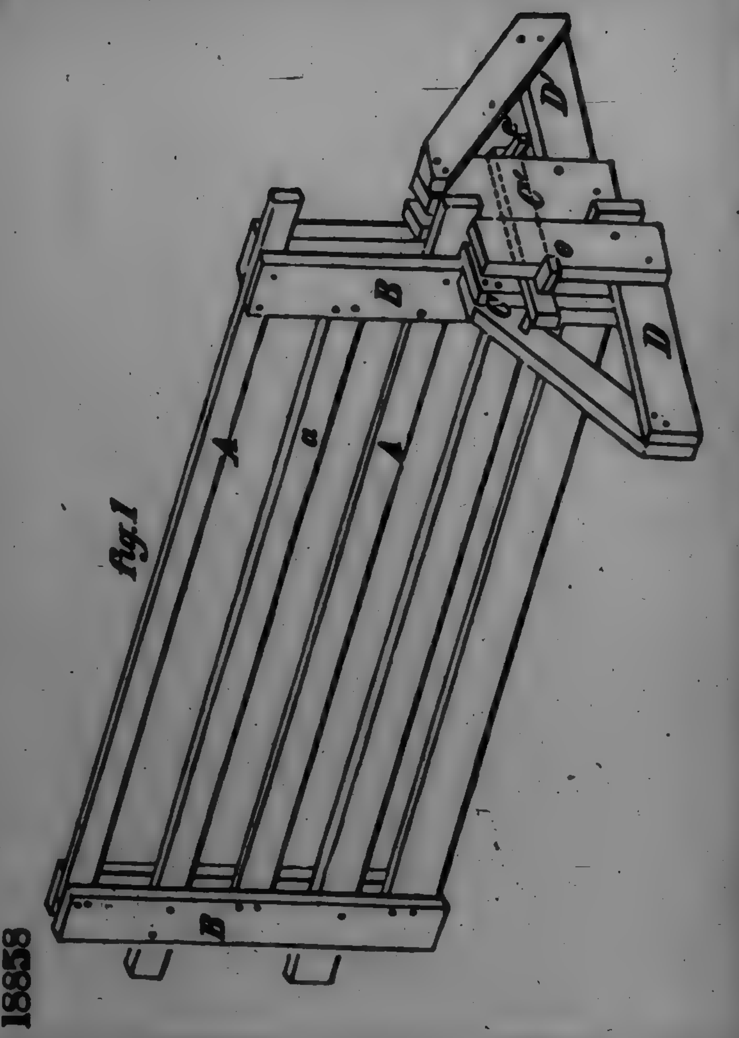

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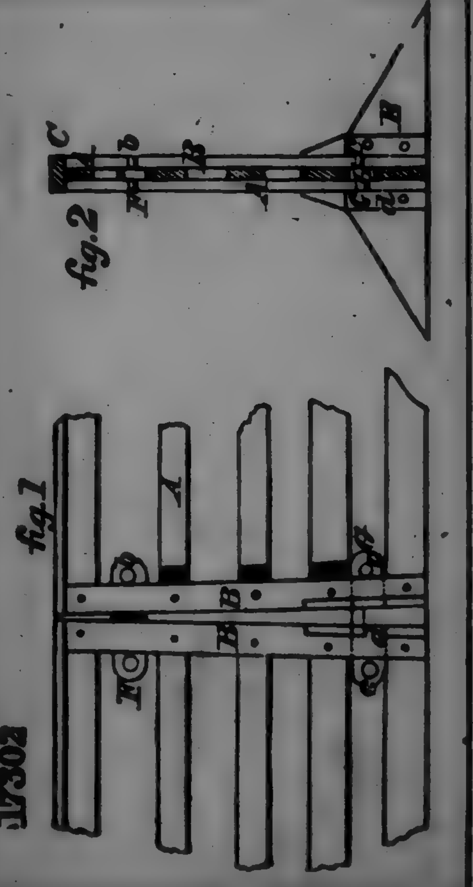

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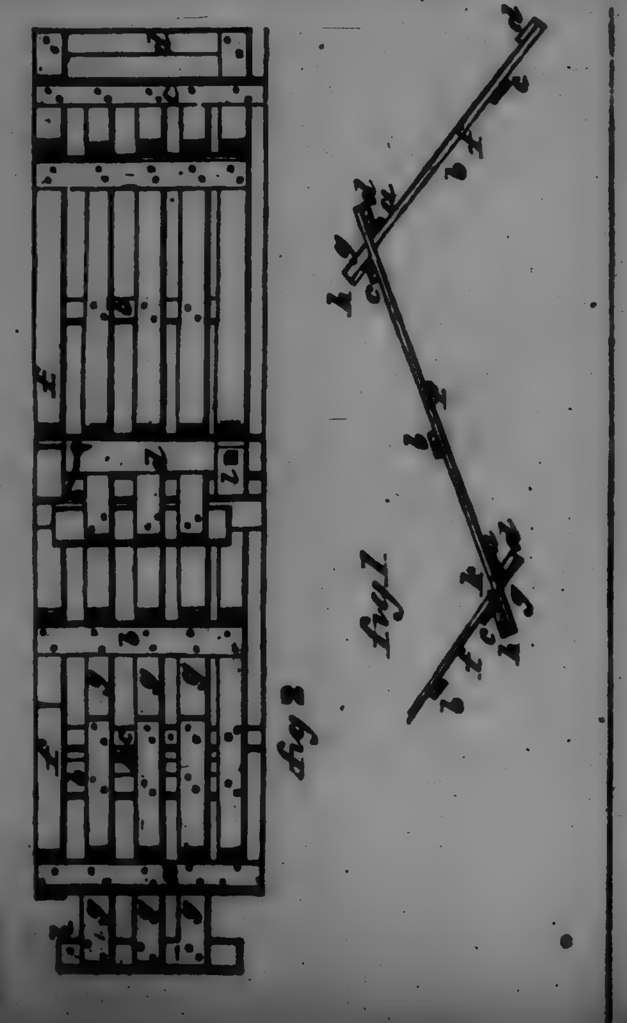

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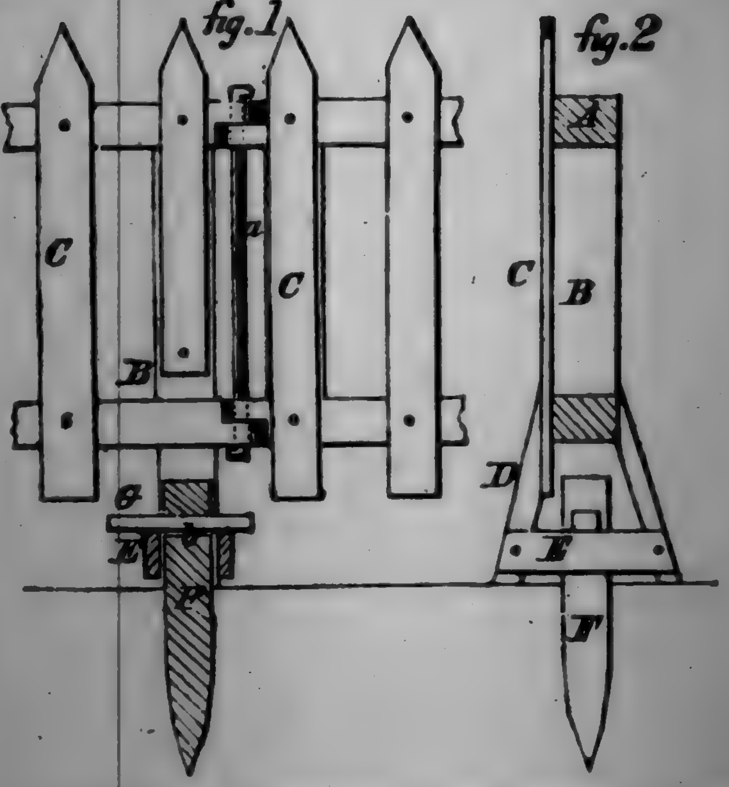

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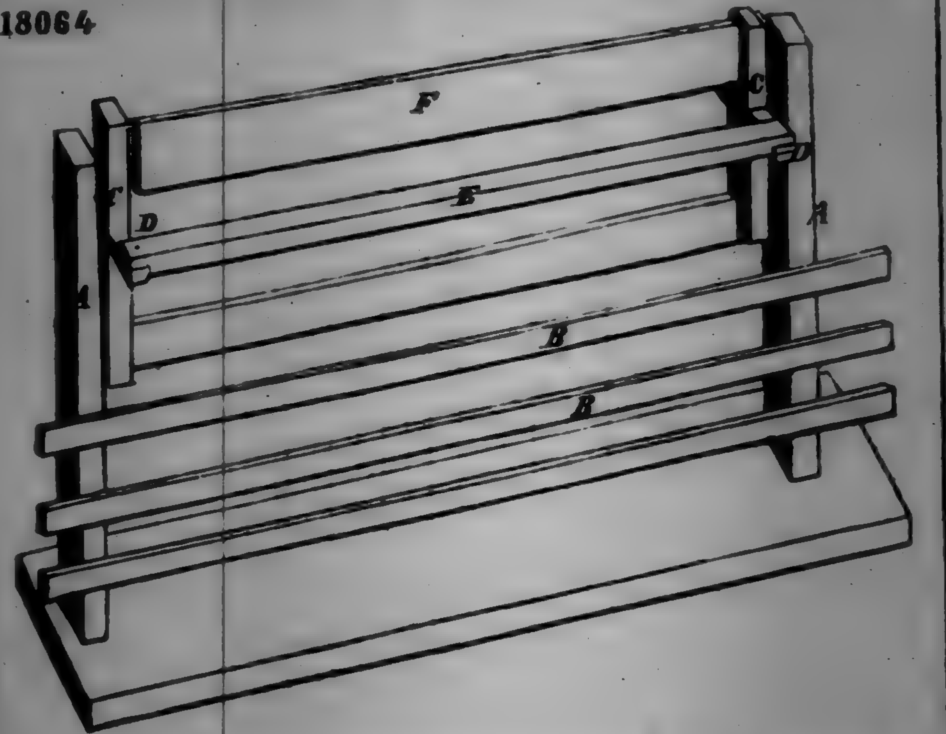

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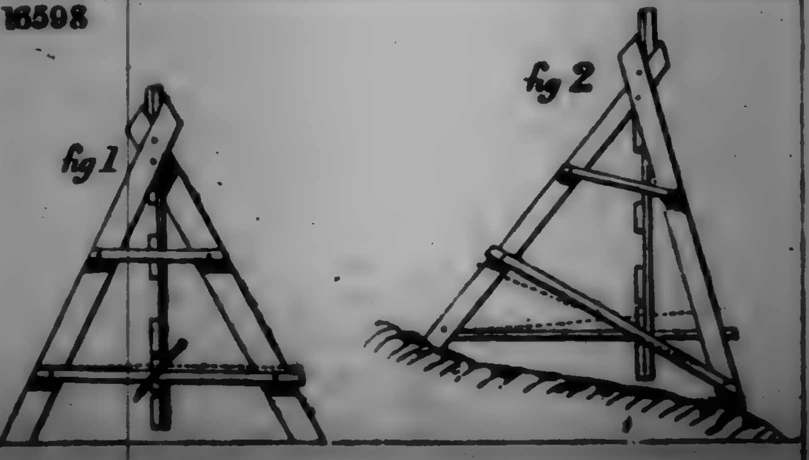

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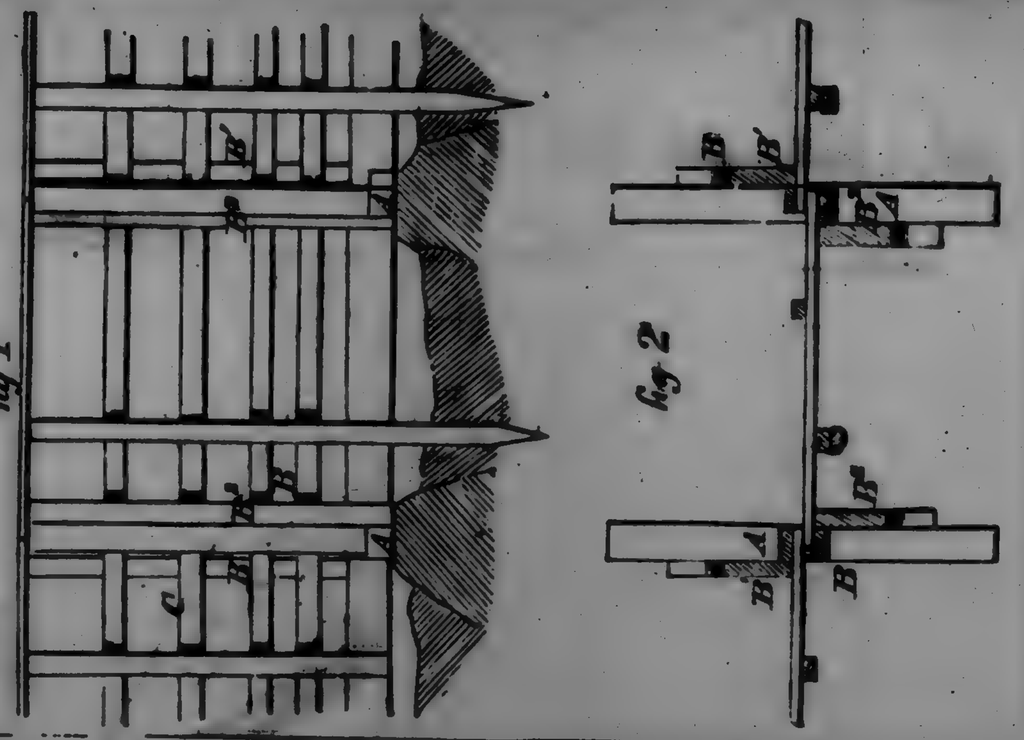

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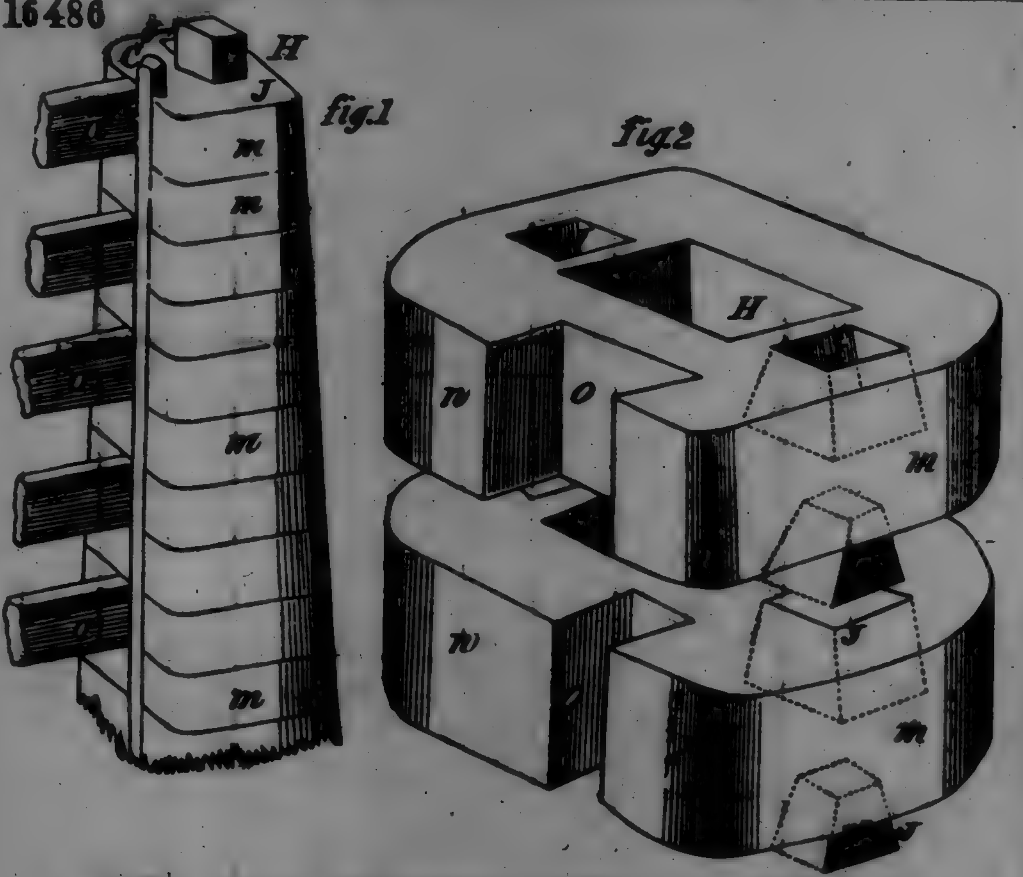

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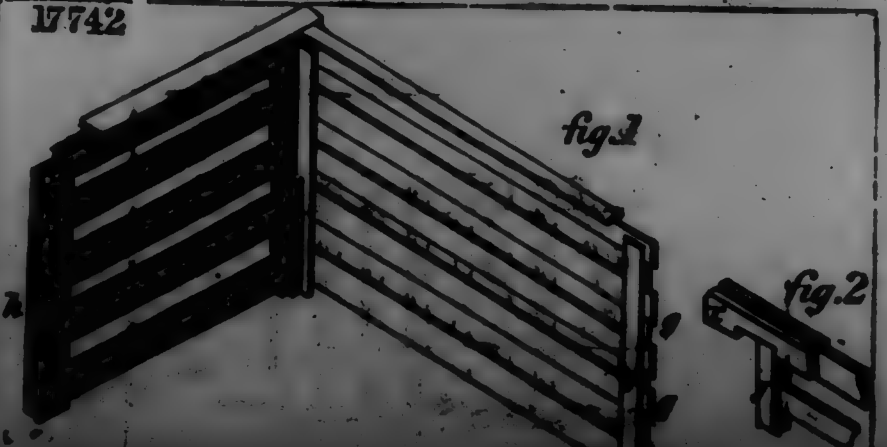

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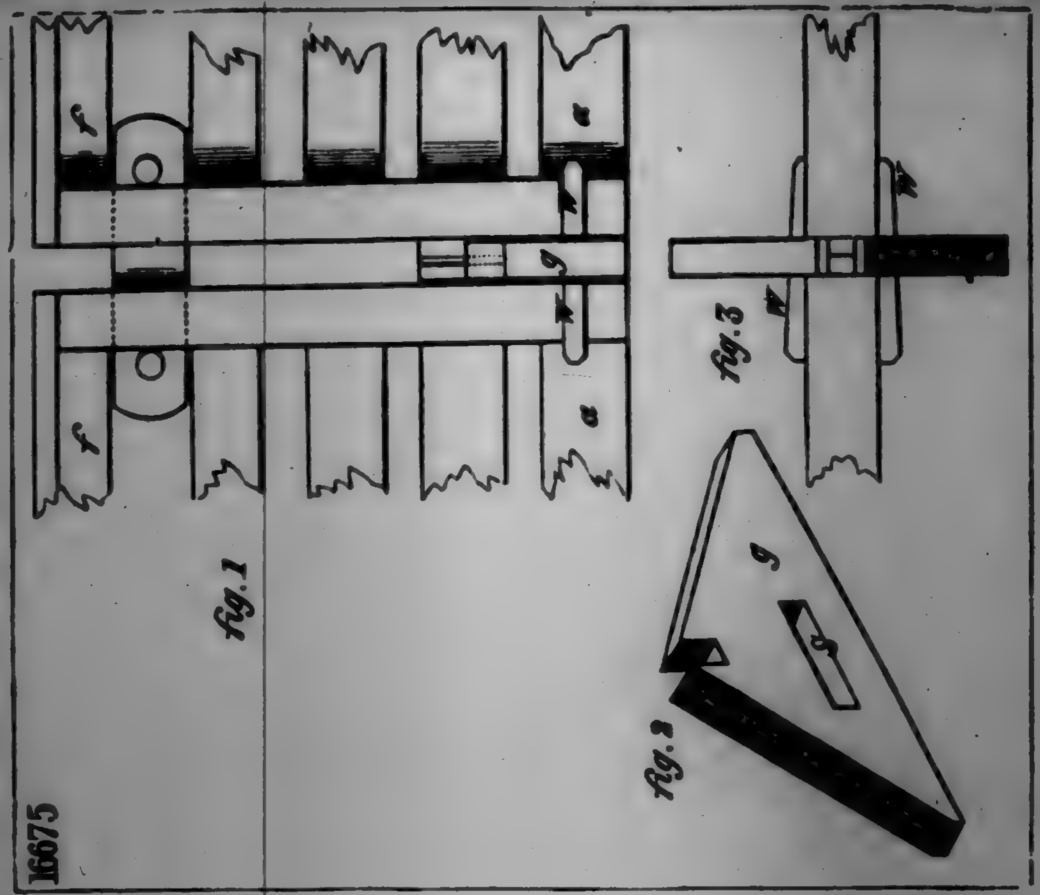

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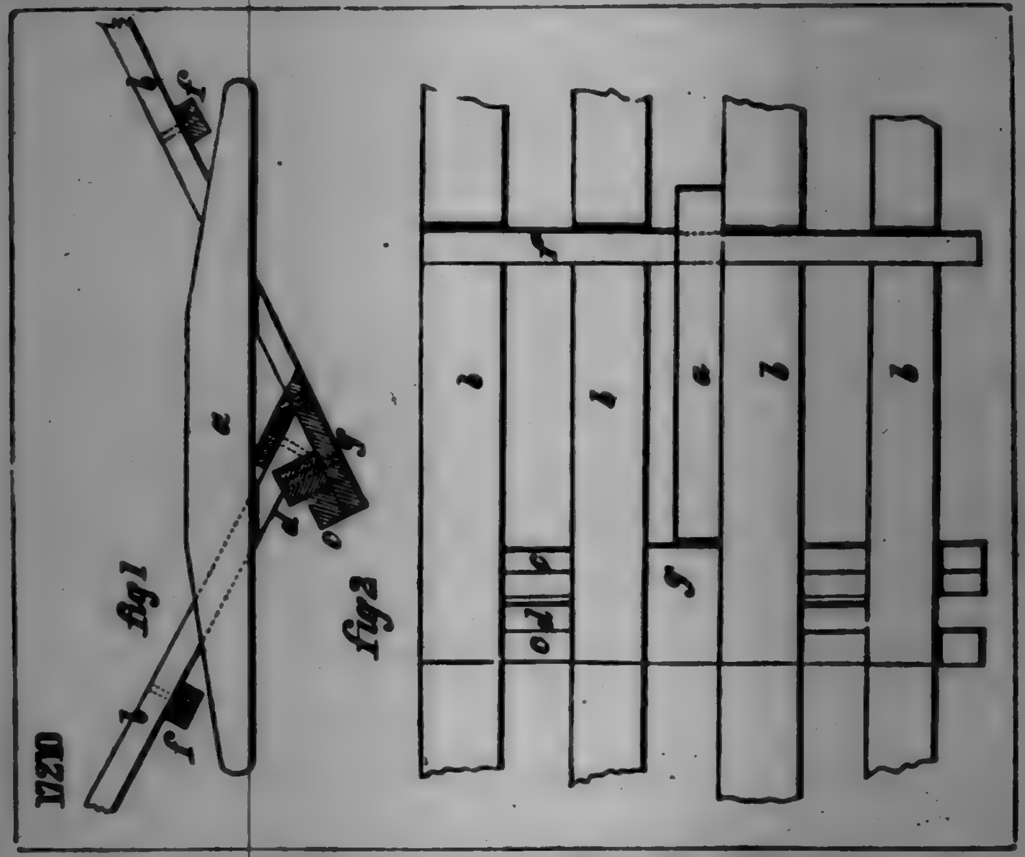

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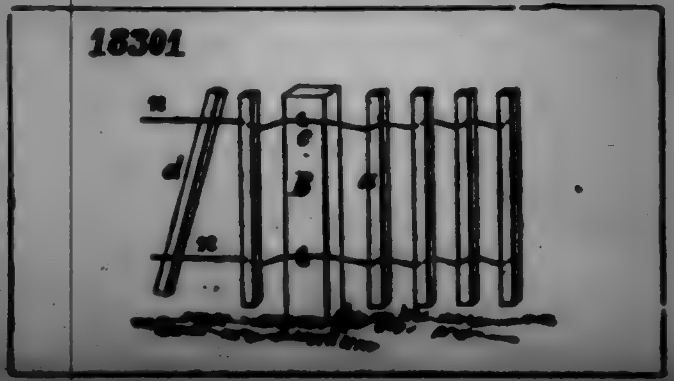

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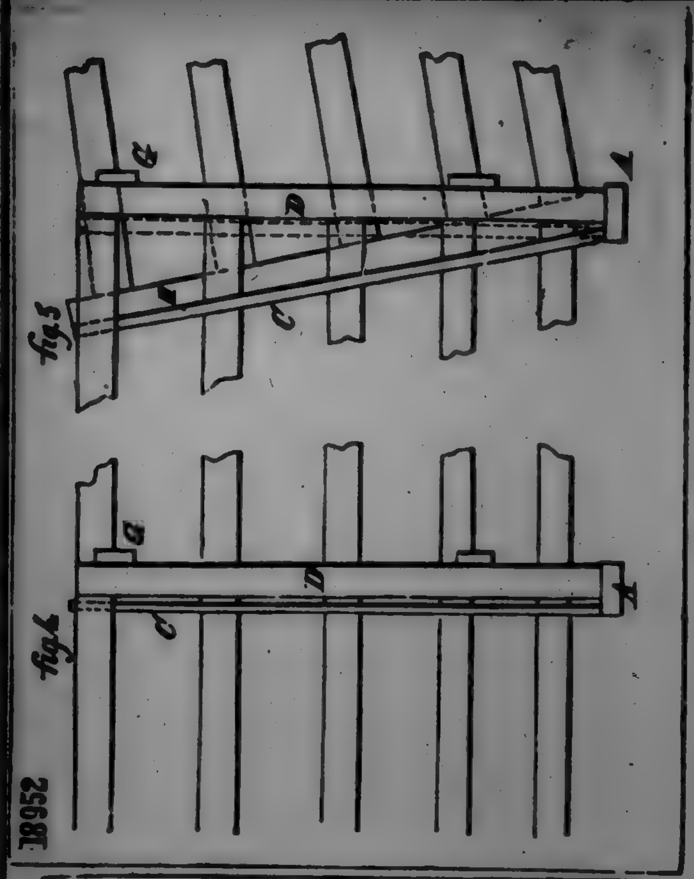

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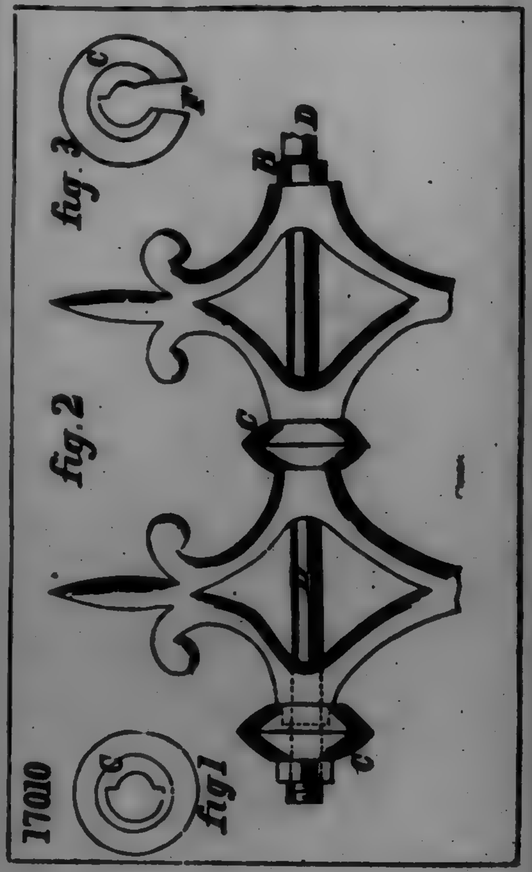

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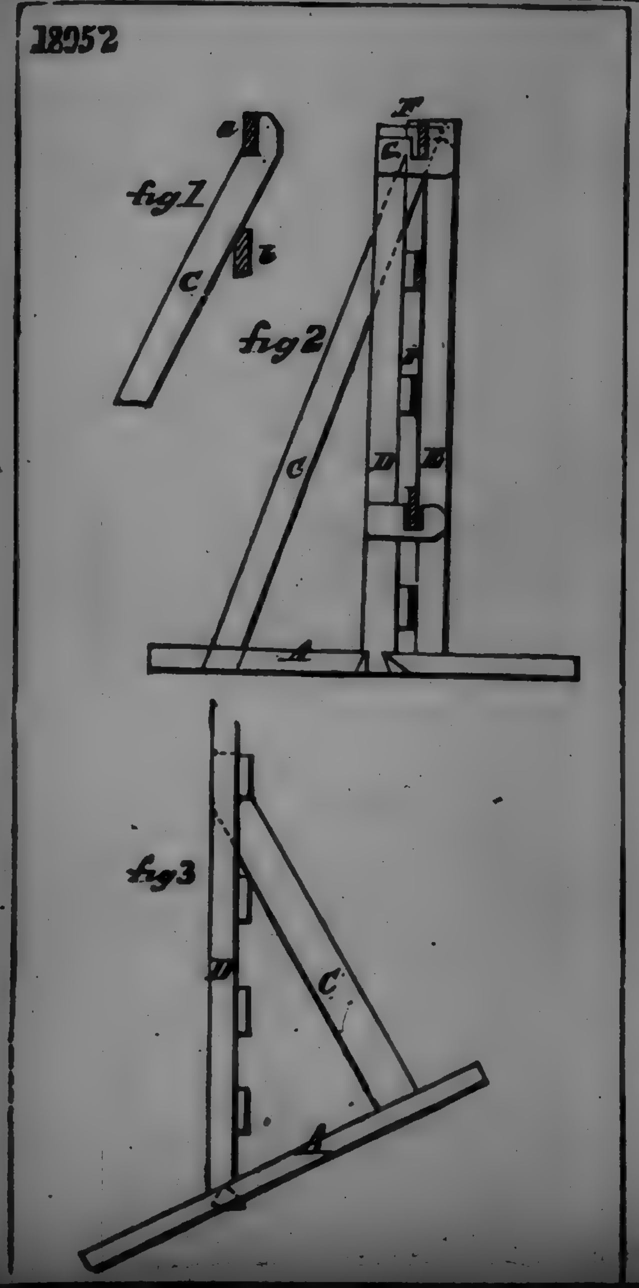

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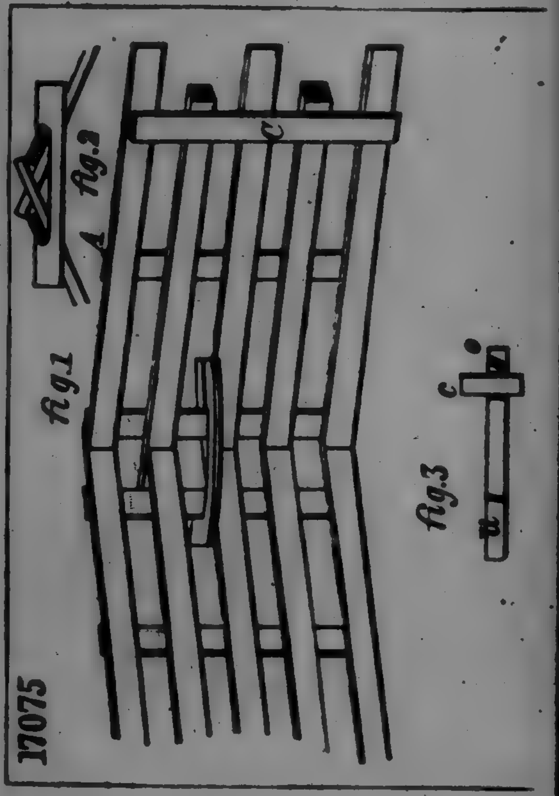

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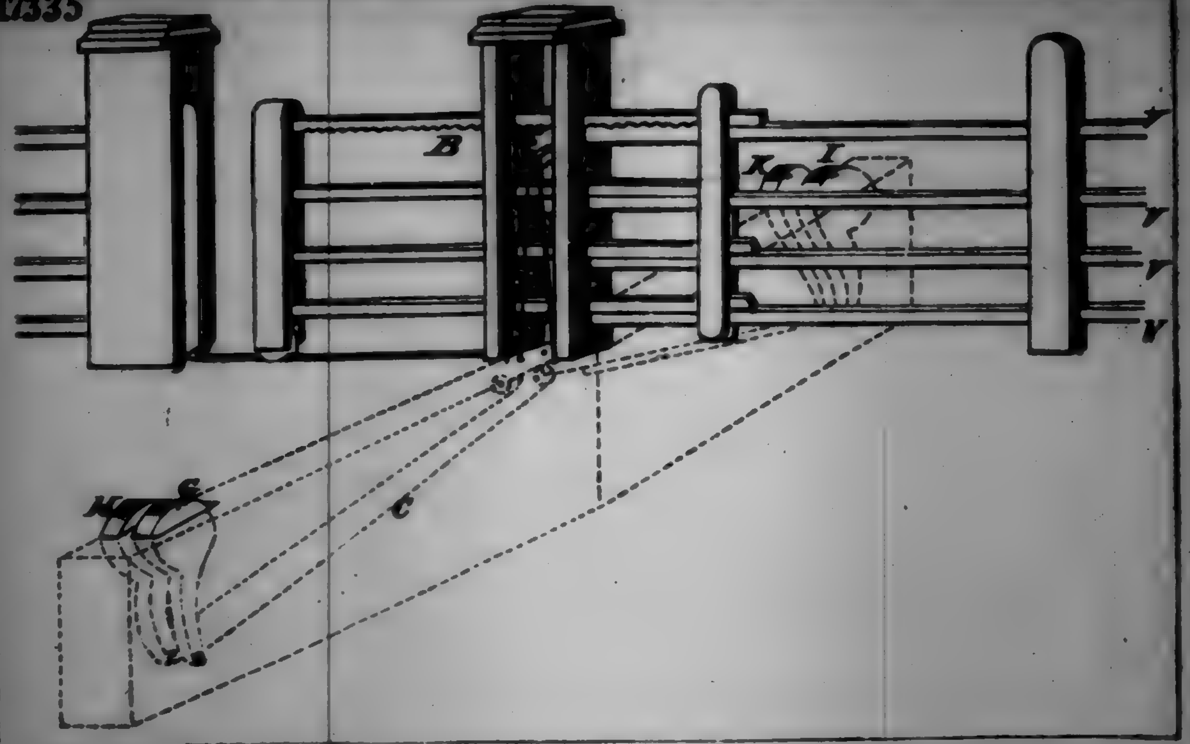

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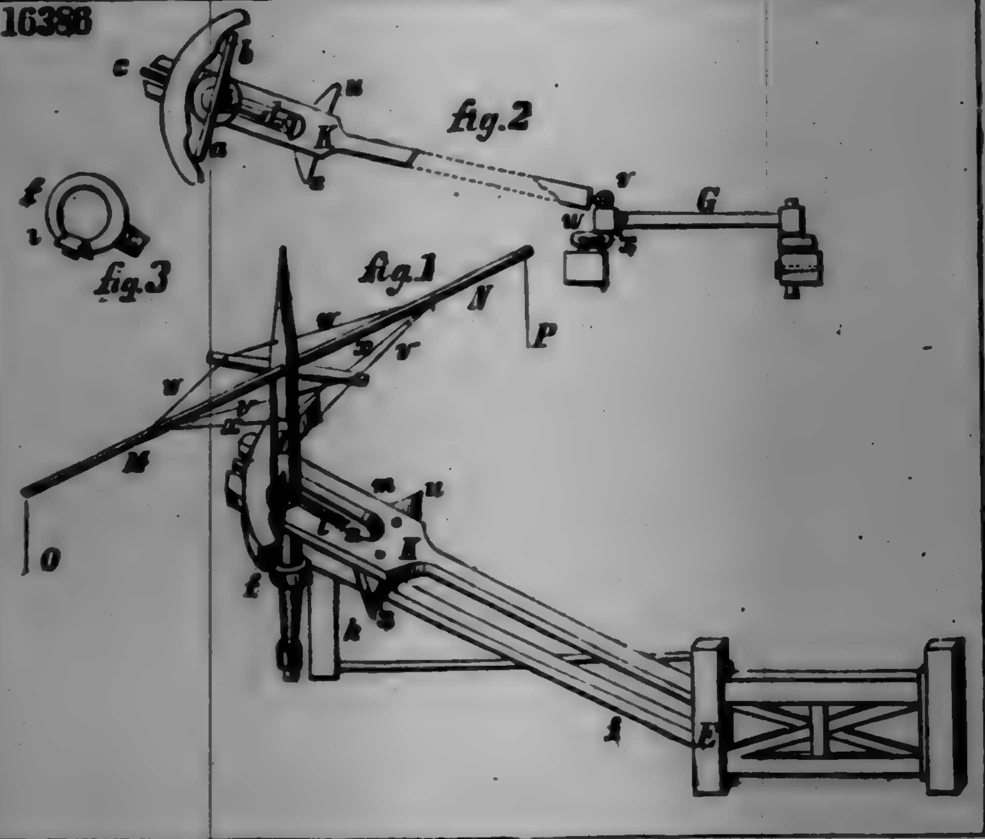

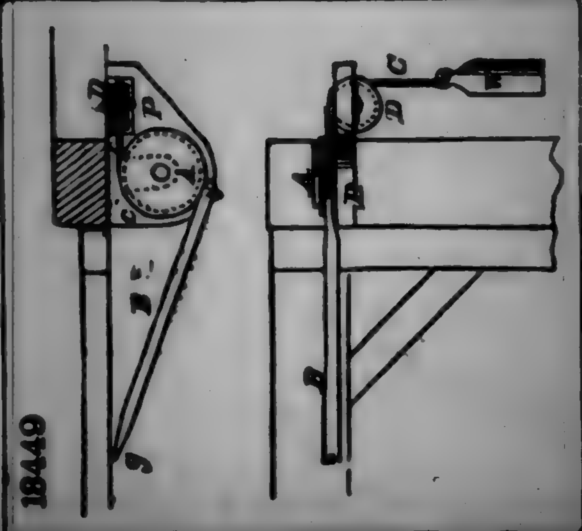

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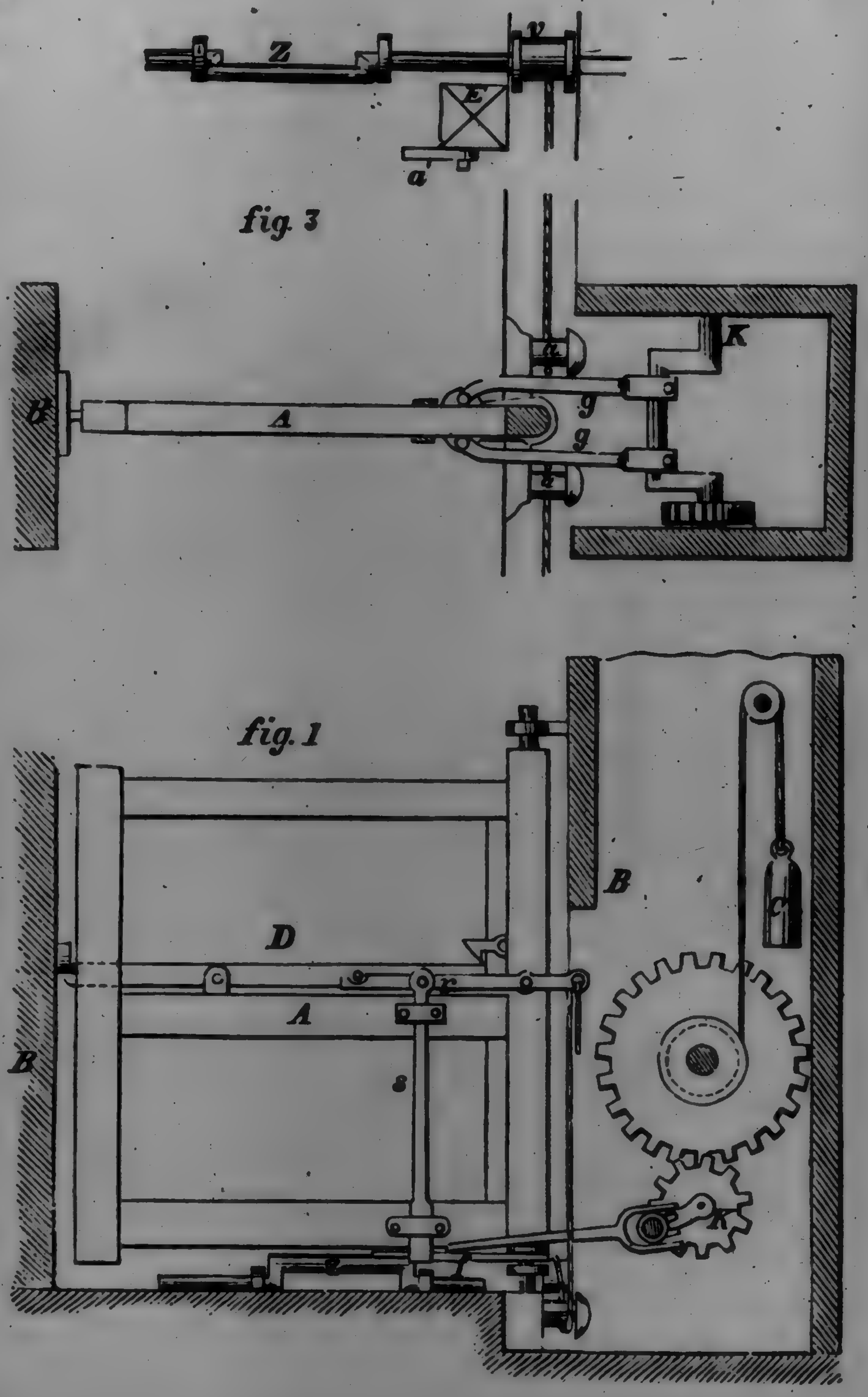

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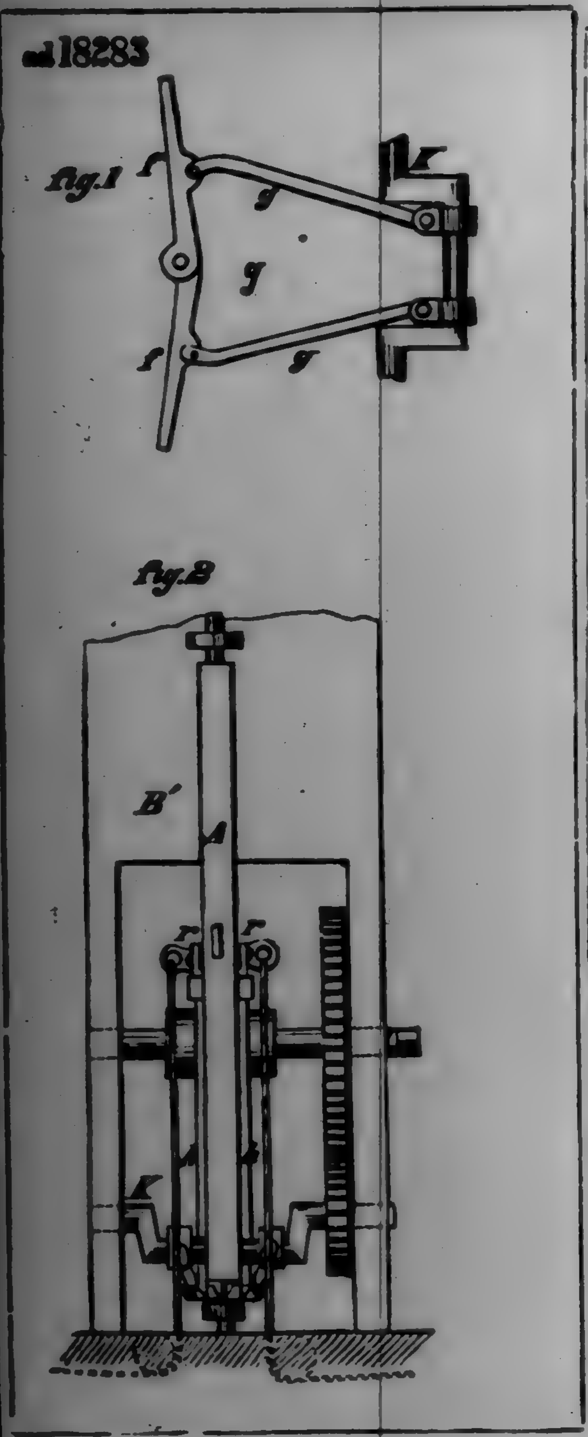

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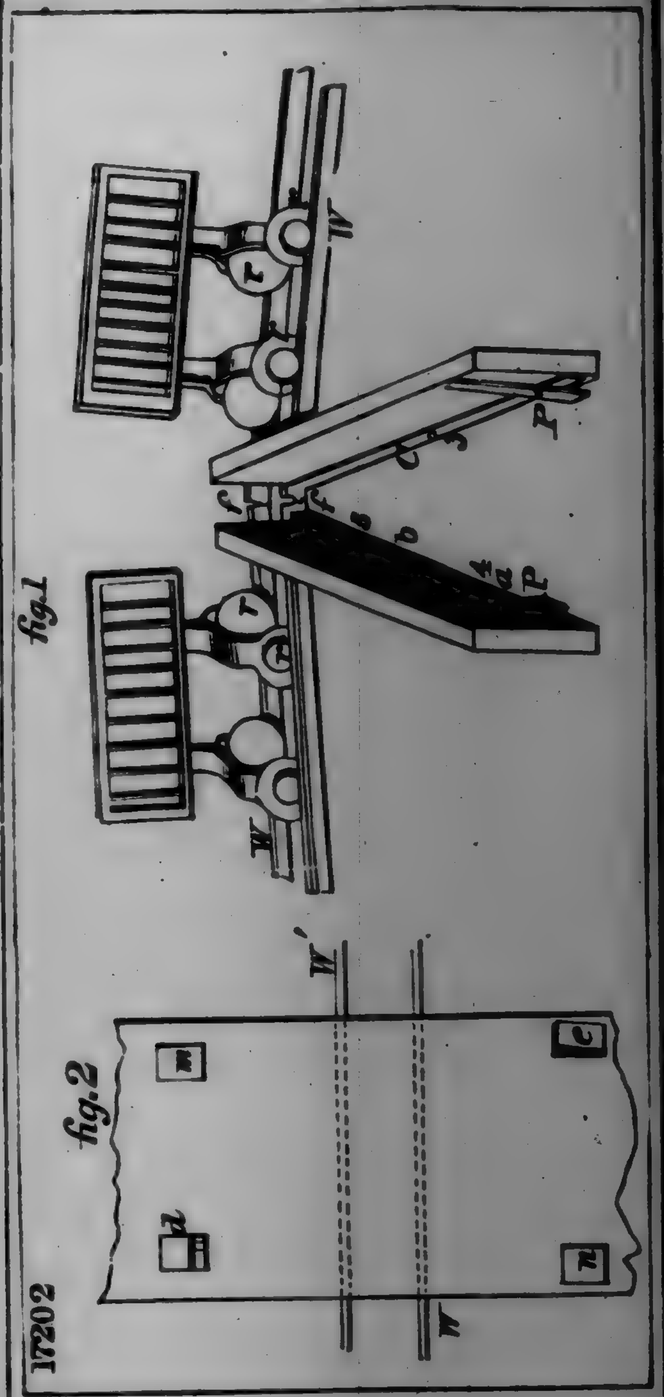

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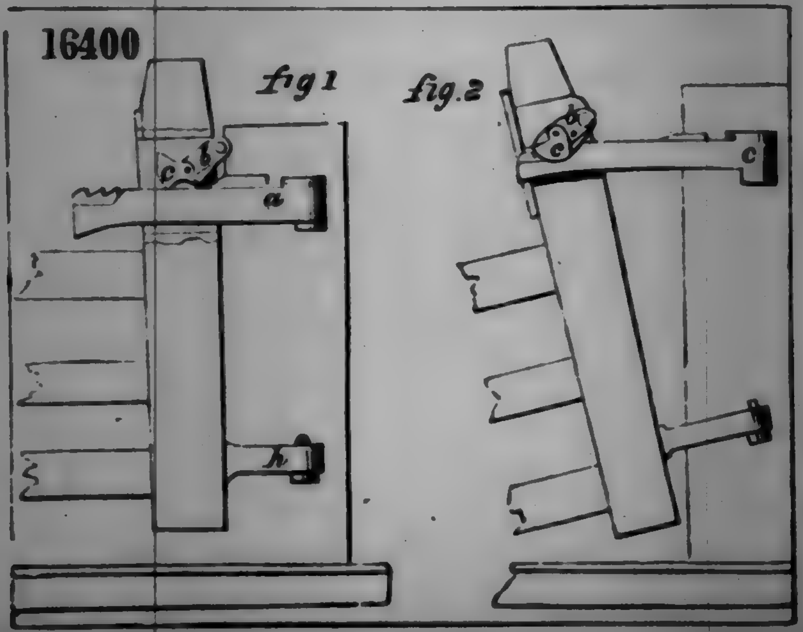

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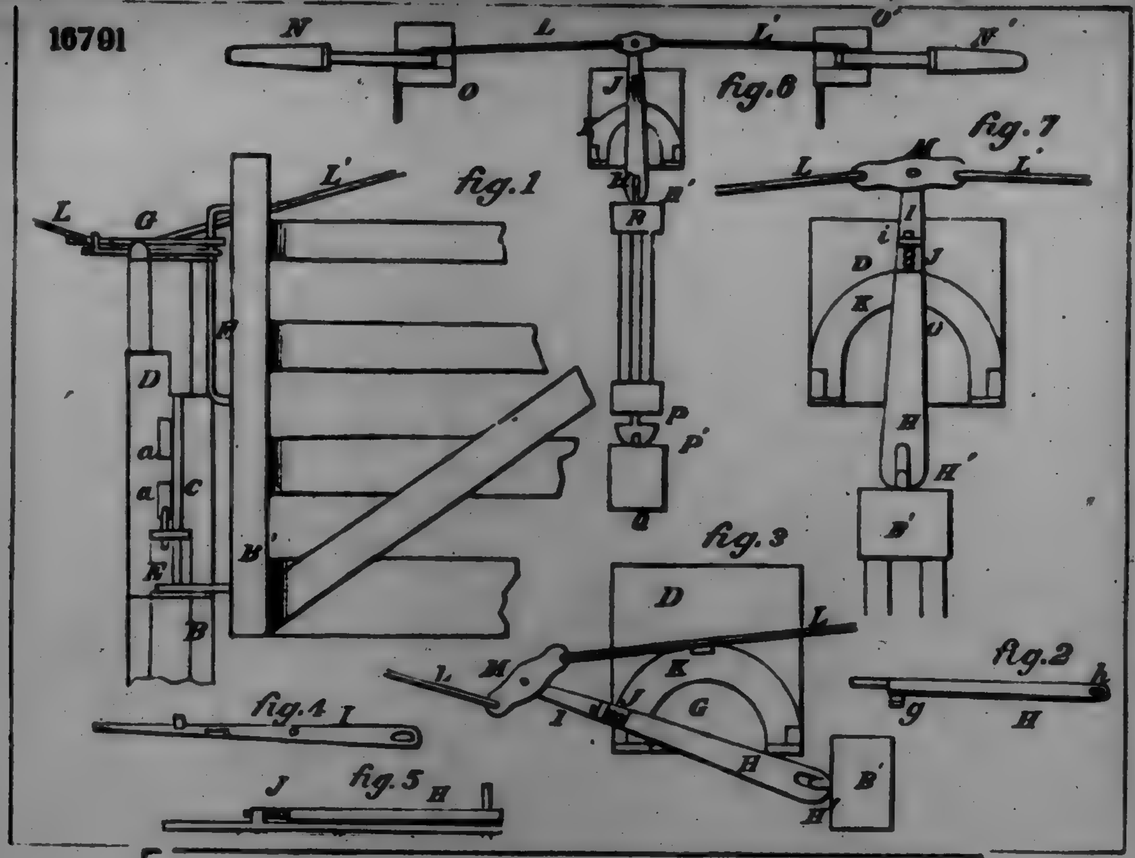

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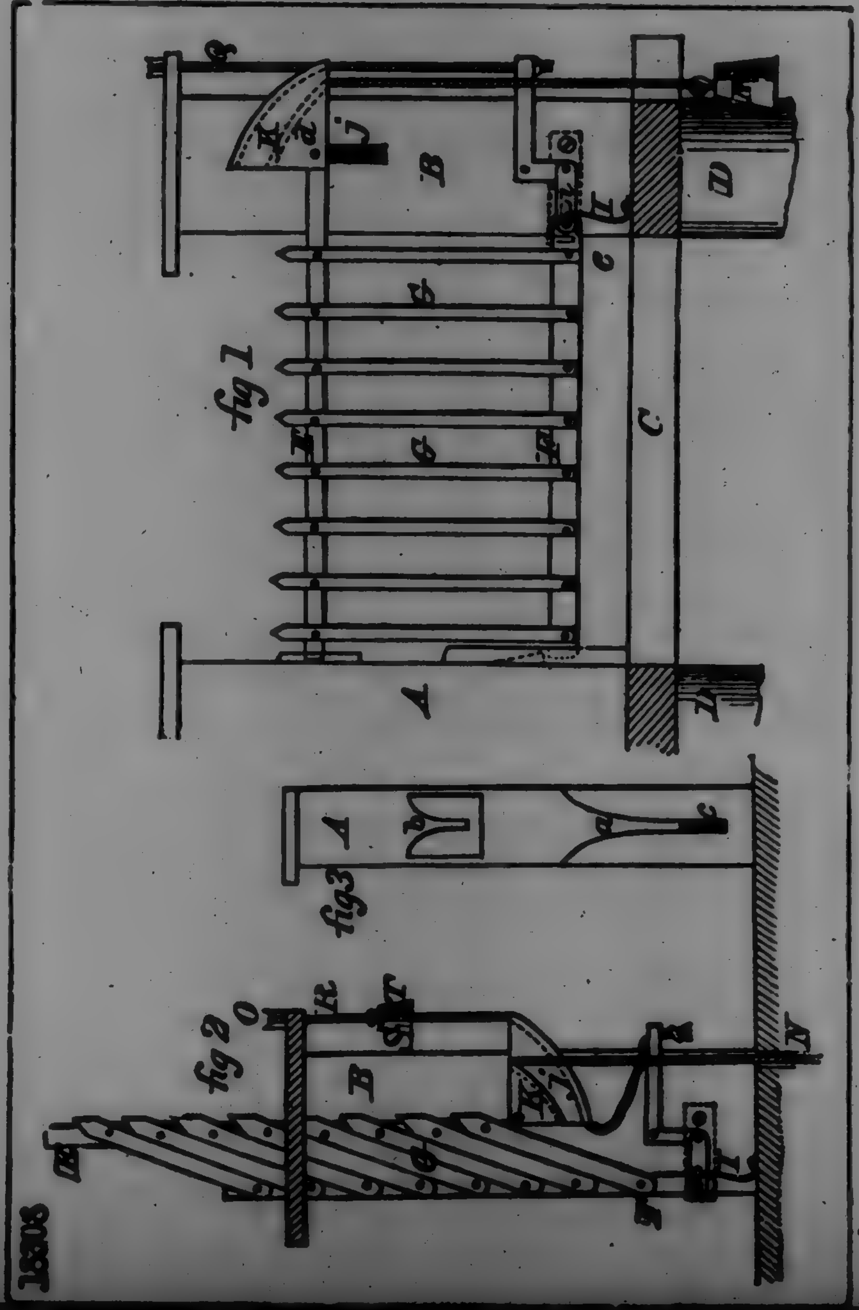

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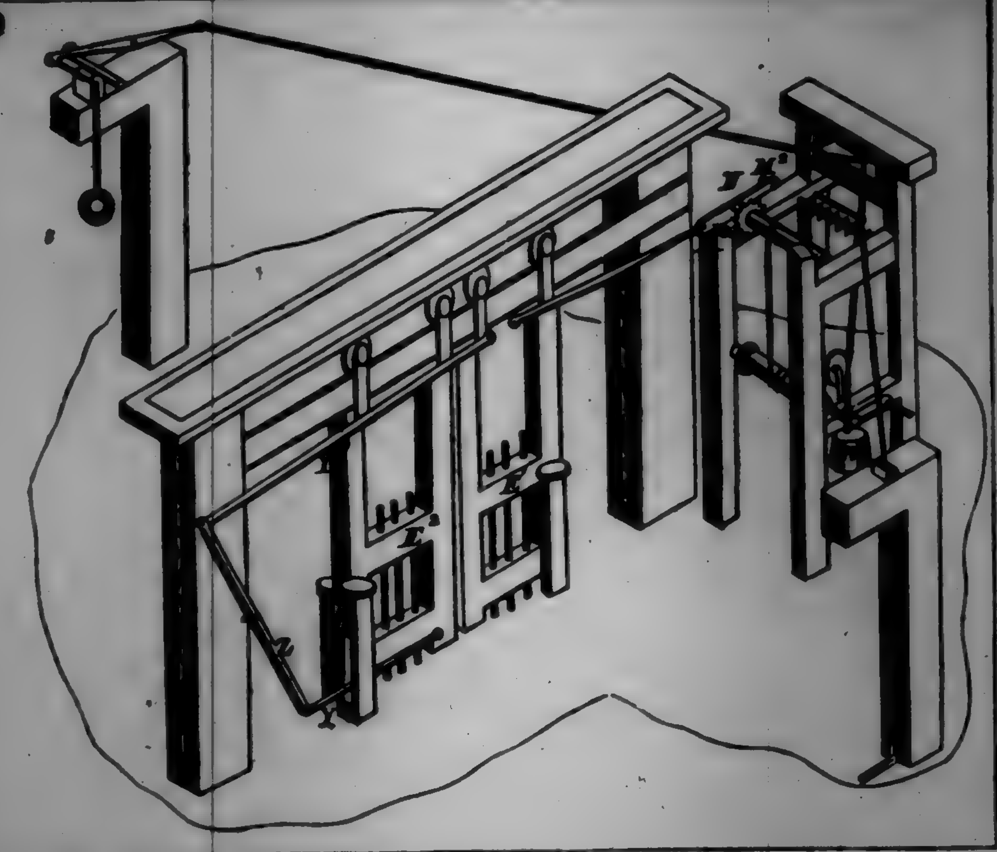

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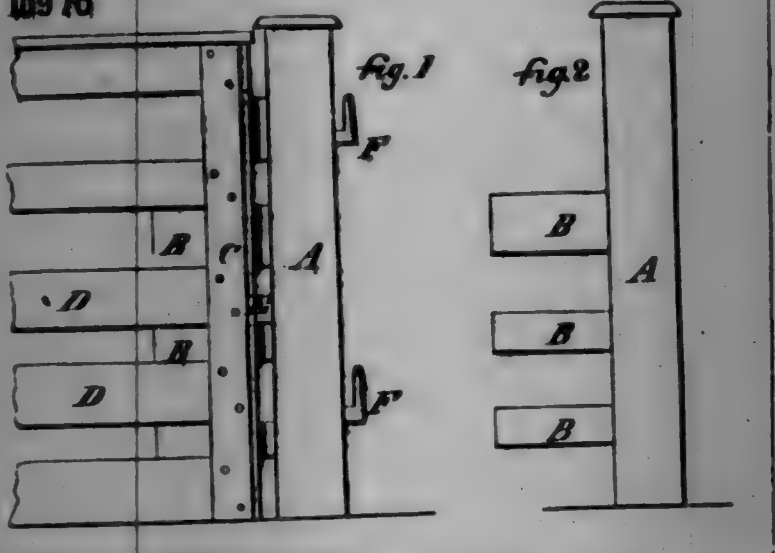

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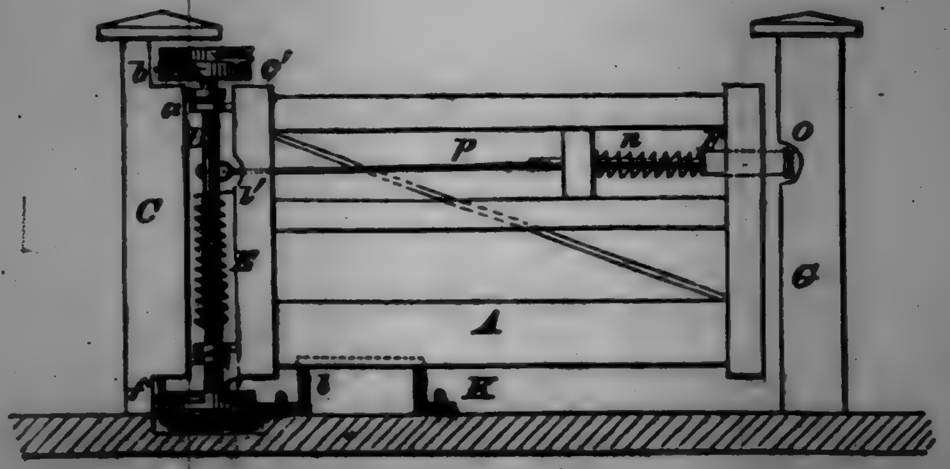

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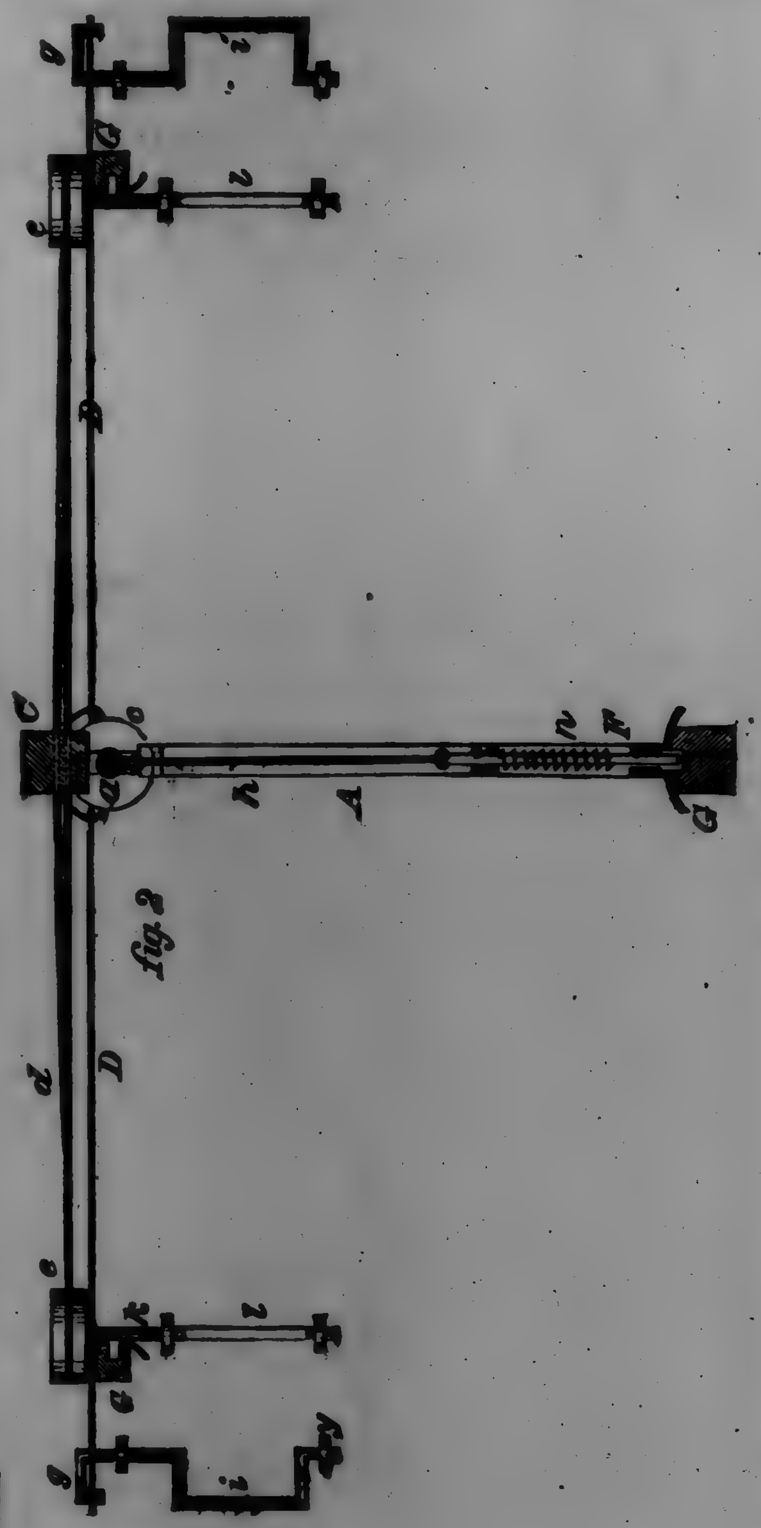

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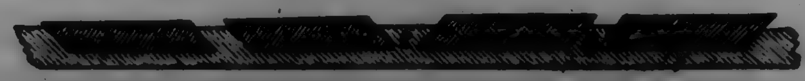

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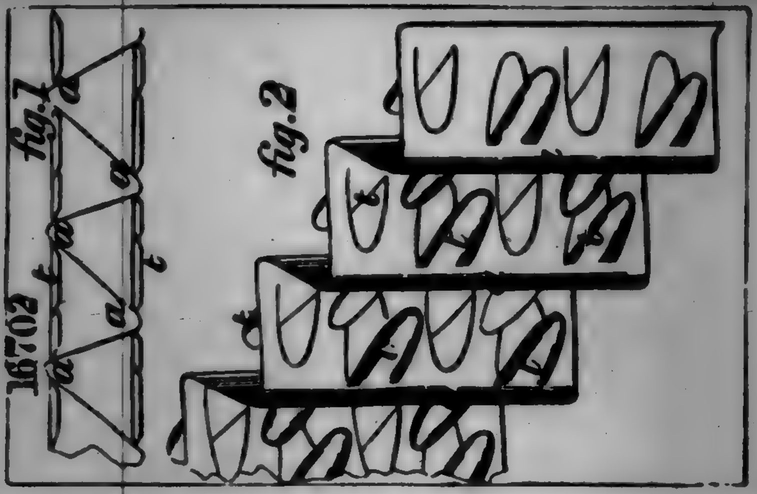

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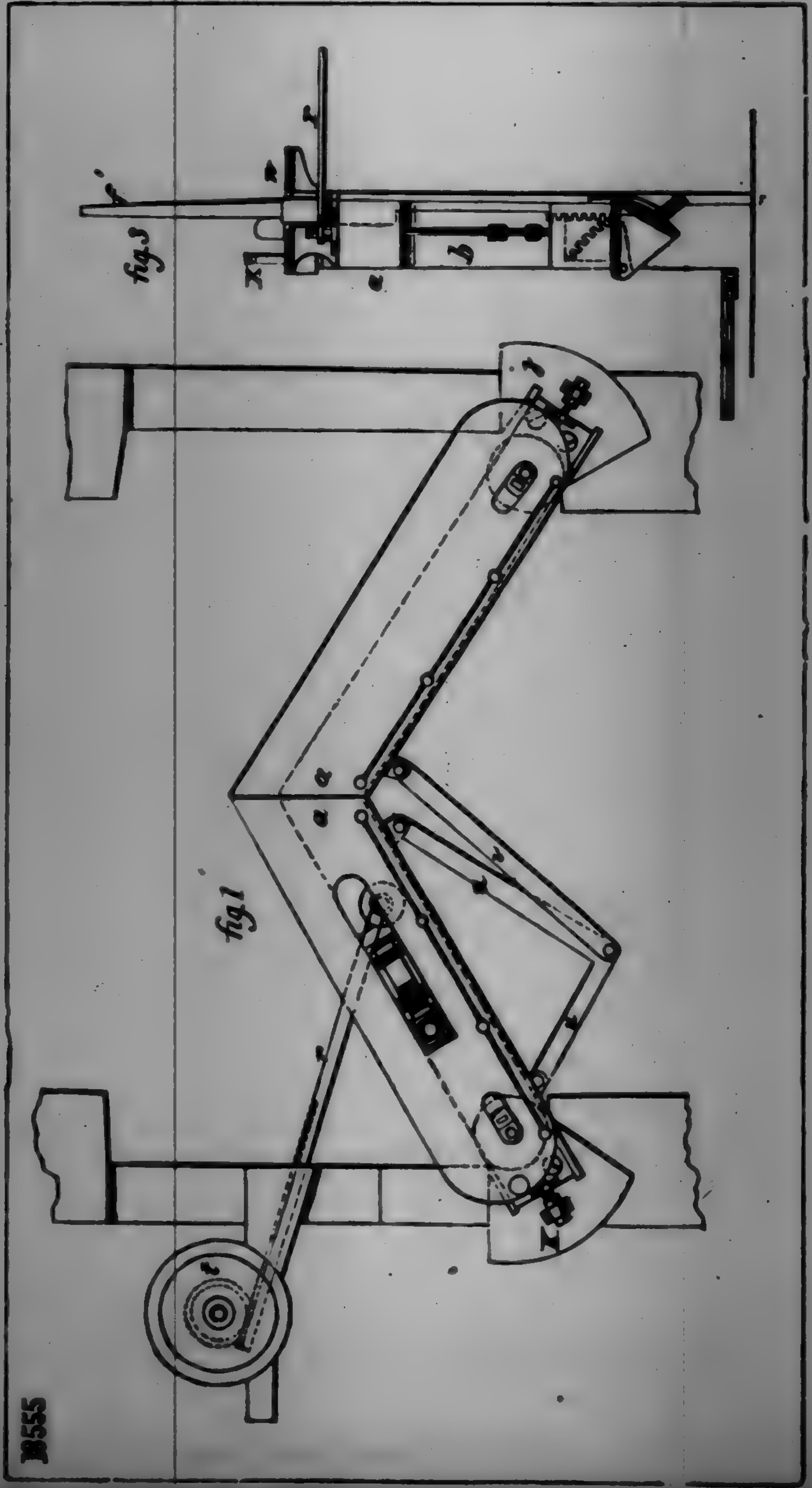

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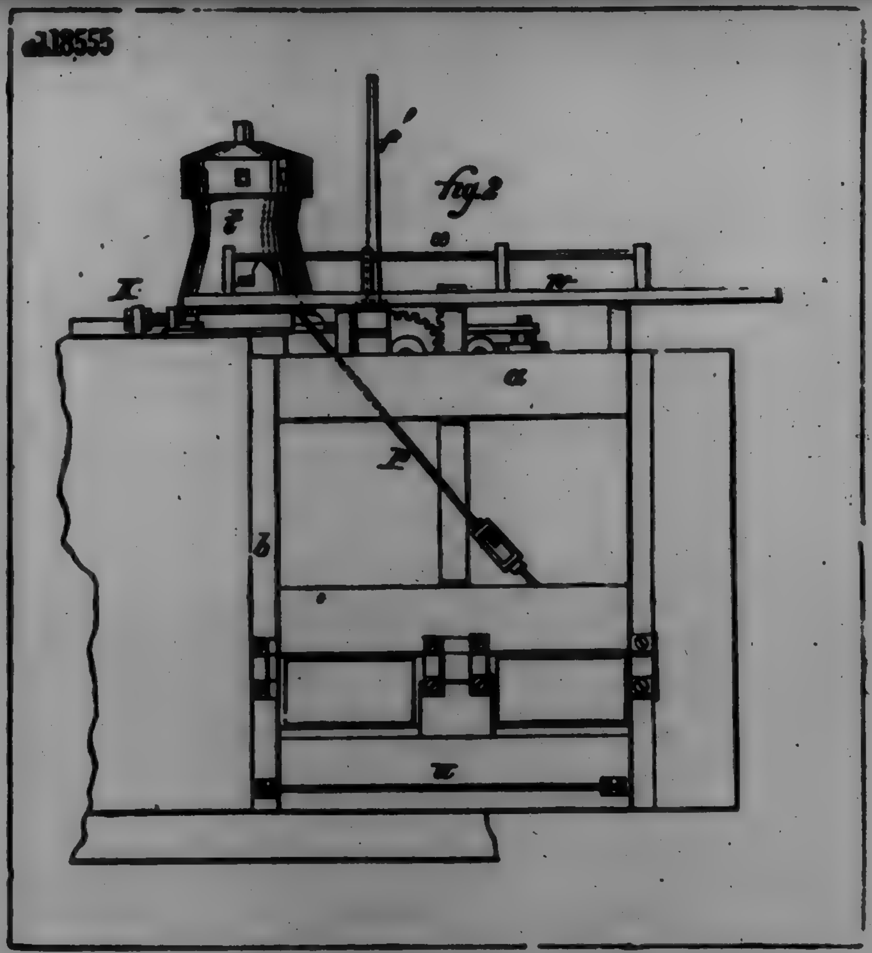

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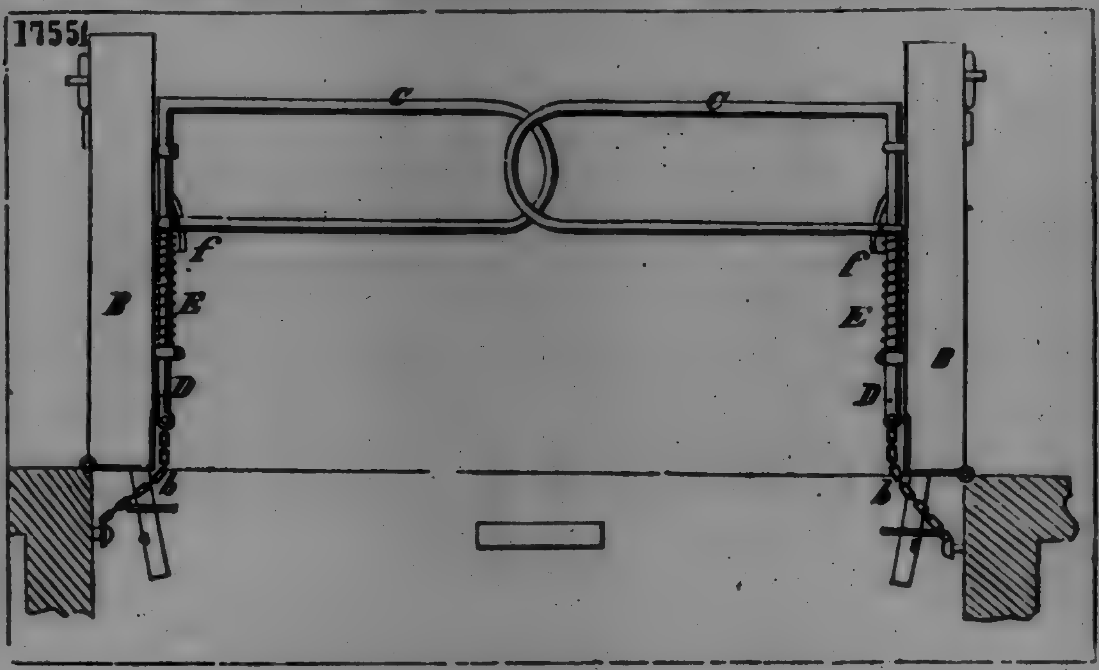

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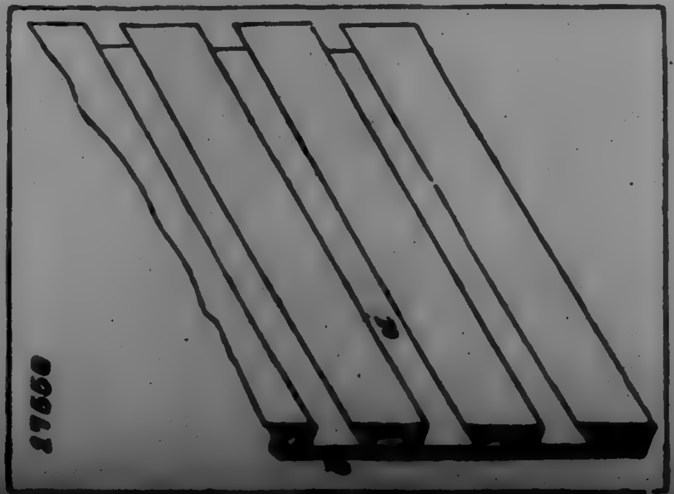

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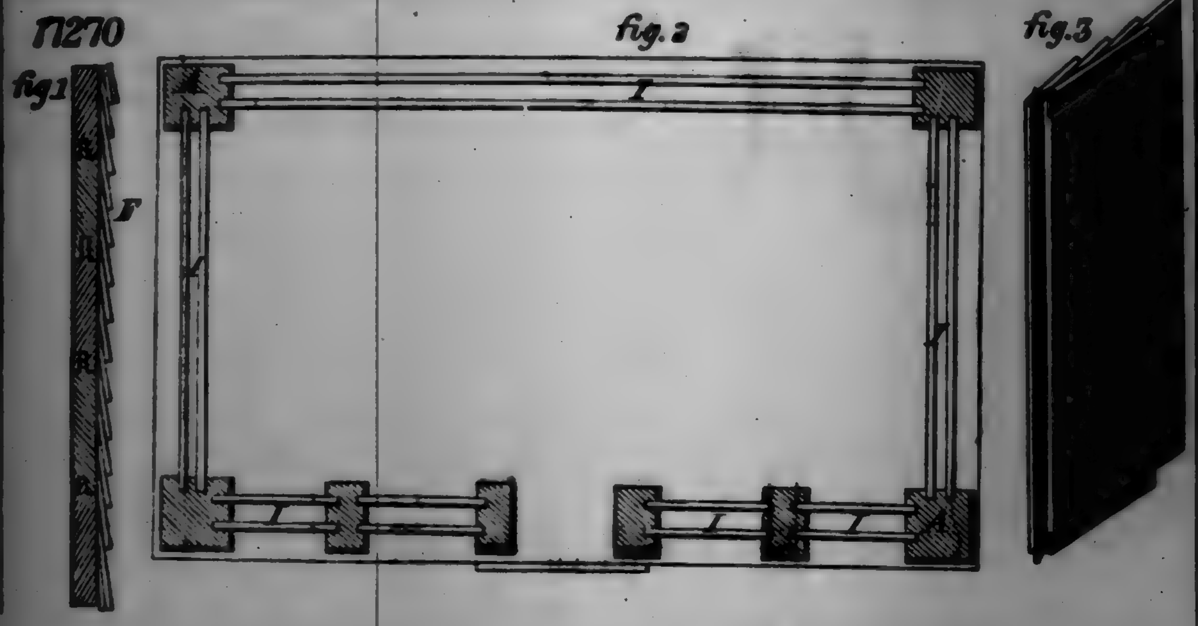

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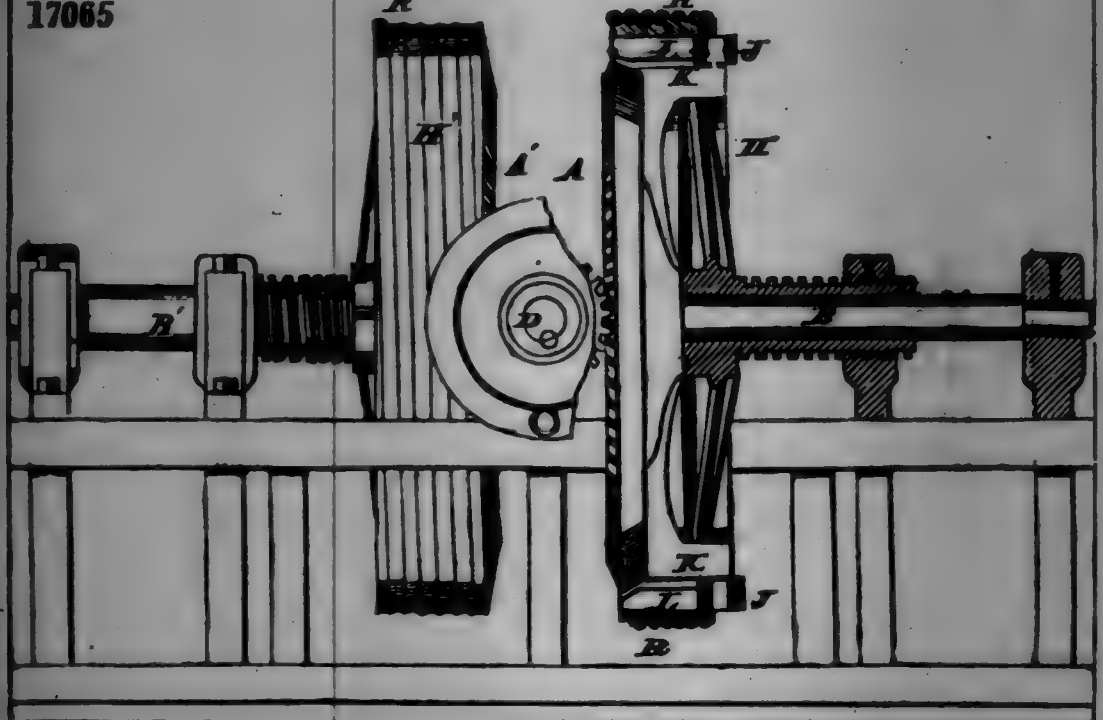

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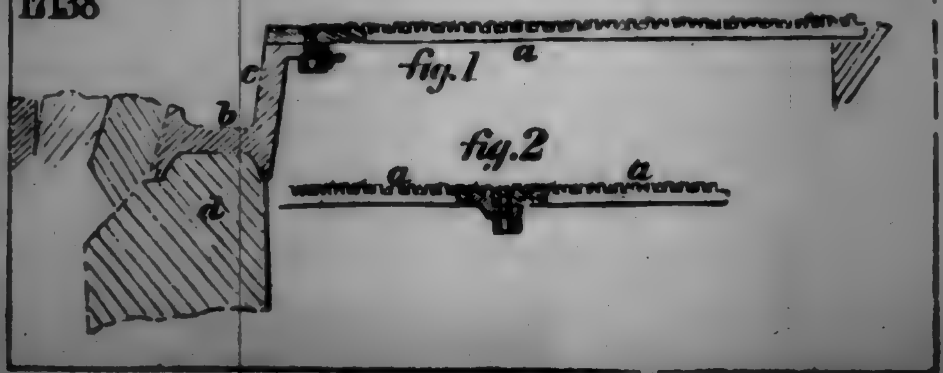

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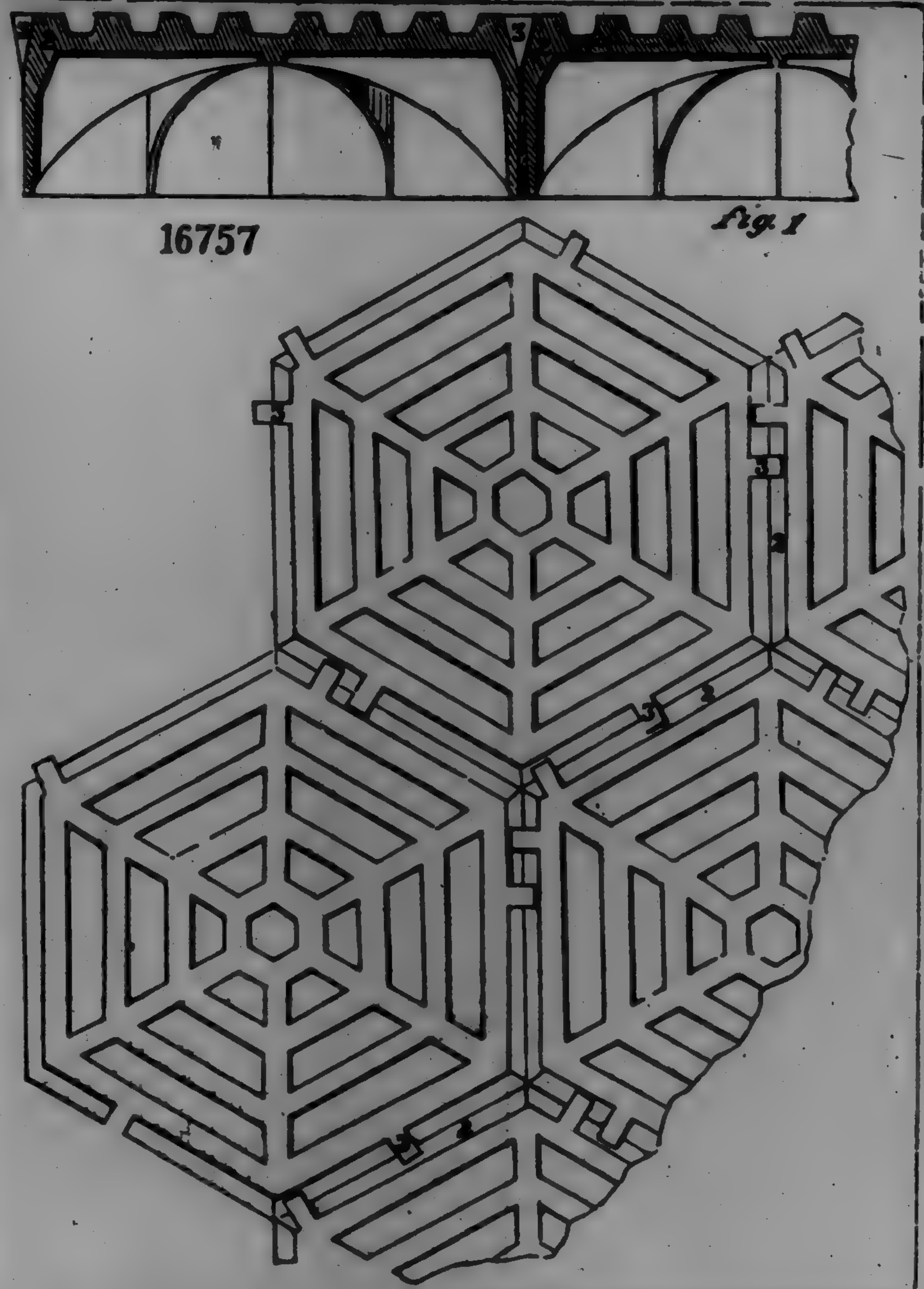

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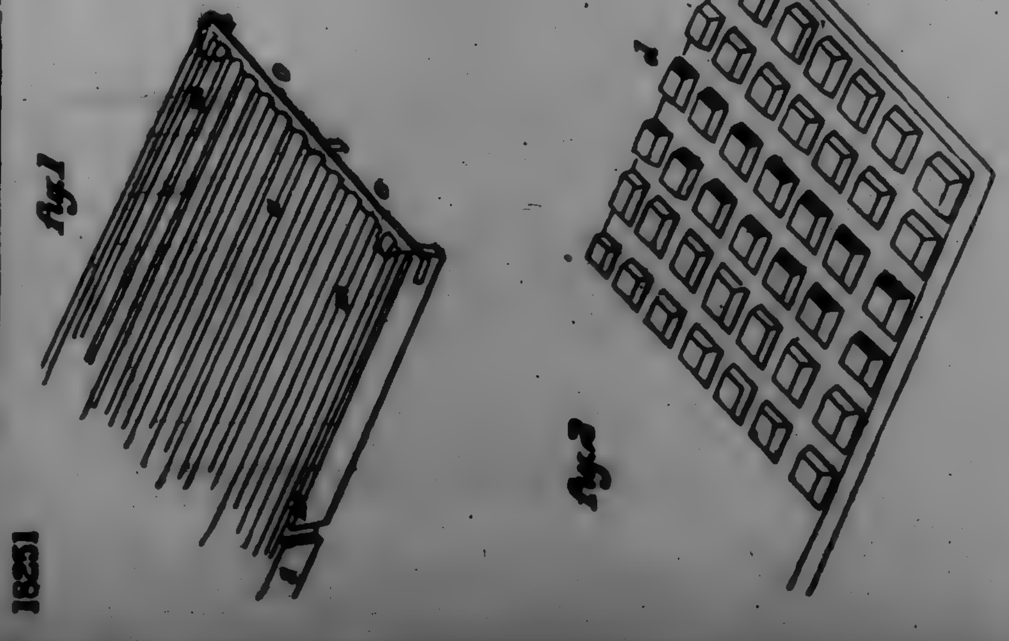

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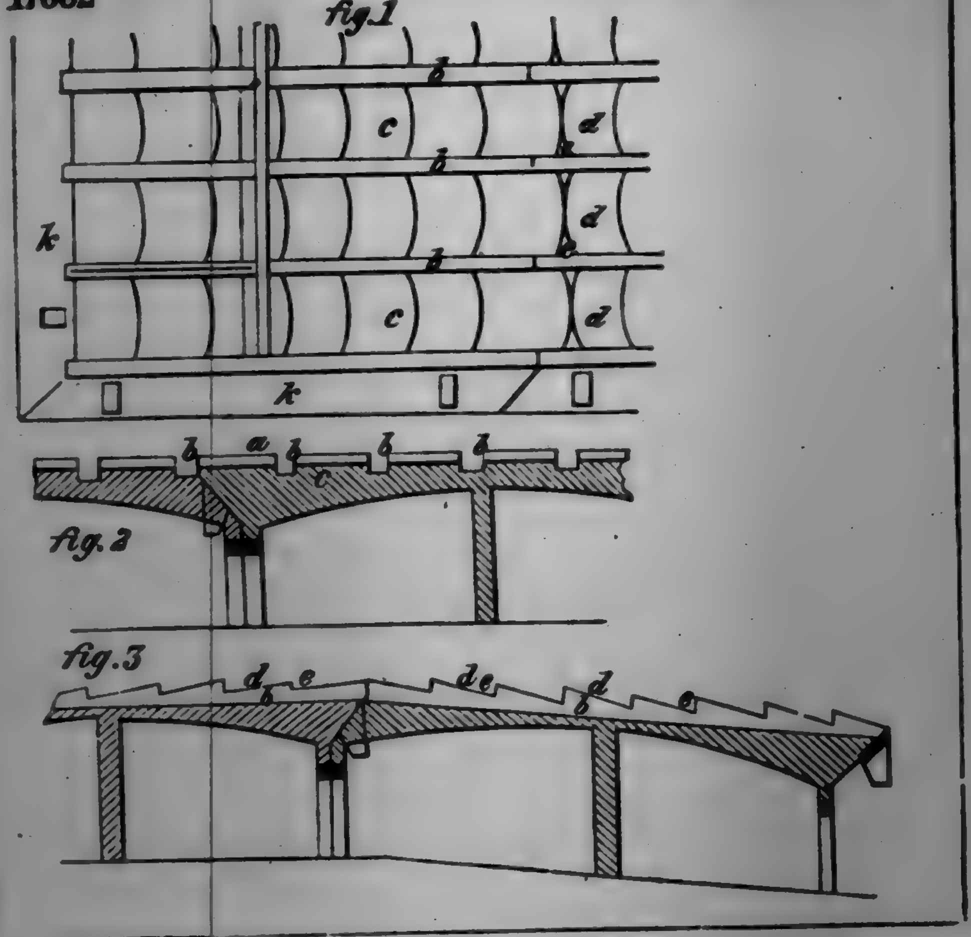

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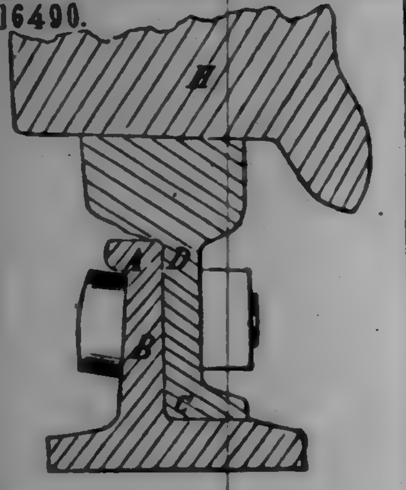

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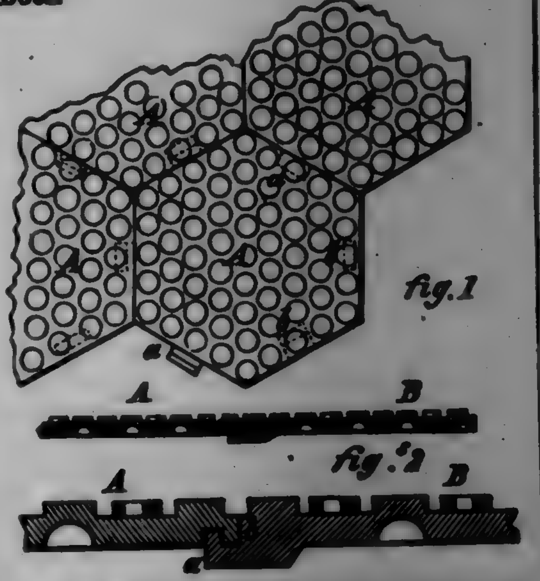

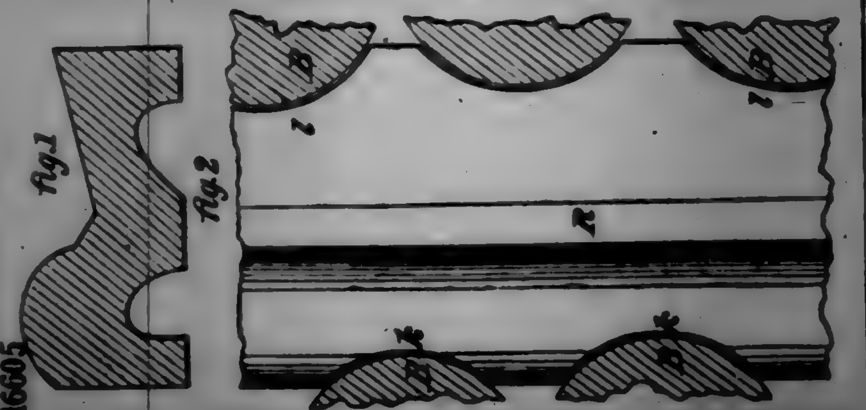

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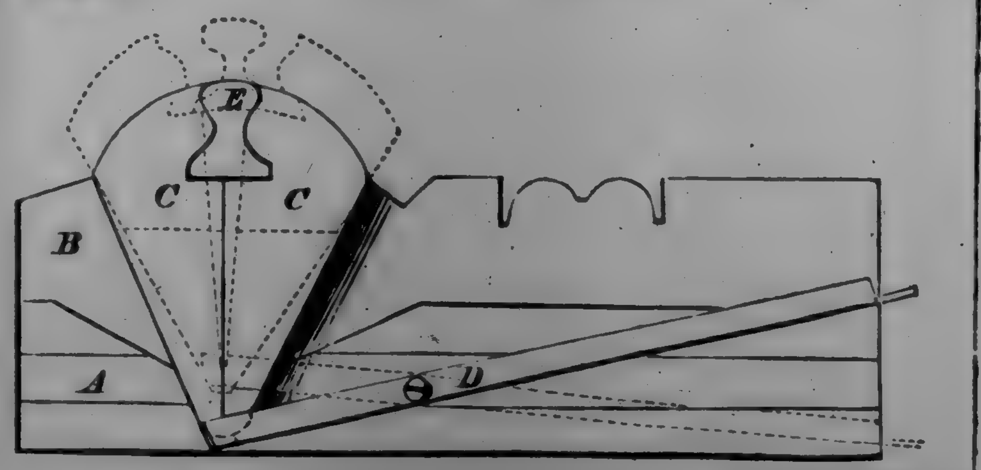

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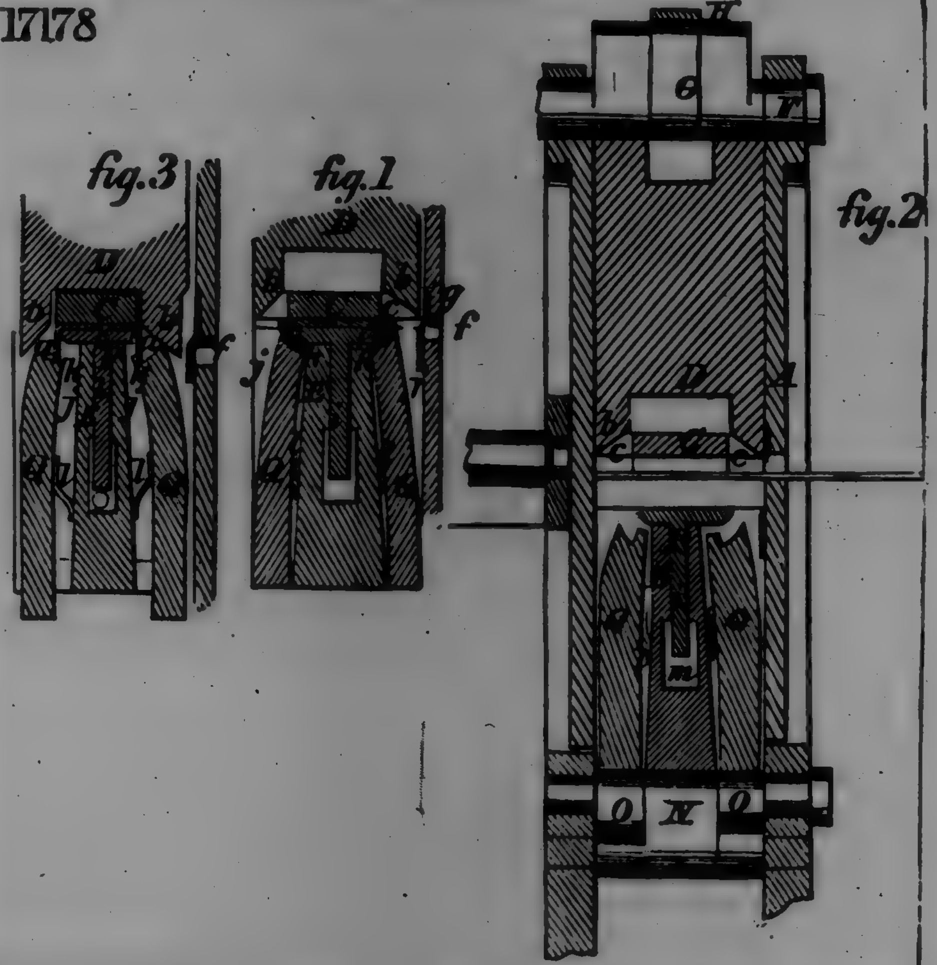

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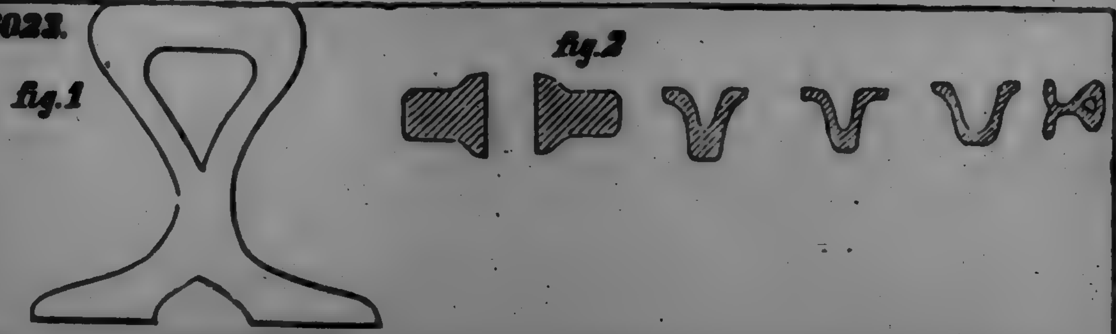

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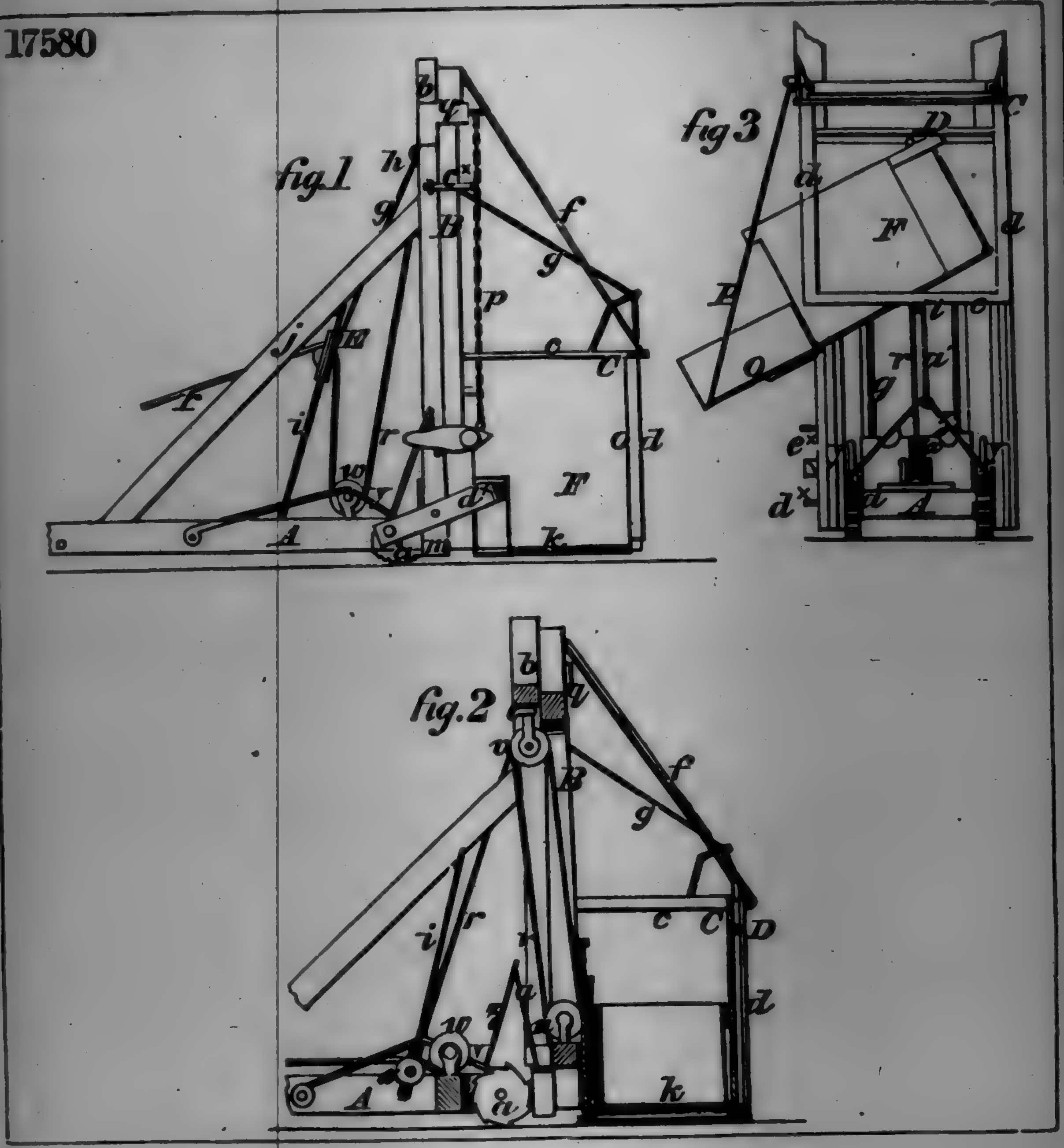

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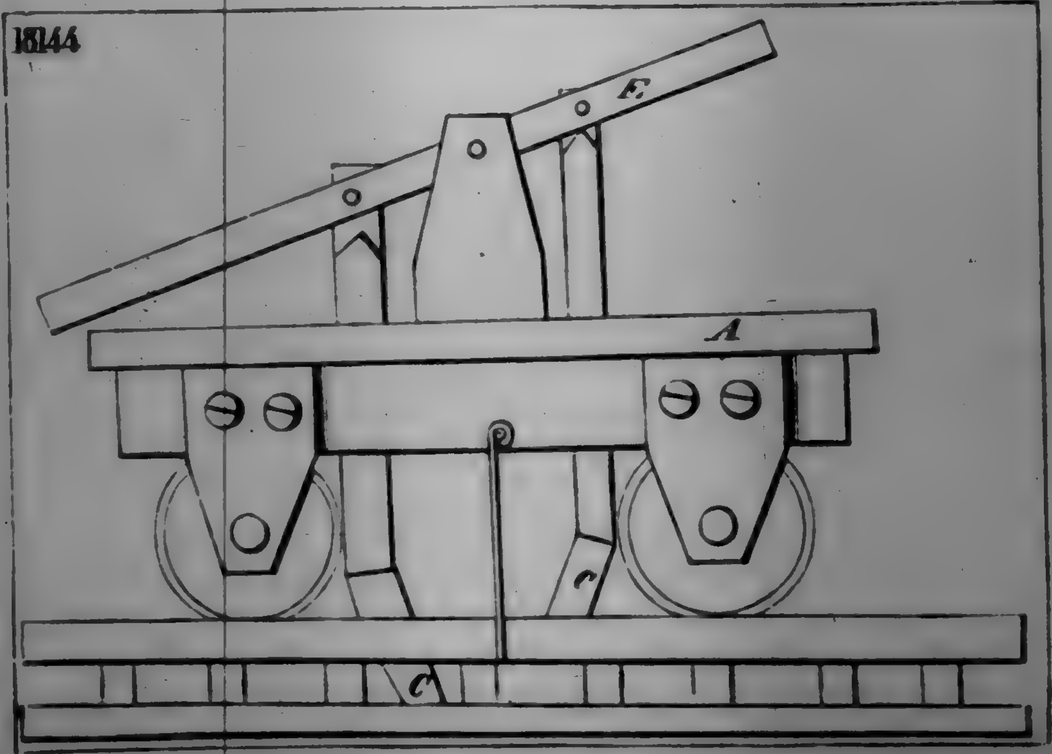

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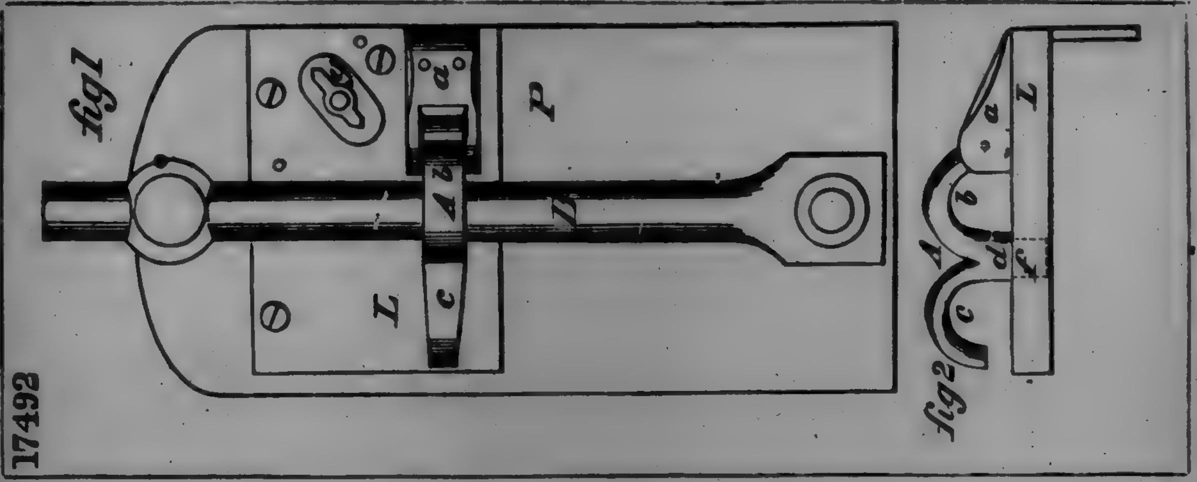

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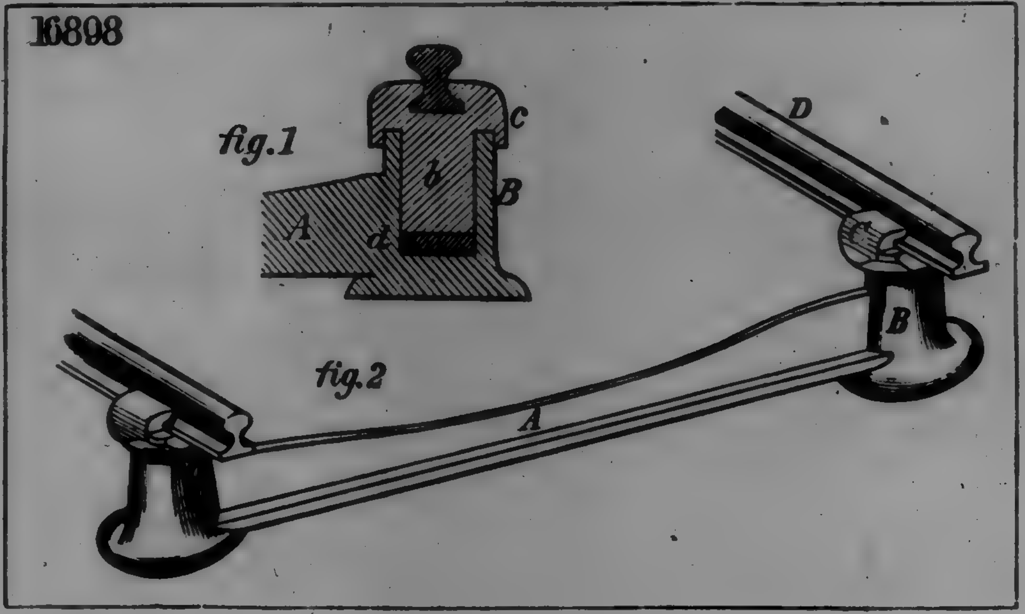

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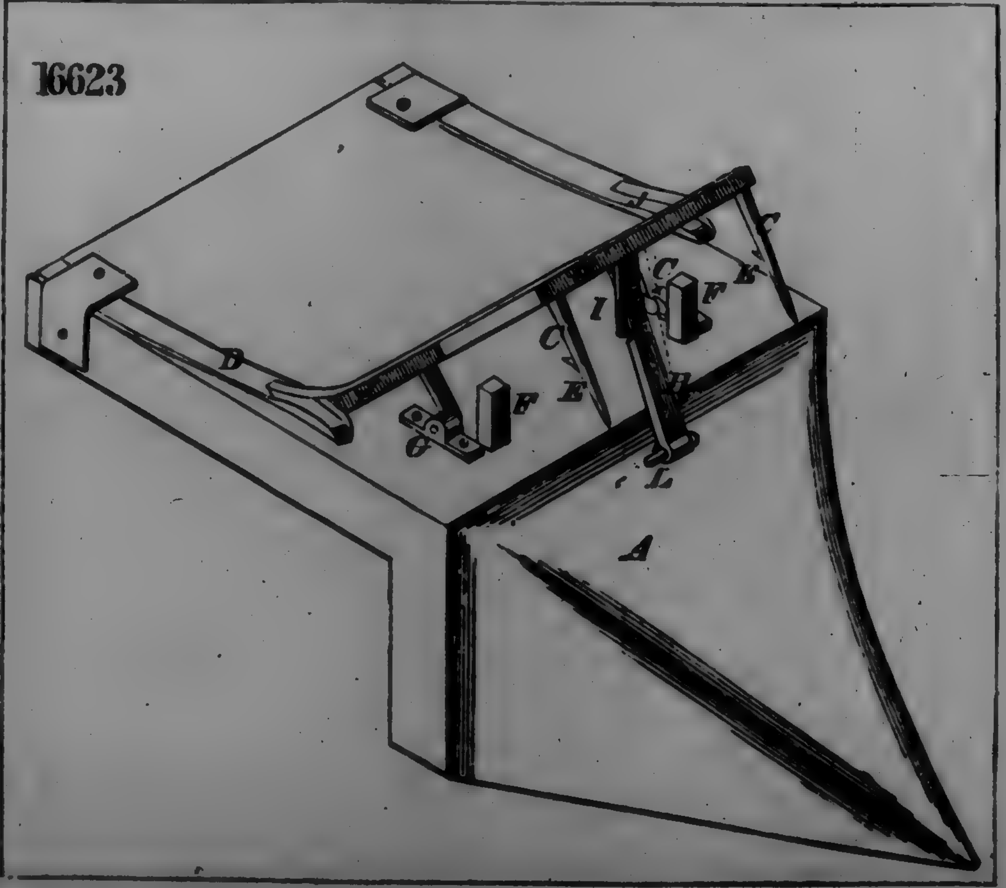

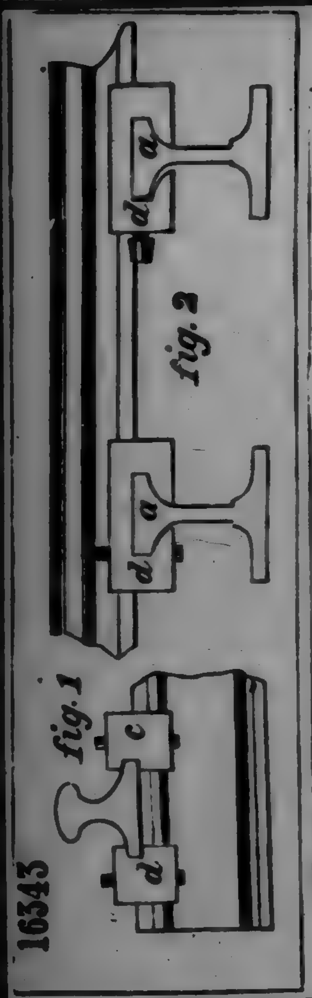
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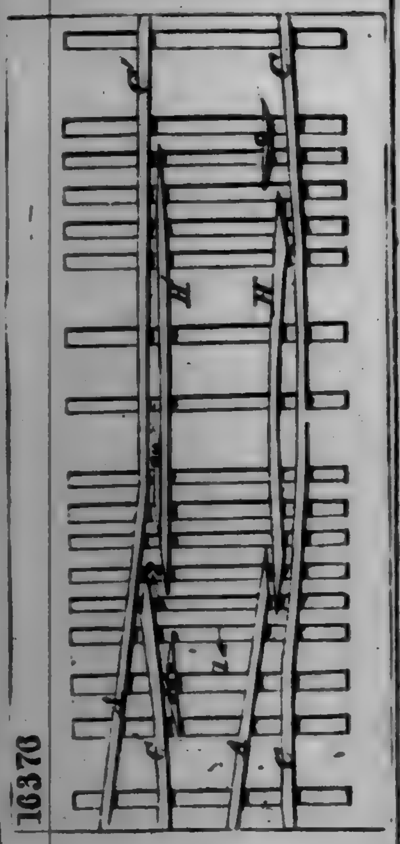
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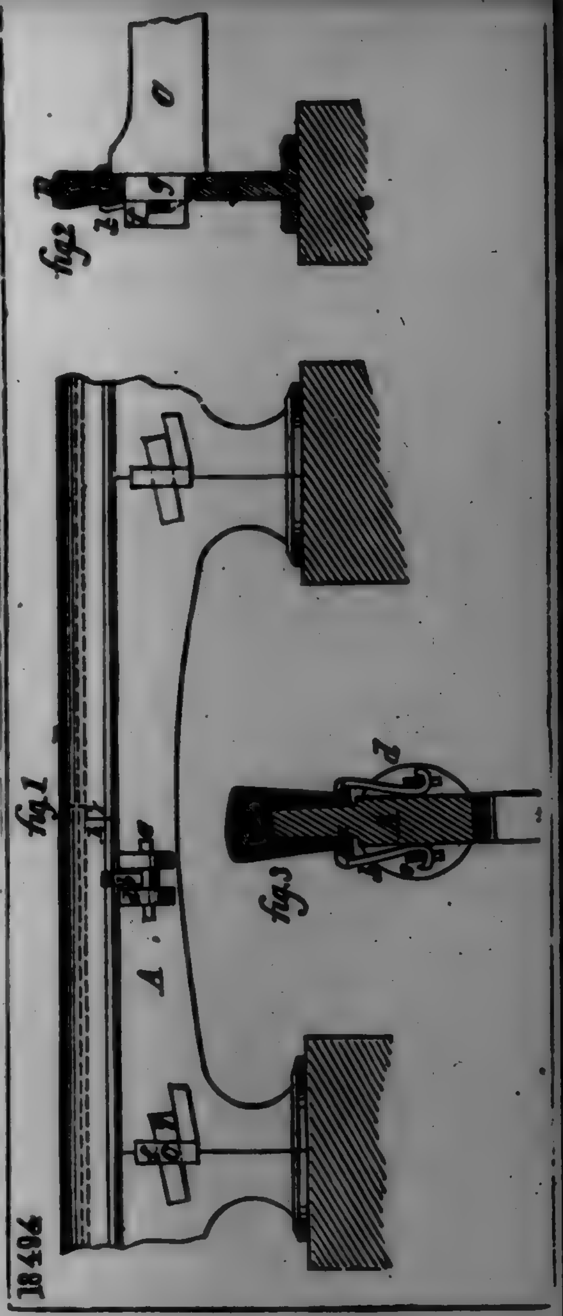
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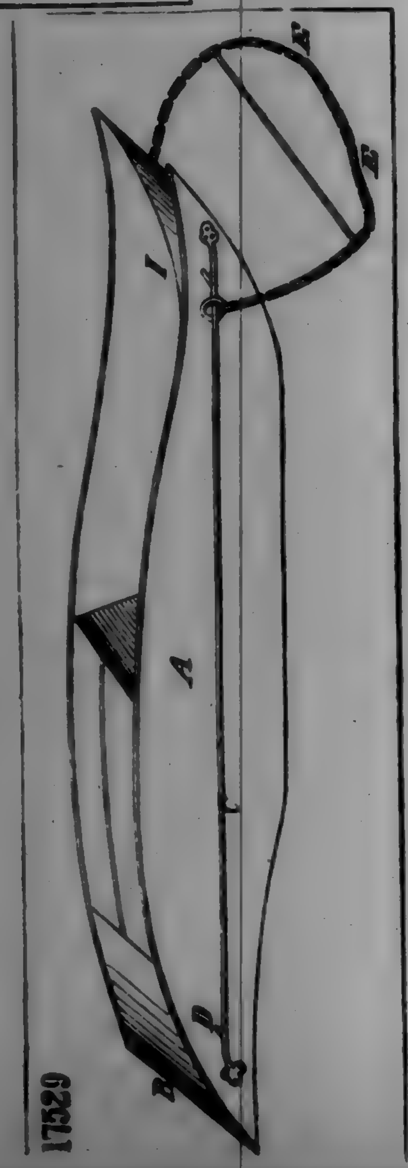
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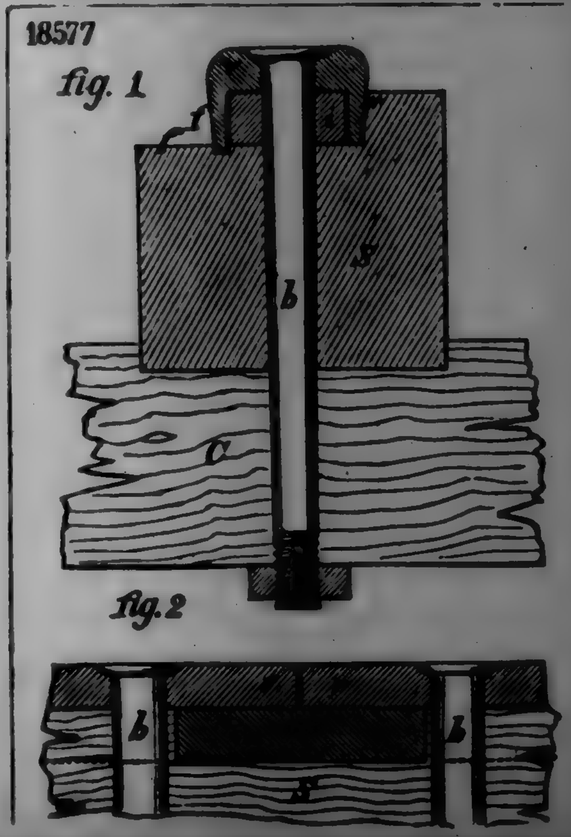
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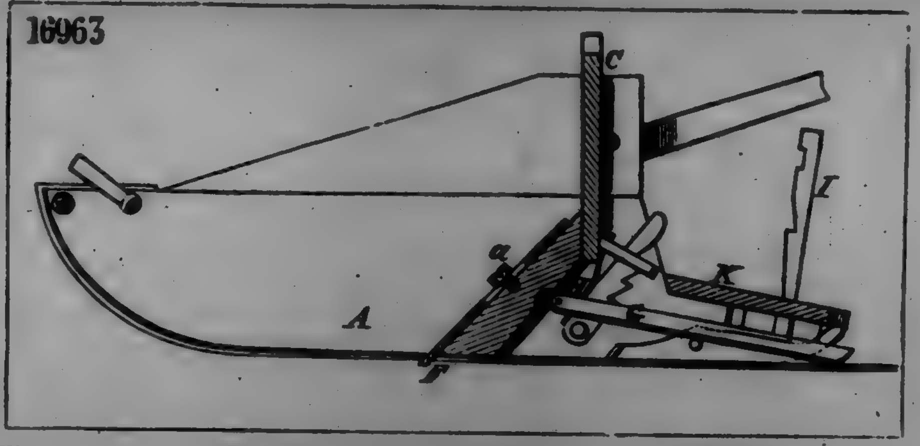
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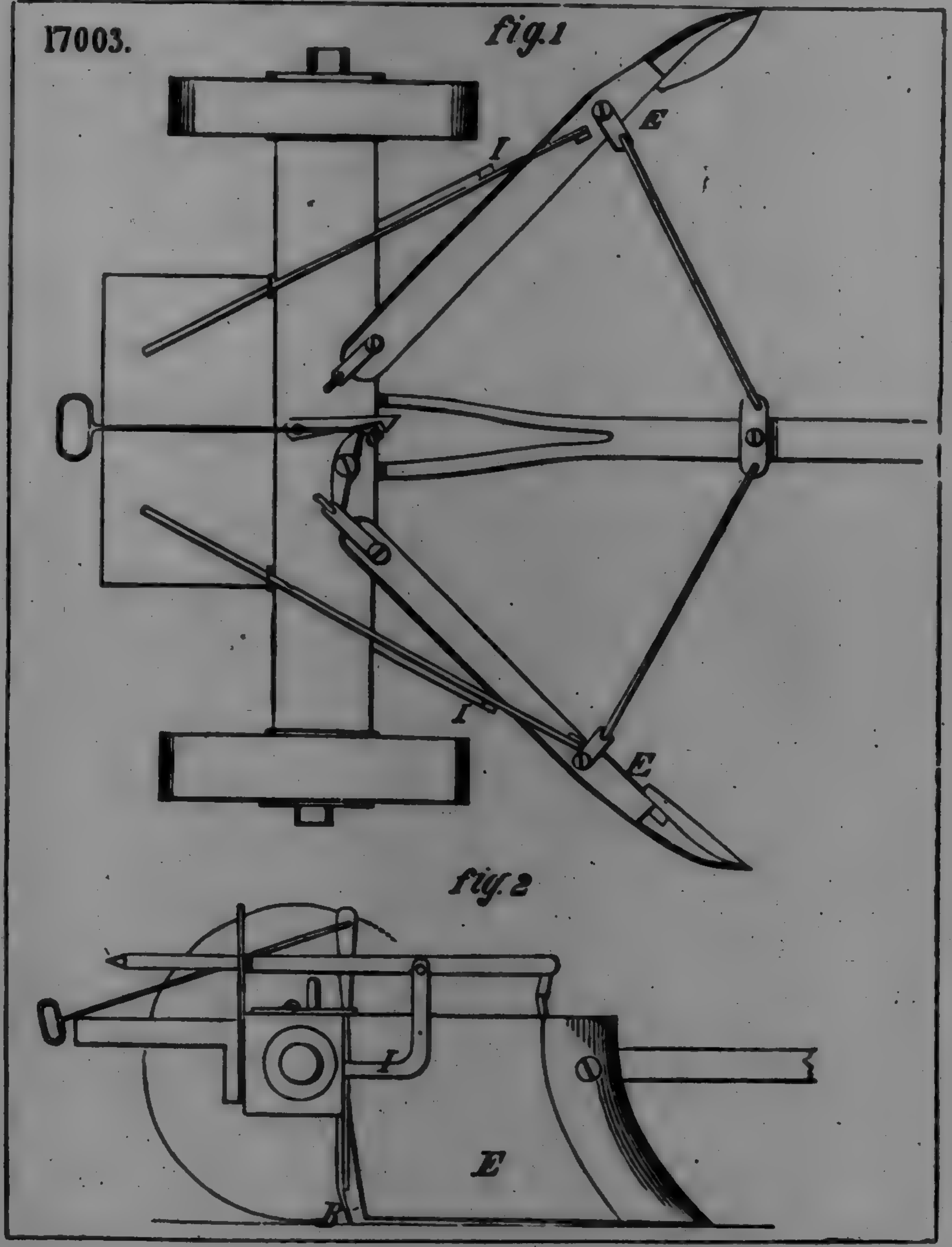
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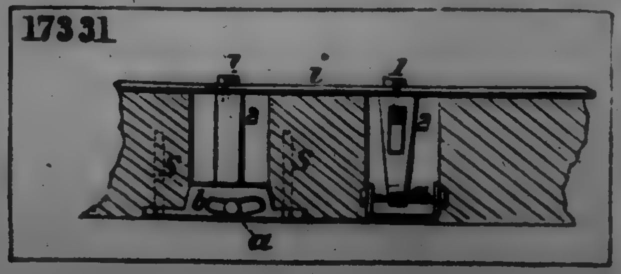
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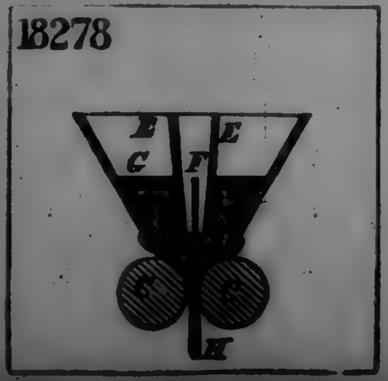
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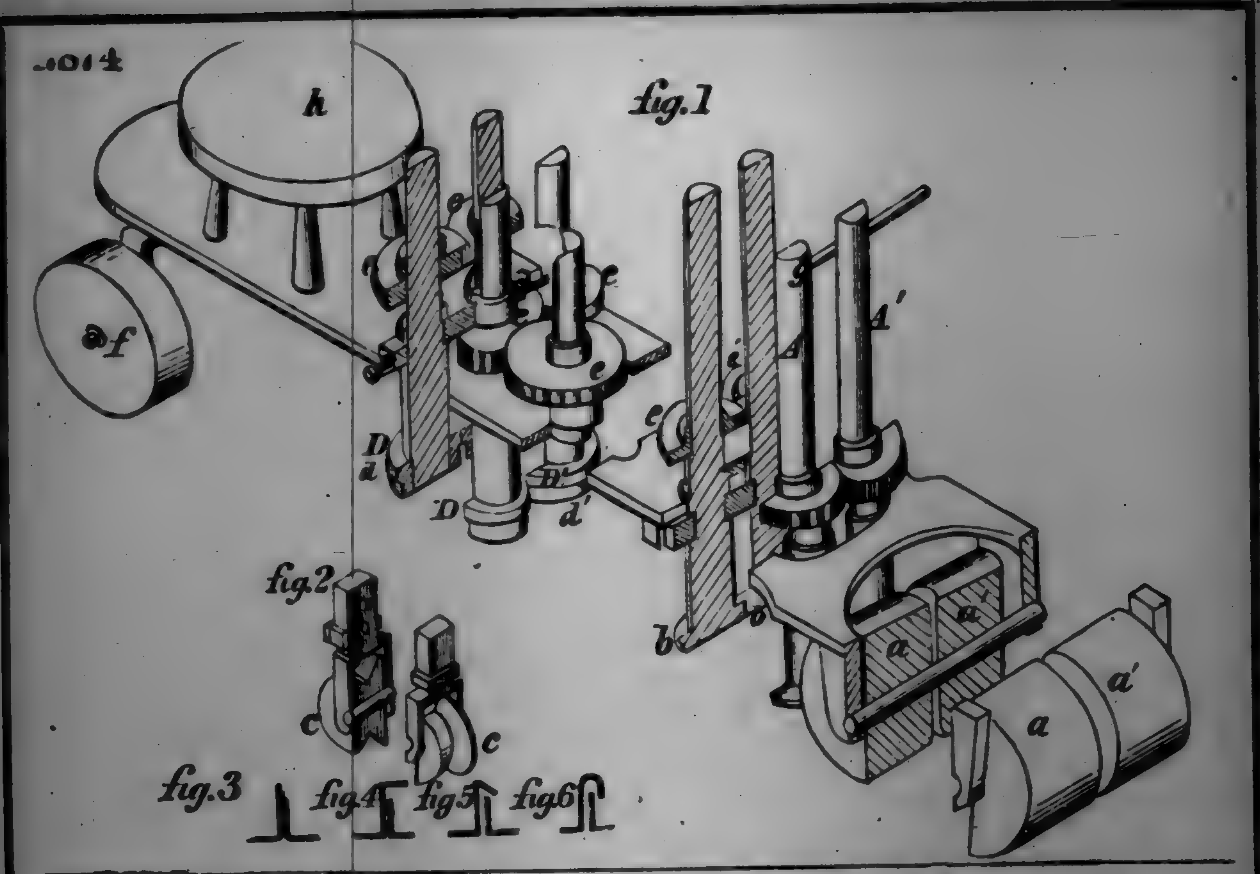
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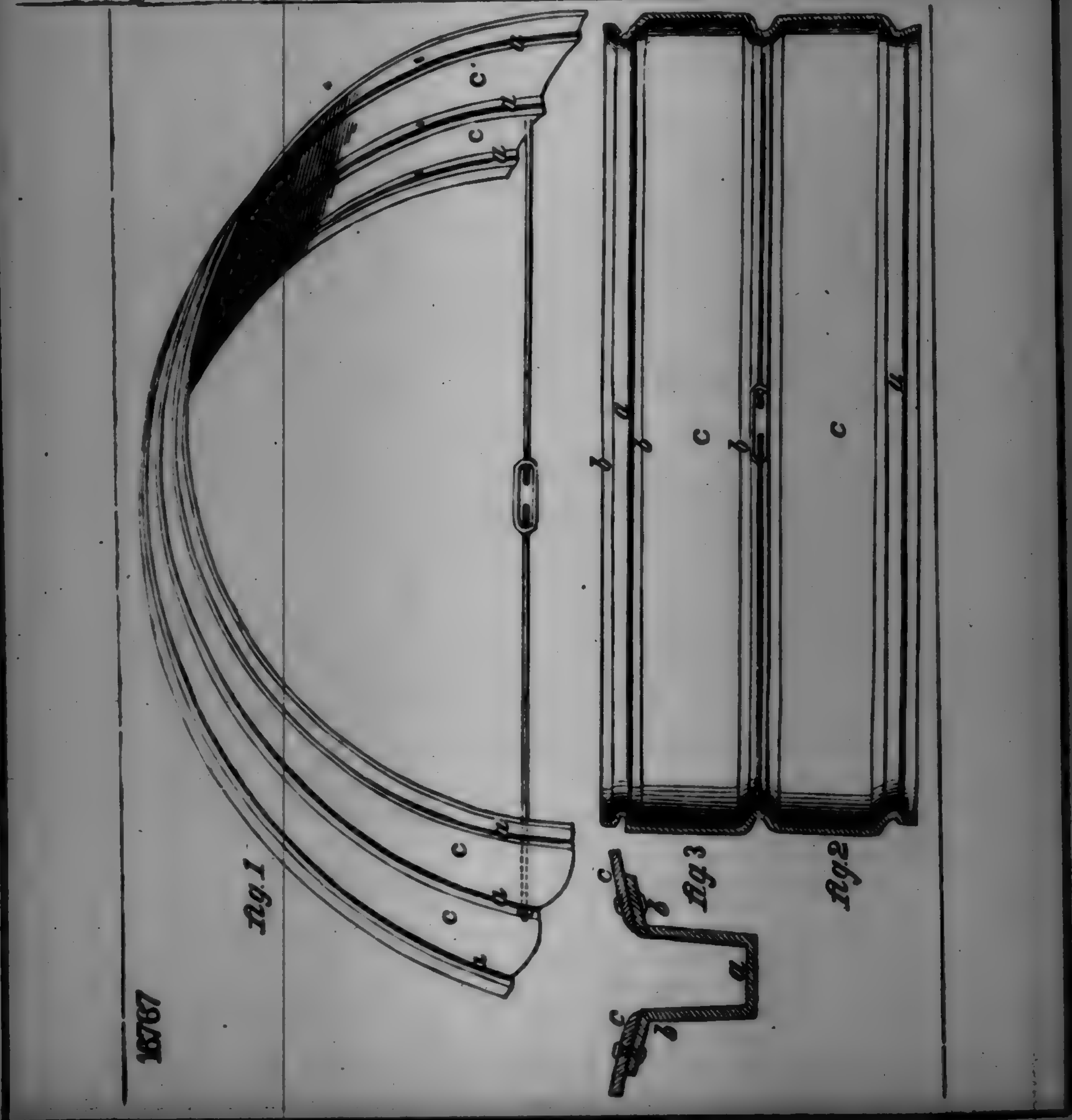
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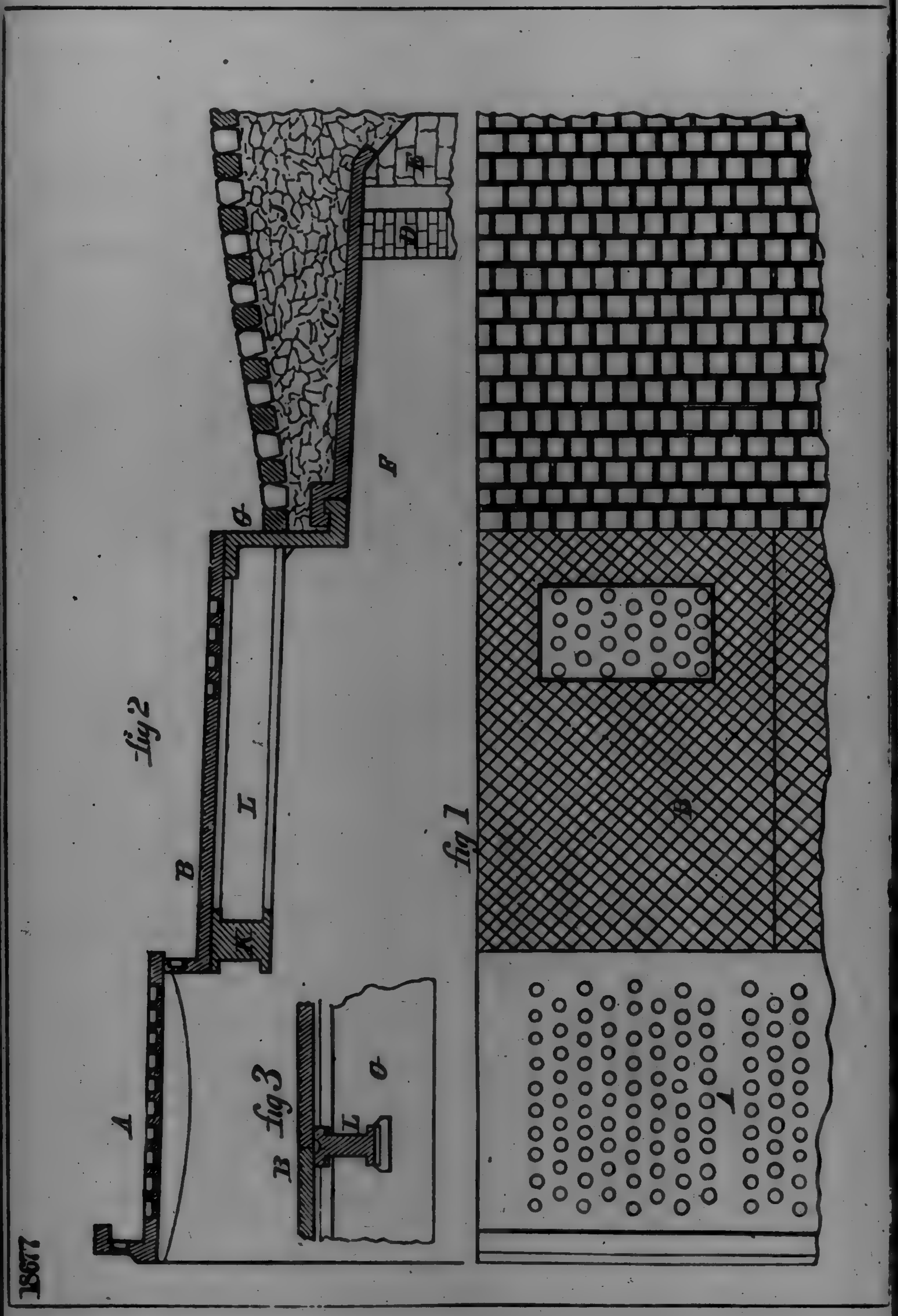
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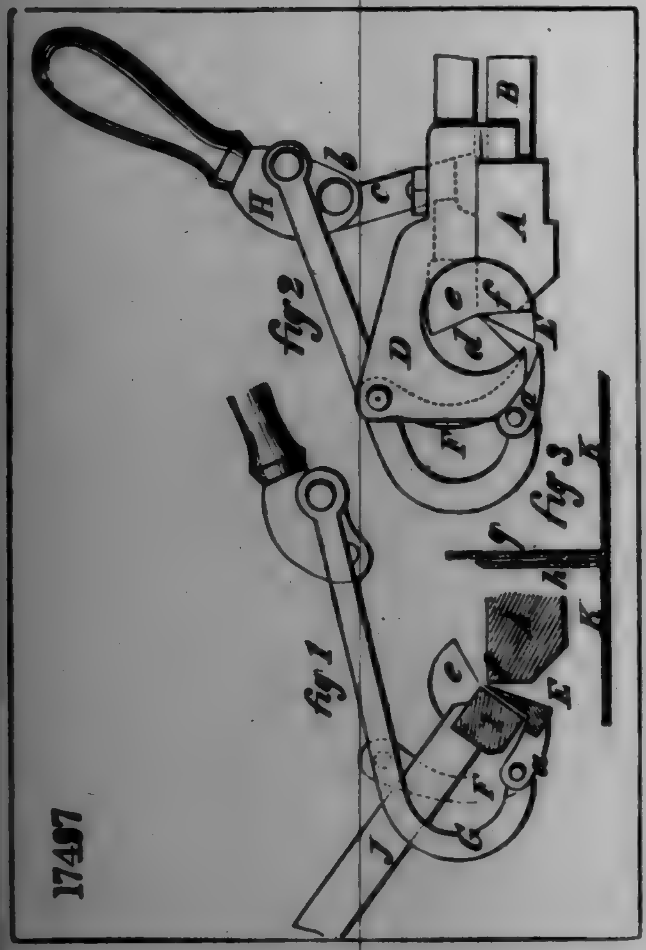
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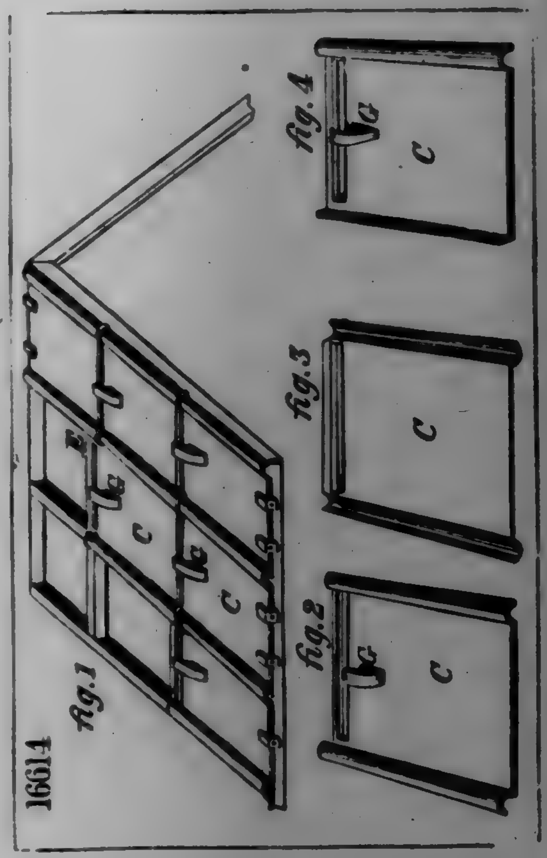
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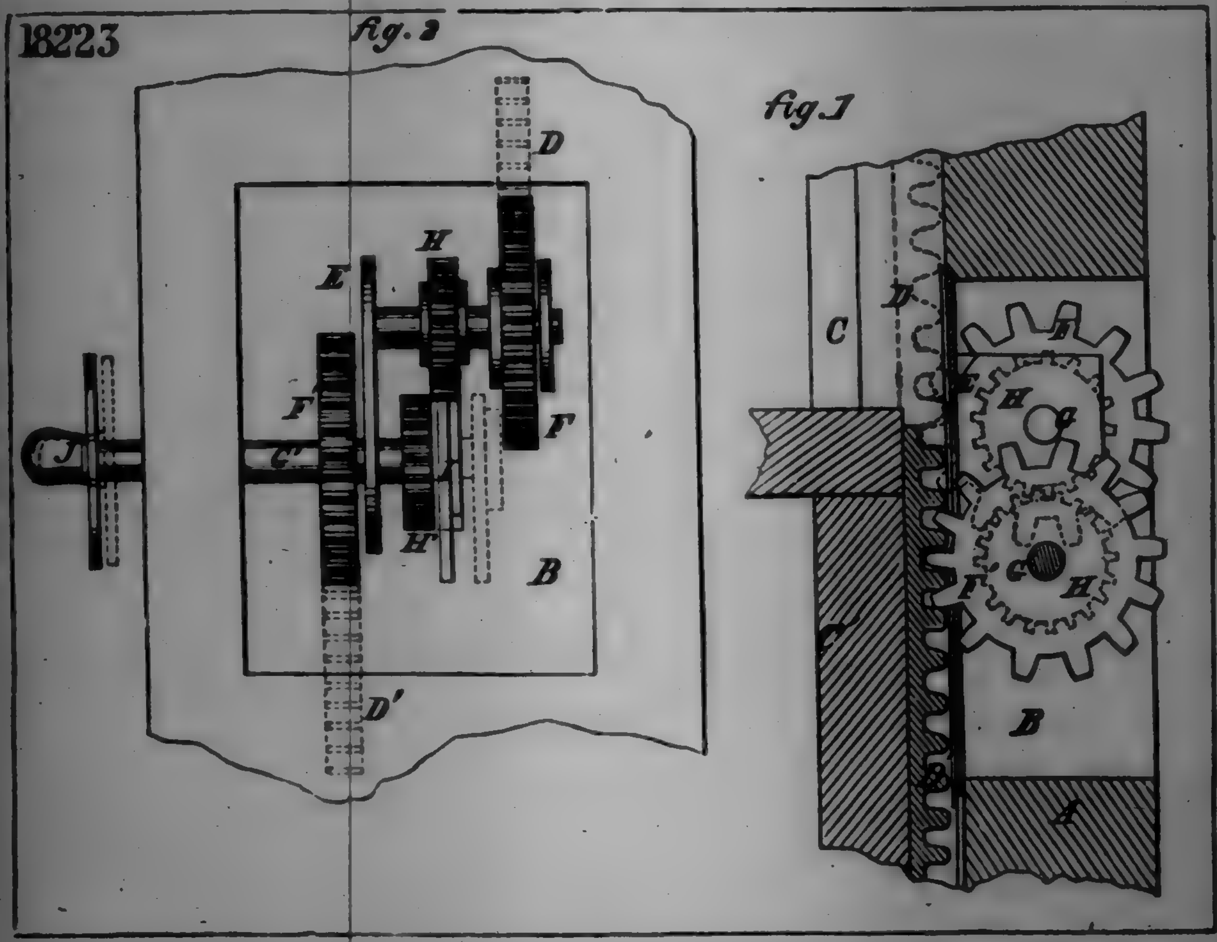
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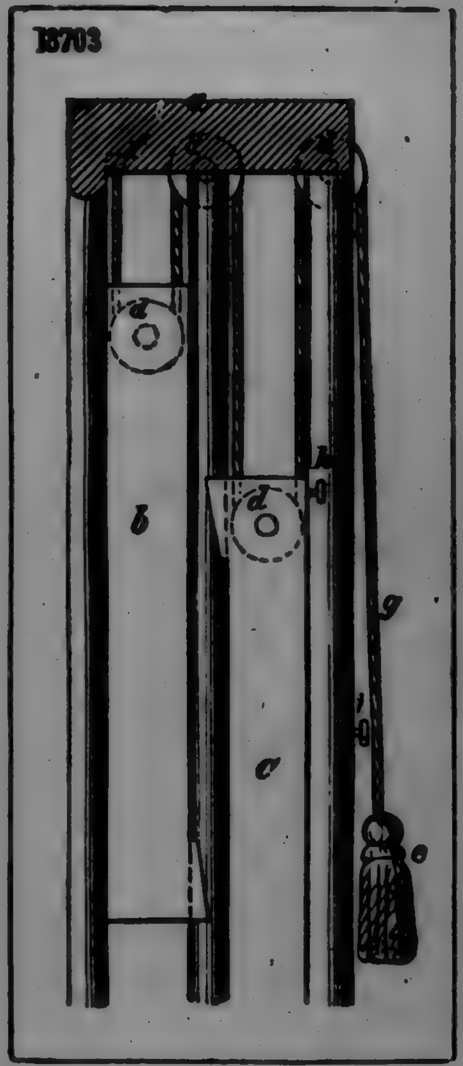
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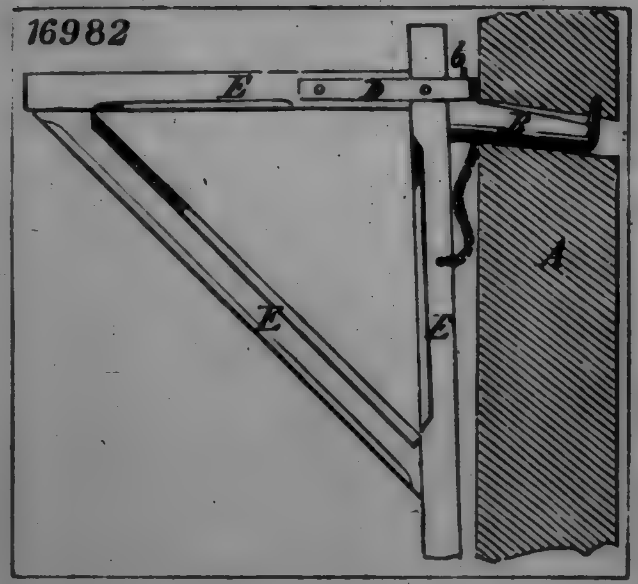
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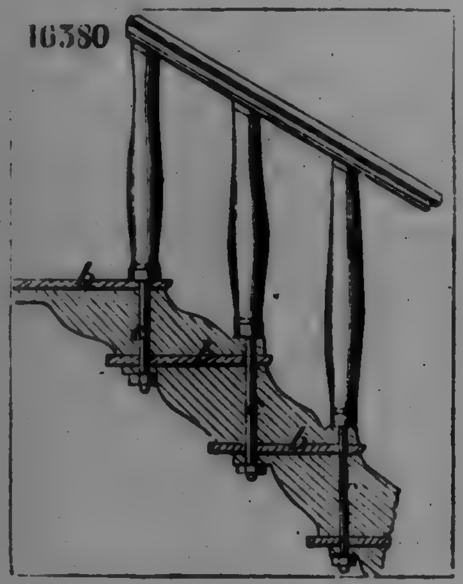
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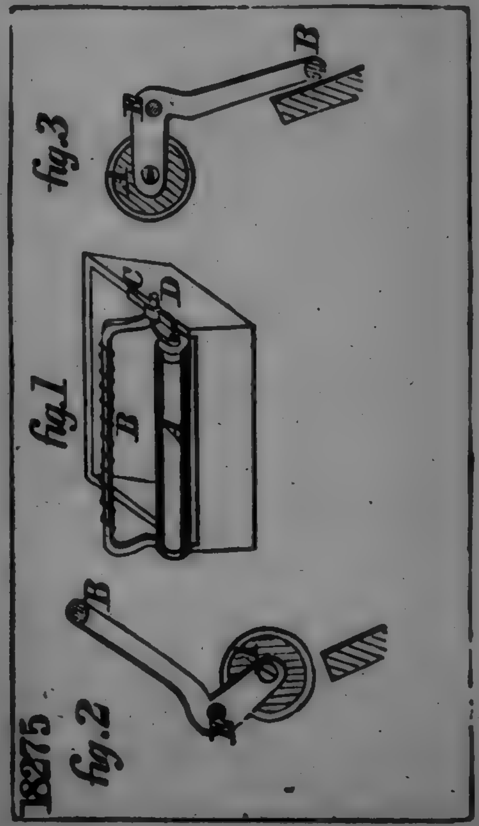
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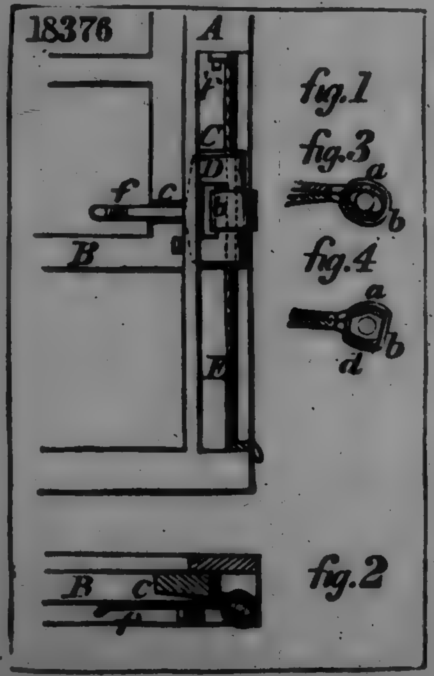
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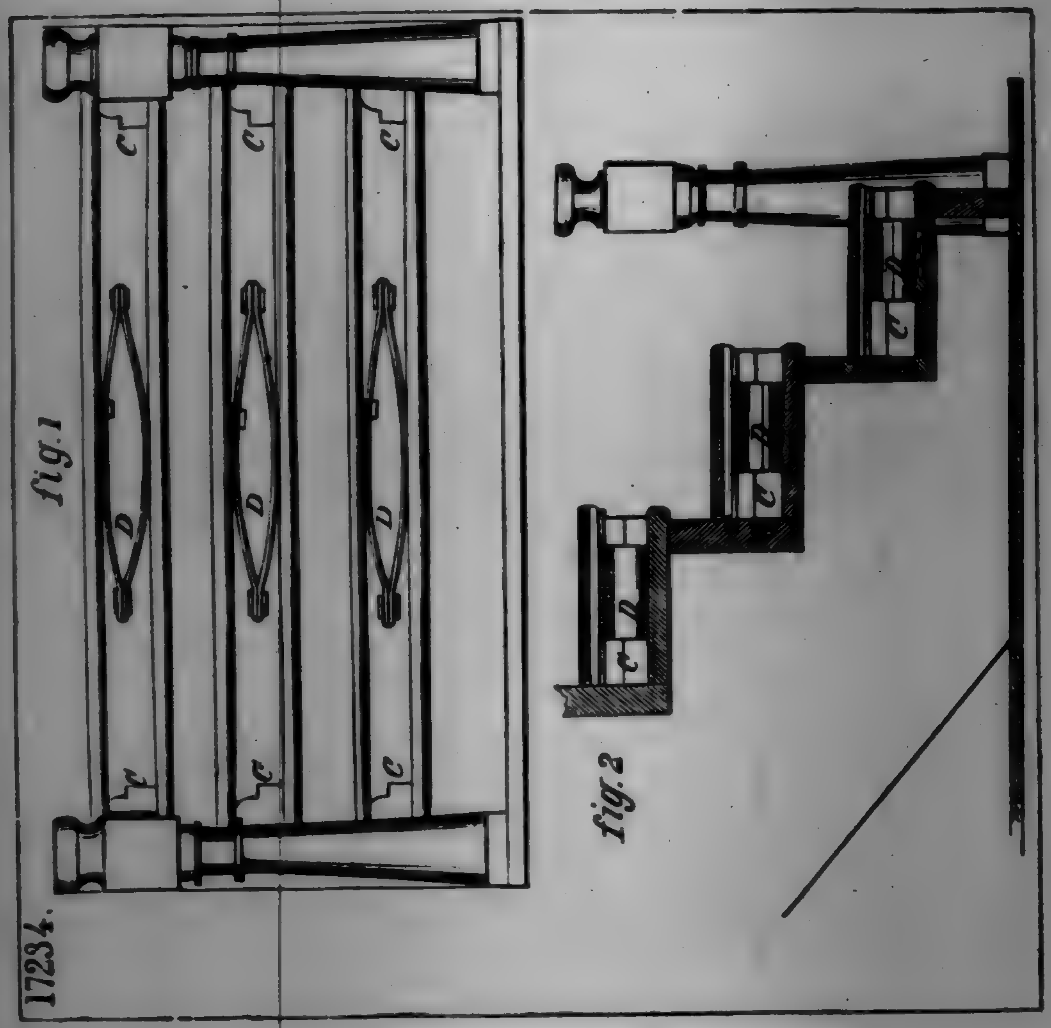
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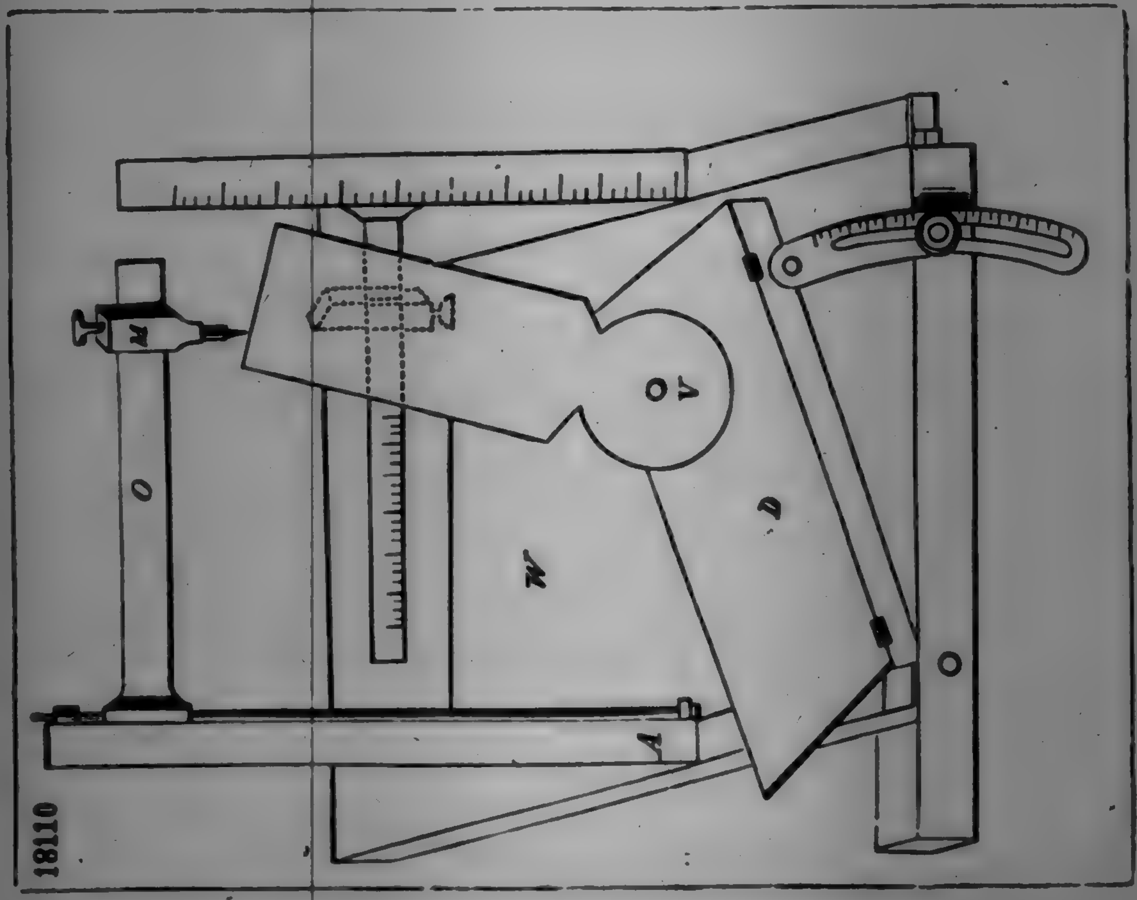
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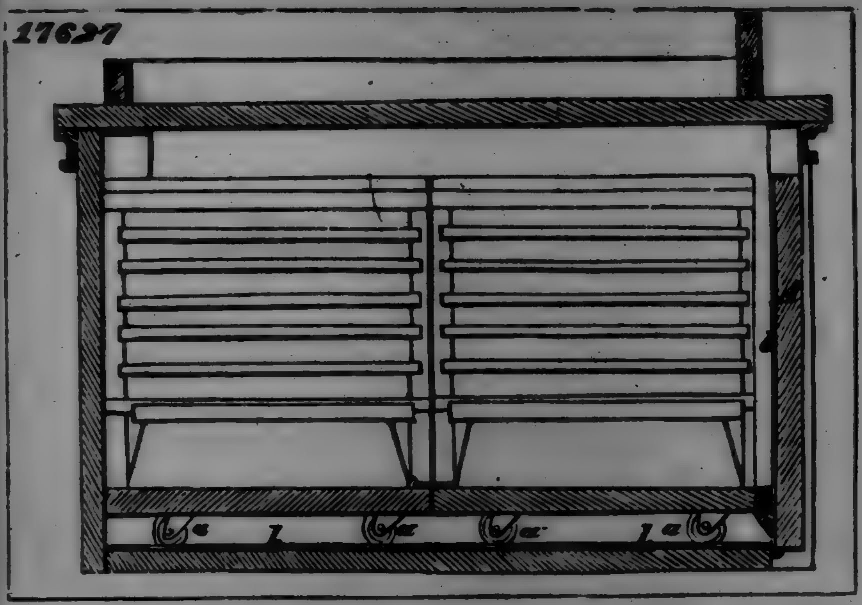
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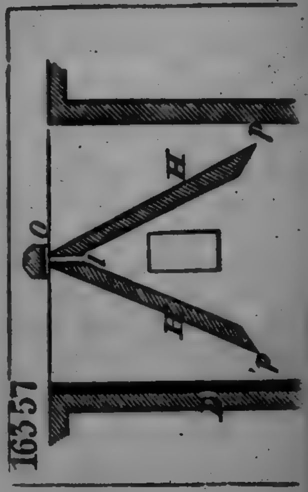
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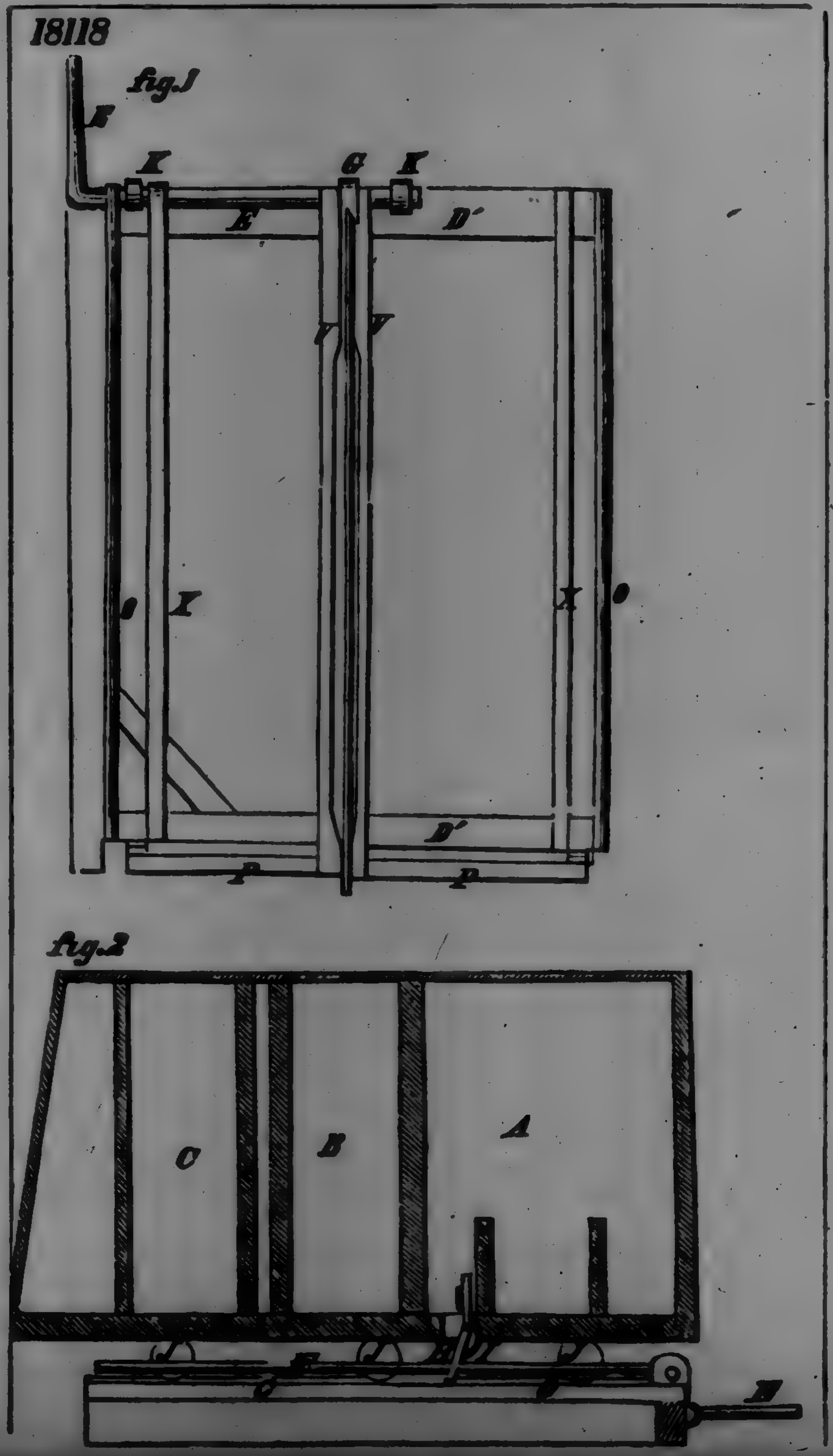
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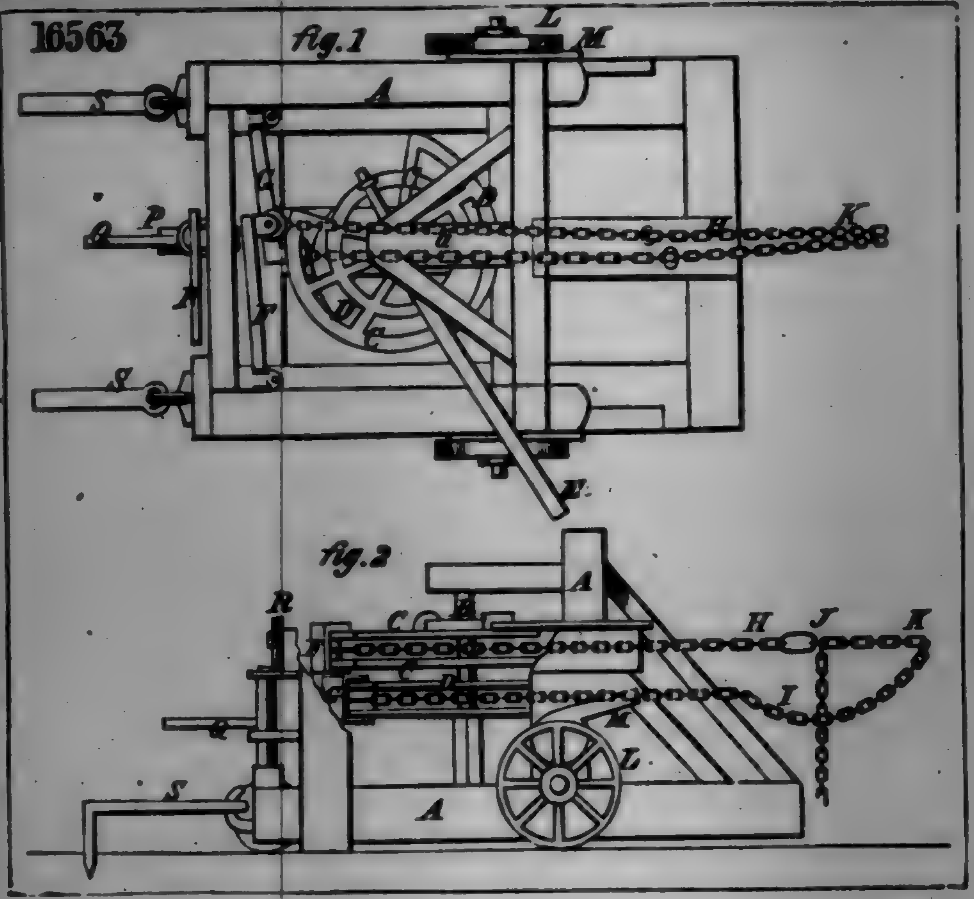

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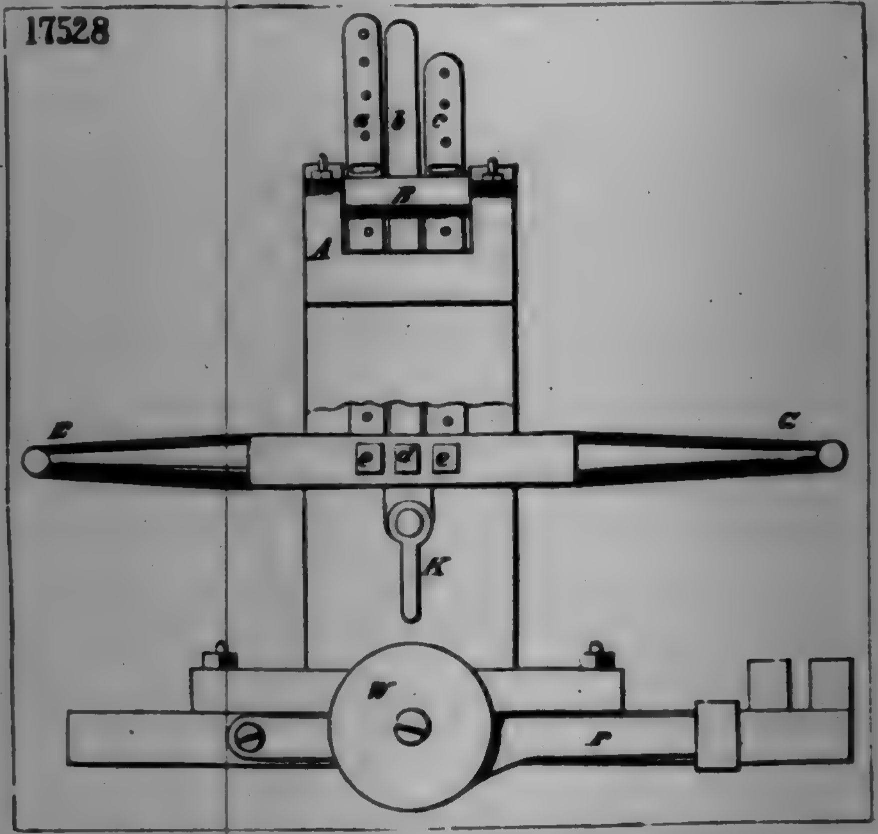

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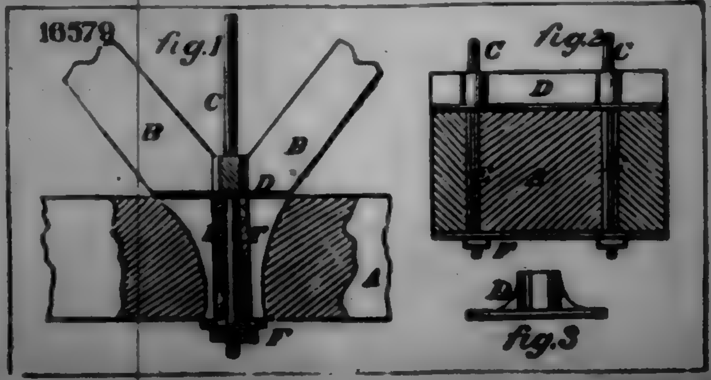

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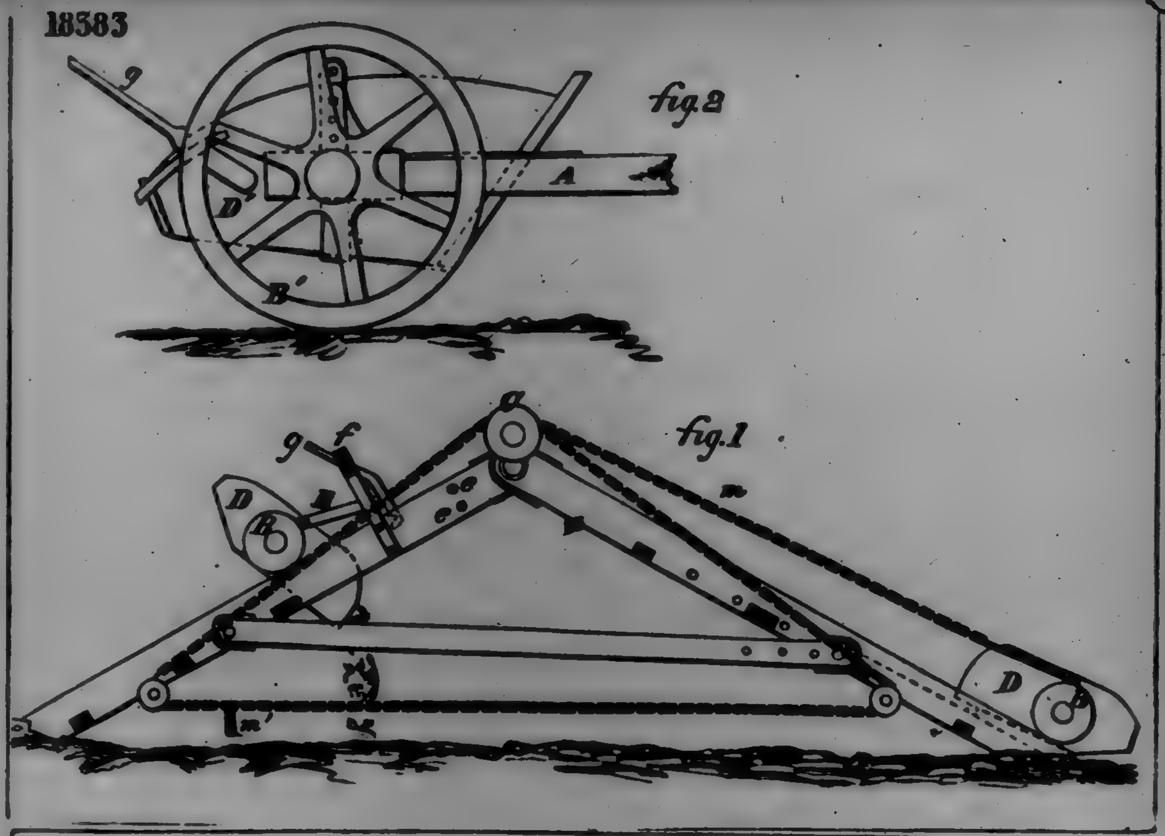

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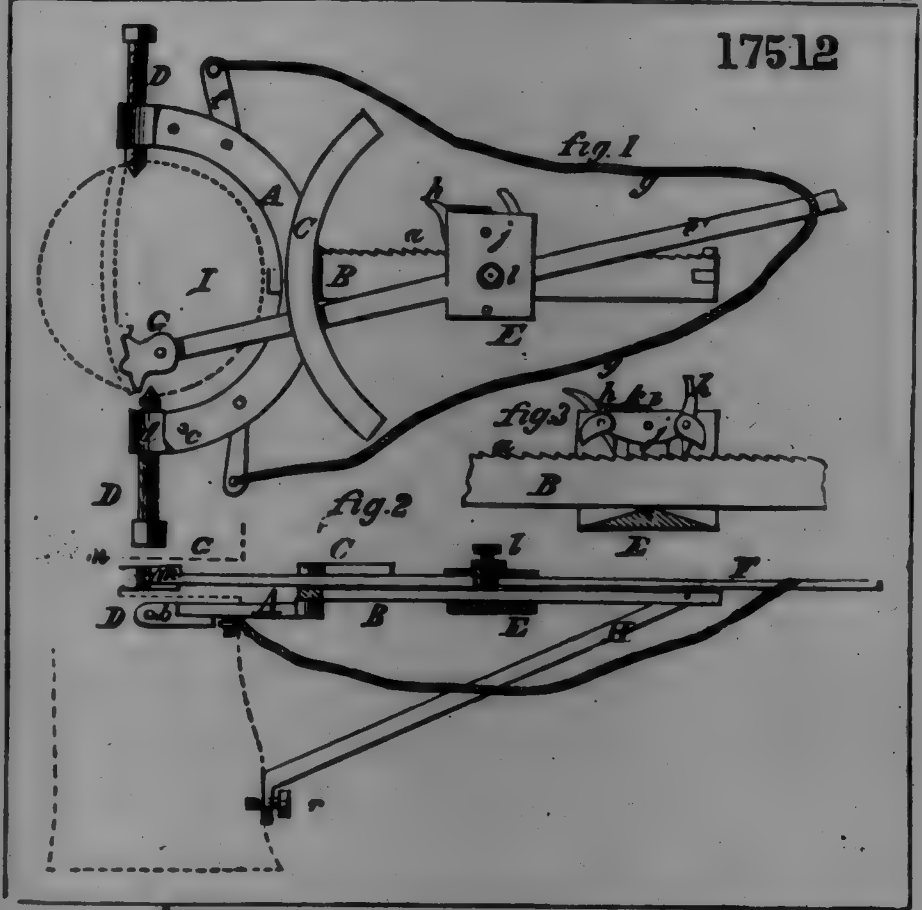

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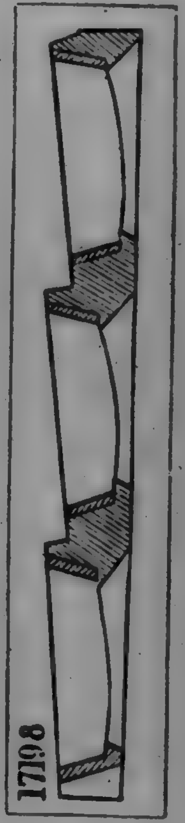

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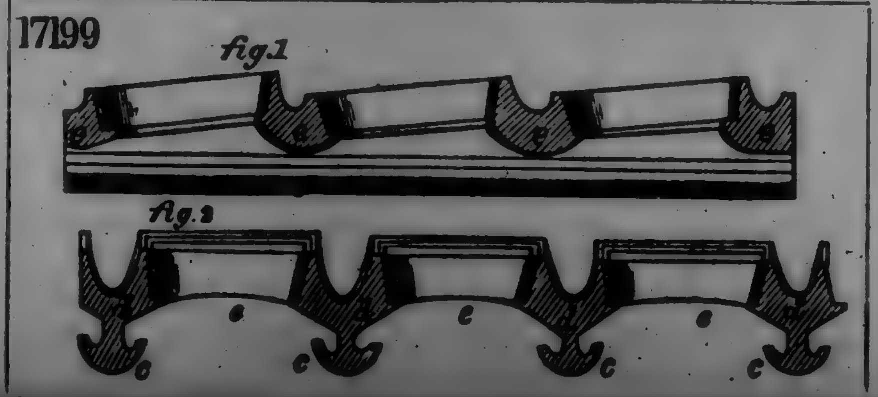

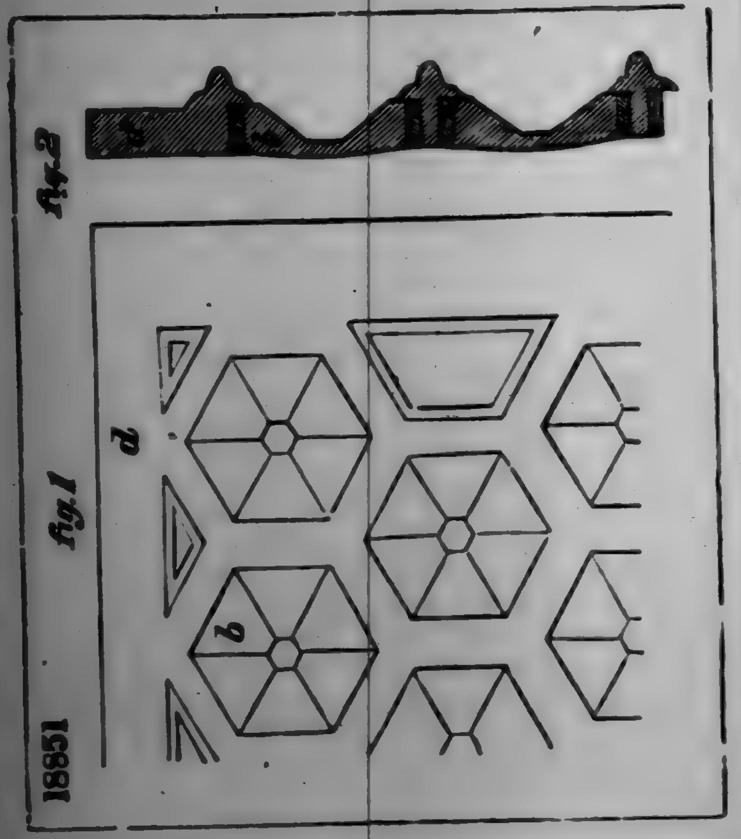
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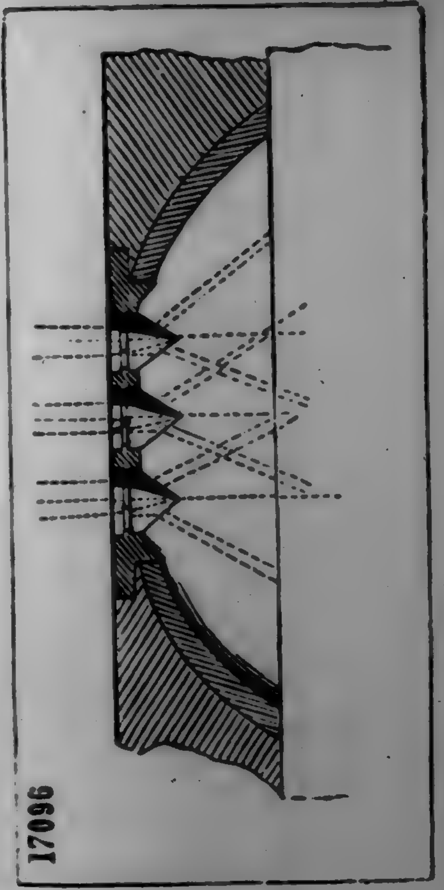
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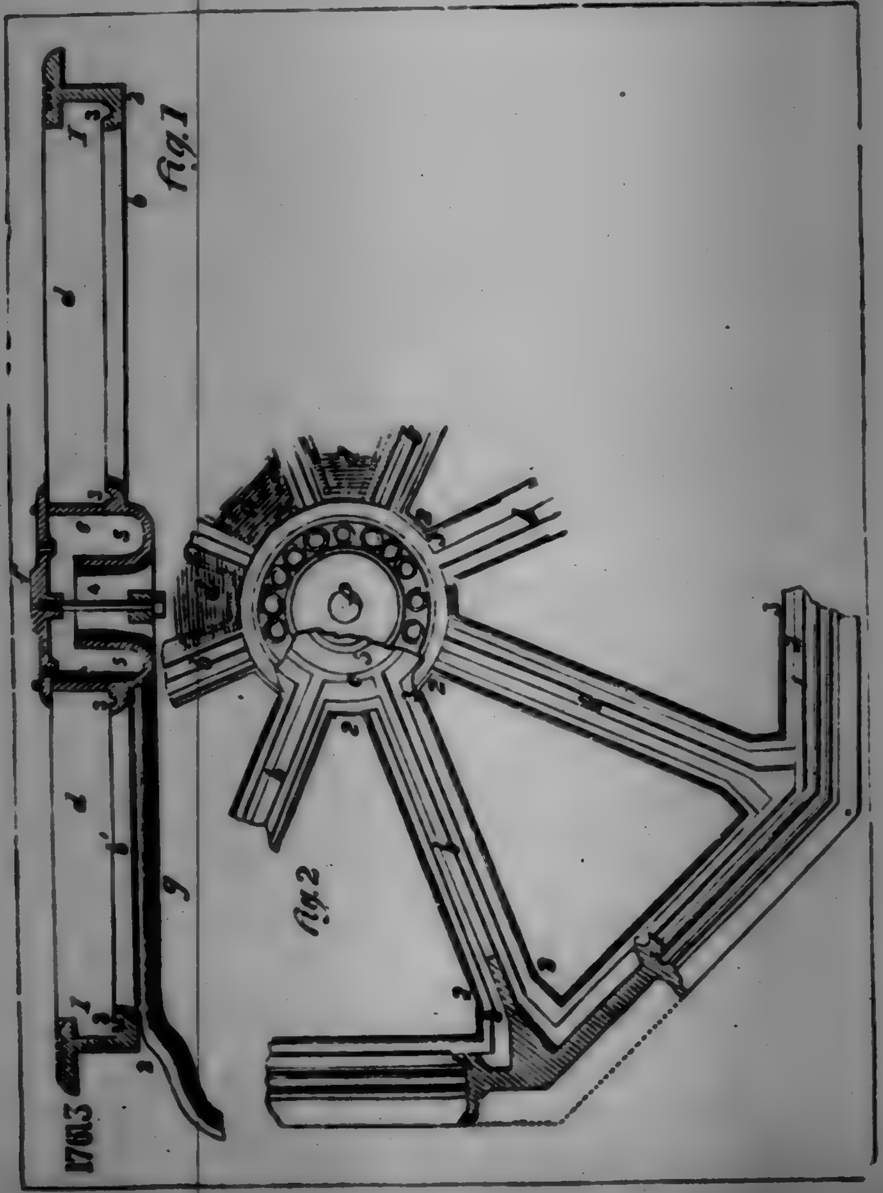
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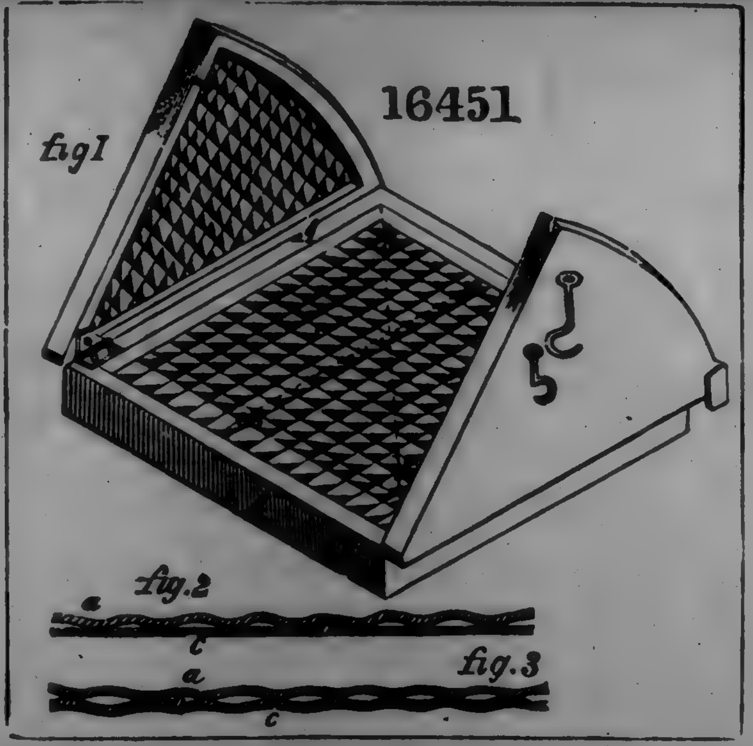
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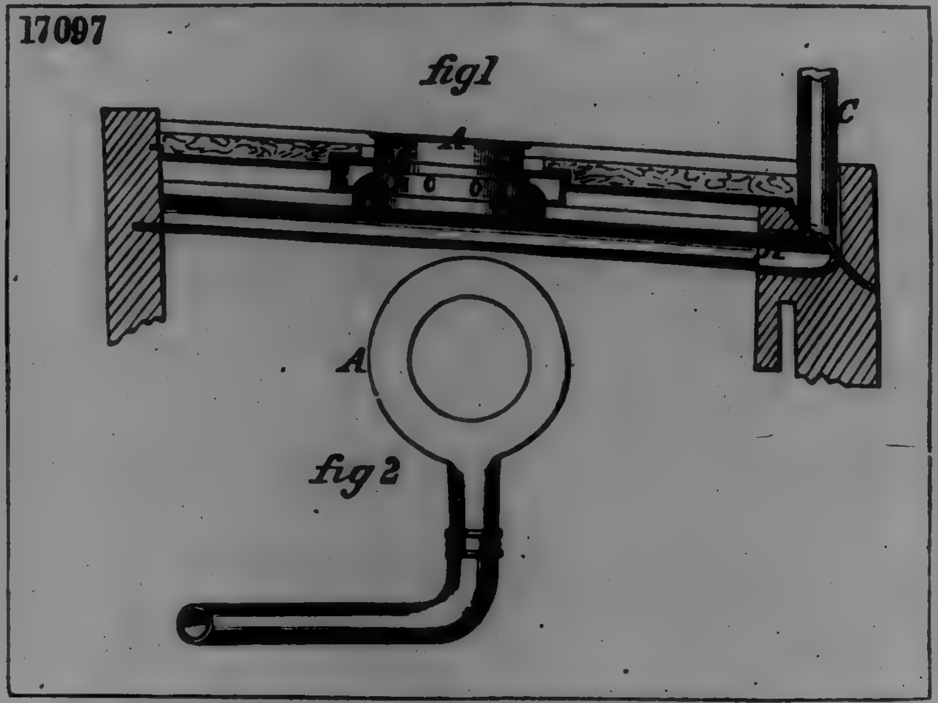
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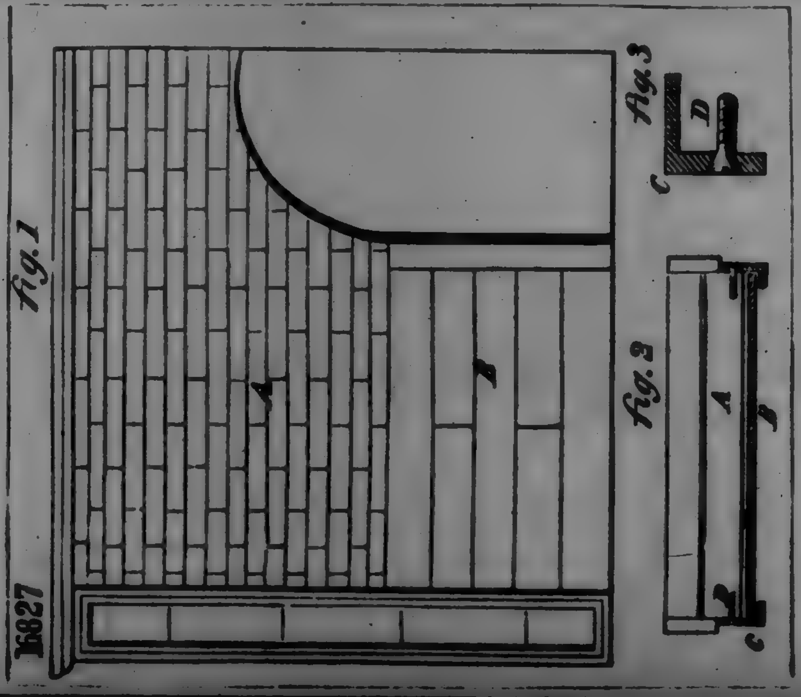
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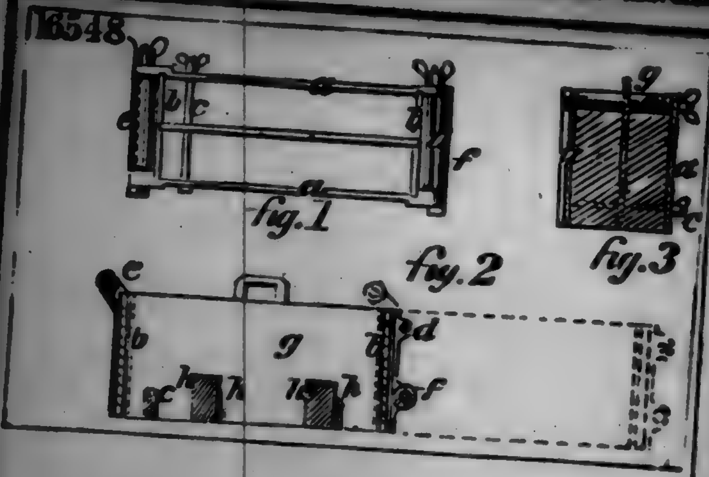

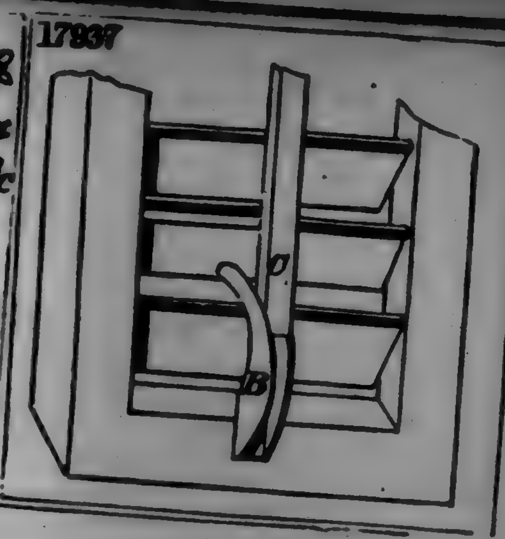

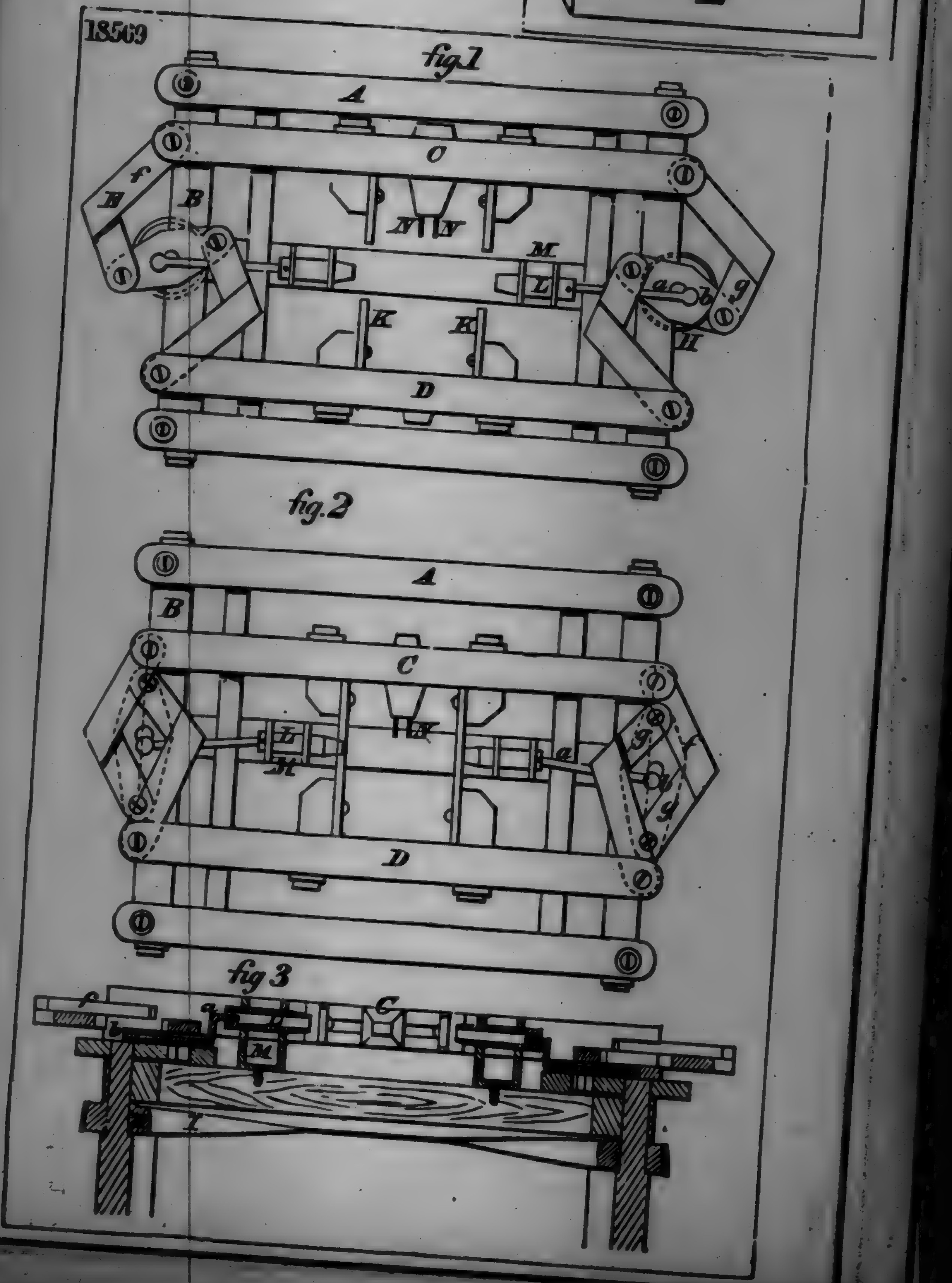

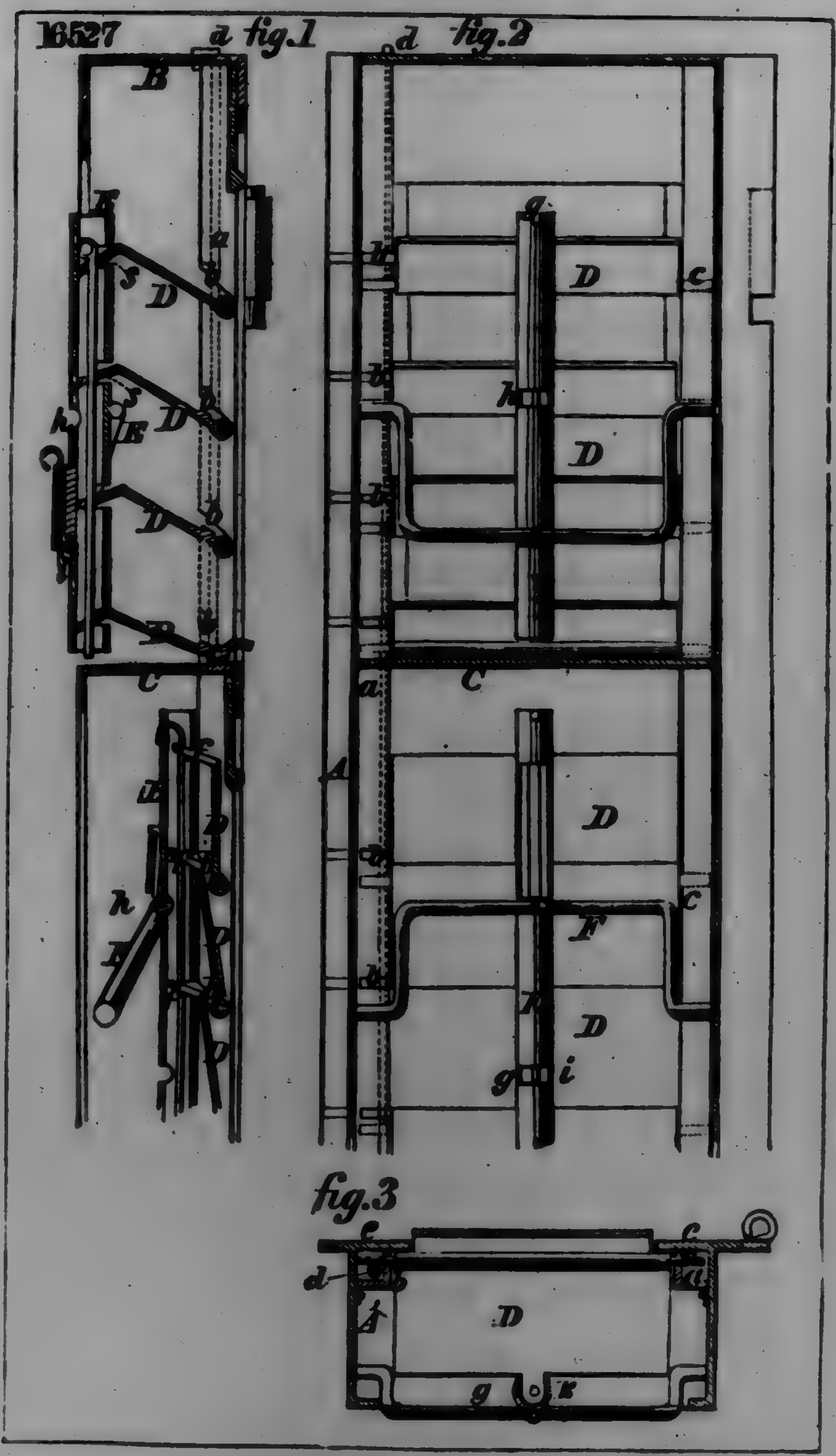

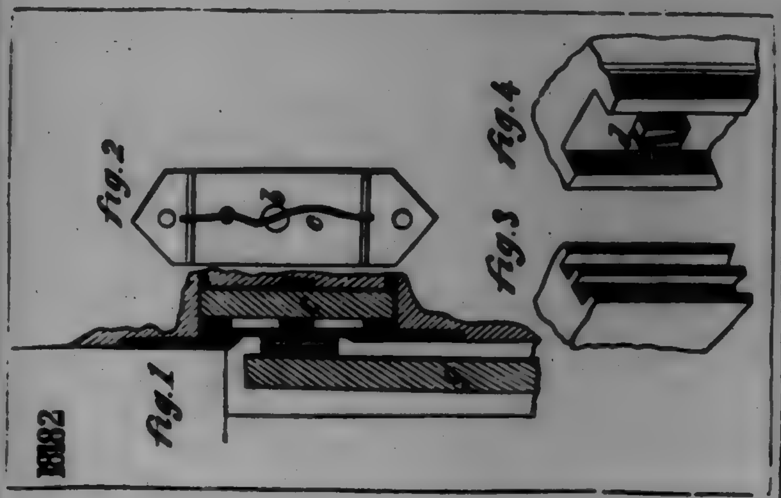

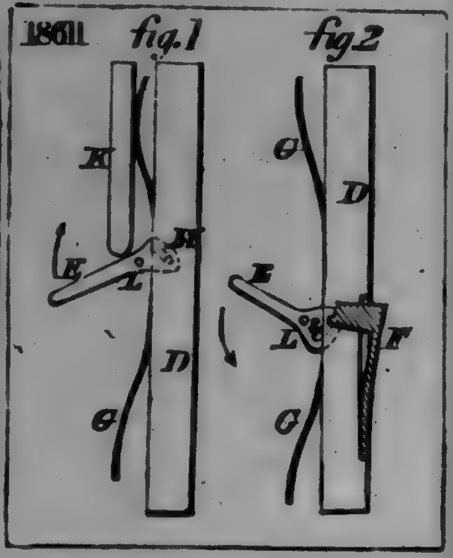

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IX.—CIVIL ENGINEERING. 417

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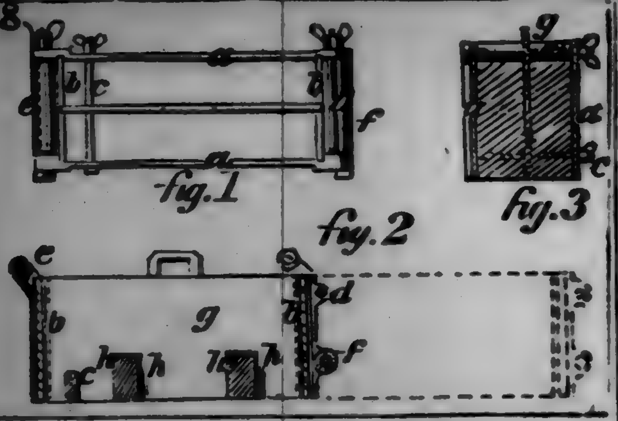

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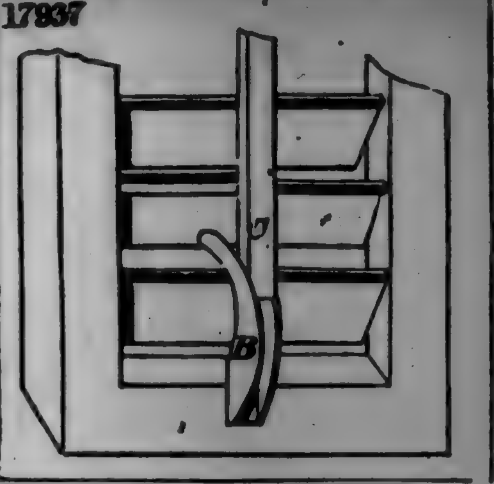

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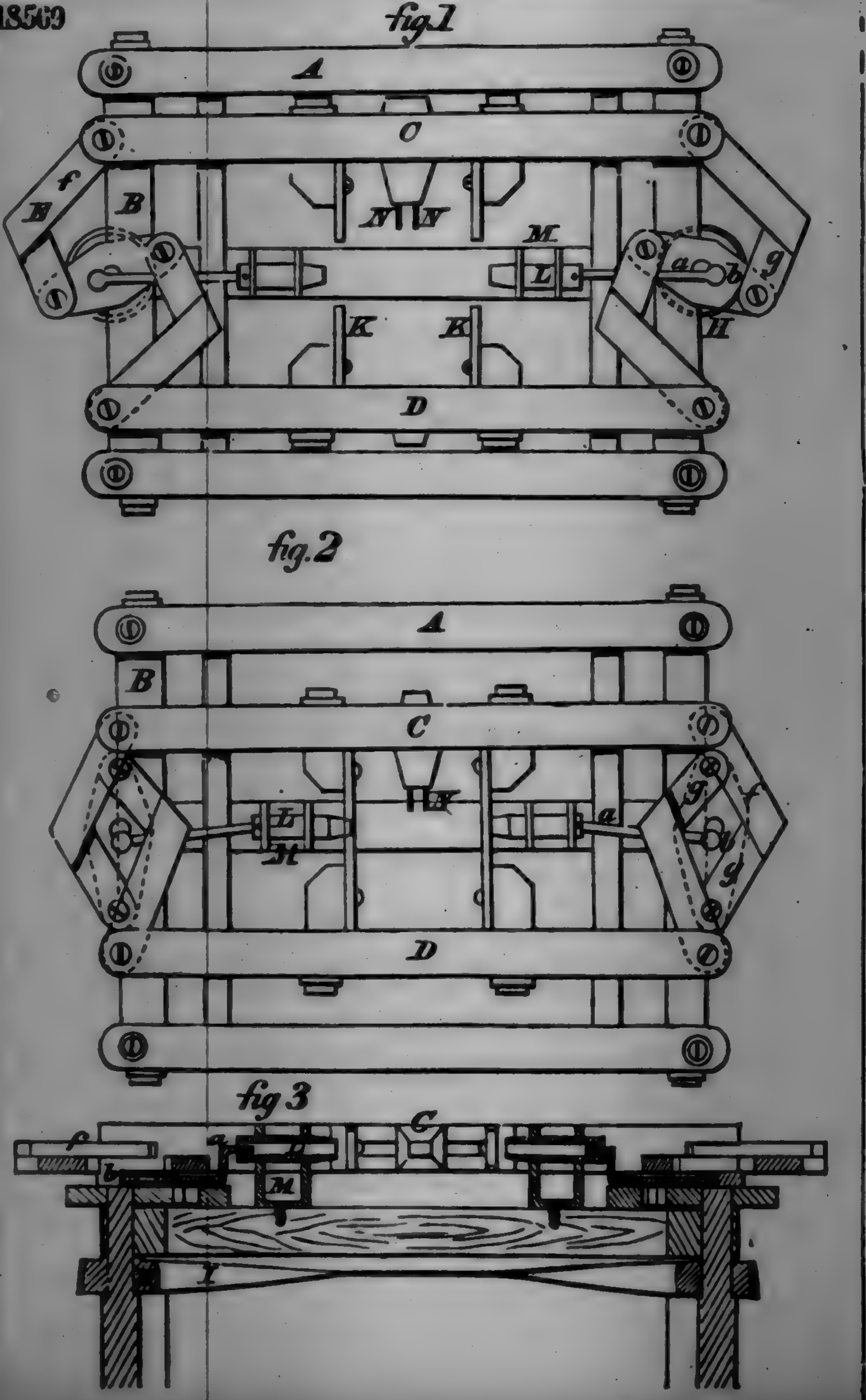

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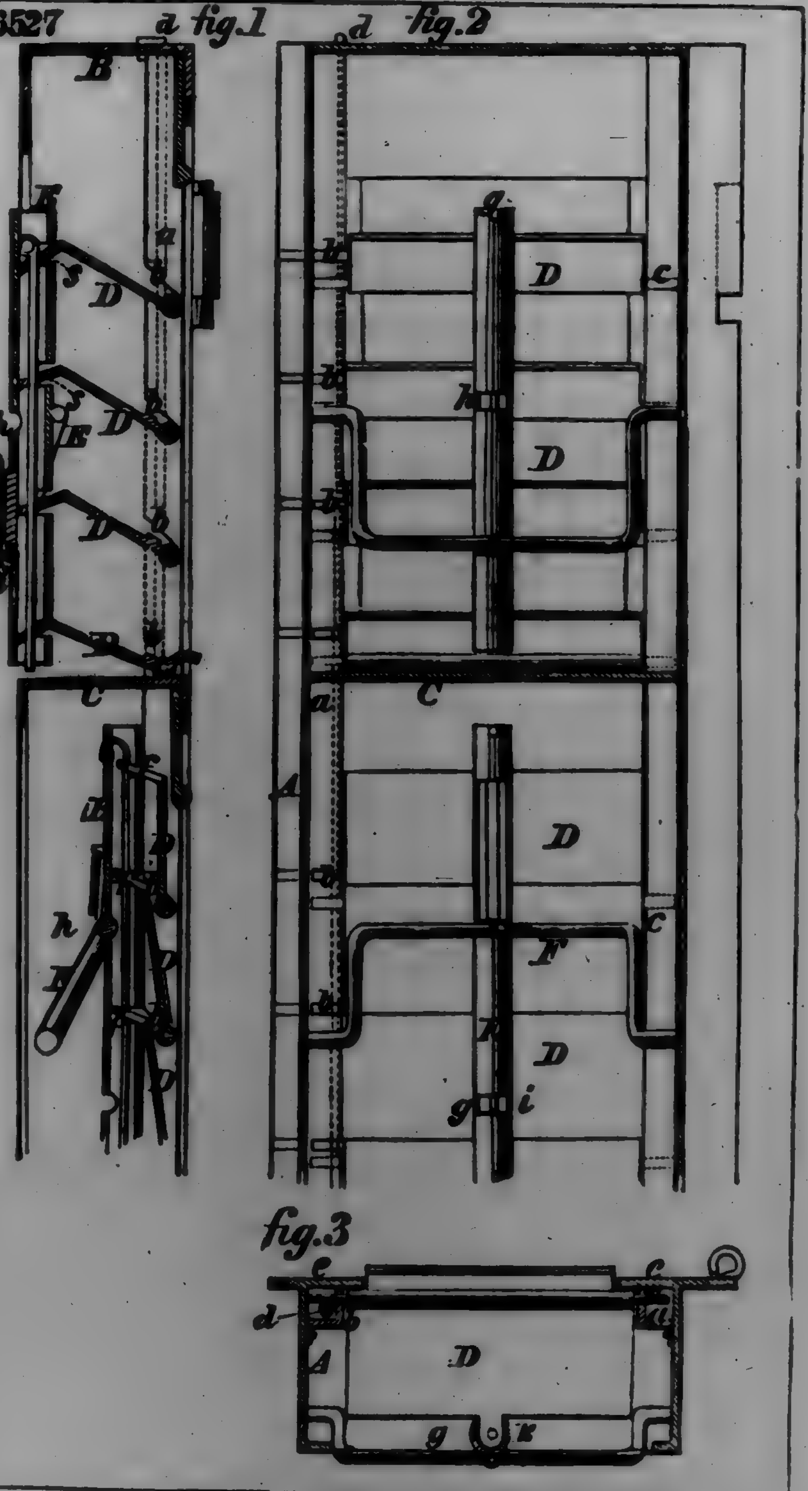

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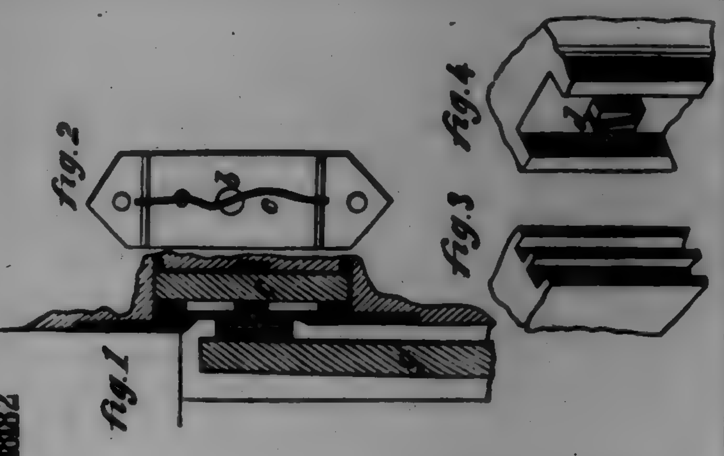

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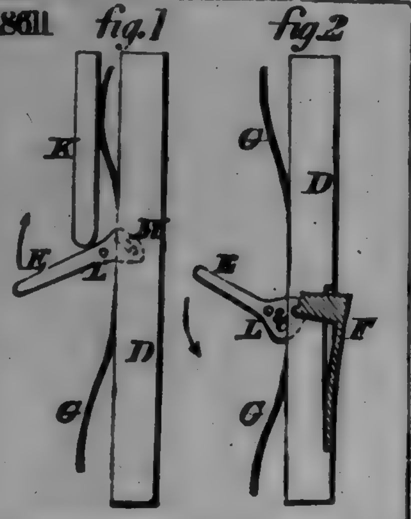

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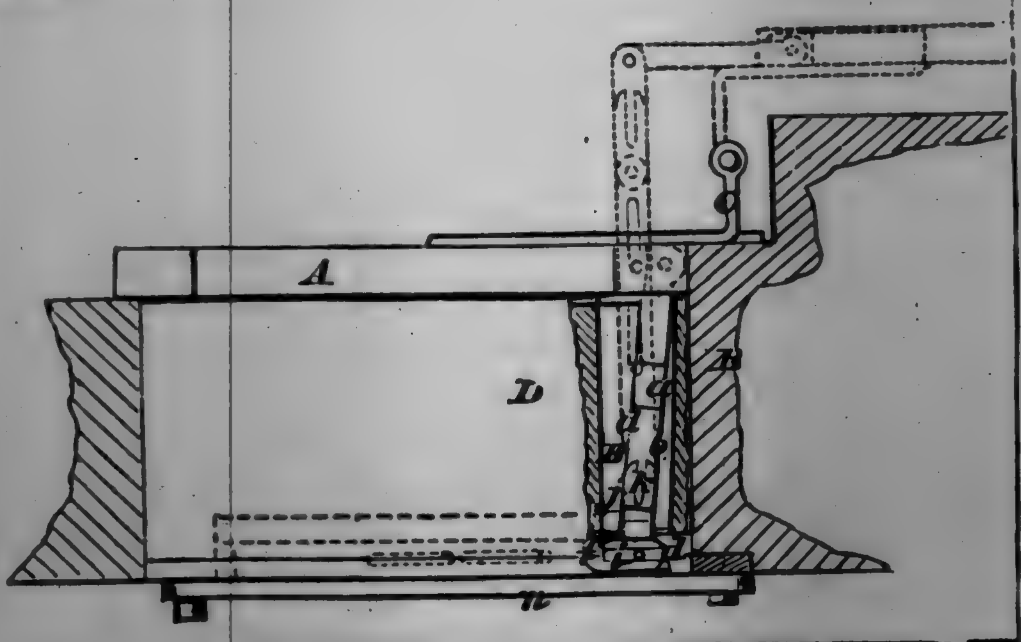

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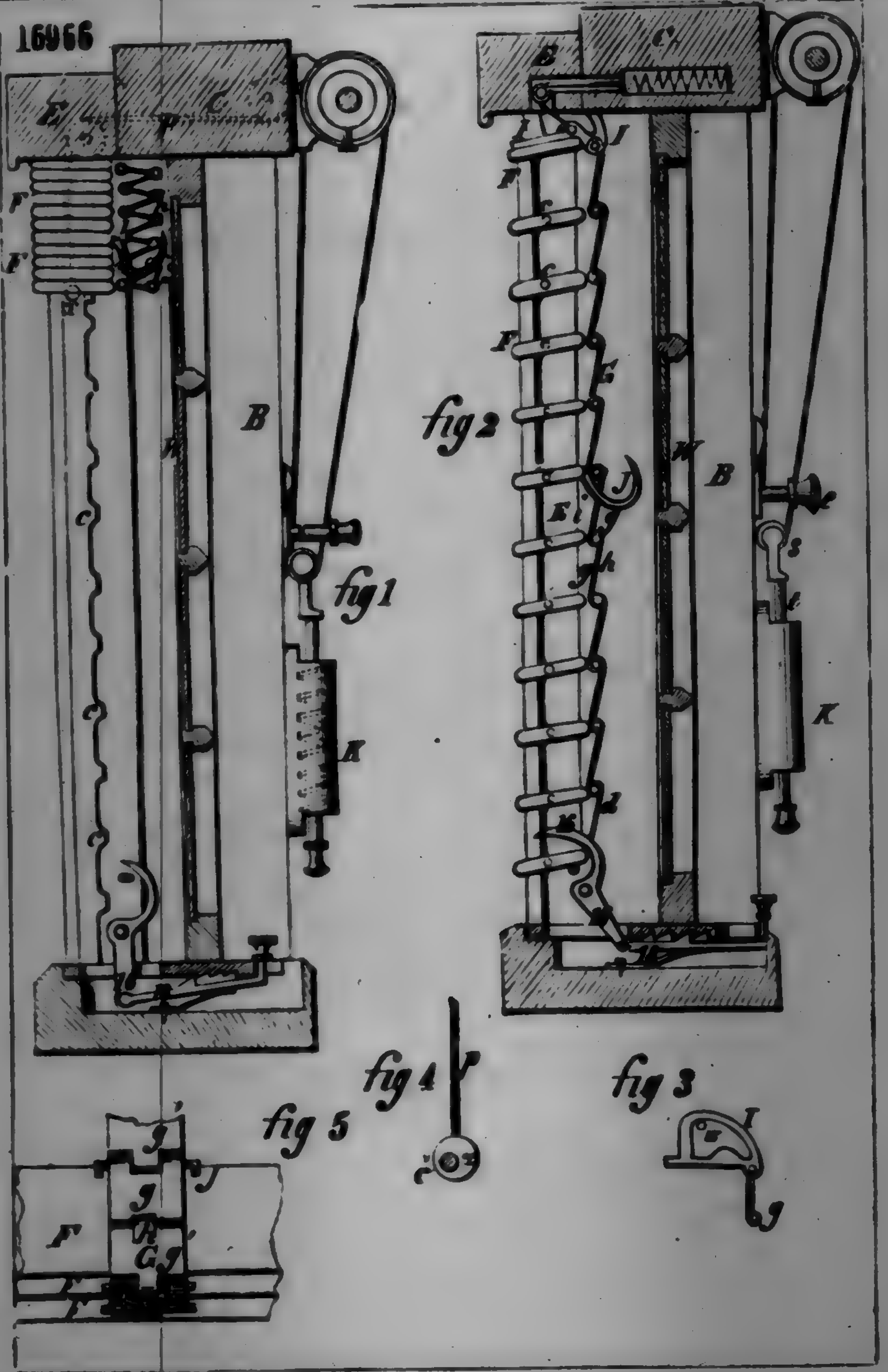

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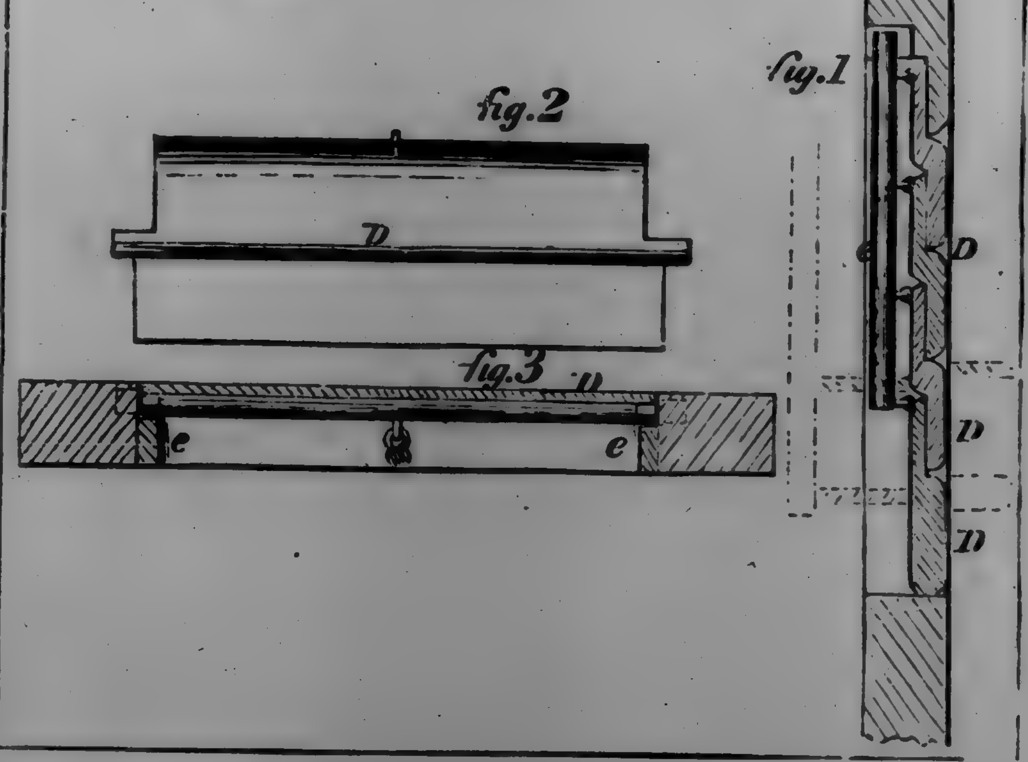

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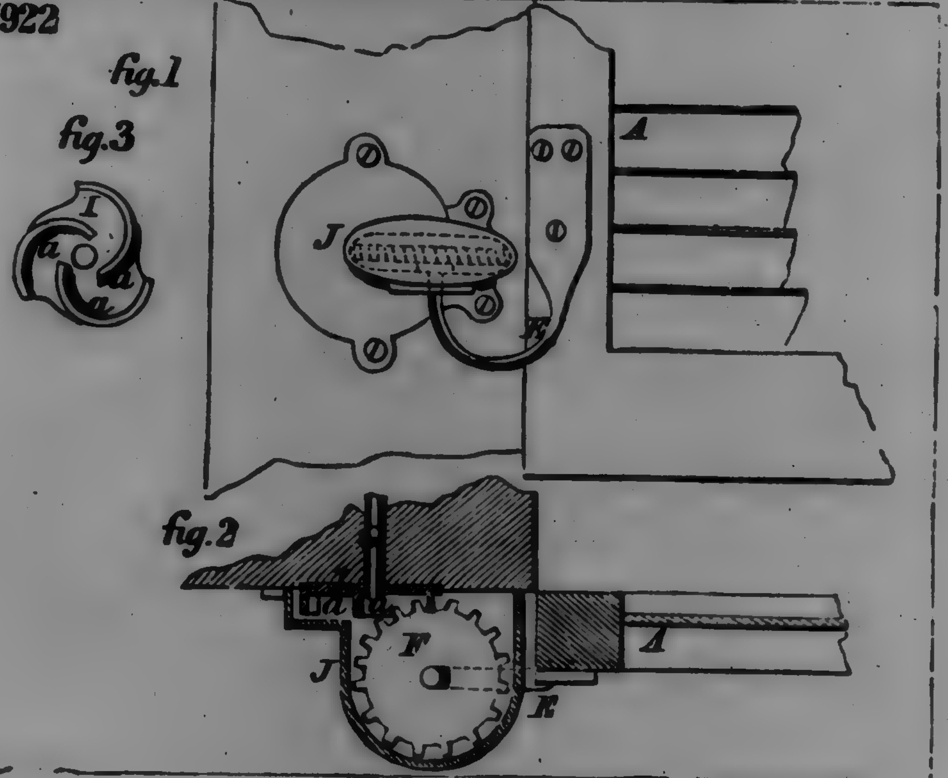

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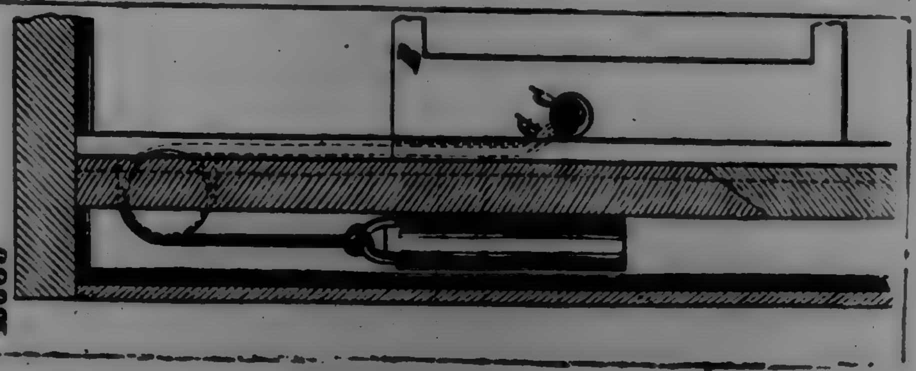

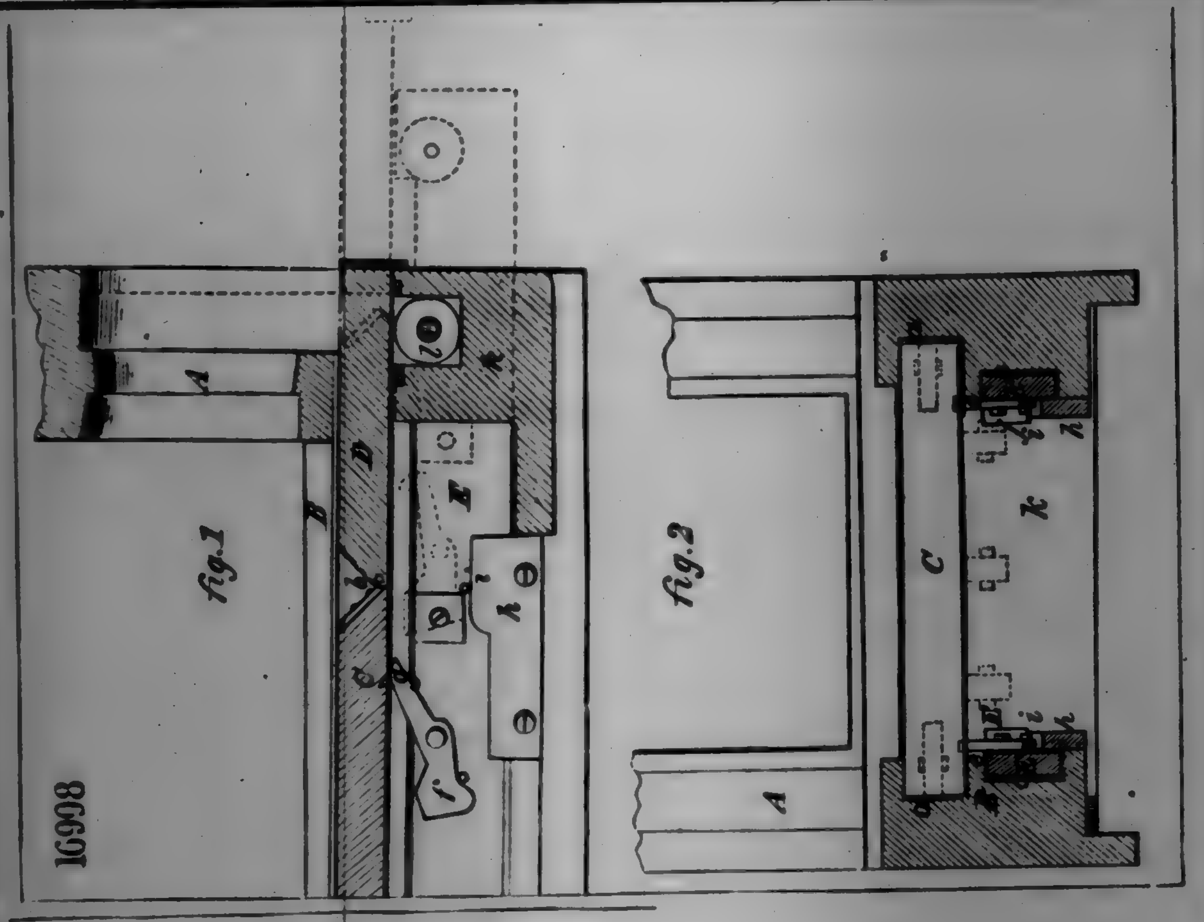
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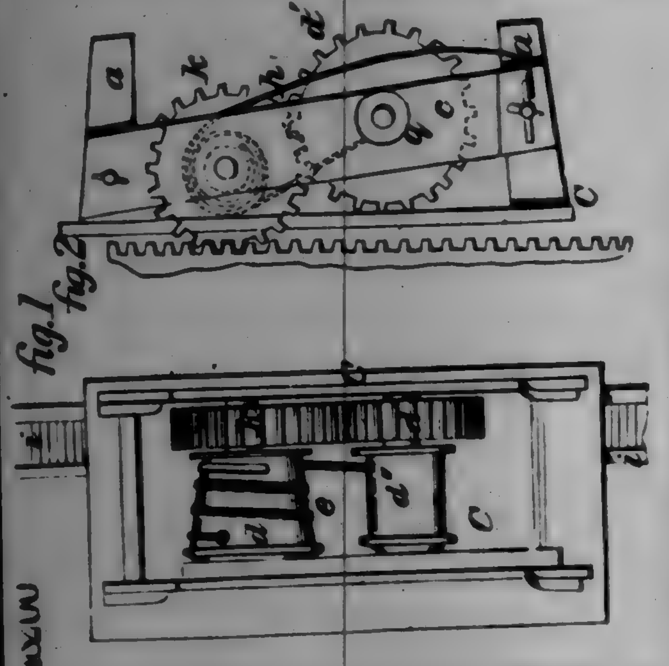
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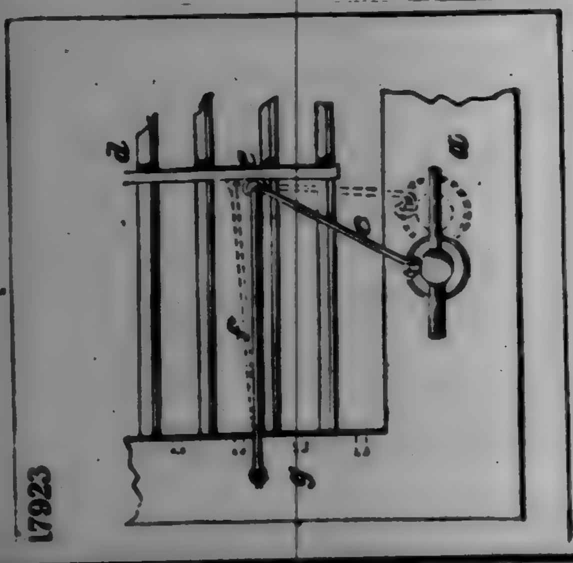
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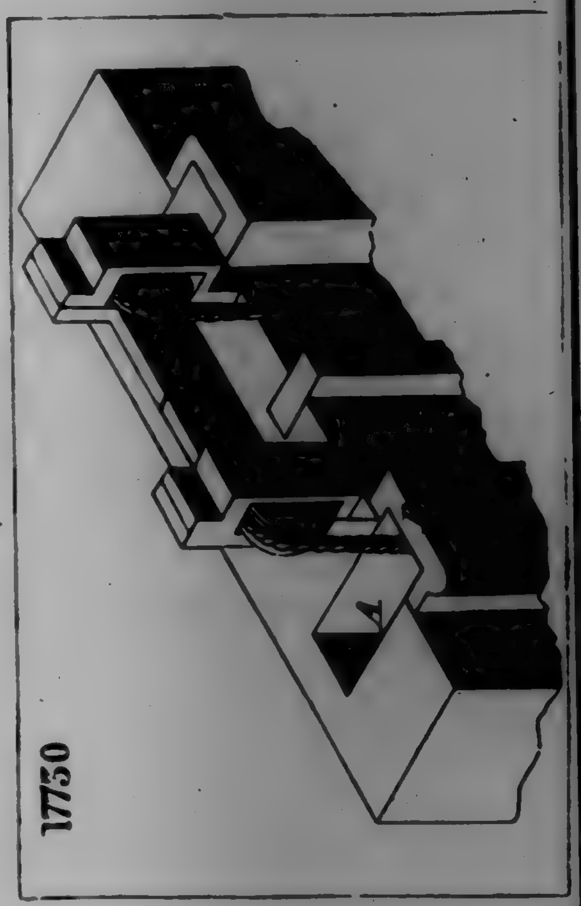
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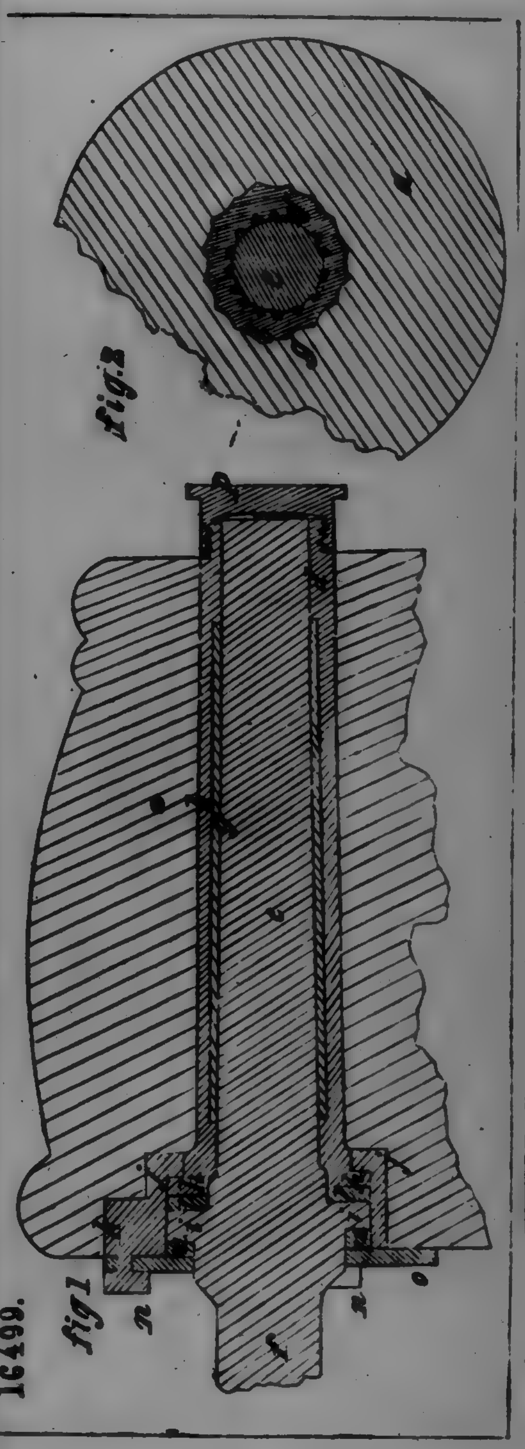
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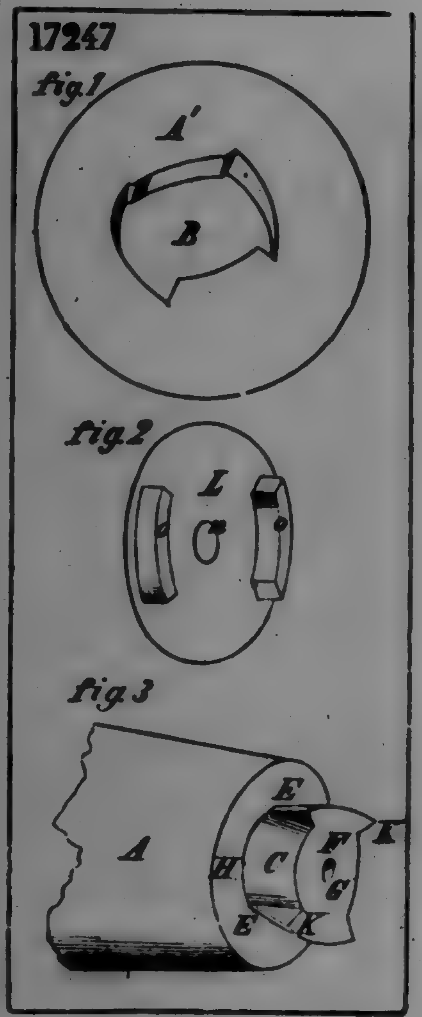
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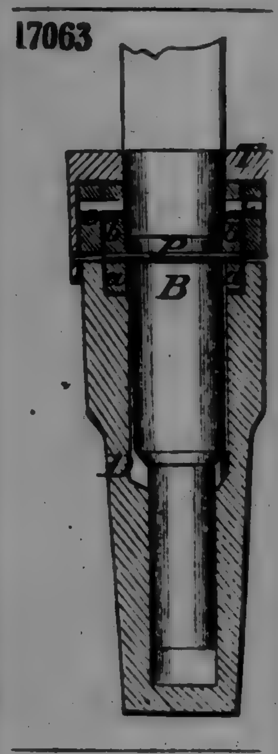
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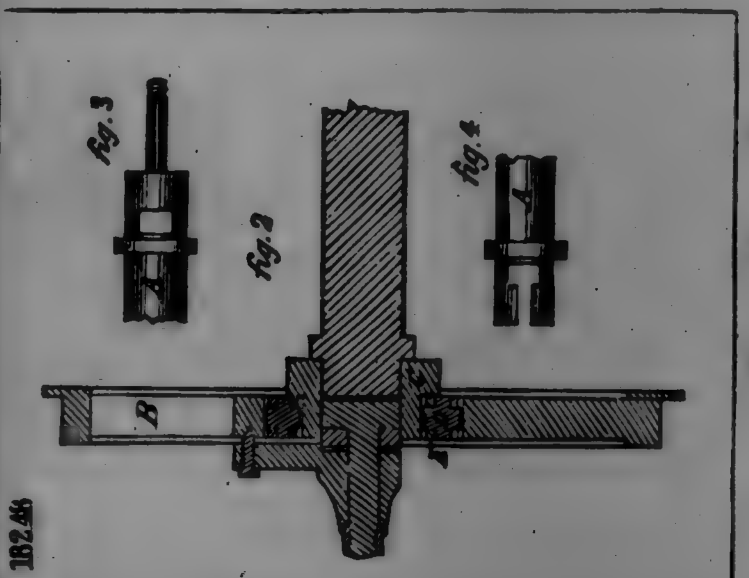
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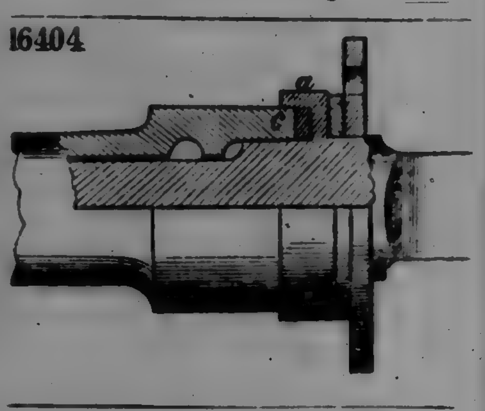
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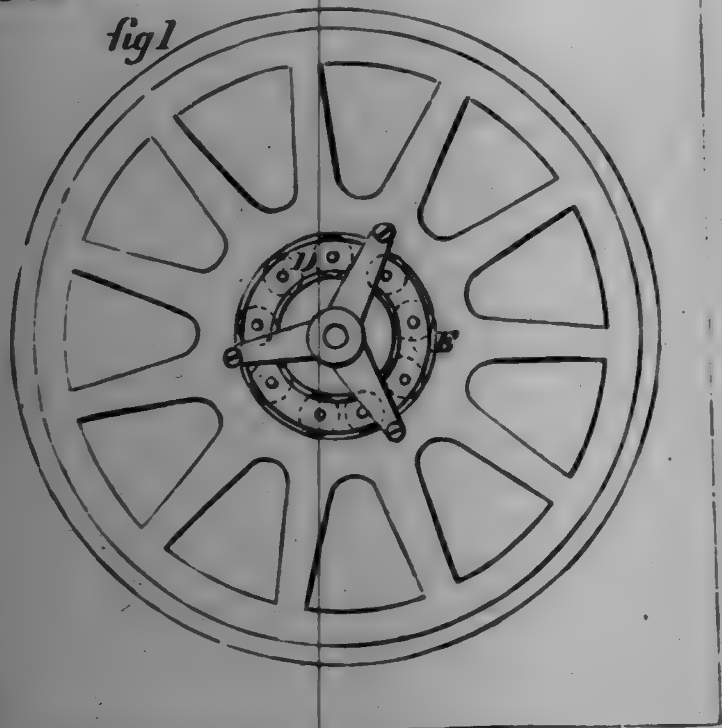

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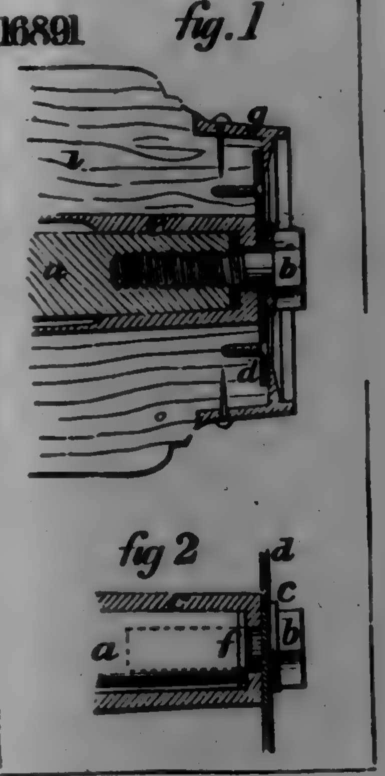

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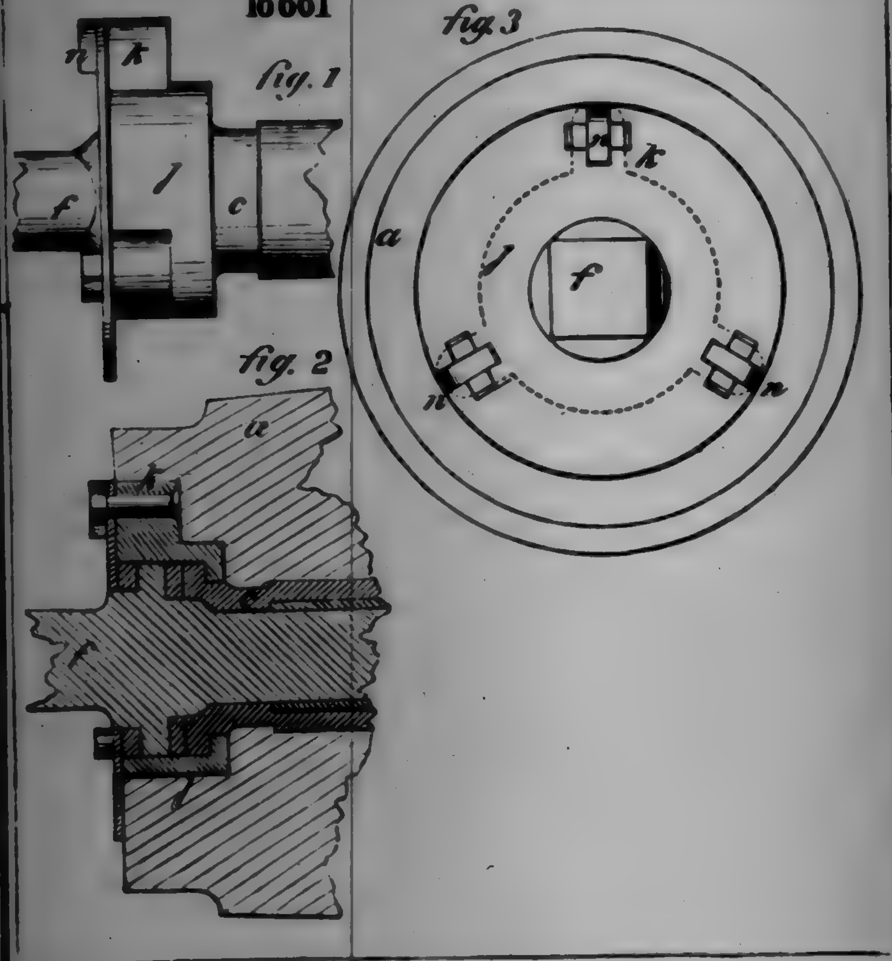

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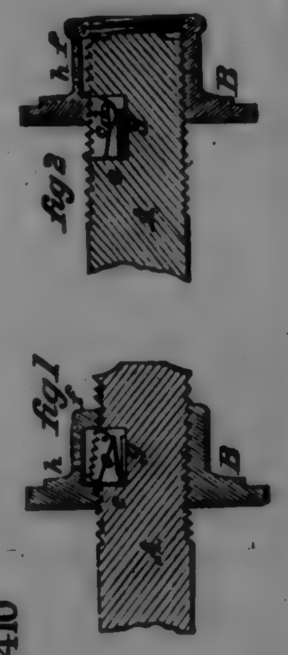

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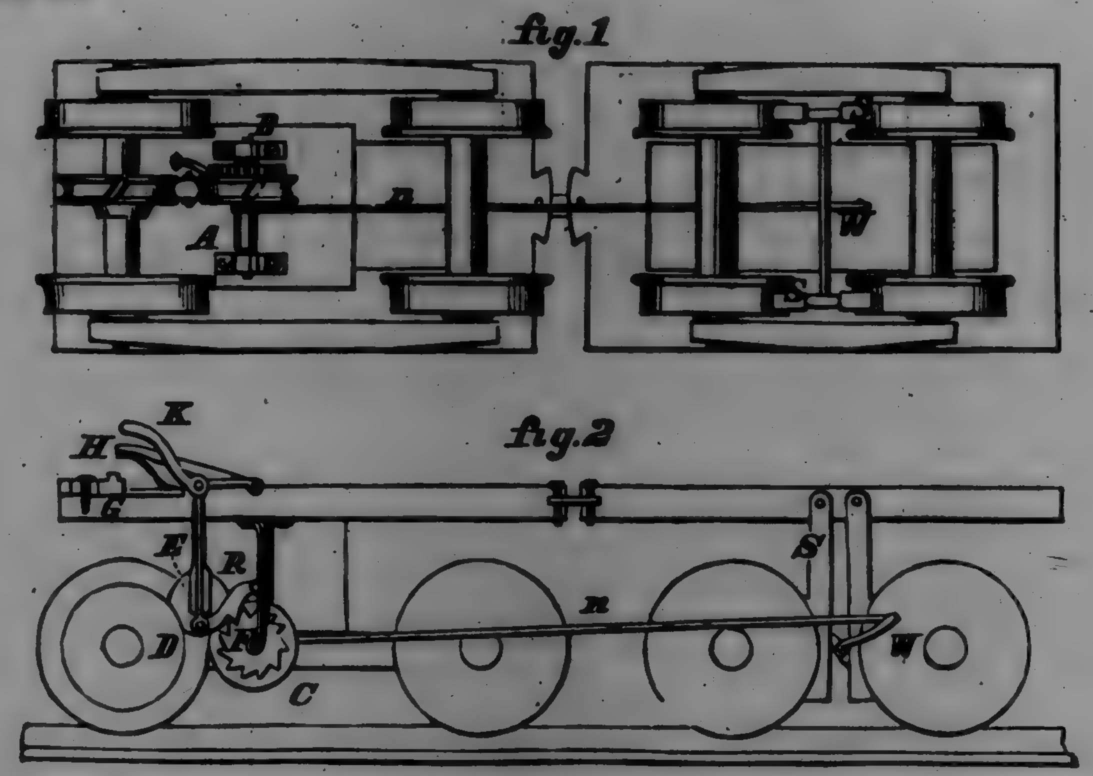

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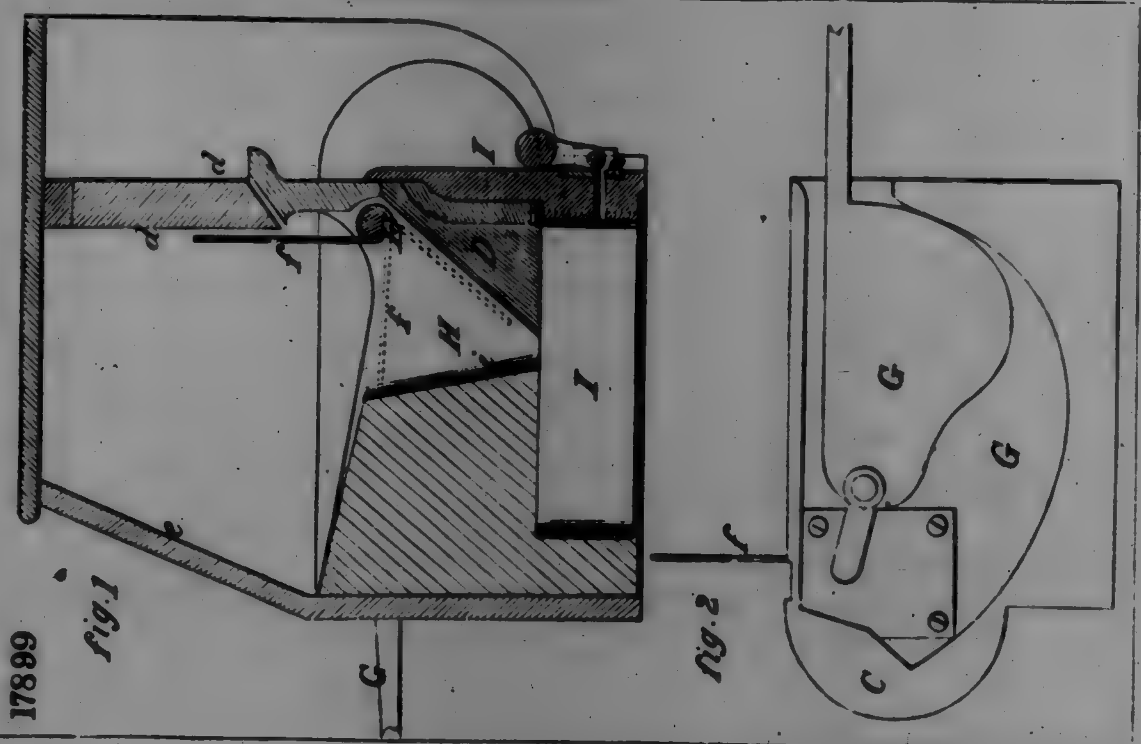

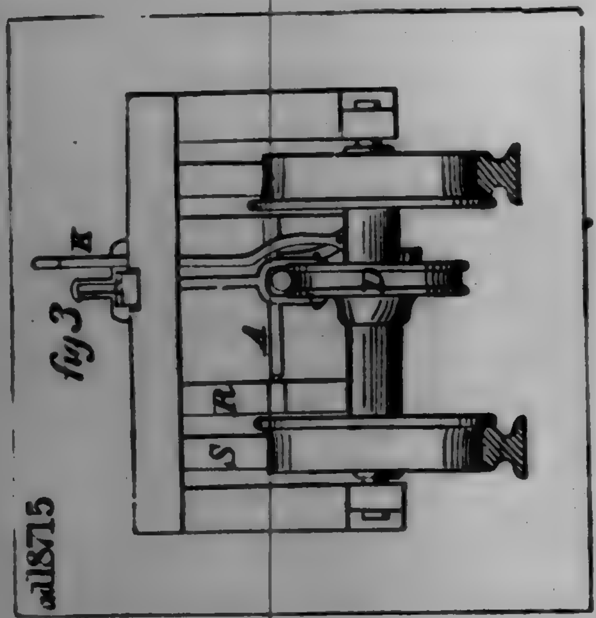
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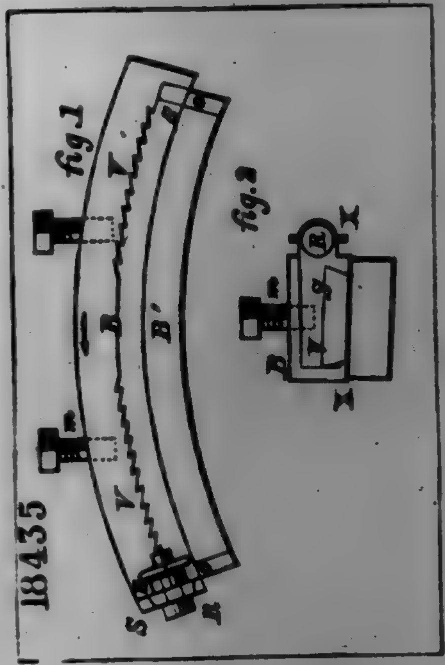
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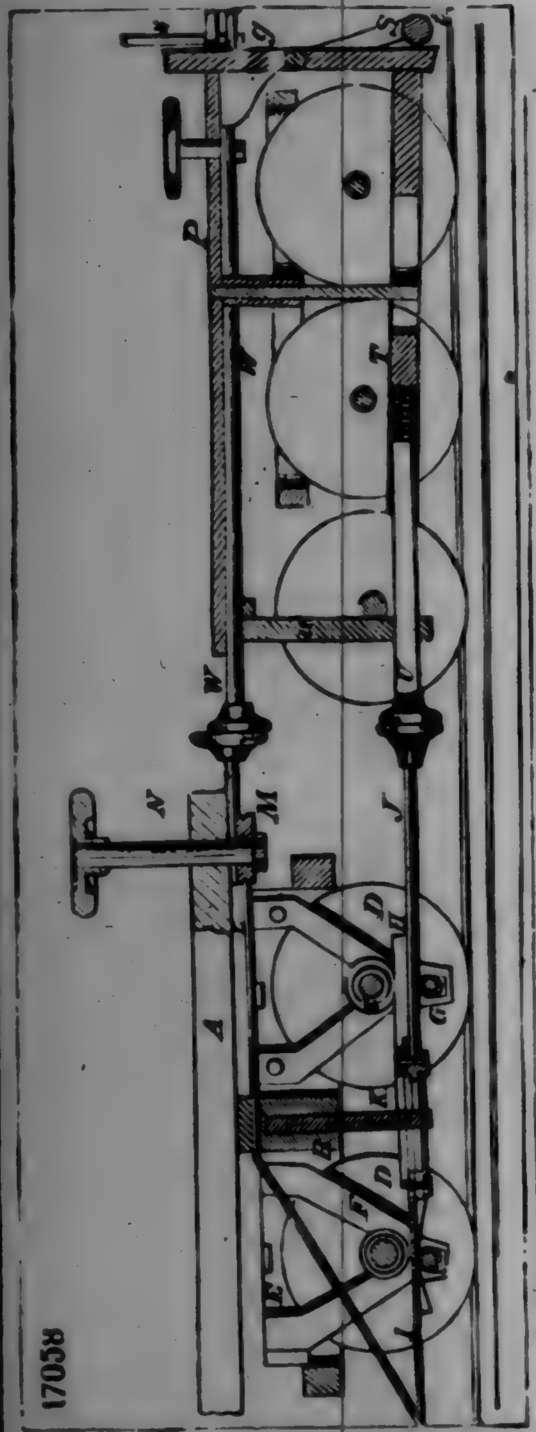
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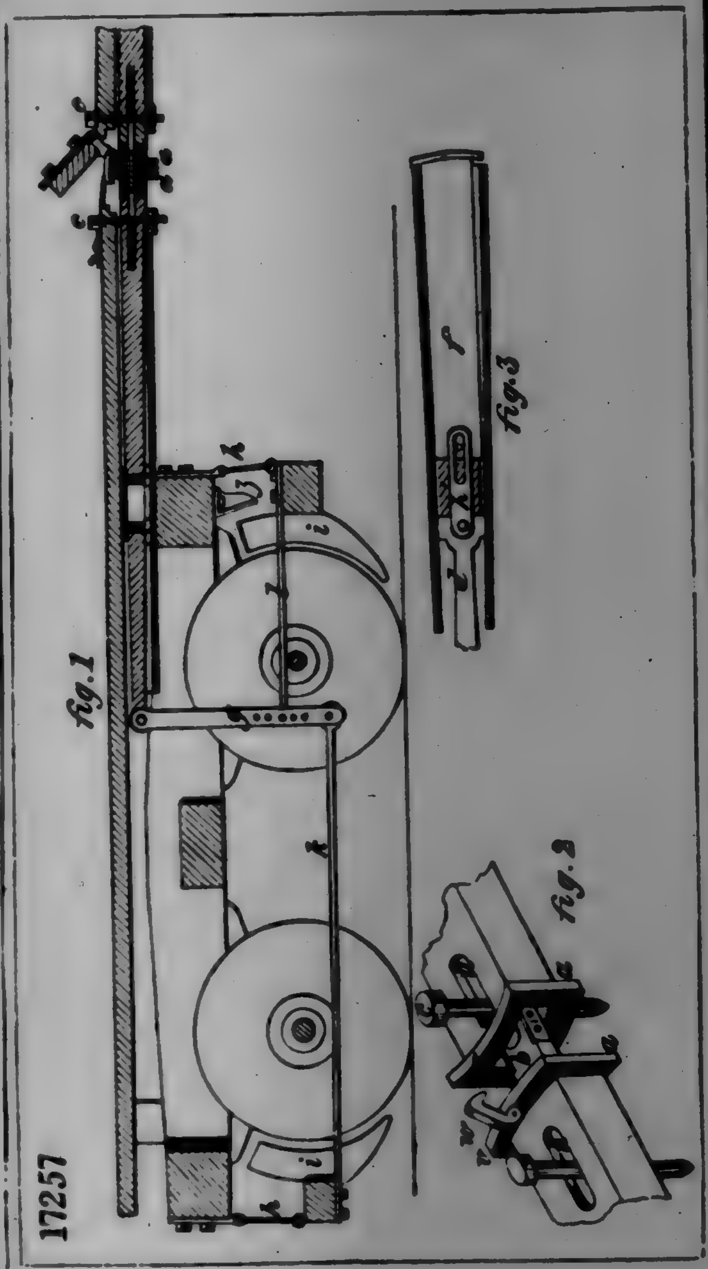
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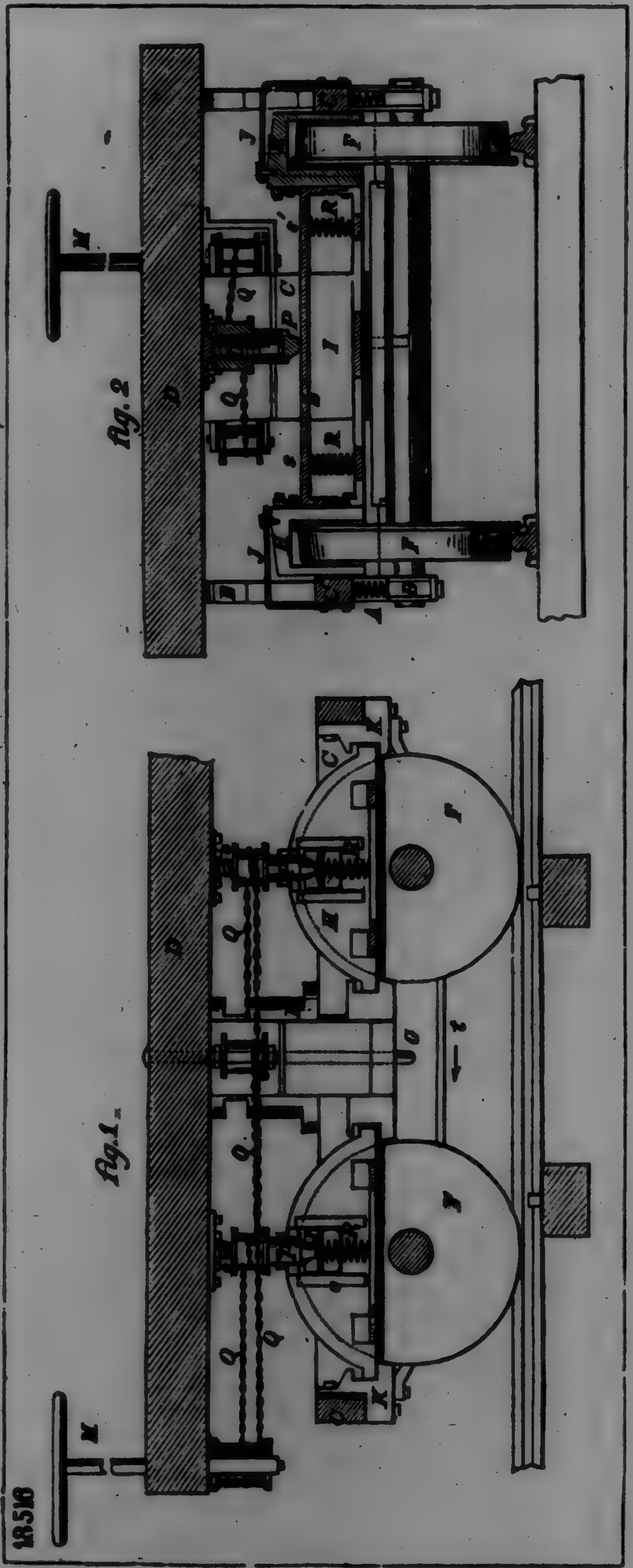
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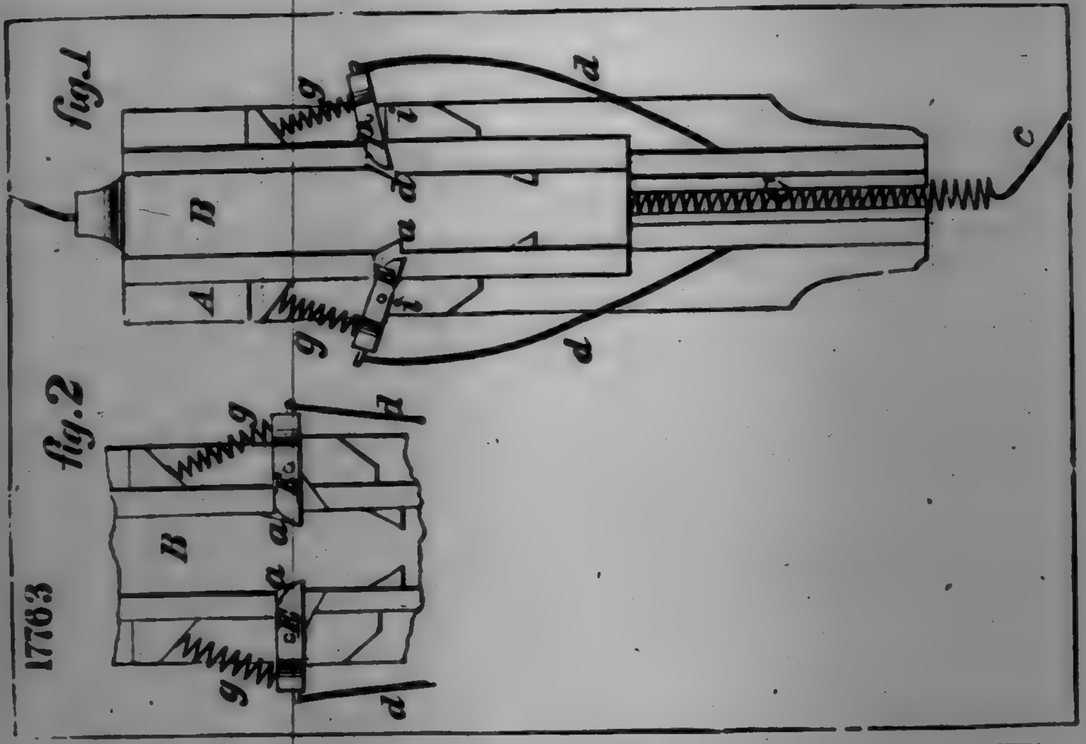
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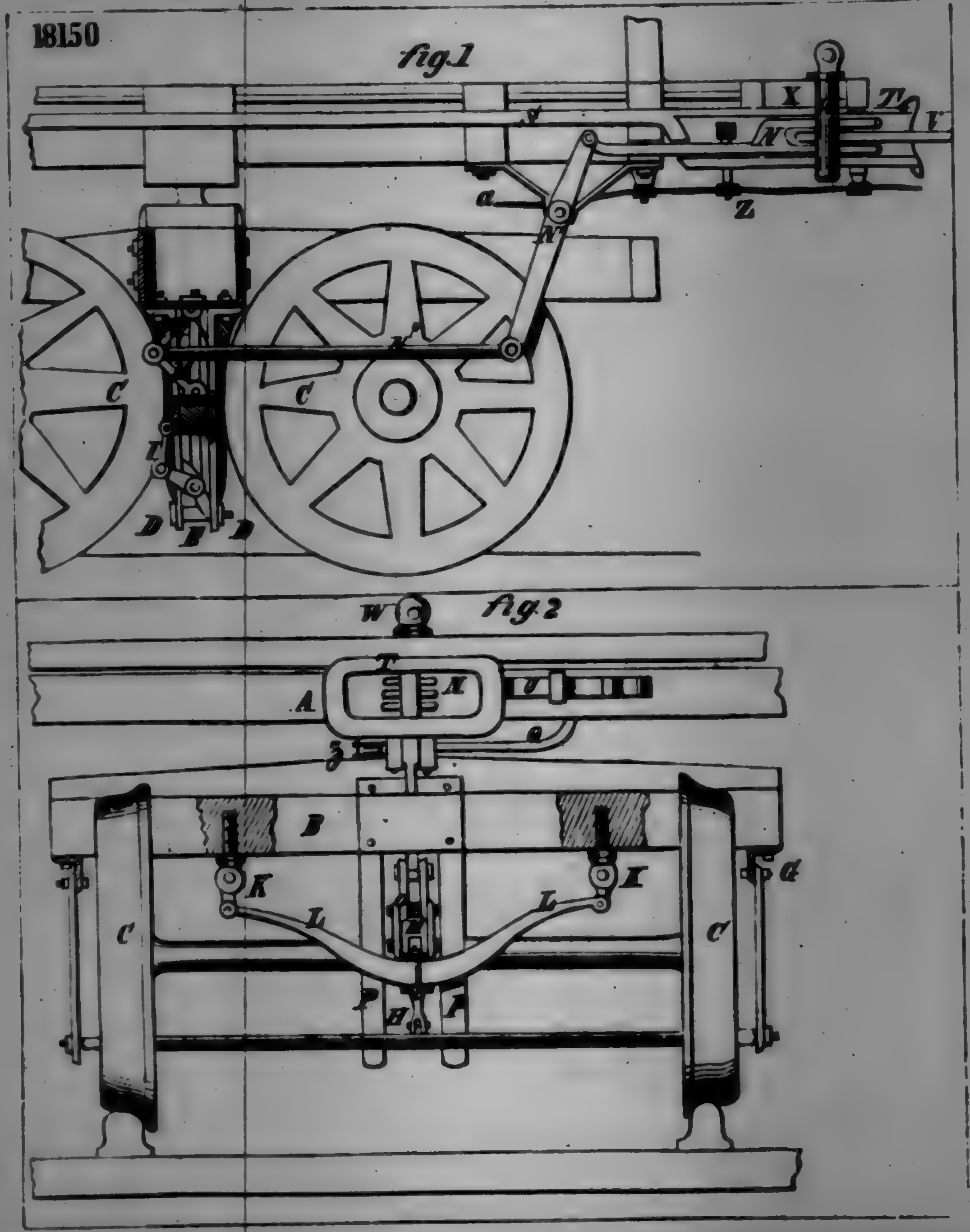
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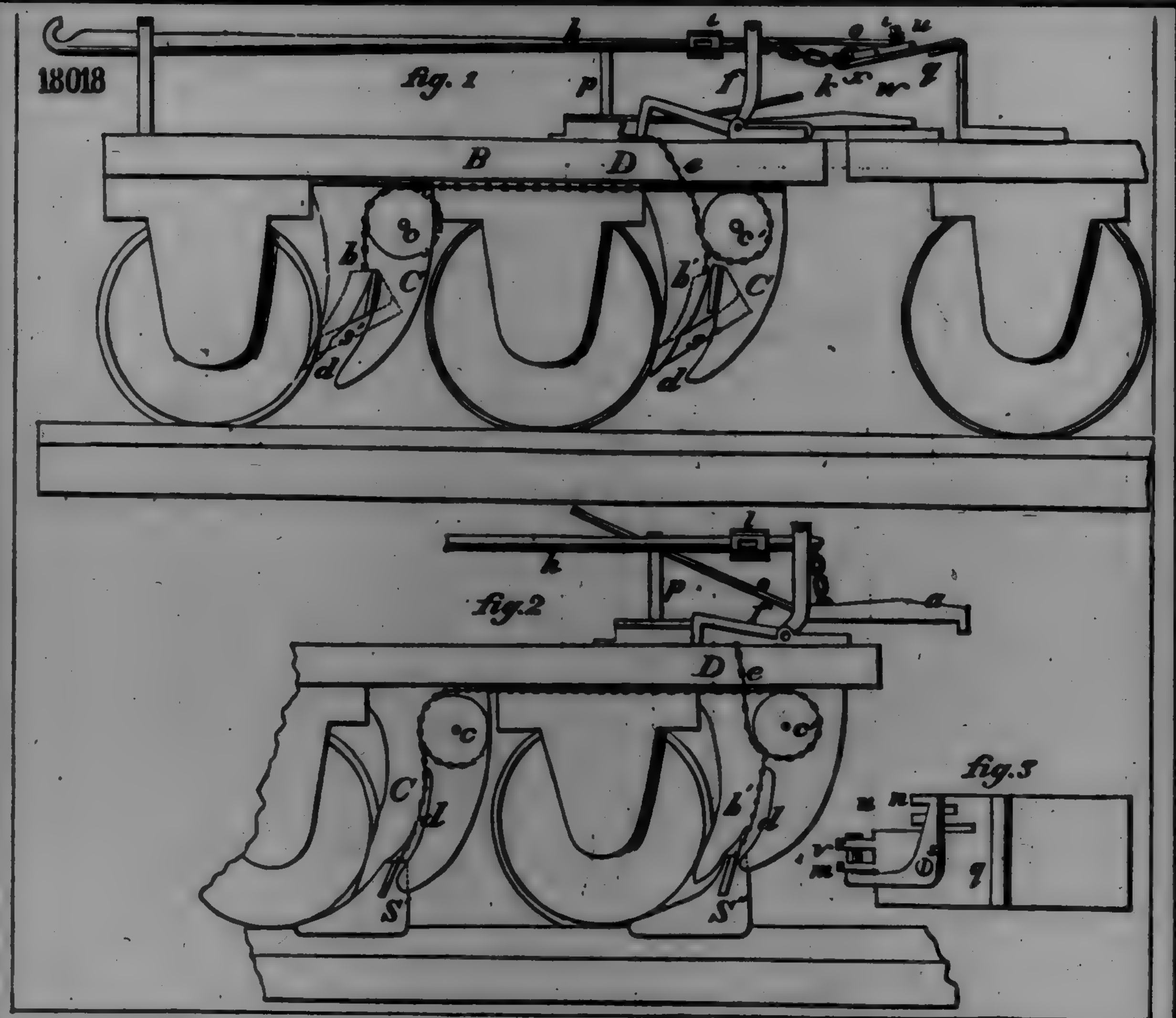
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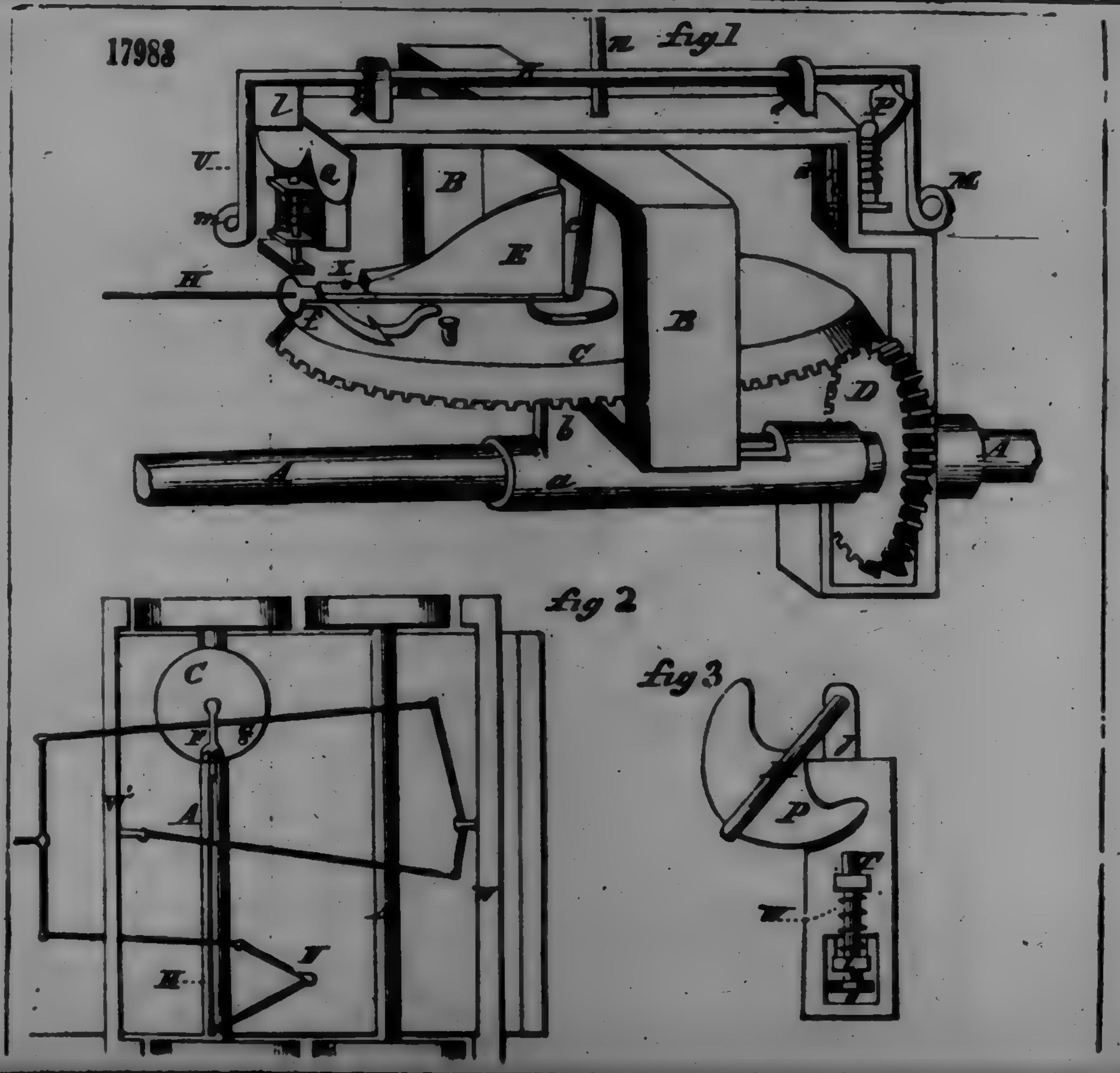
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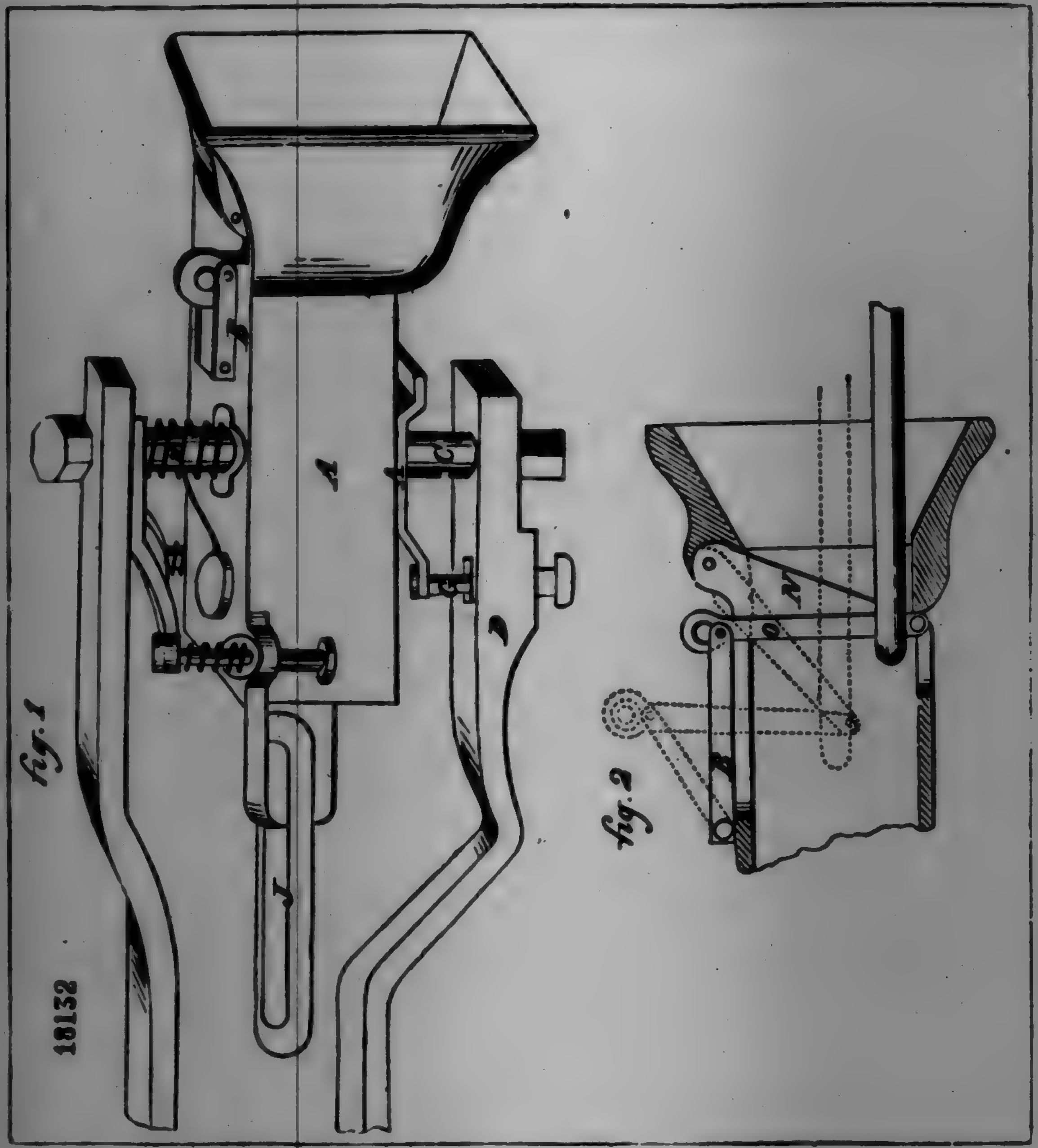

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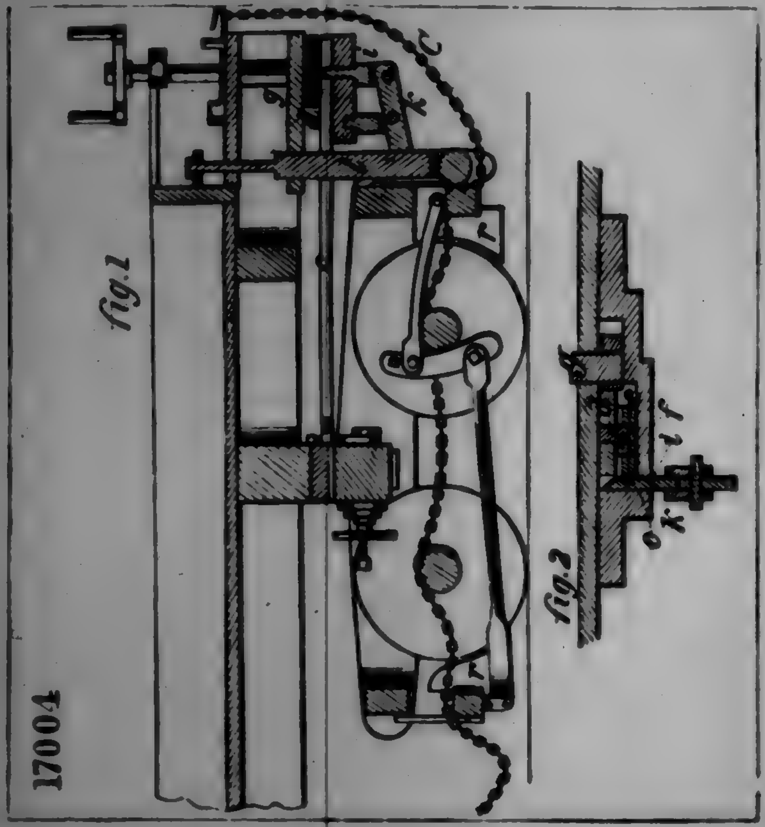

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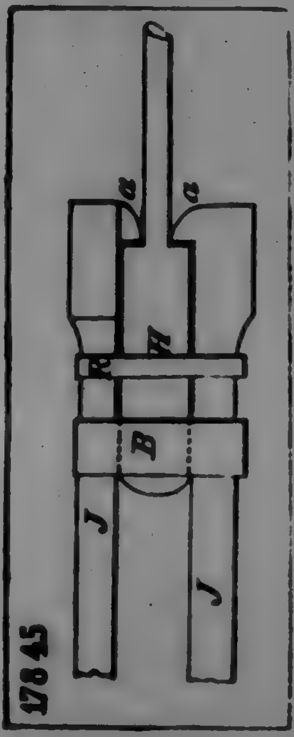

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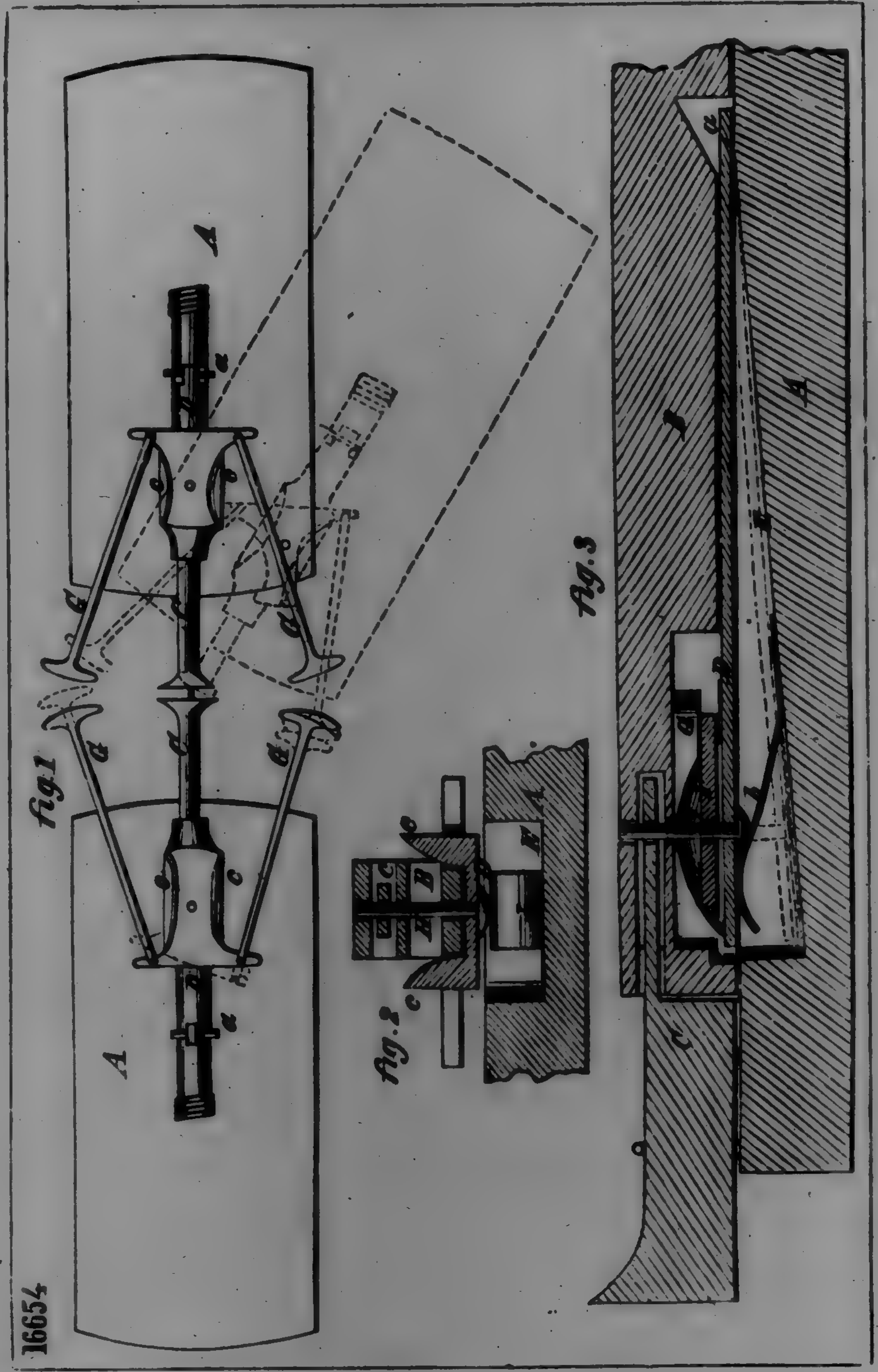

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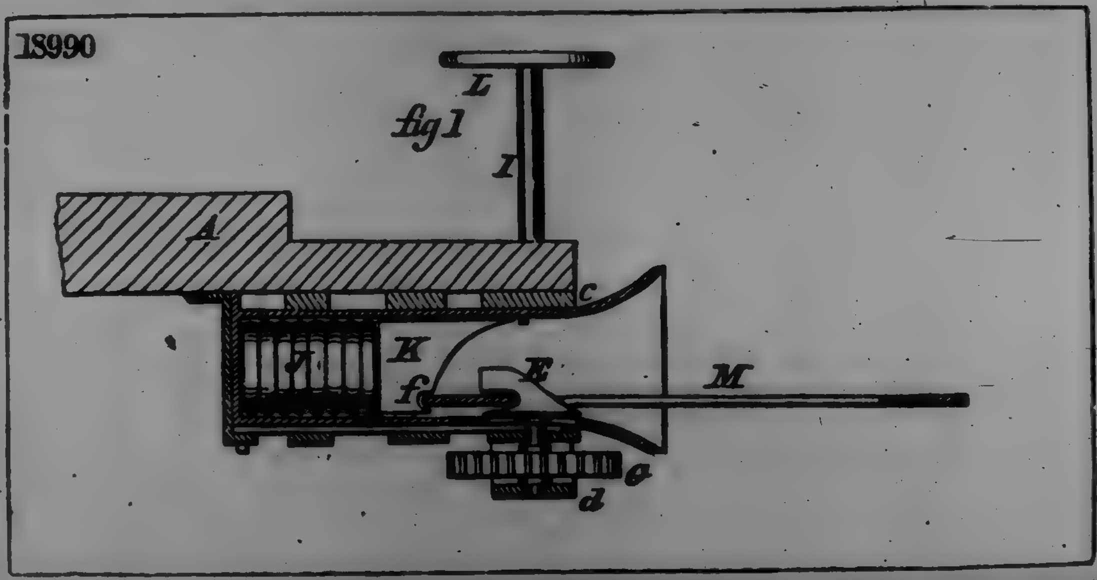

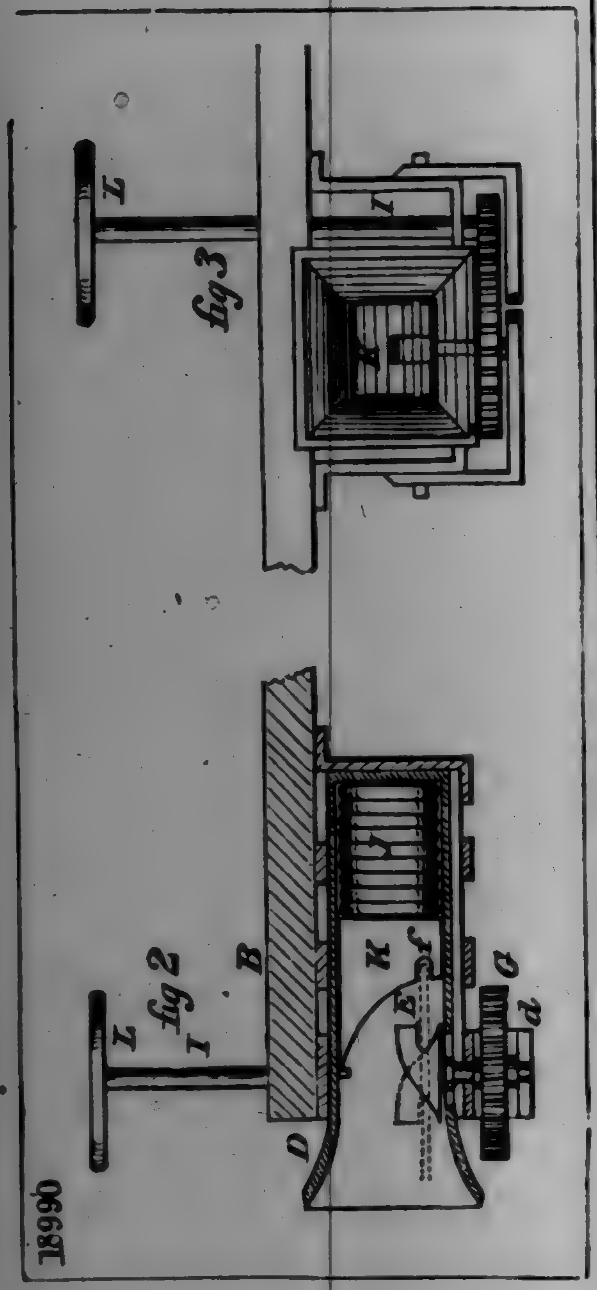
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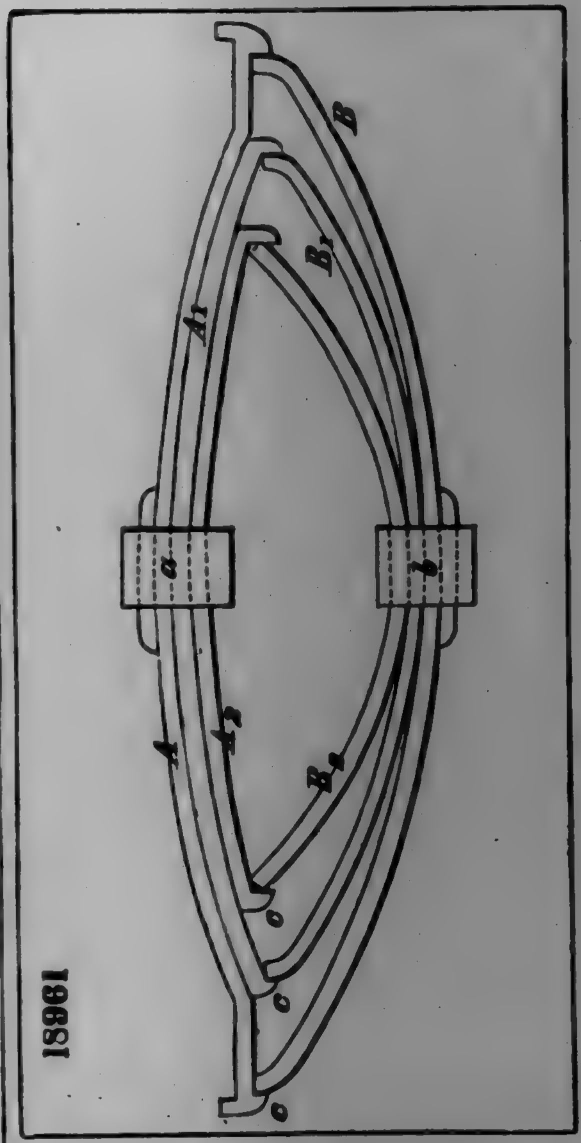
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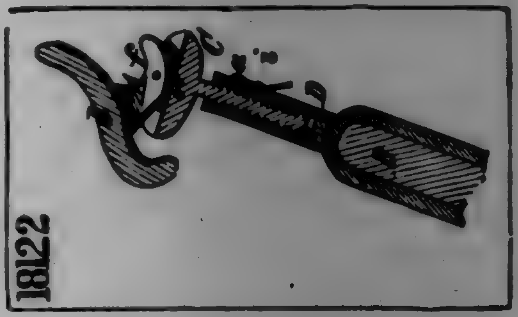
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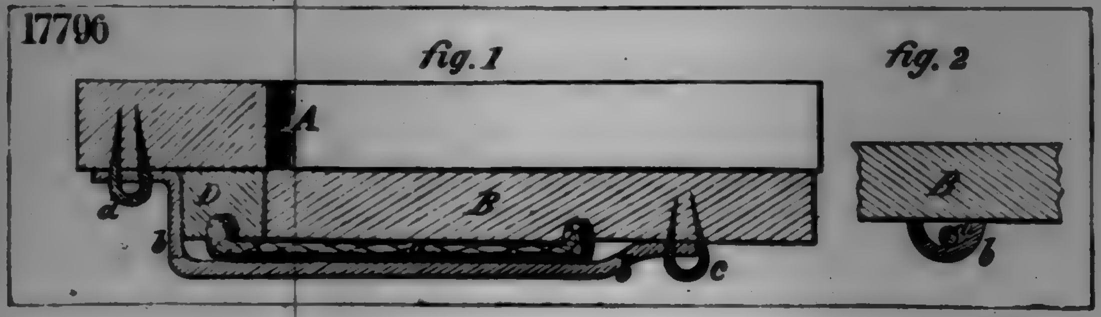
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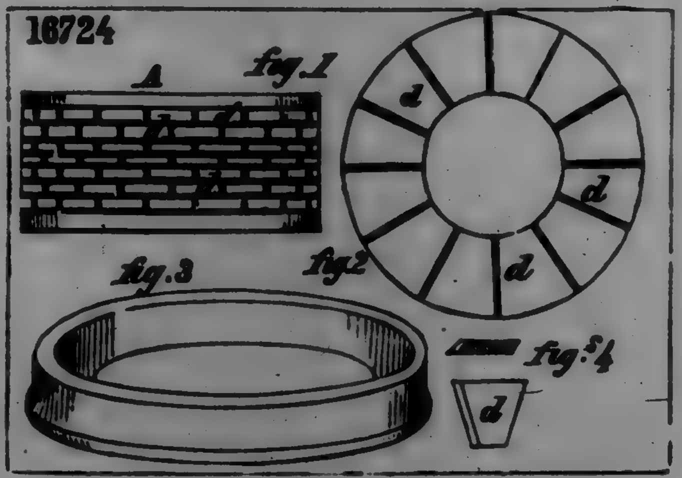
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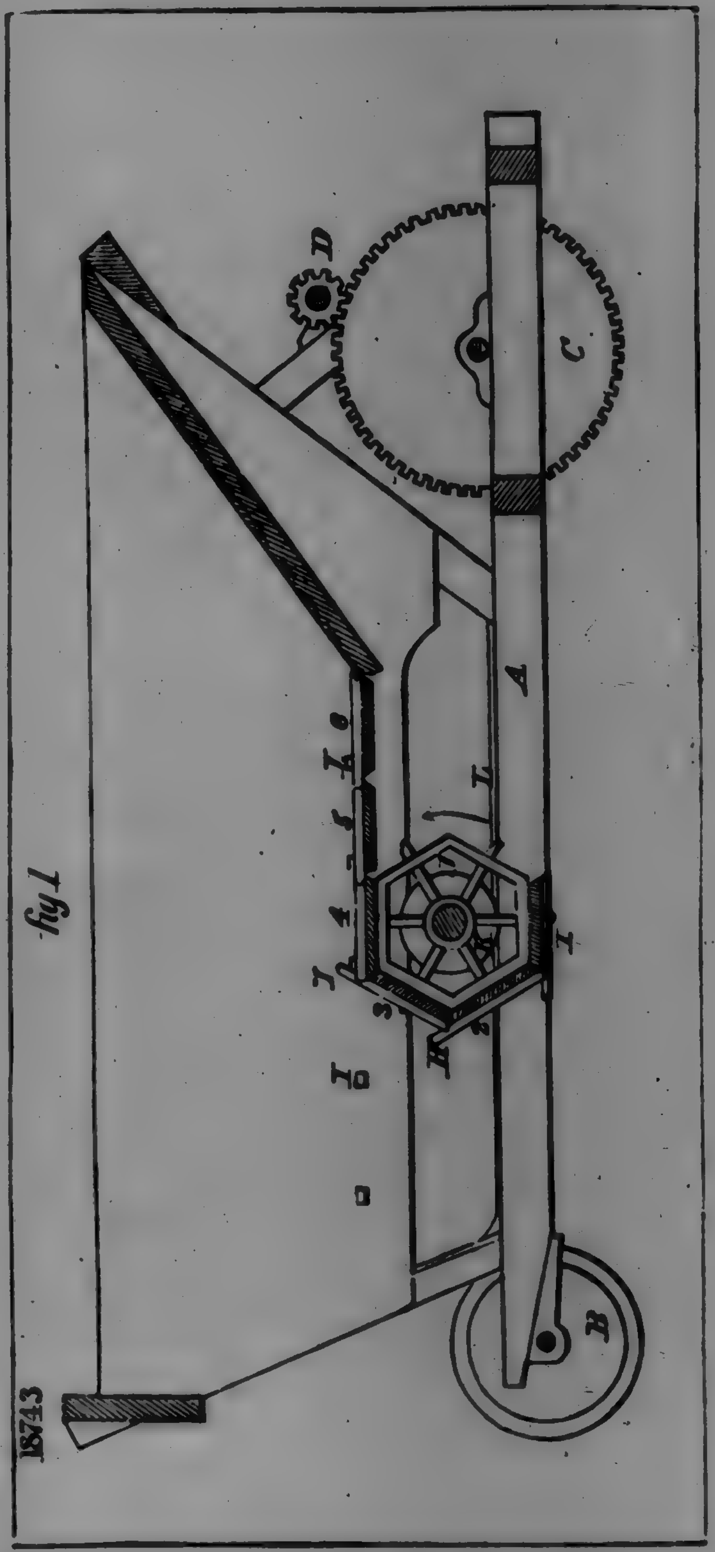
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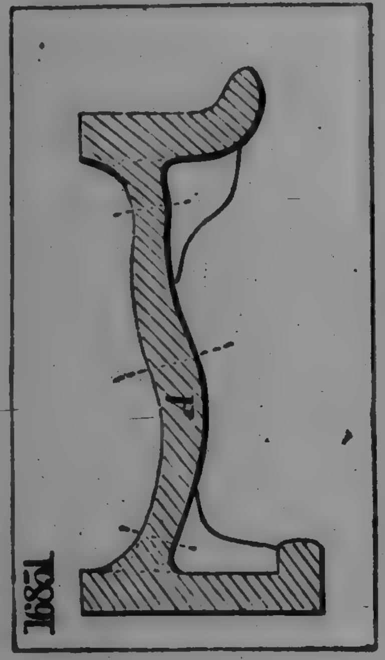
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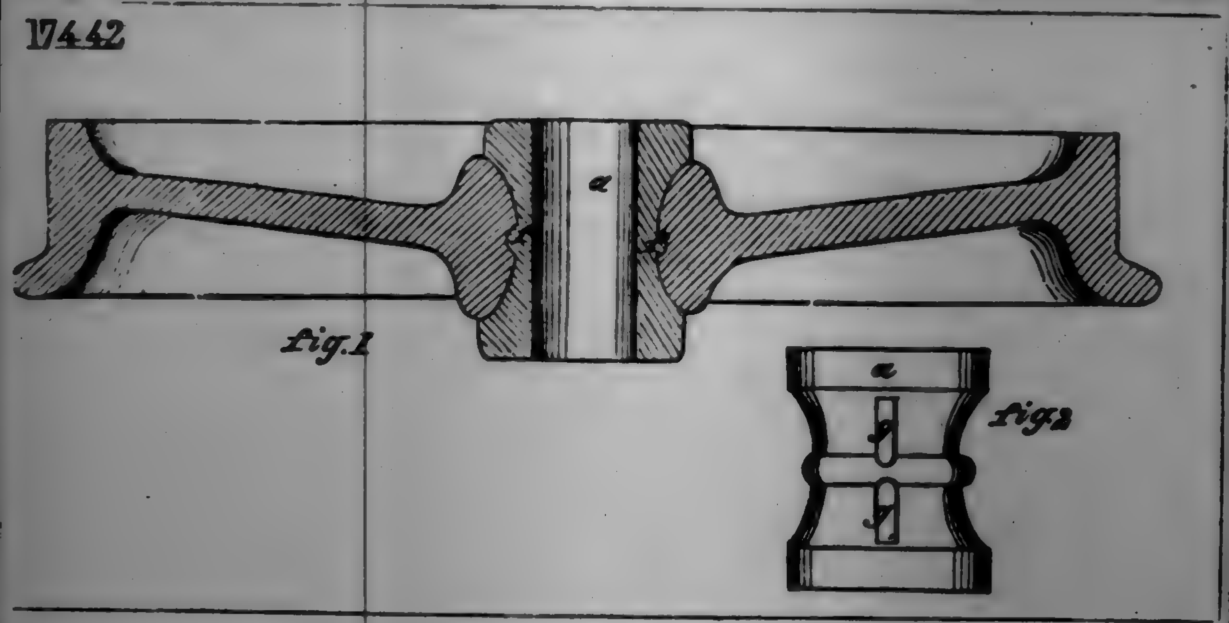

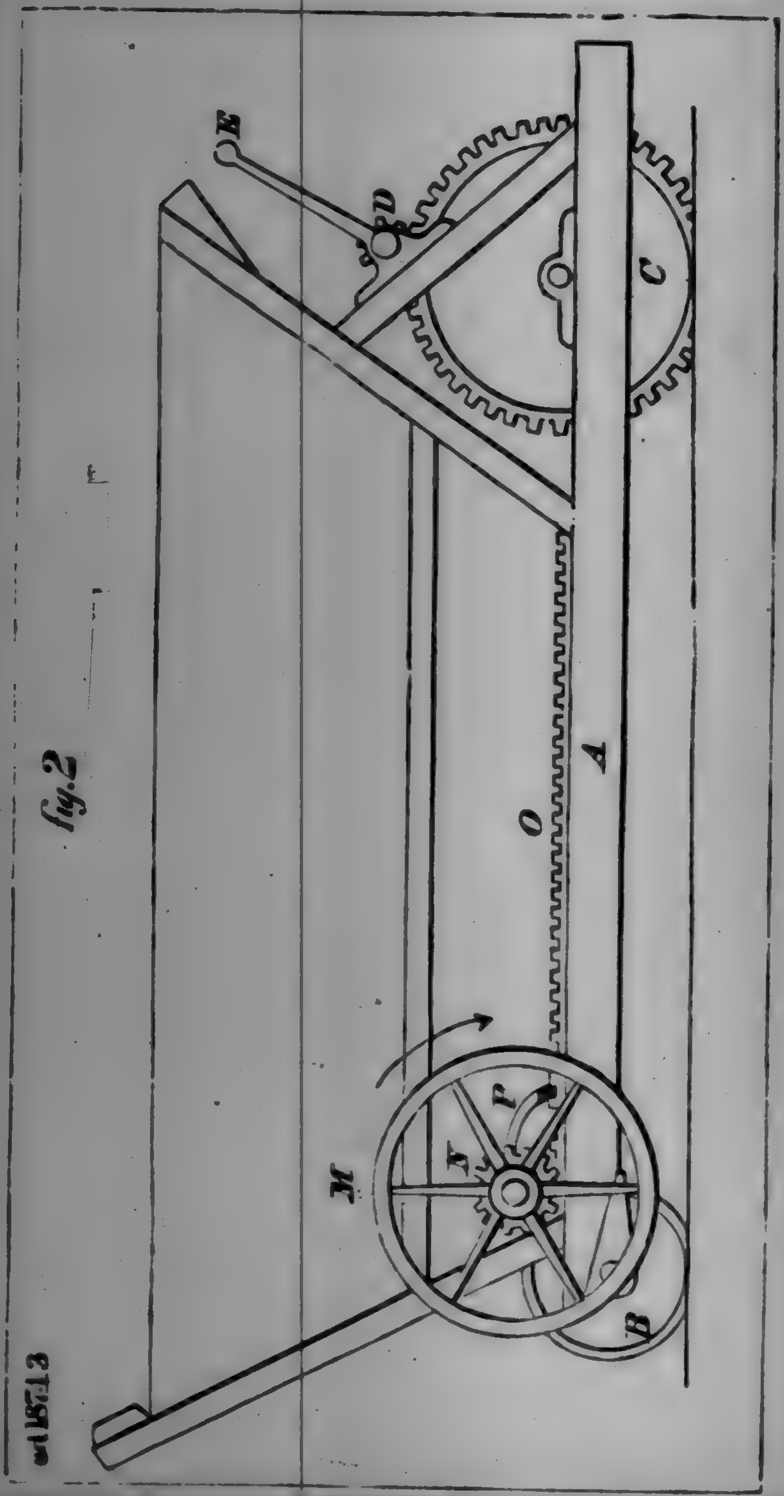

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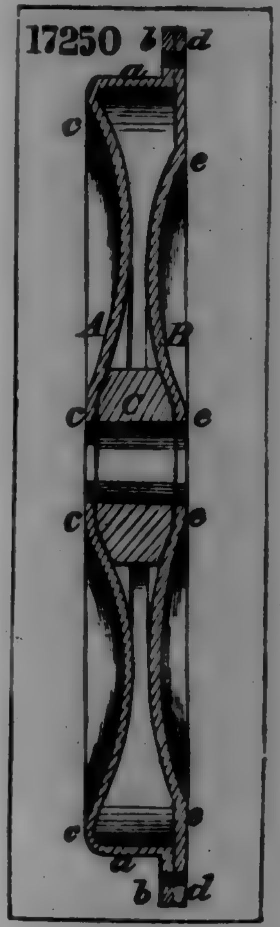

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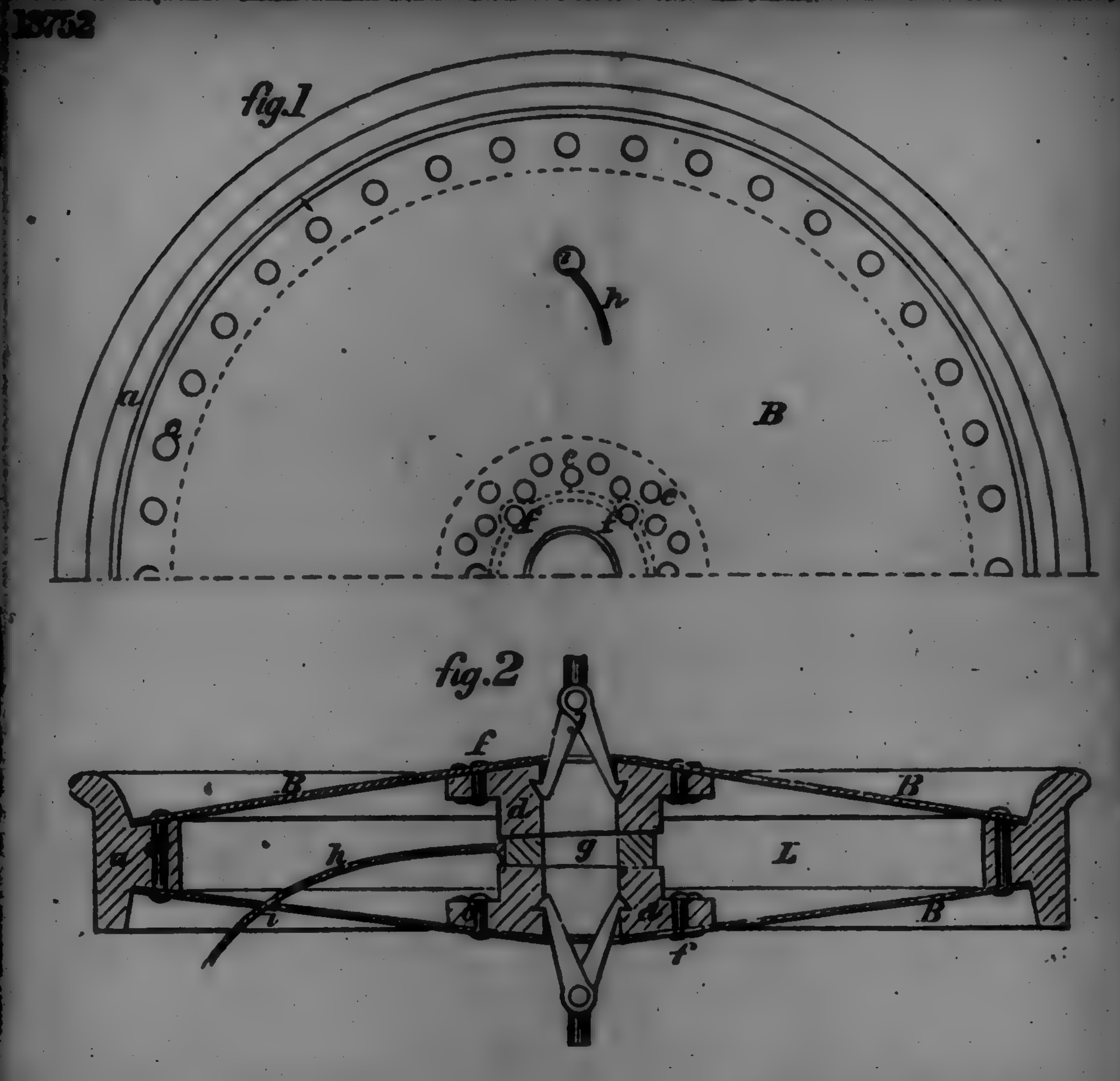

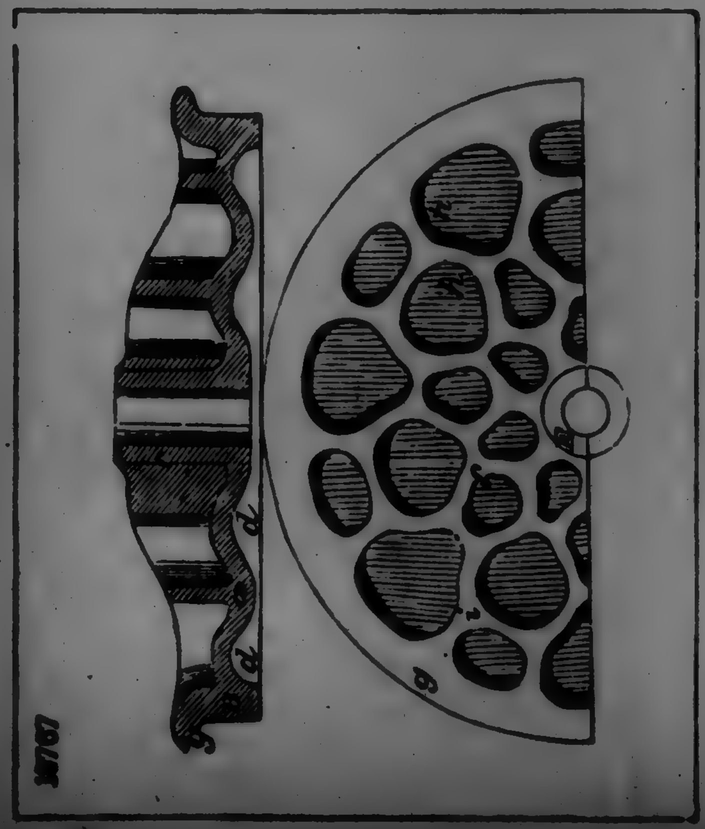

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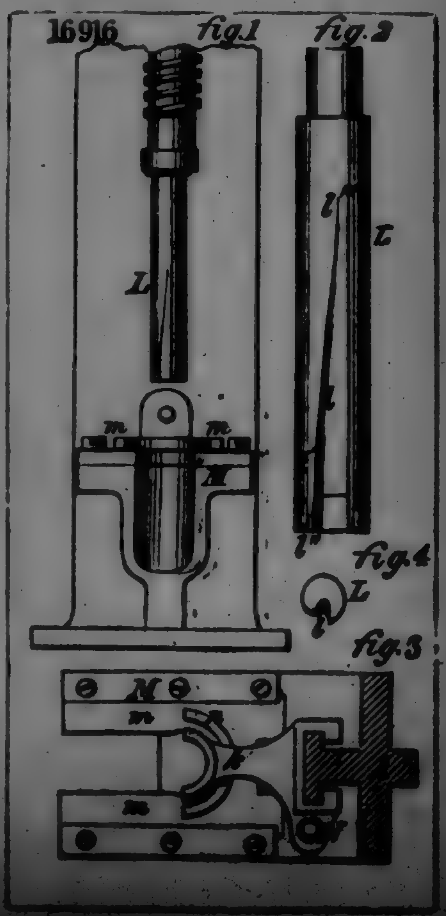

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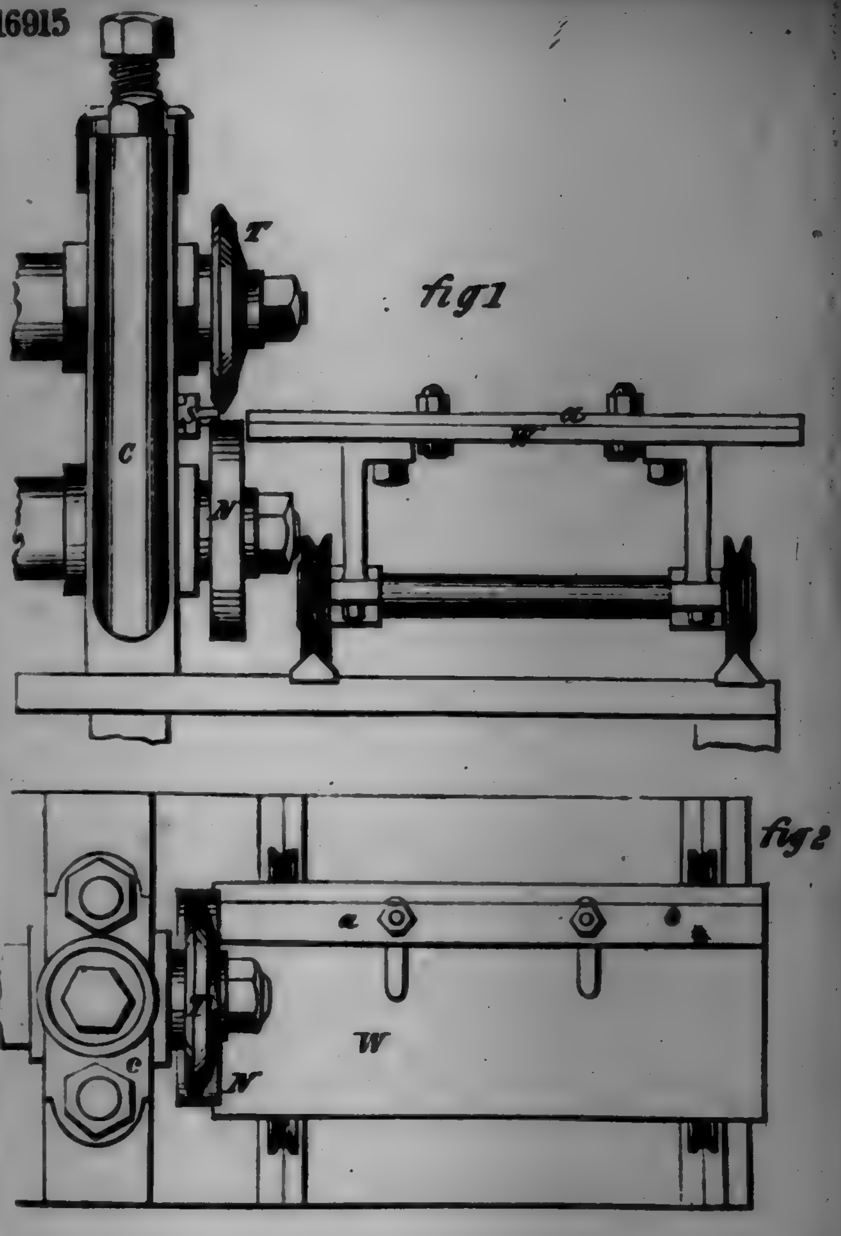

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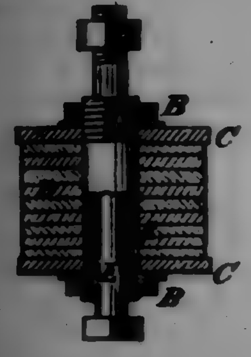

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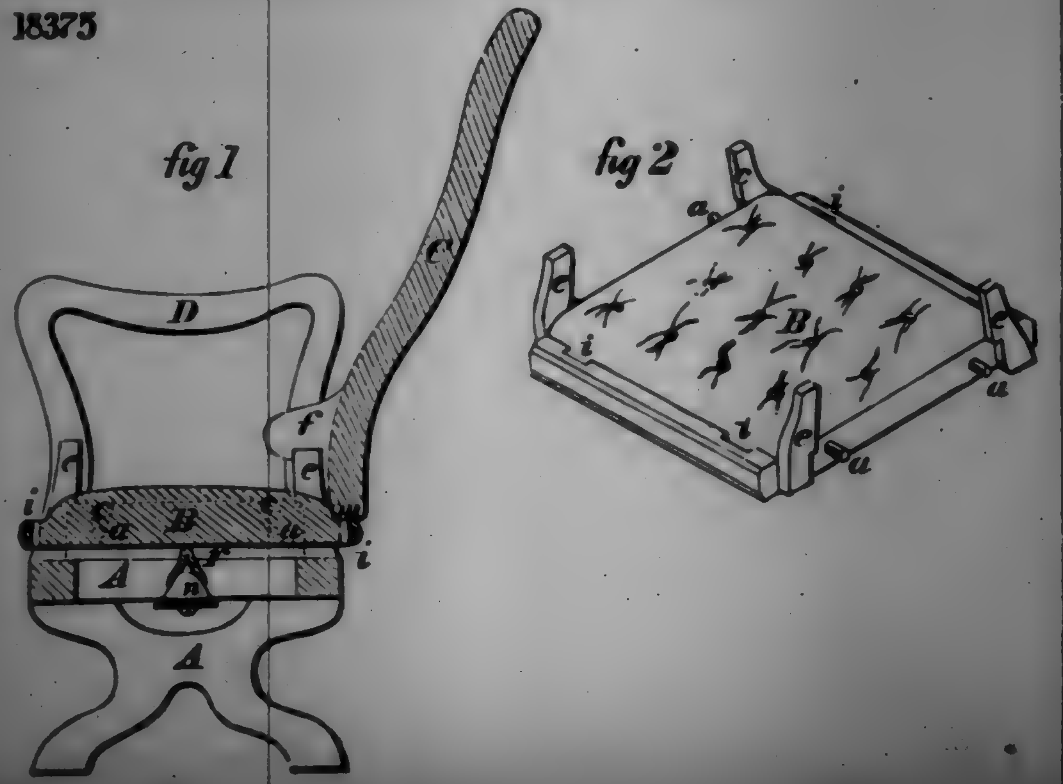

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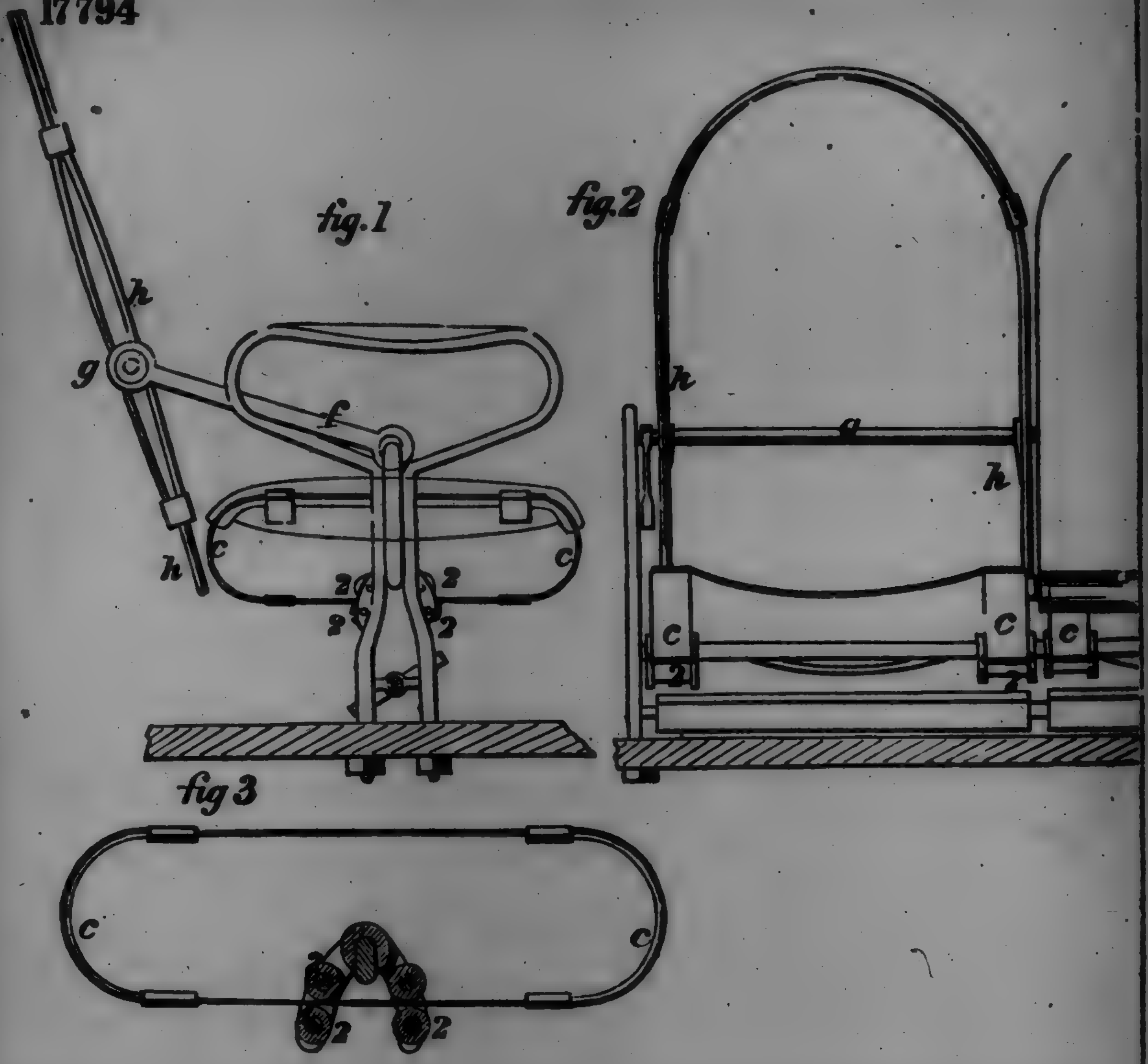

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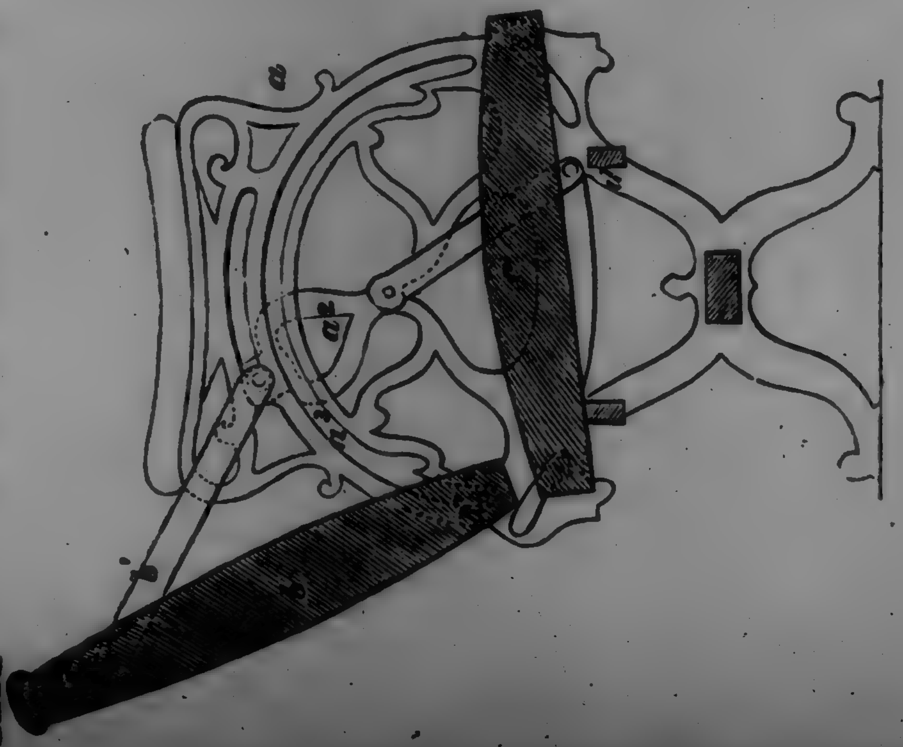

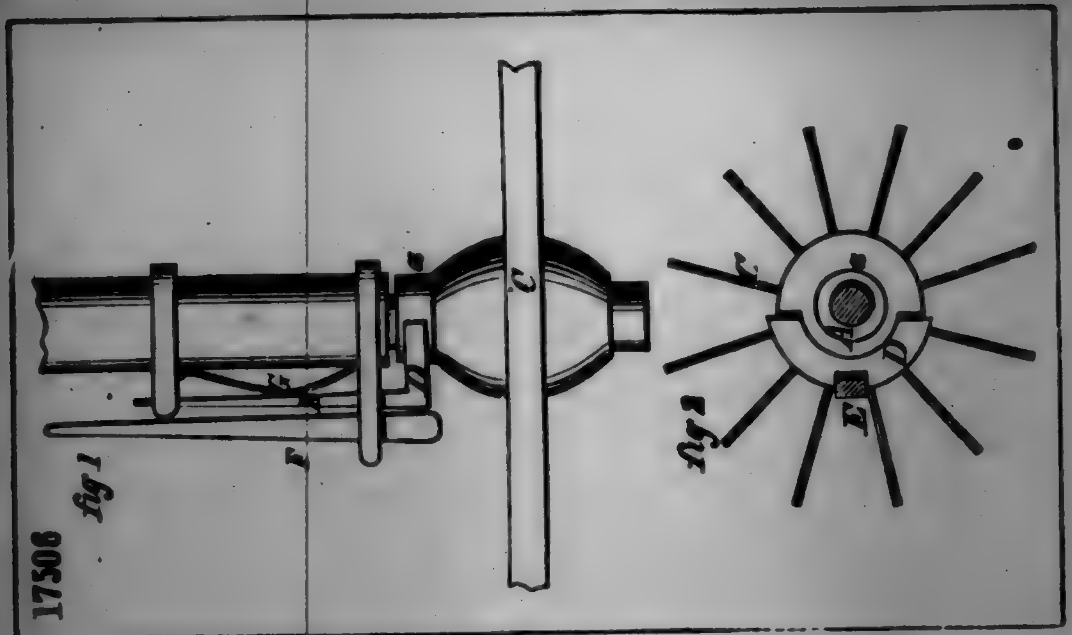
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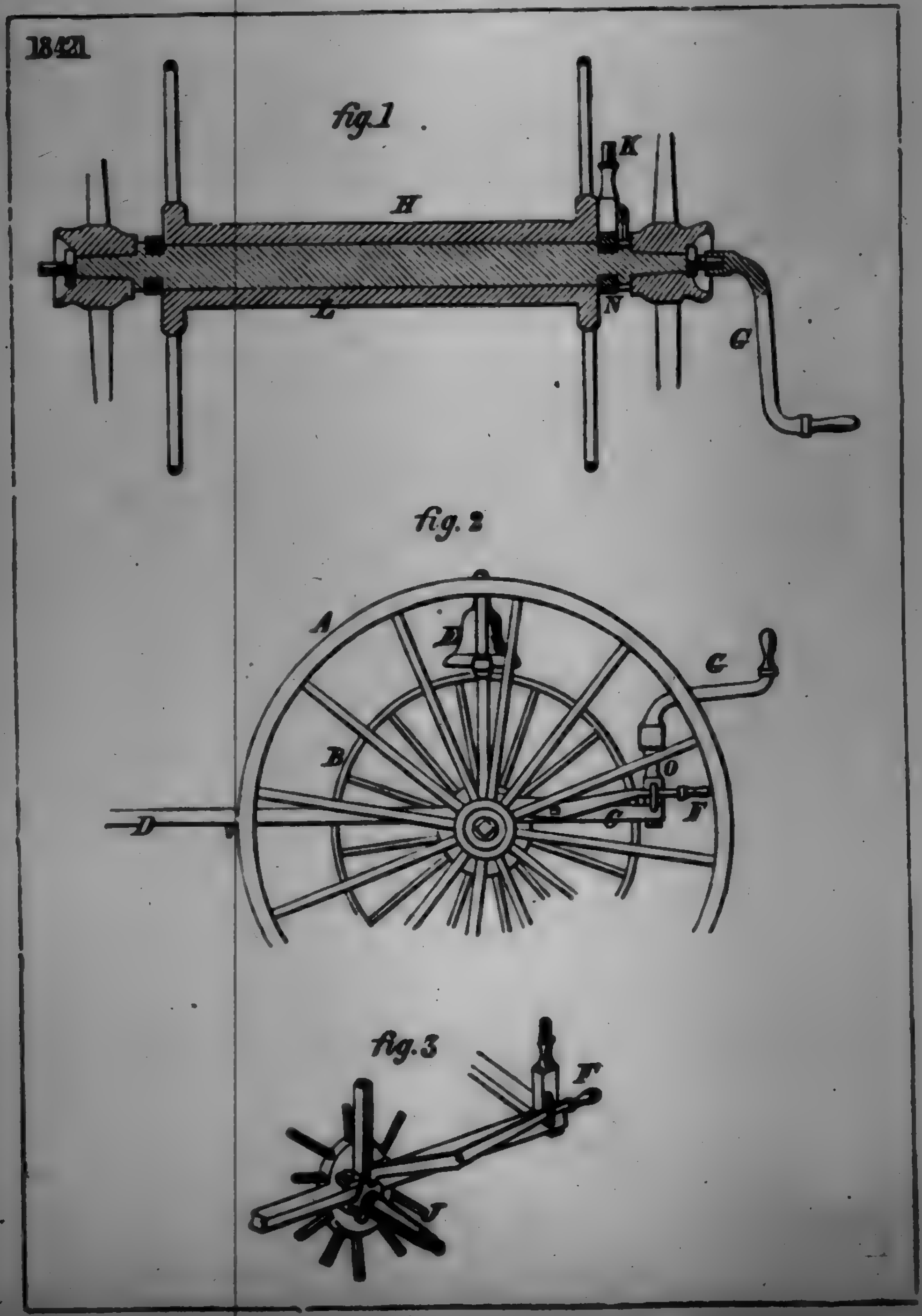
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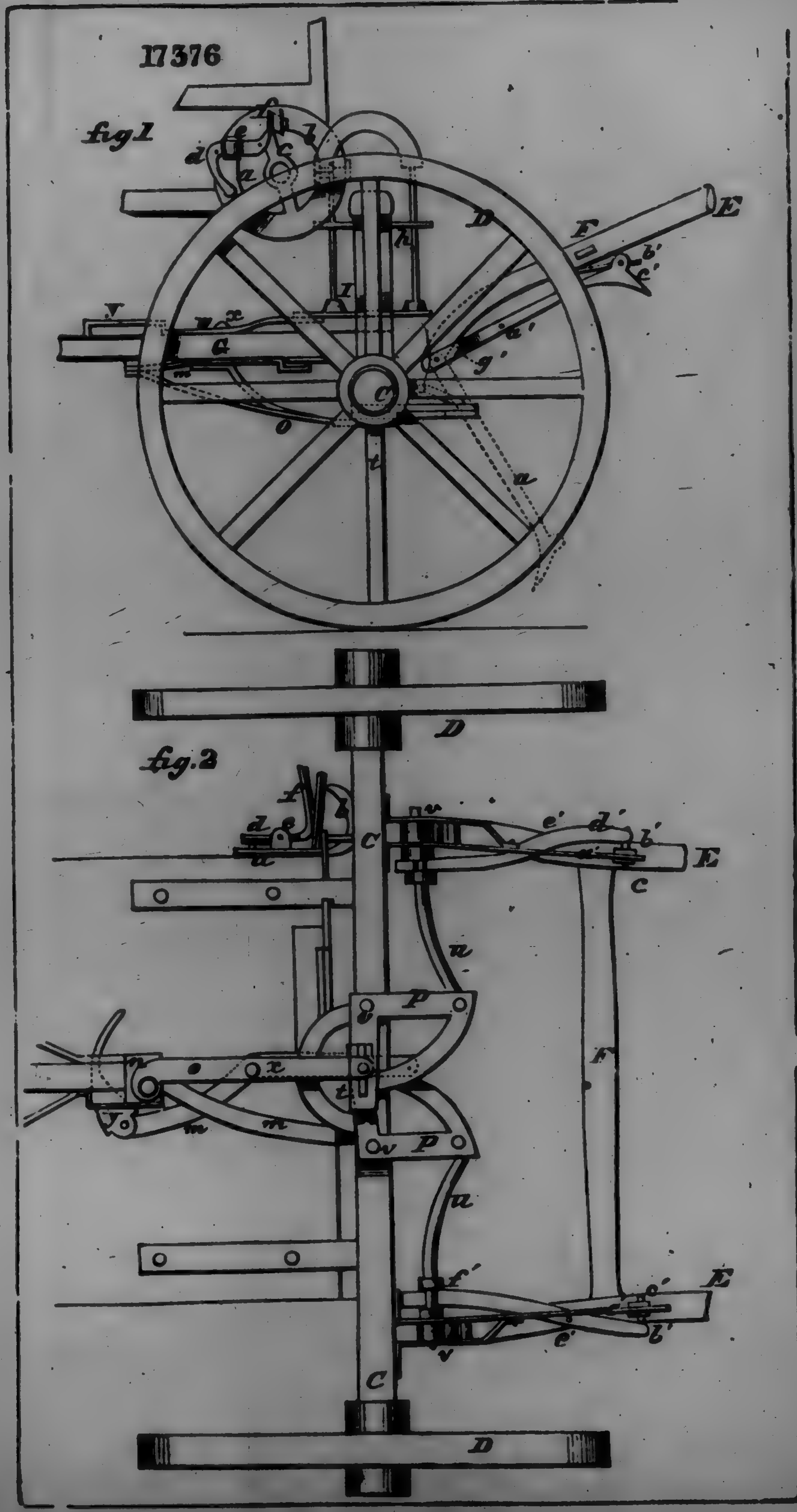
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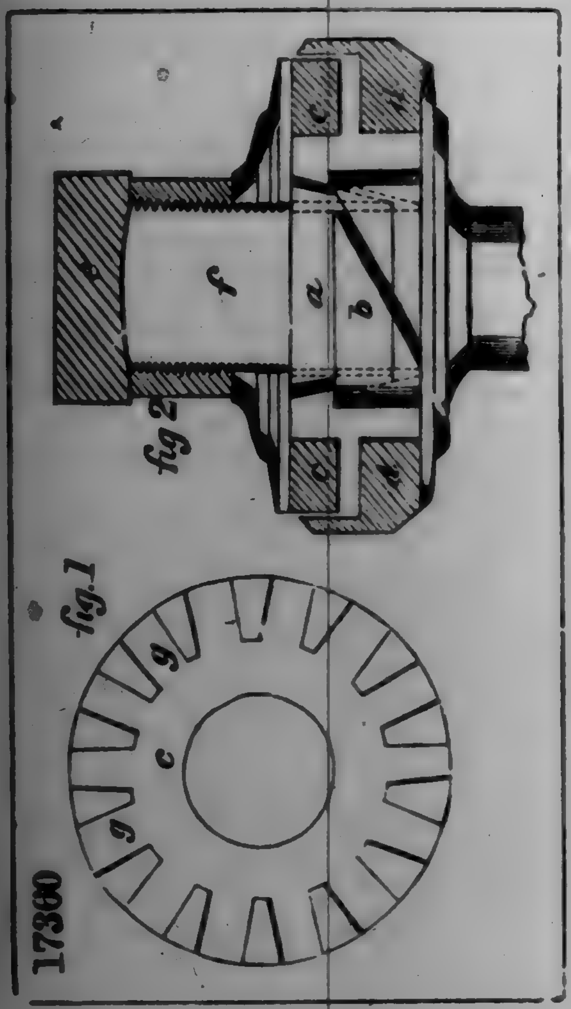
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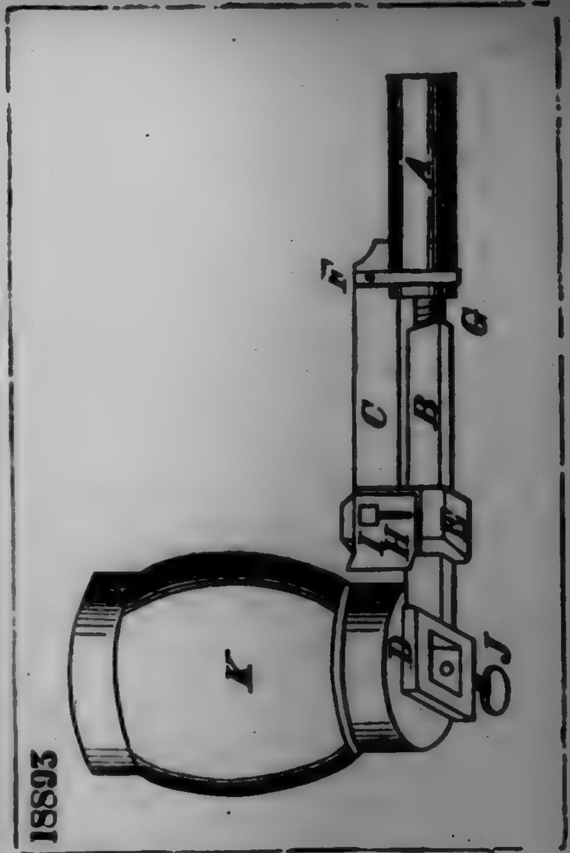
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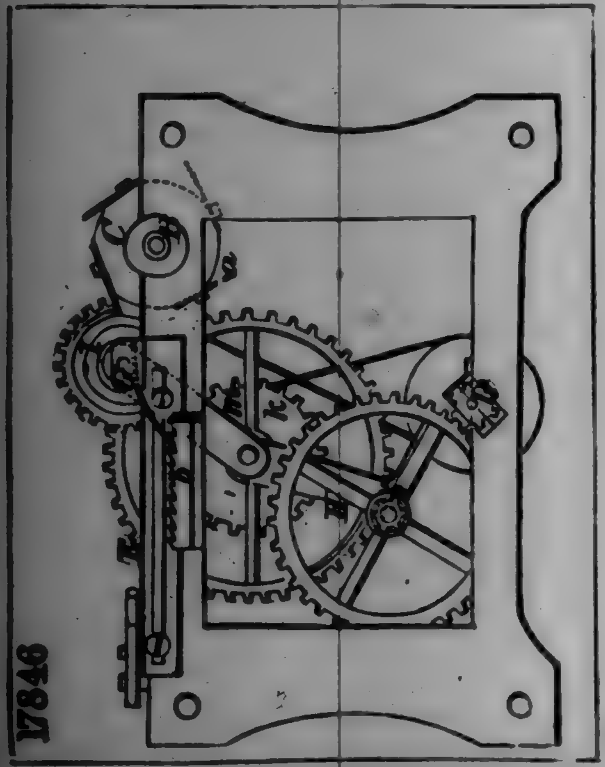
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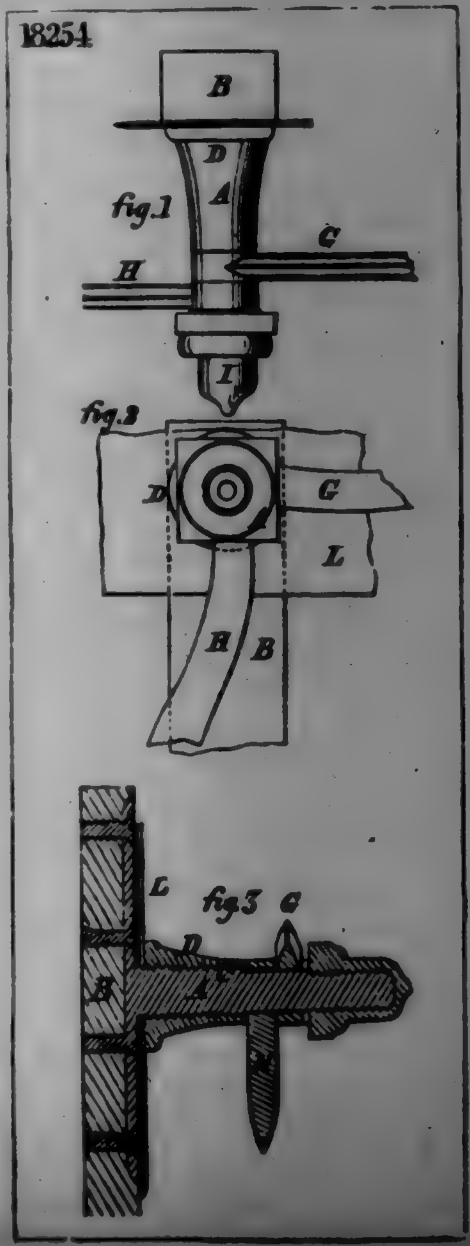
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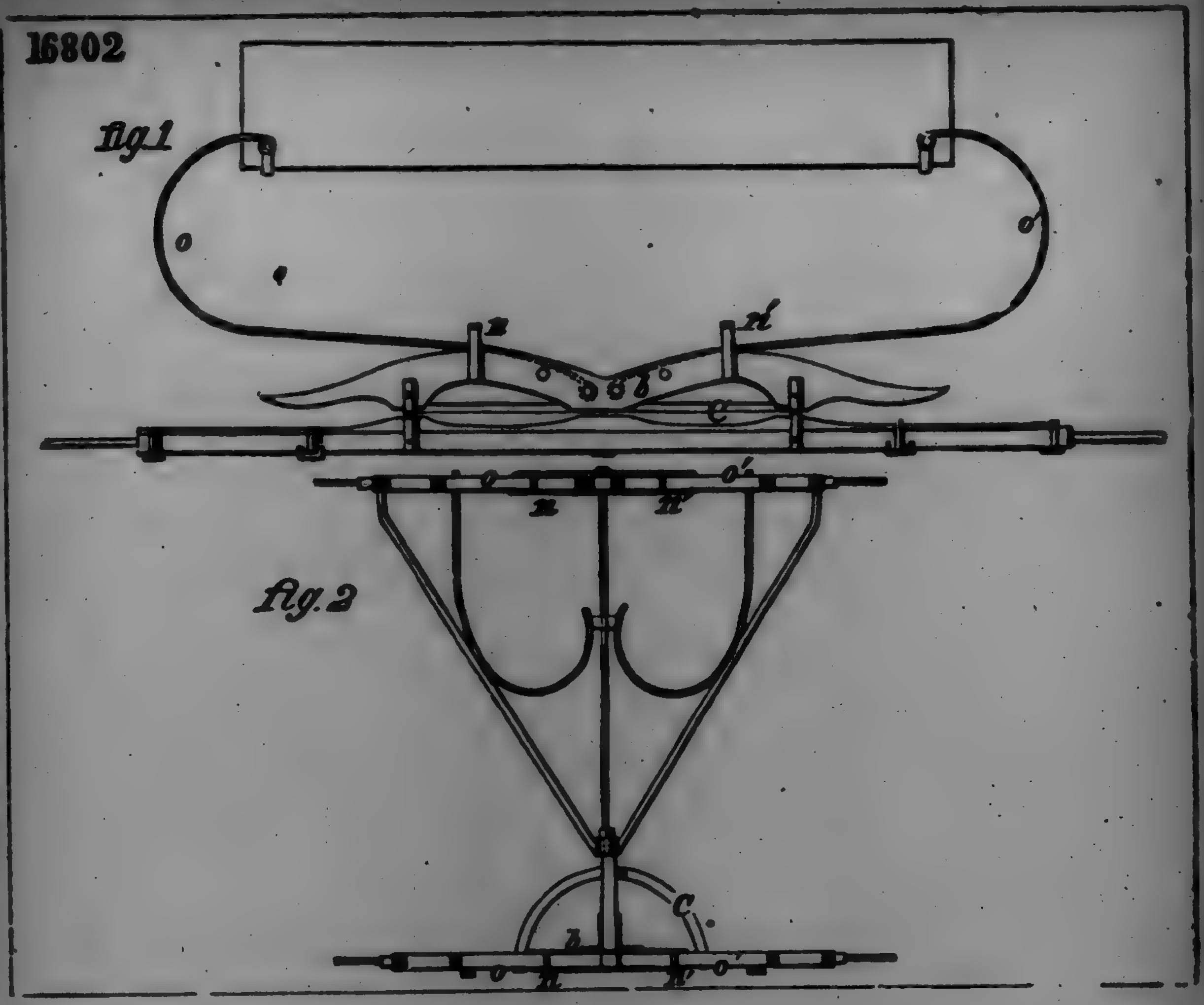
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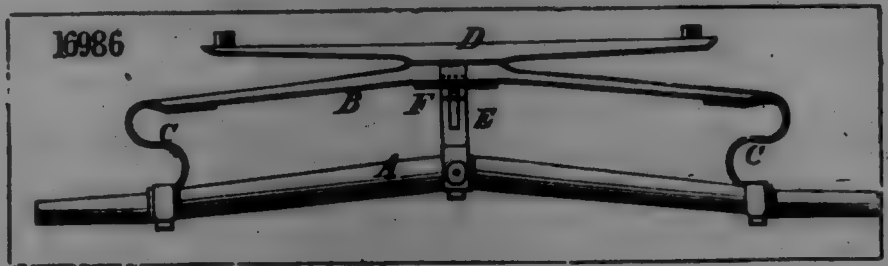
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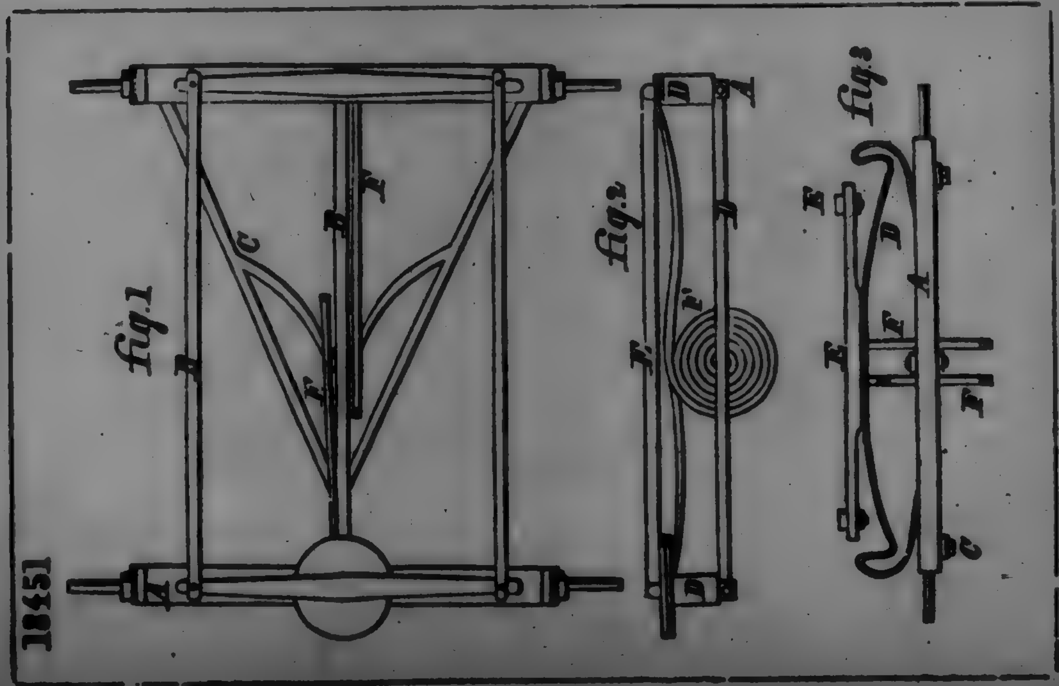
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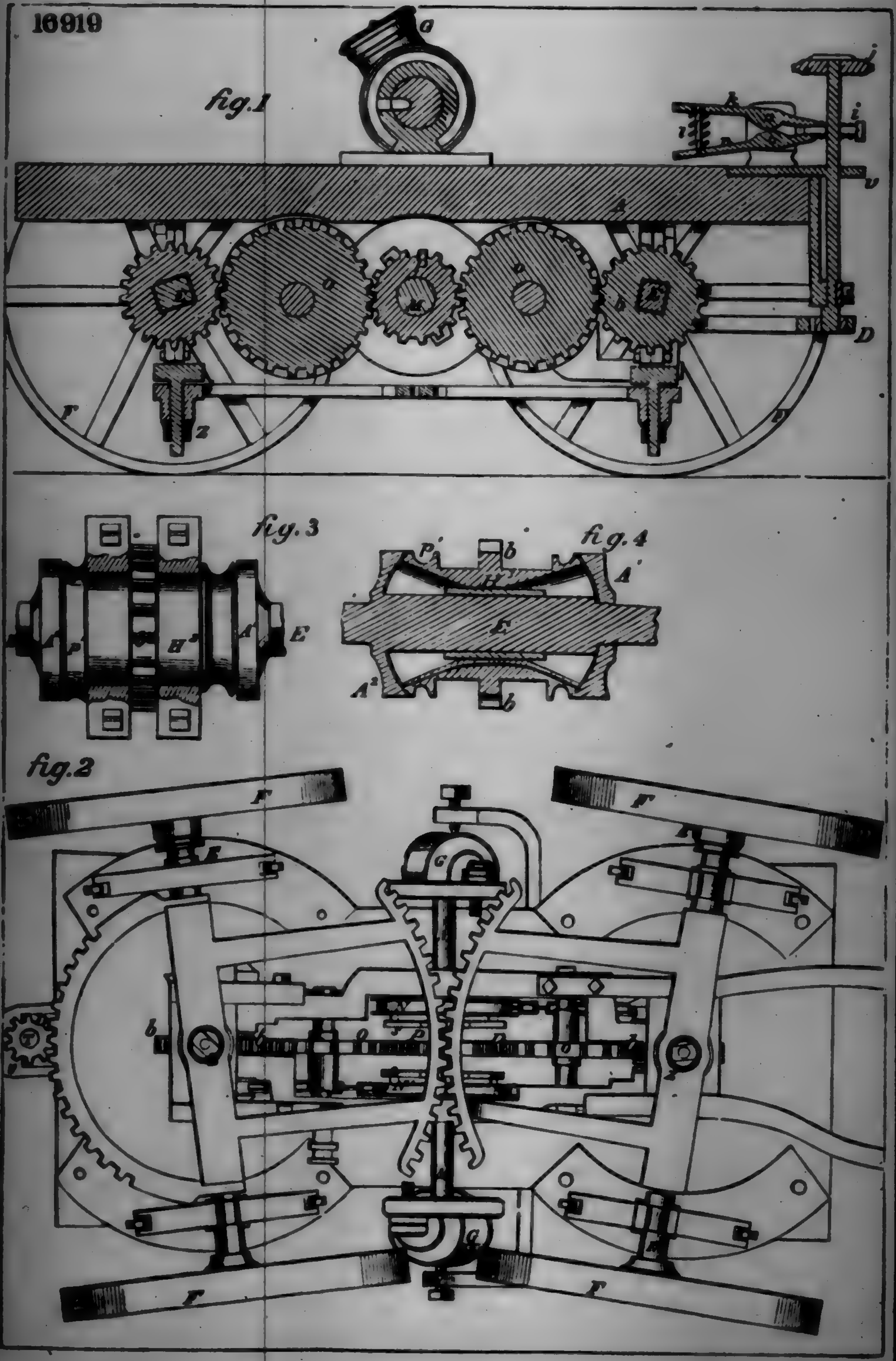

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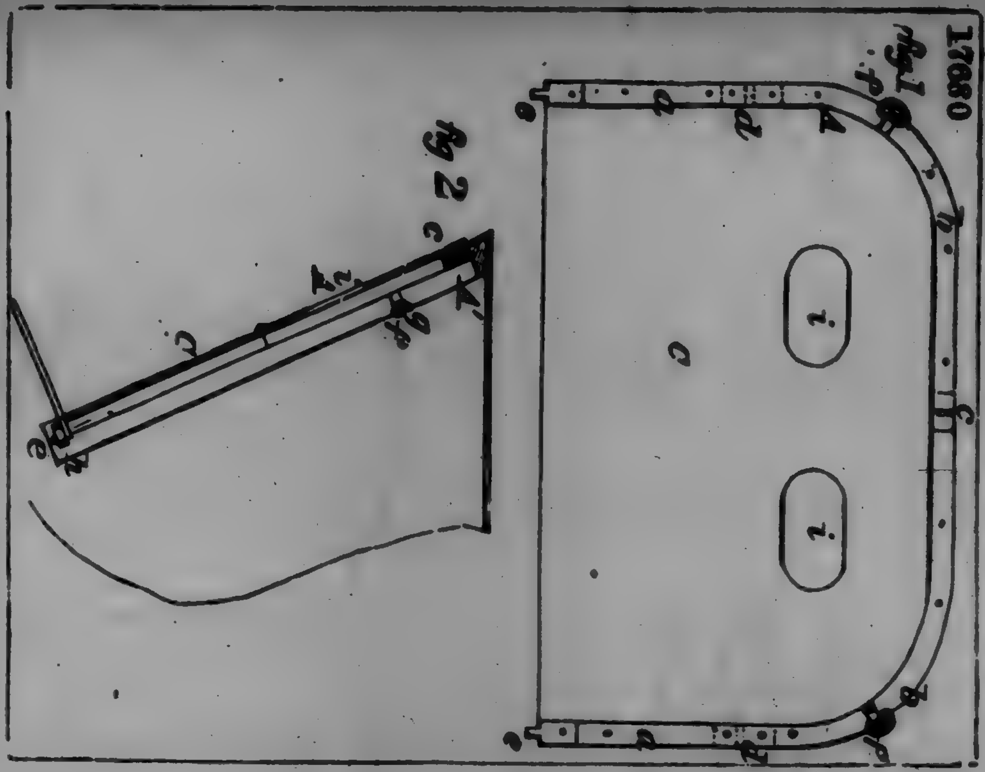

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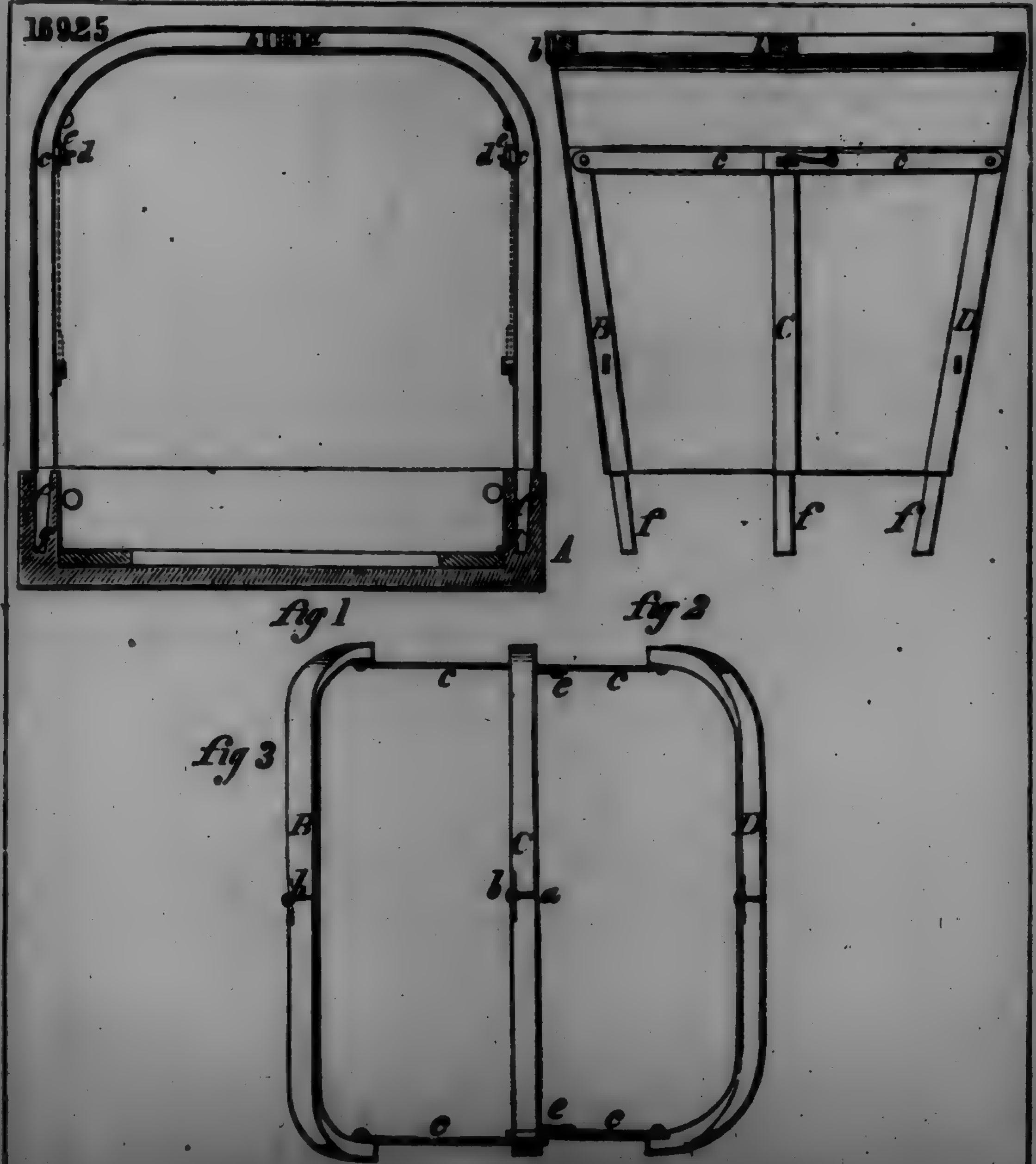

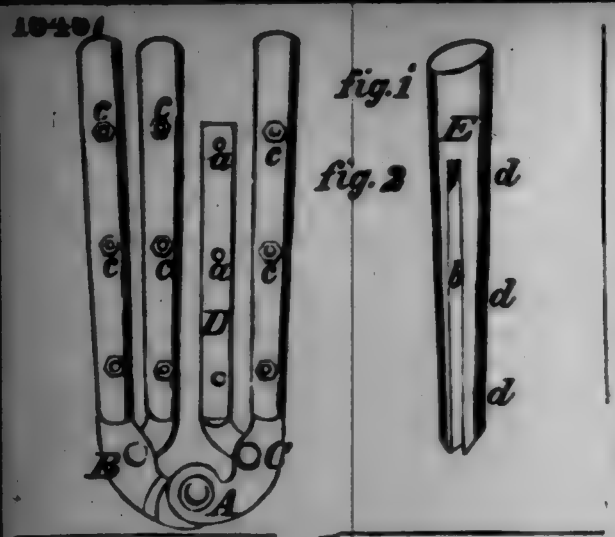

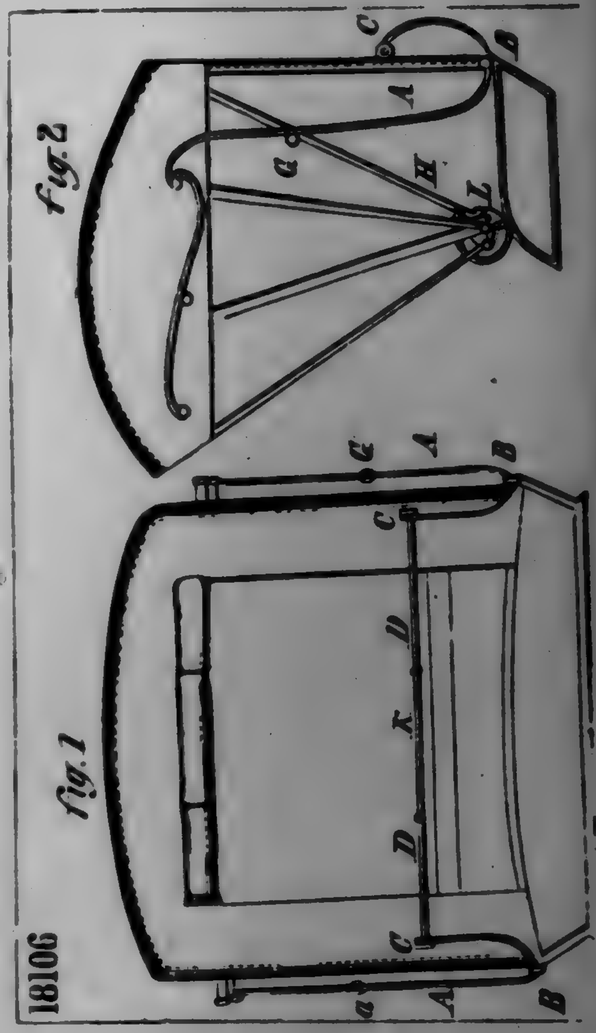
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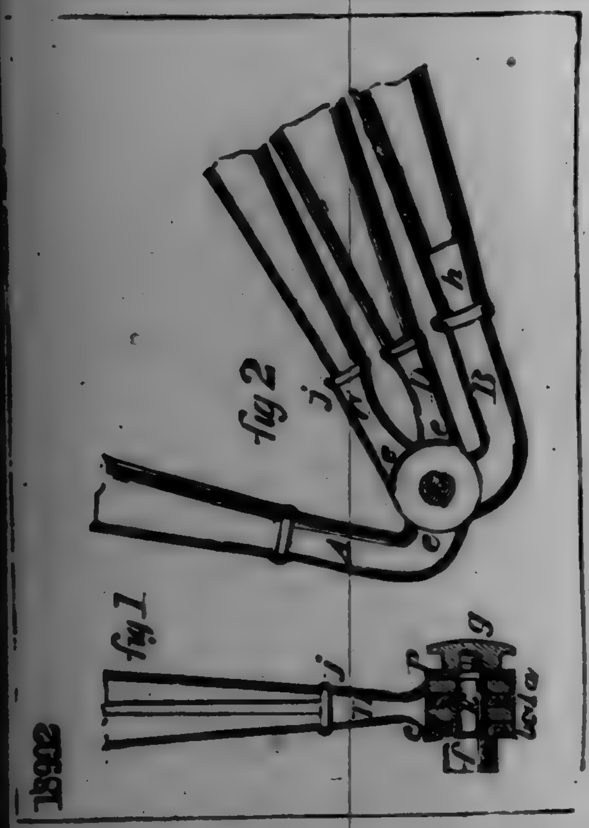
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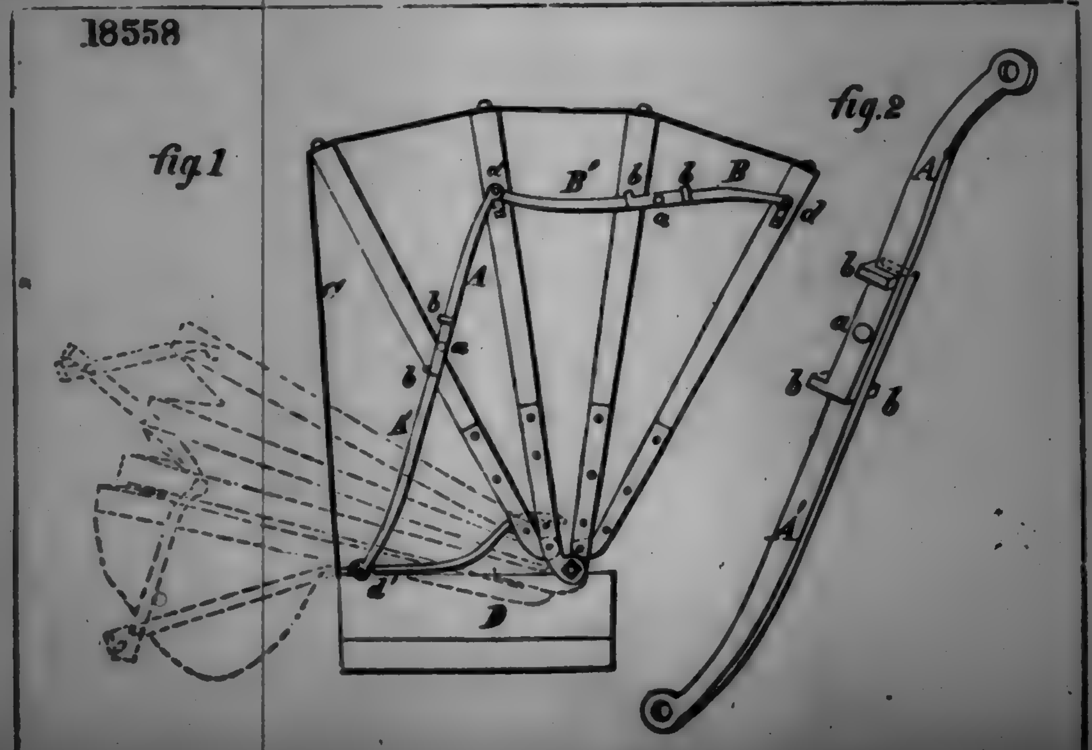
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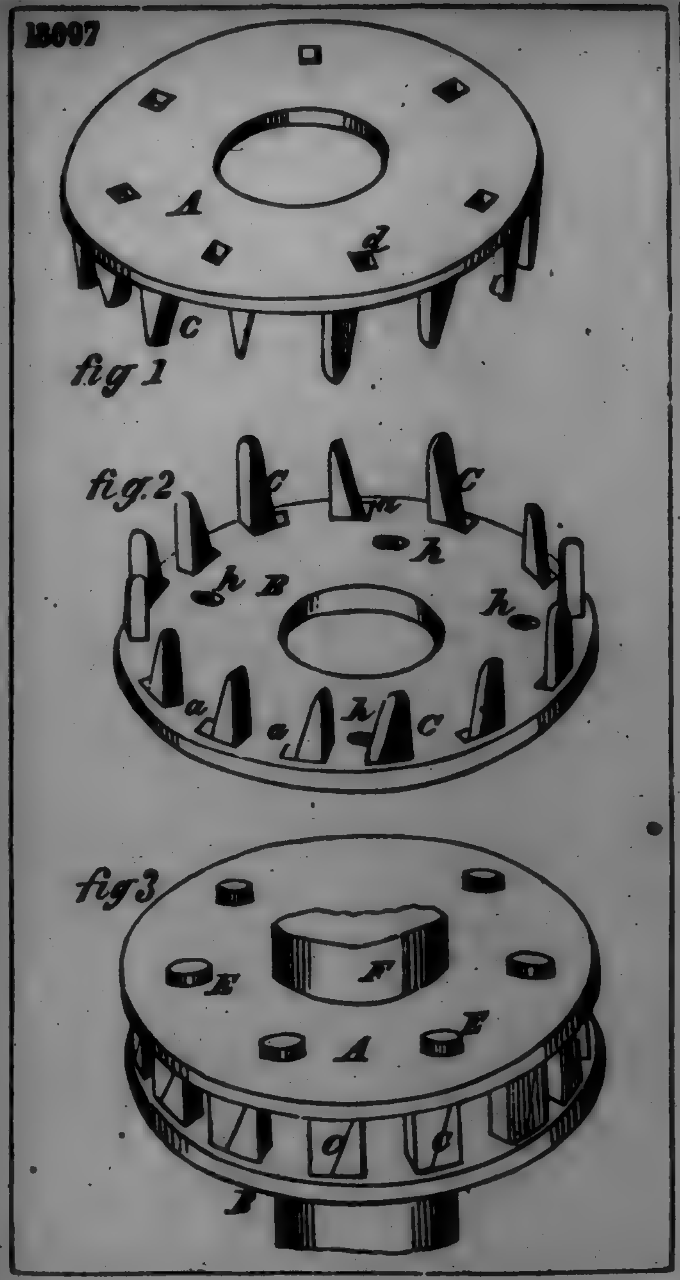
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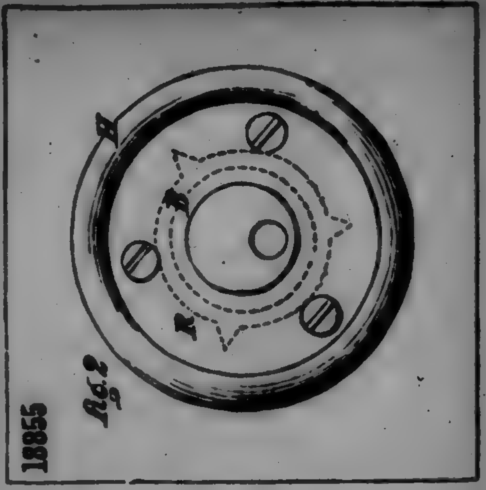
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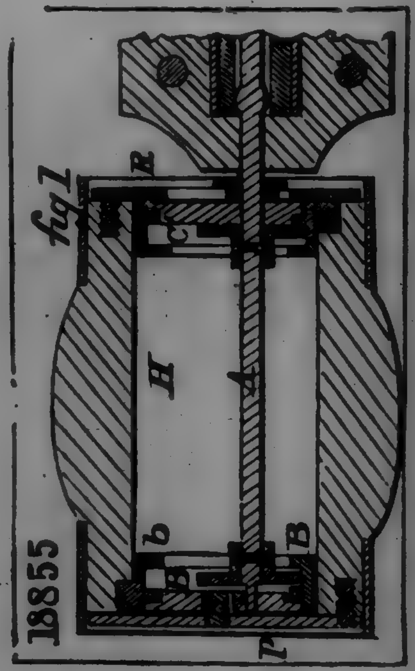
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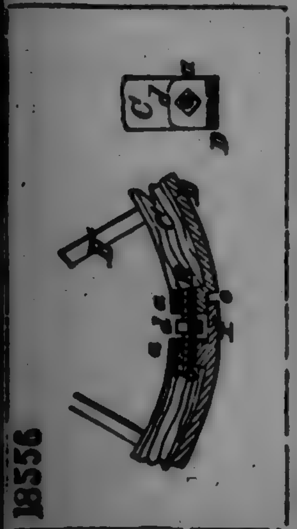
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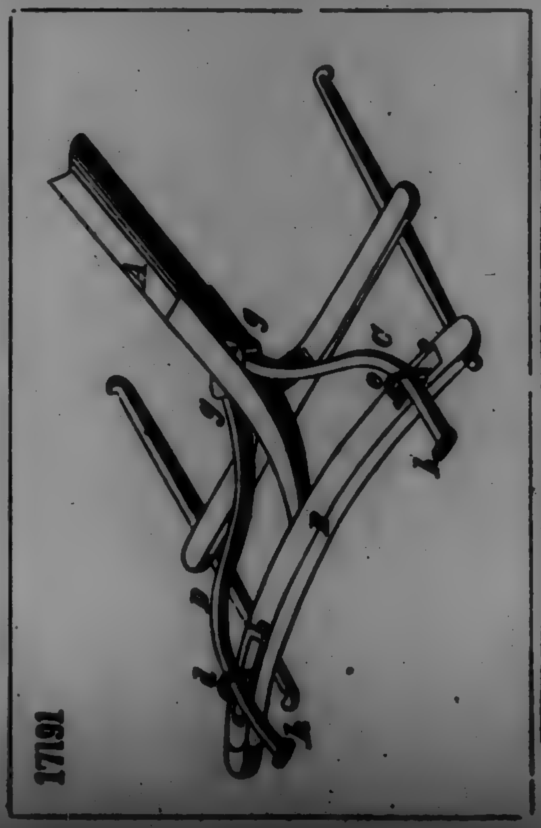
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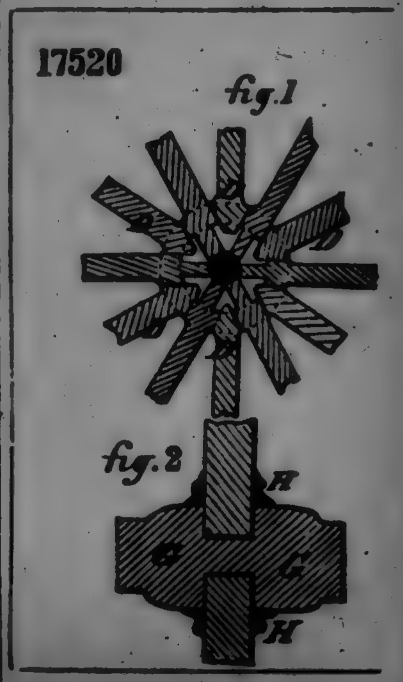
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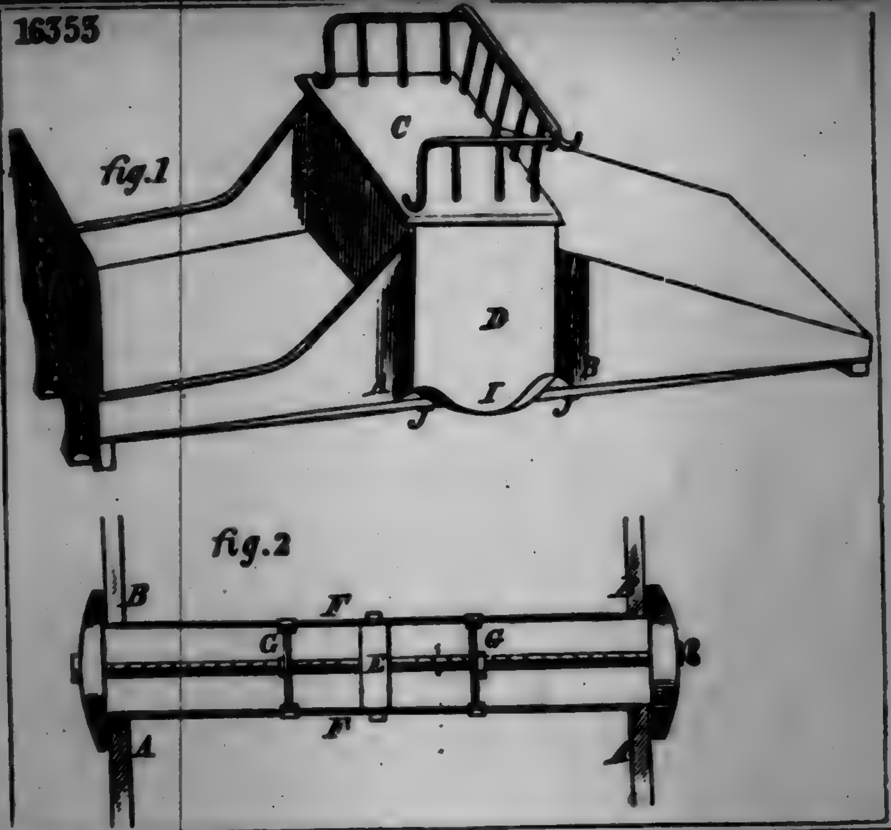

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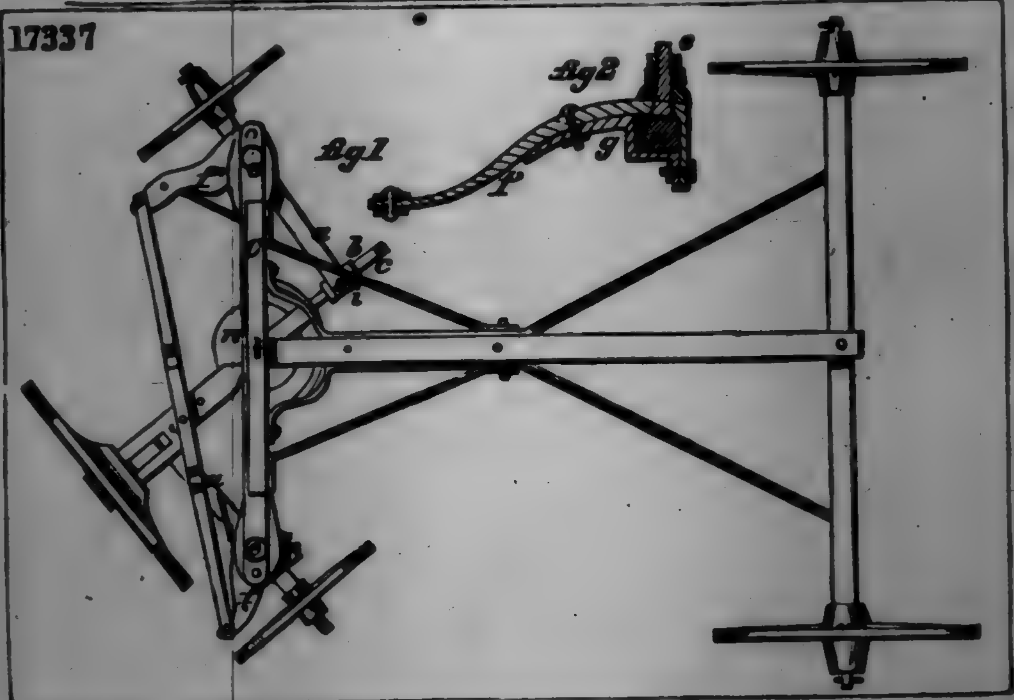

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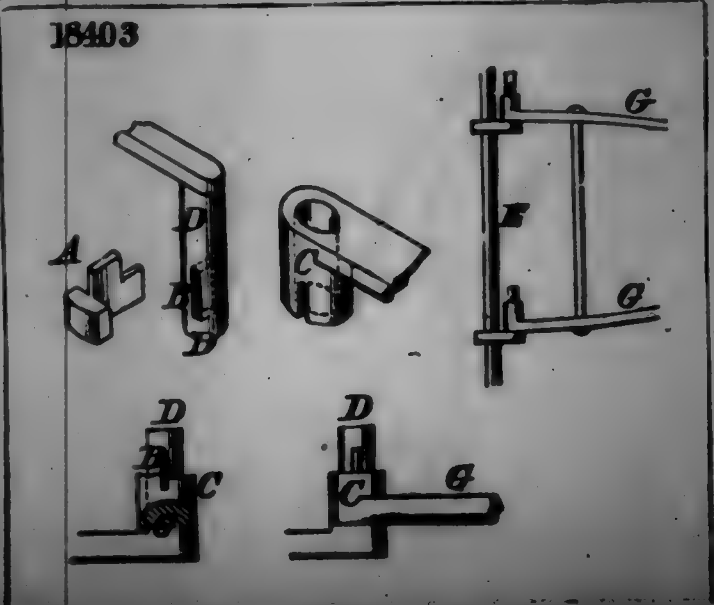

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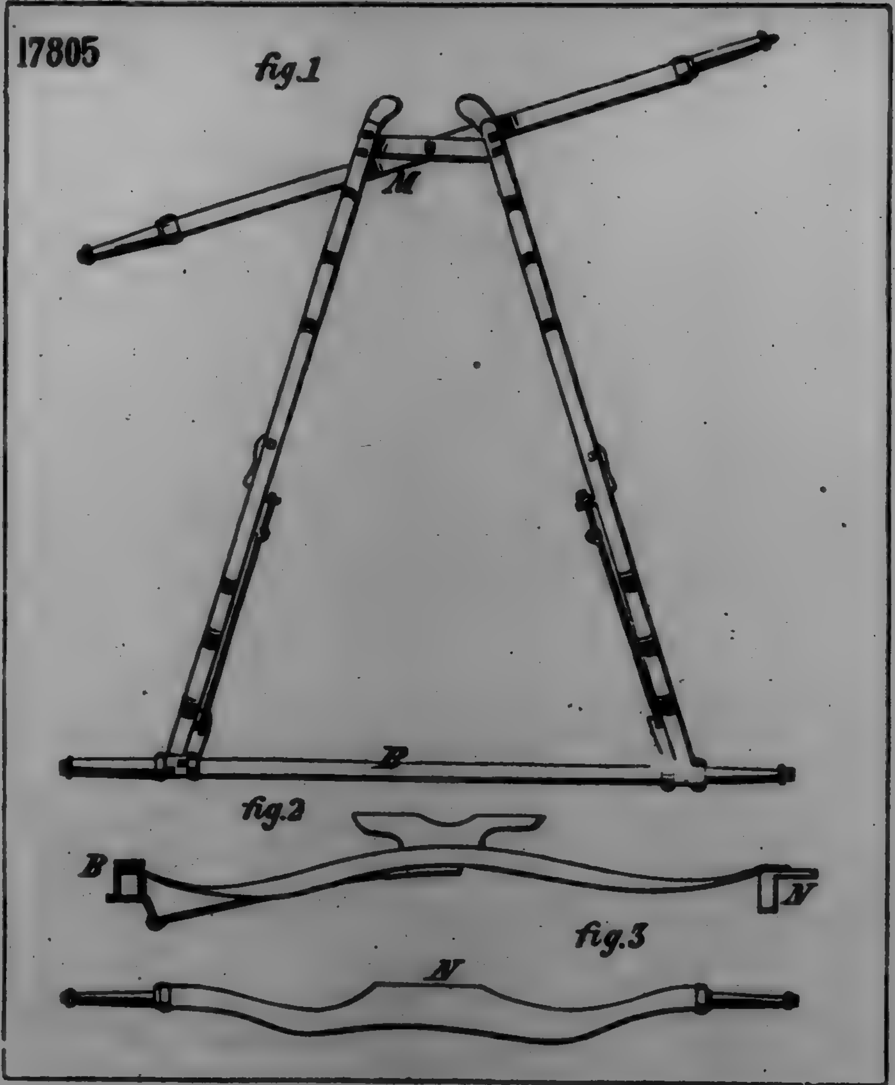

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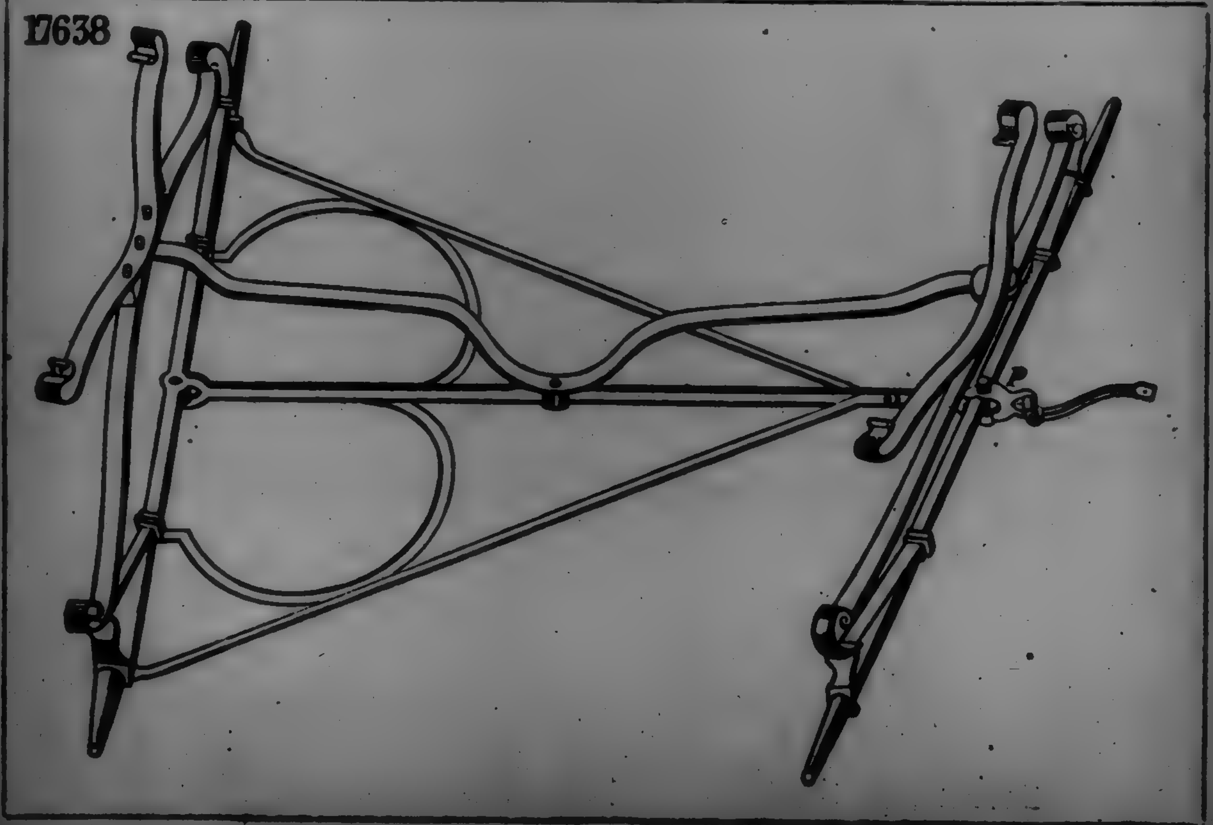

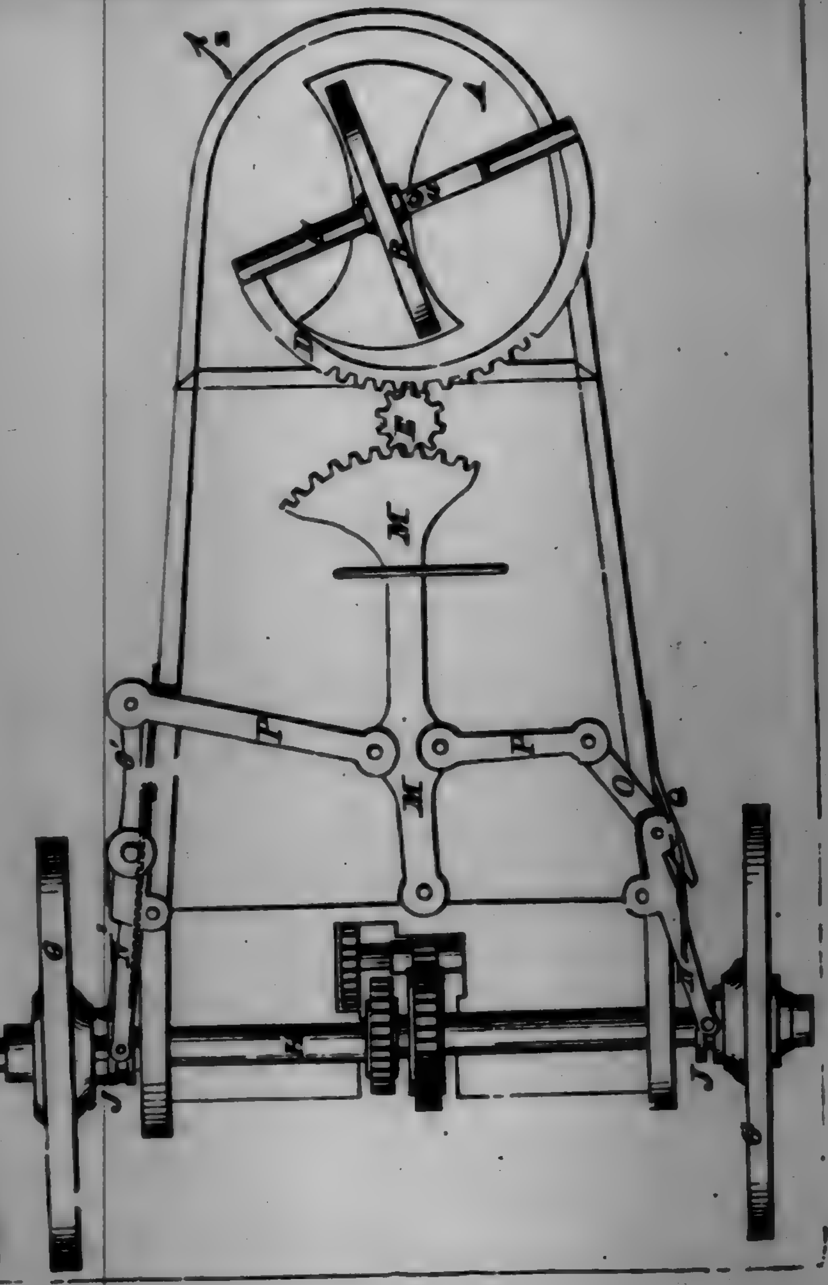

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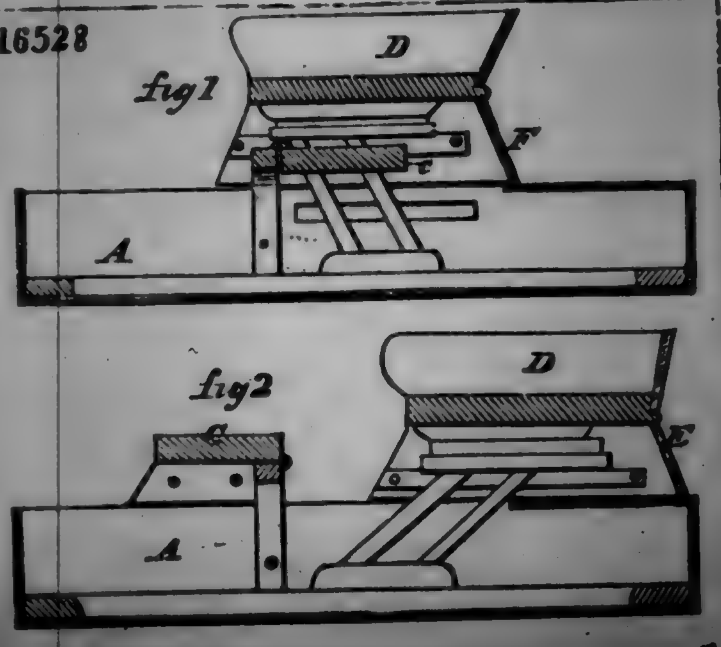

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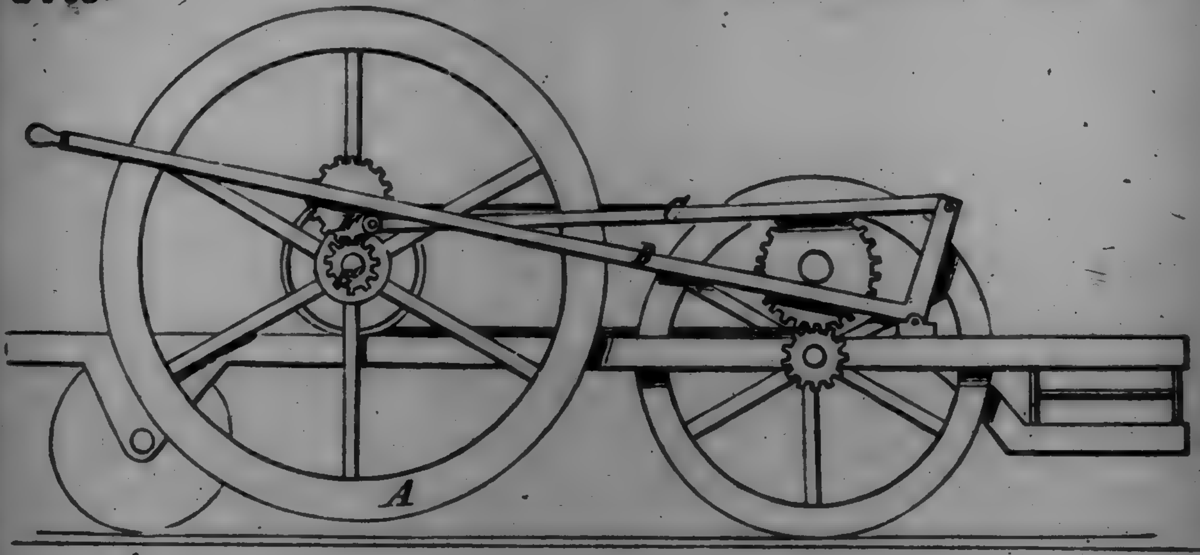

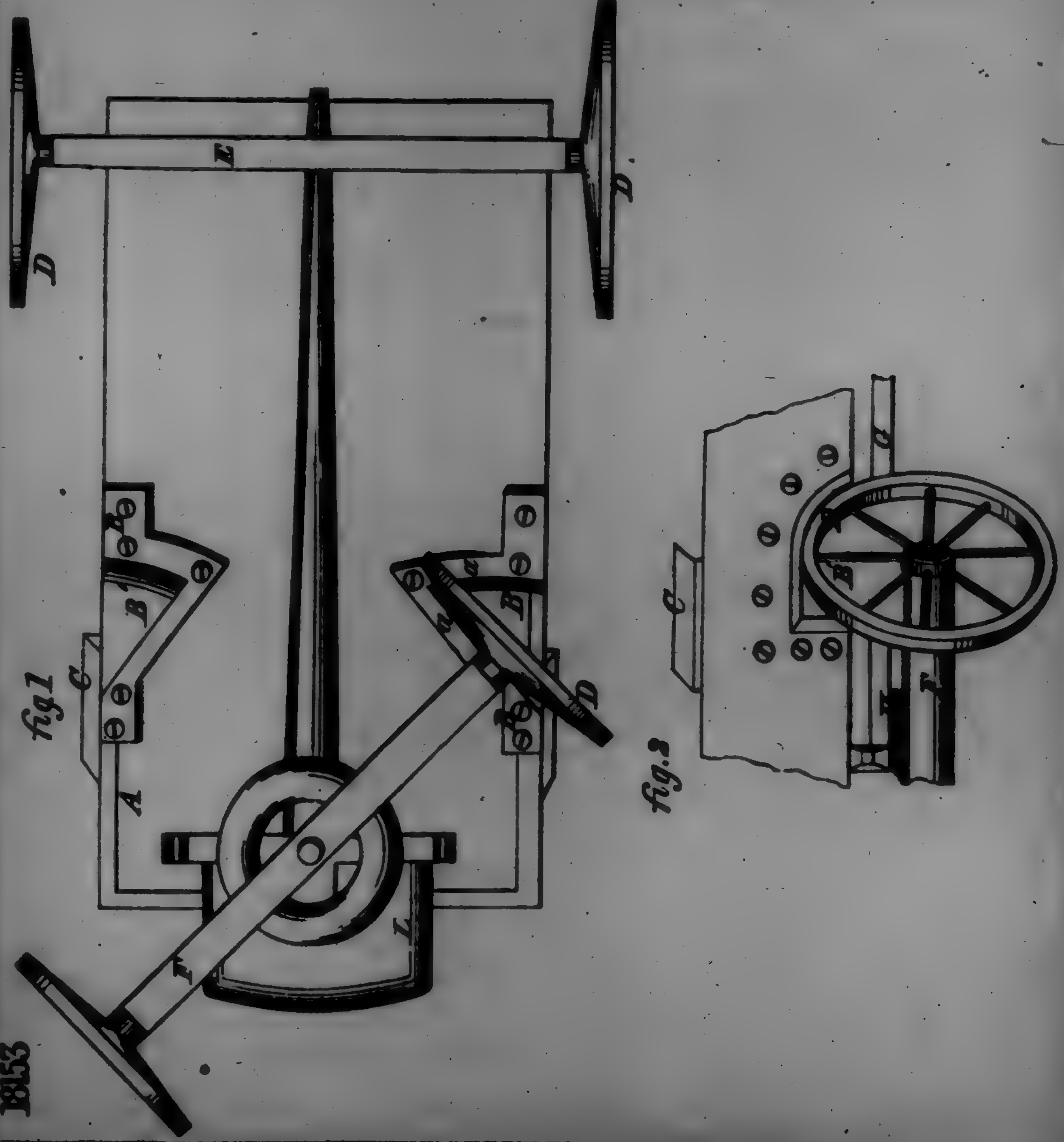

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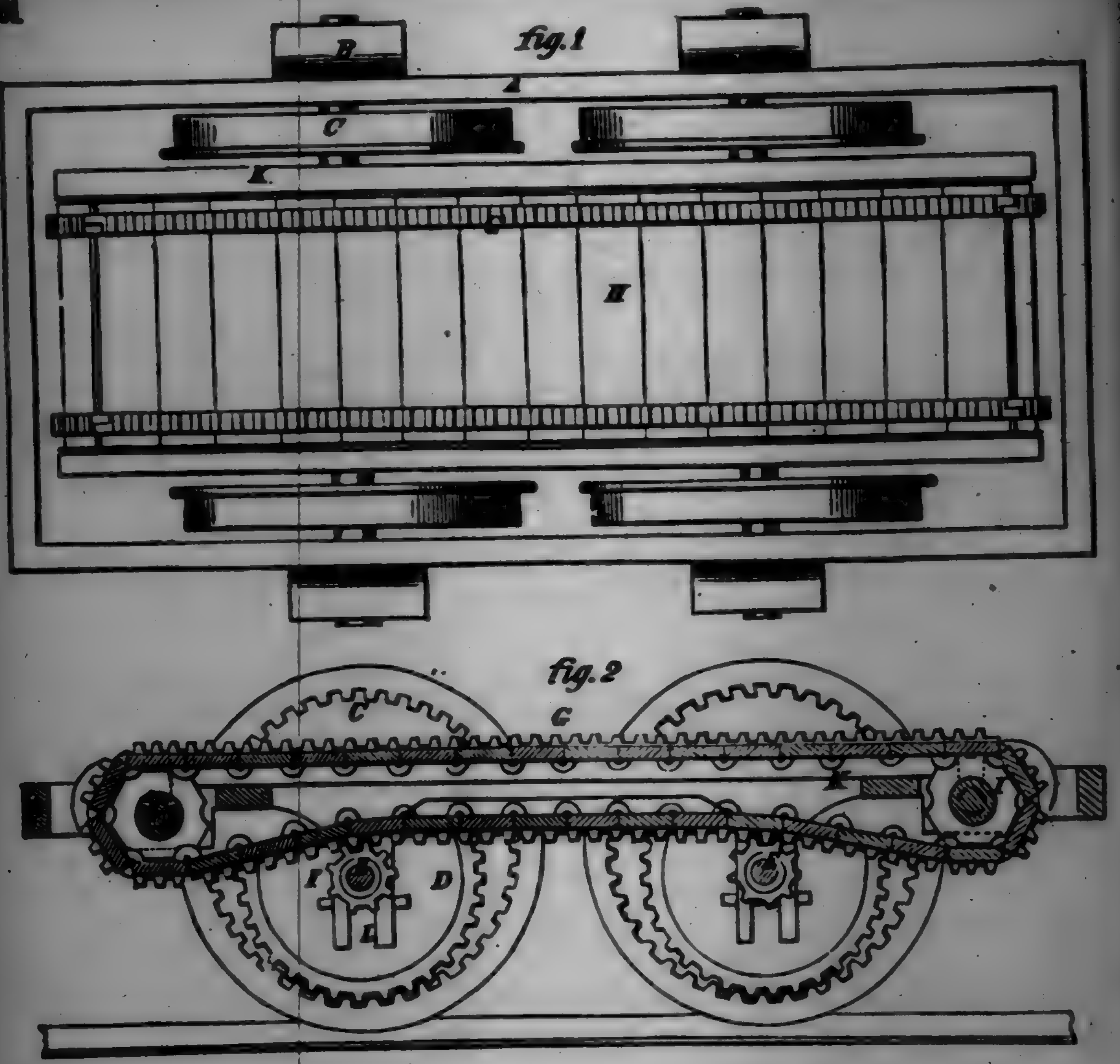

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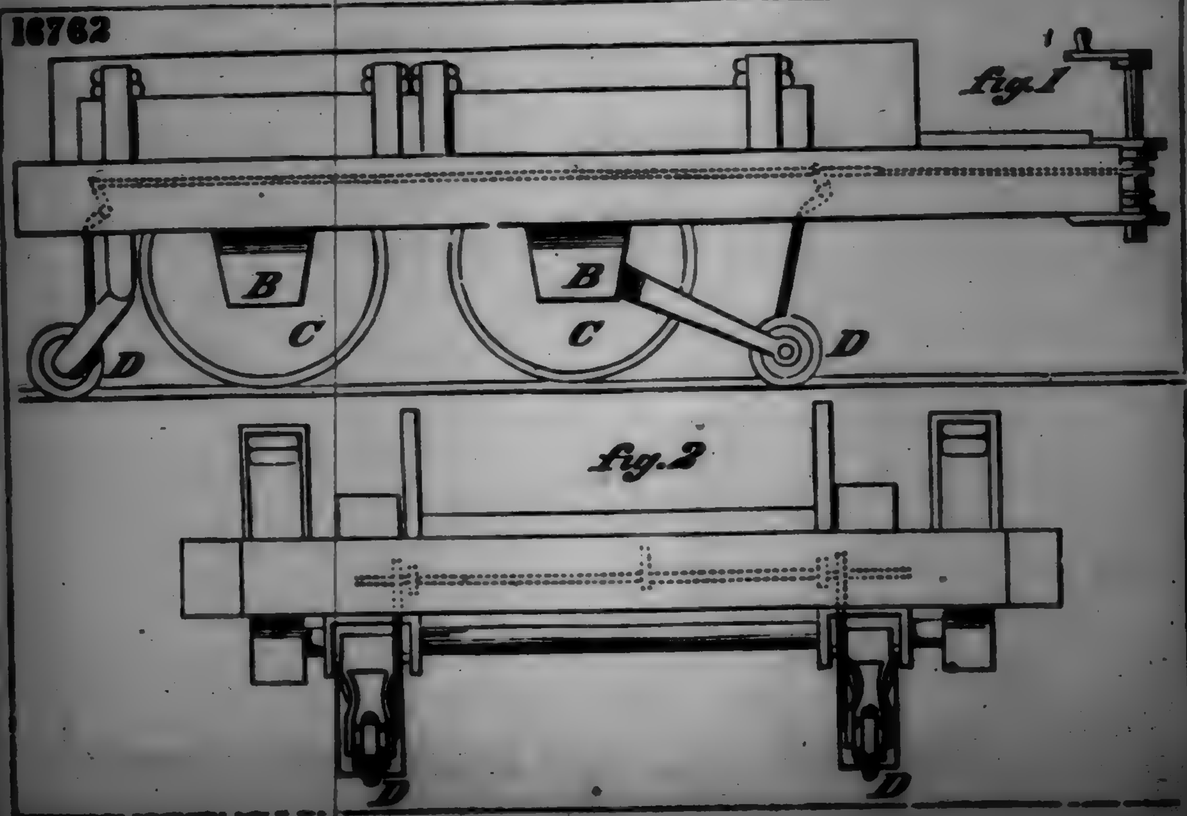

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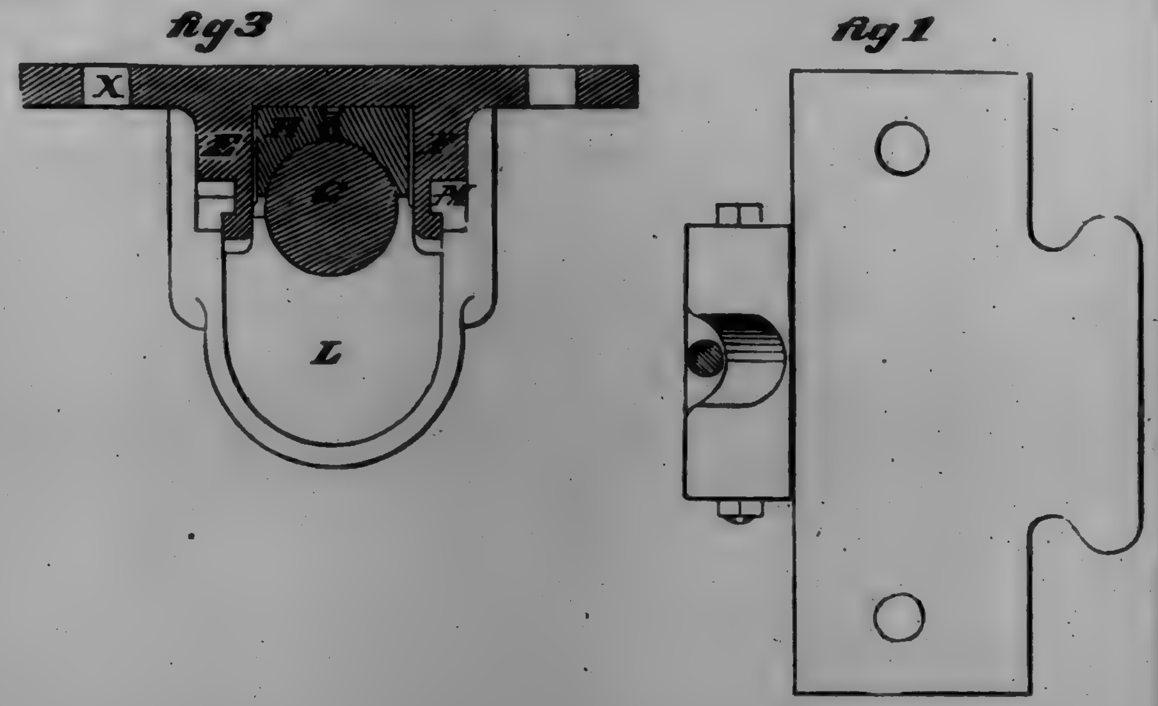

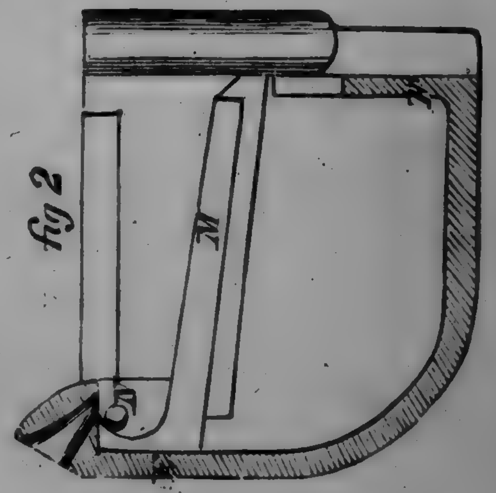

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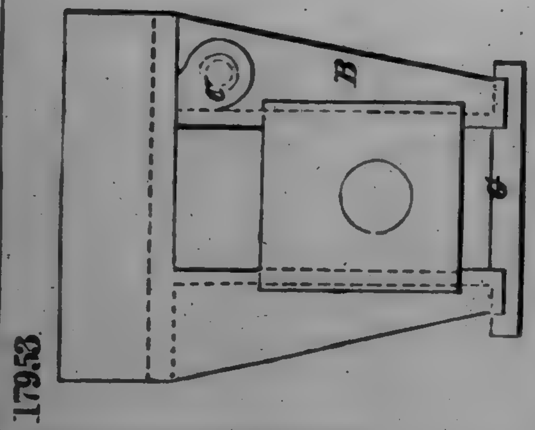

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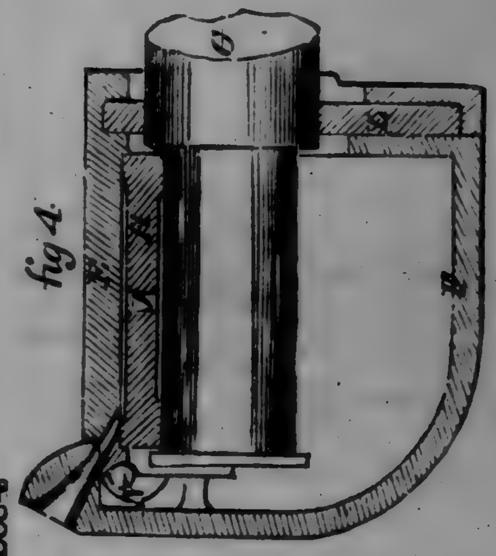

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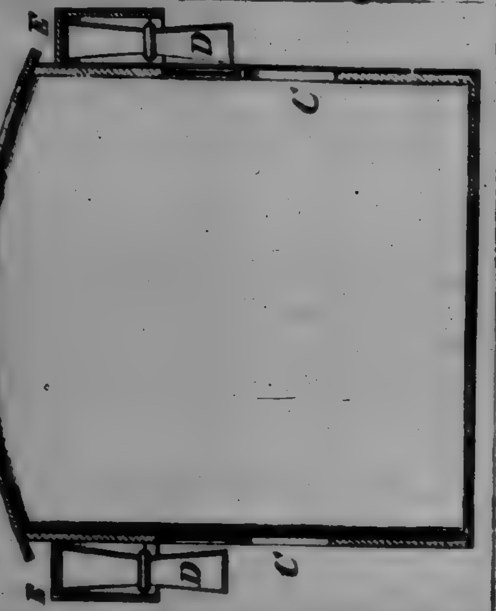

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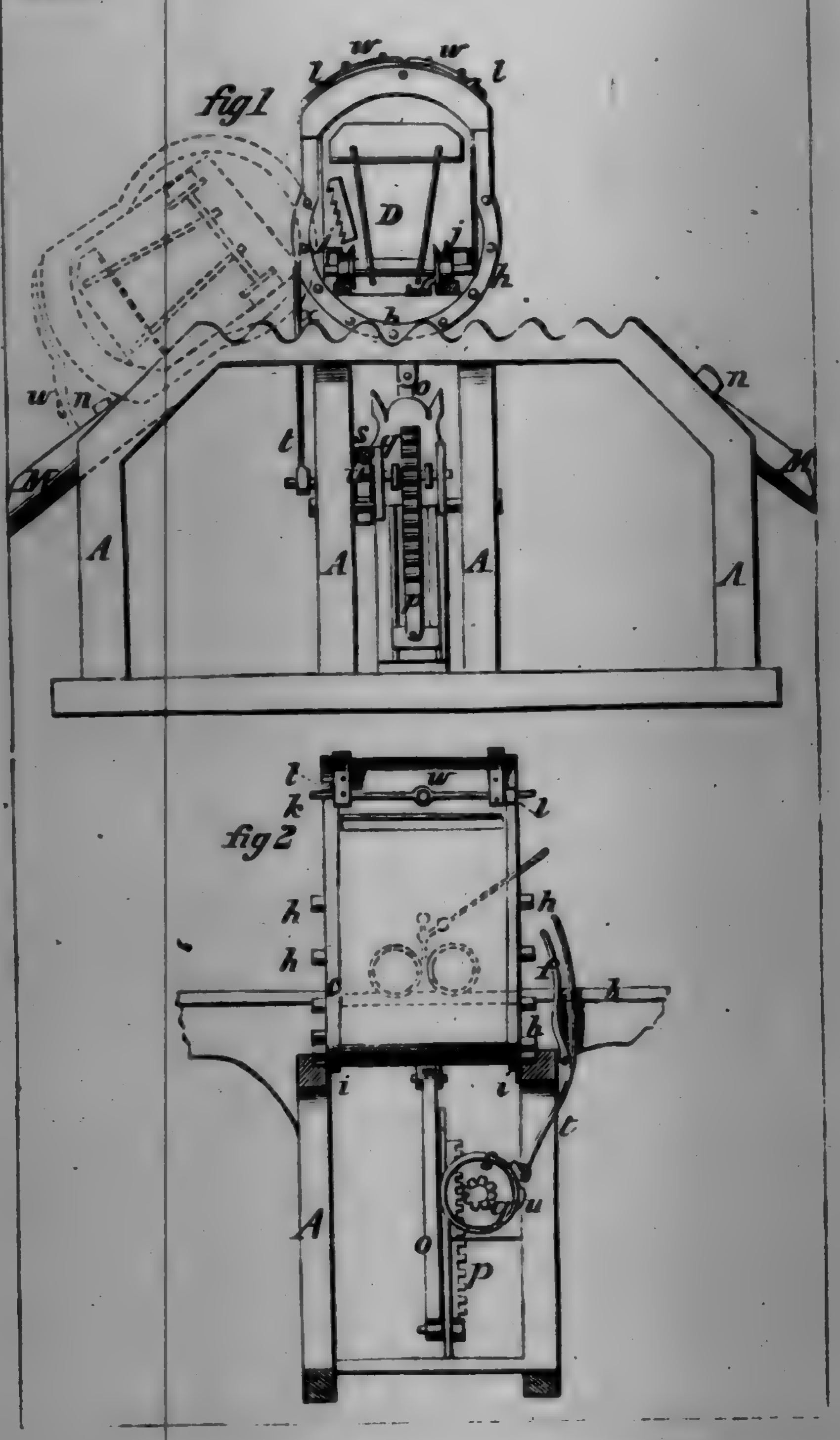

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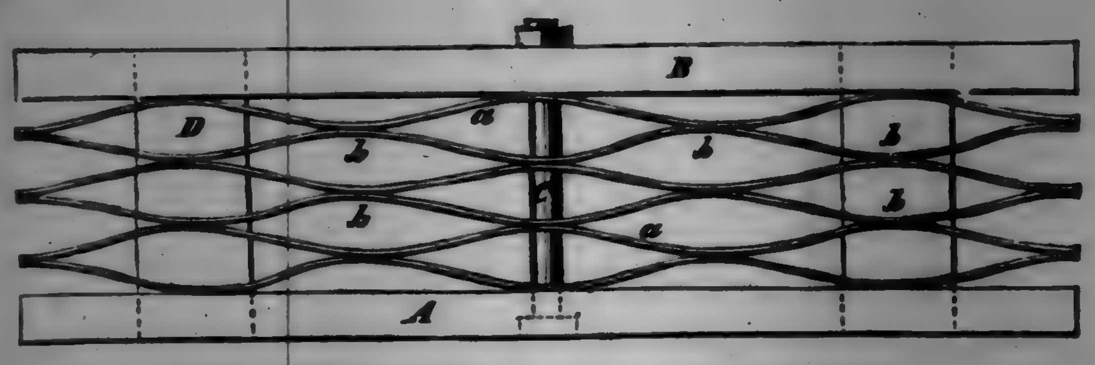

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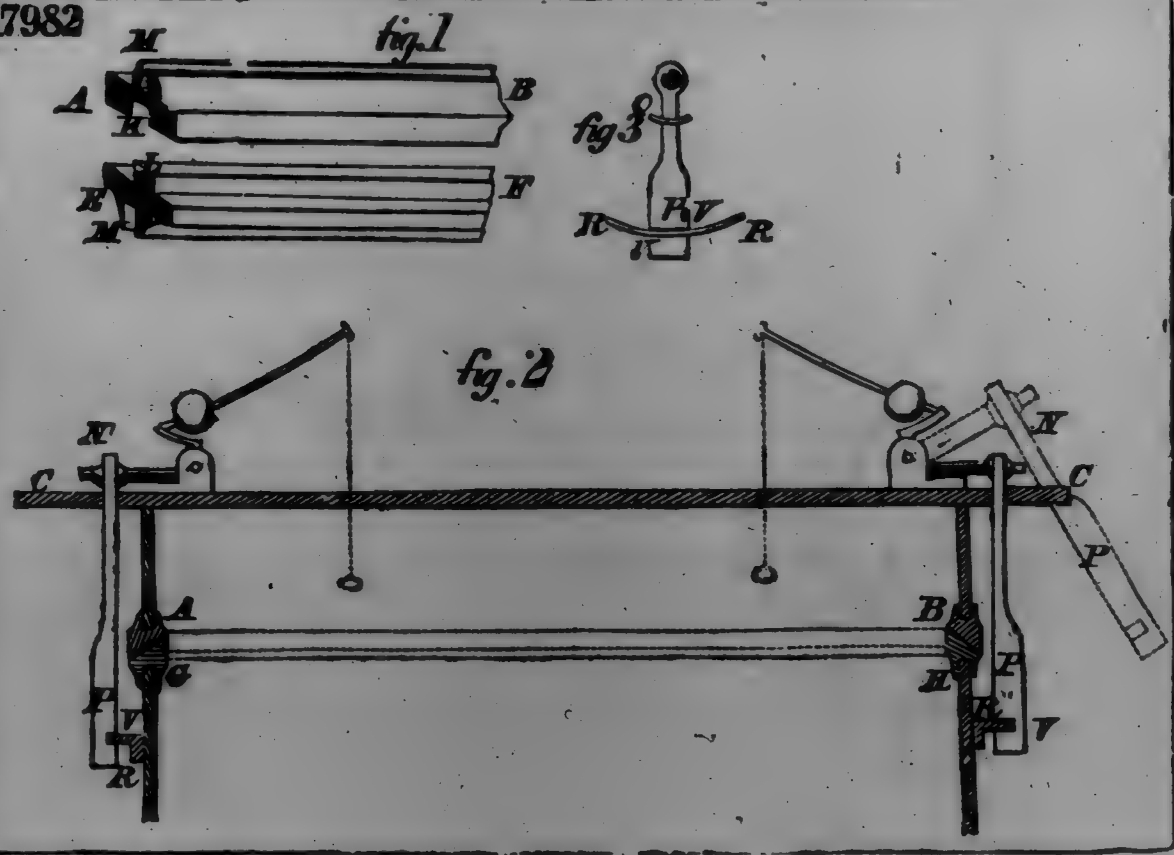

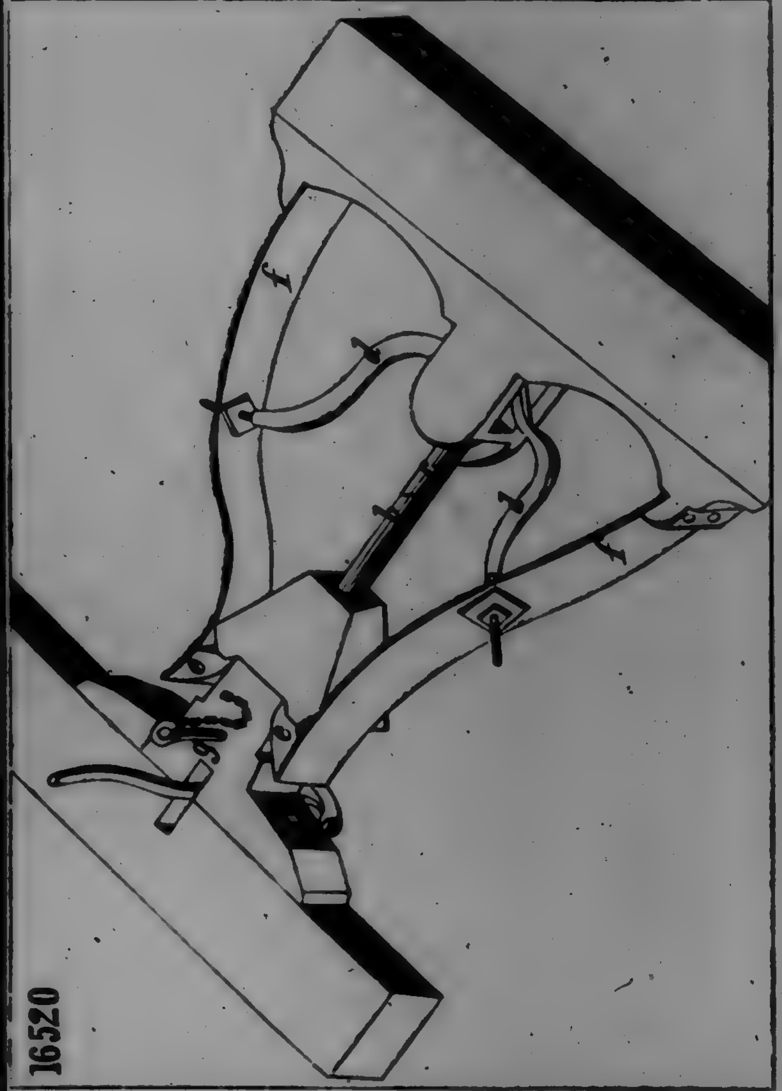

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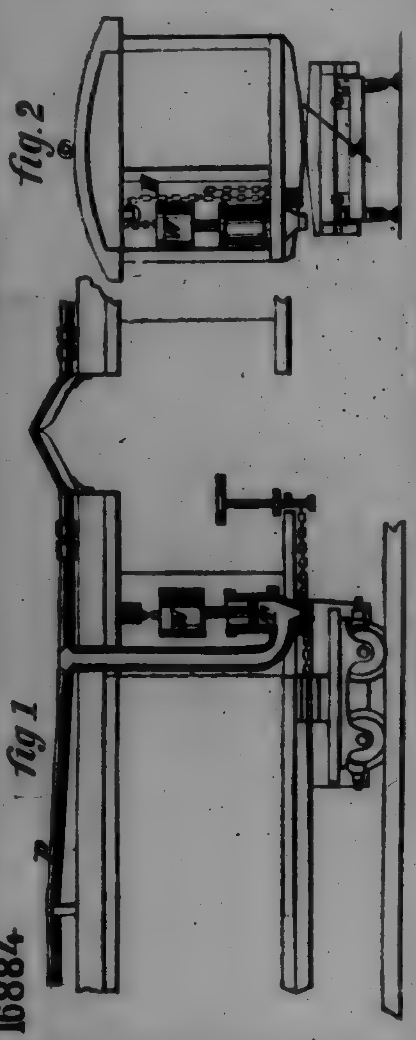

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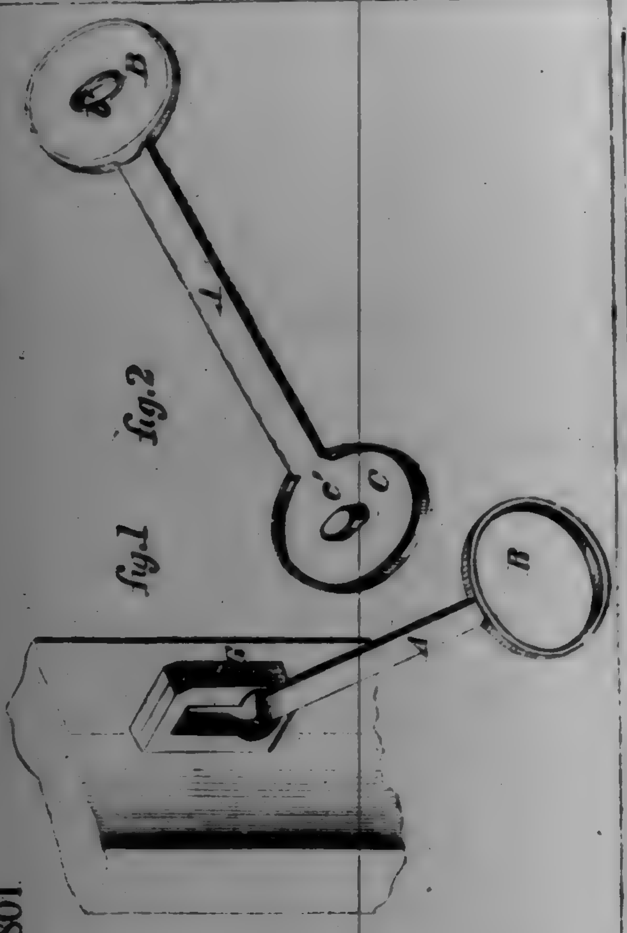

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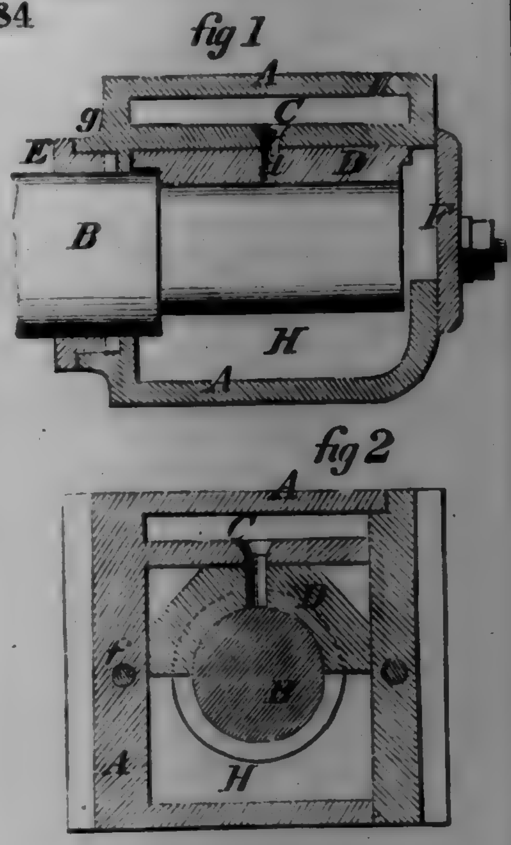

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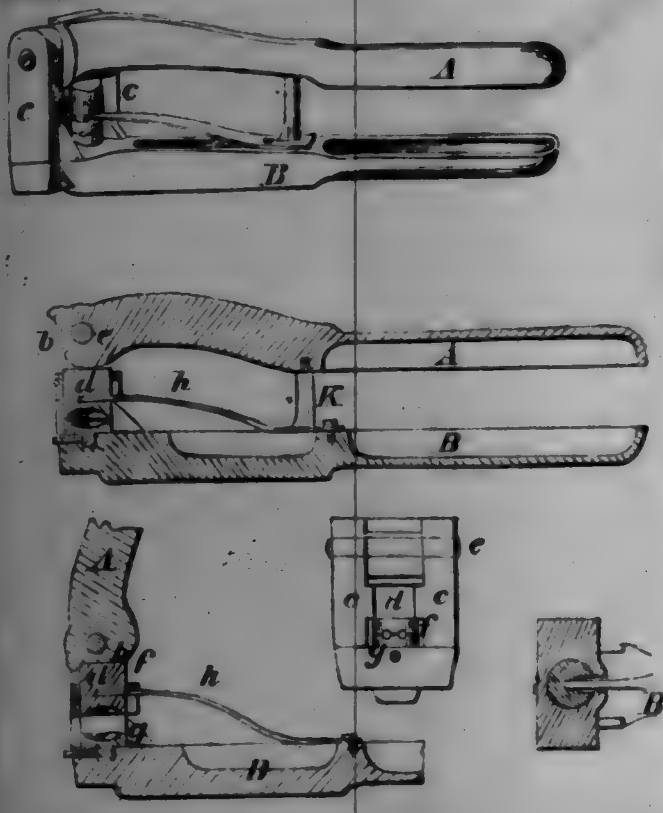

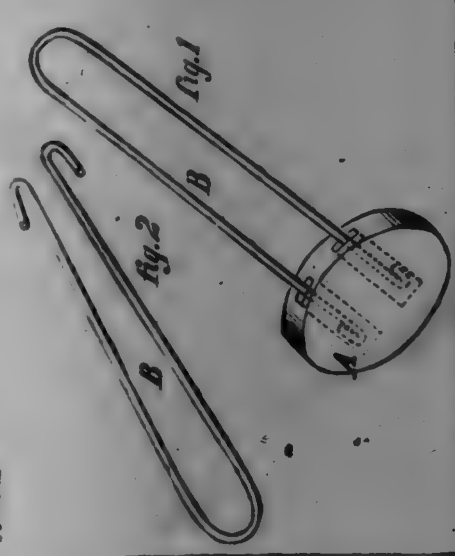

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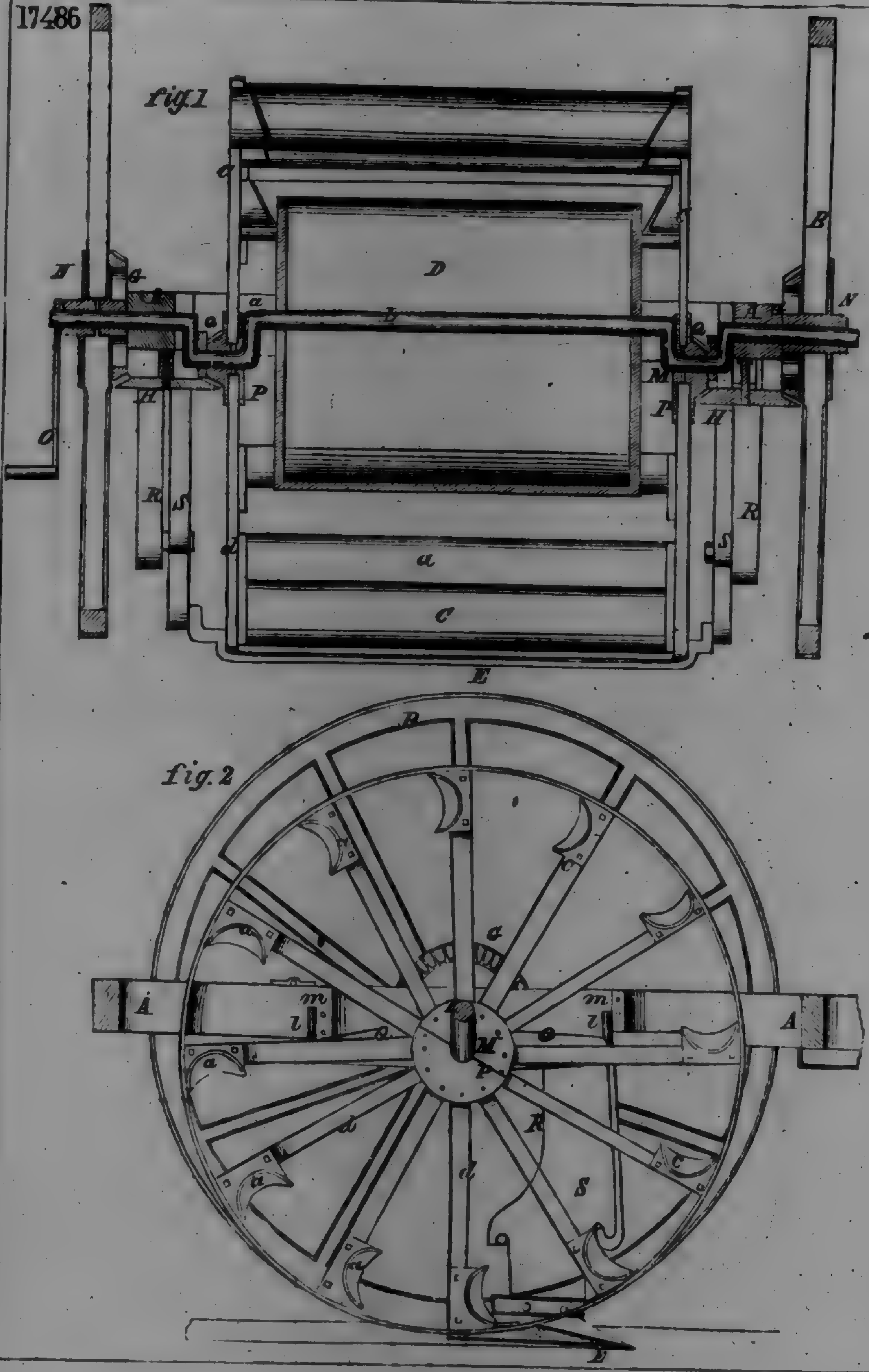

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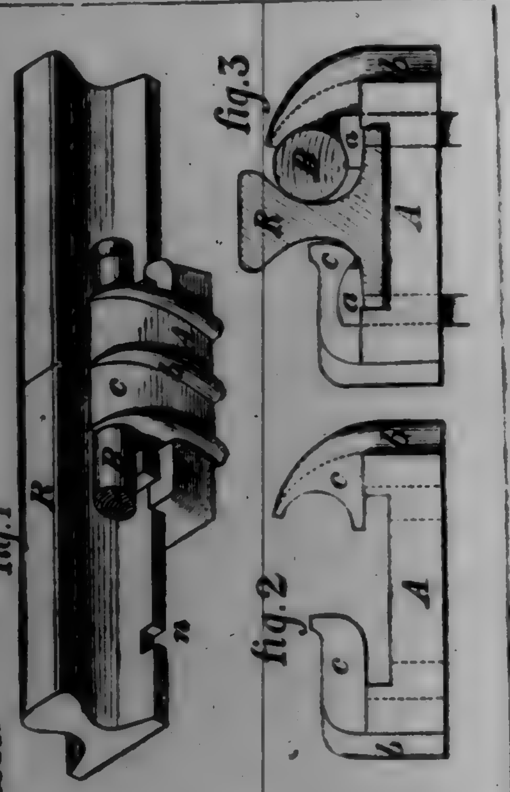

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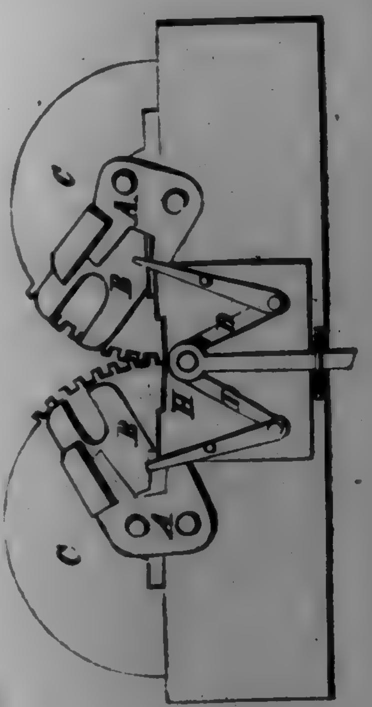

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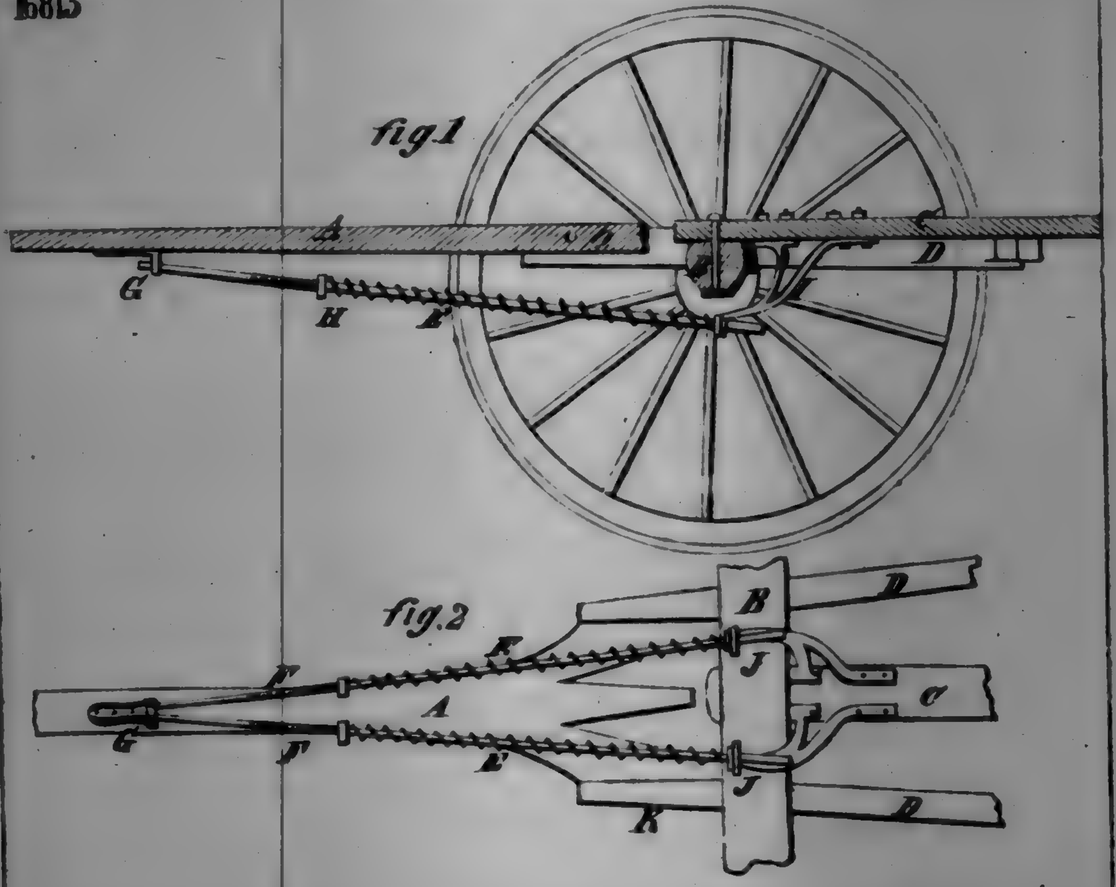

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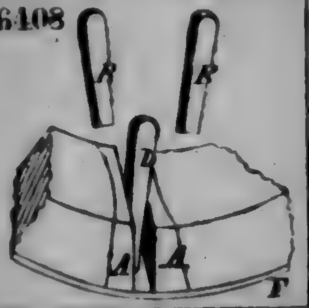

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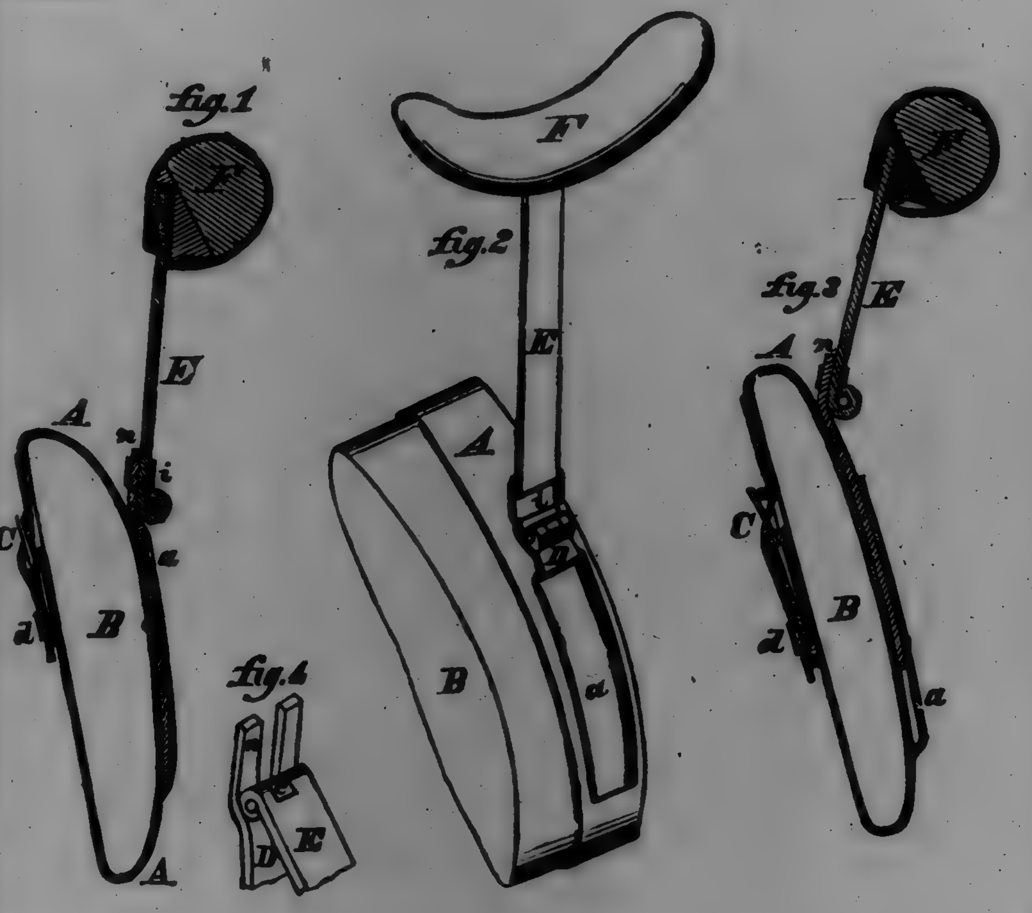

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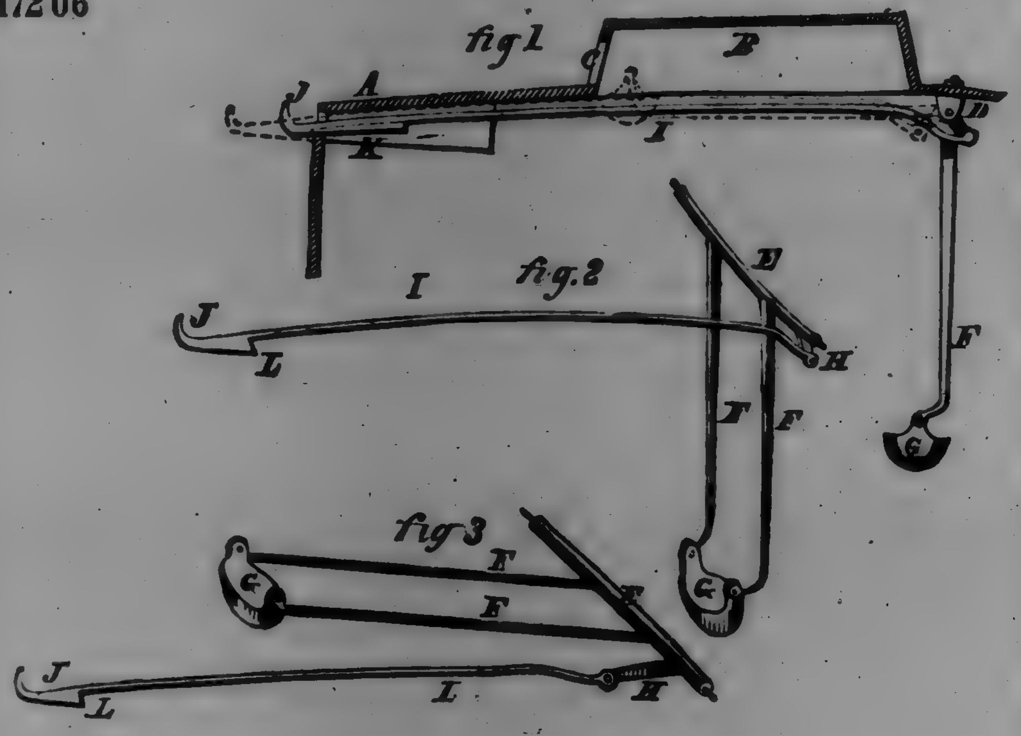

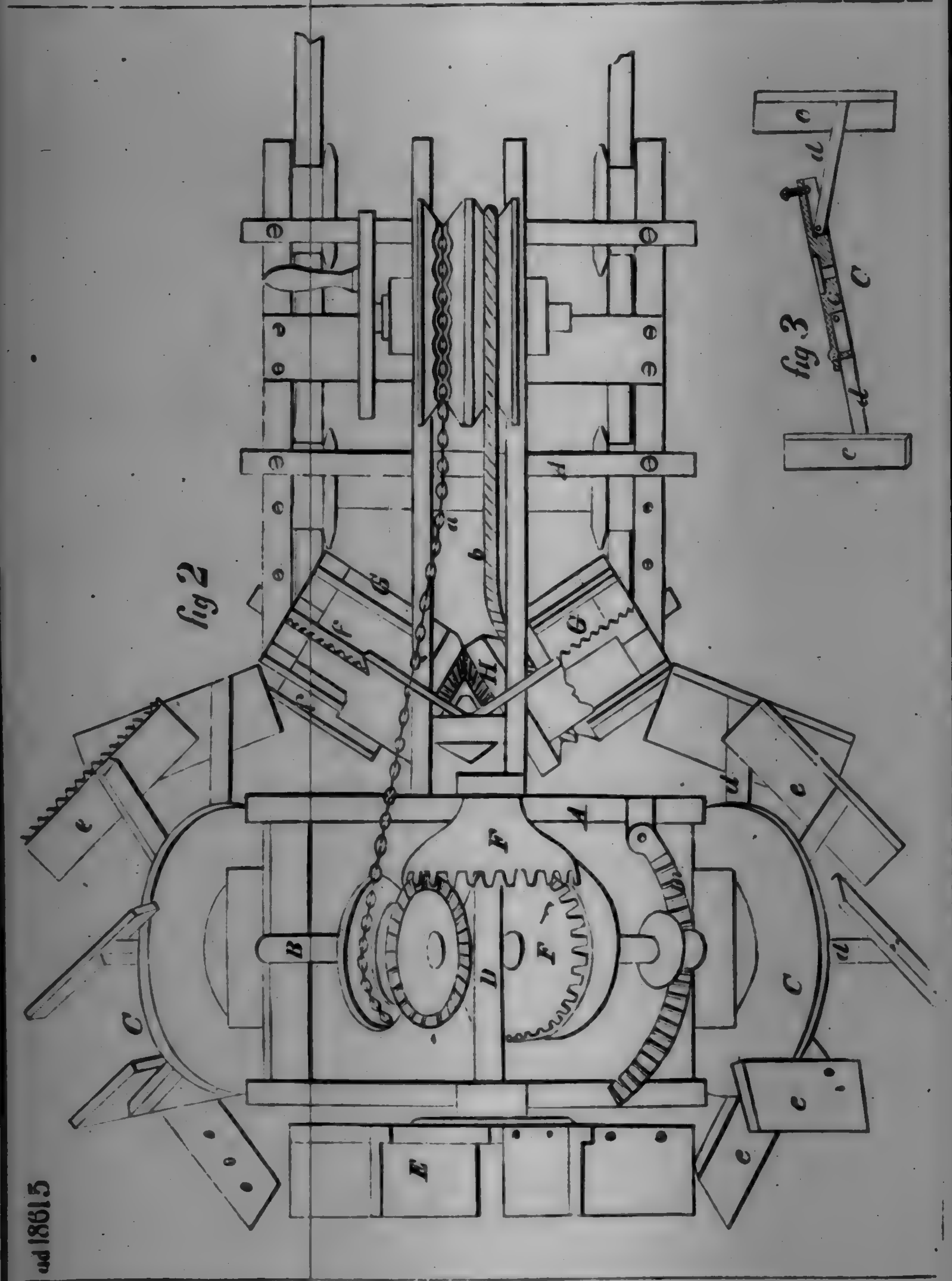
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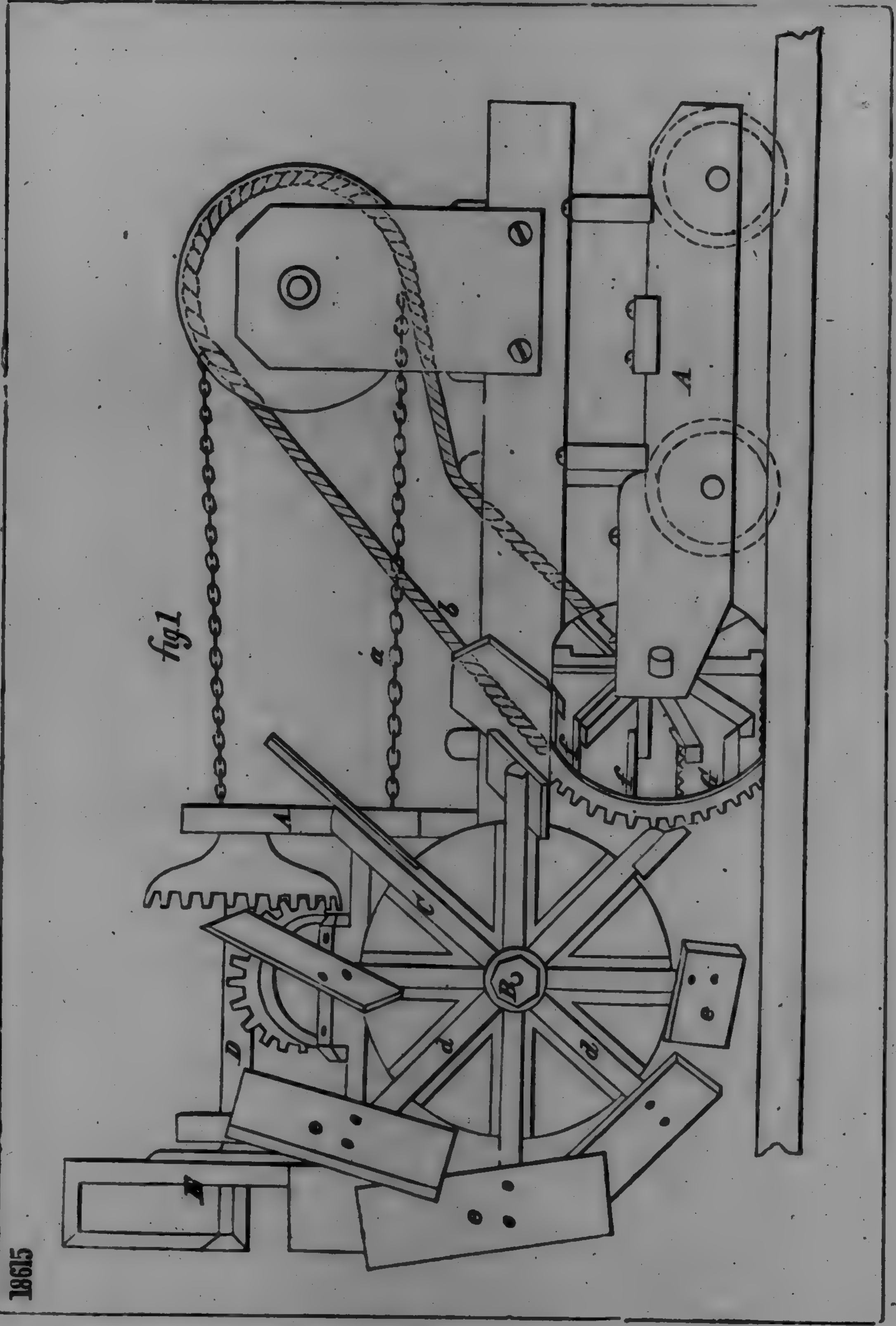
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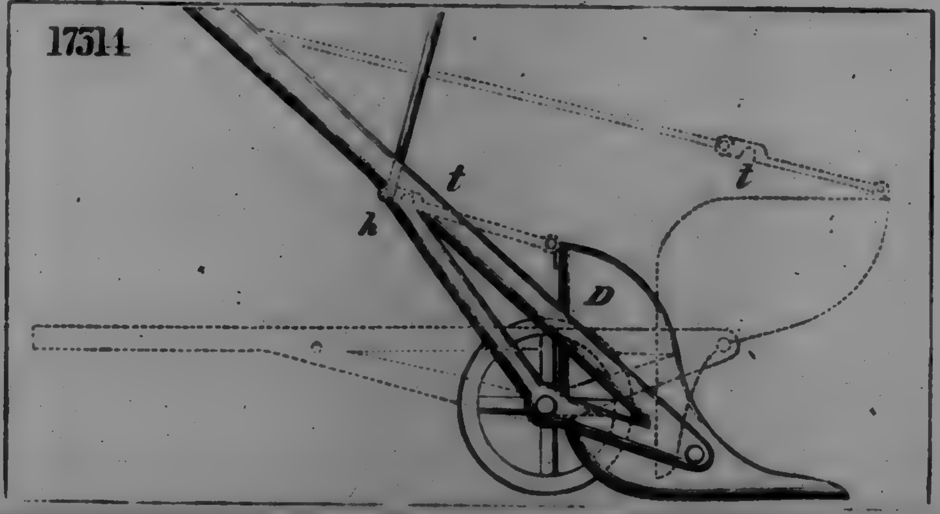
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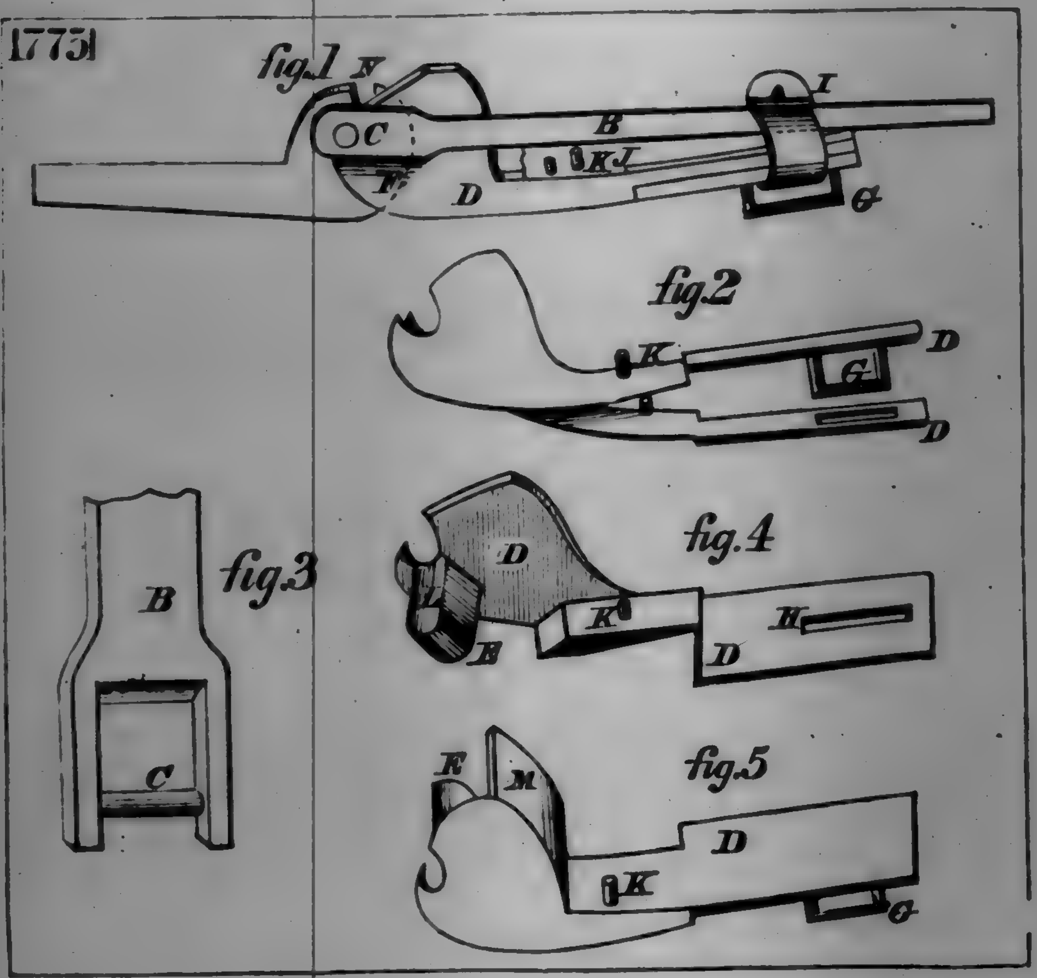

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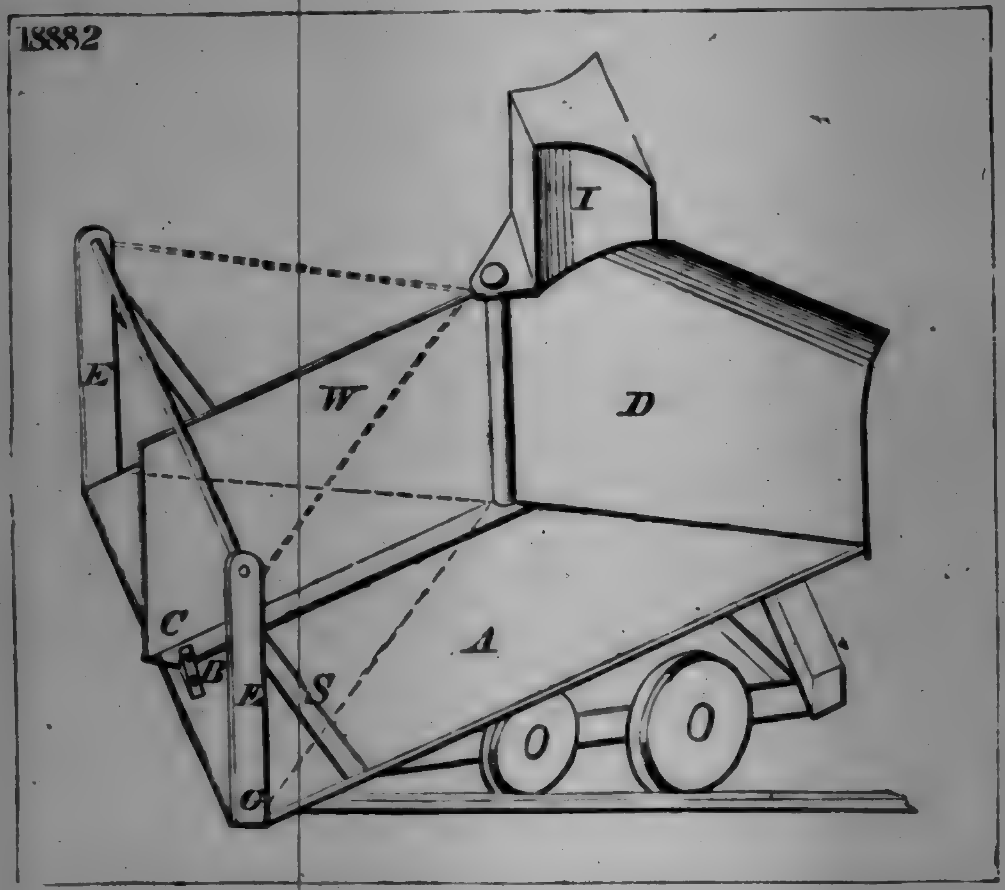

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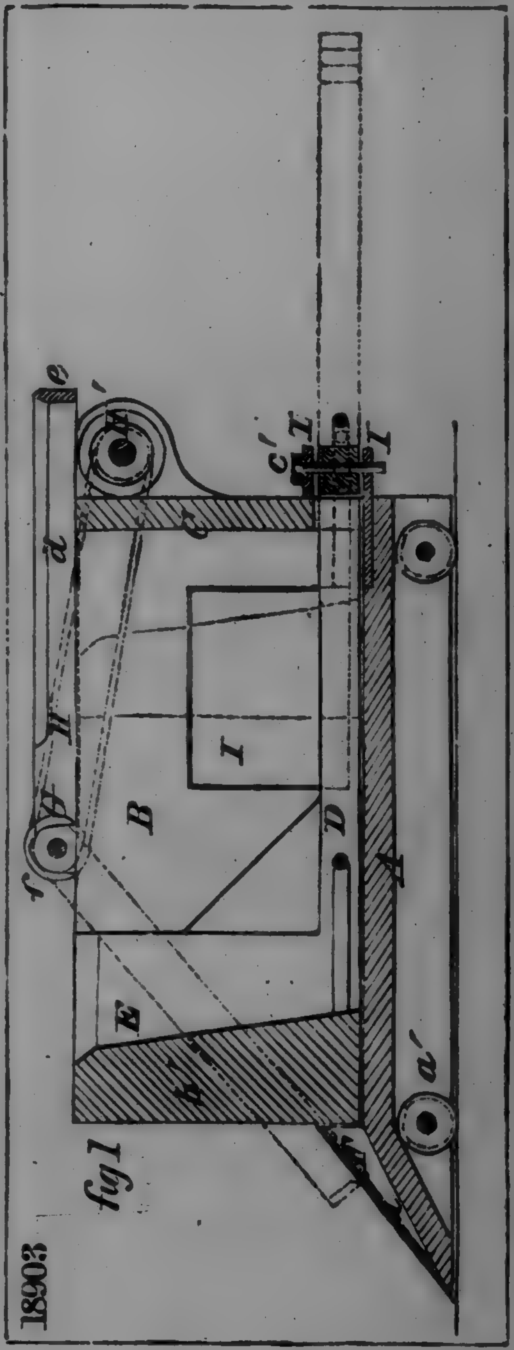

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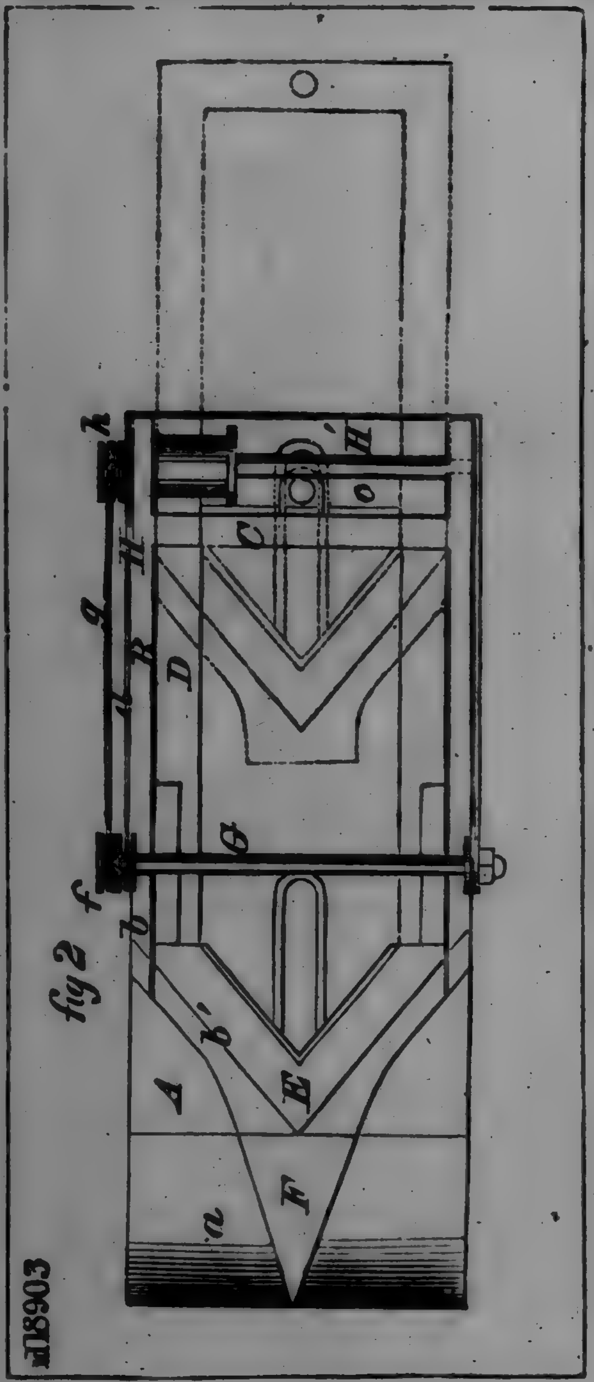

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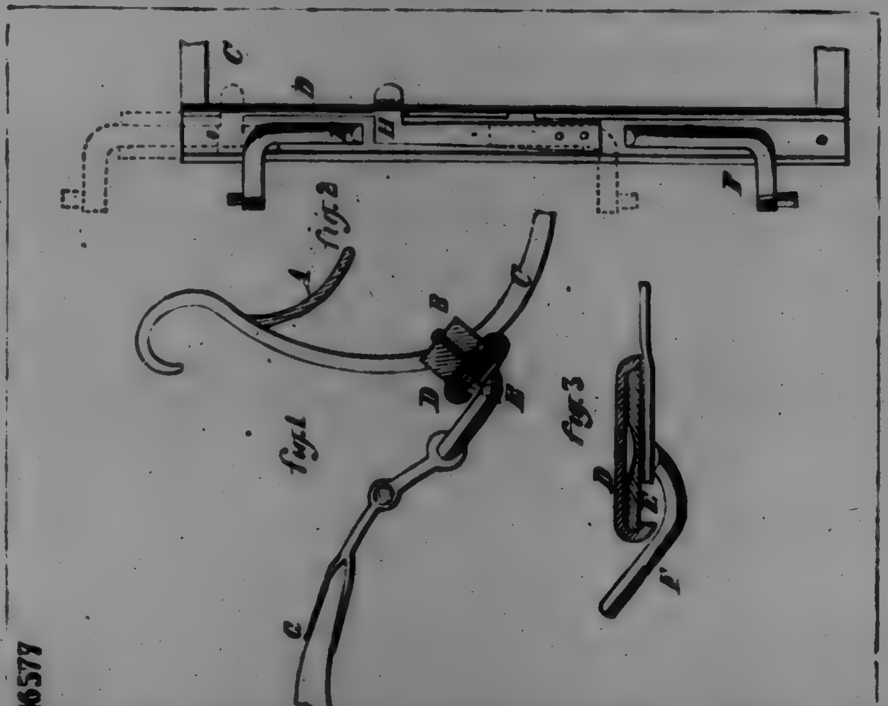

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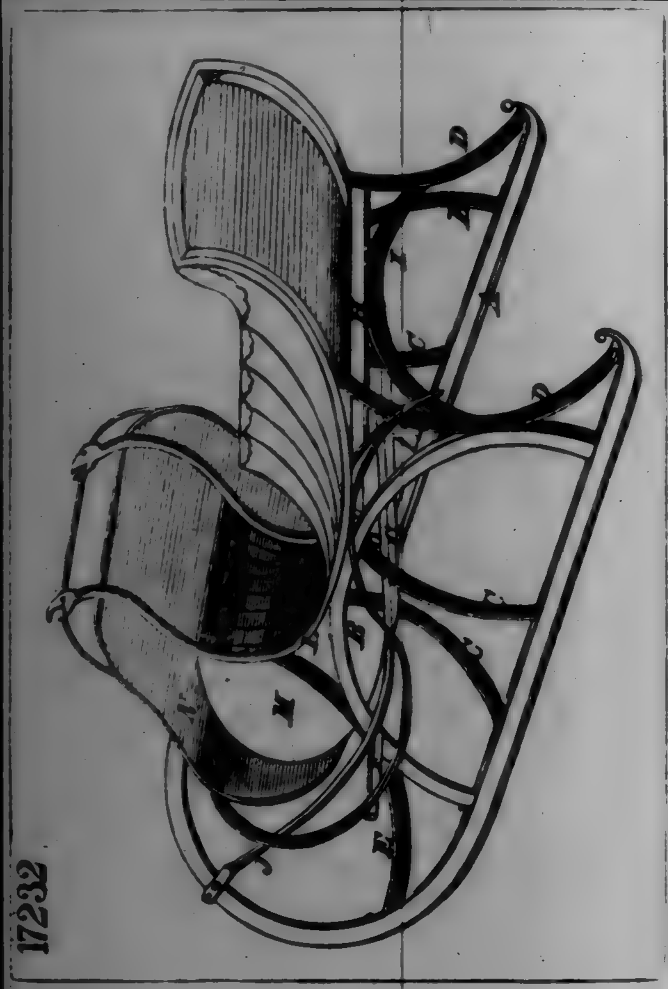

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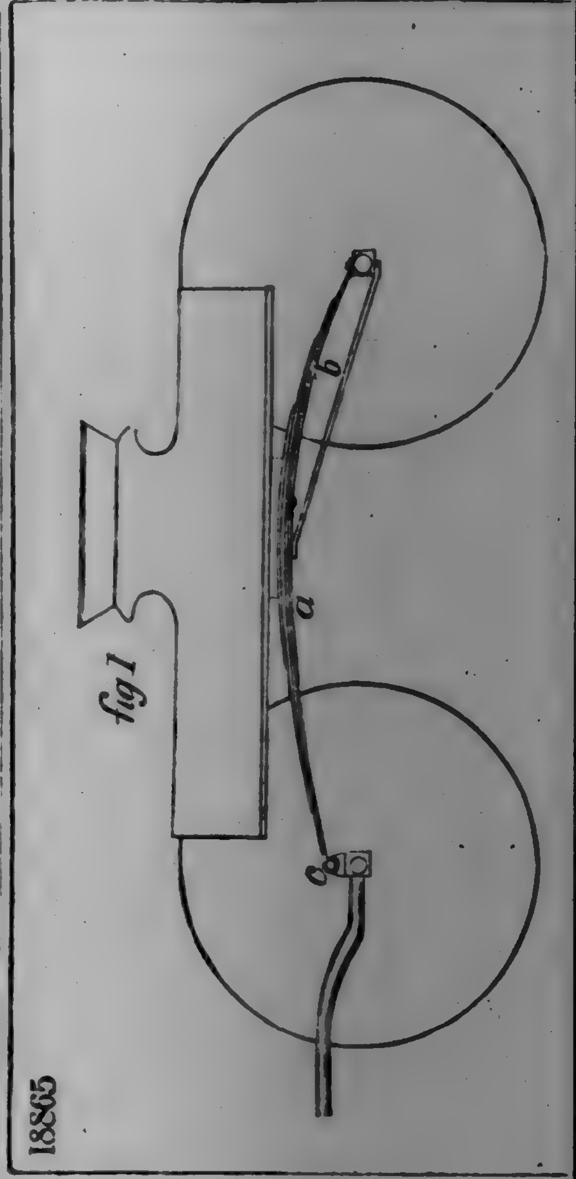

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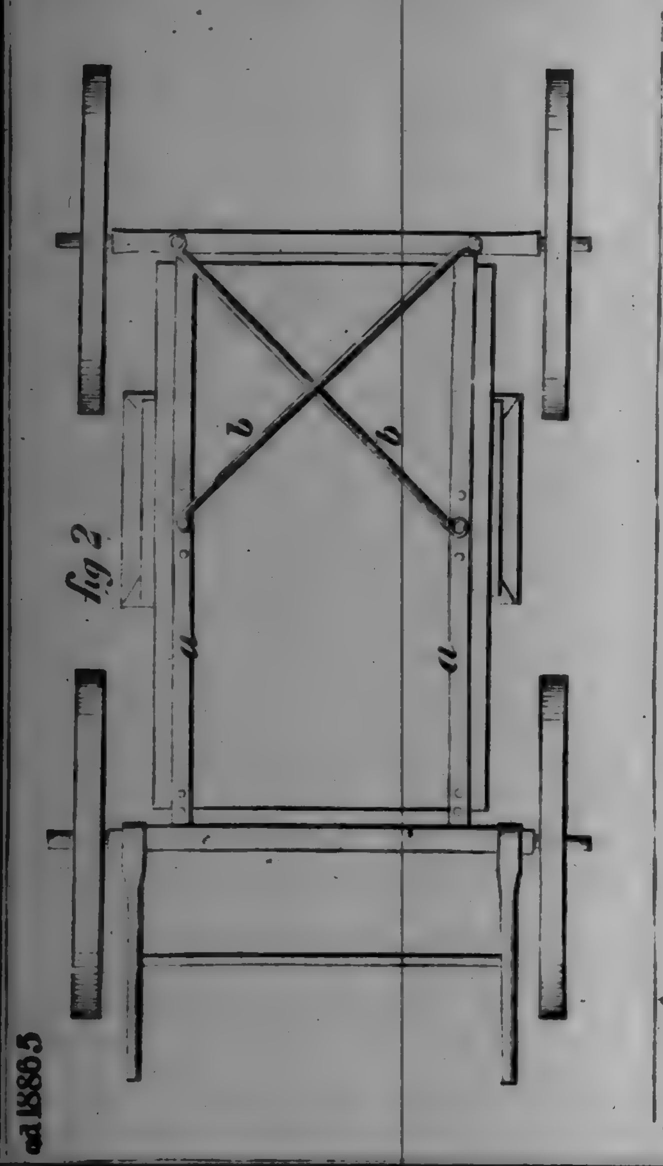

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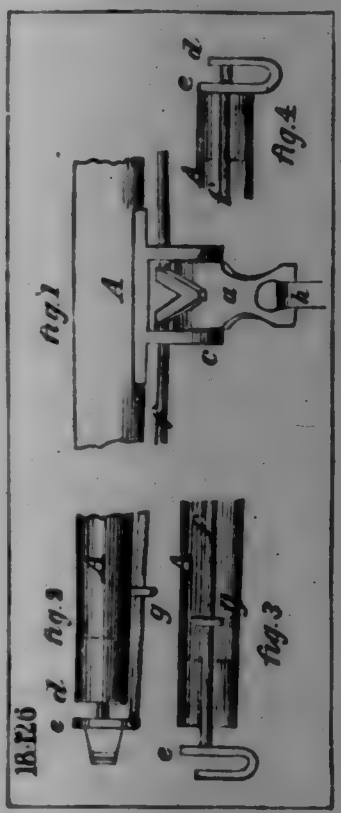

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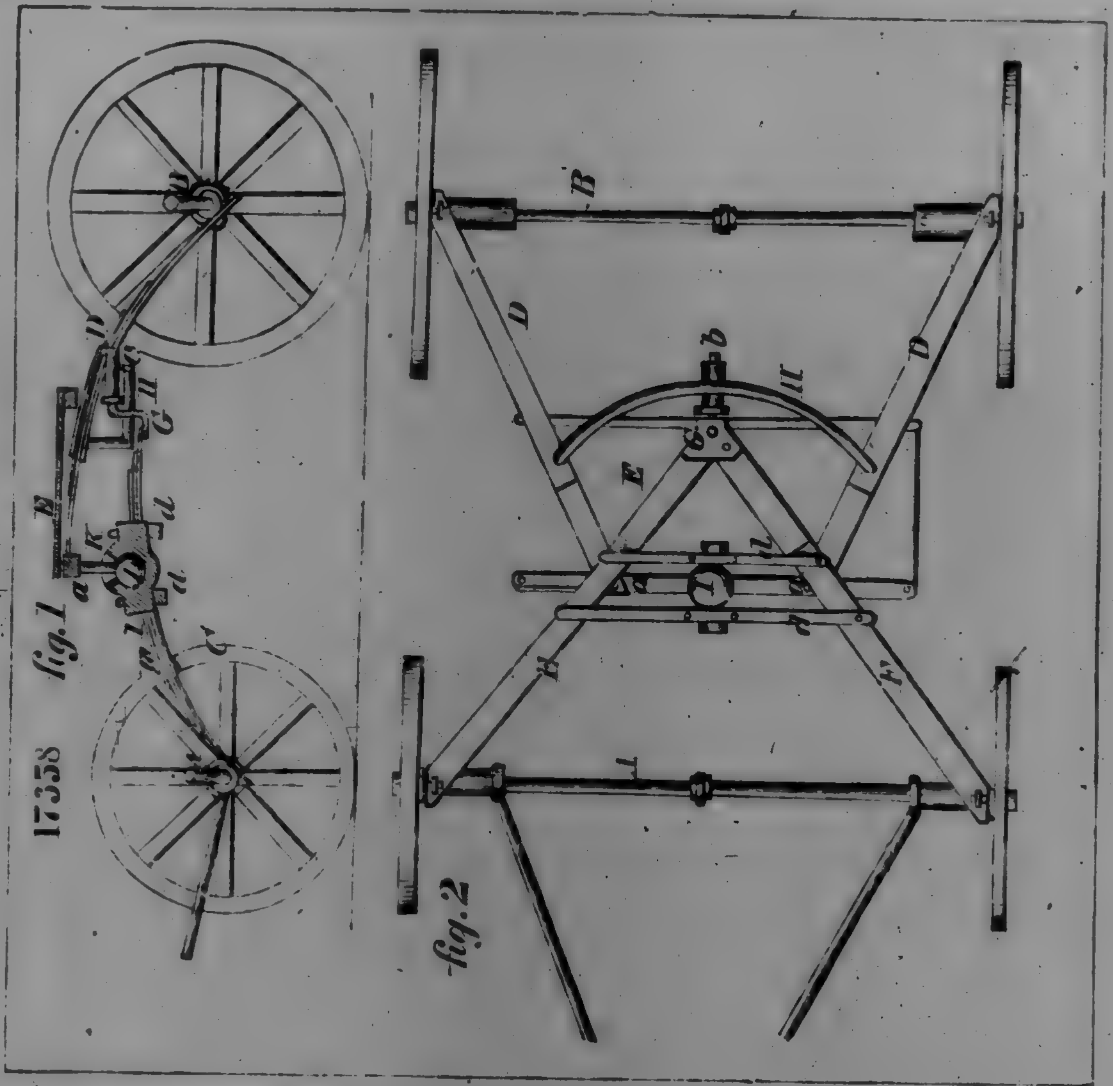

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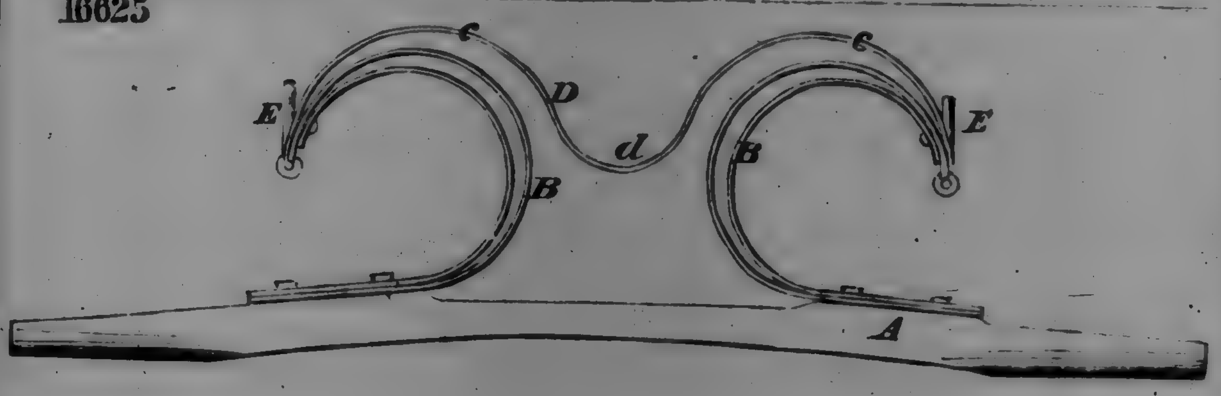

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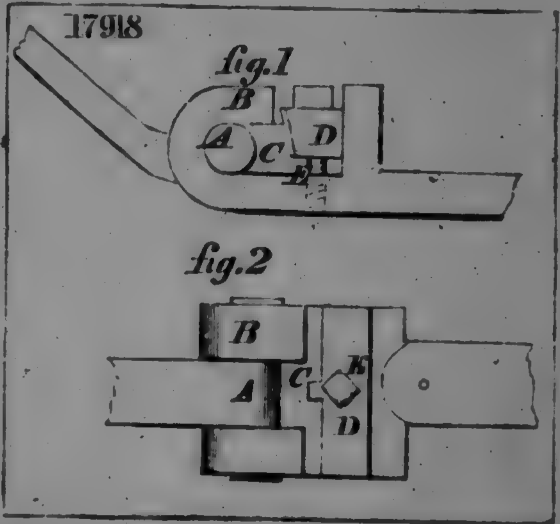

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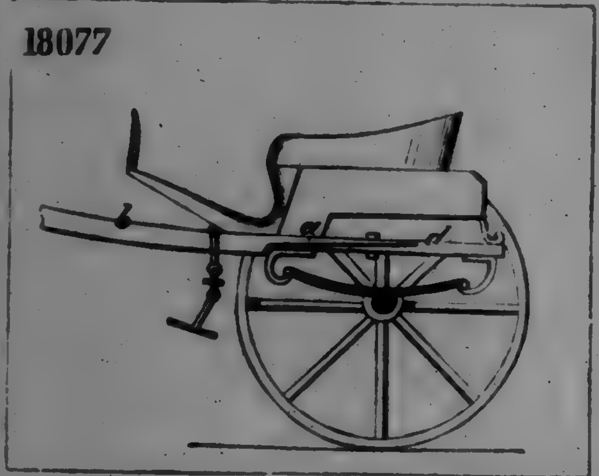

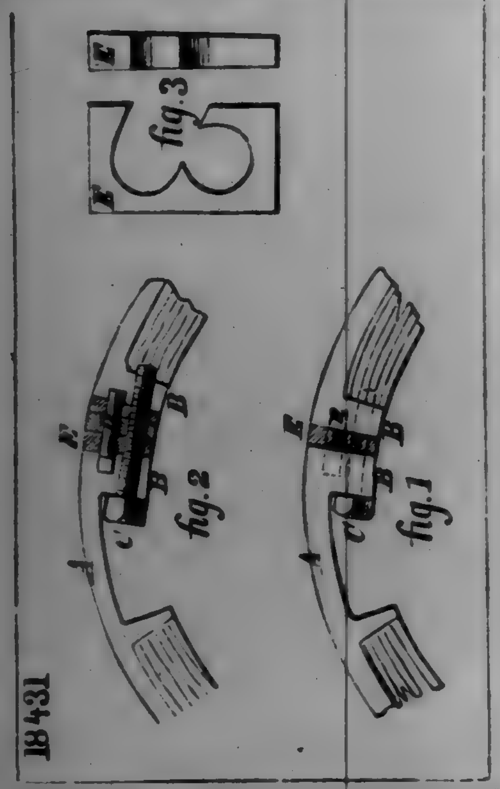
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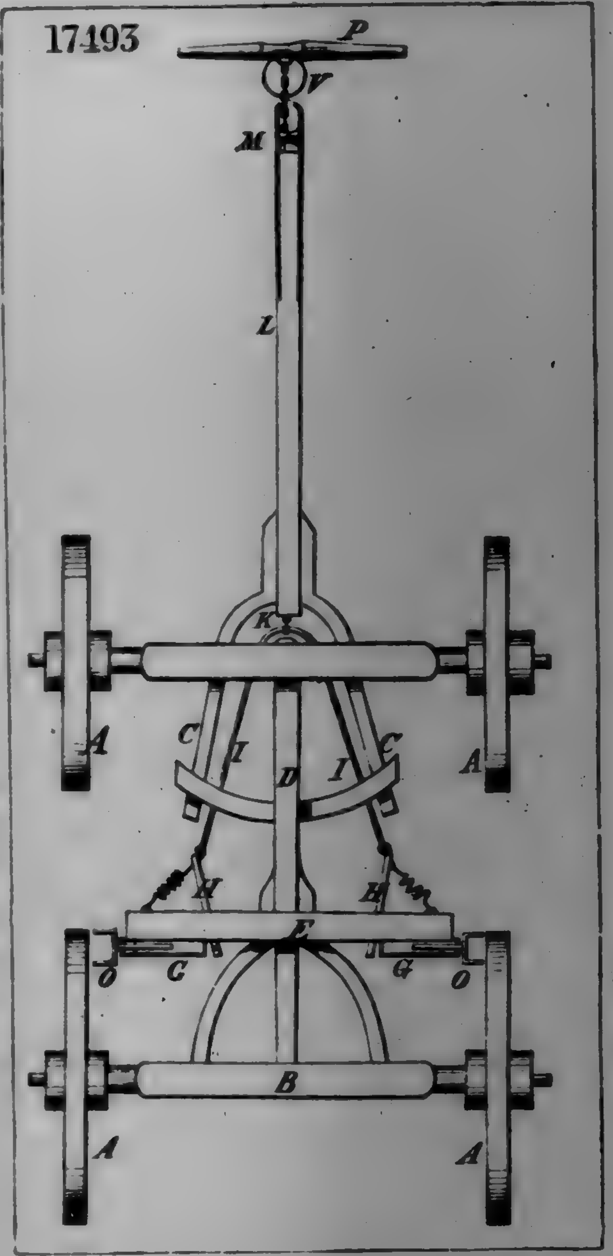
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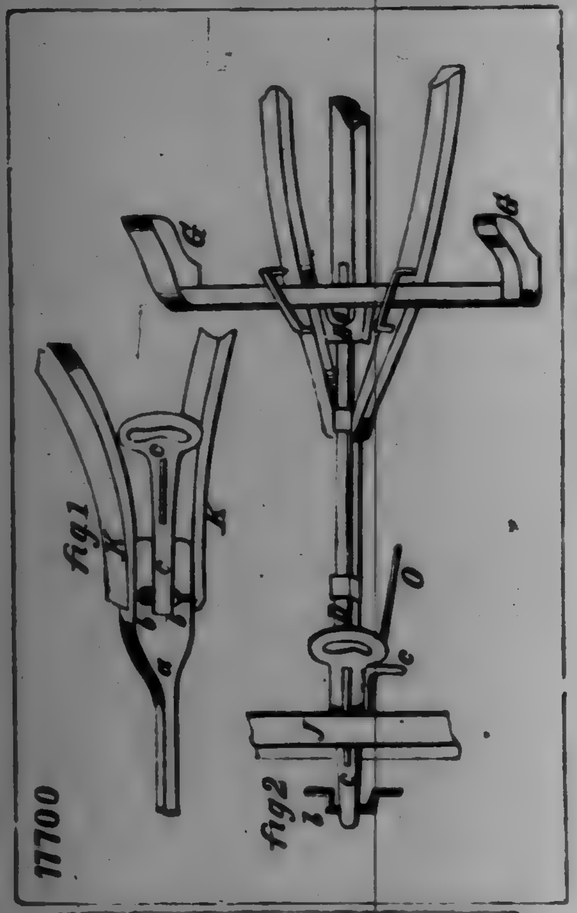
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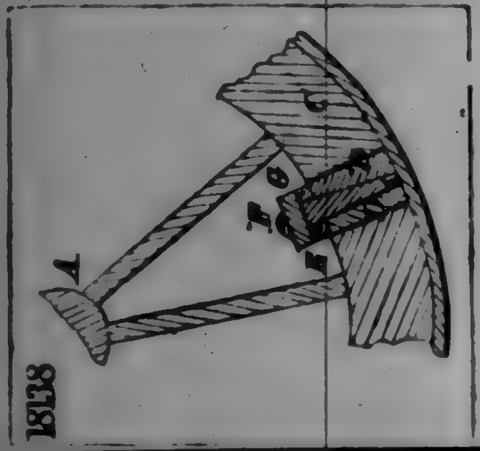
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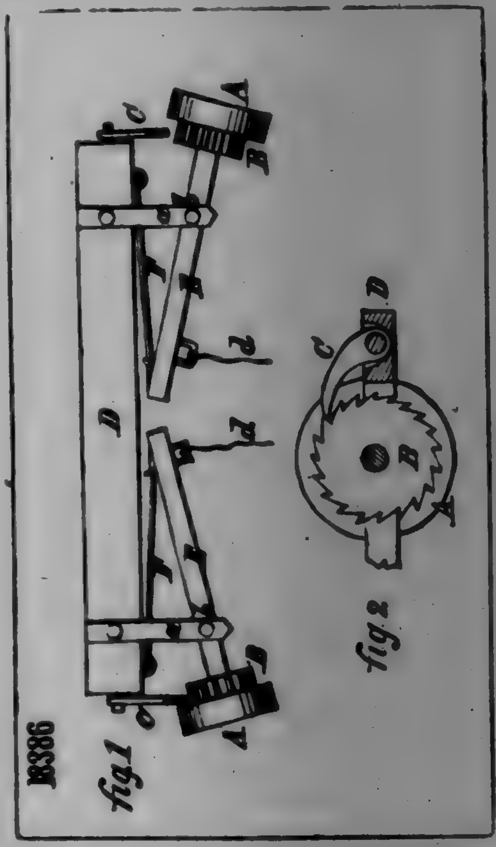
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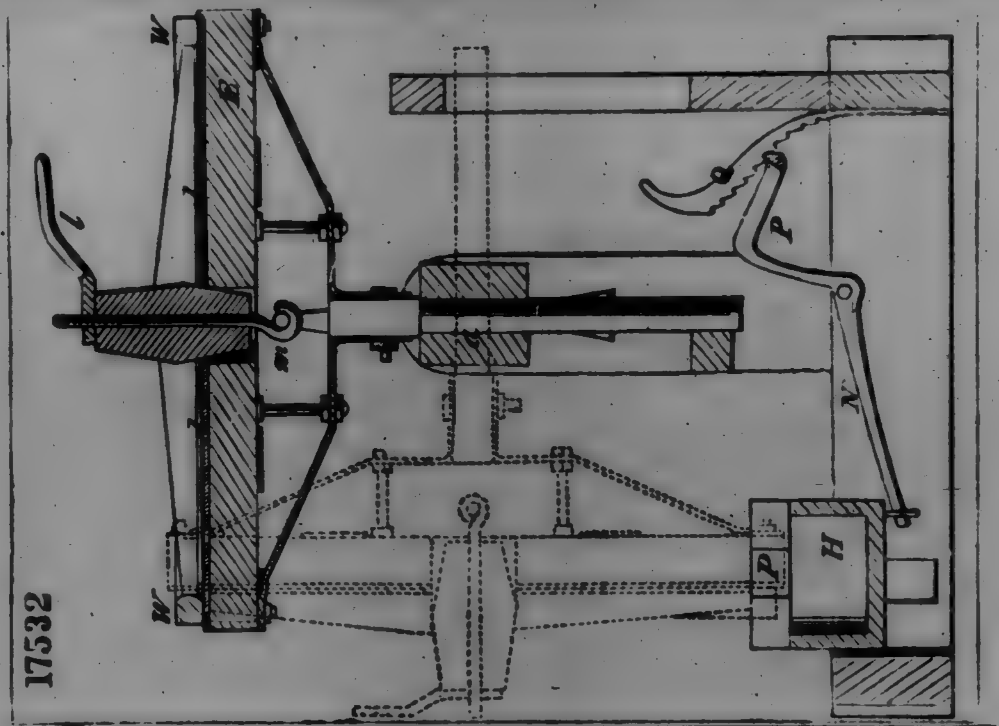
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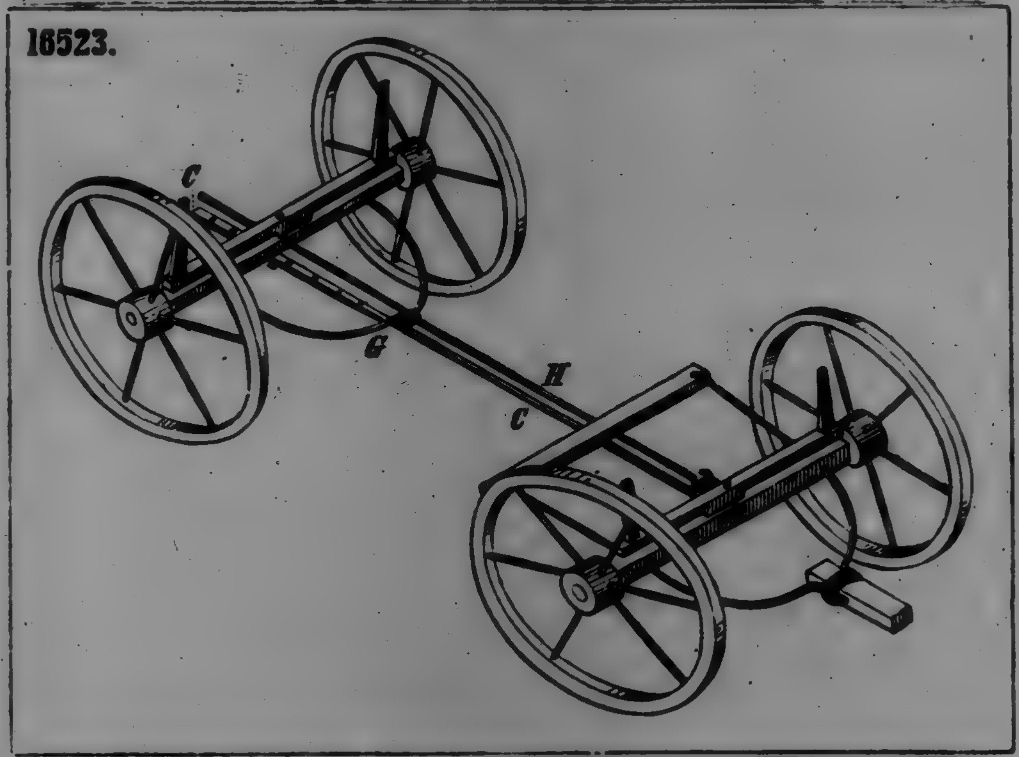
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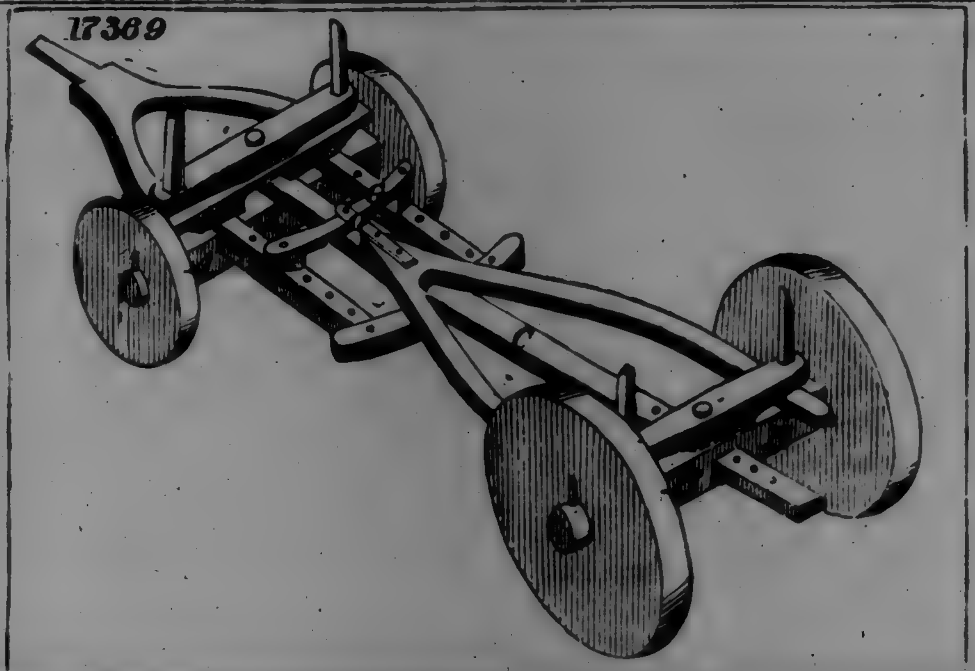
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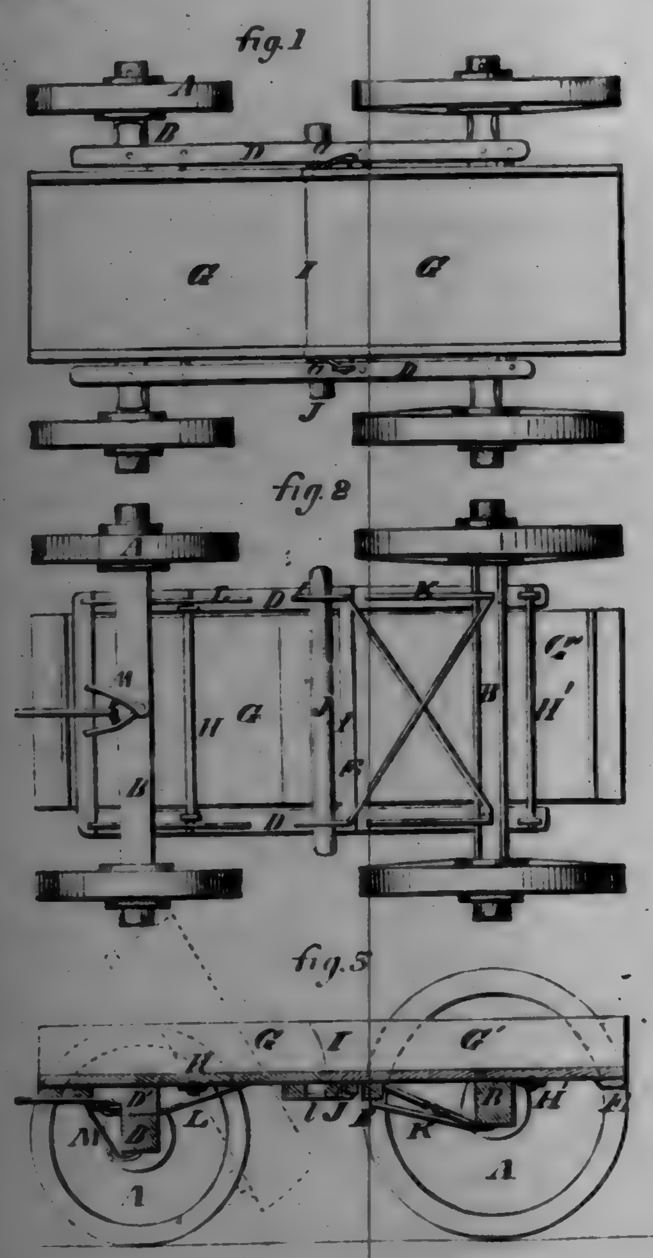

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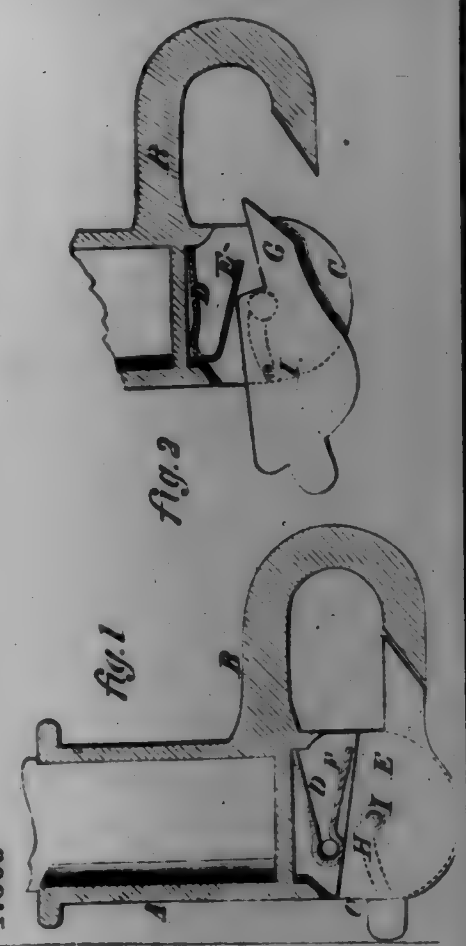

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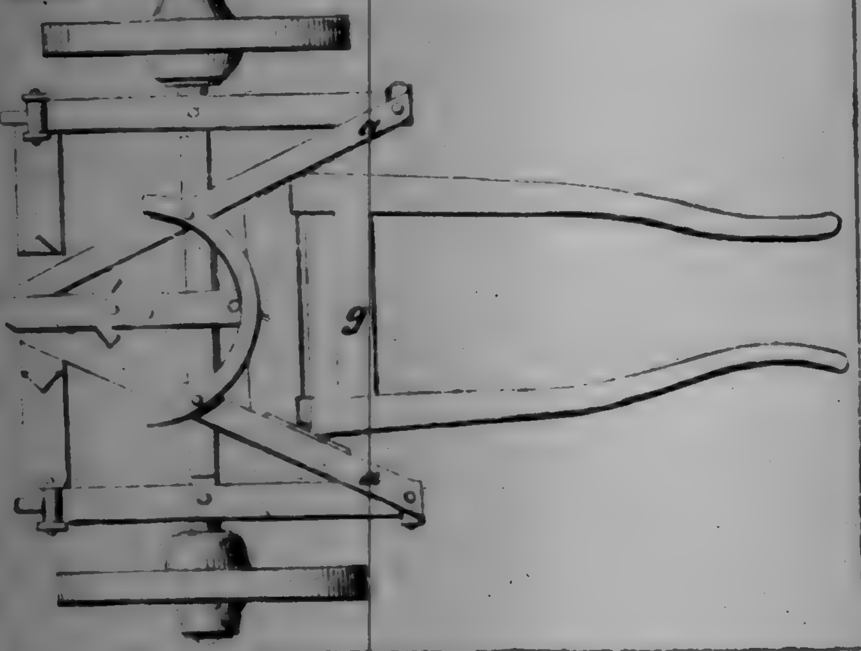

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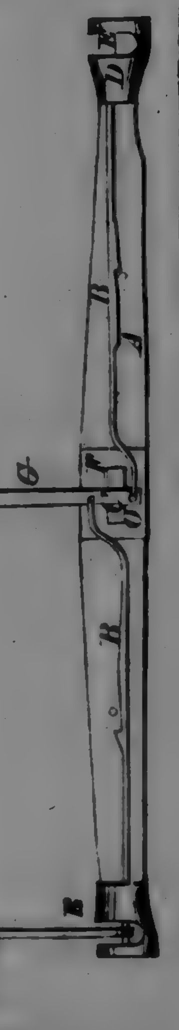

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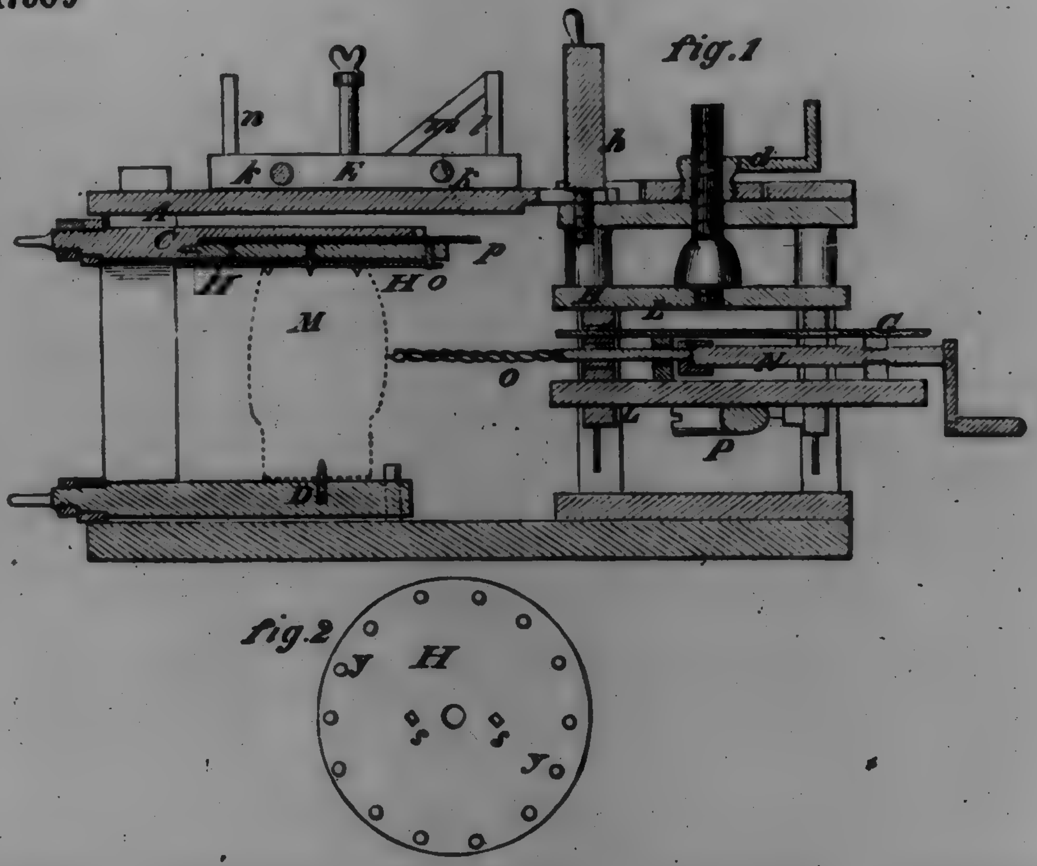

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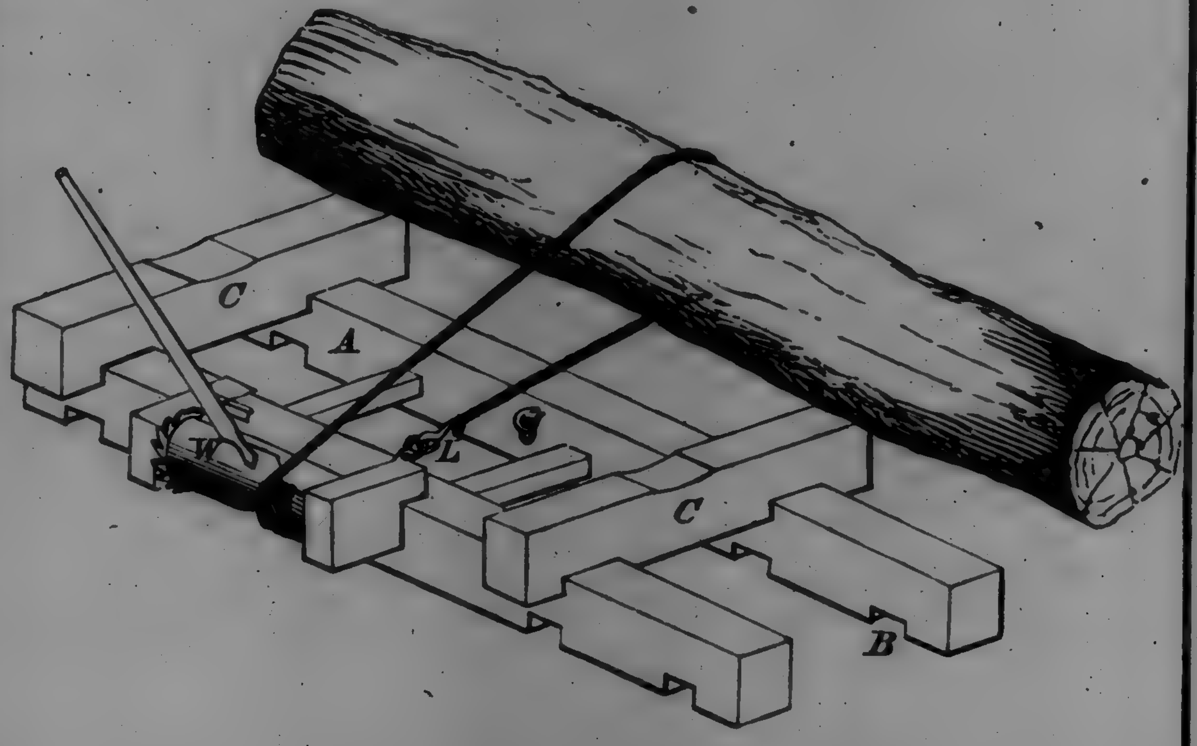

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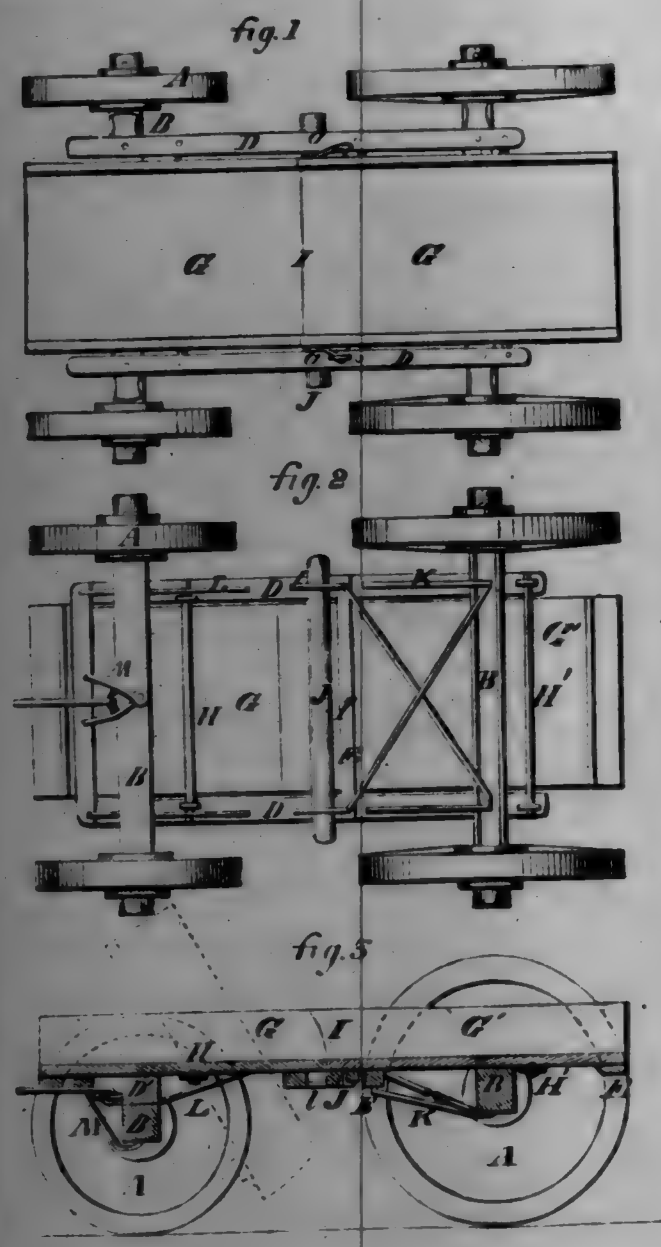

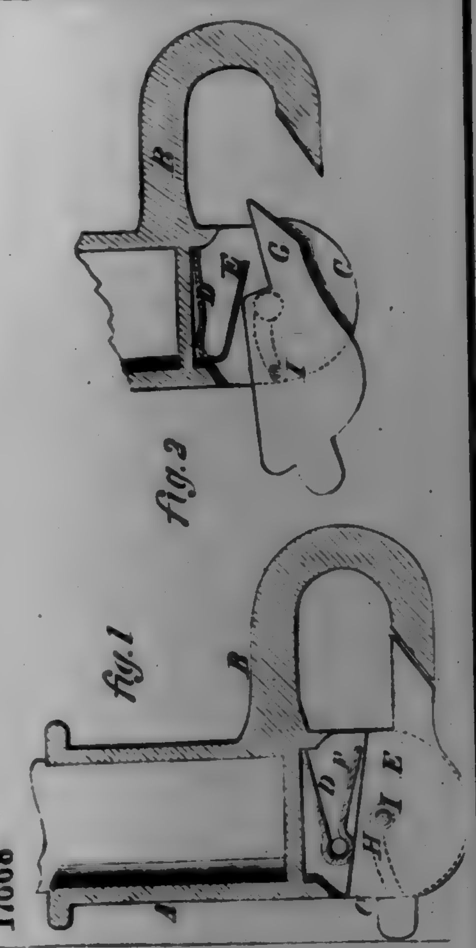

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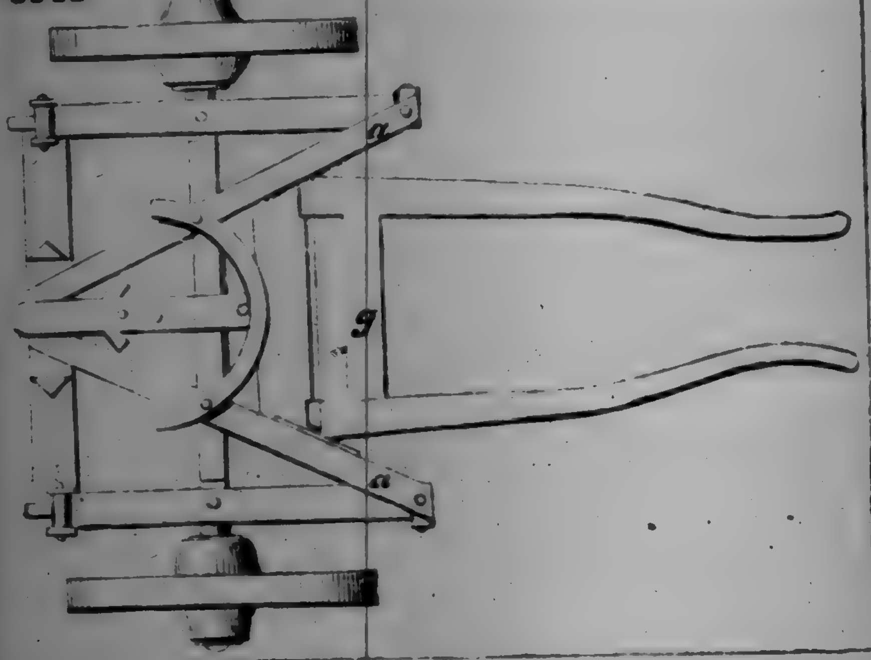

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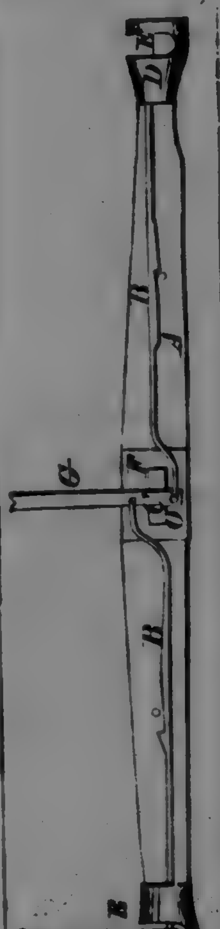

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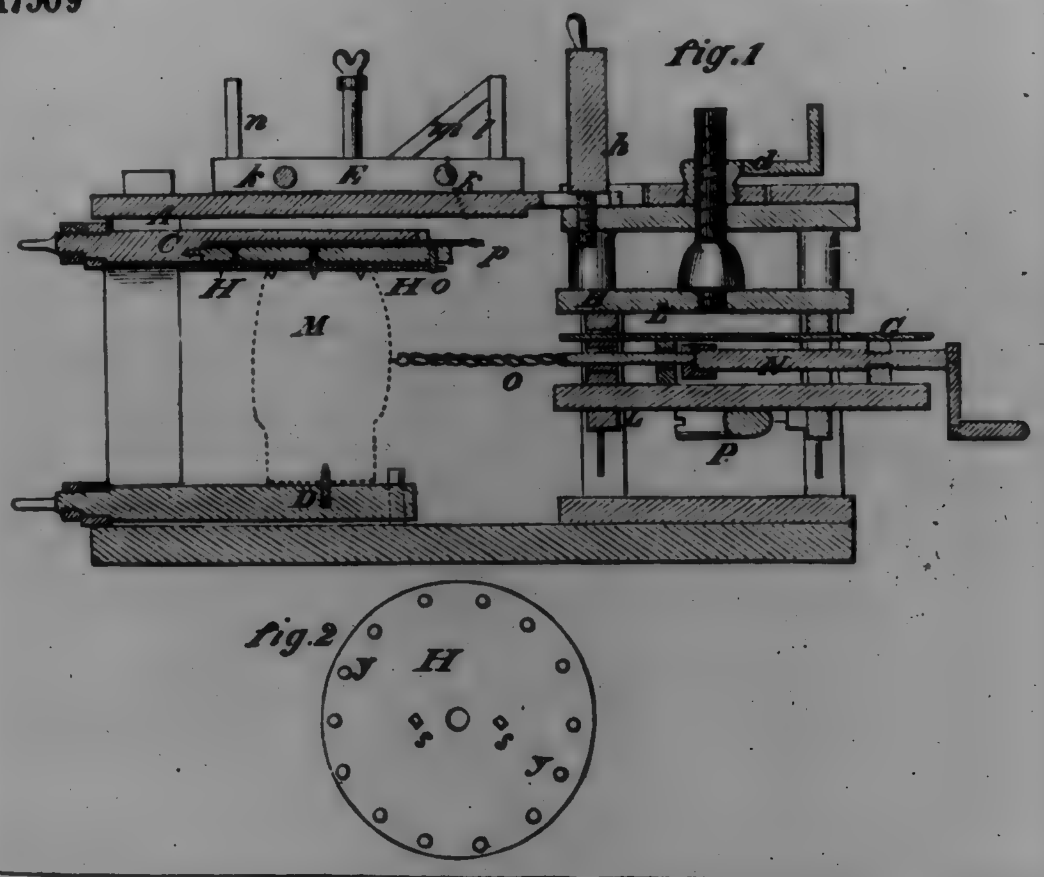

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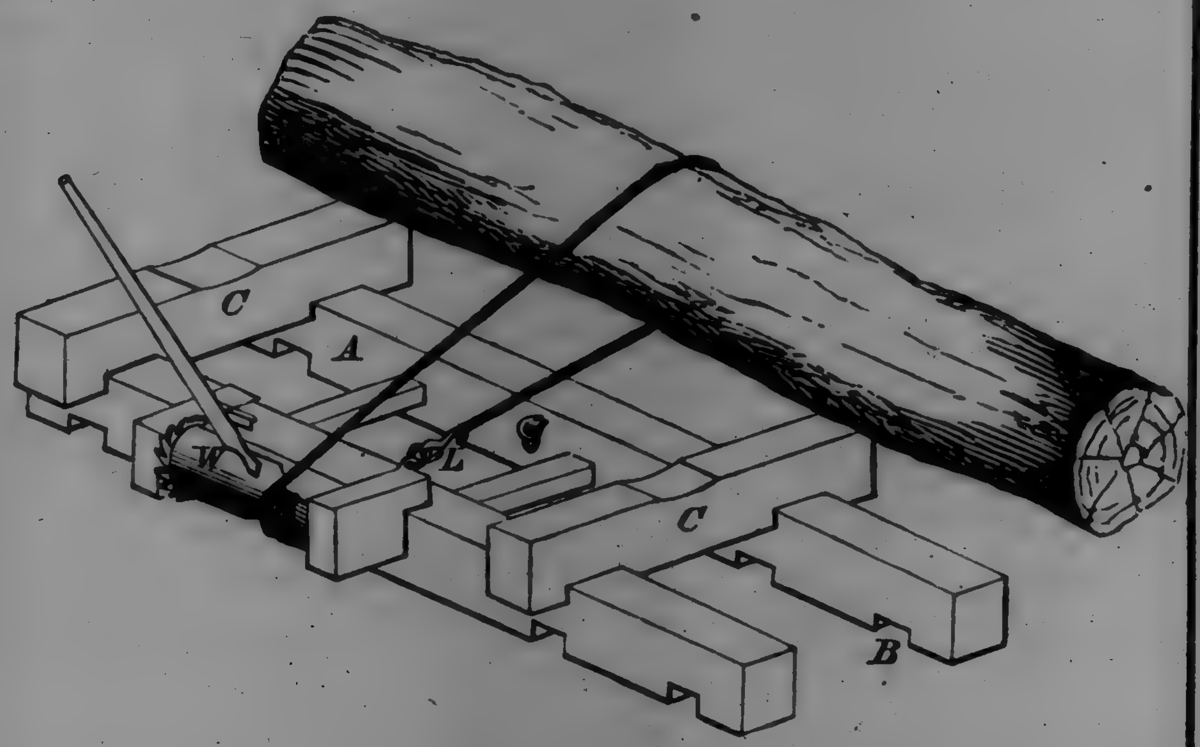

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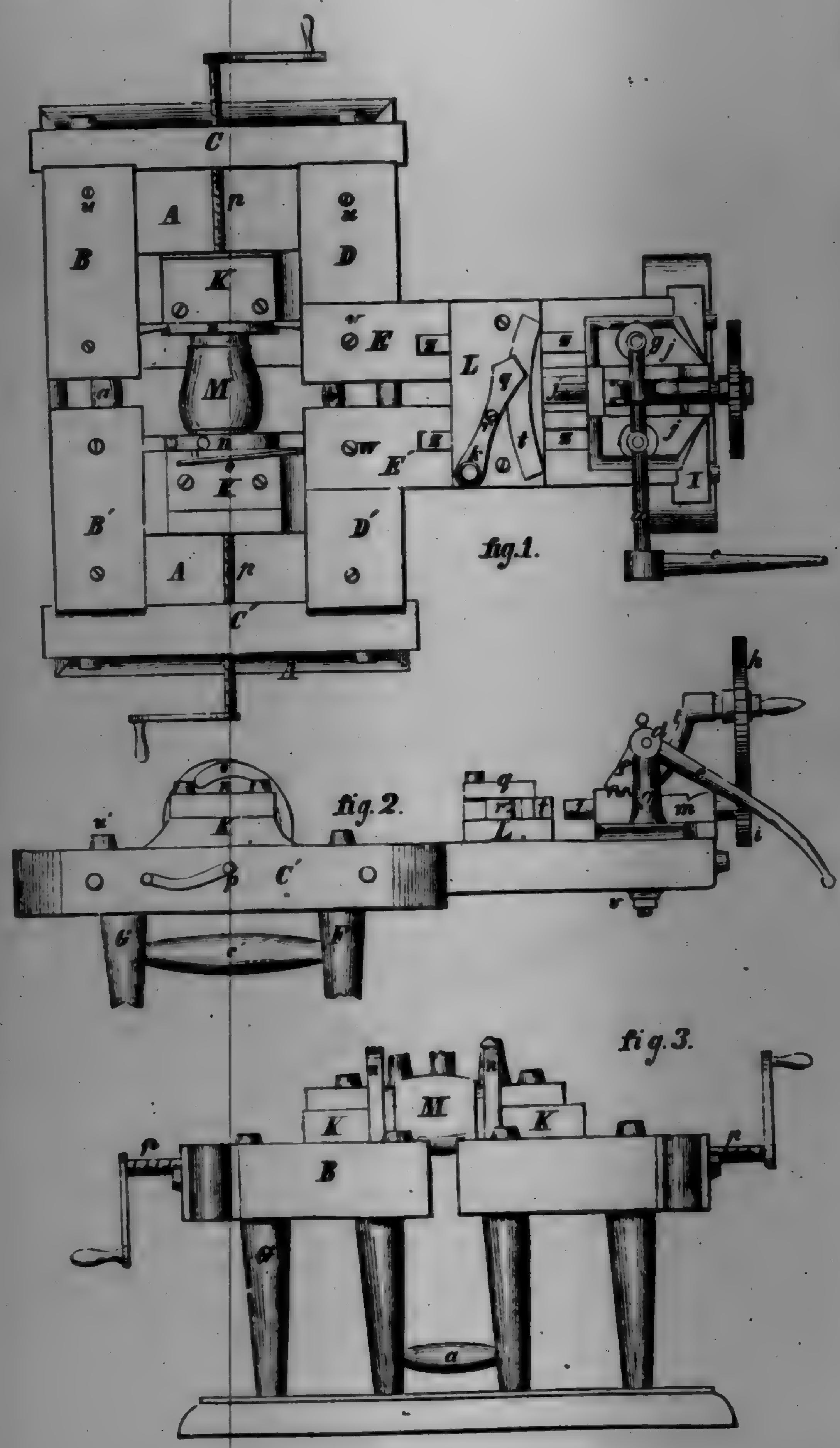

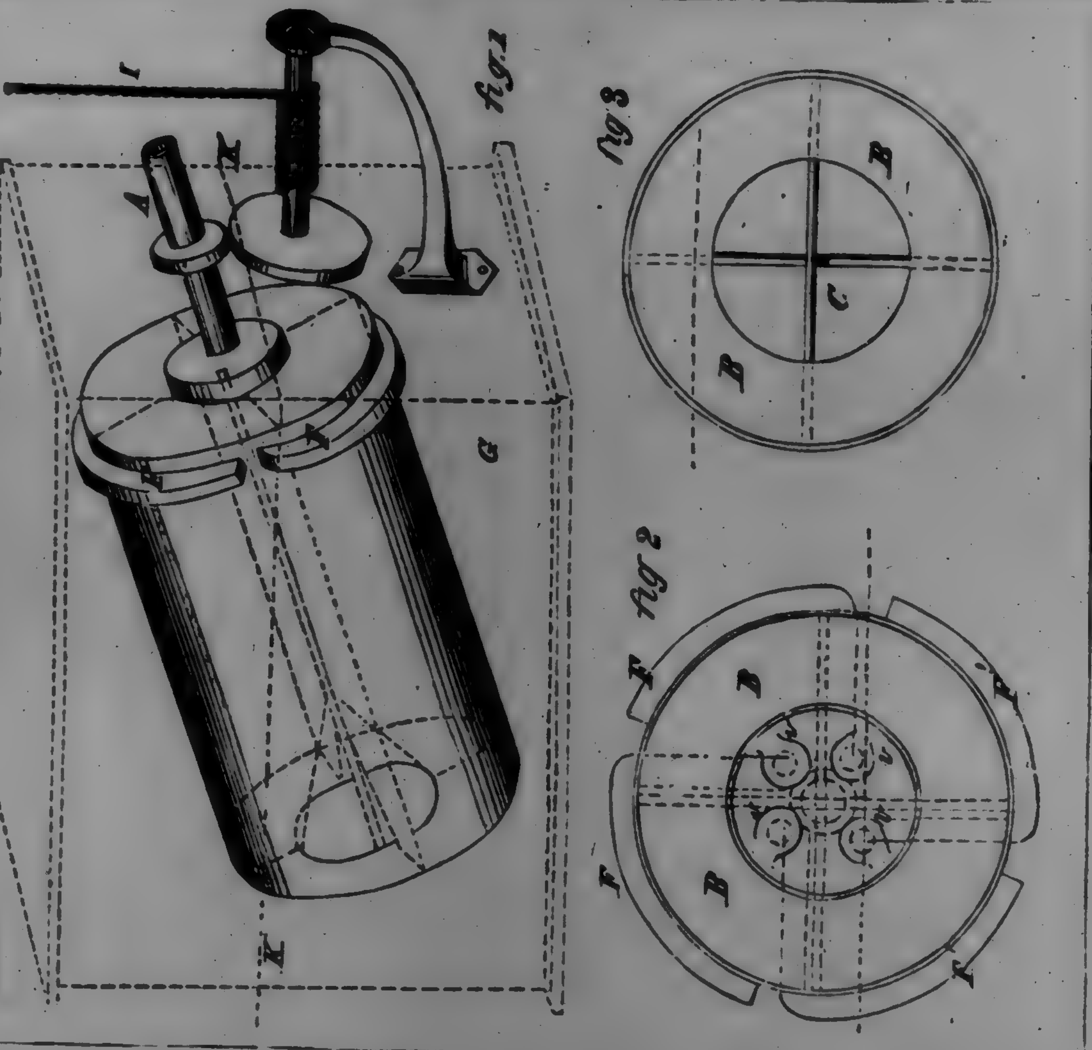

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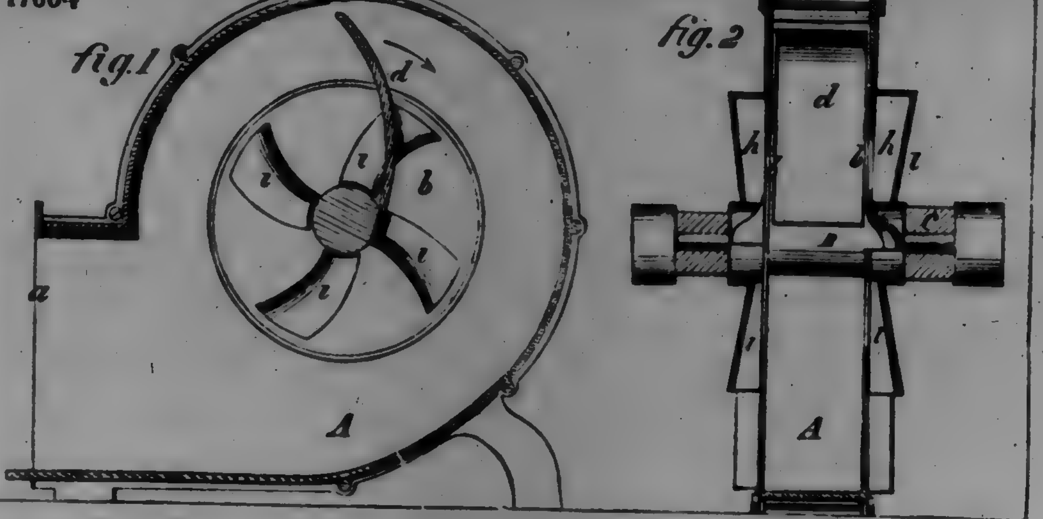

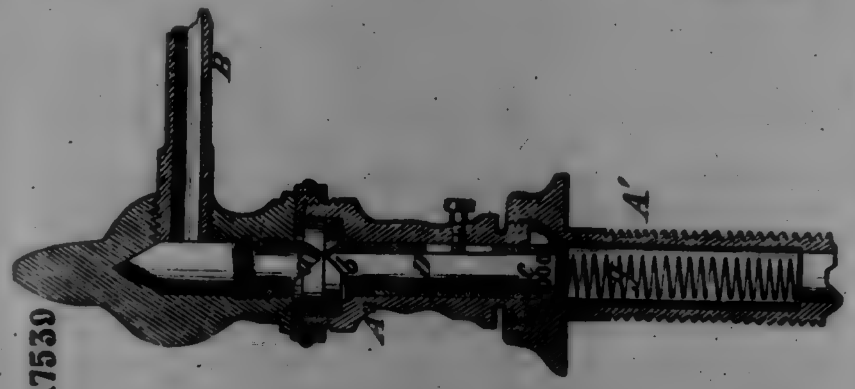

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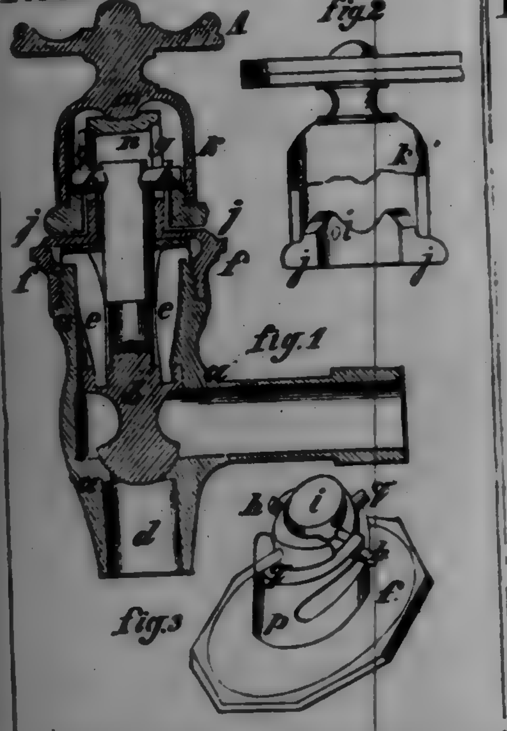

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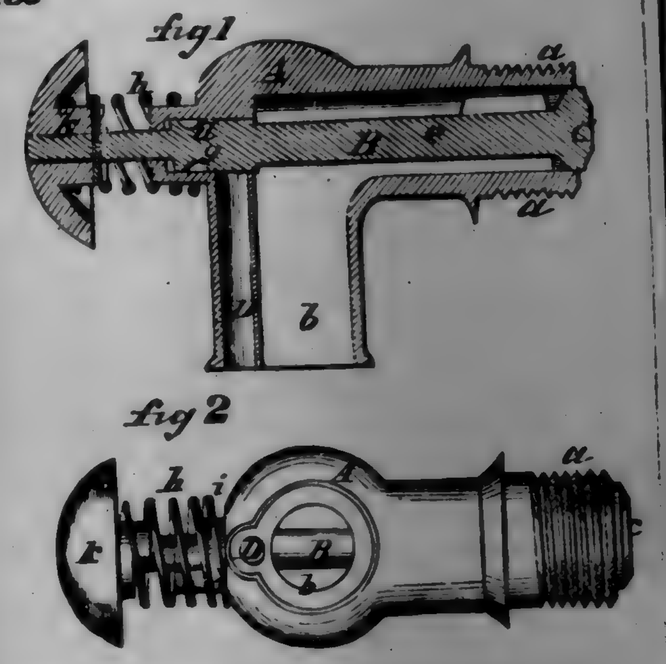

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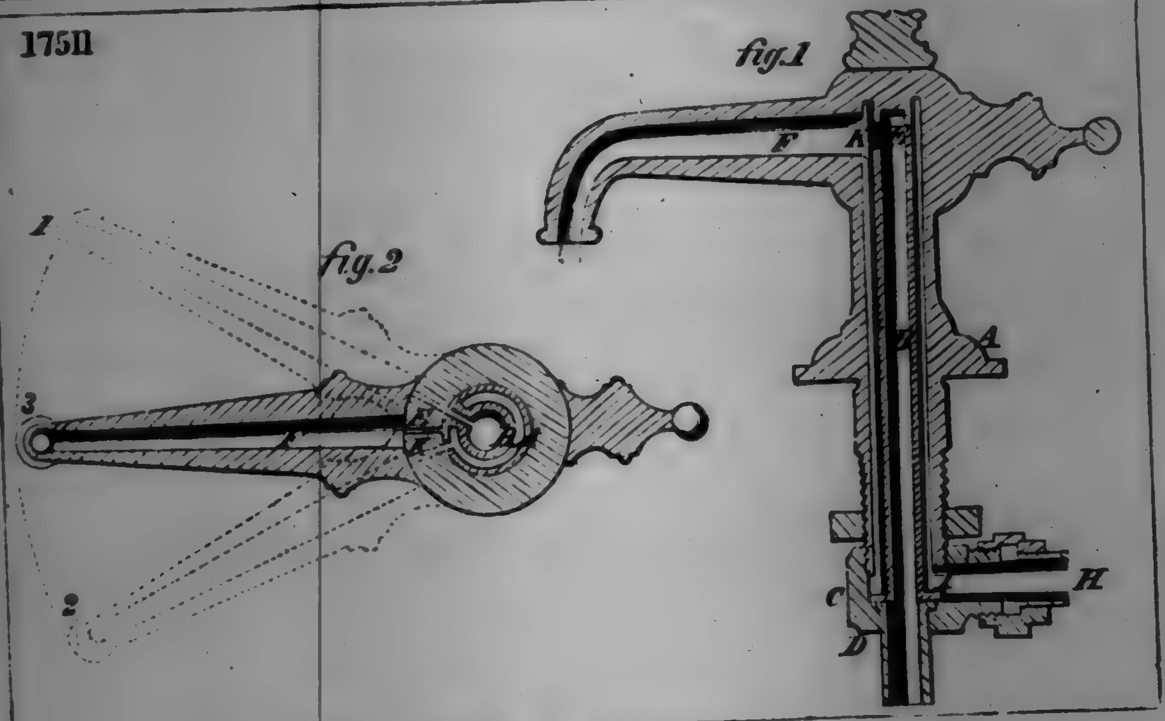

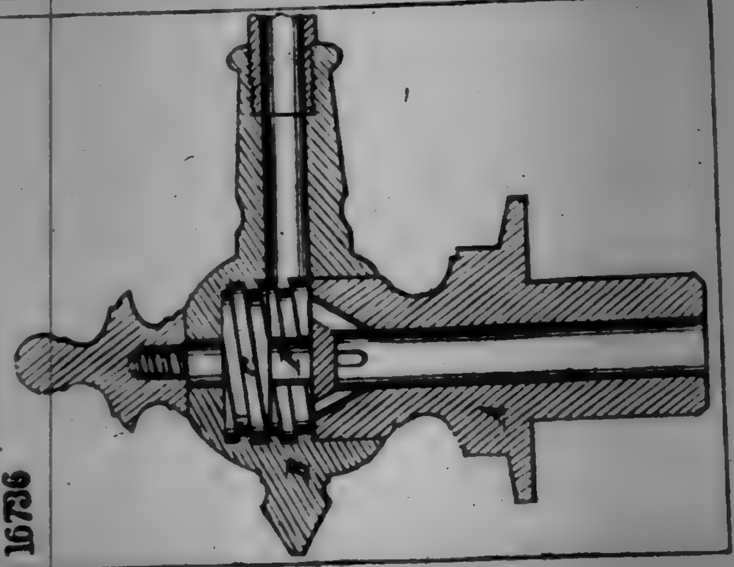

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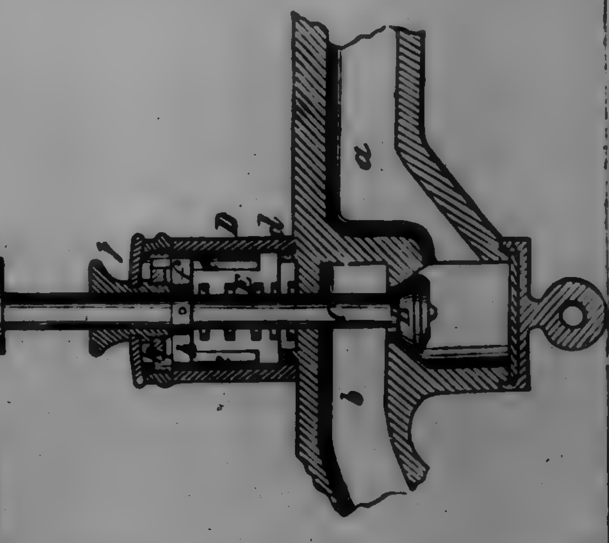

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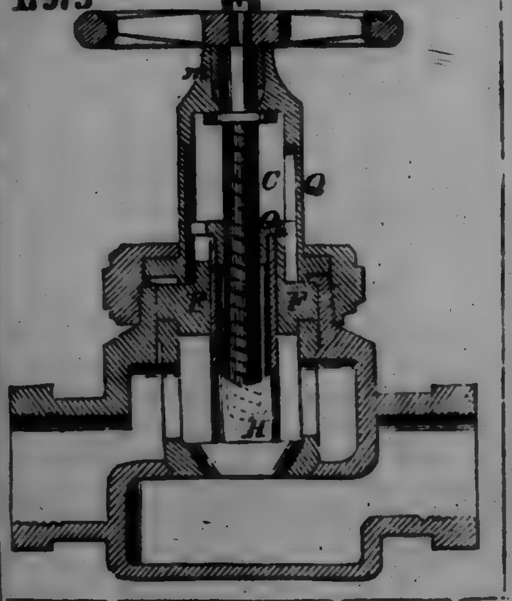

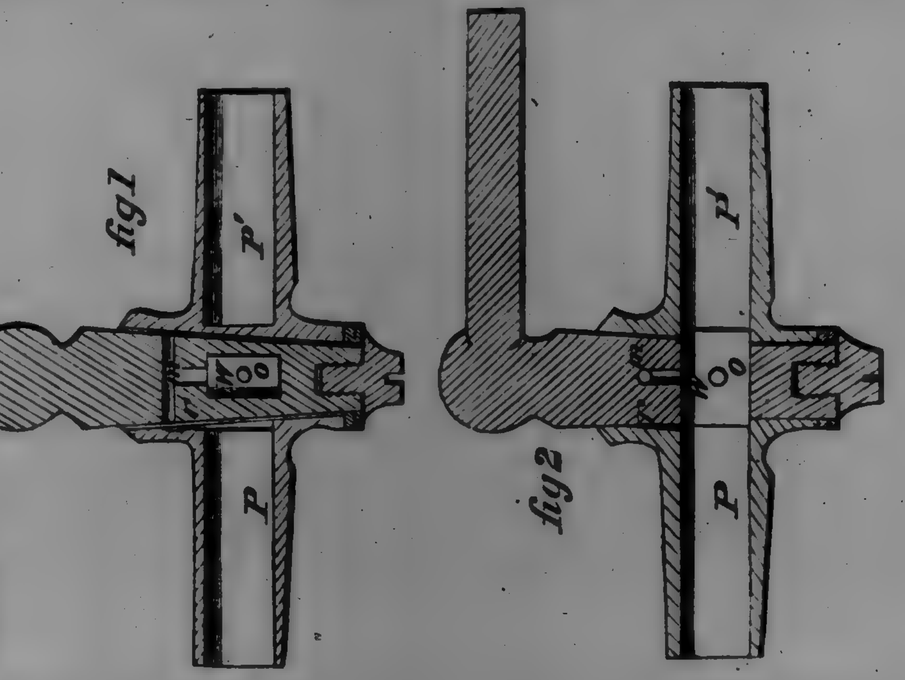

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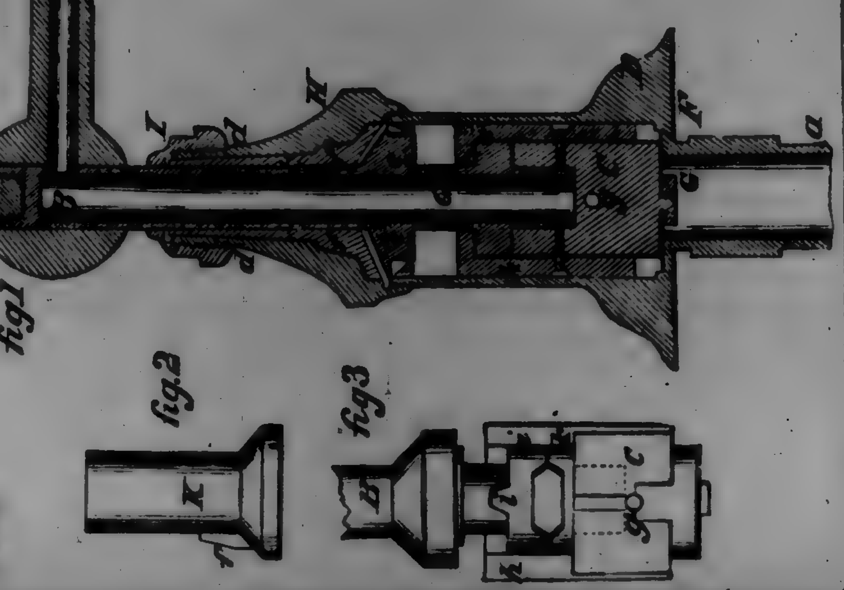

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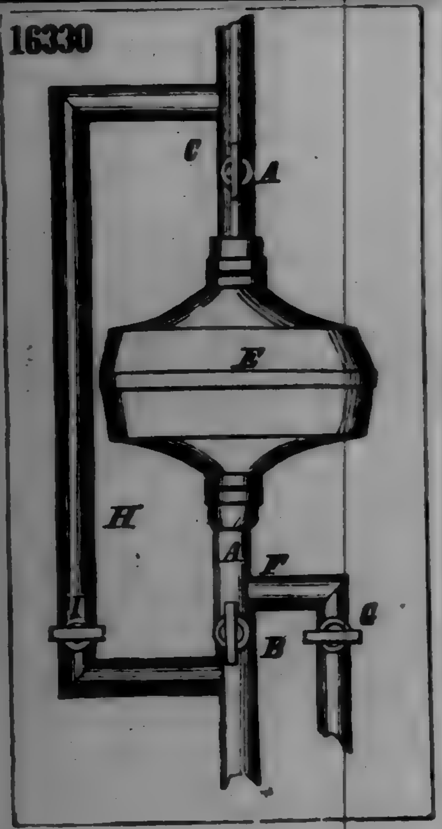

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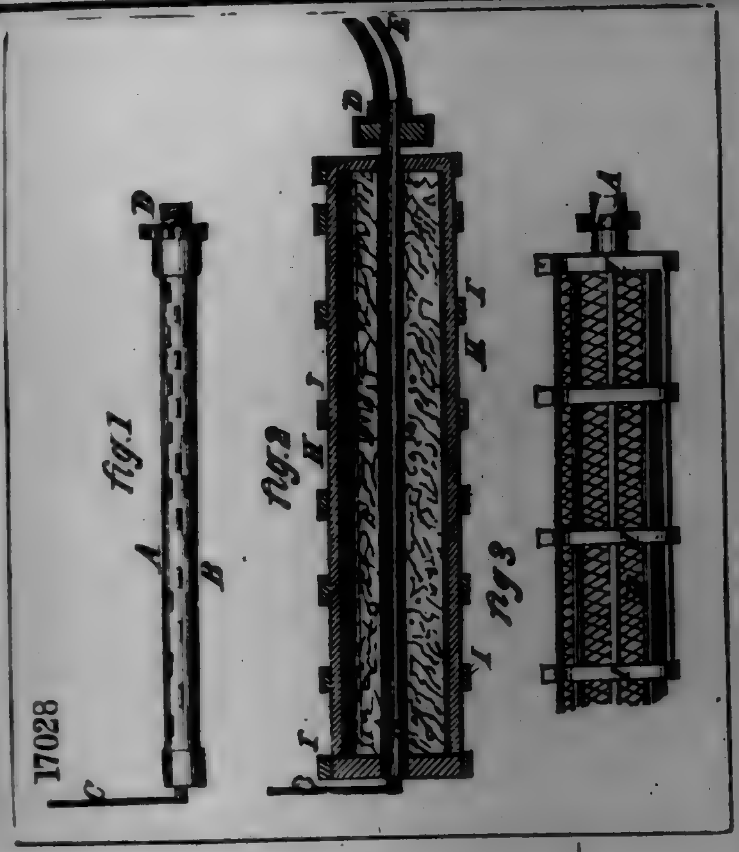

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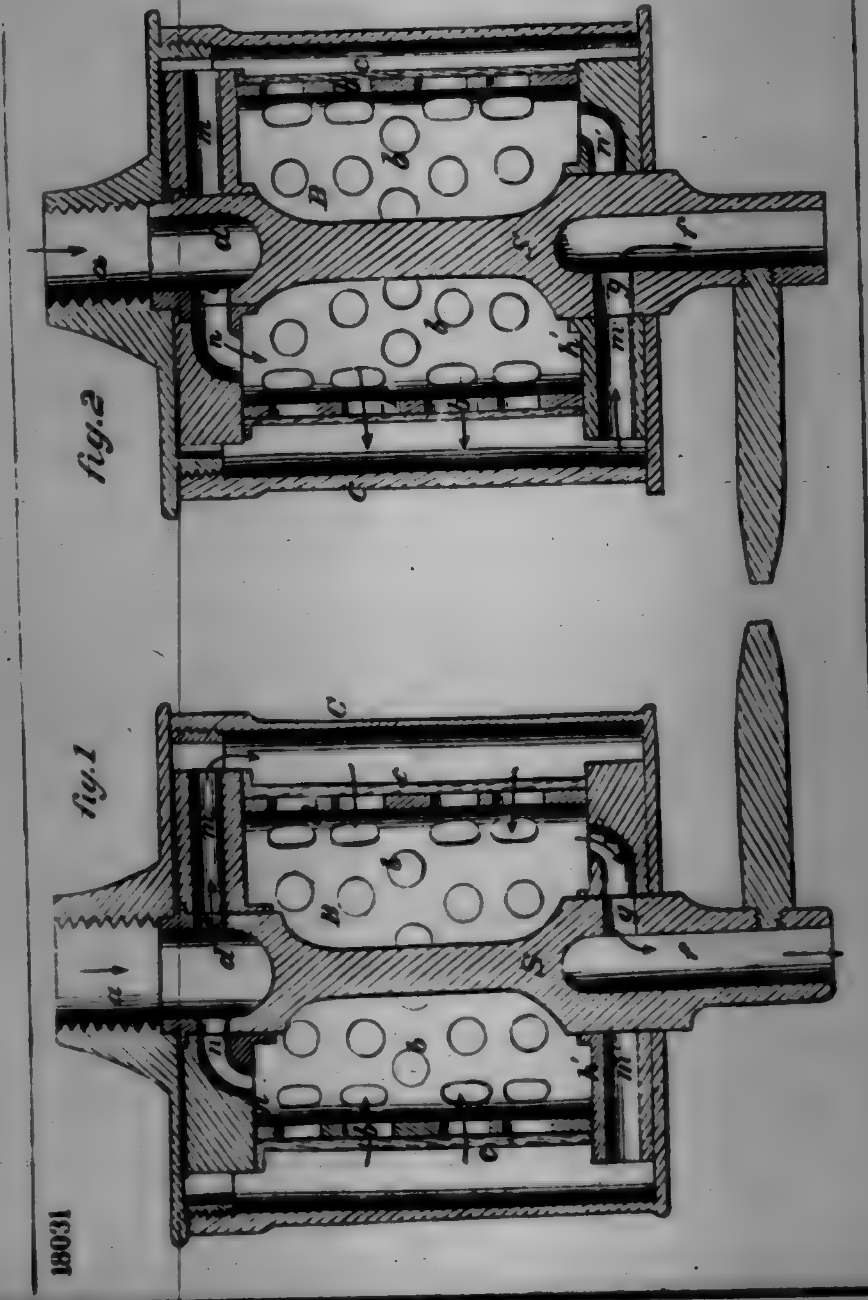

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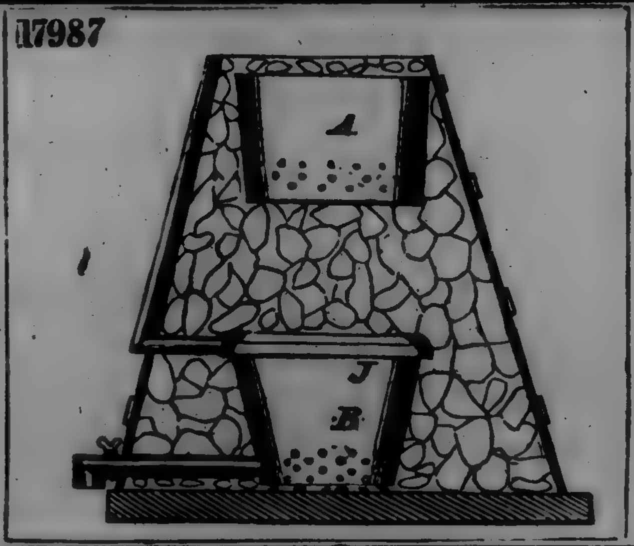

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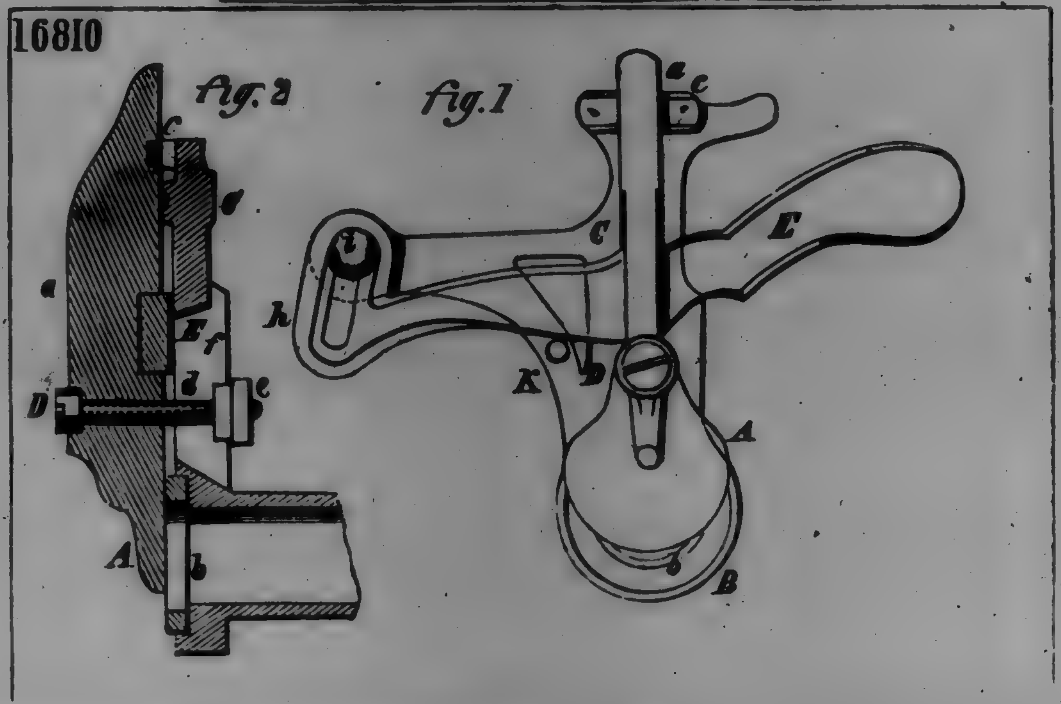

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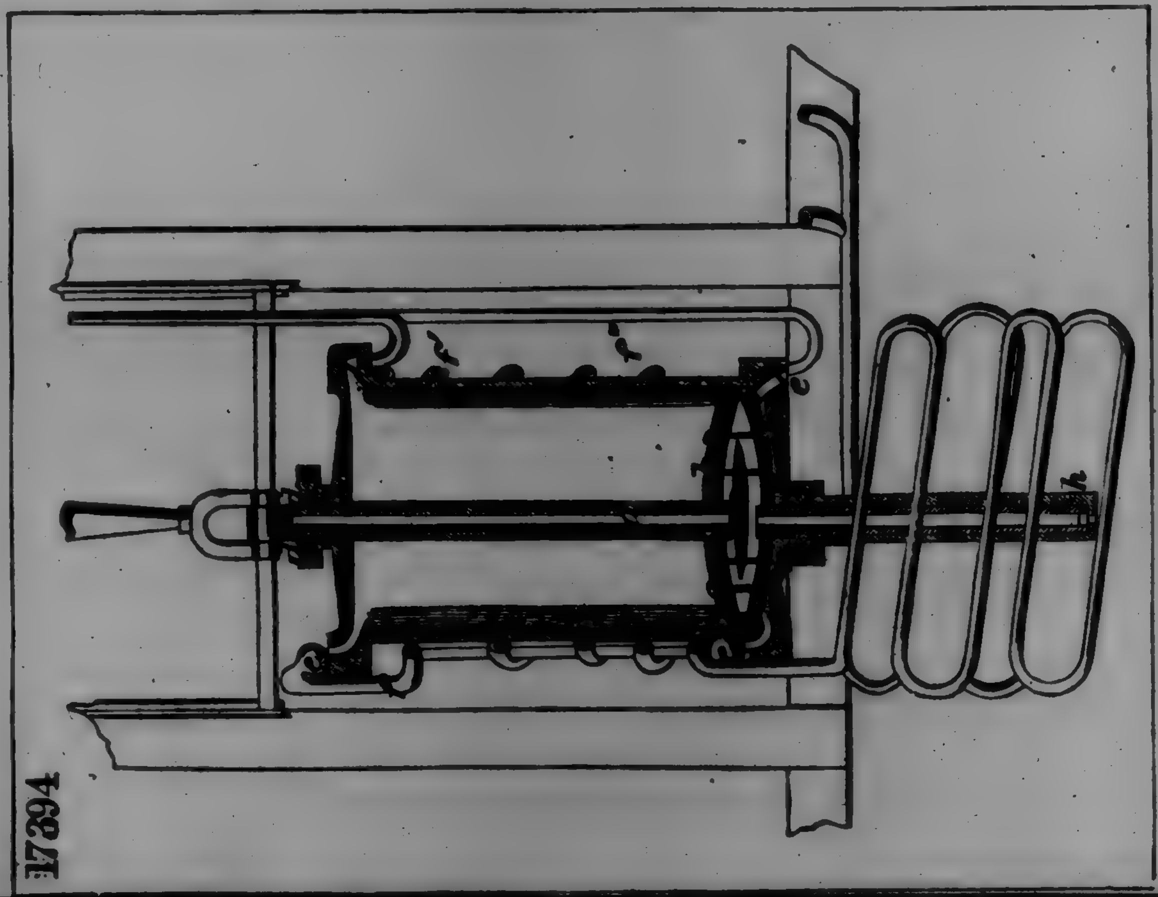

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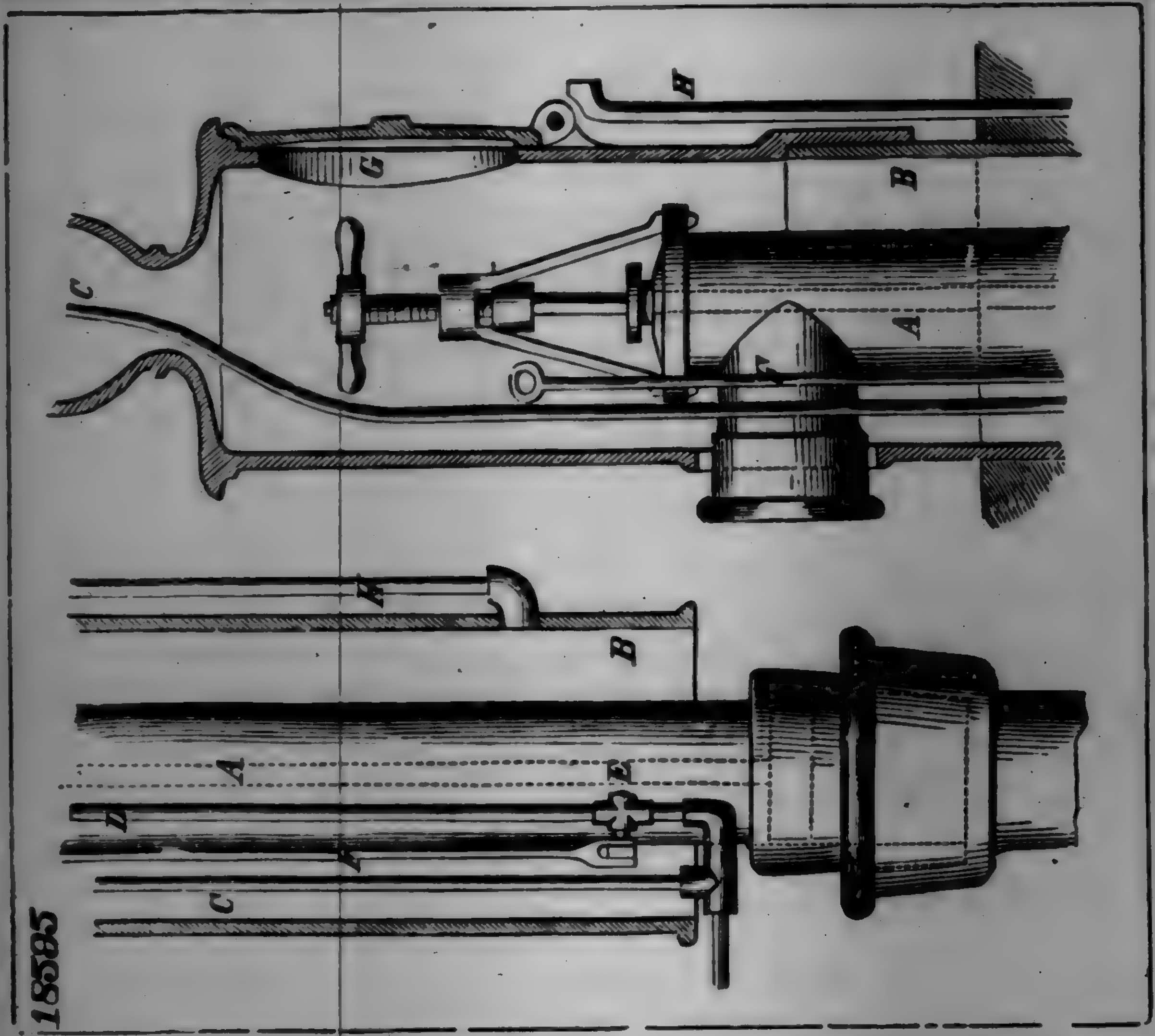

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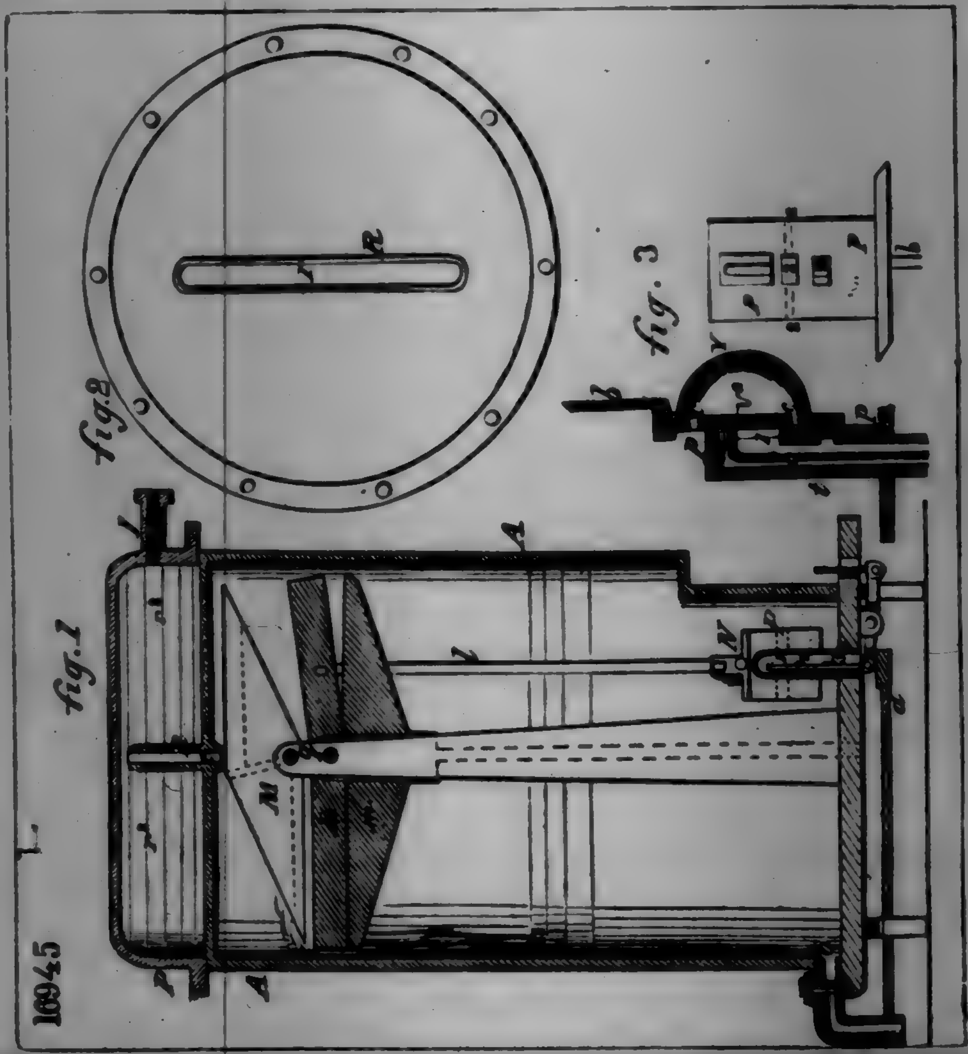

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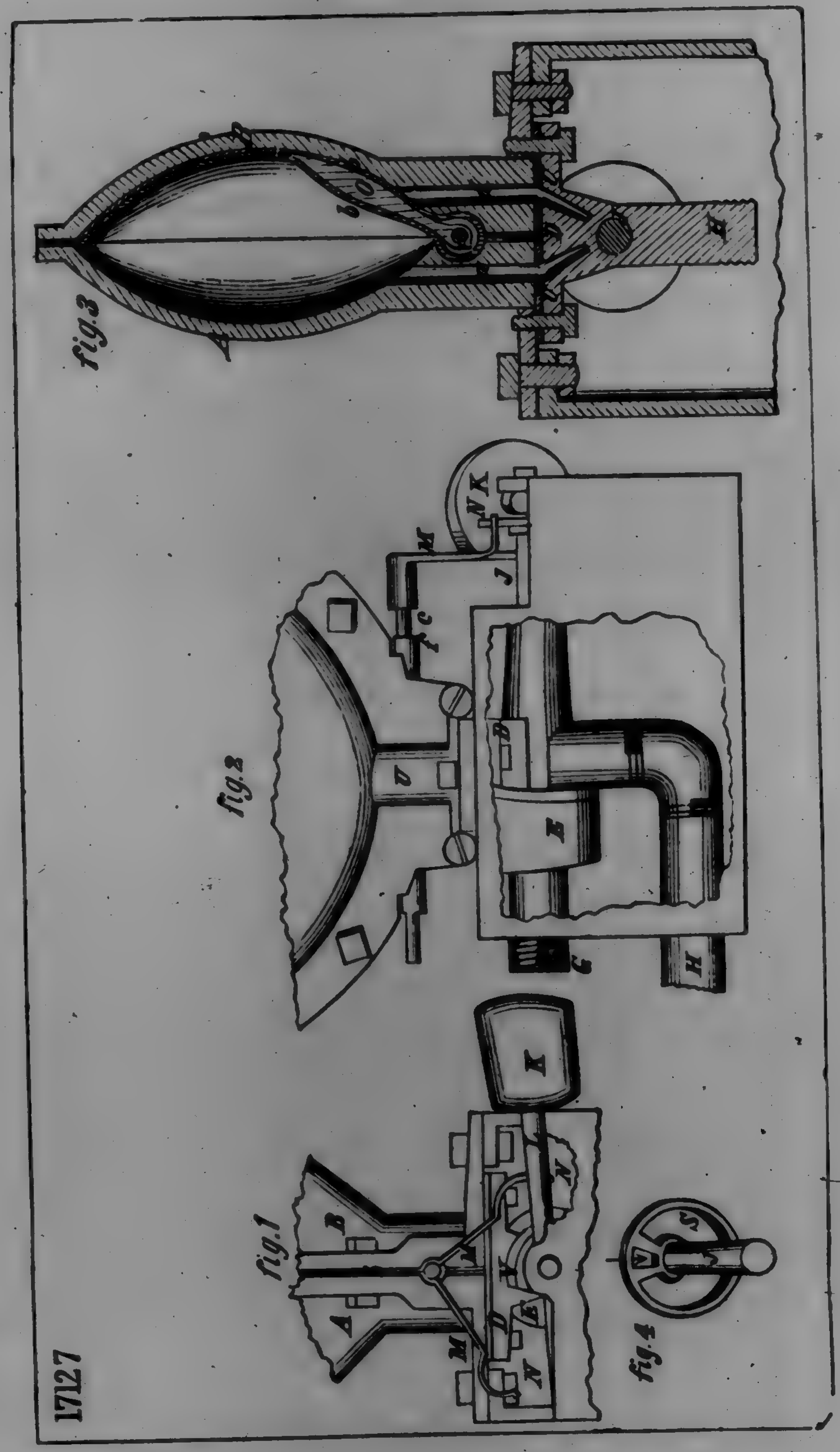

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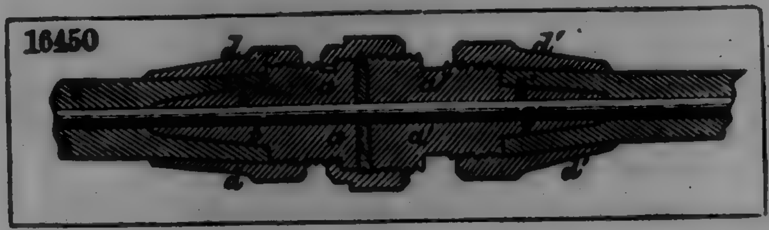

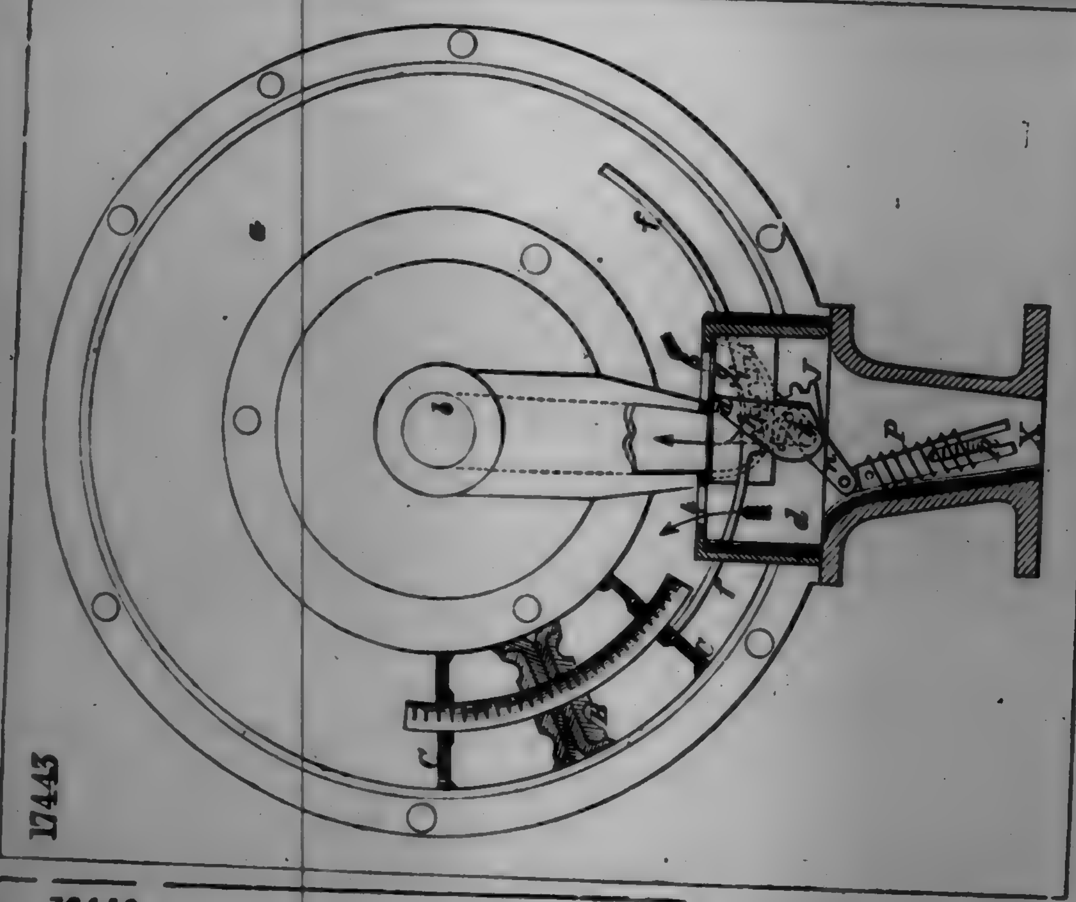
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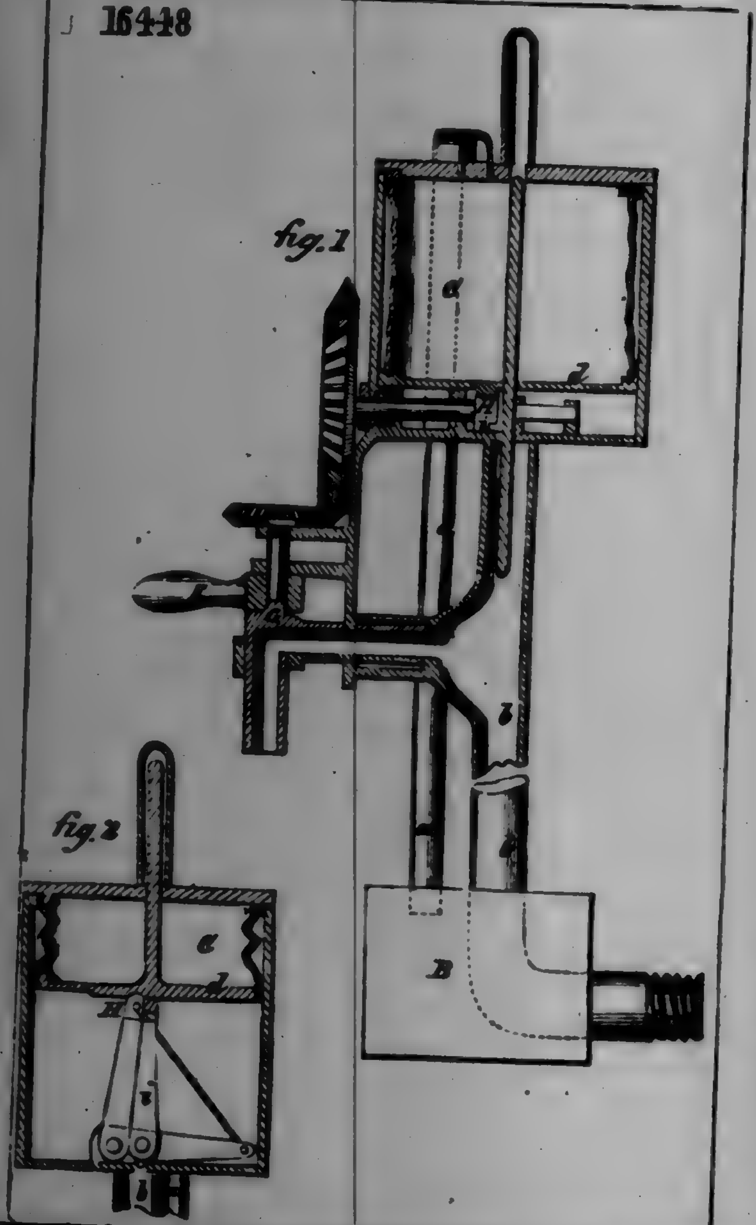
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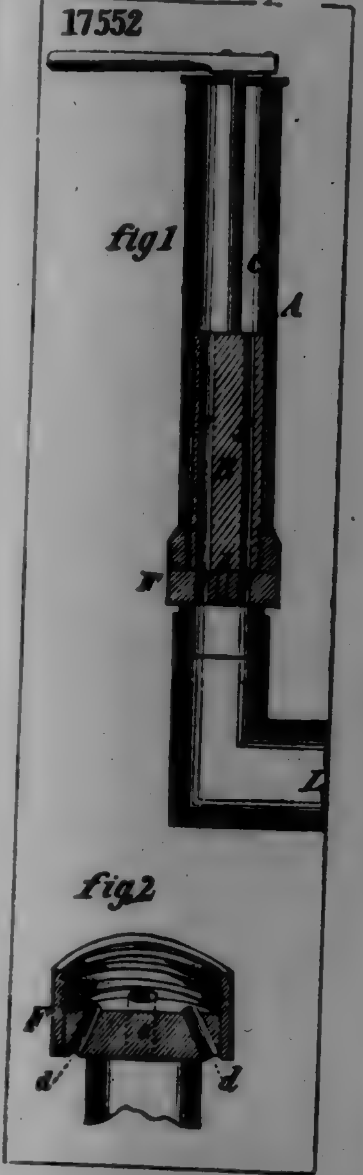
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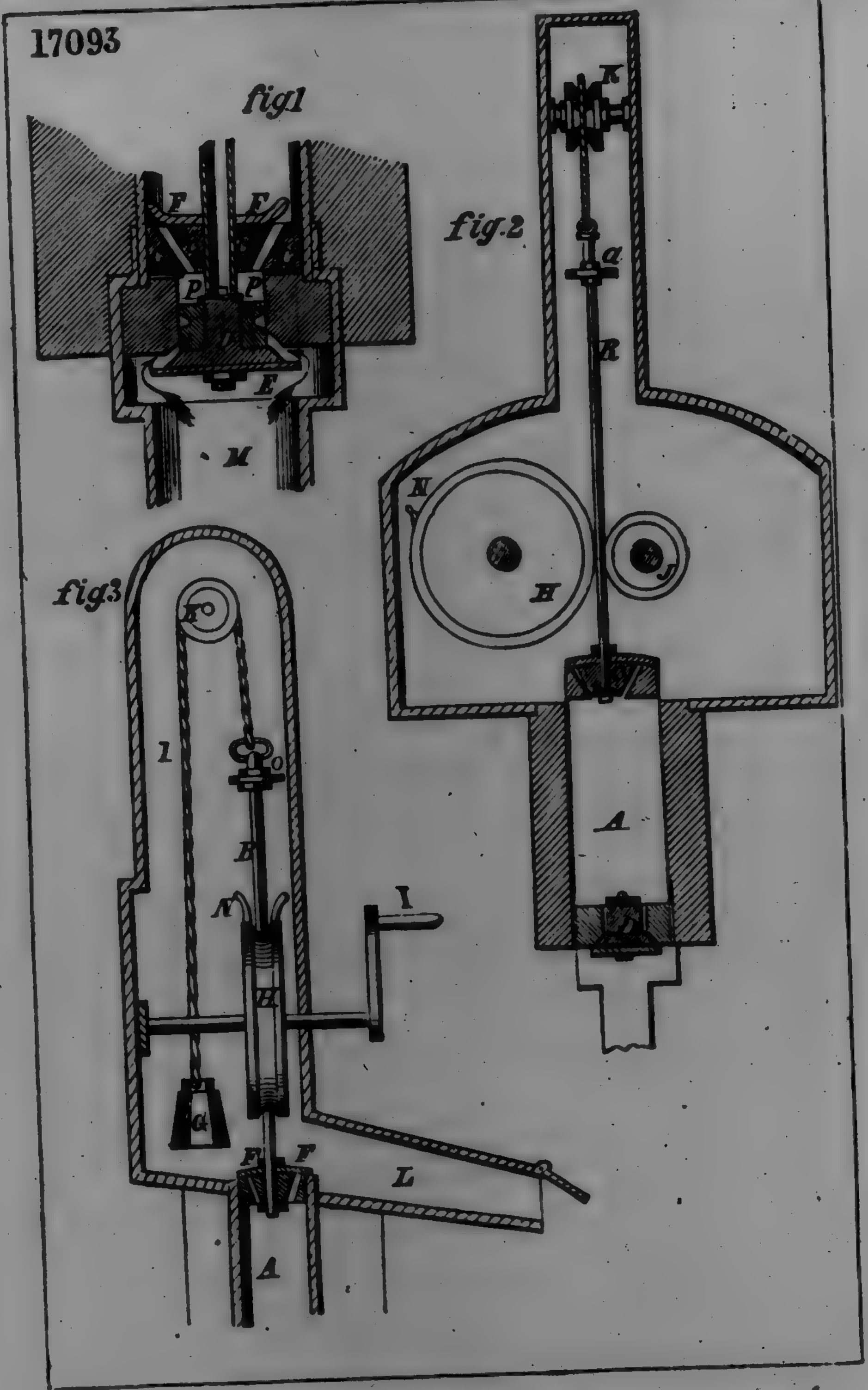
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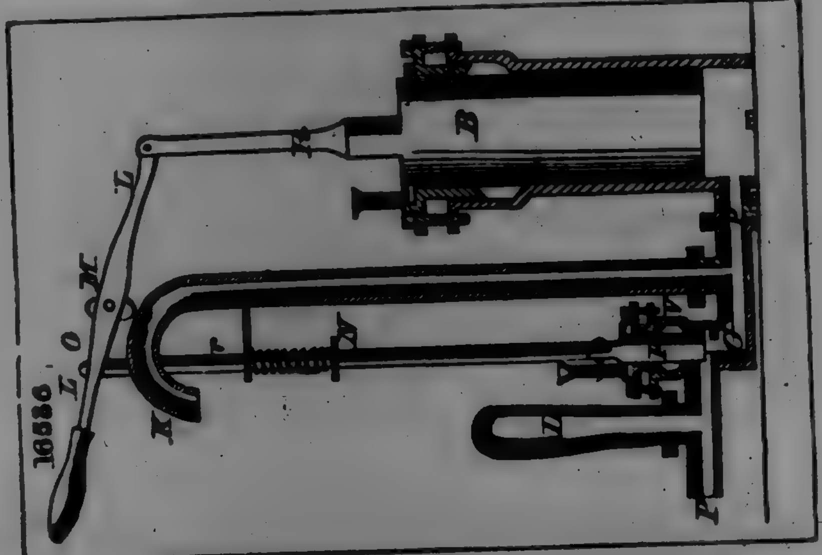
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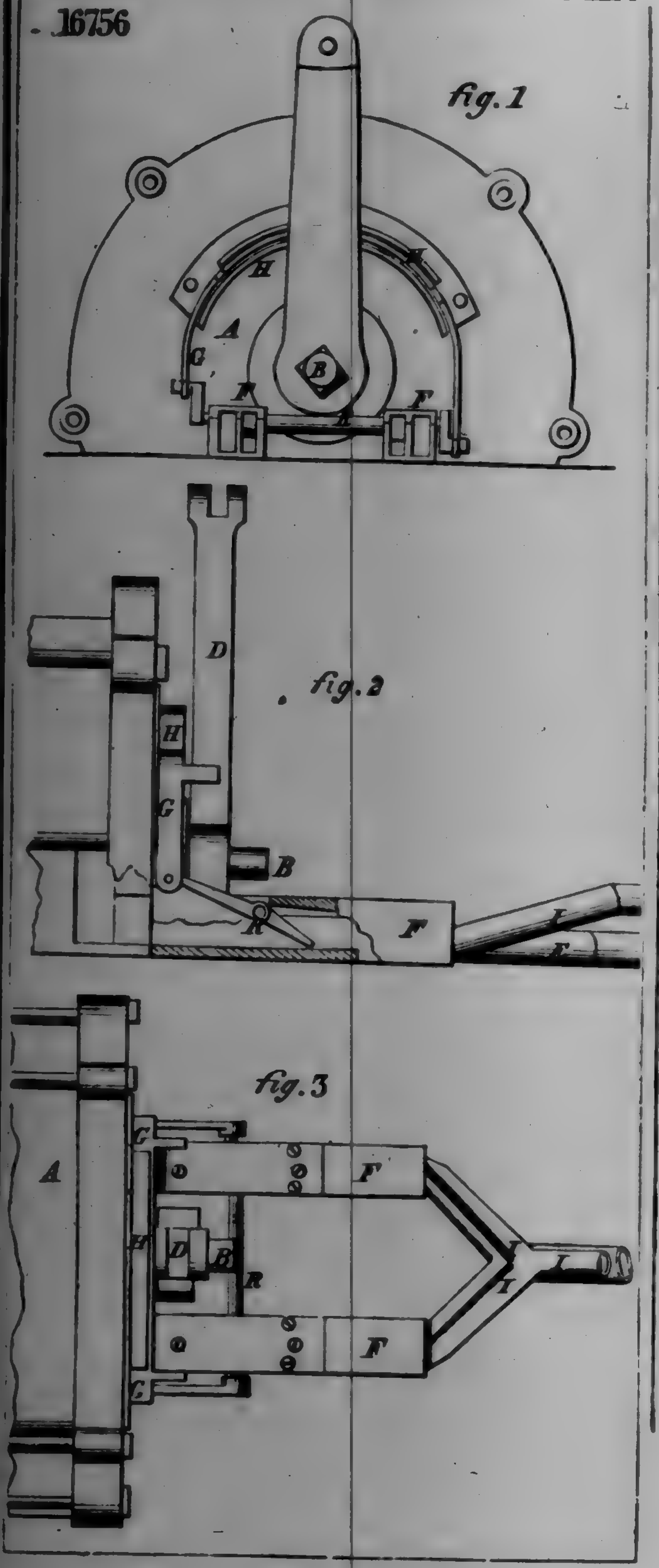

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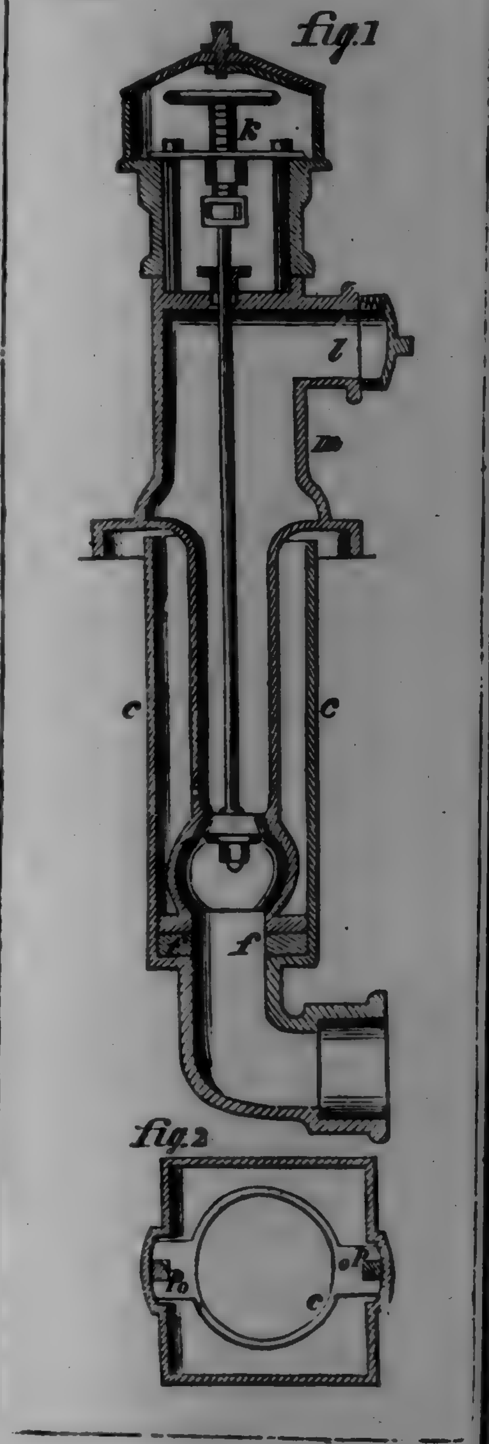

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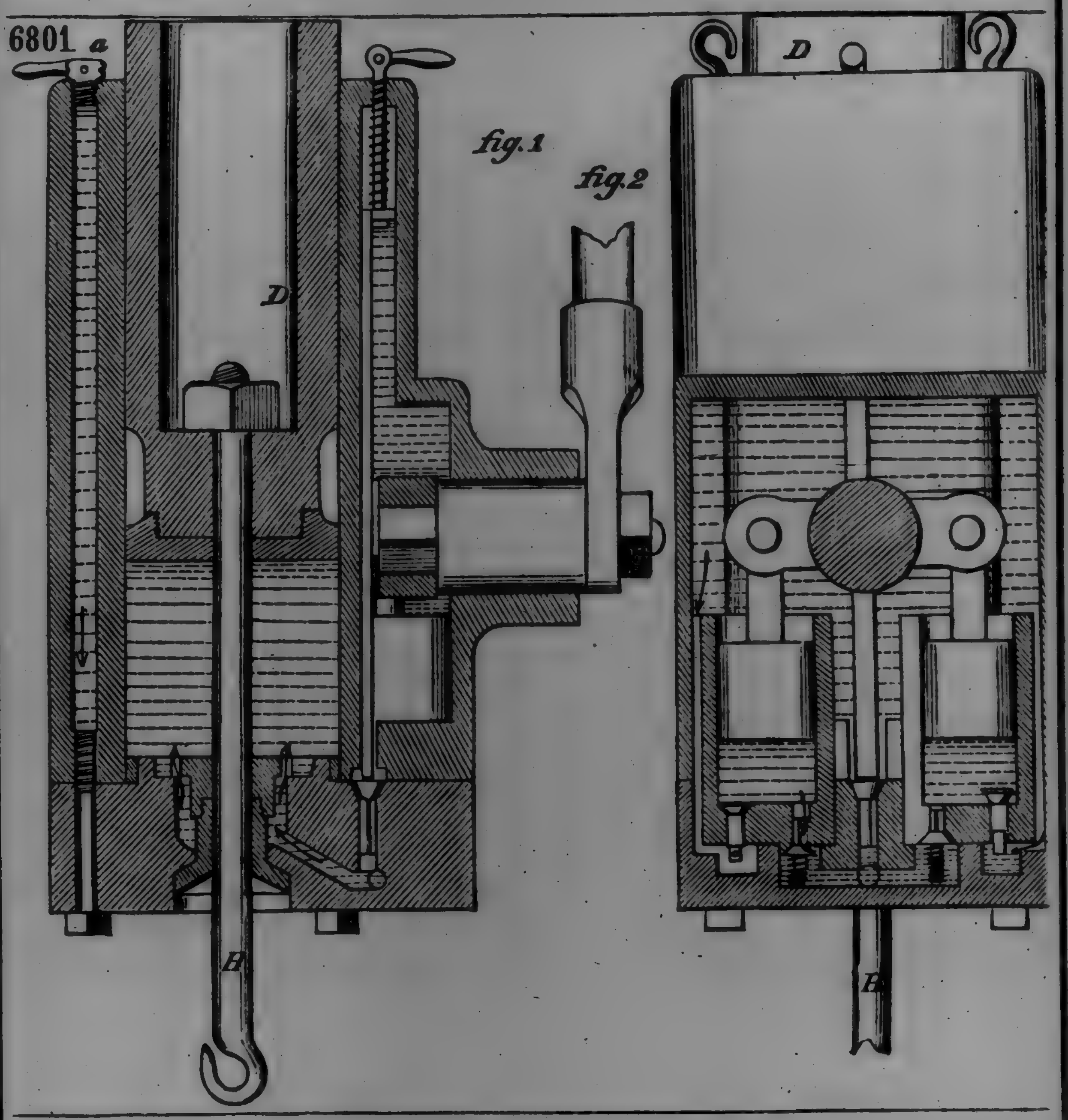

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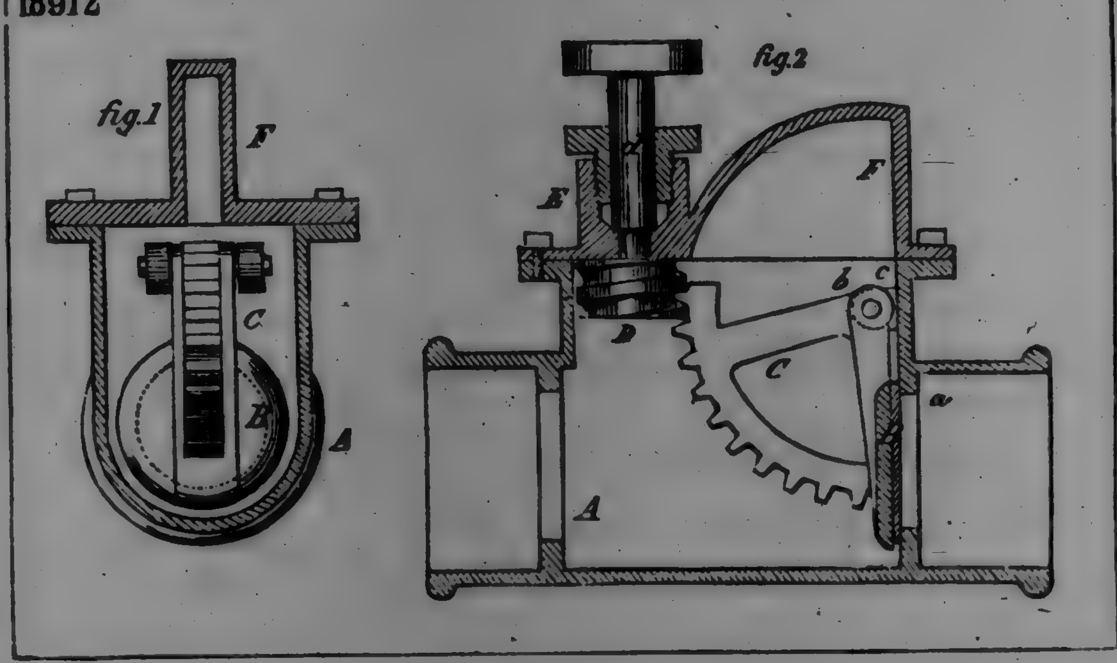

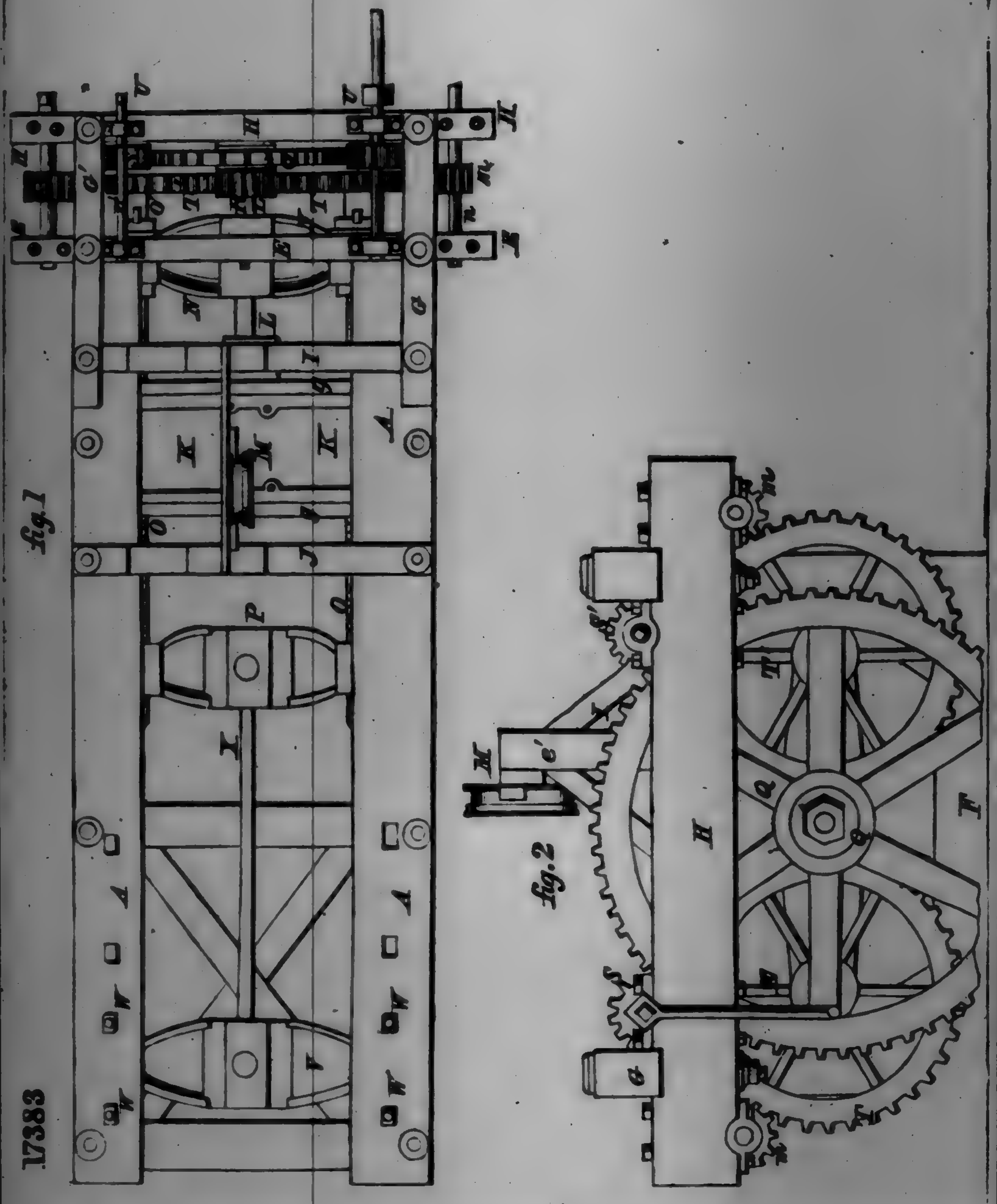

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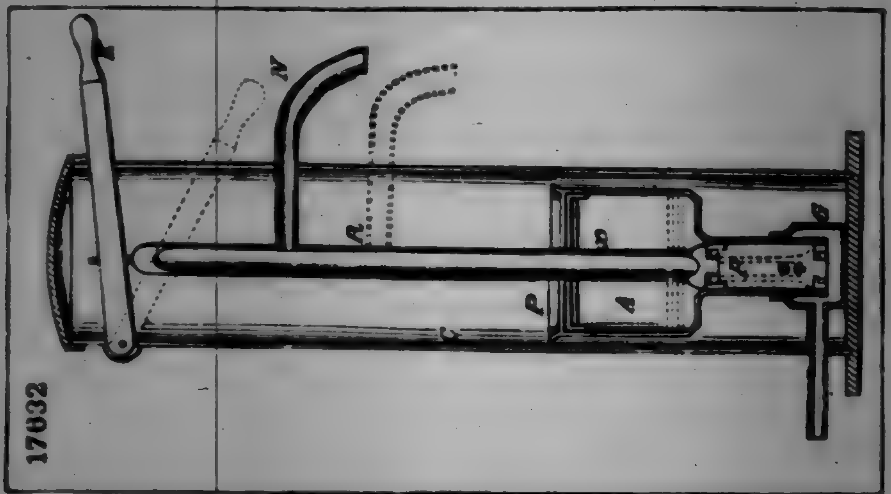

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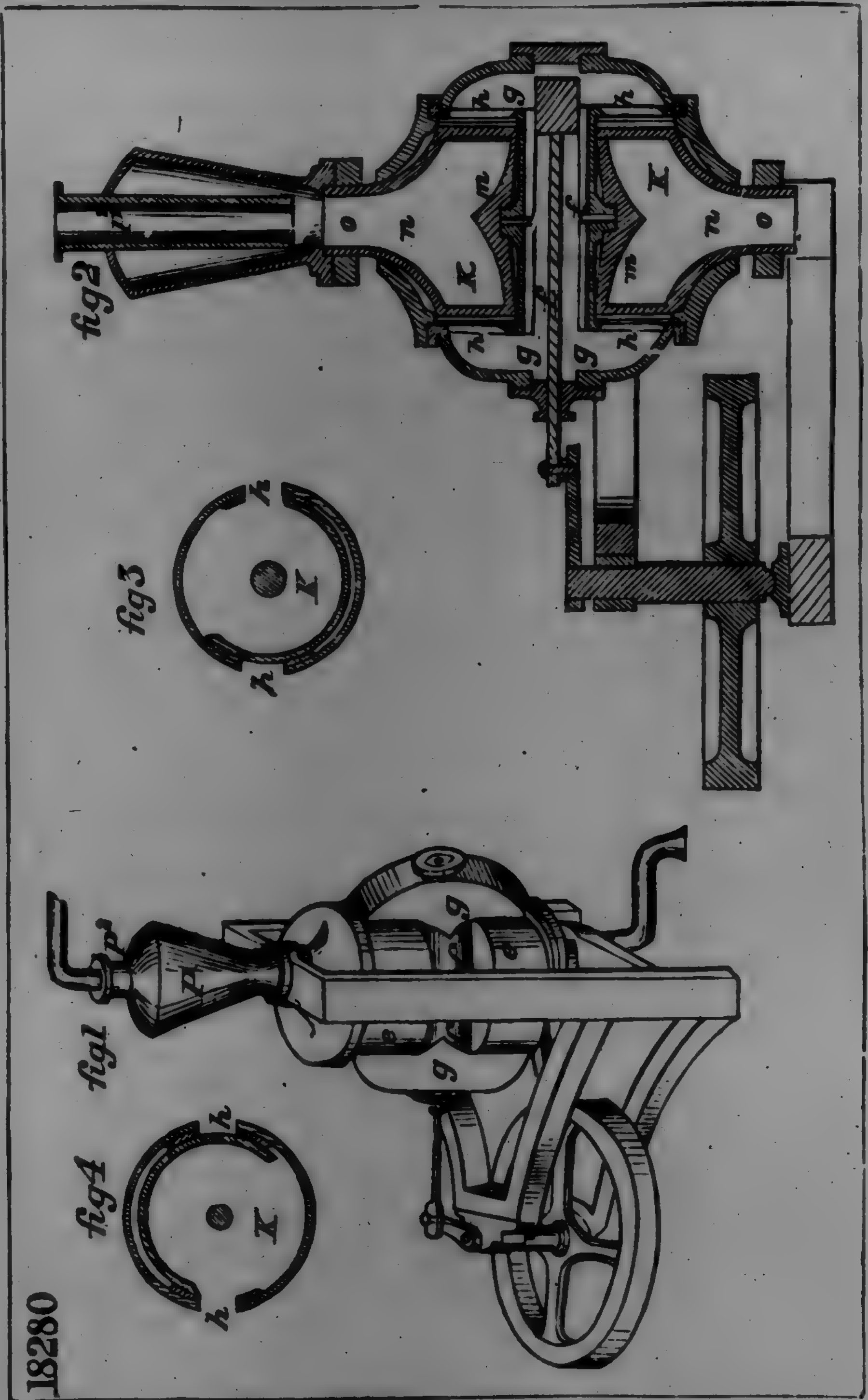

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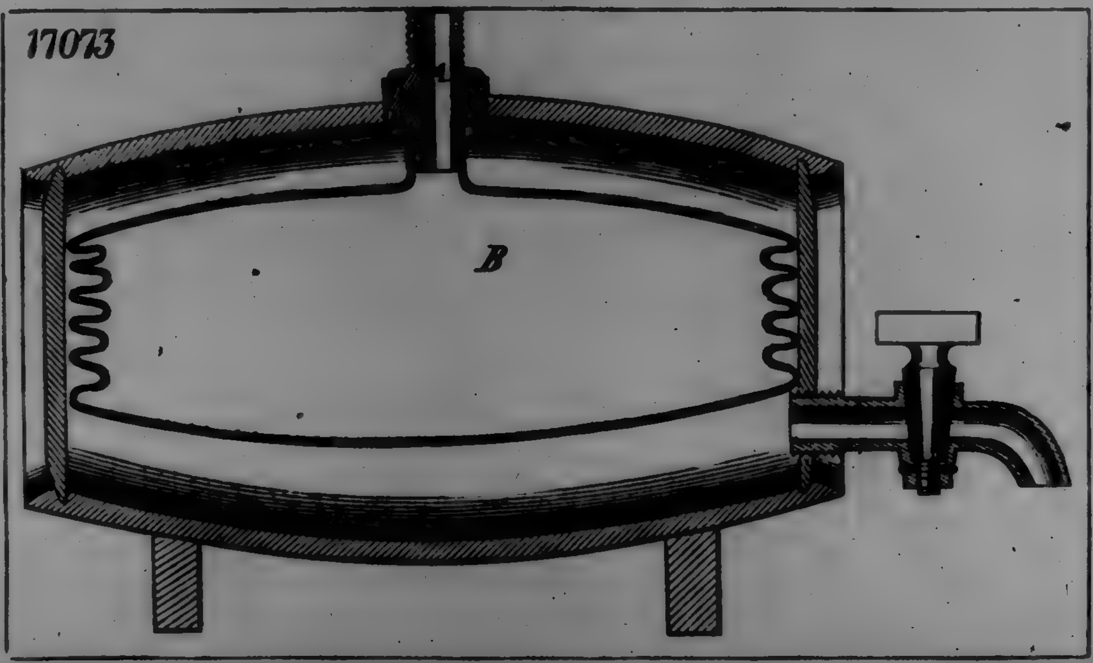

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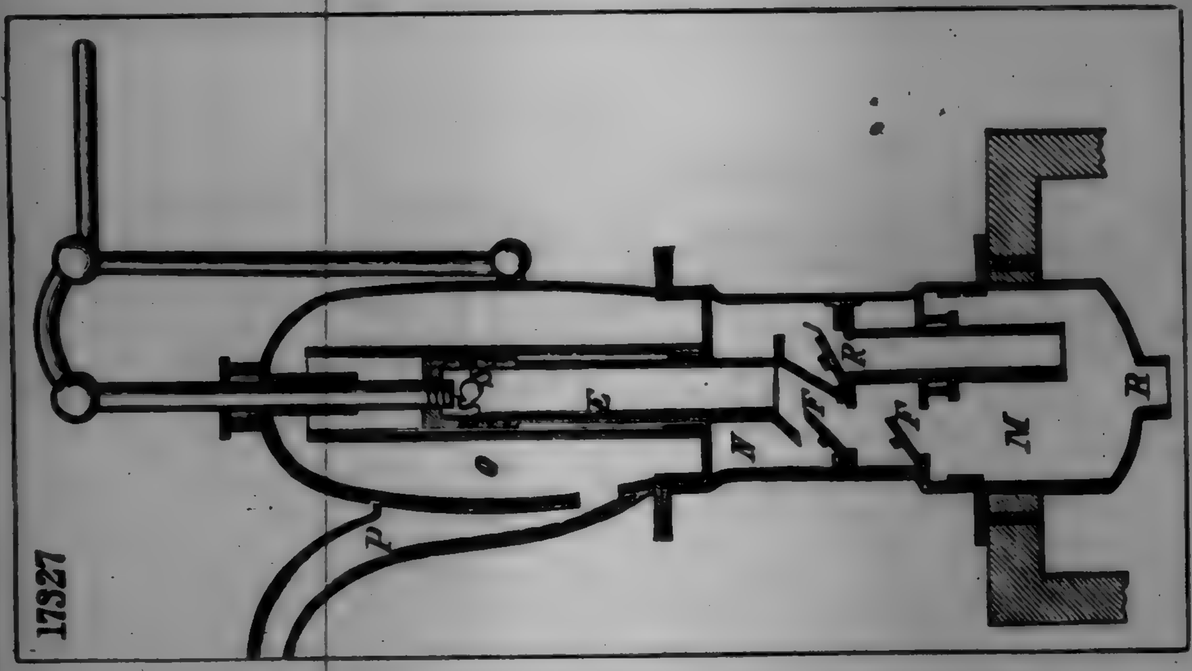
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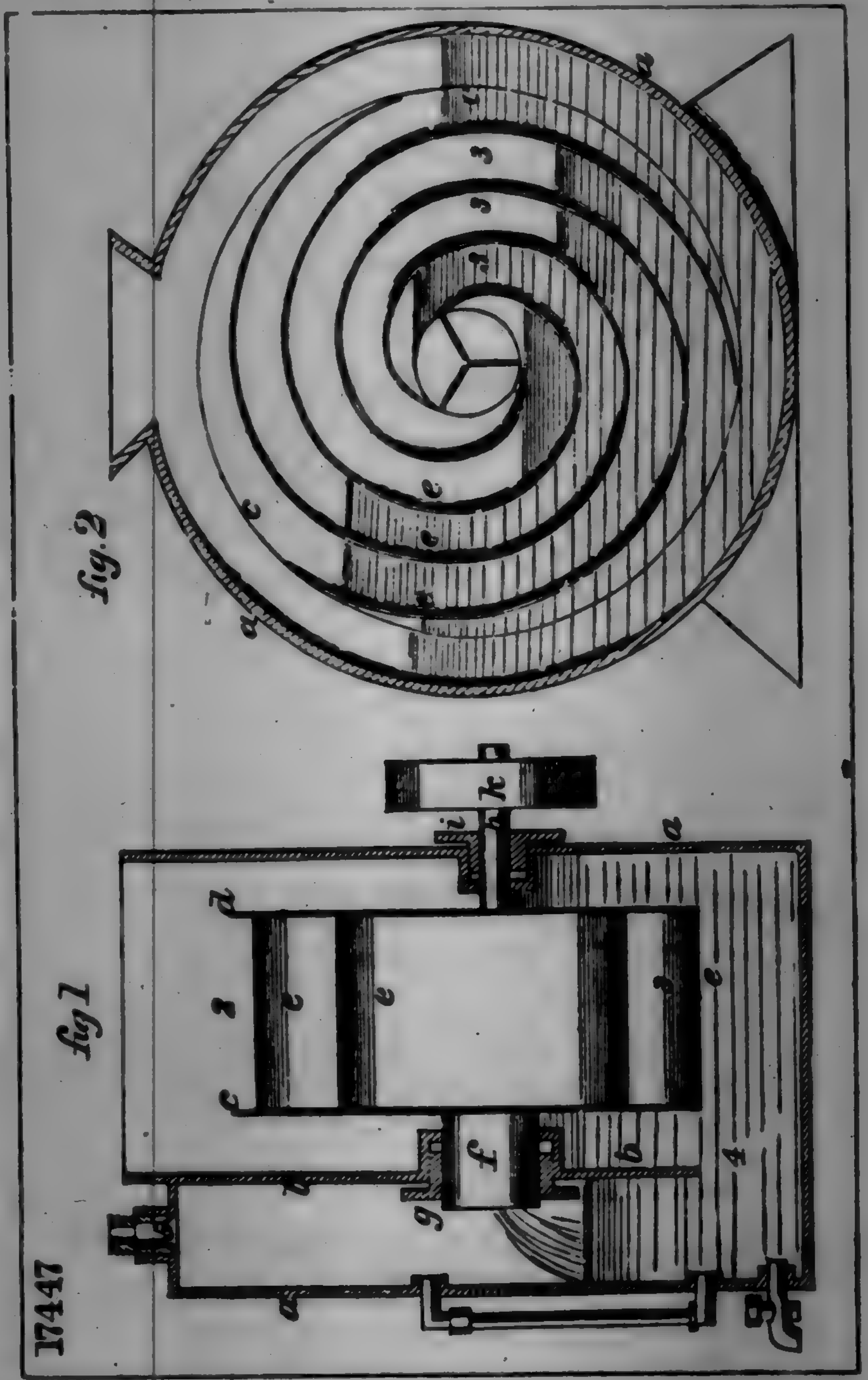
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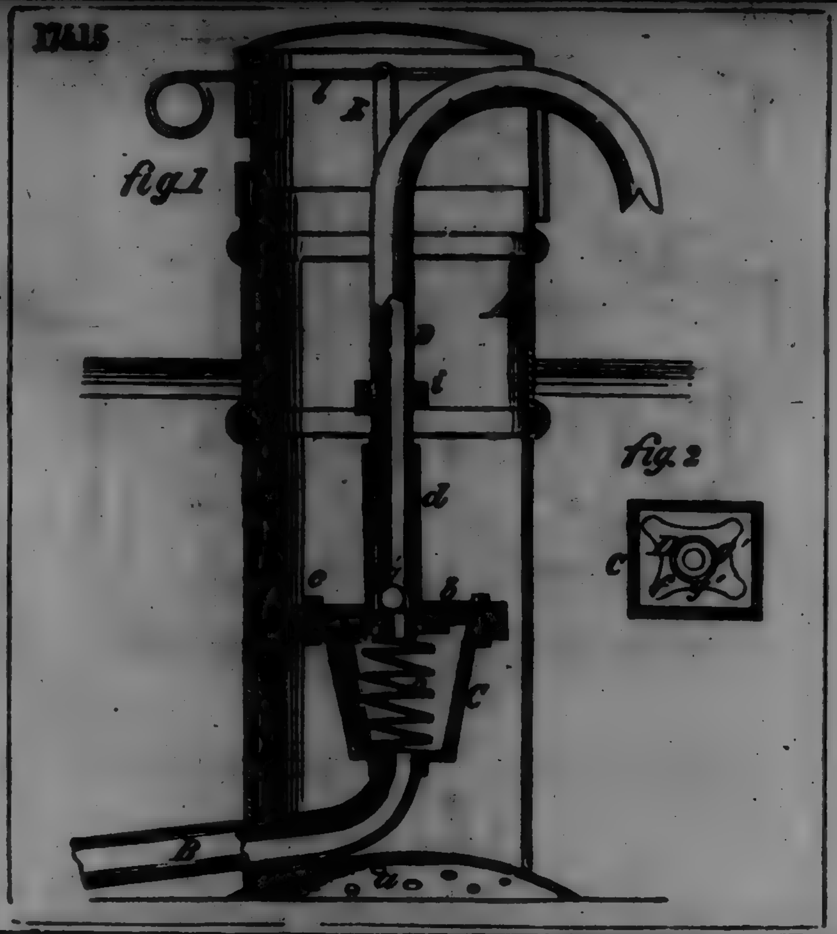
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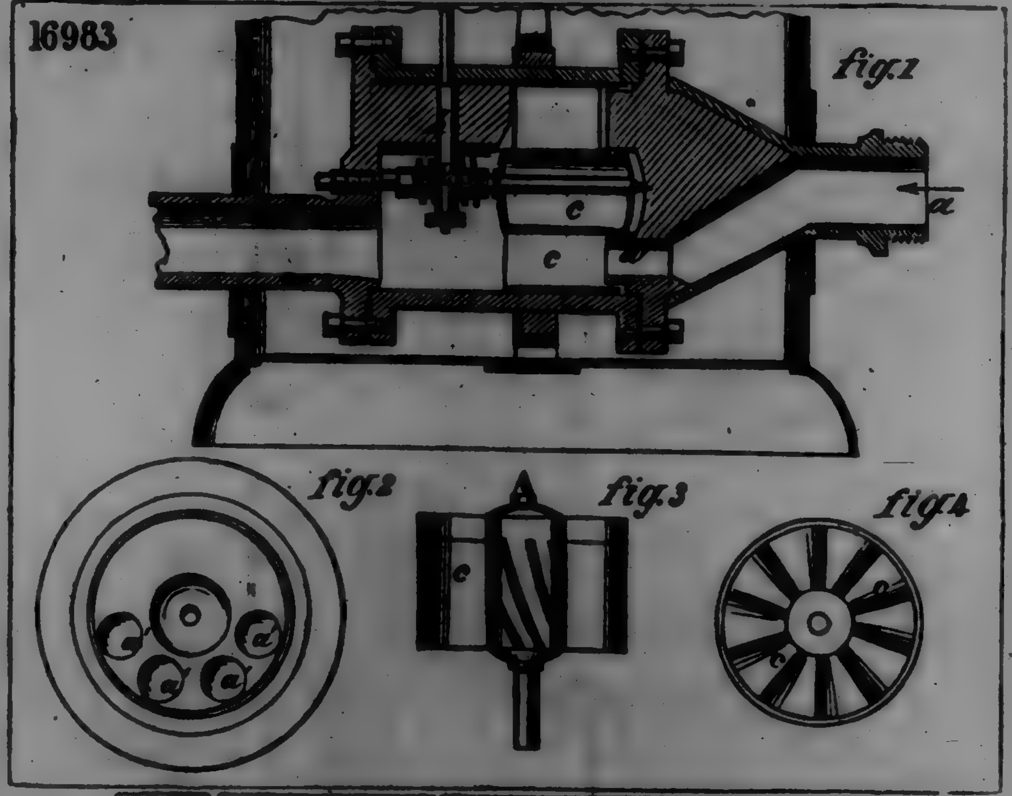
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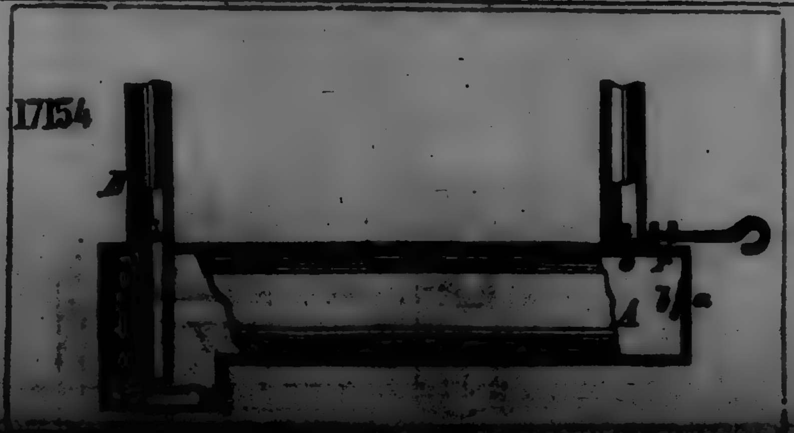
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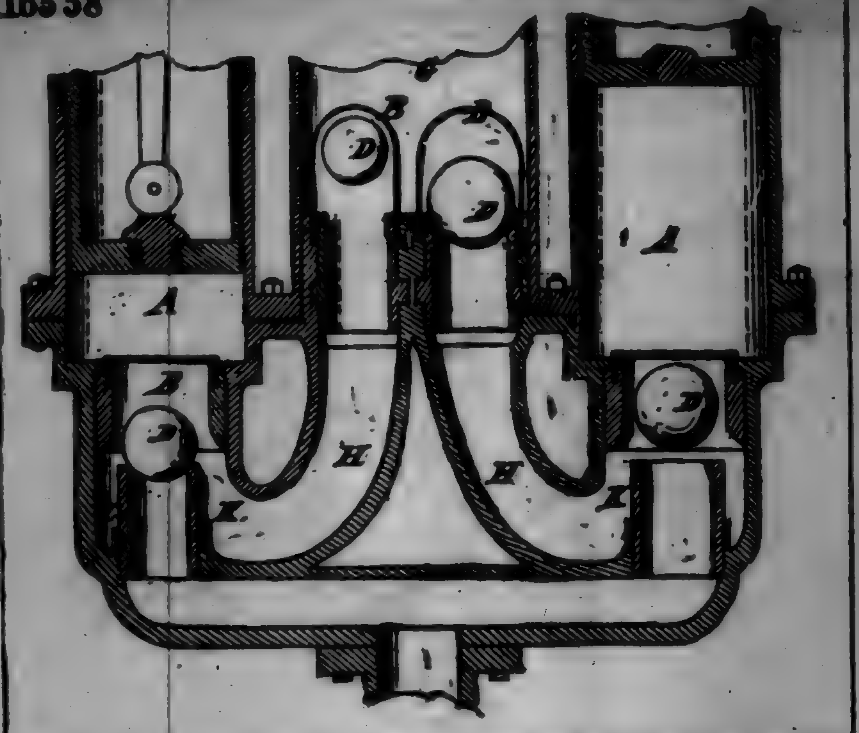

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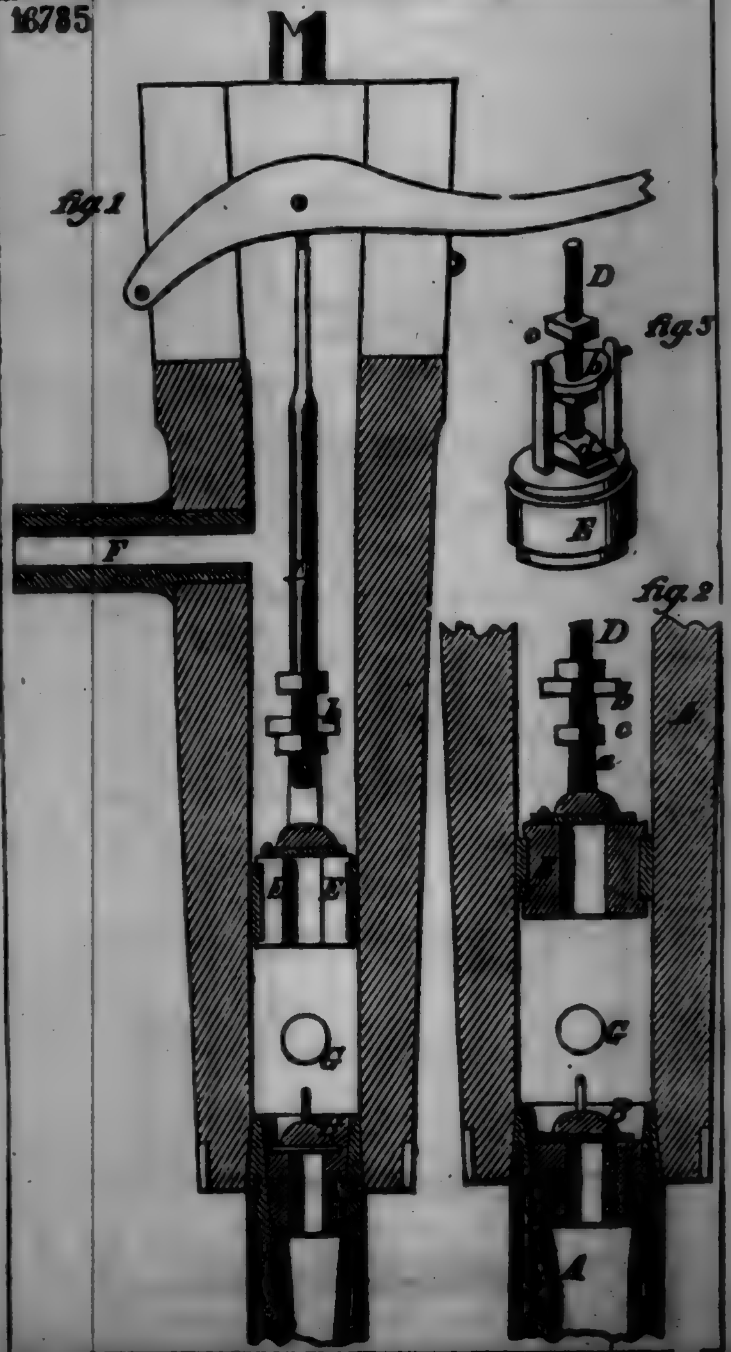

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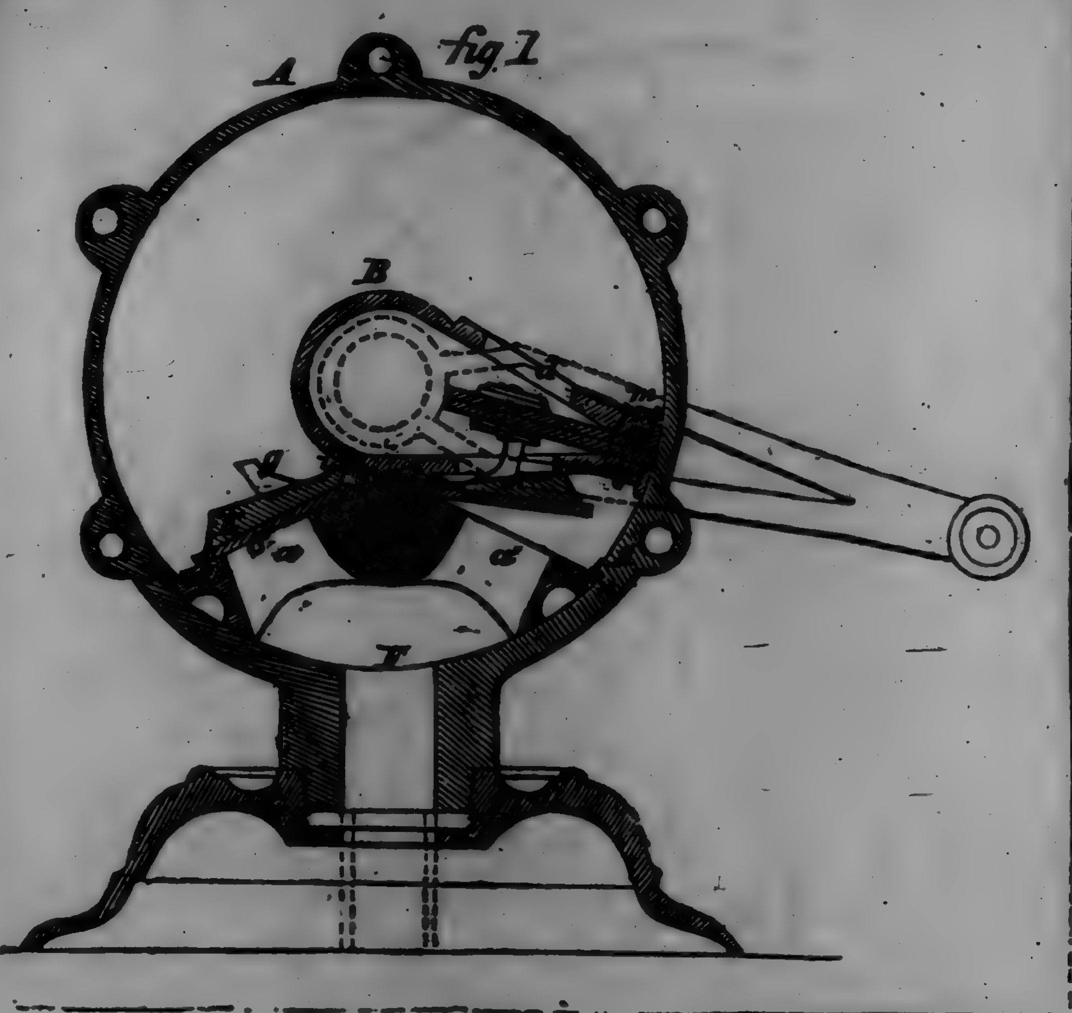

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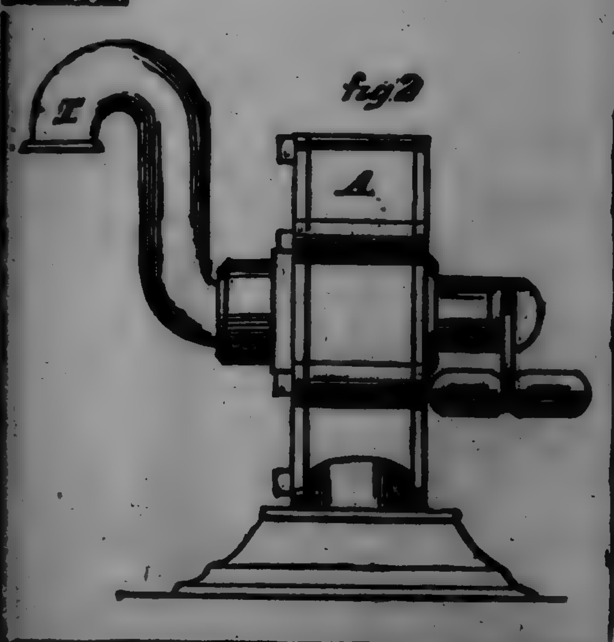

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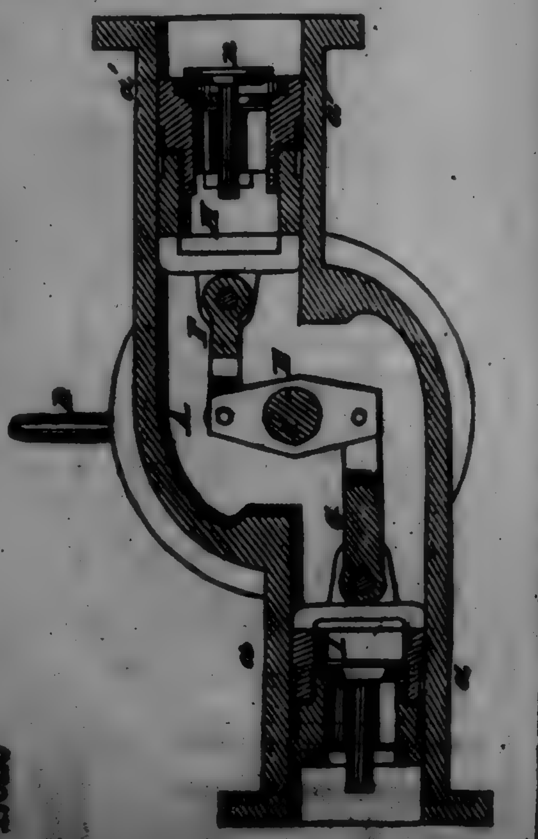

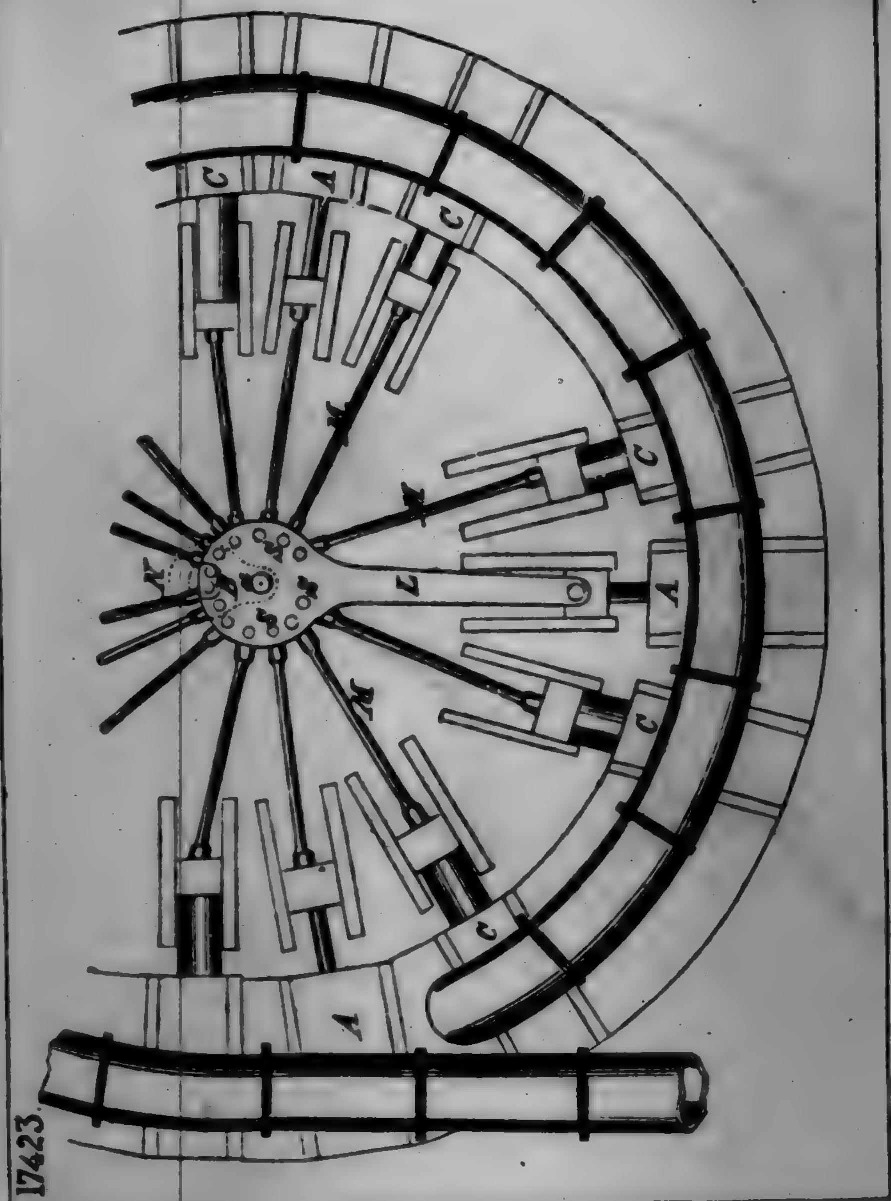

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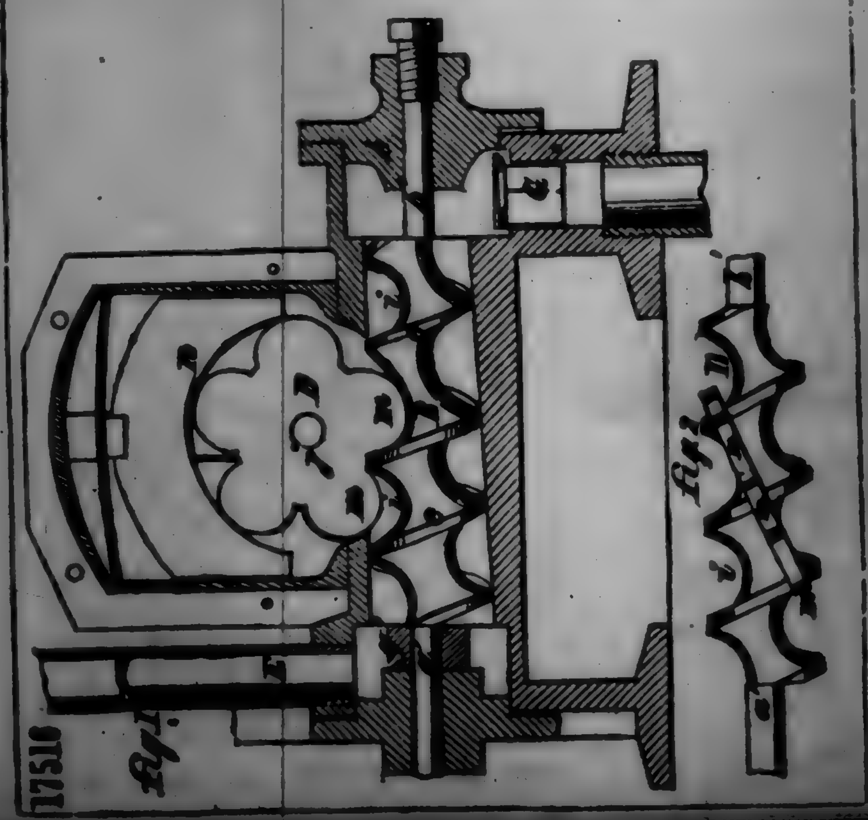

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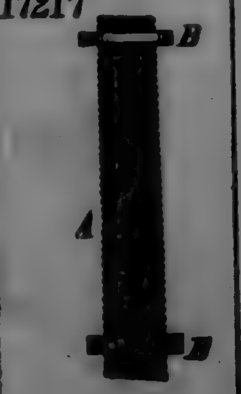

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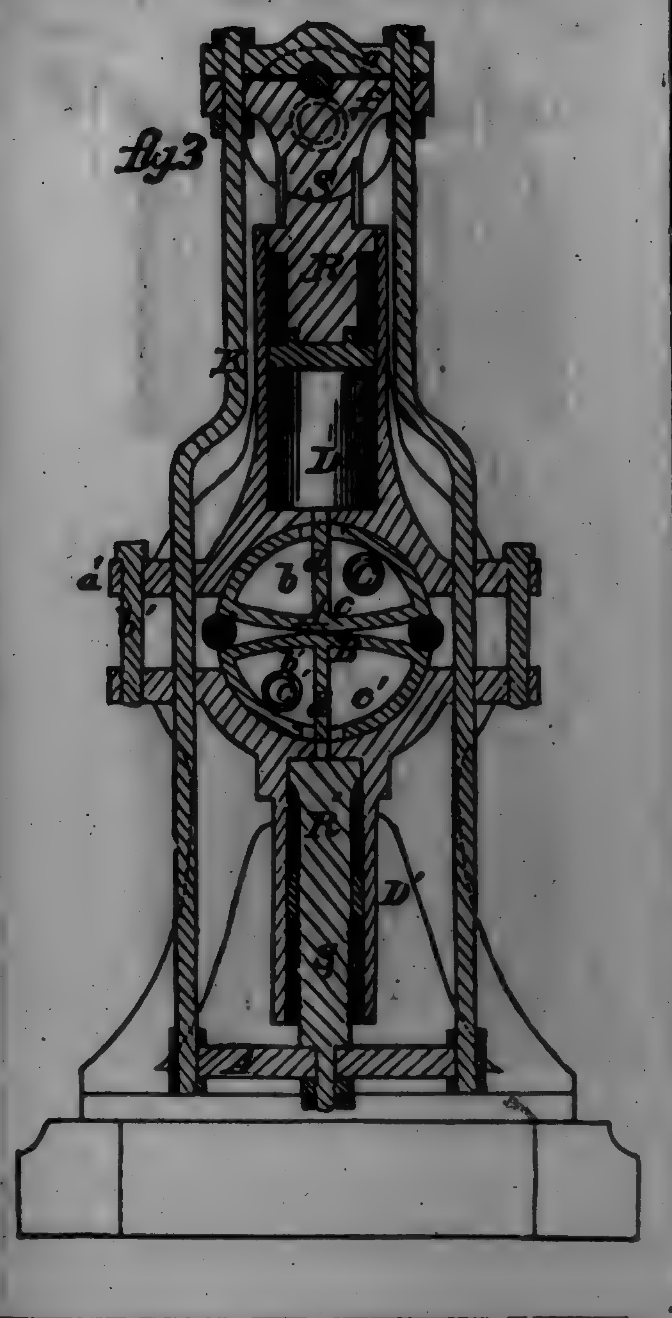

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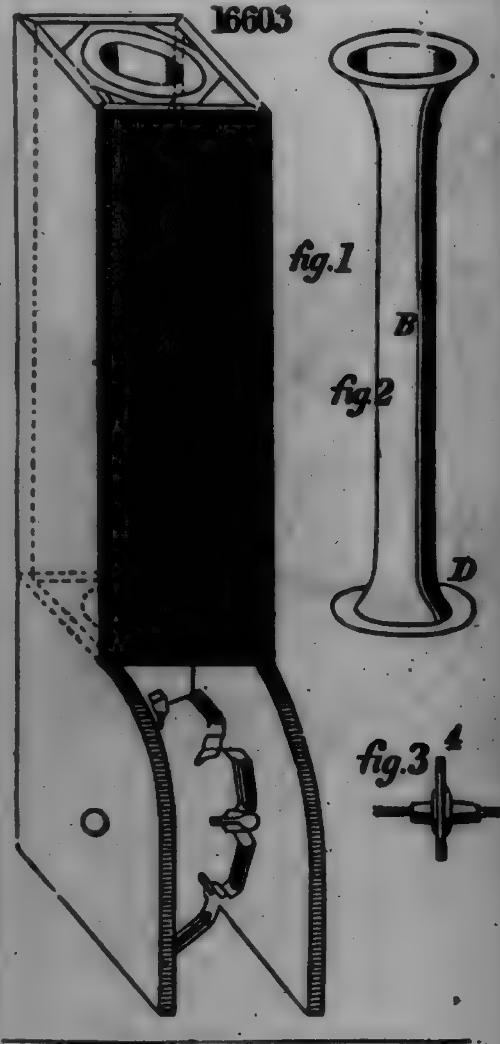

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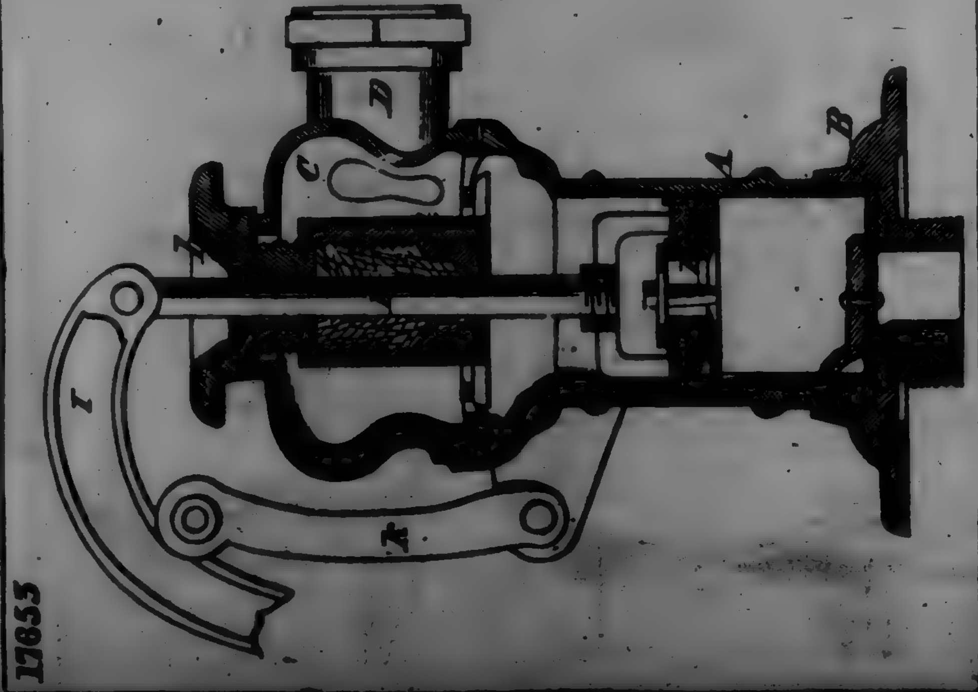

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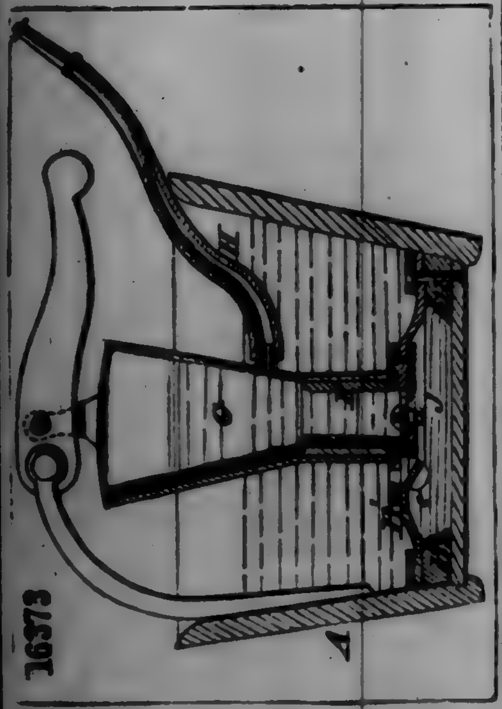
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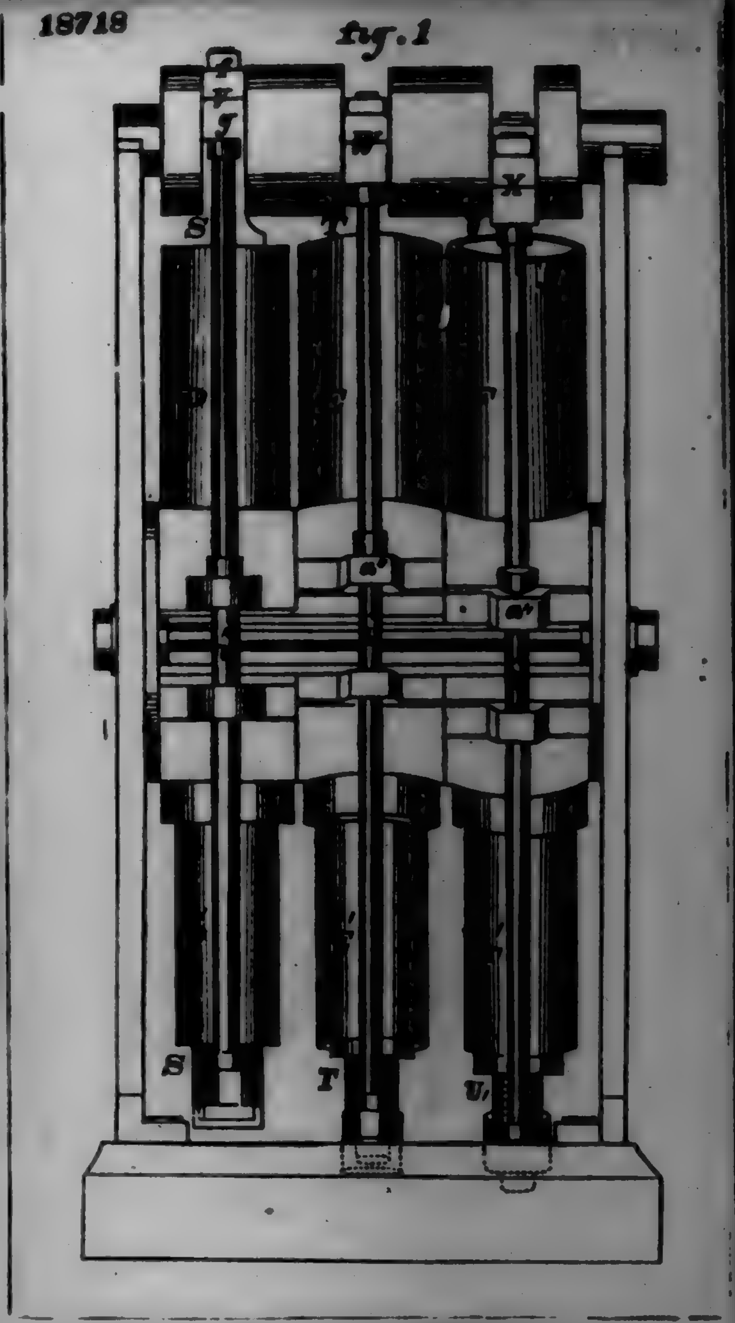
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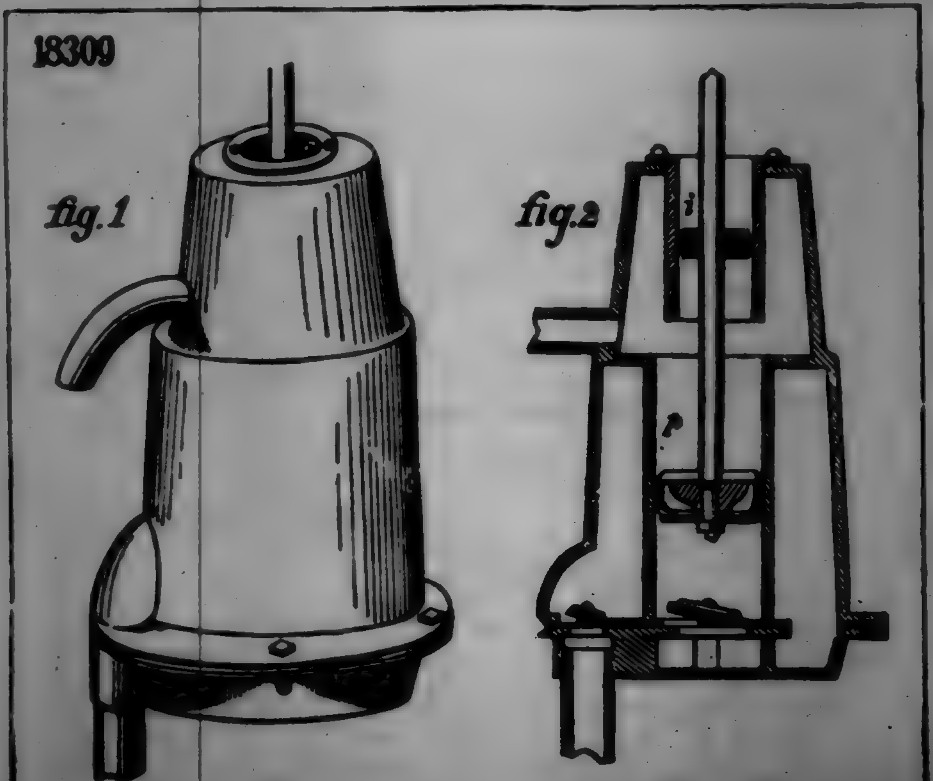
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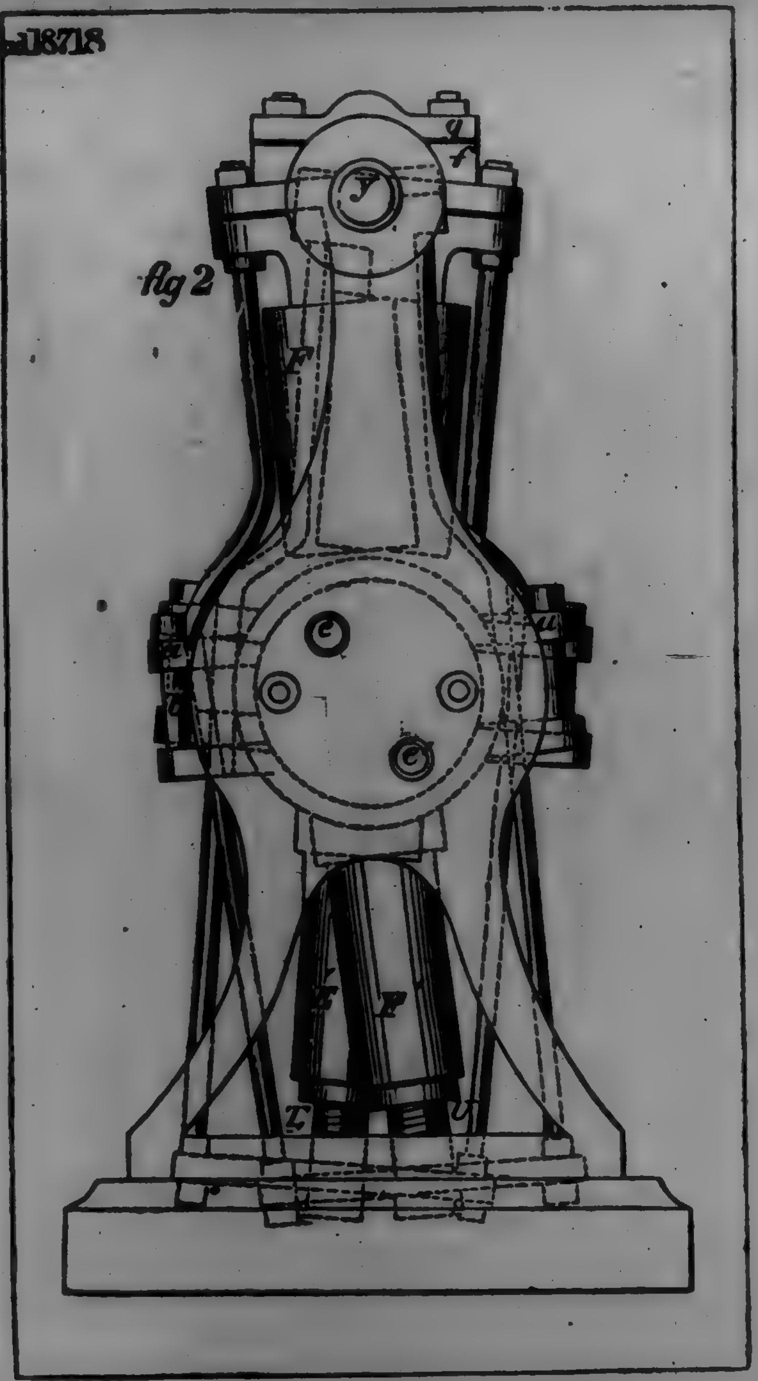
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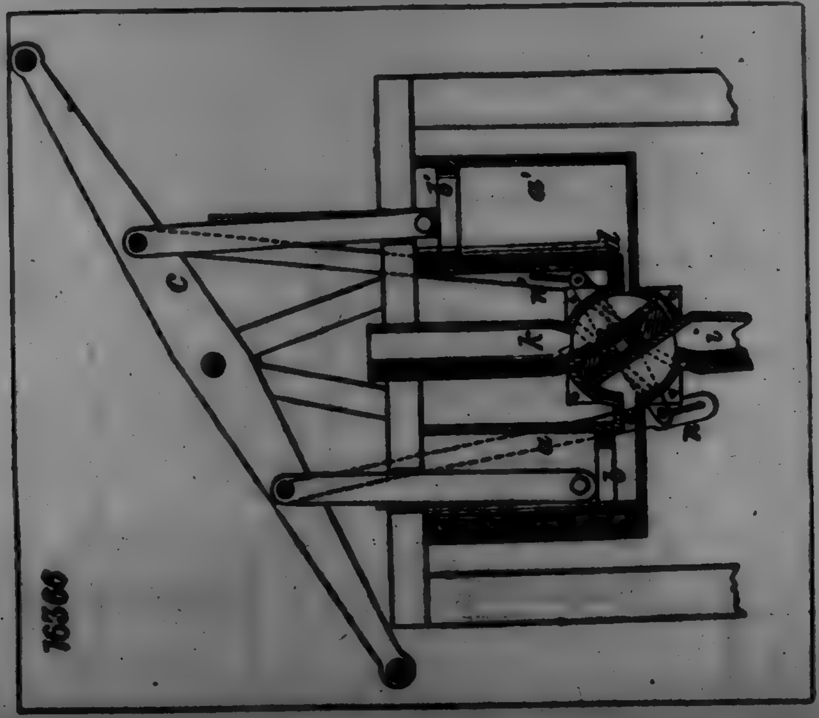
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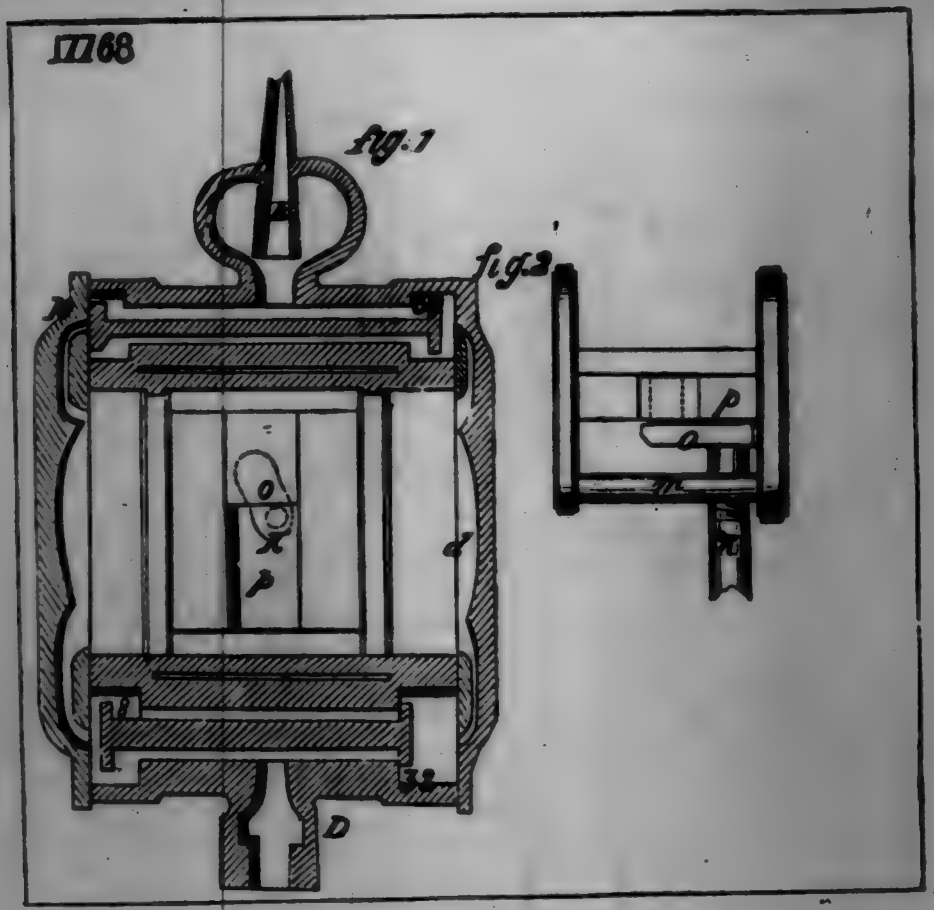

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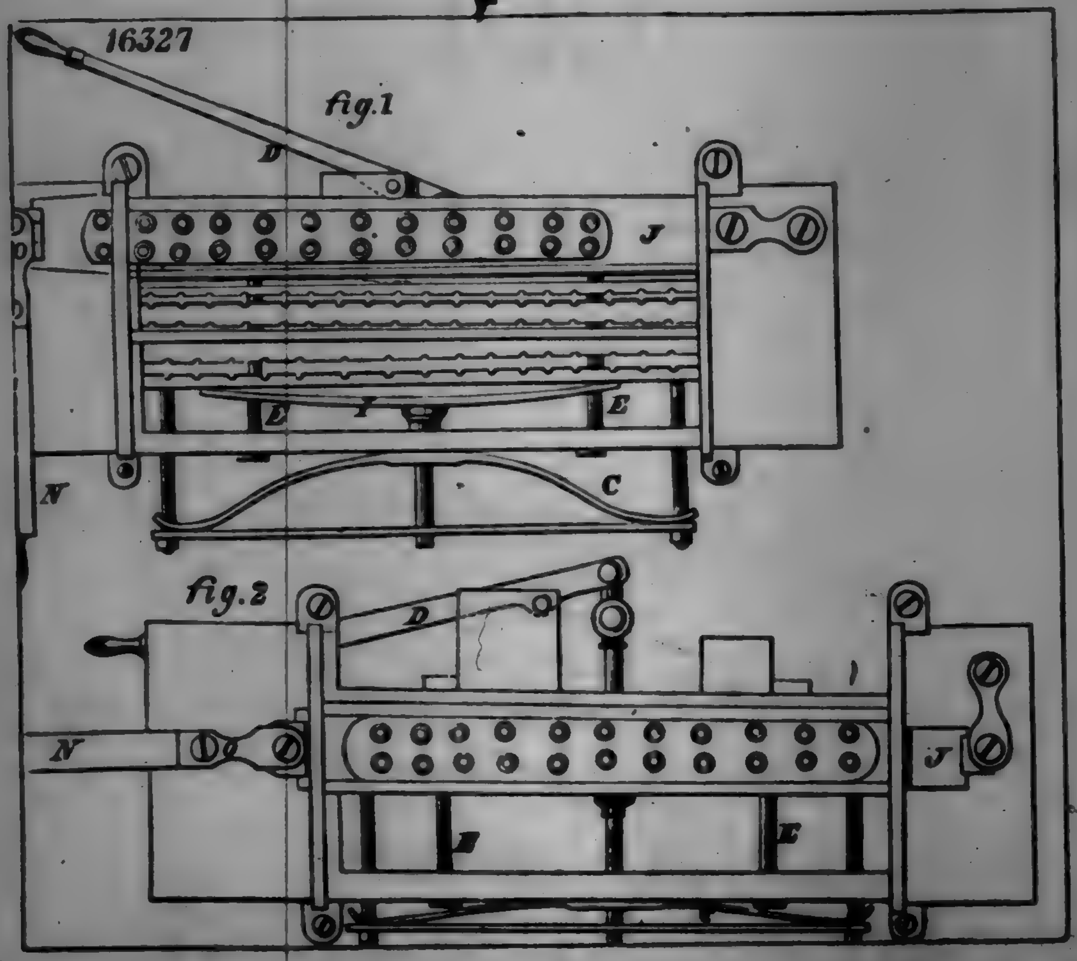

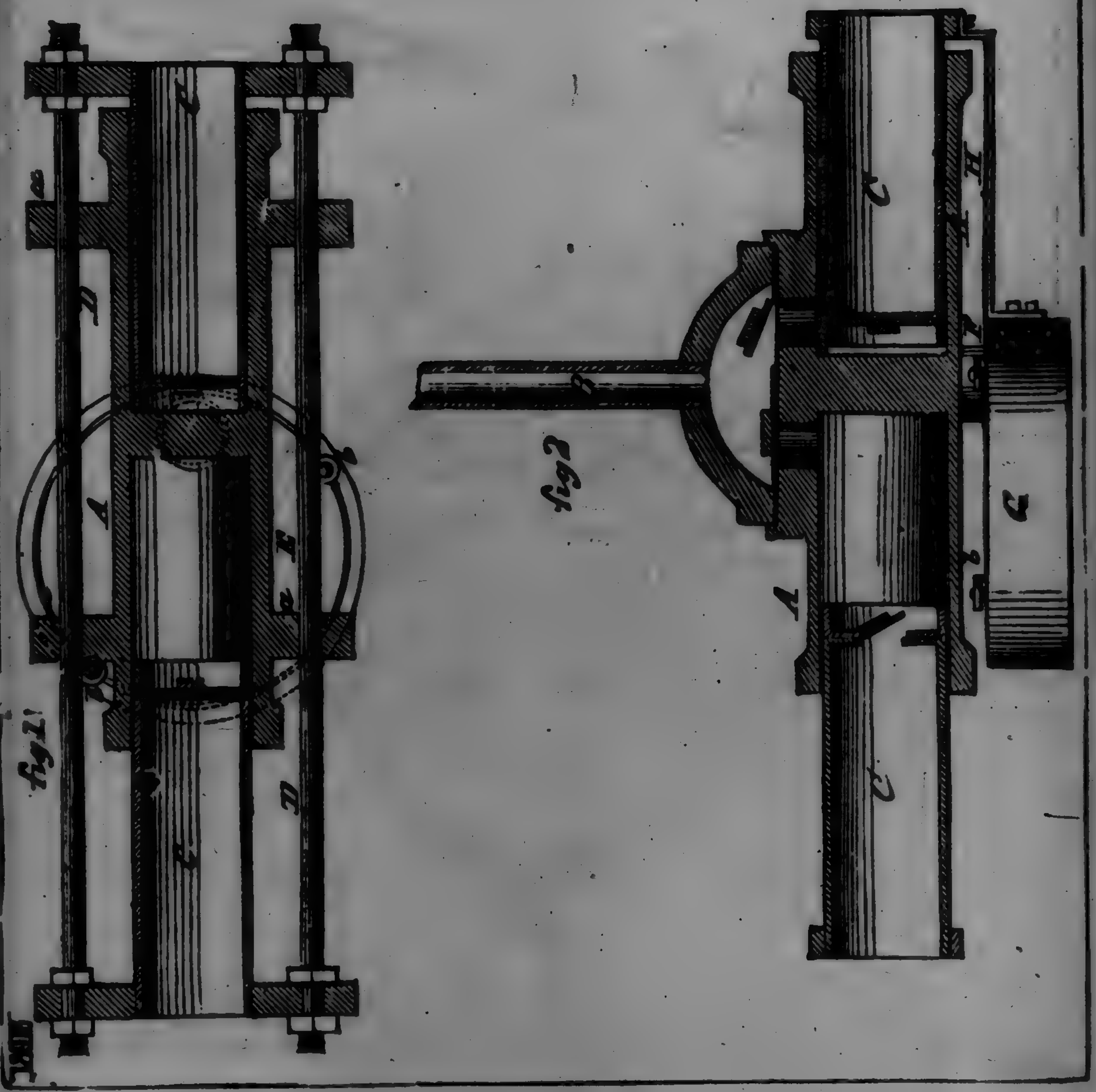

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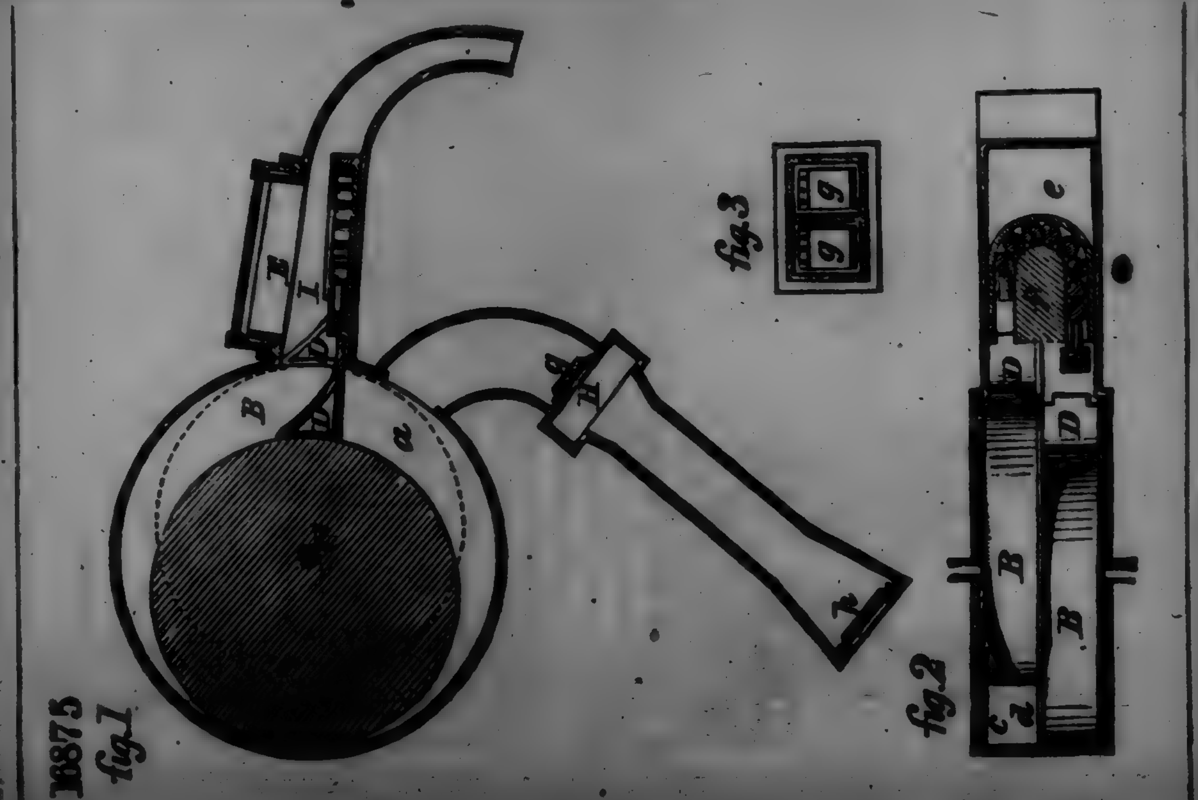

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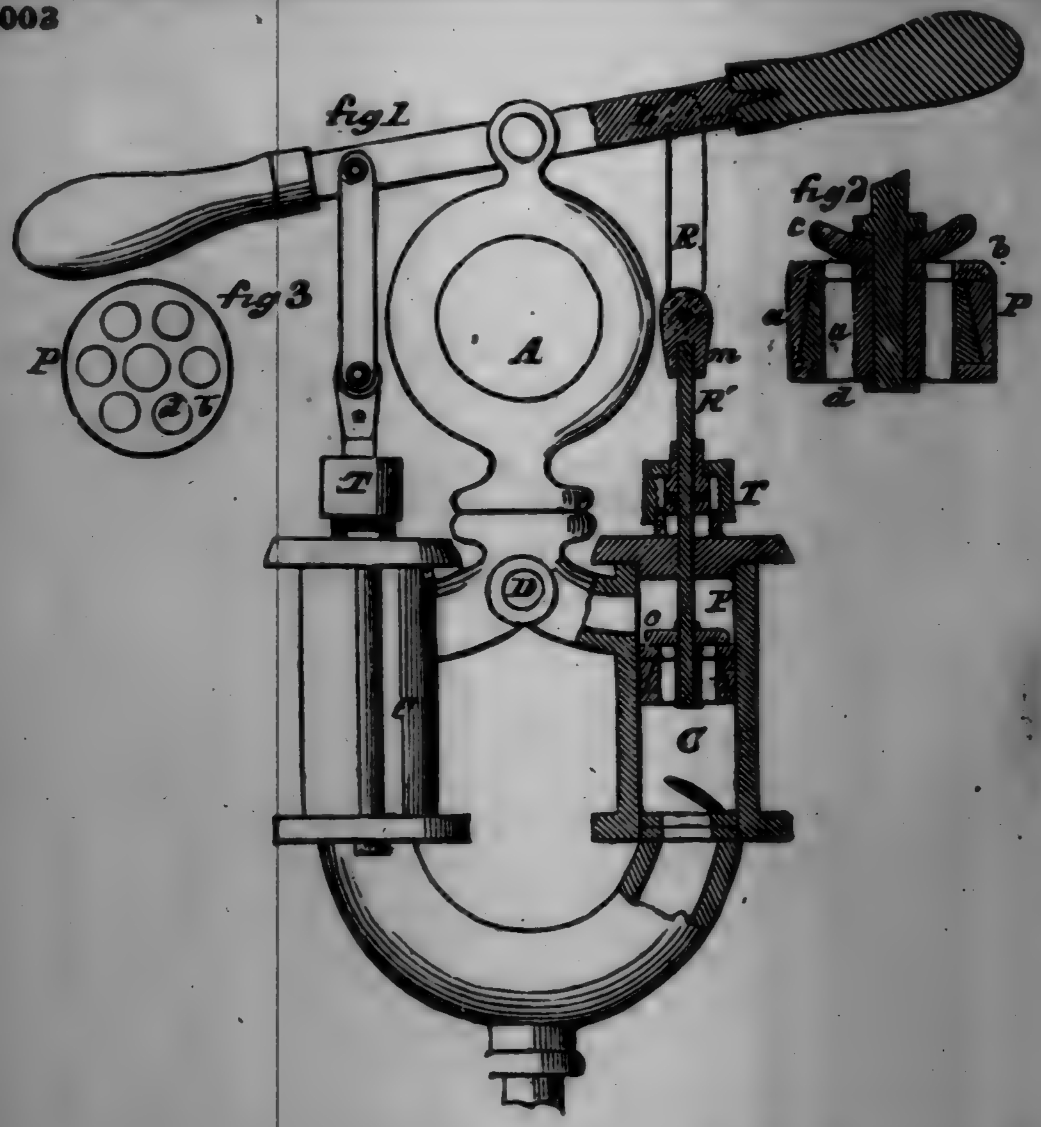

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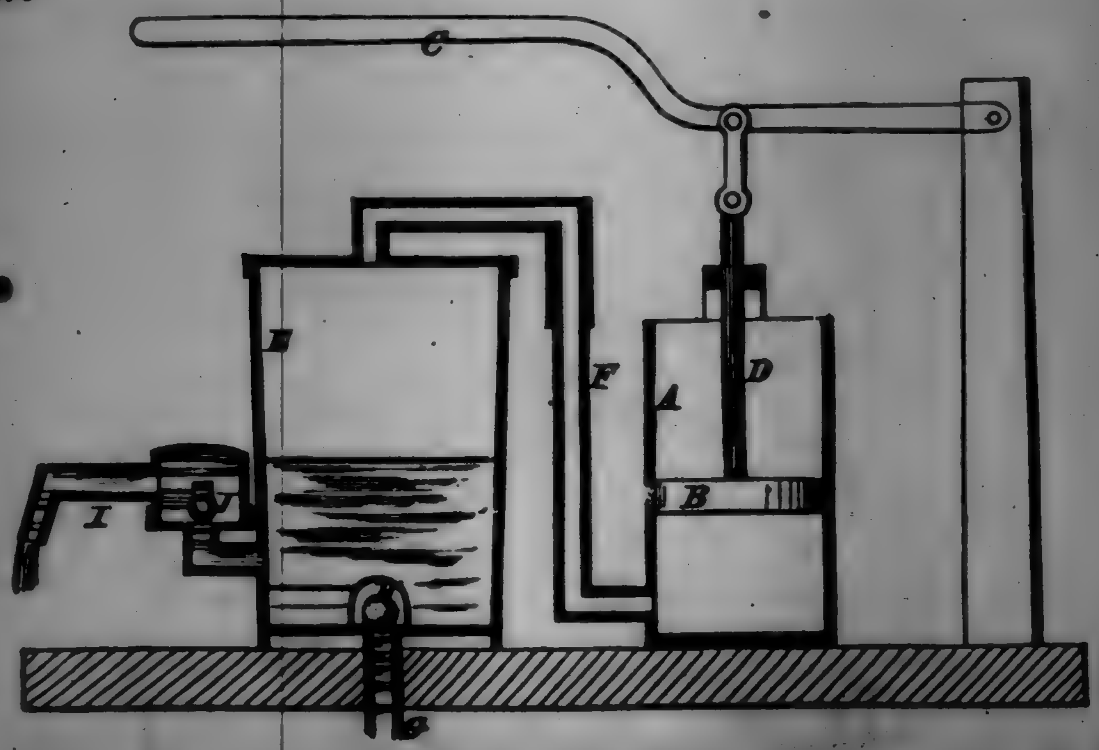

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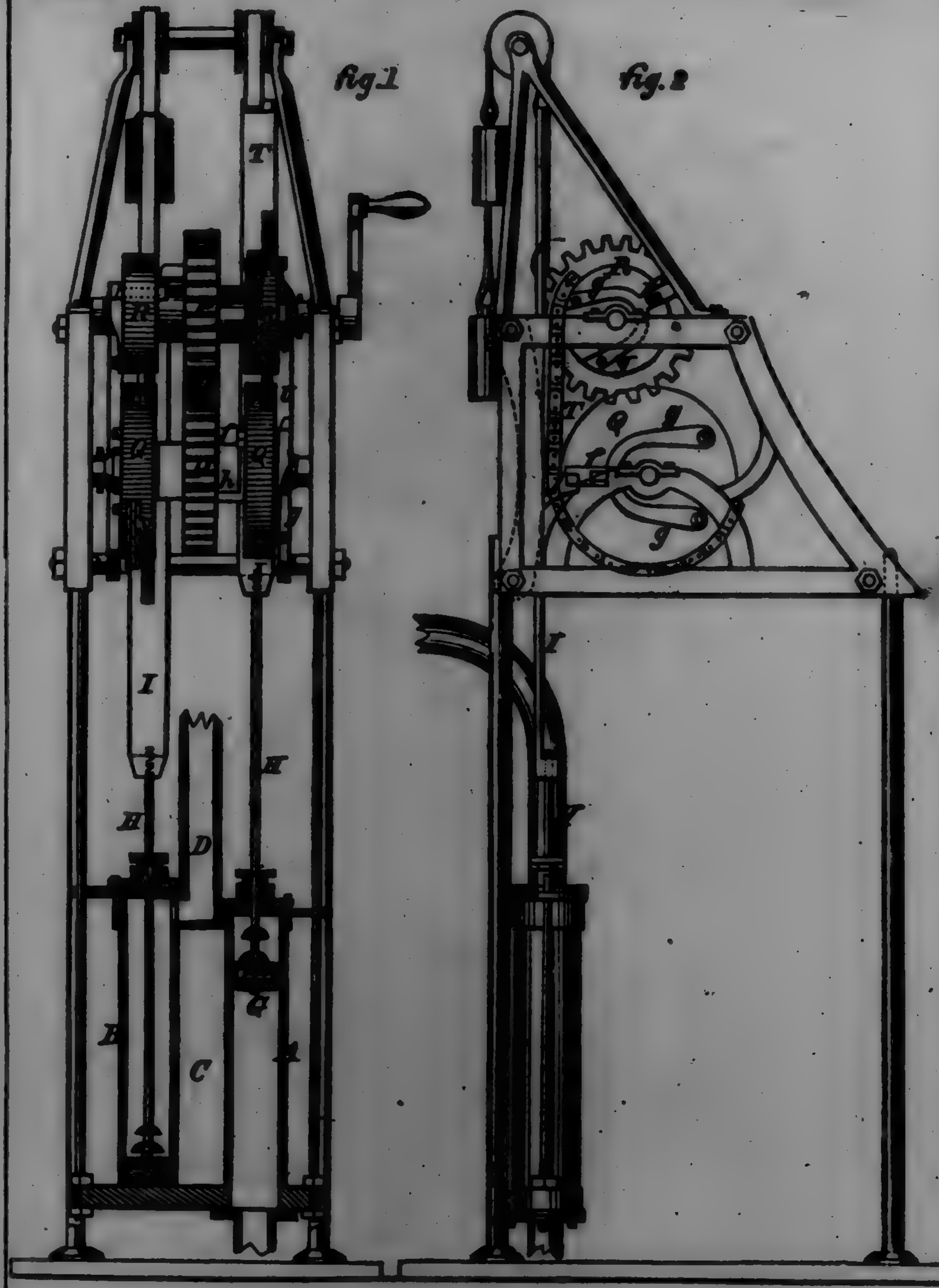

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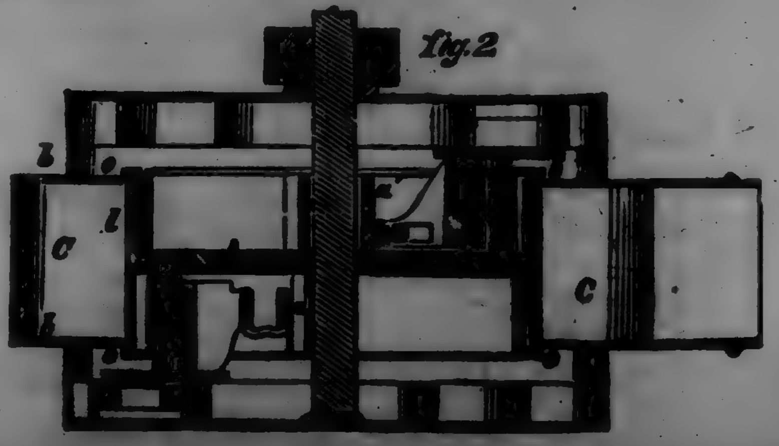

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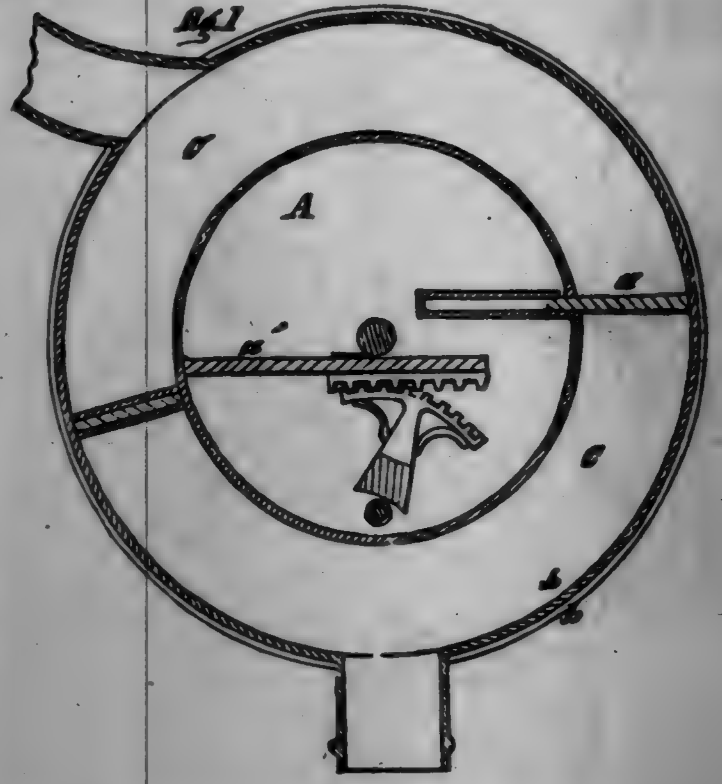

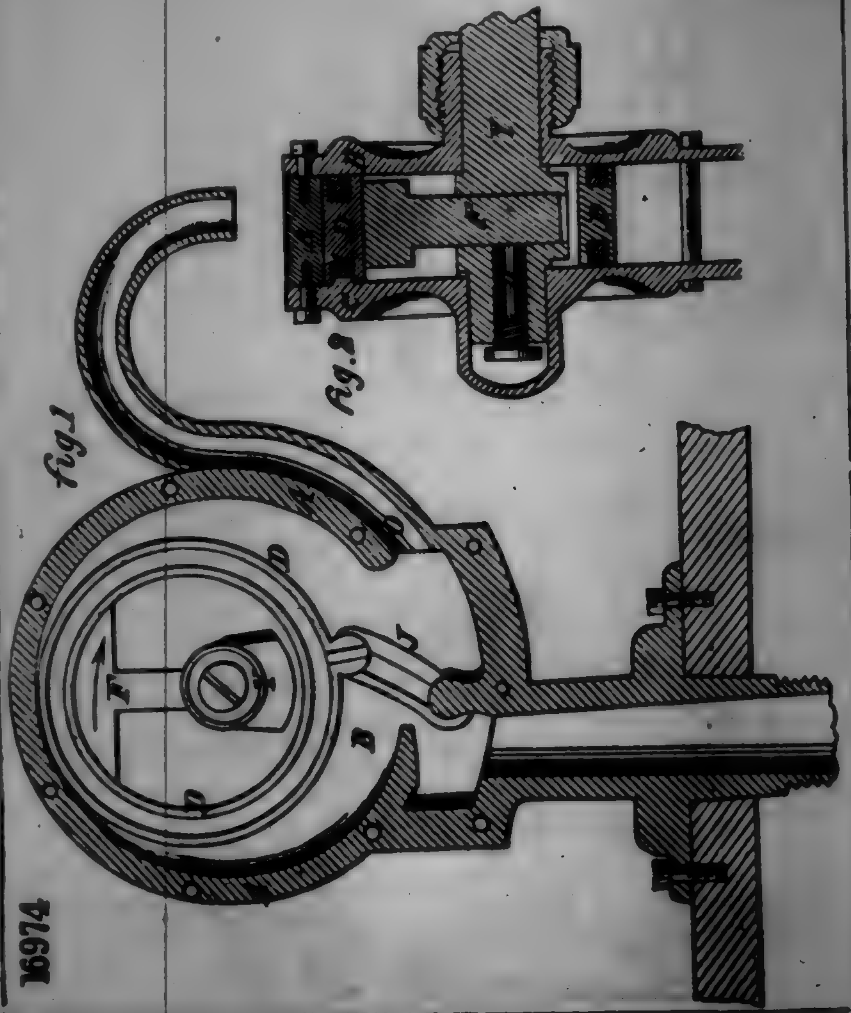

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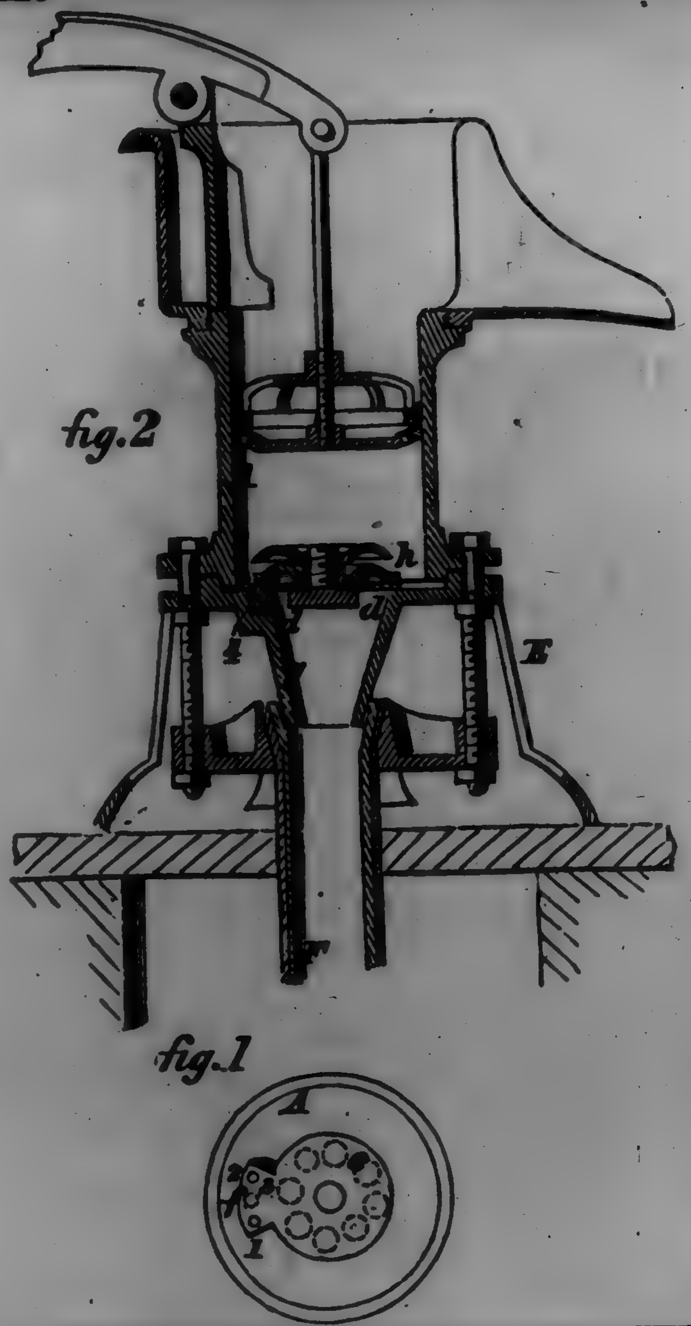

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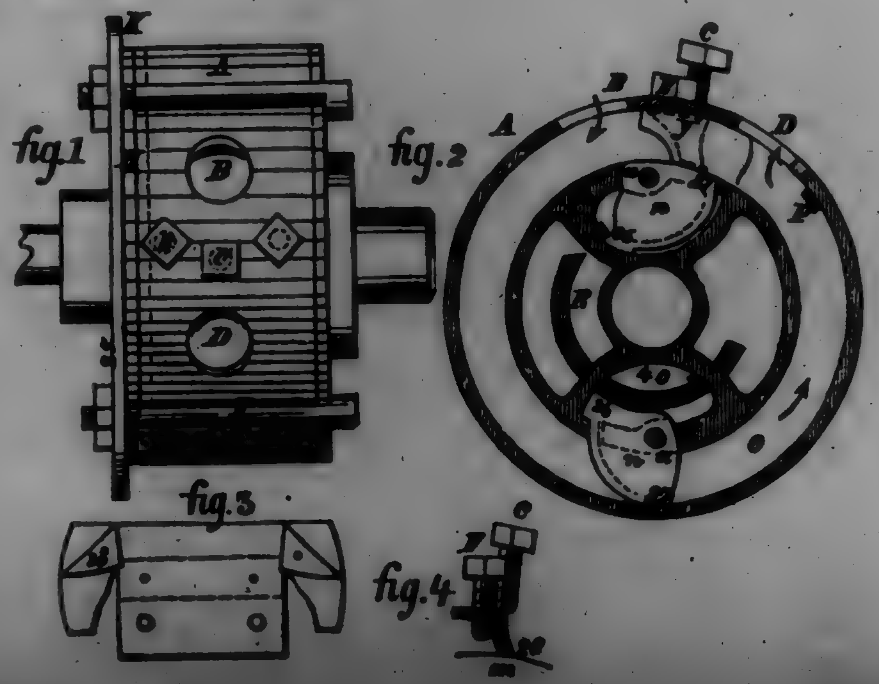

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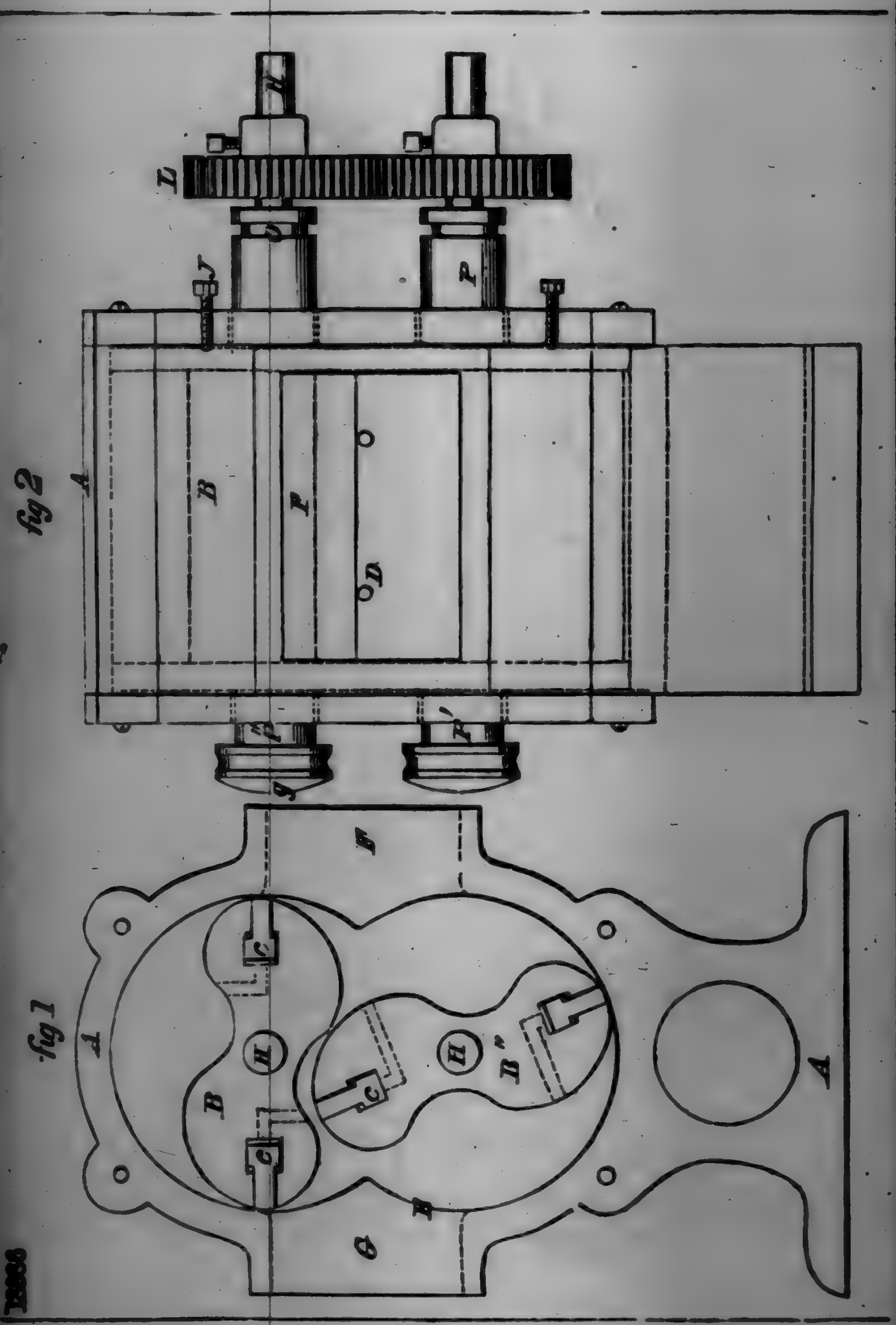

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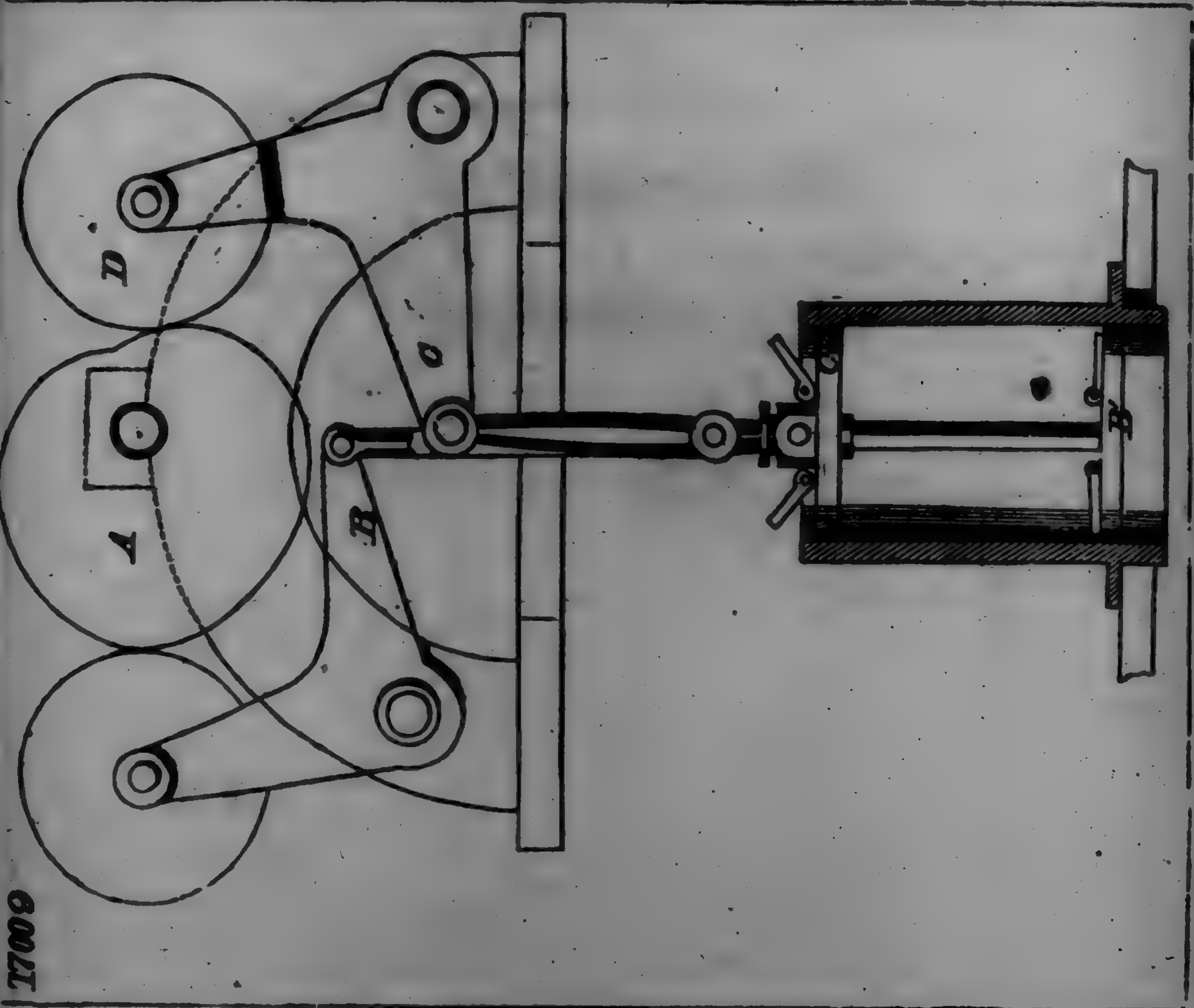

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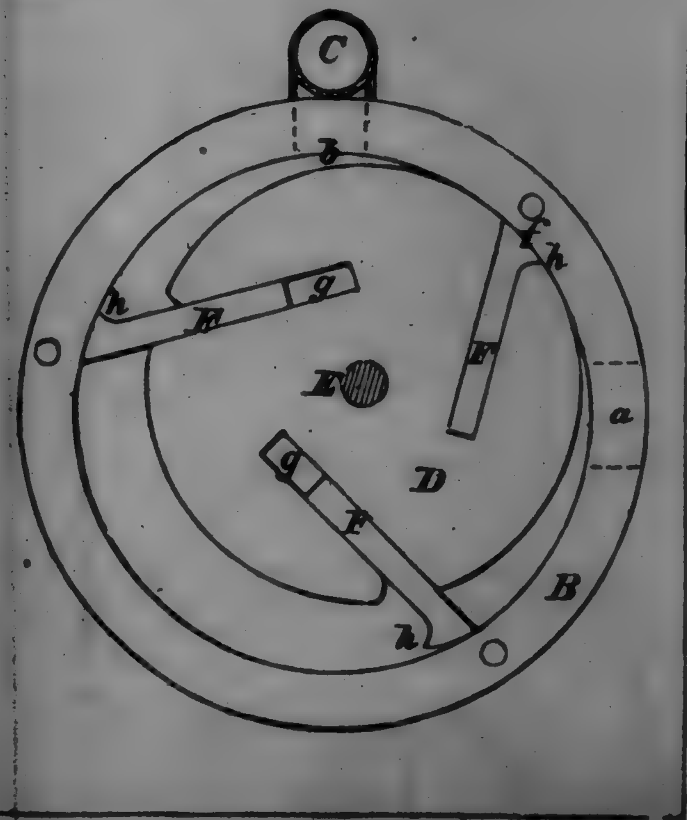

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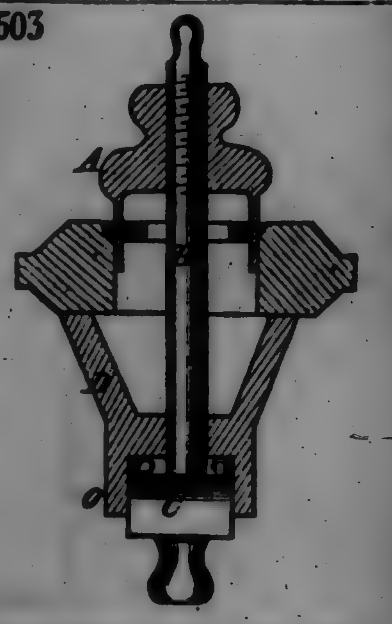

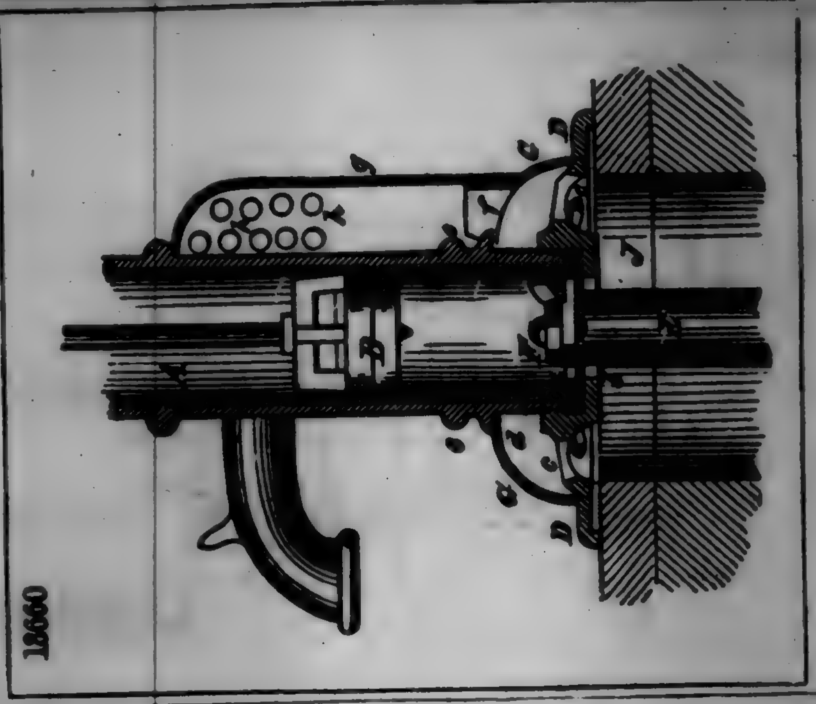
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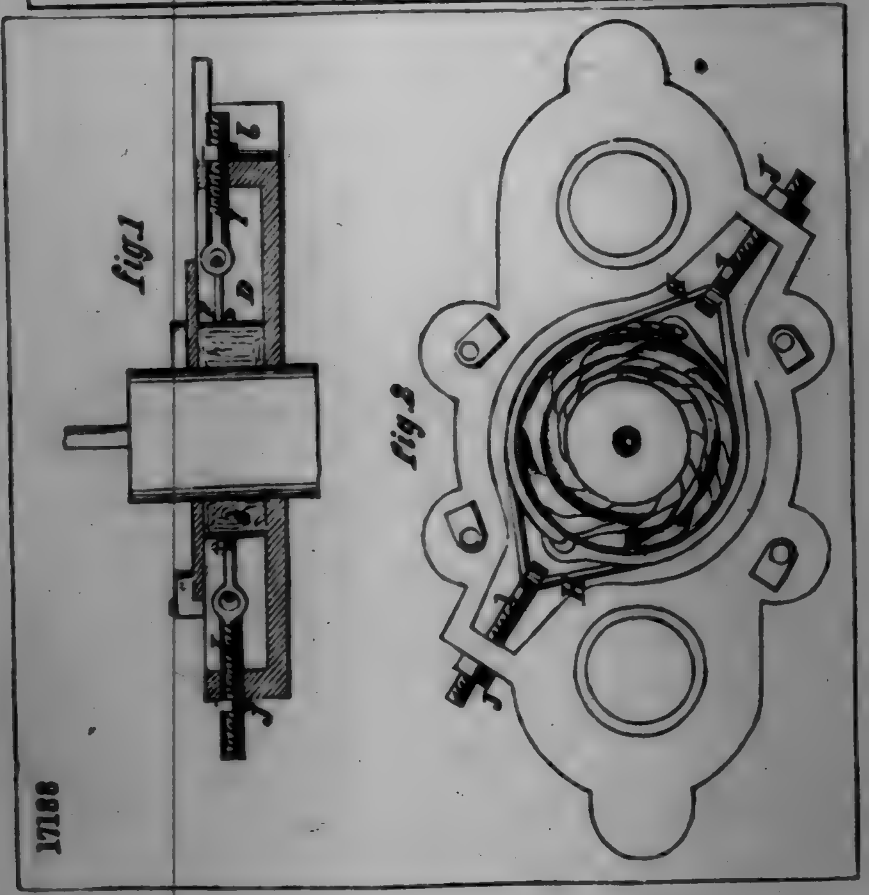
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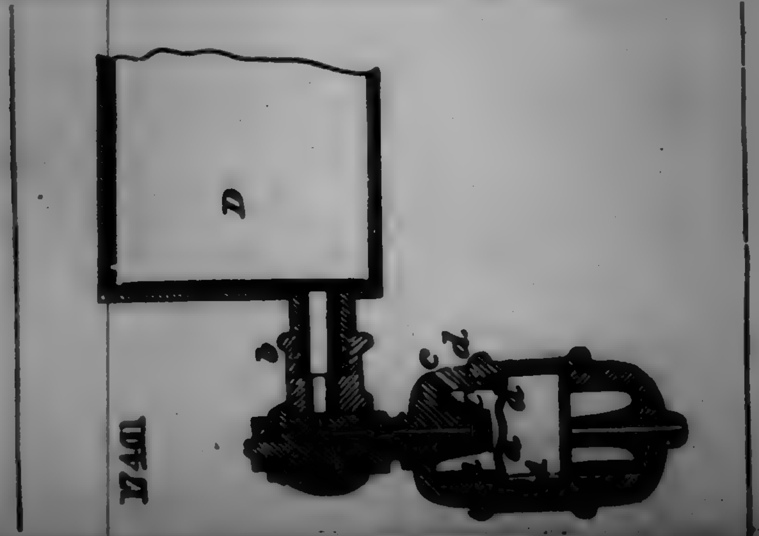
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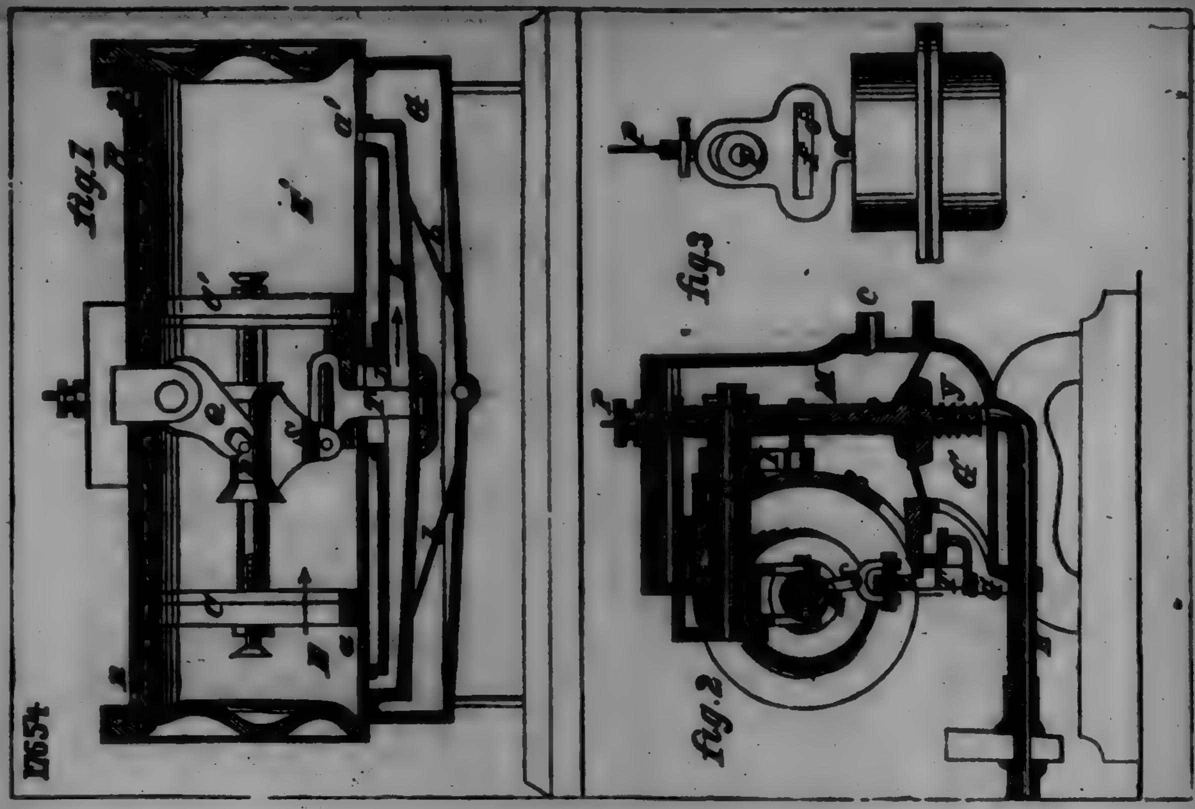
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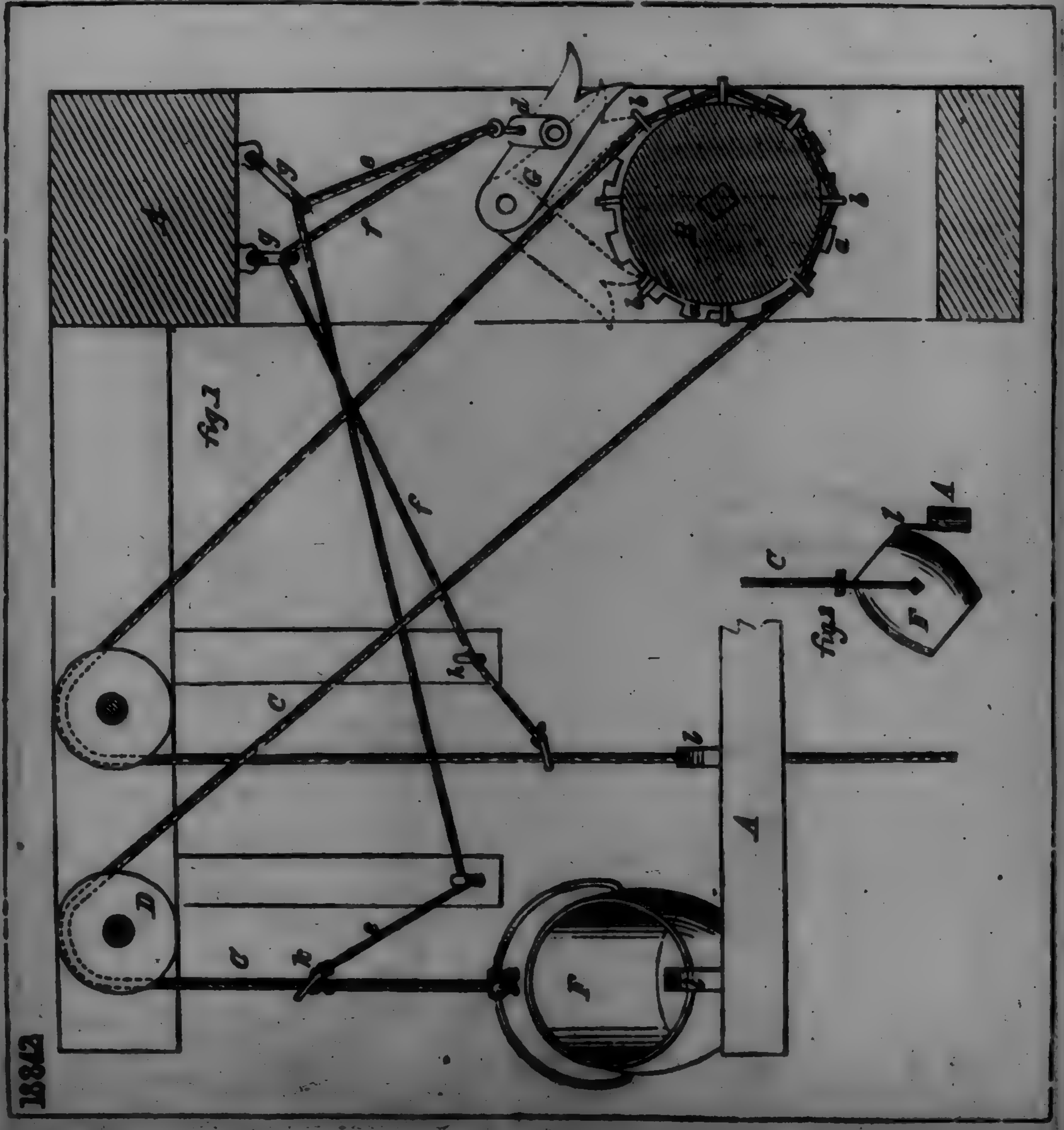
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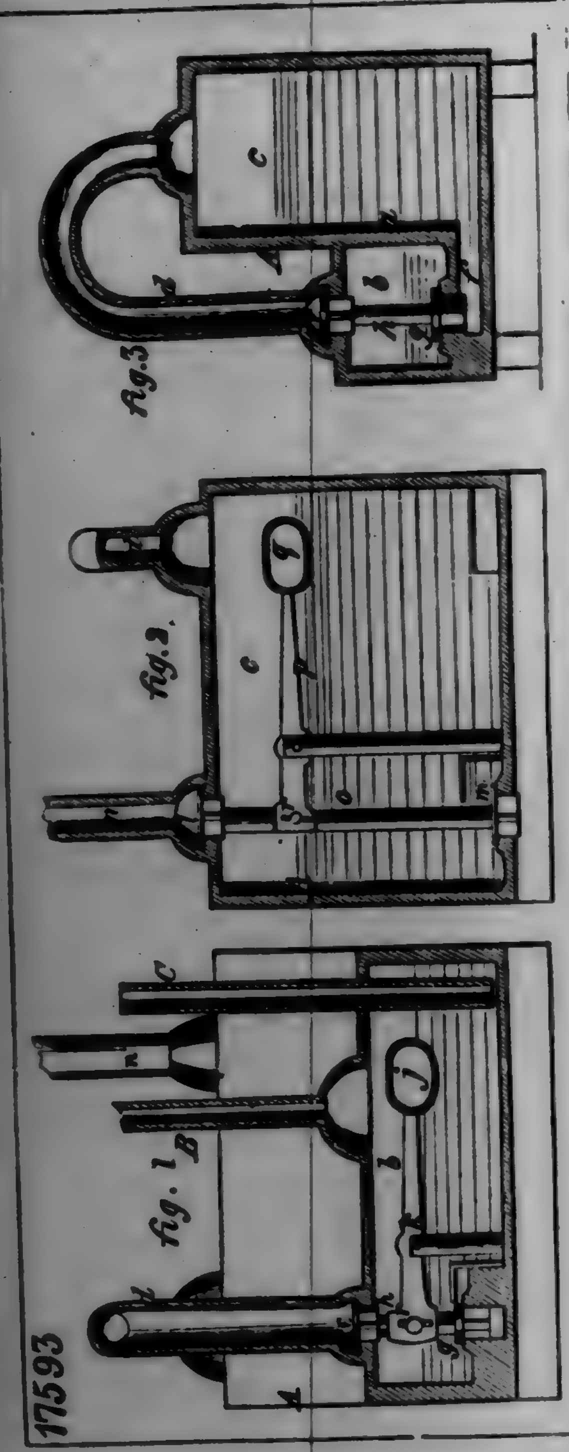
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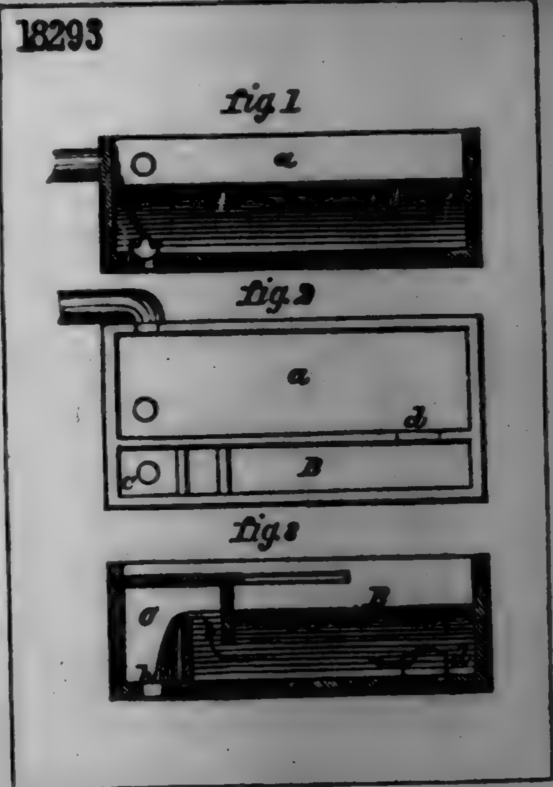
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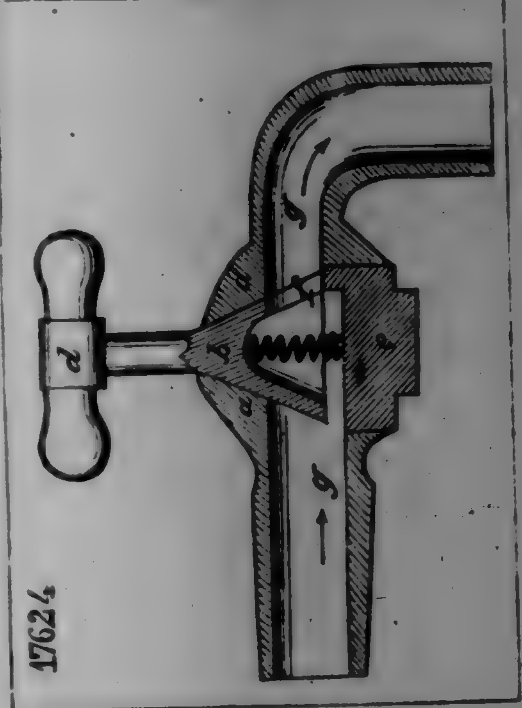
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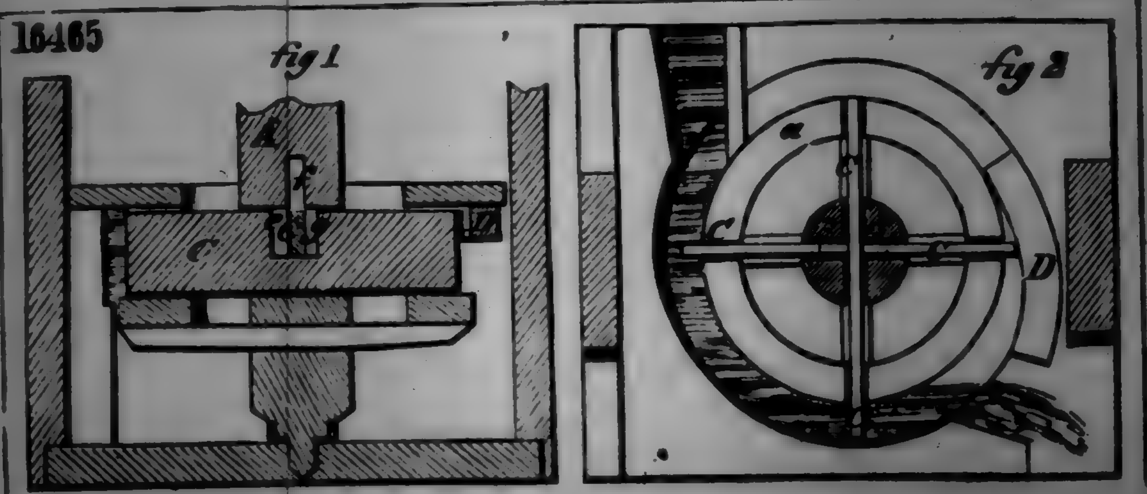
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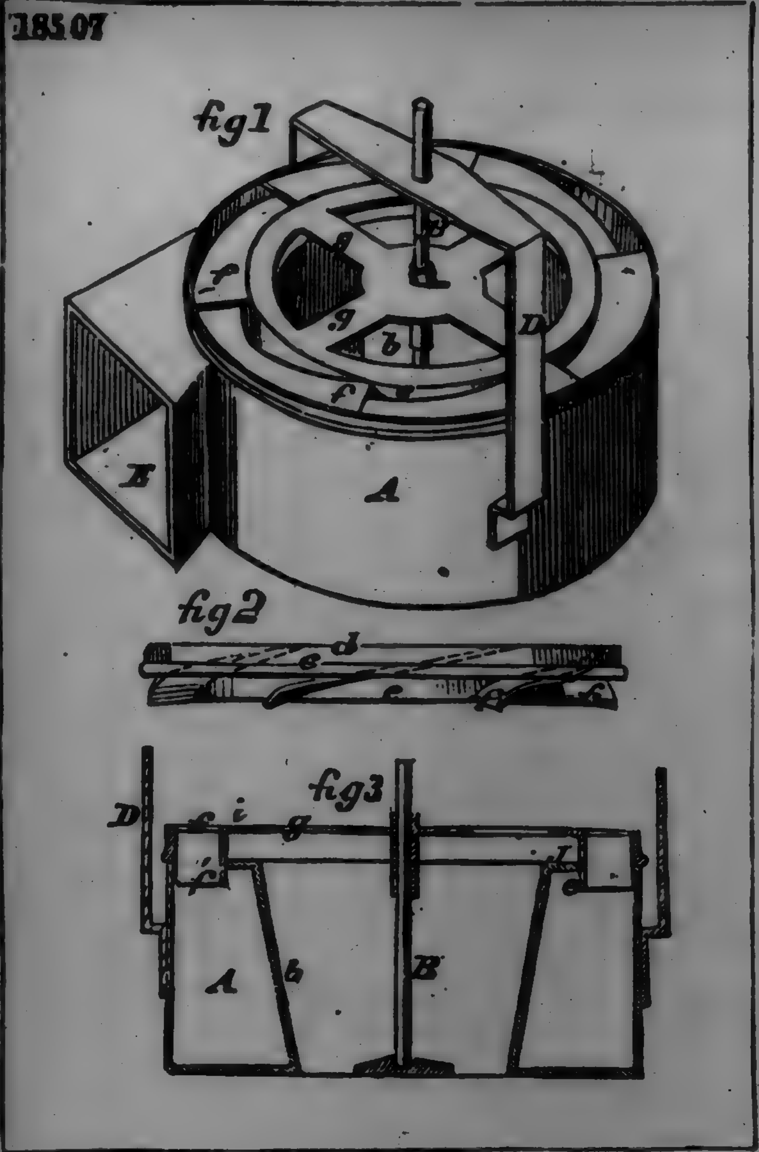
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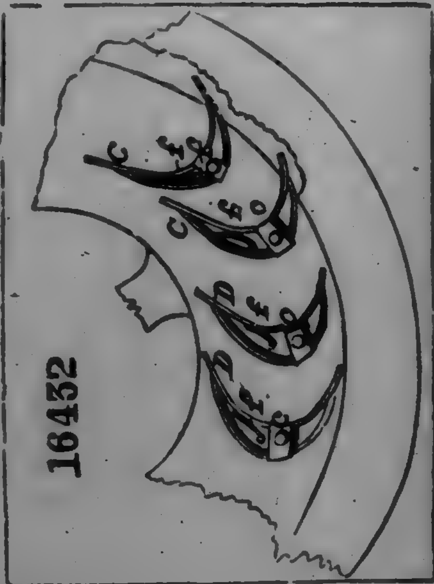
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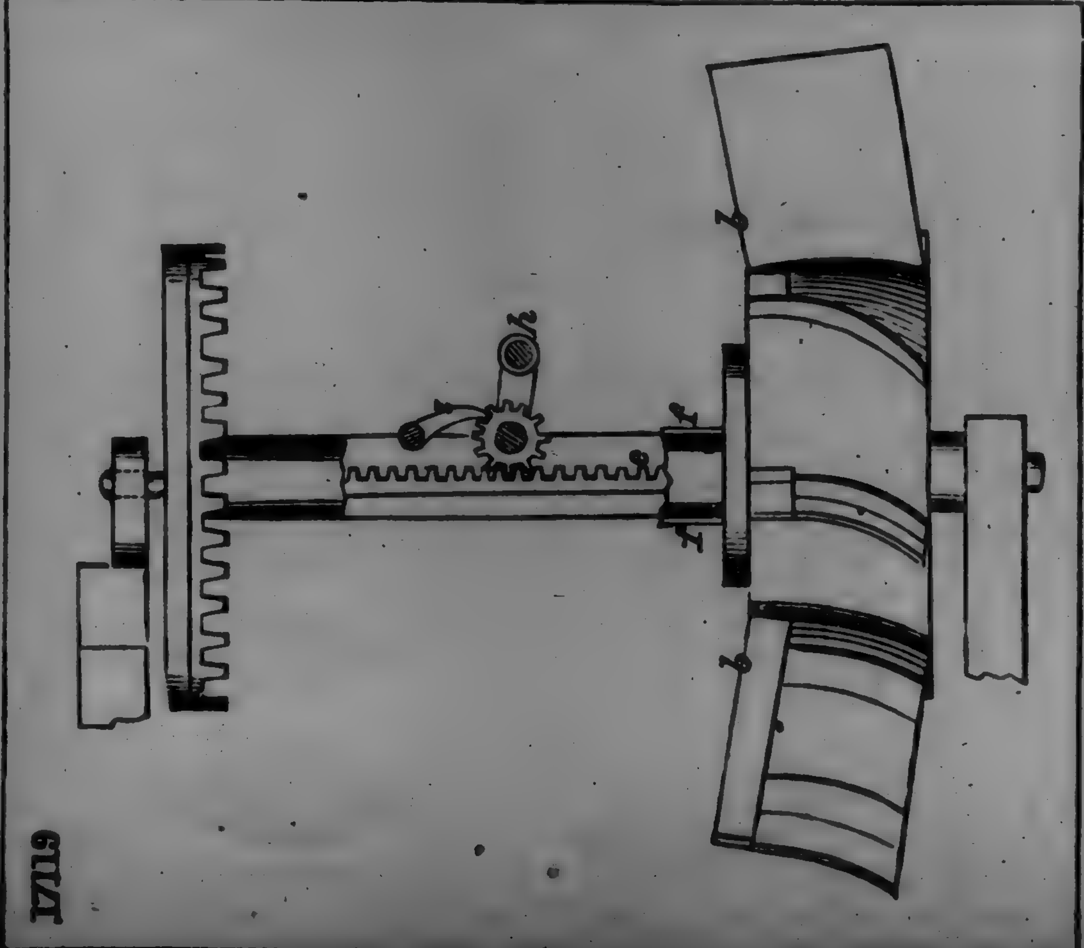
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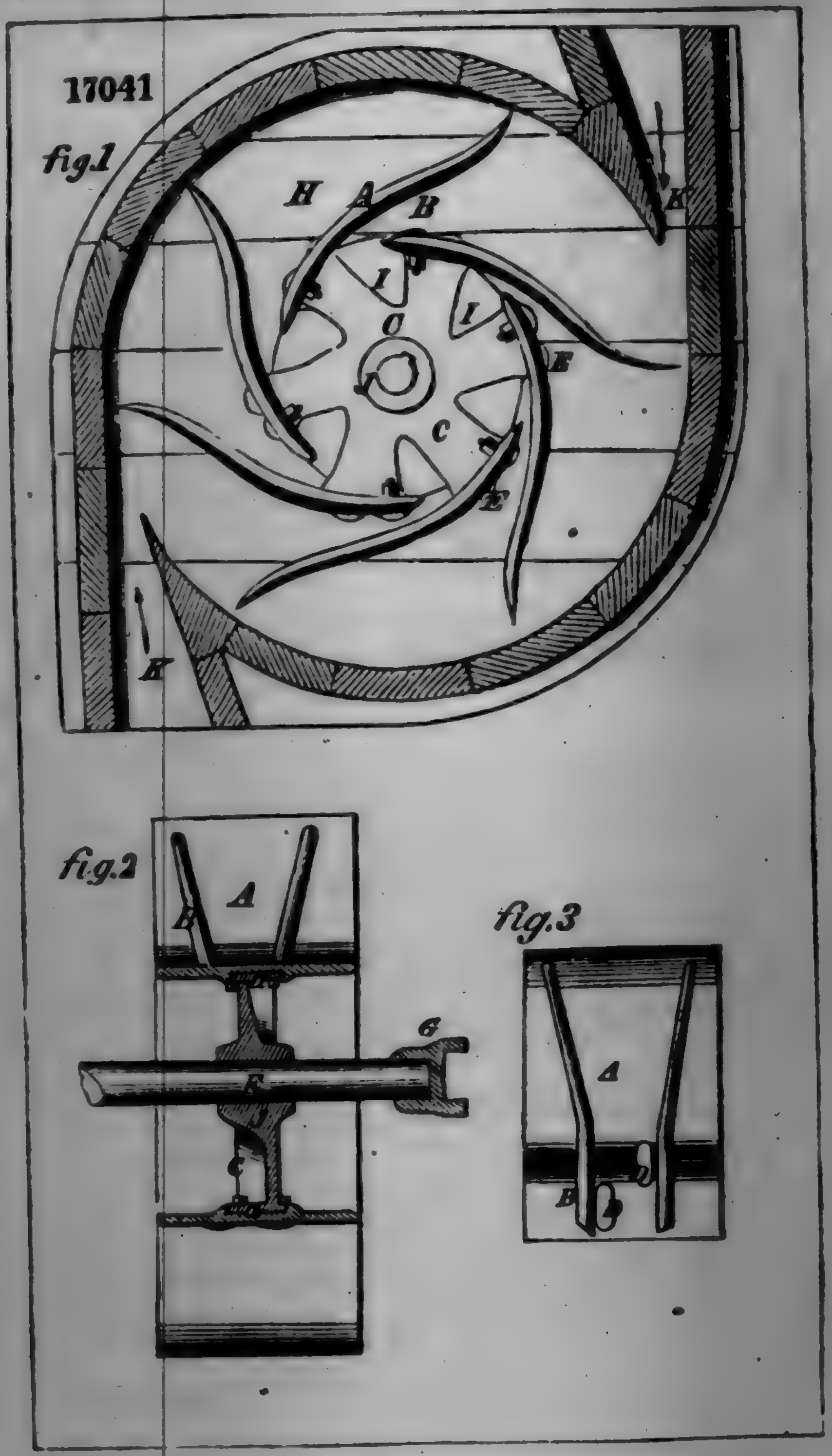
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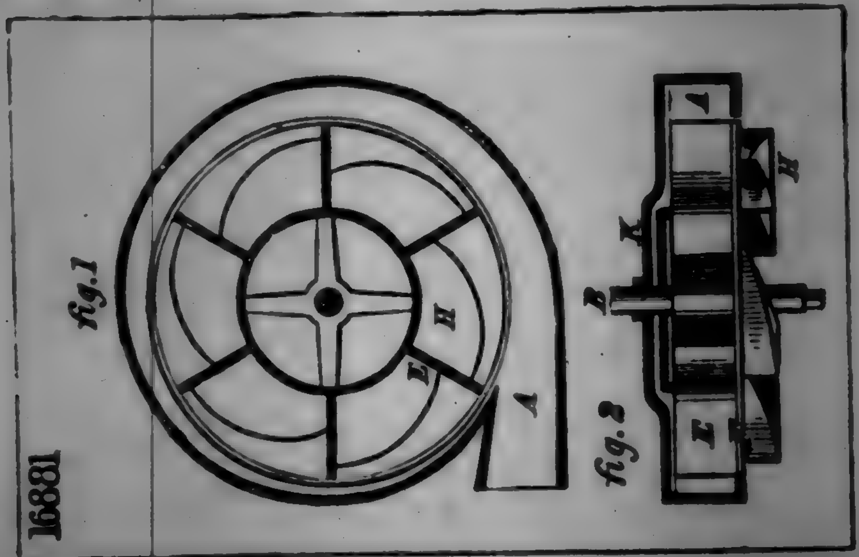
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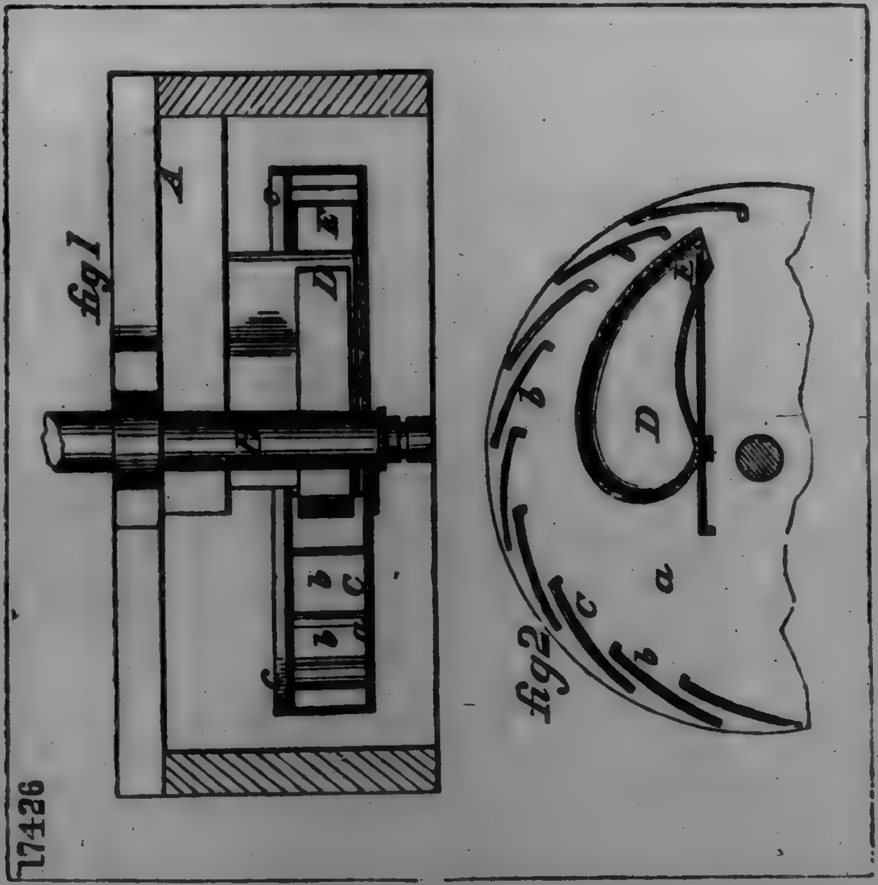
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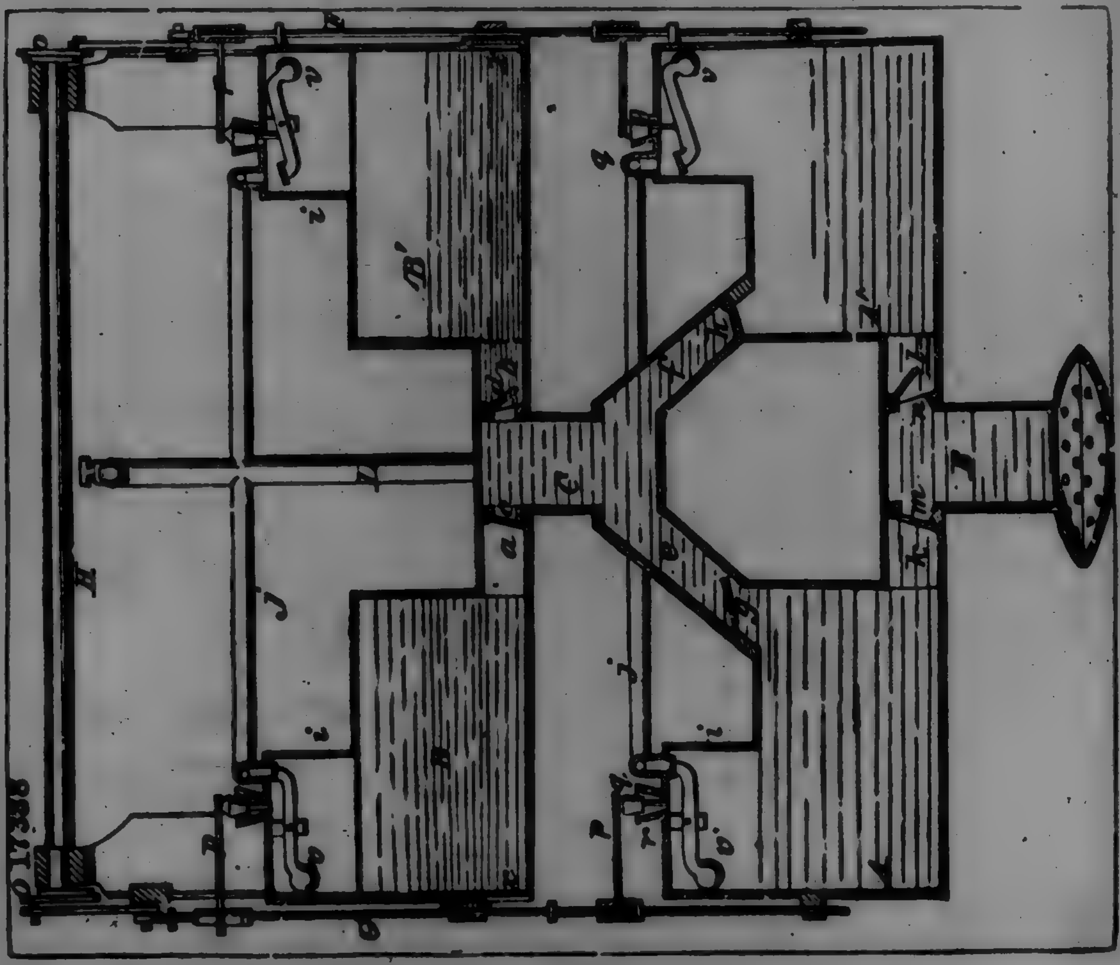
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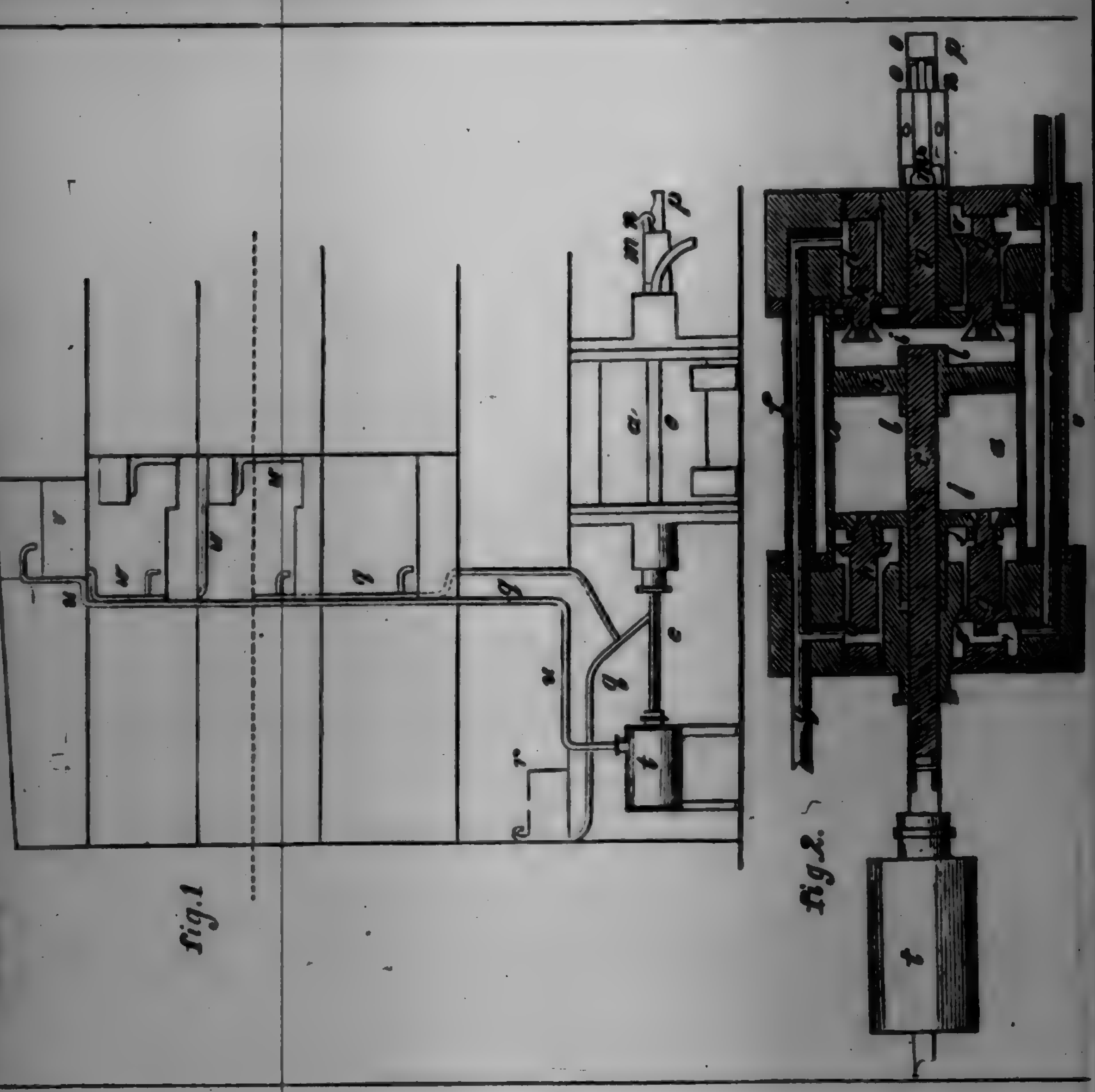

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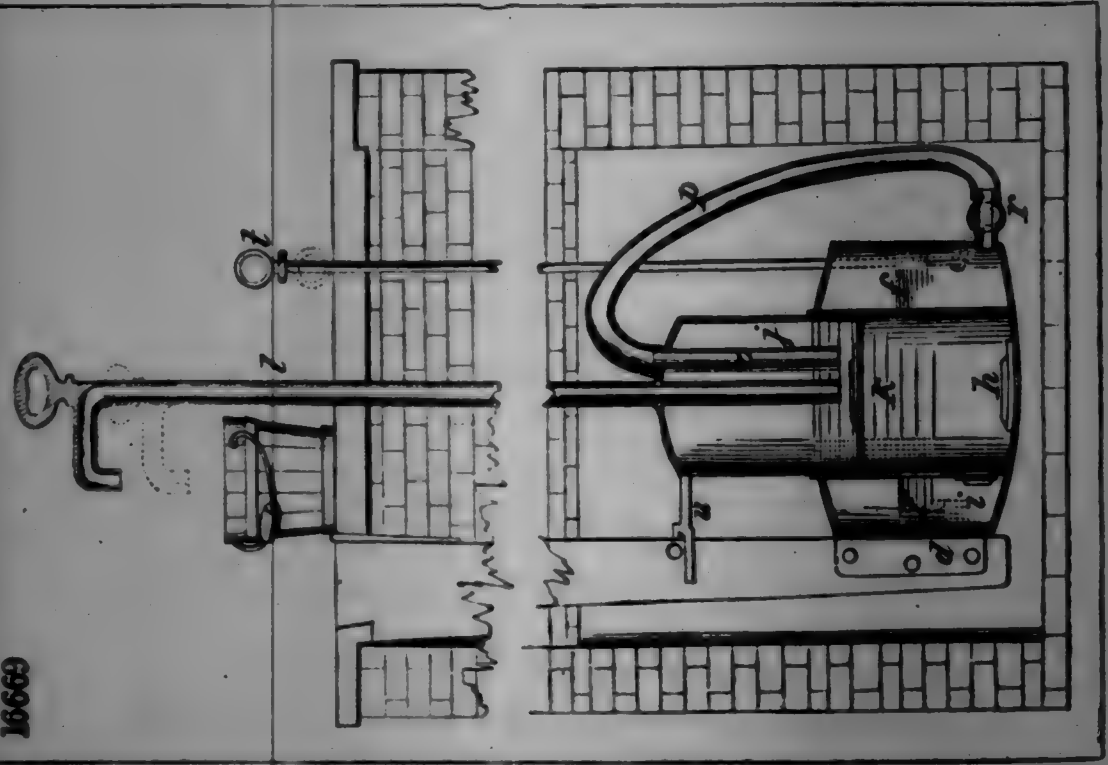

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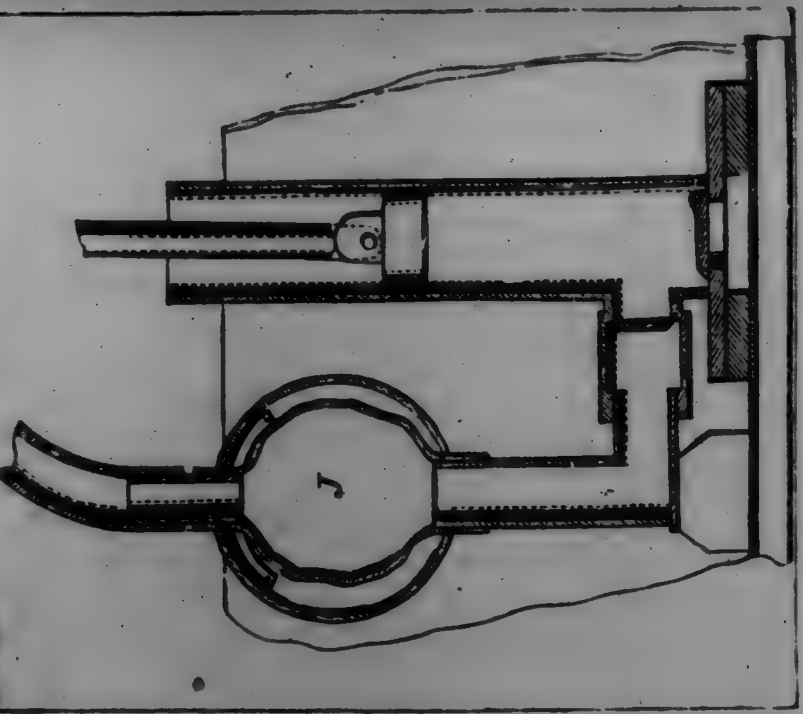

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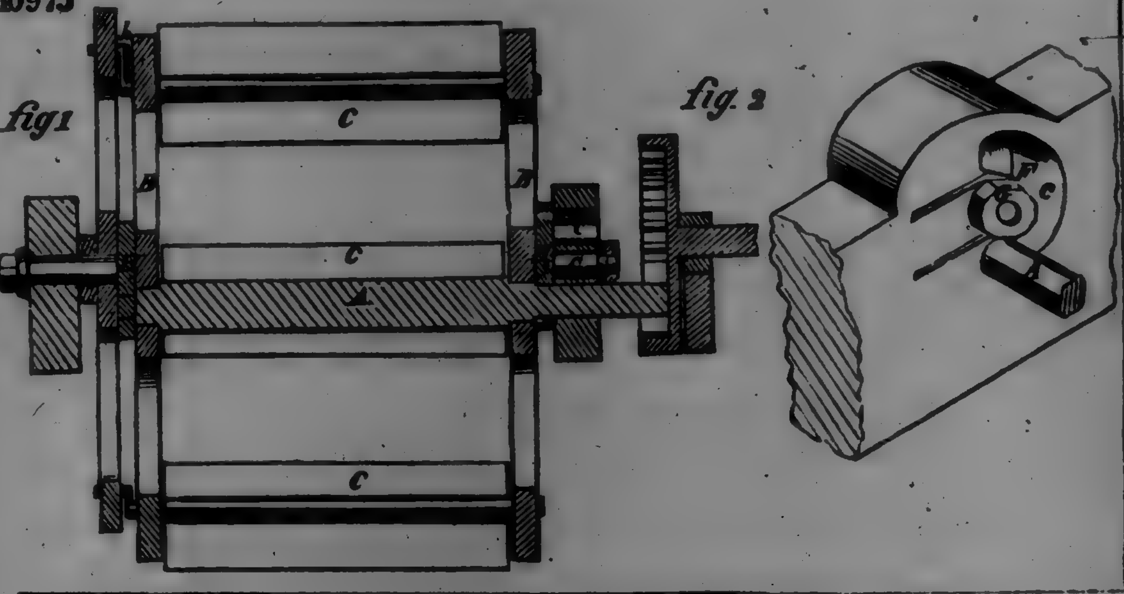

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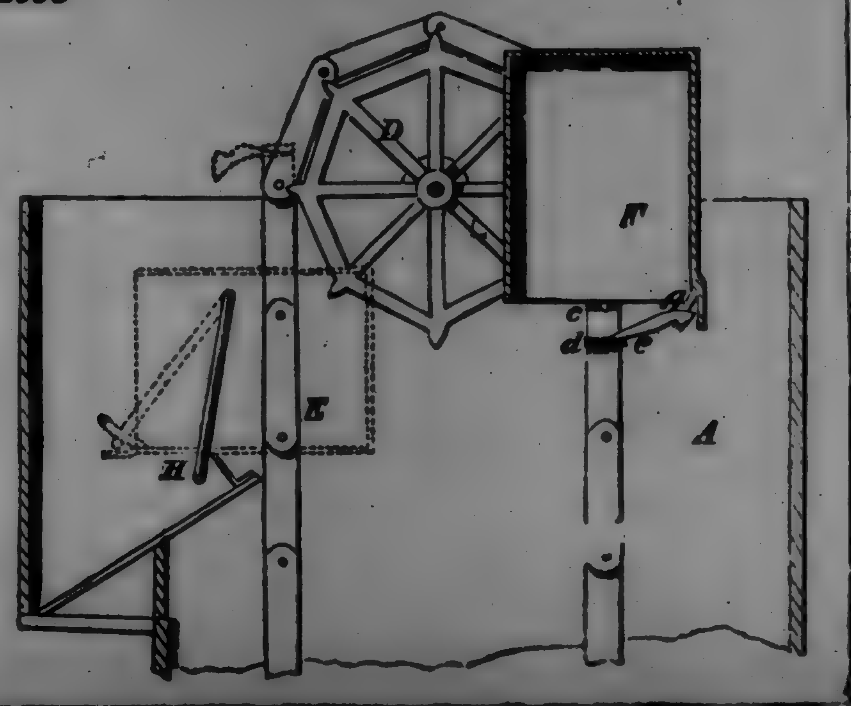

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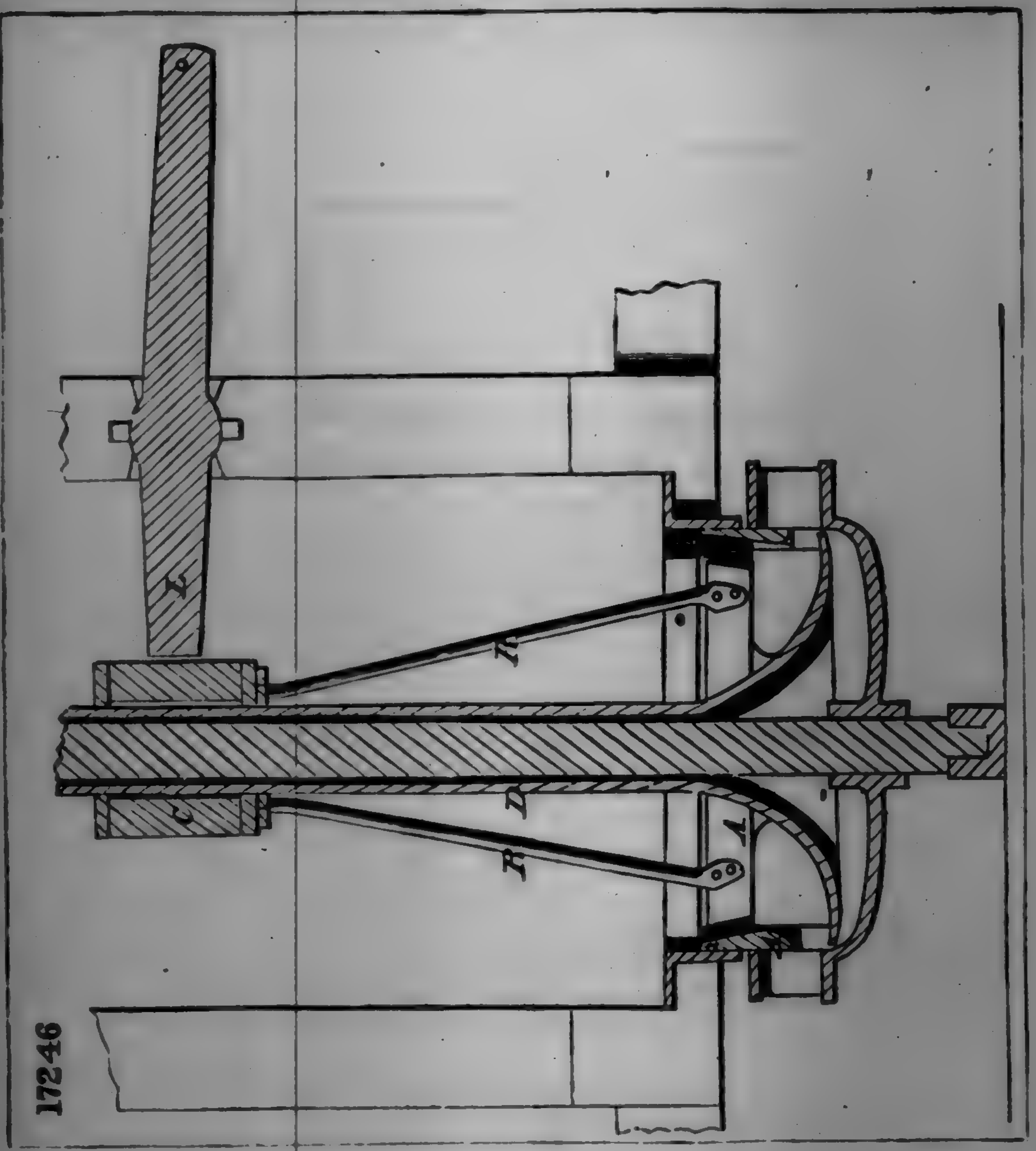

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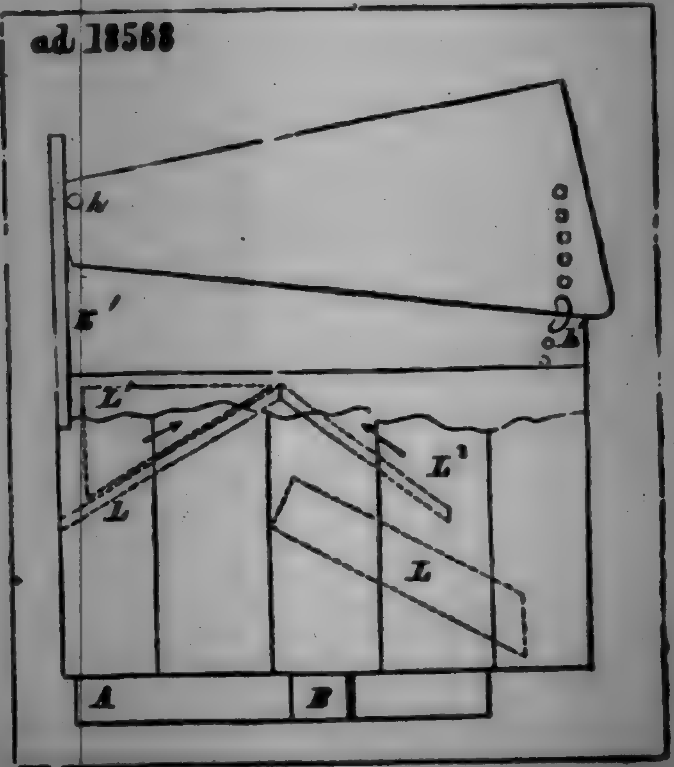

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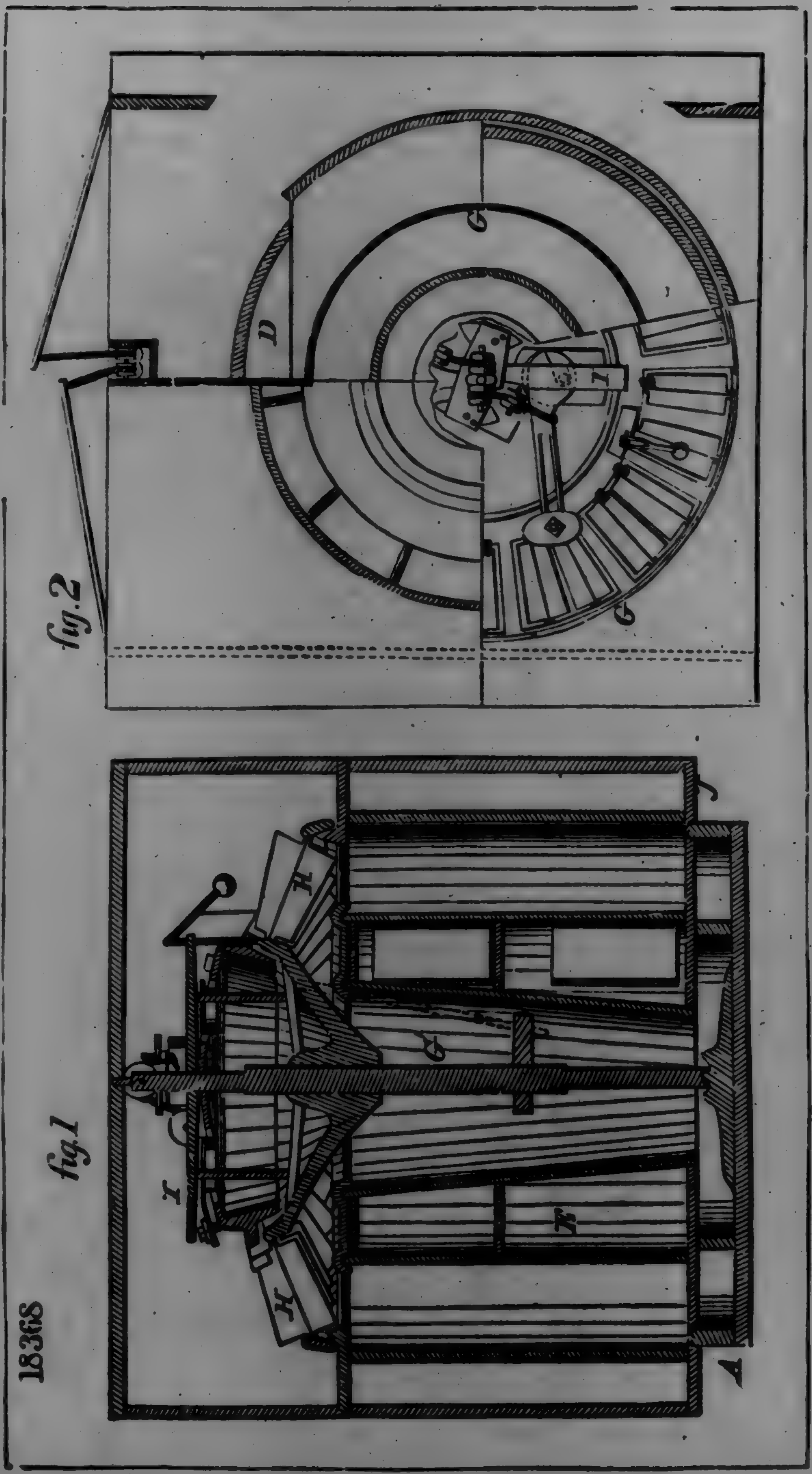
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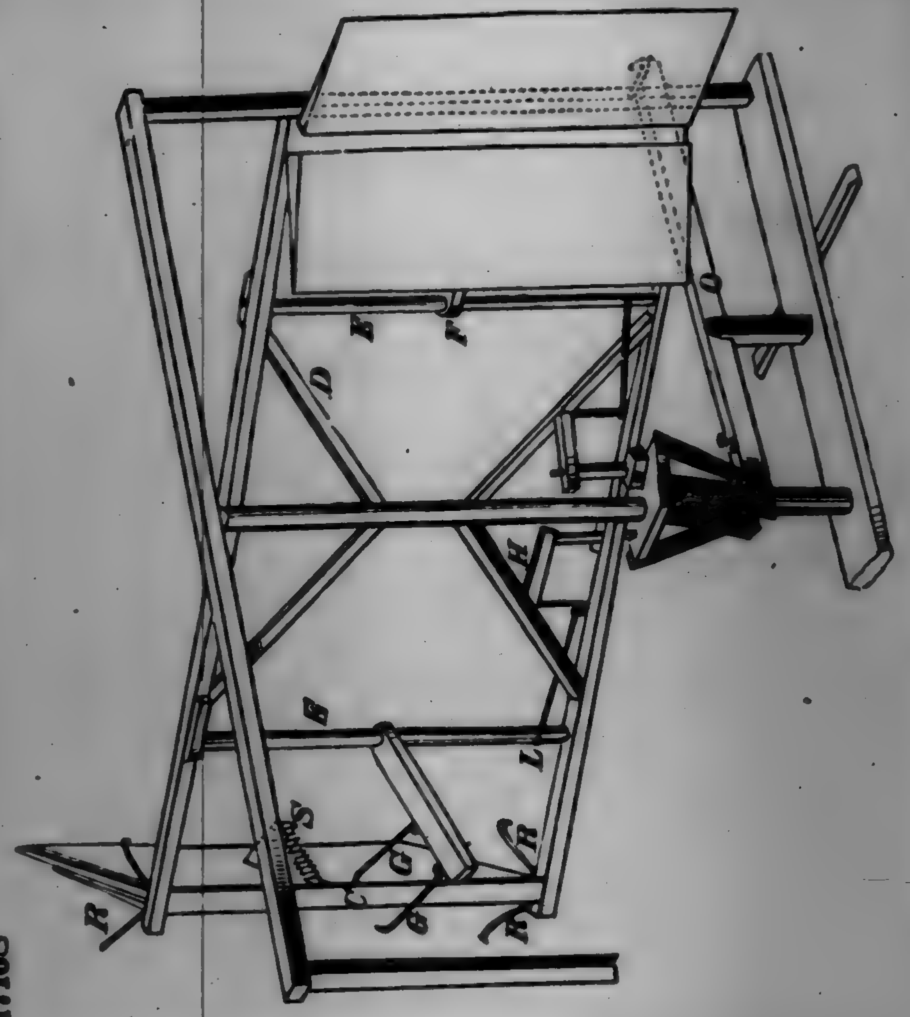

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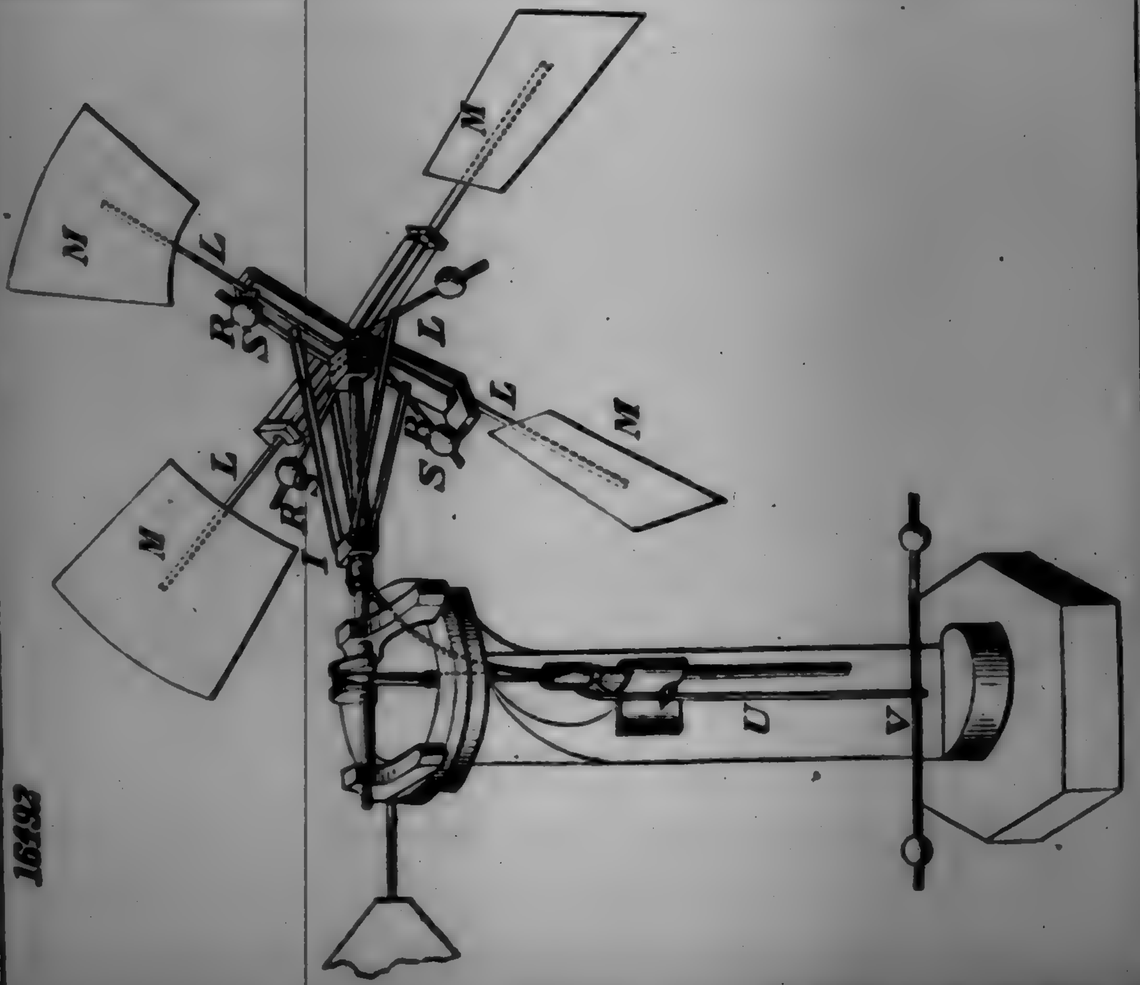

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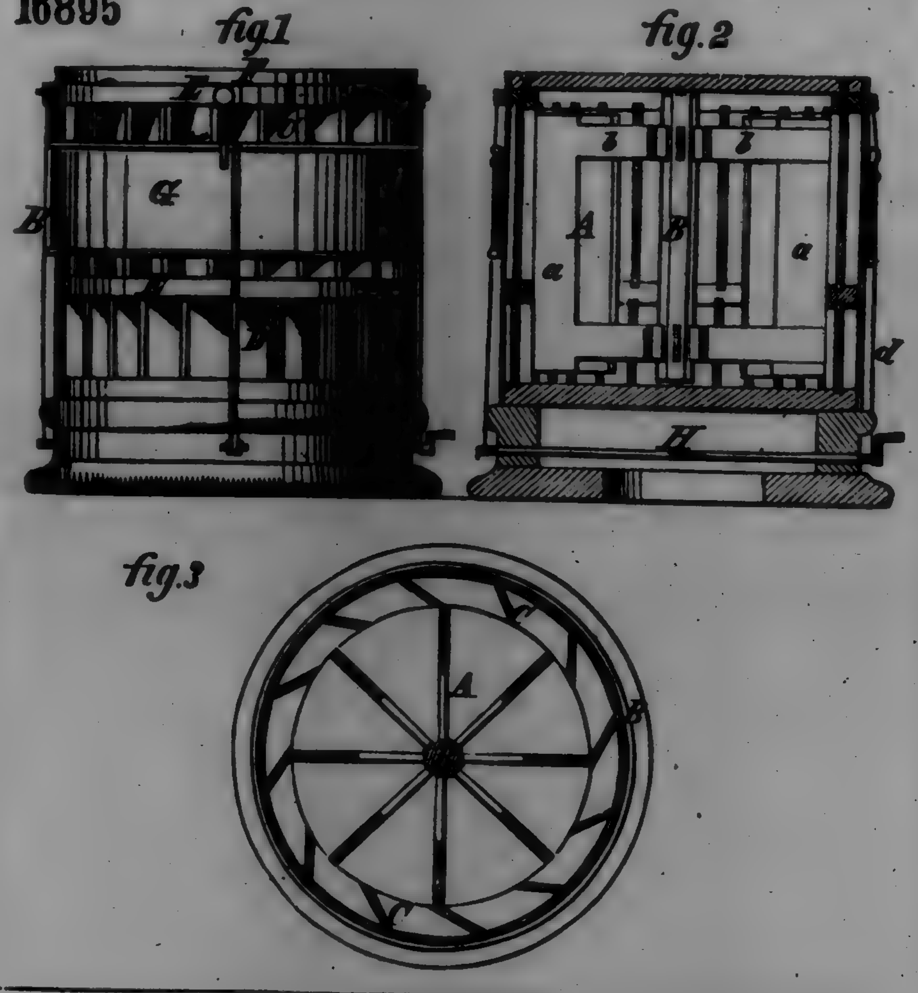

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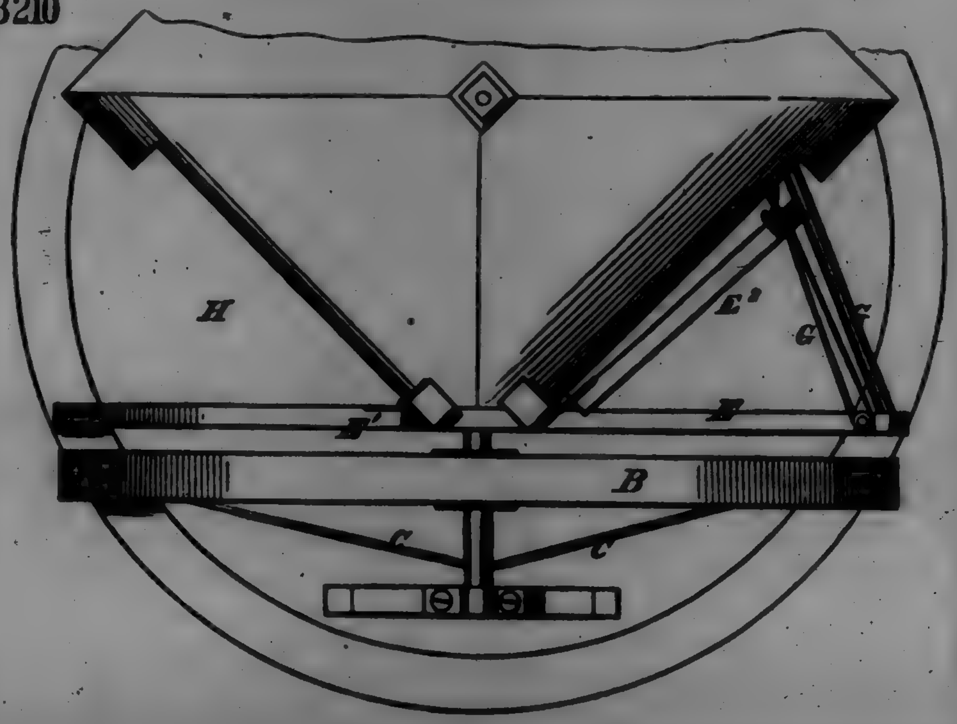

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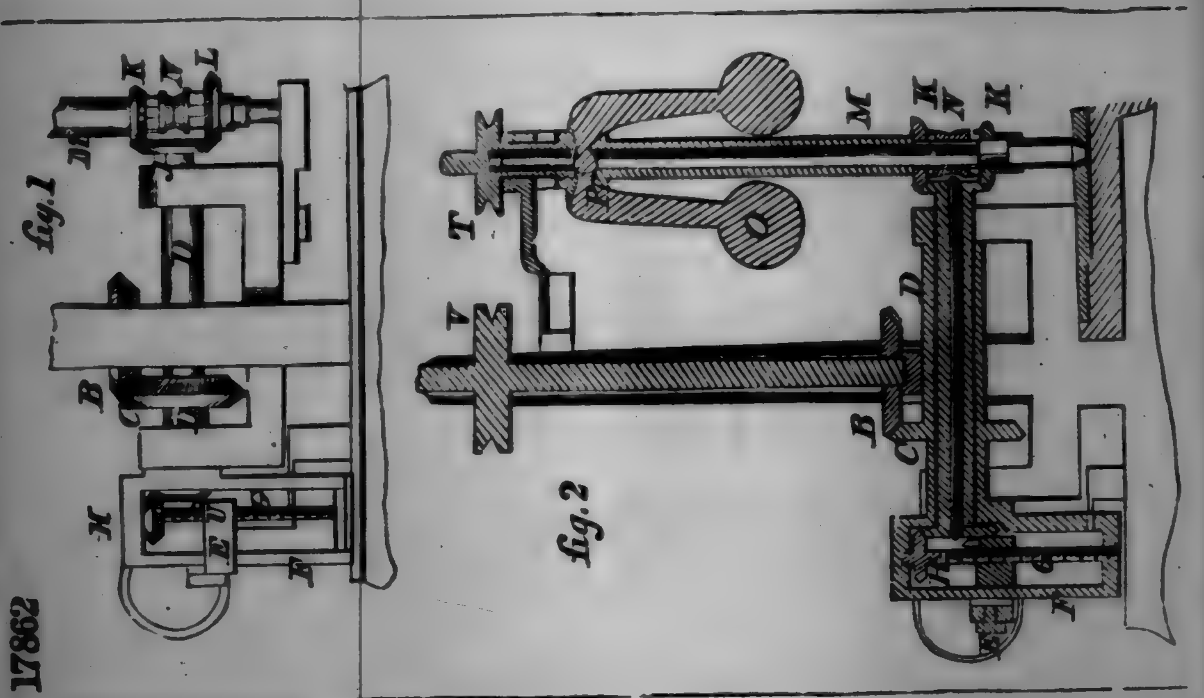

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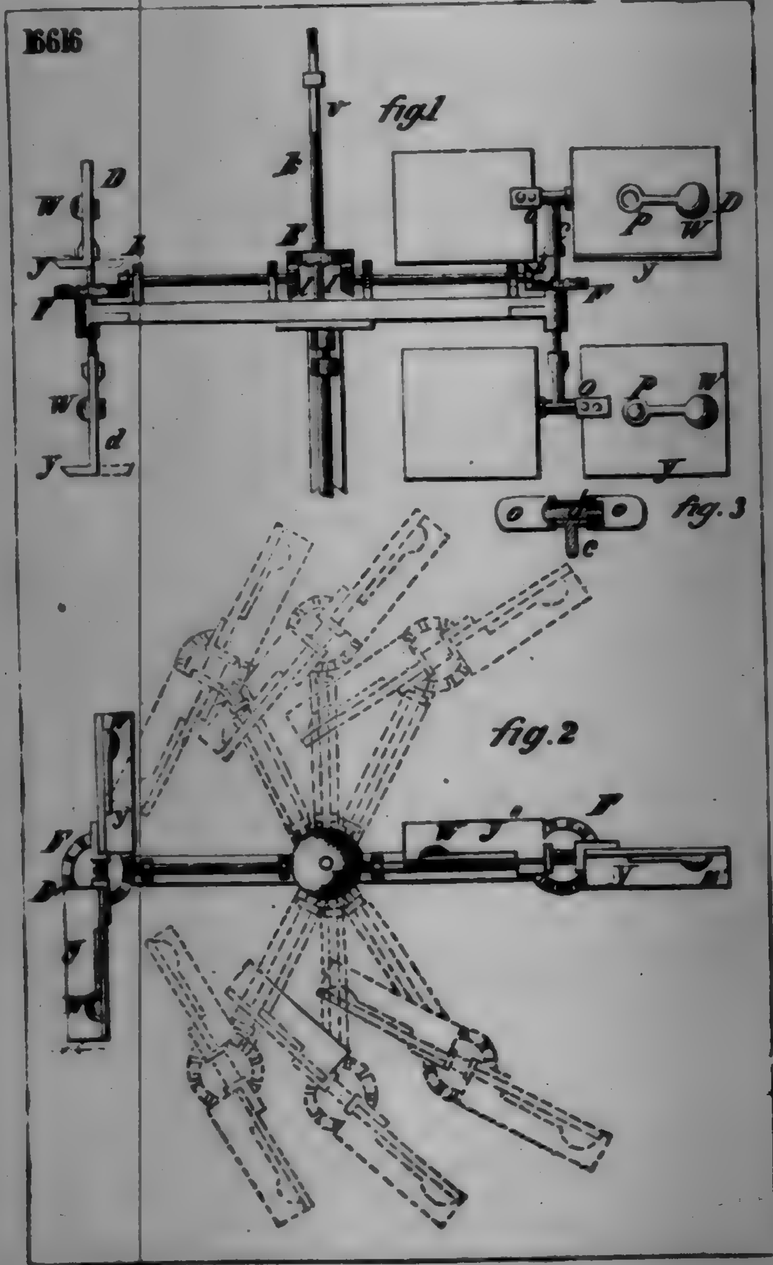

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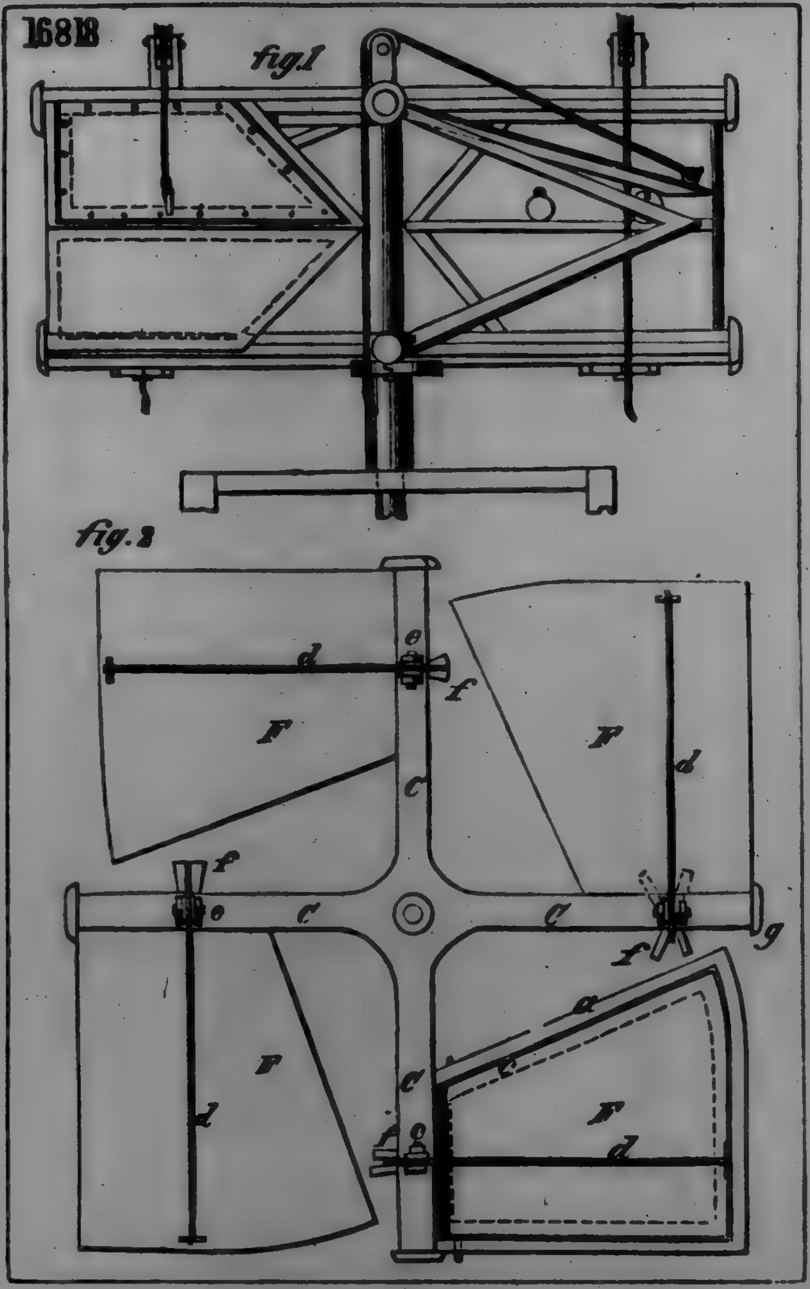

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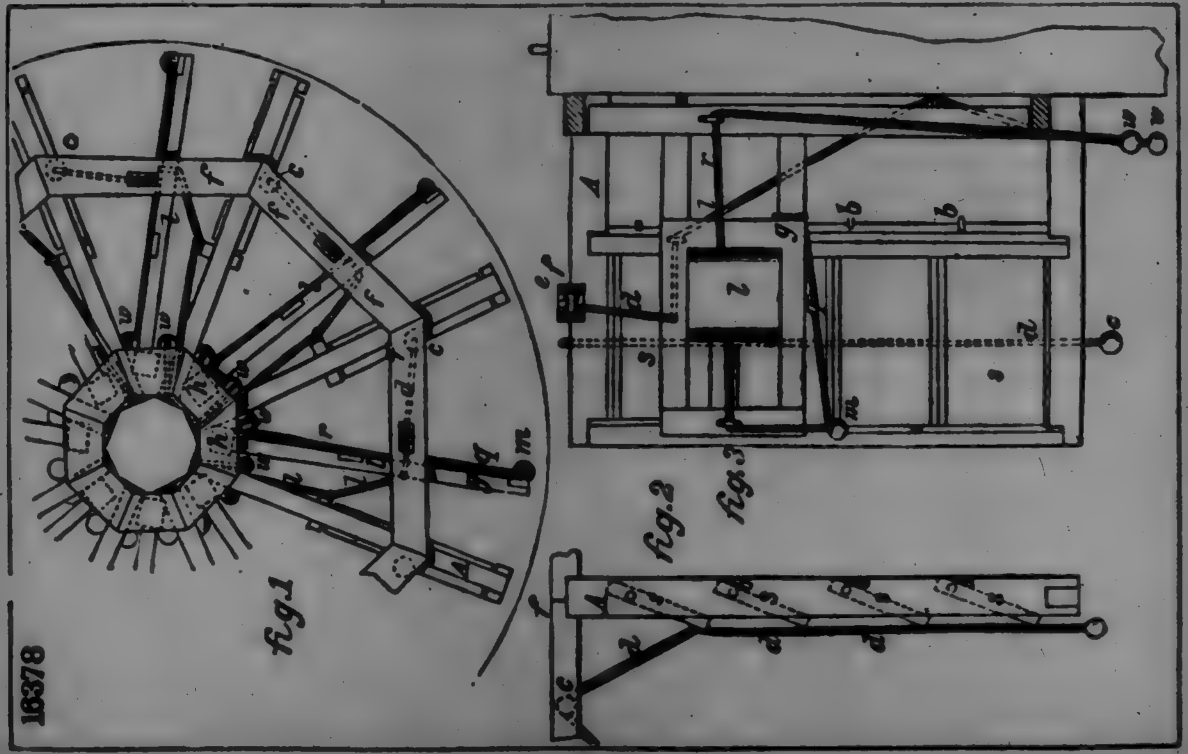

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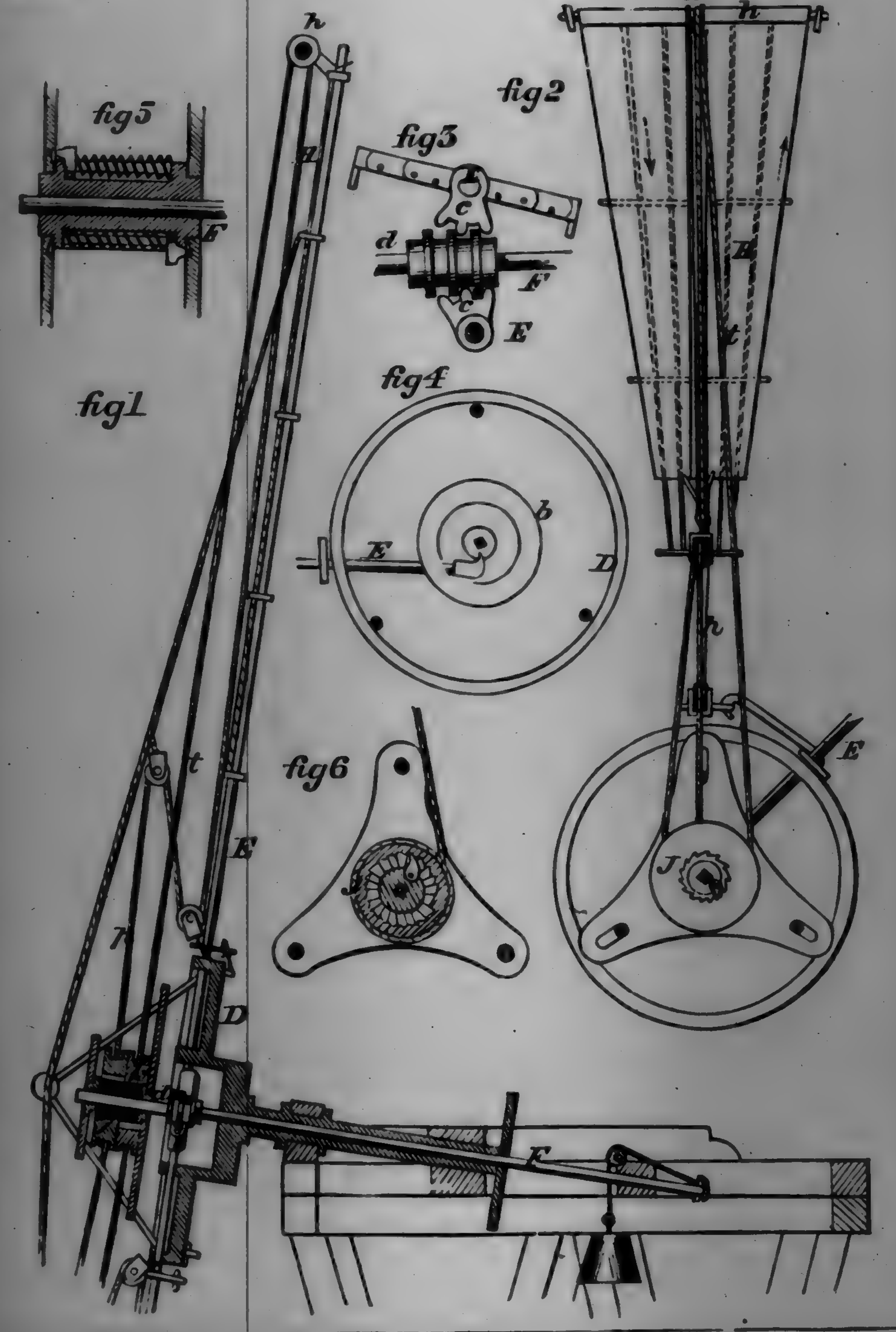

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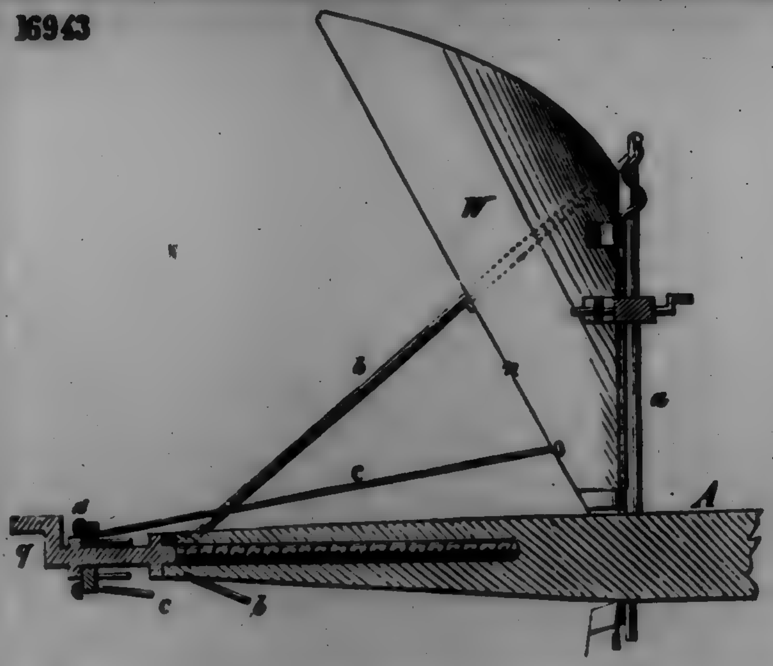

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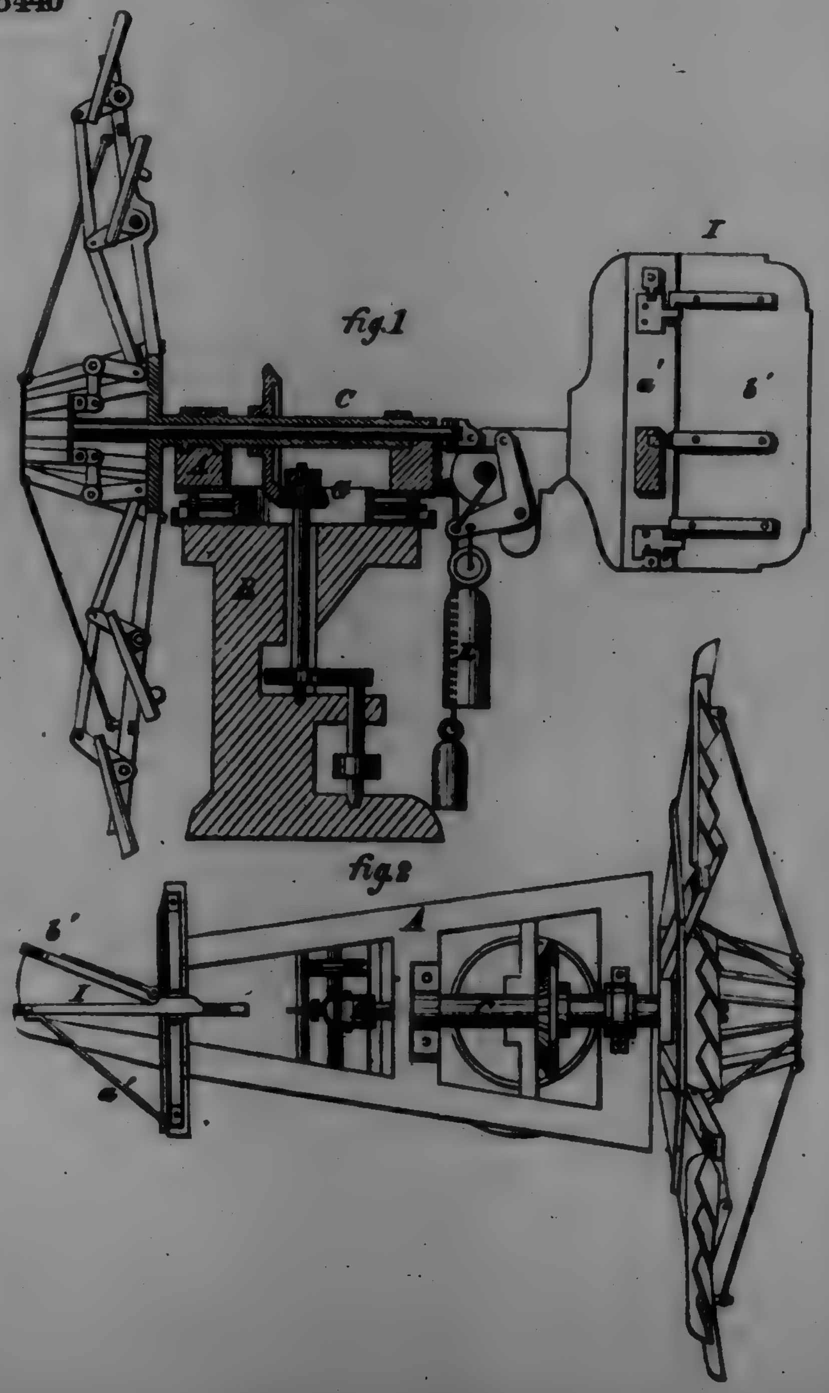

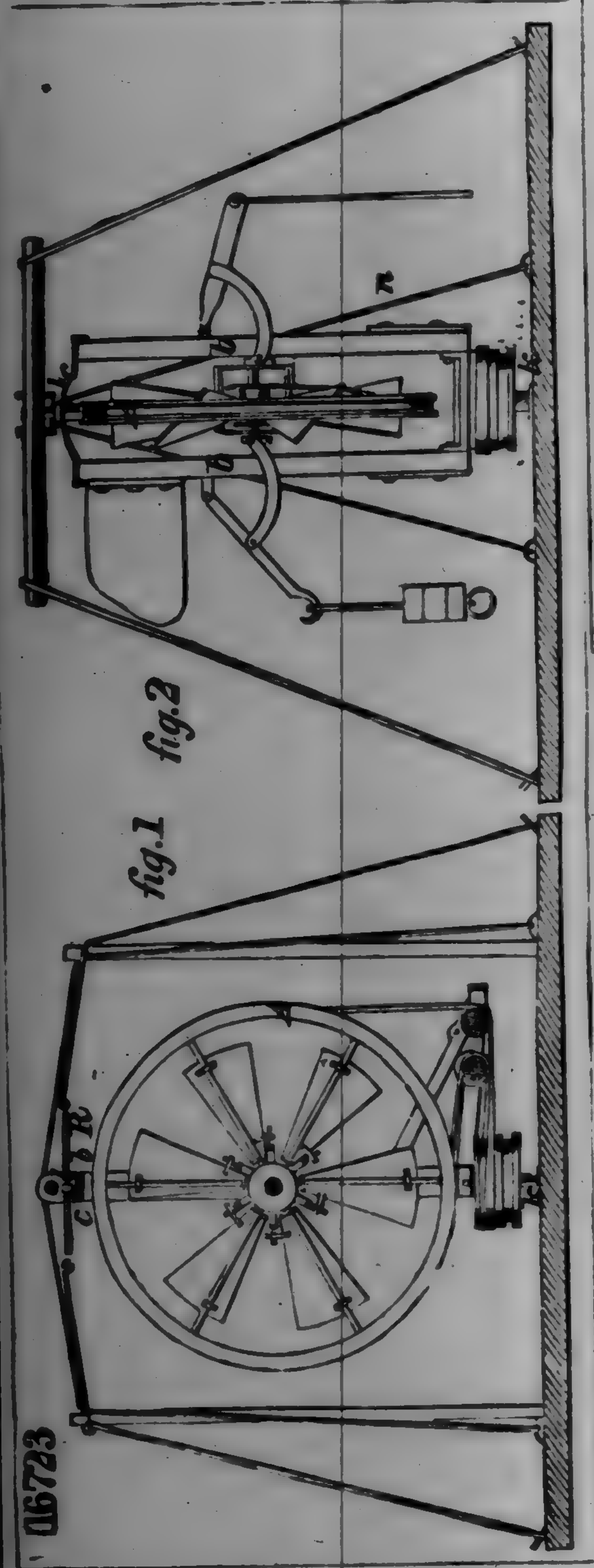

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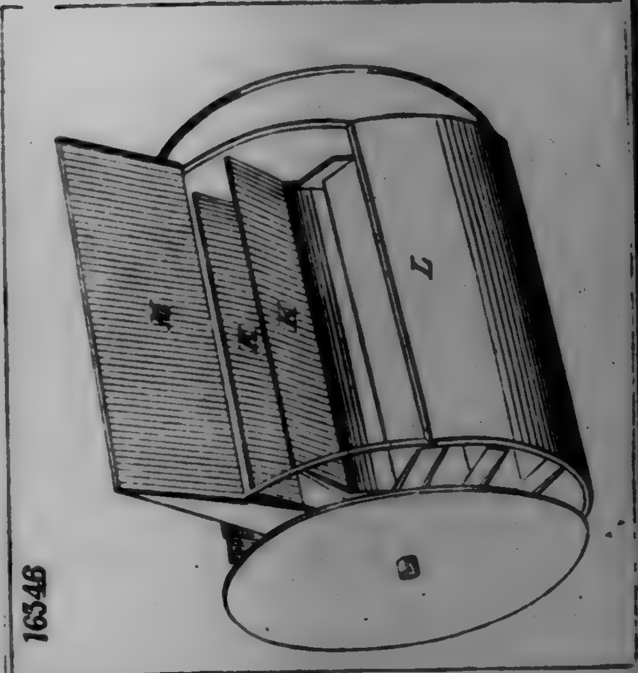

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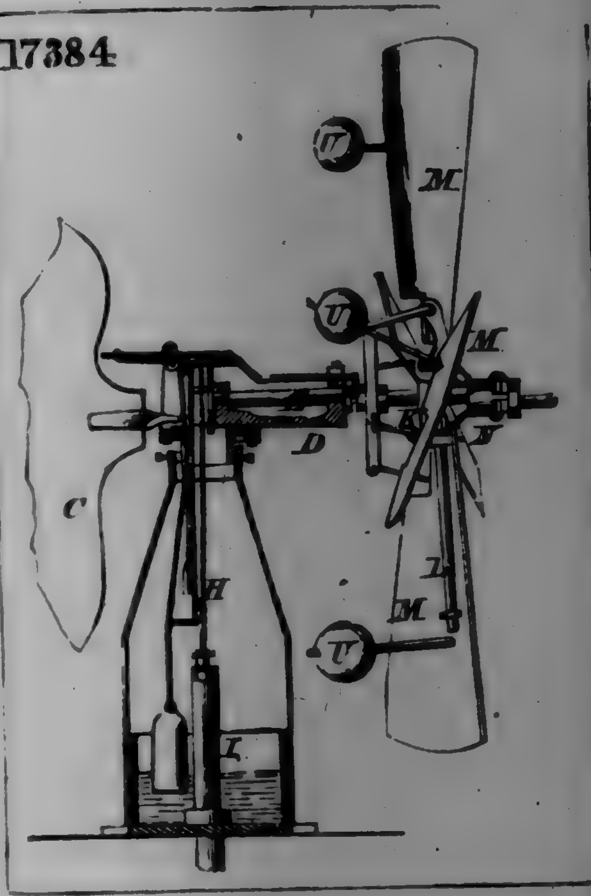

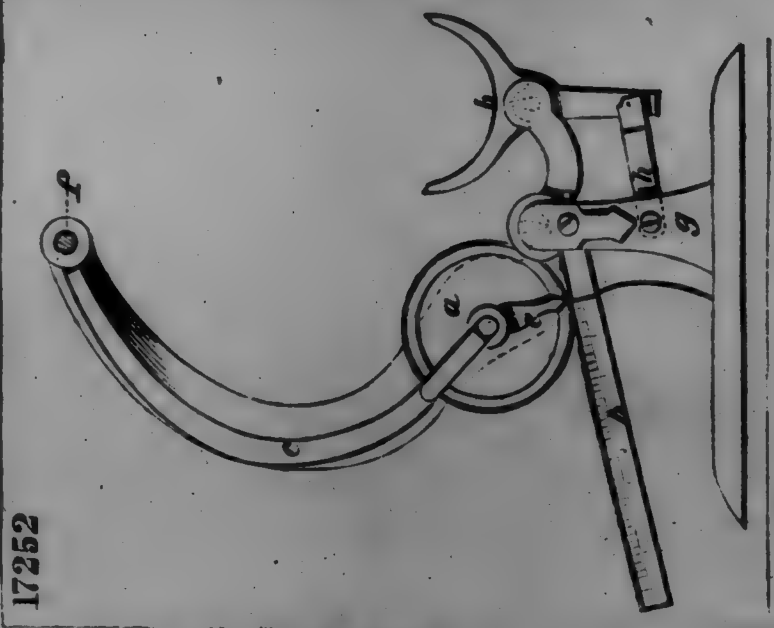

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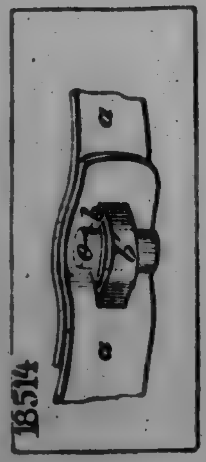

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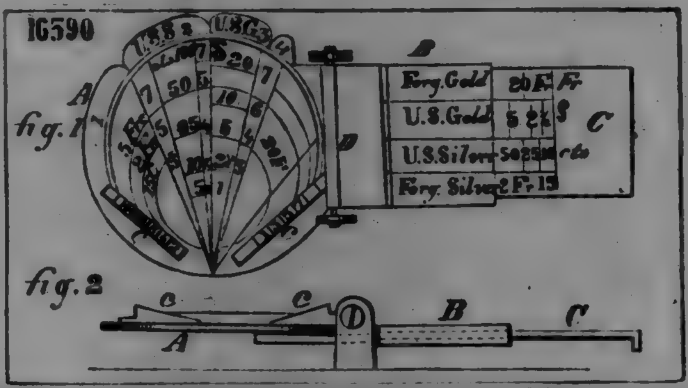

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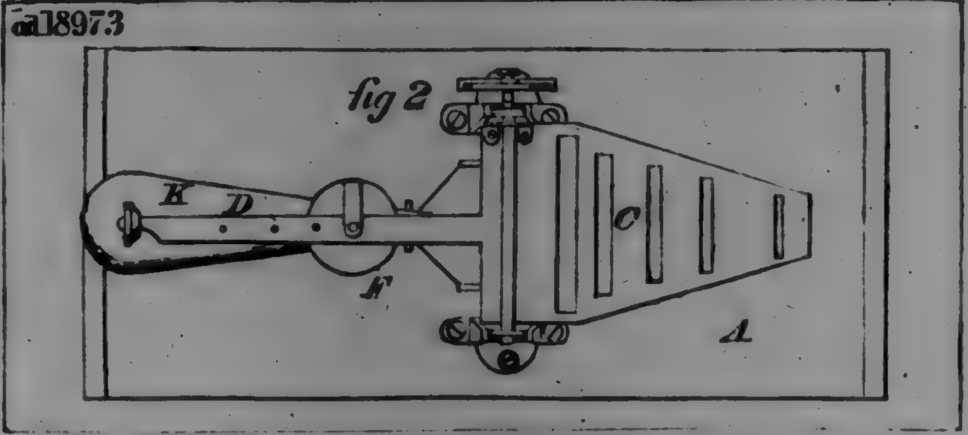

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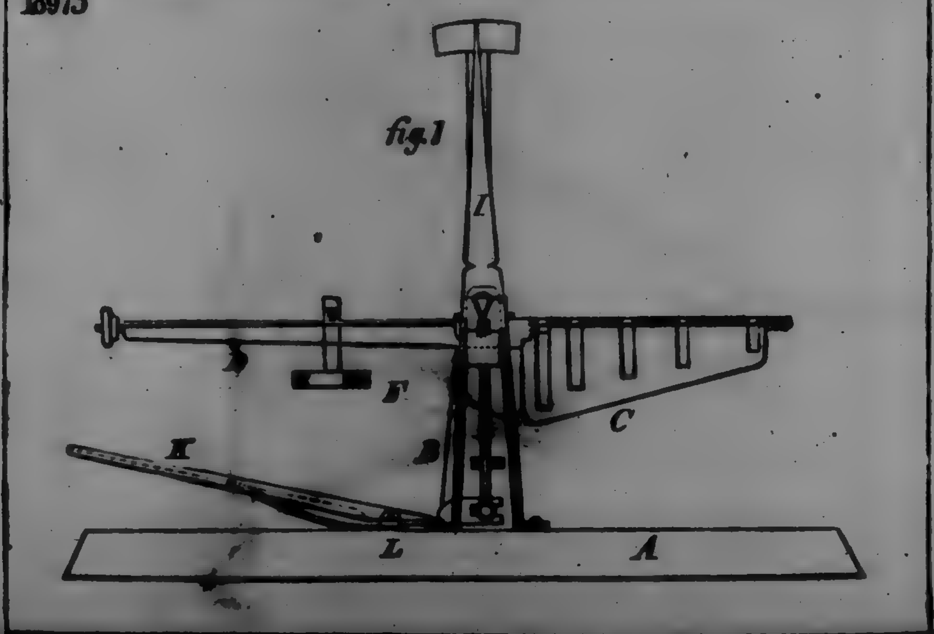

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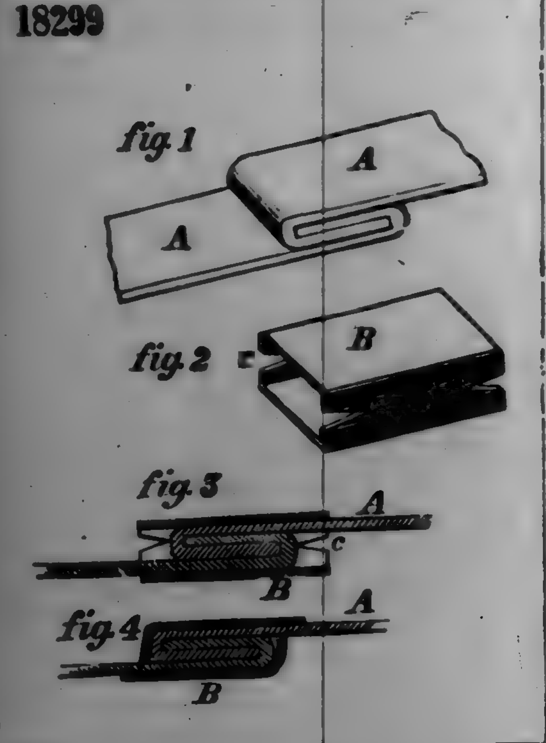

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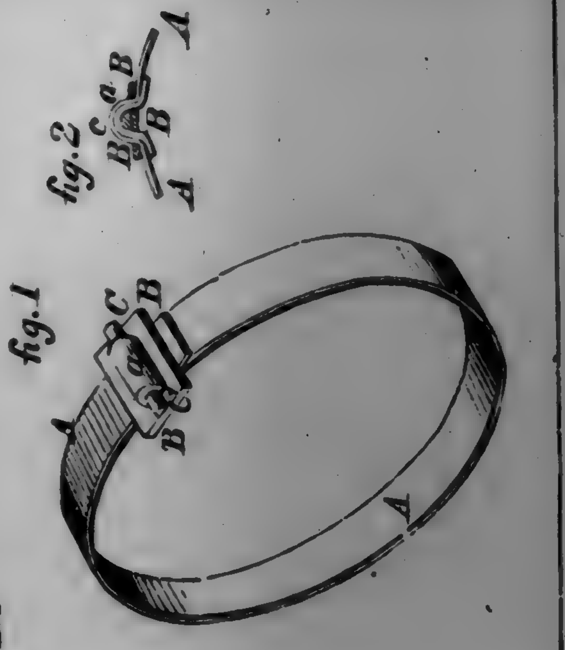

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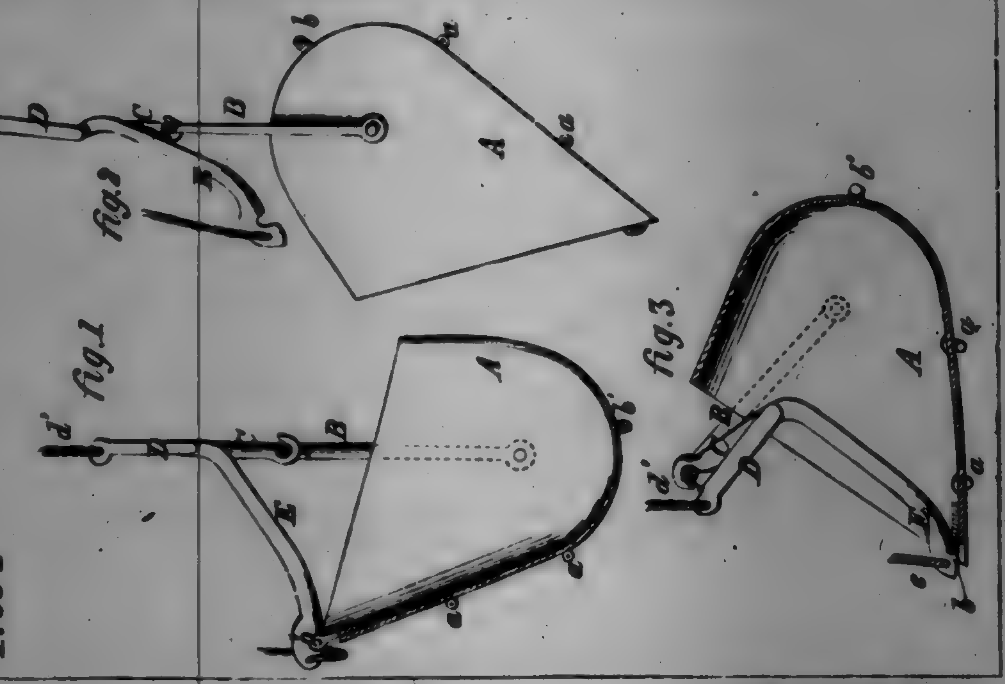

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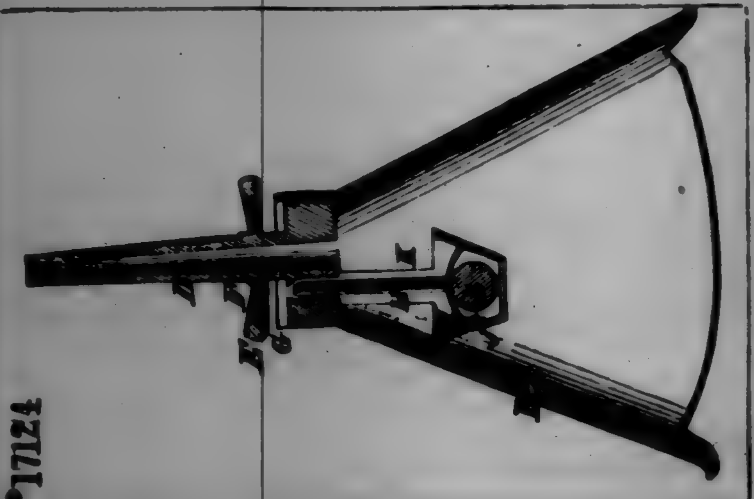

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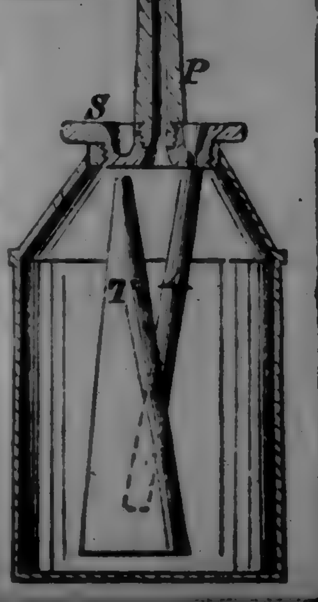

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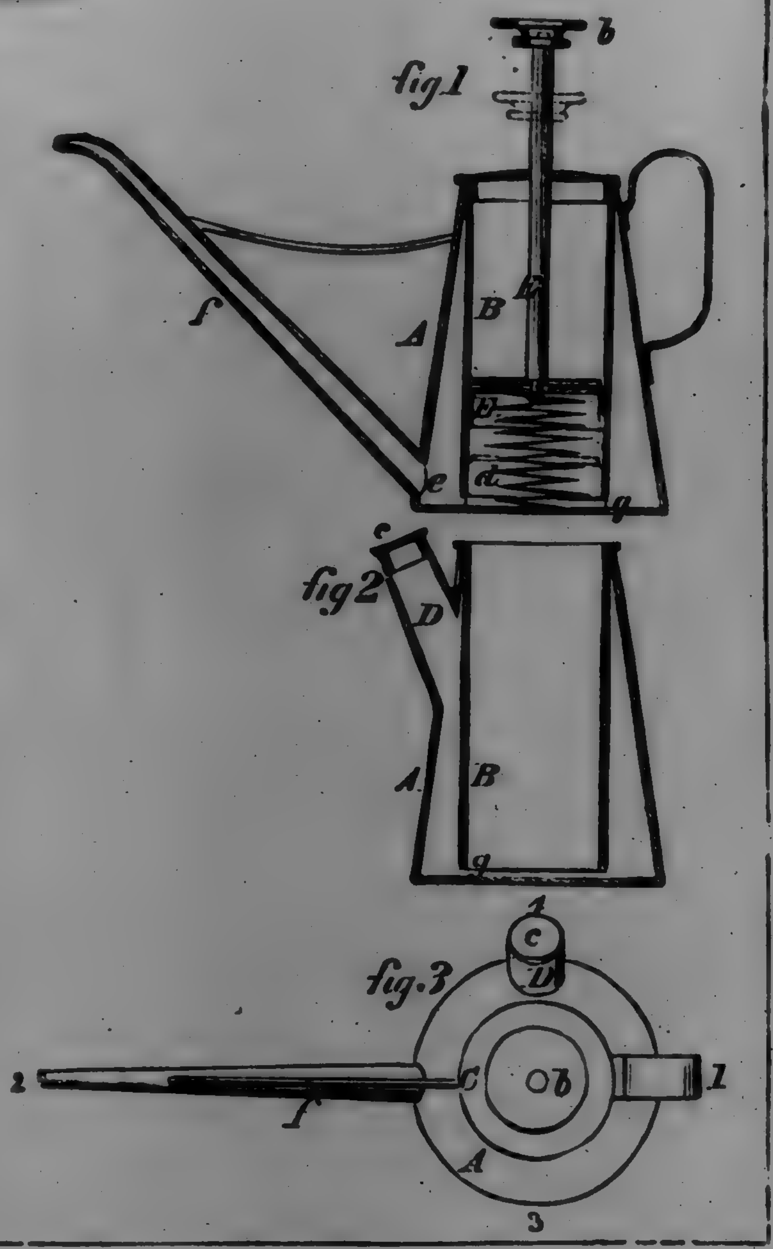

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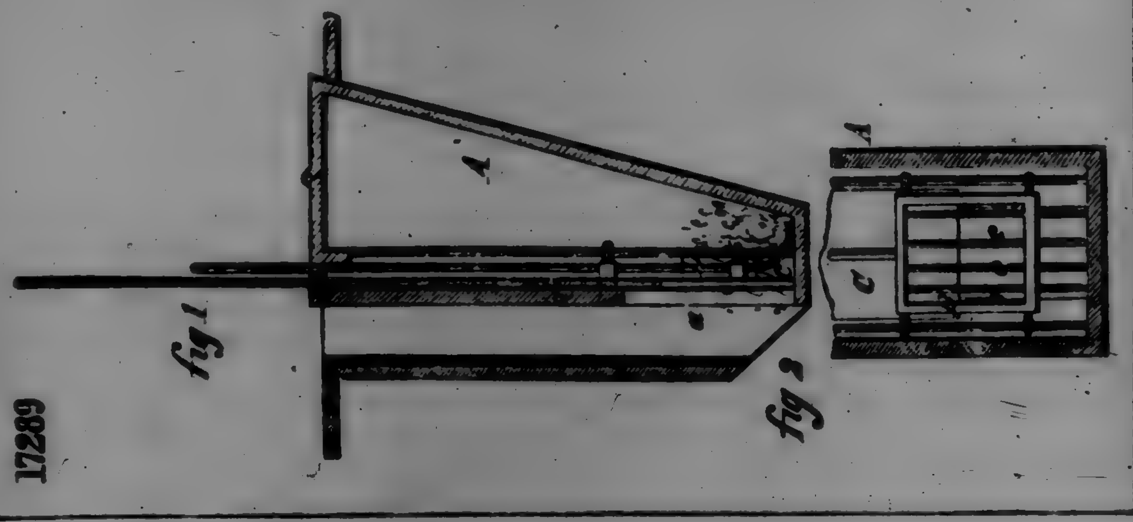

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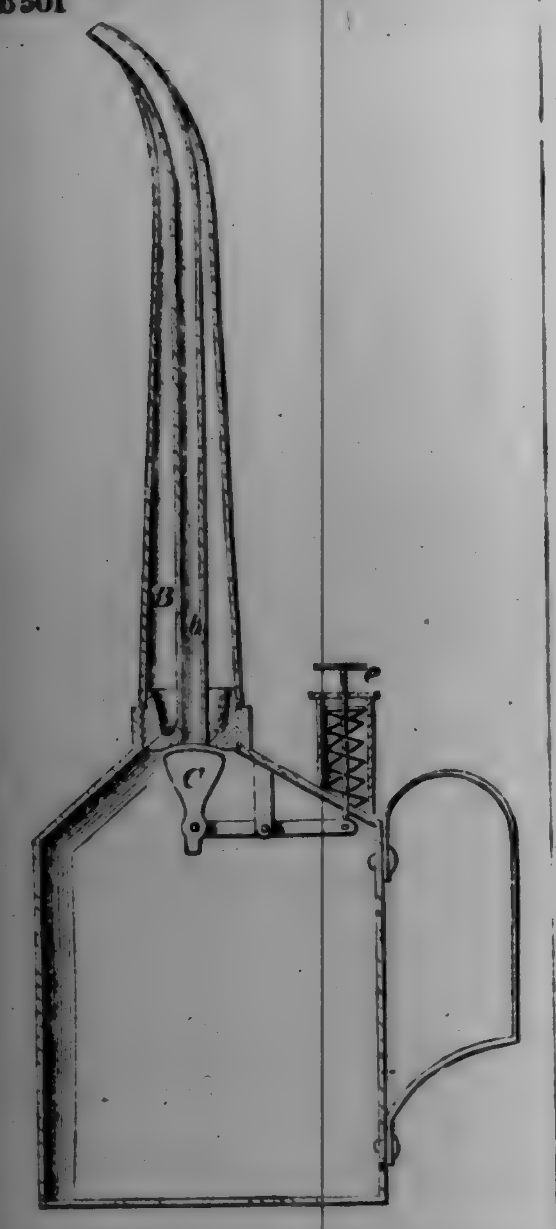

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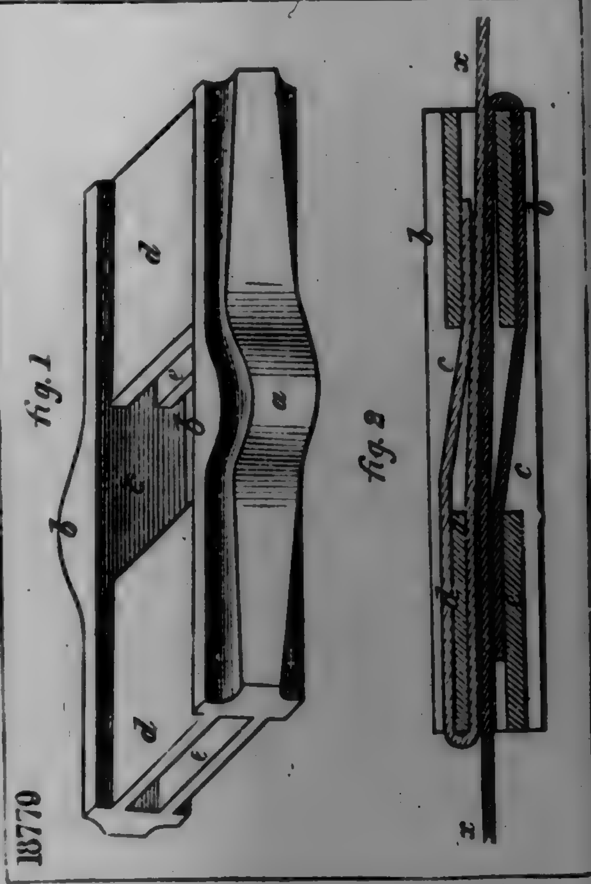

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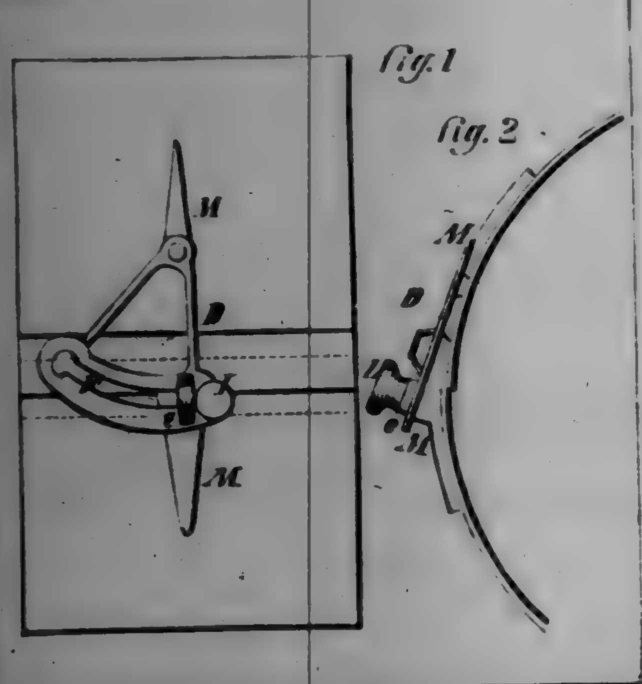

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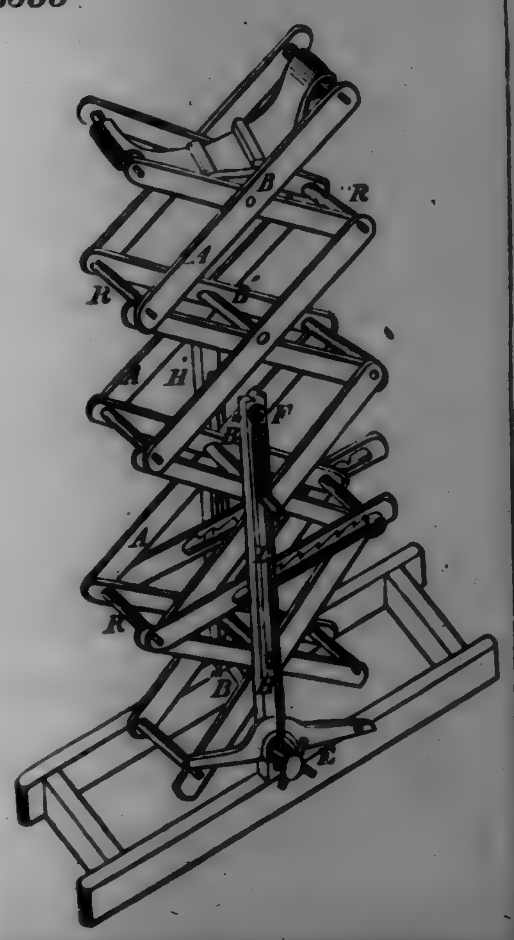

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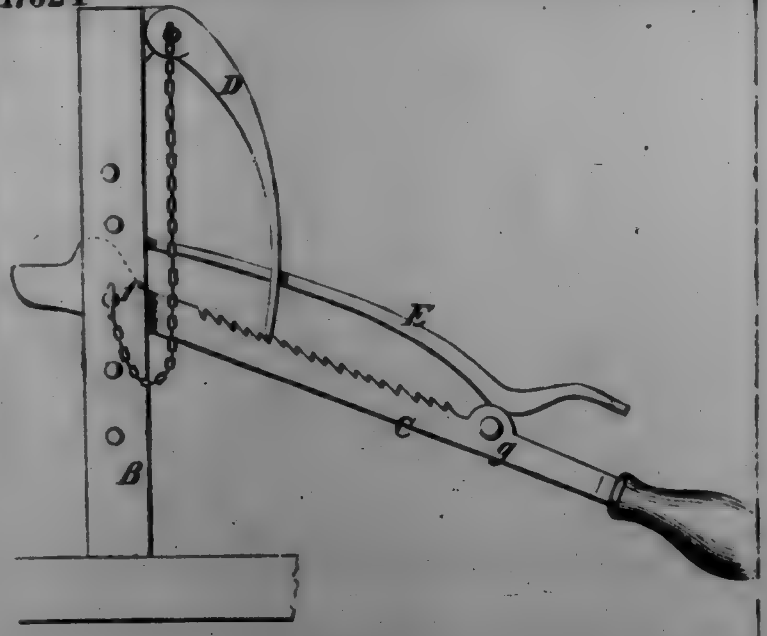

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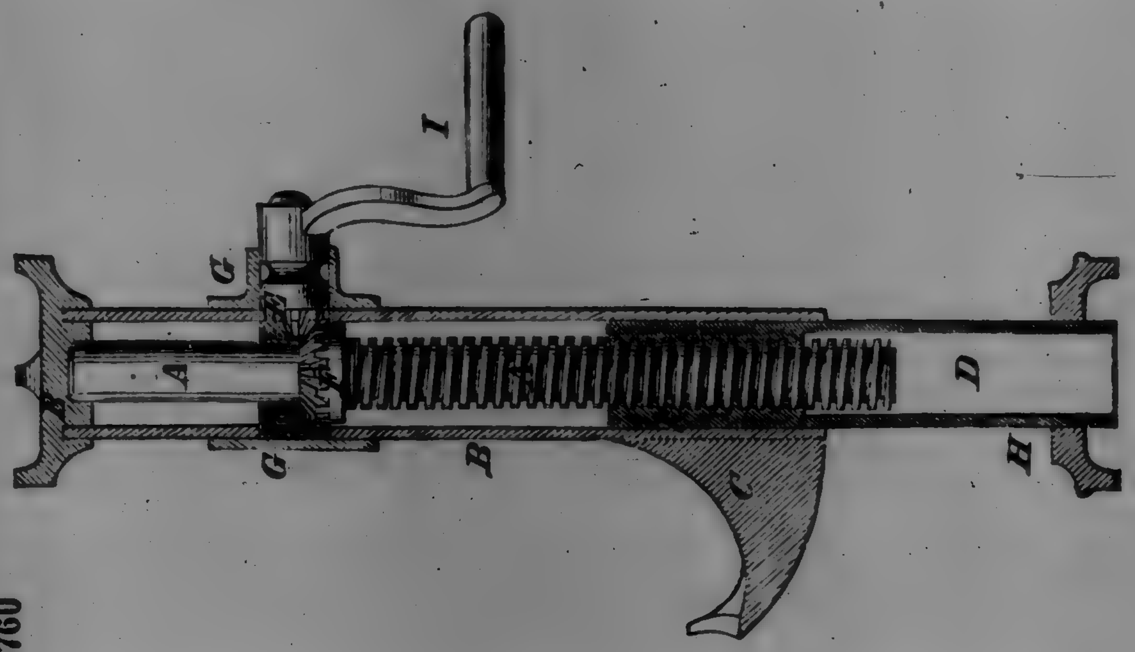

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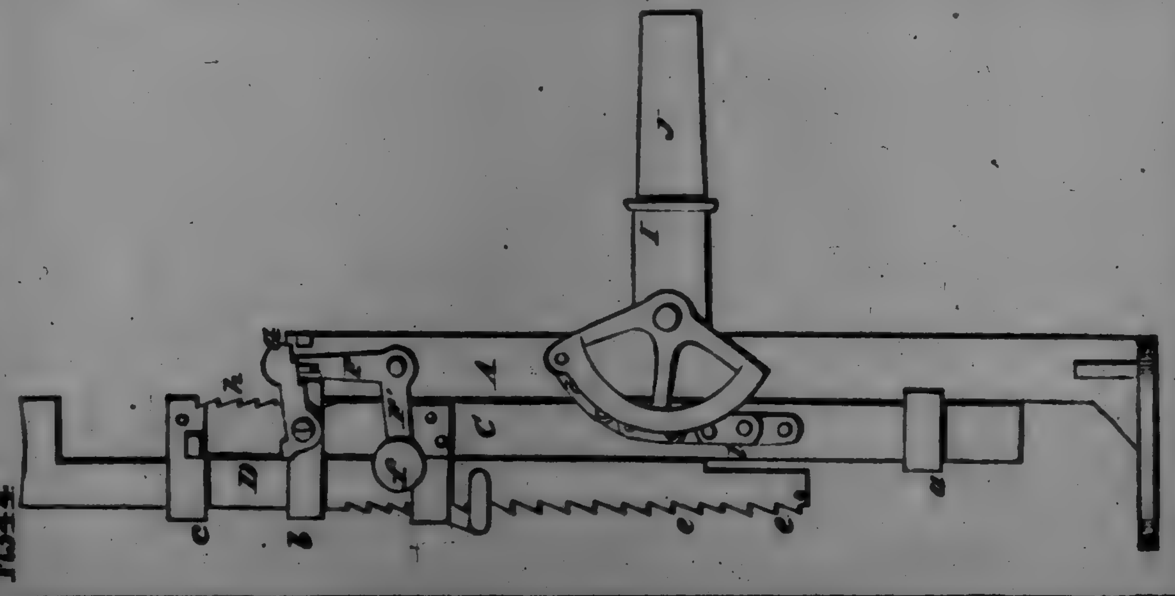

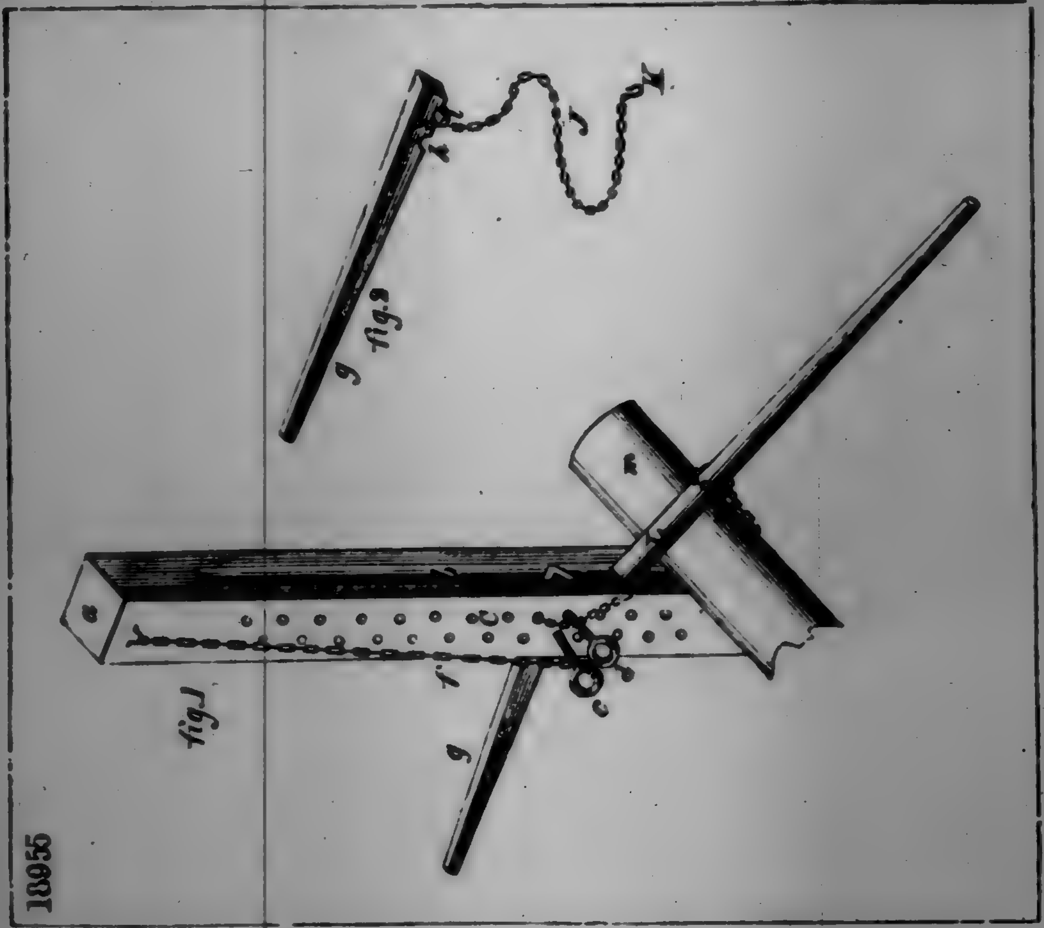

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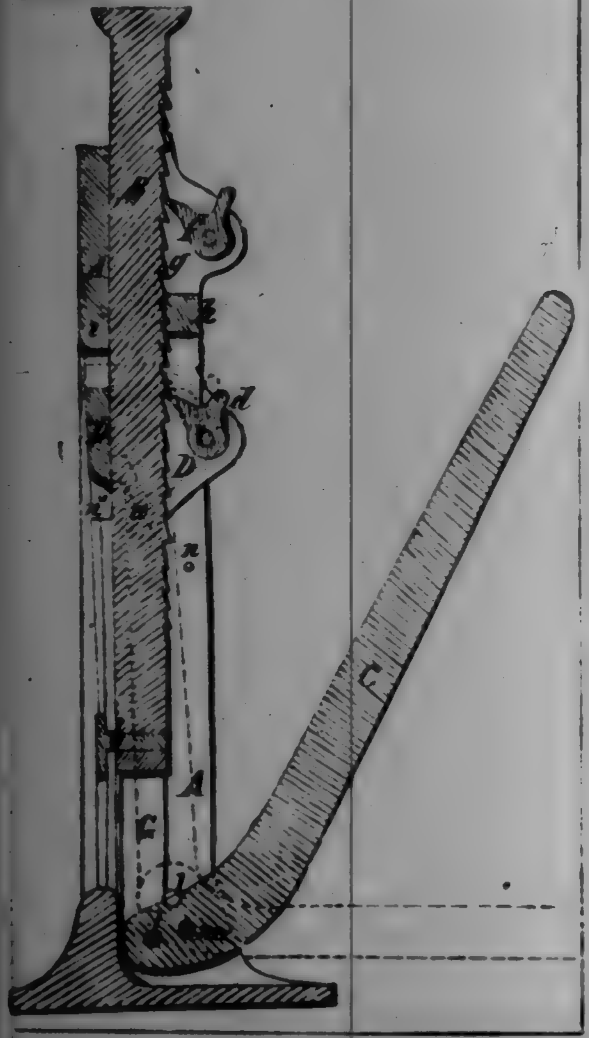

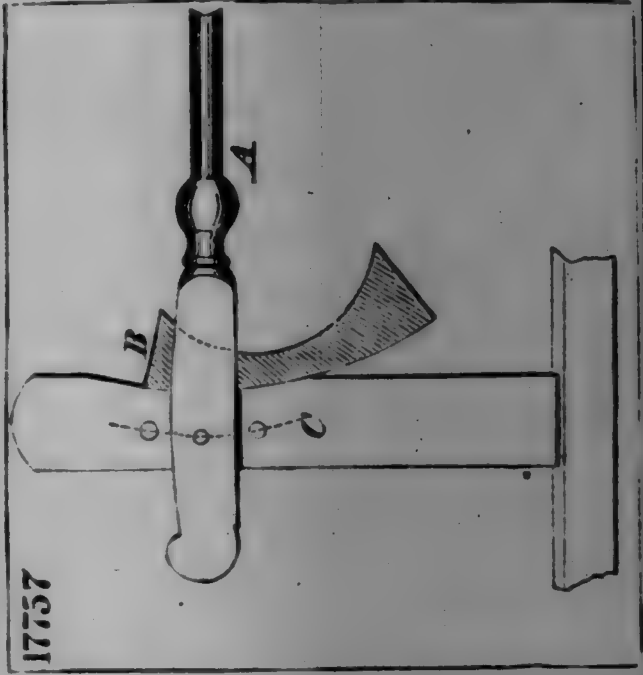

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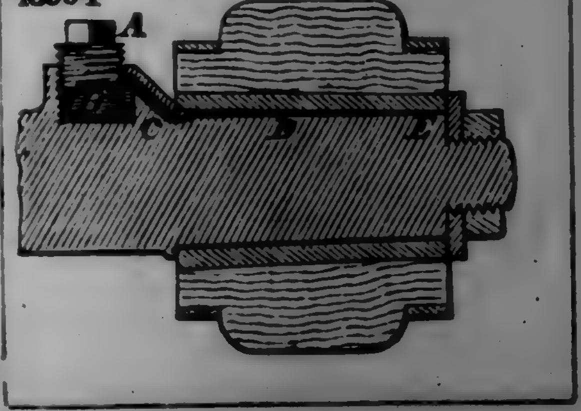

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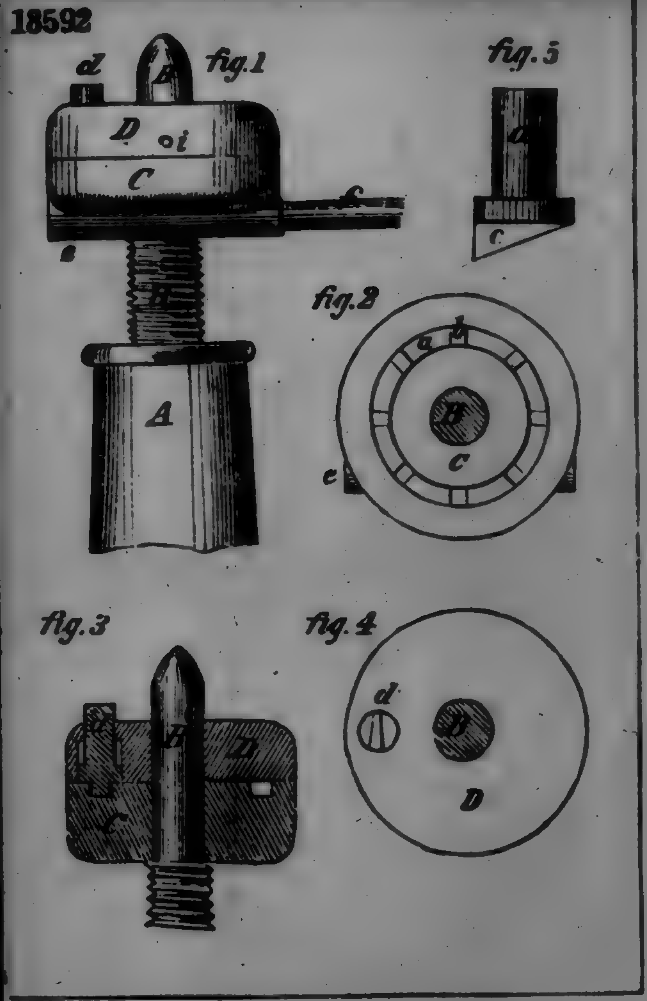

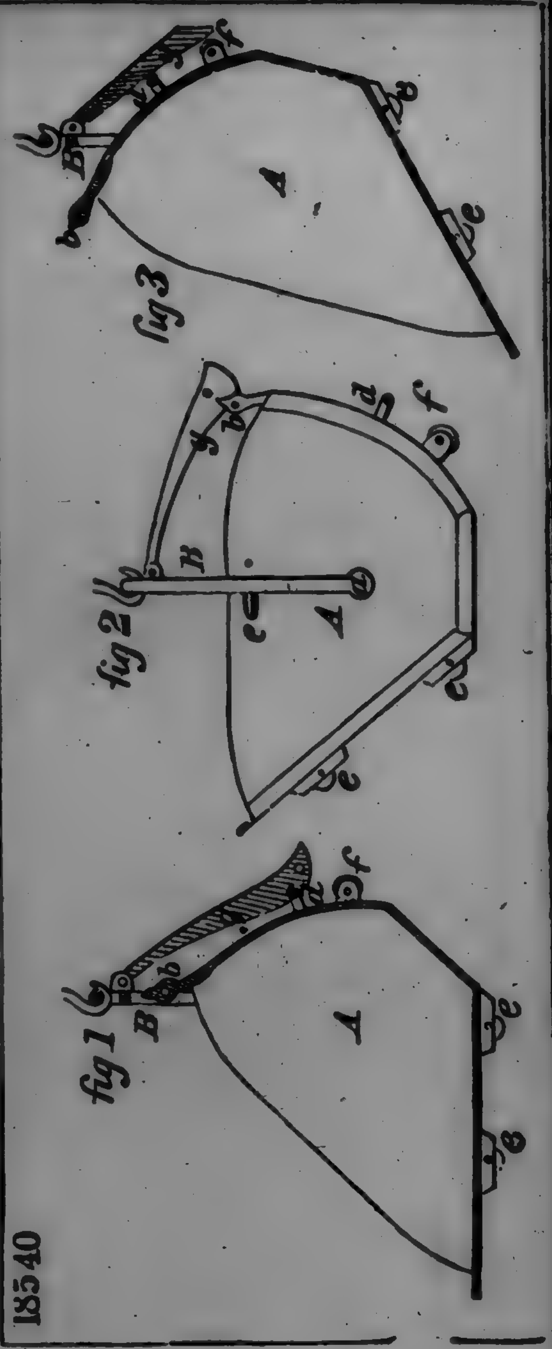

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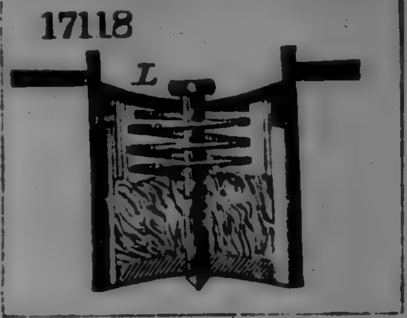

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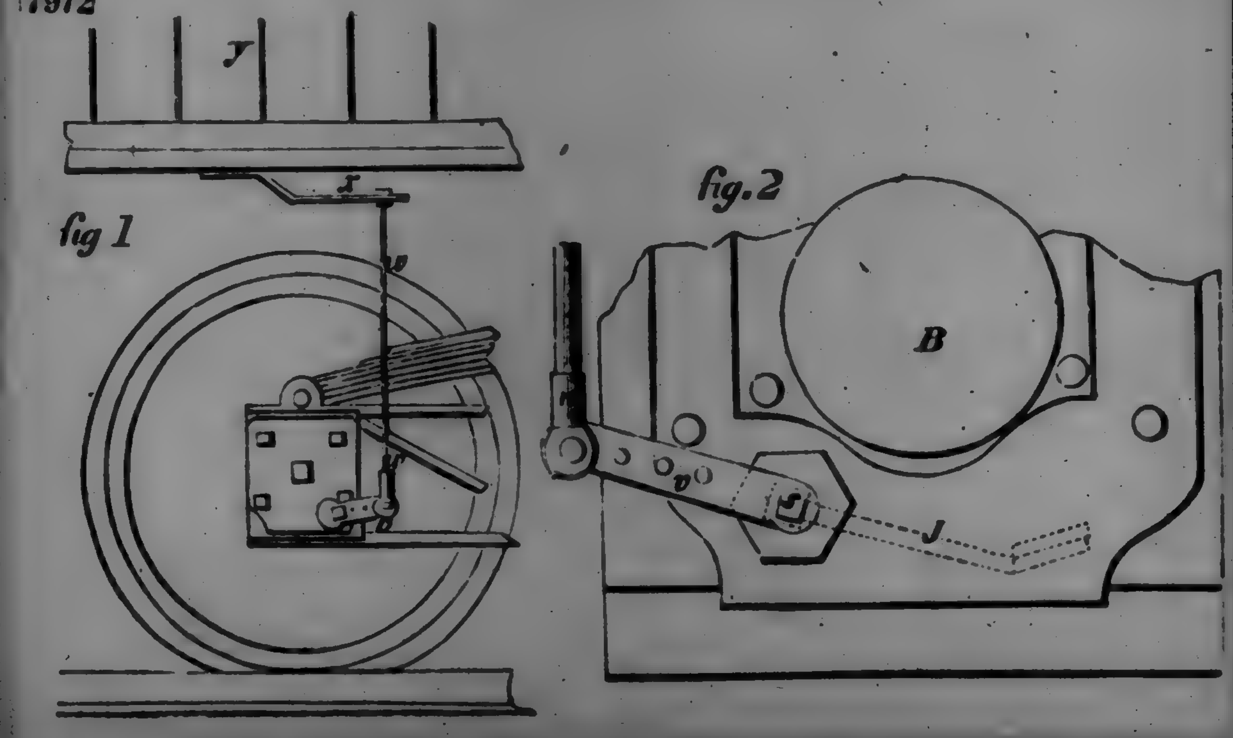

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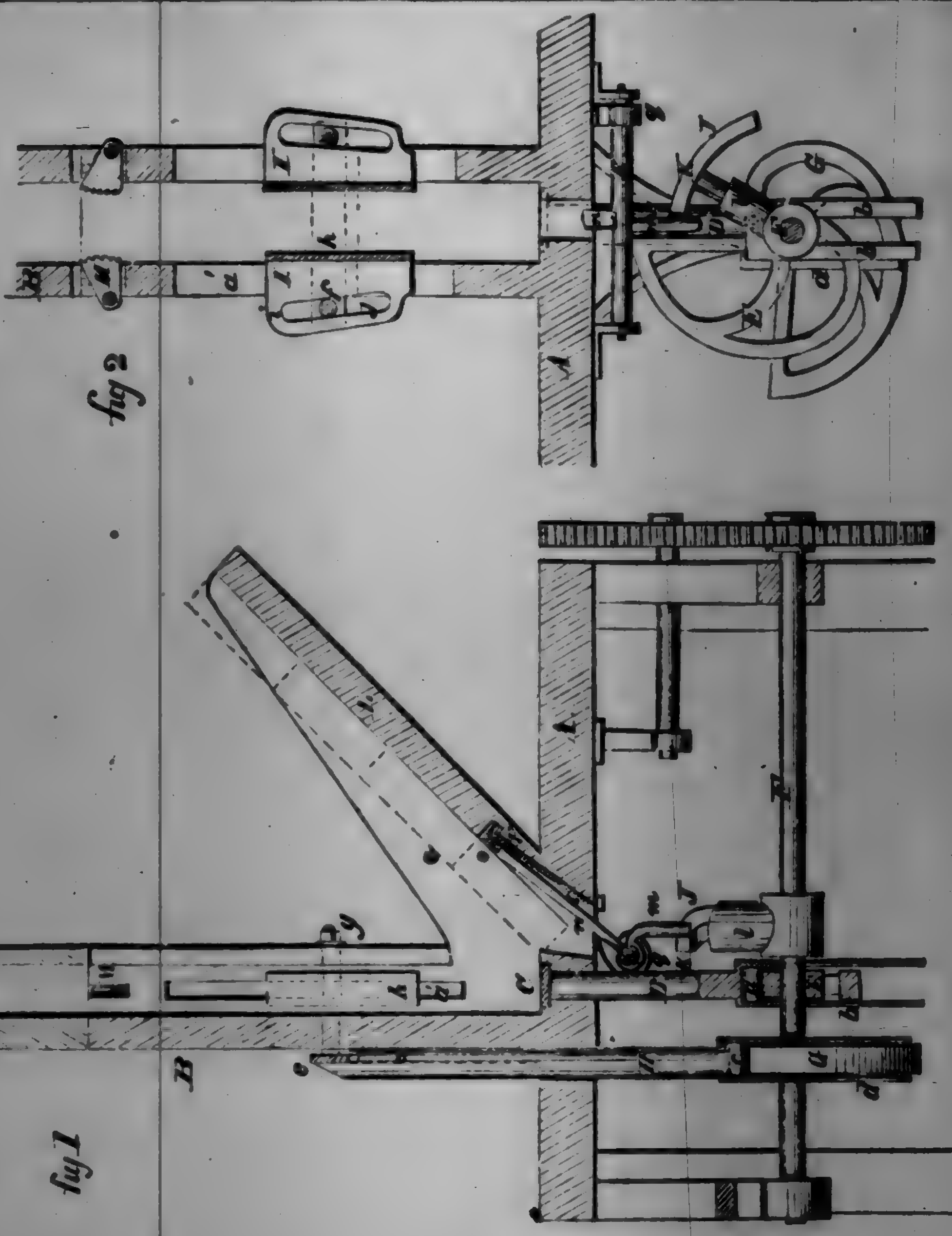

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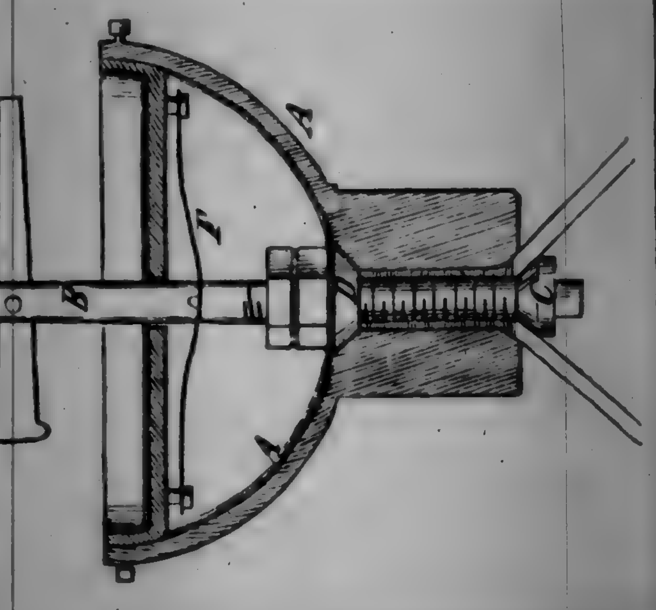

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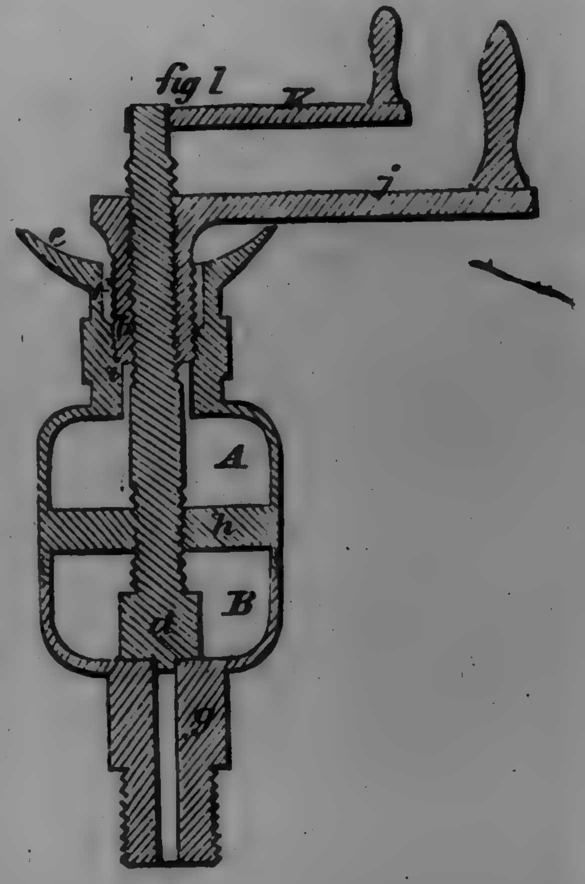

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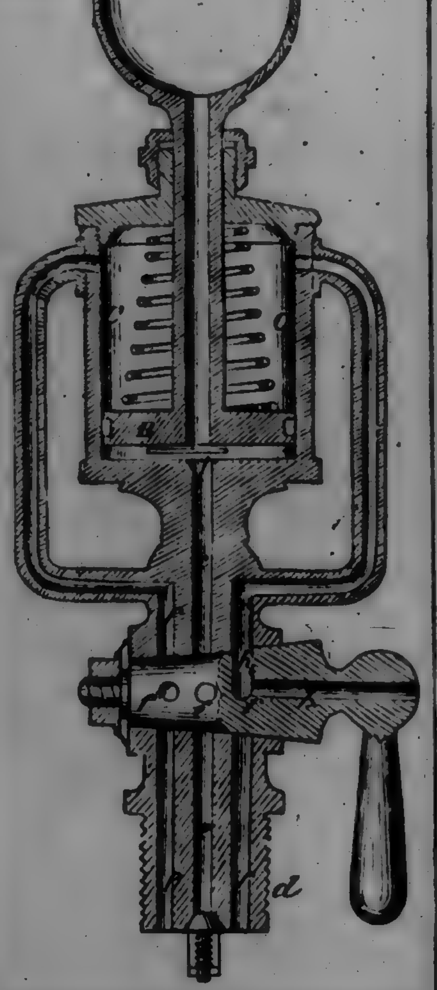

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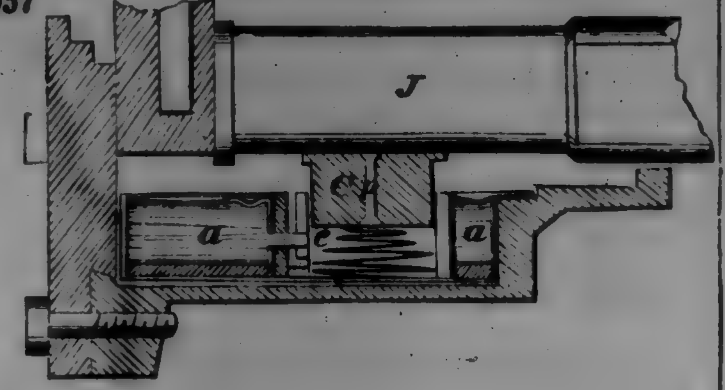

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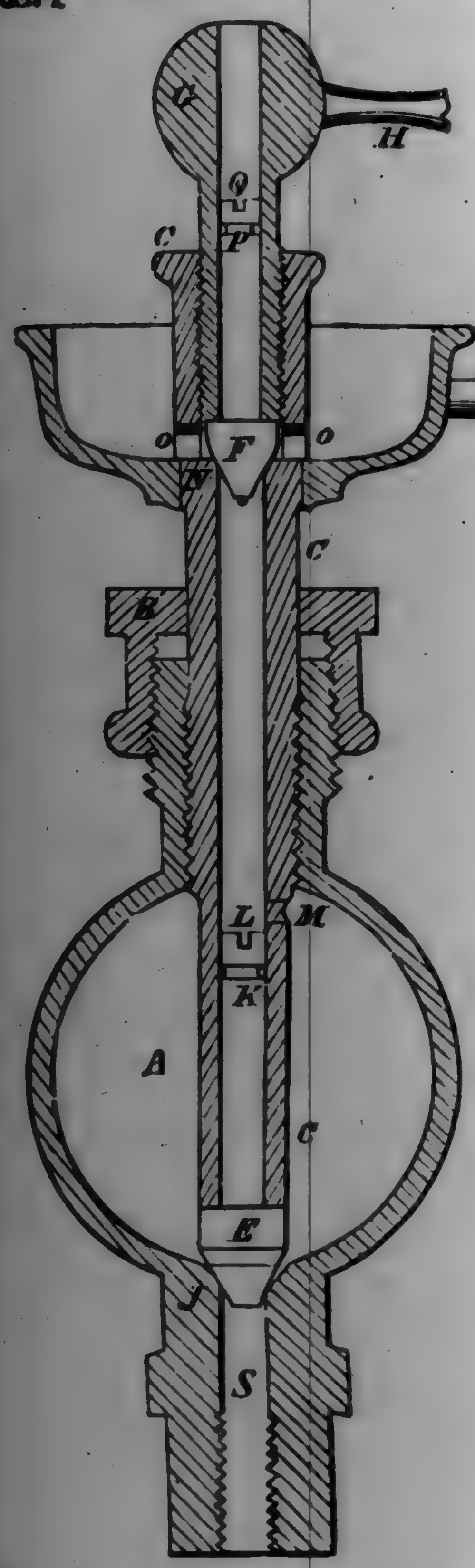

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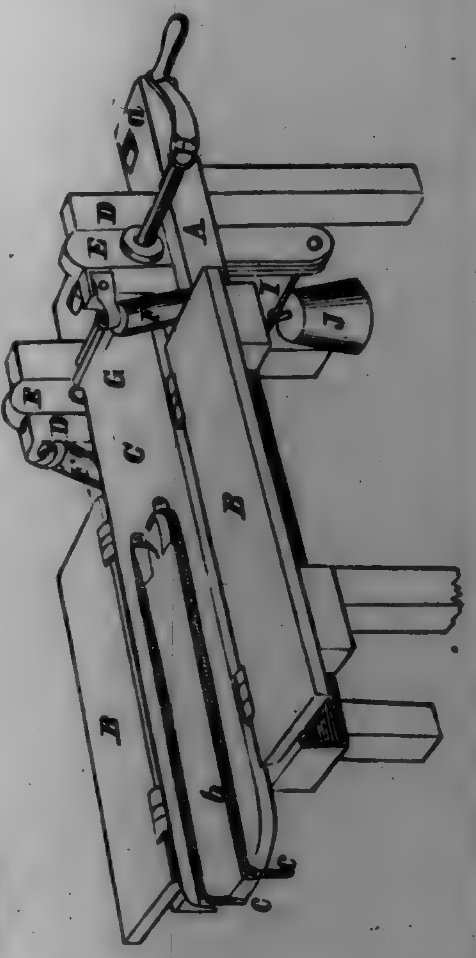

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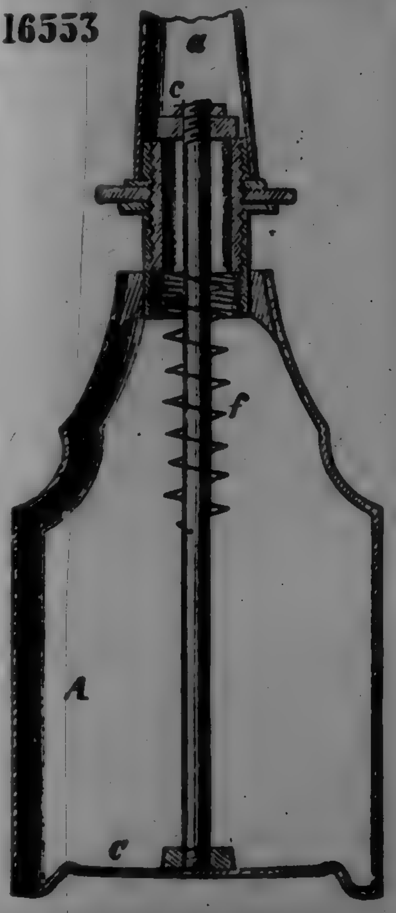

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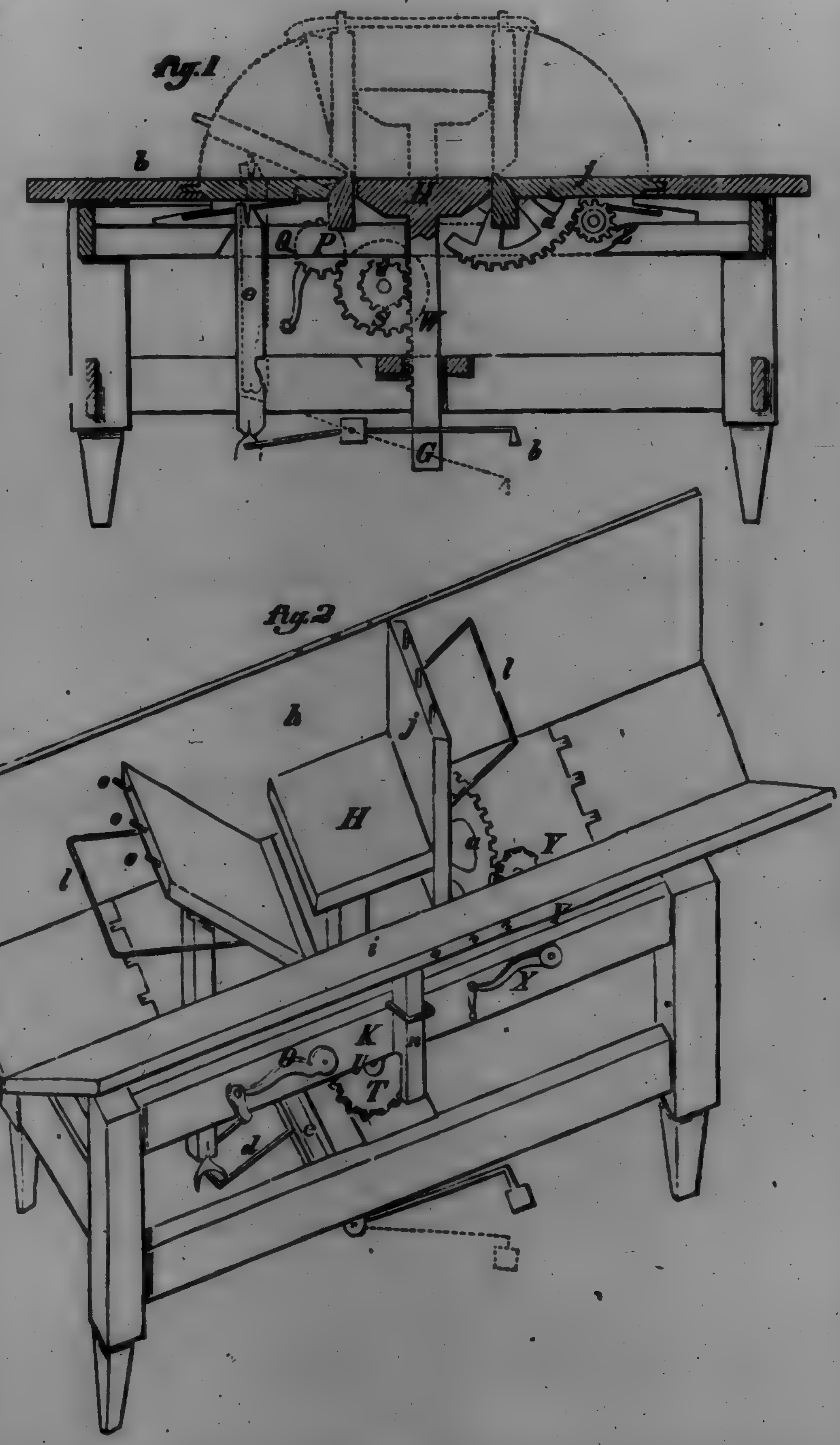

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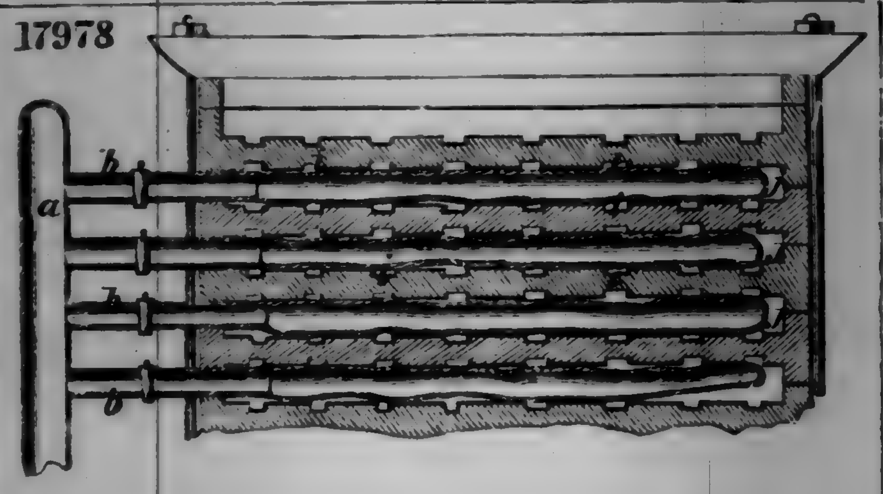

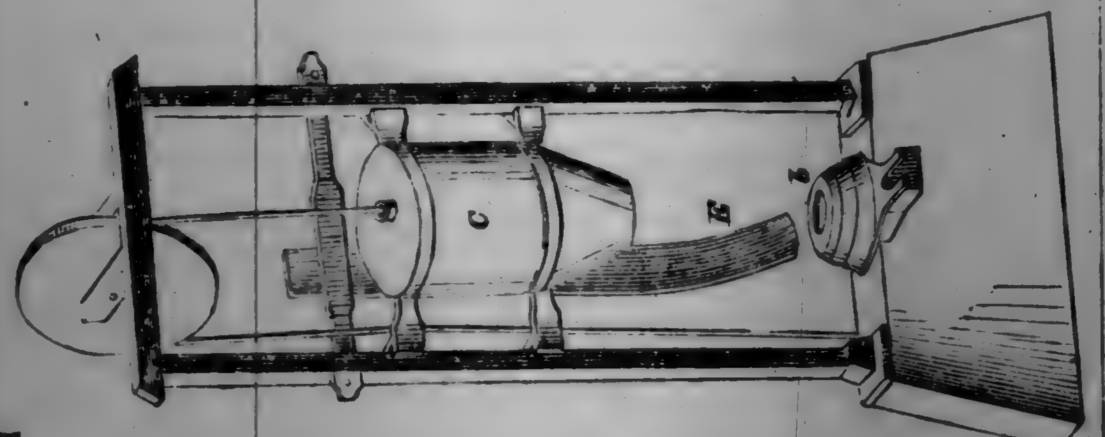

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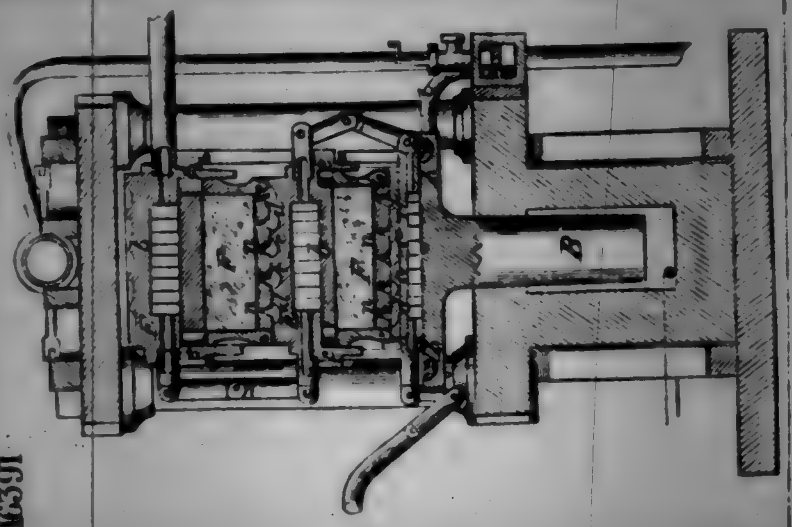

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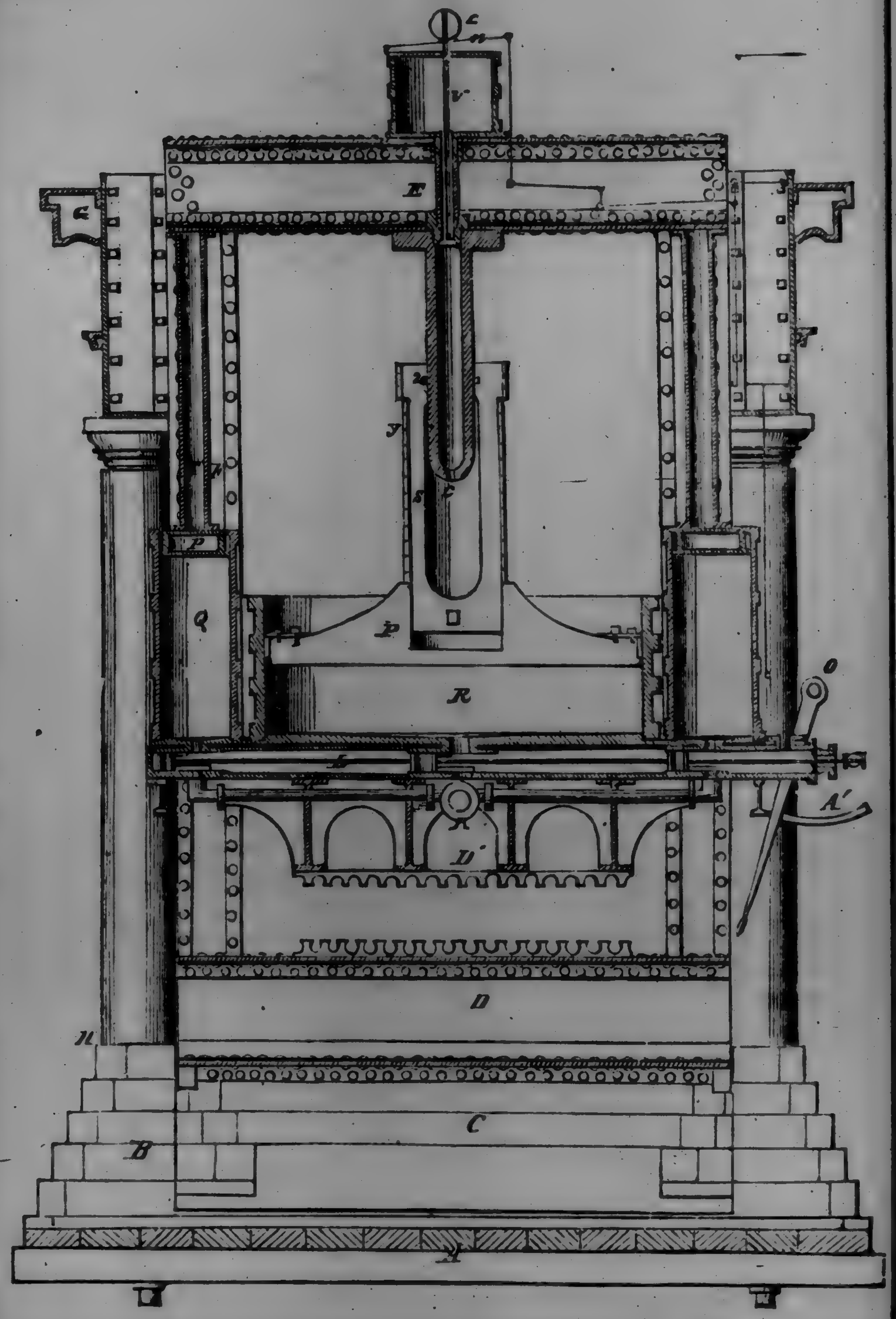

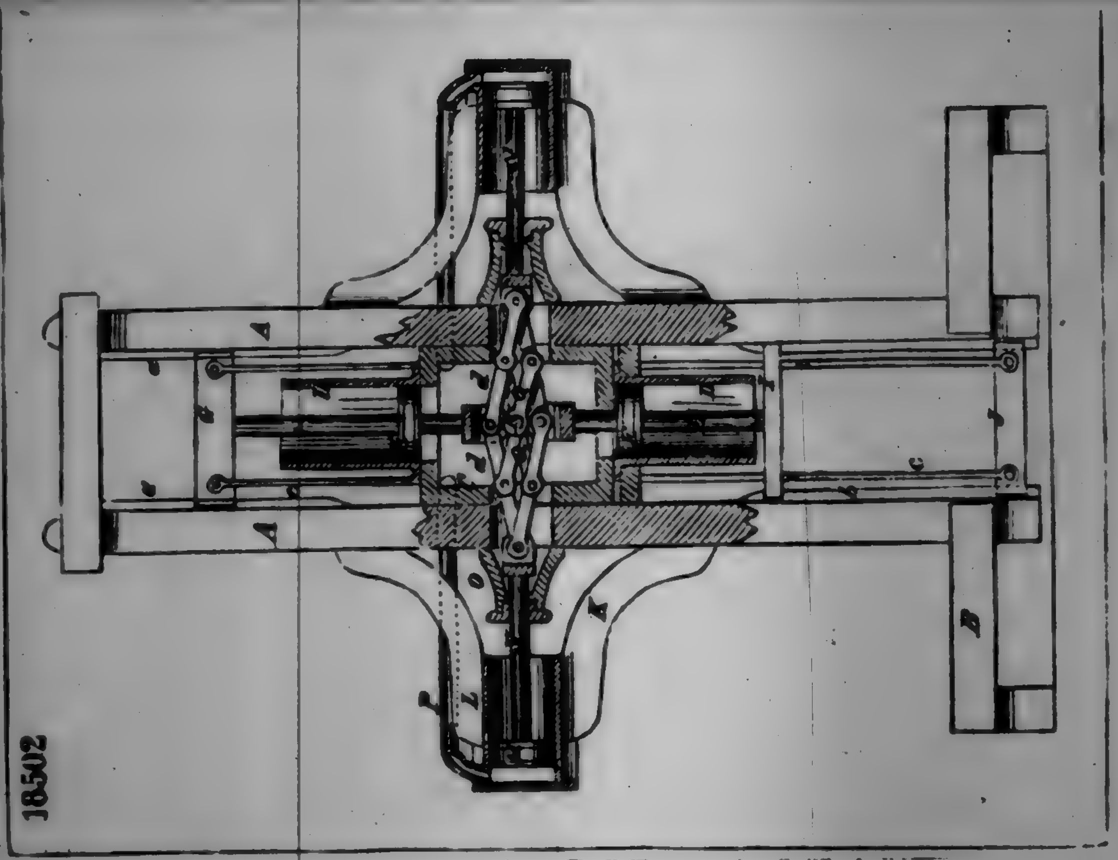

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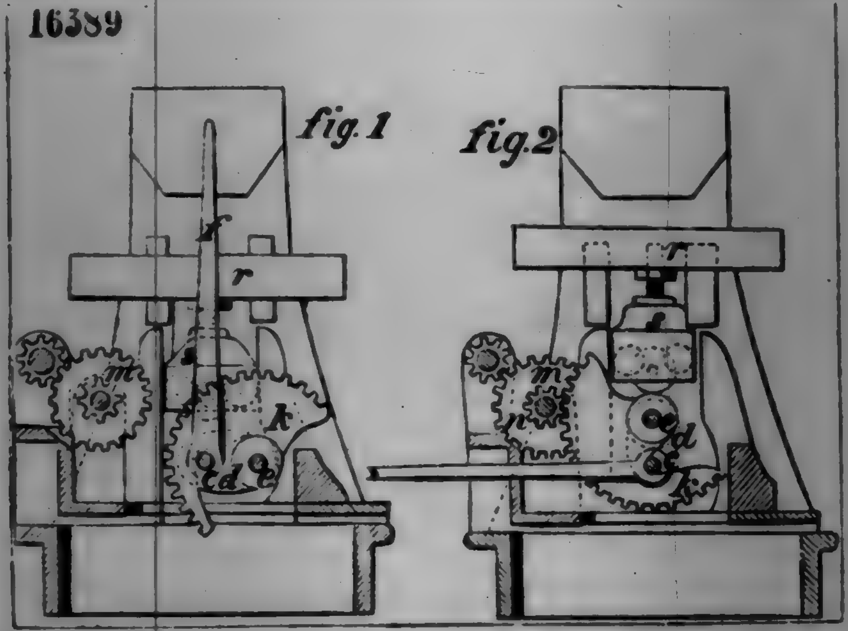

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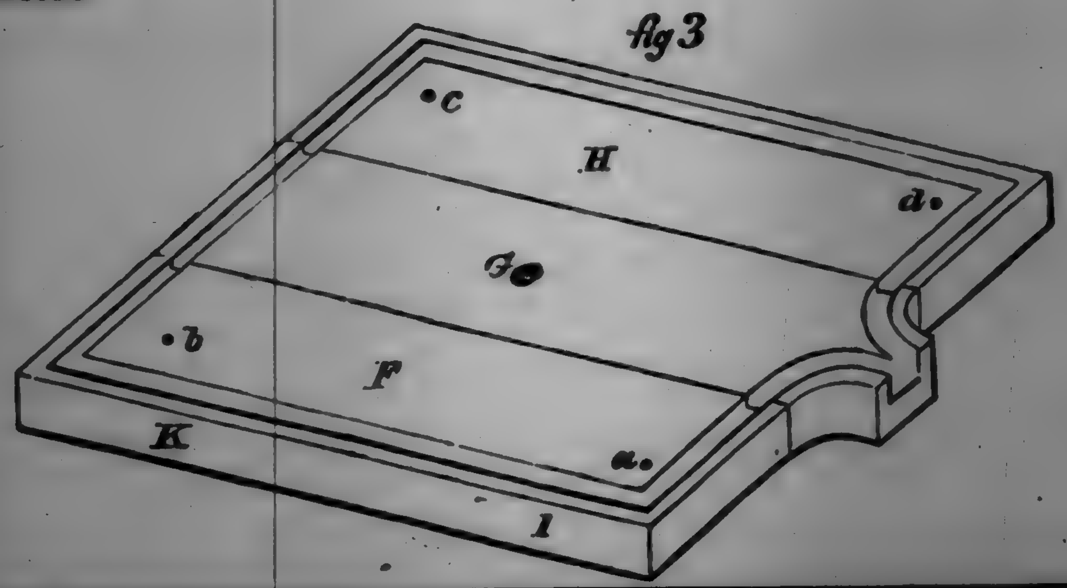

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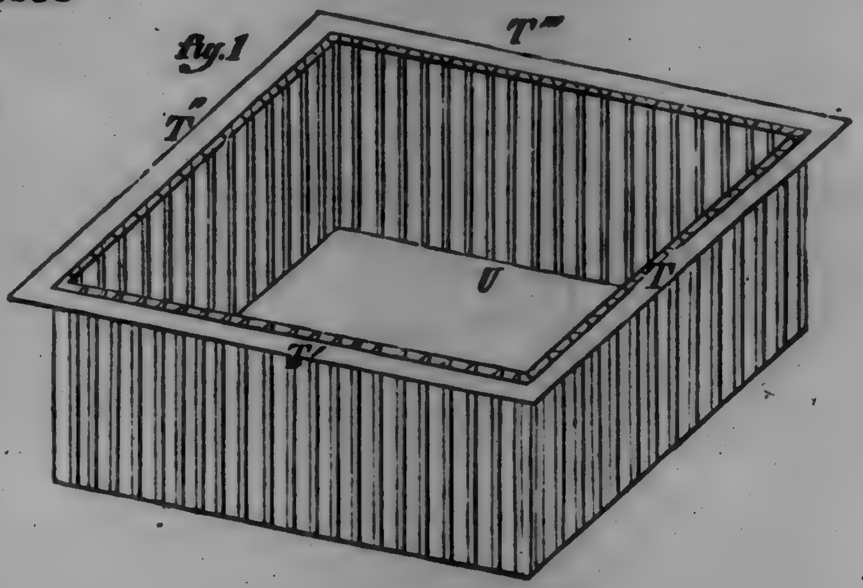

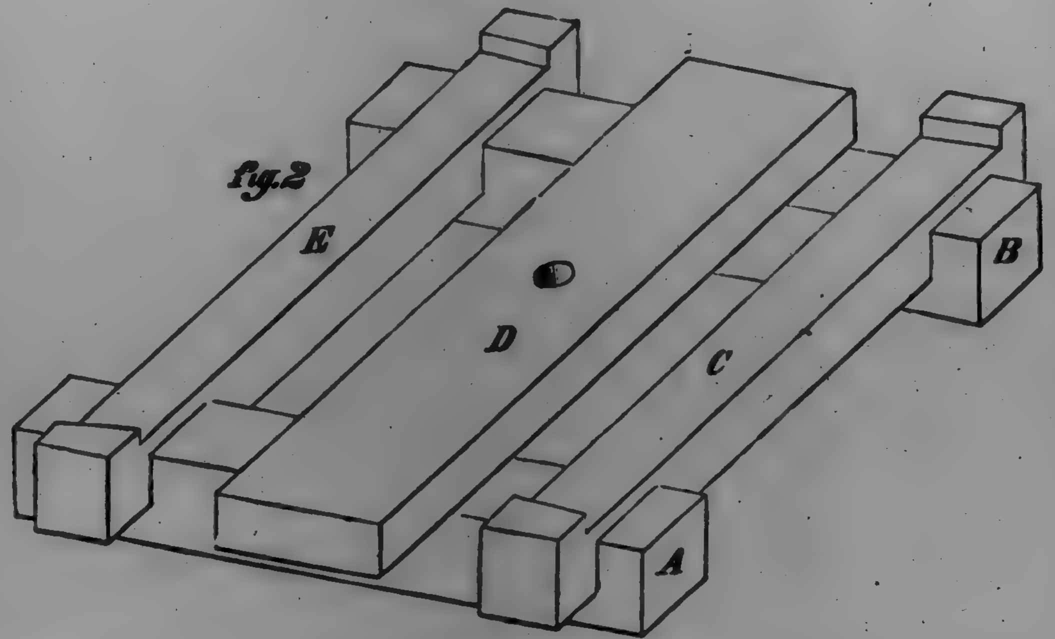

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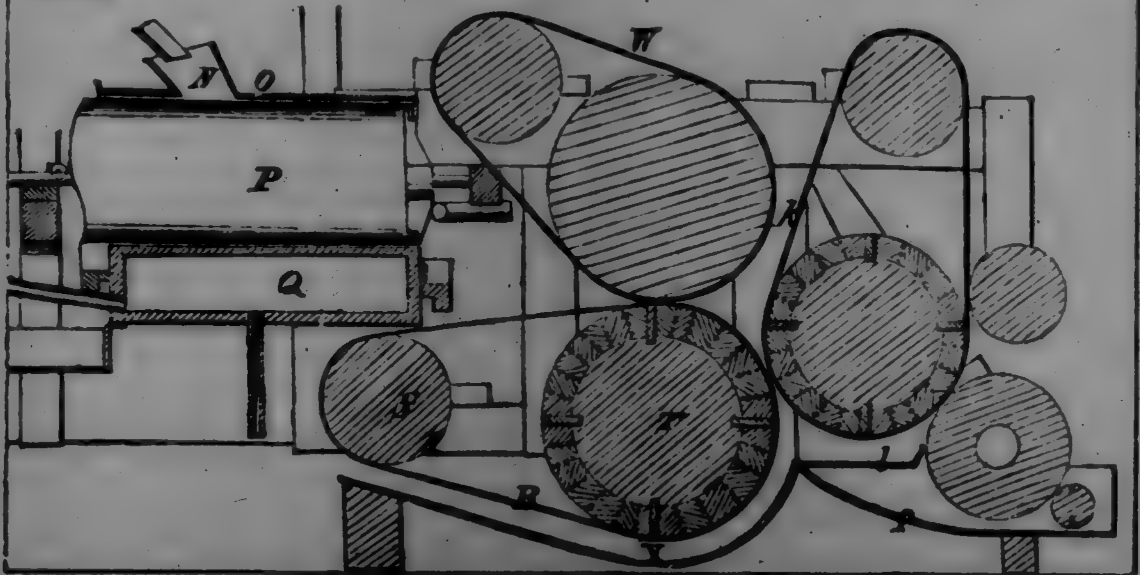

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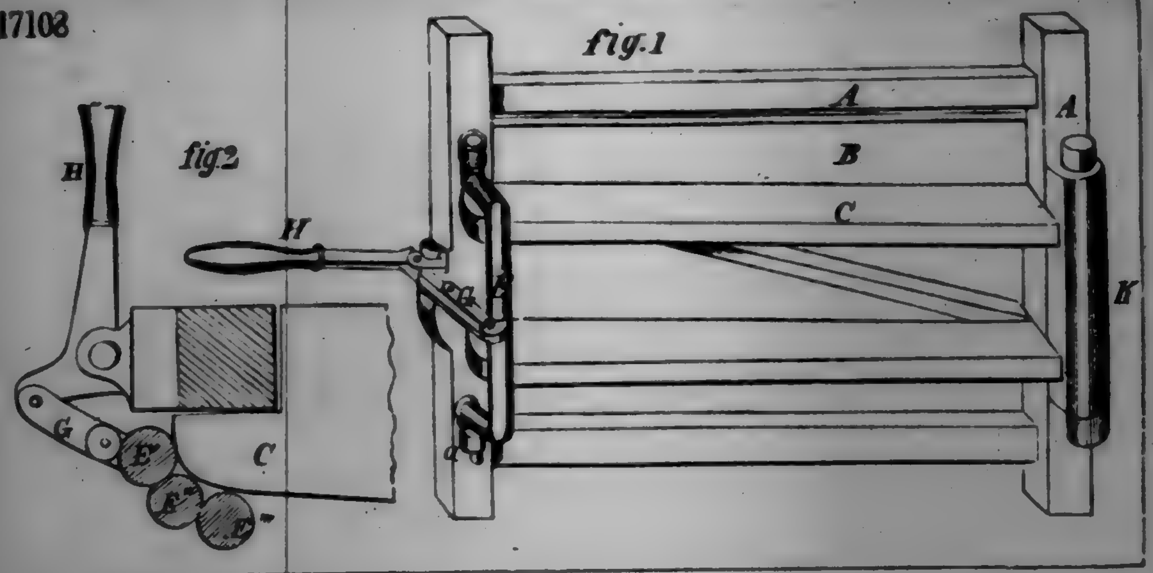

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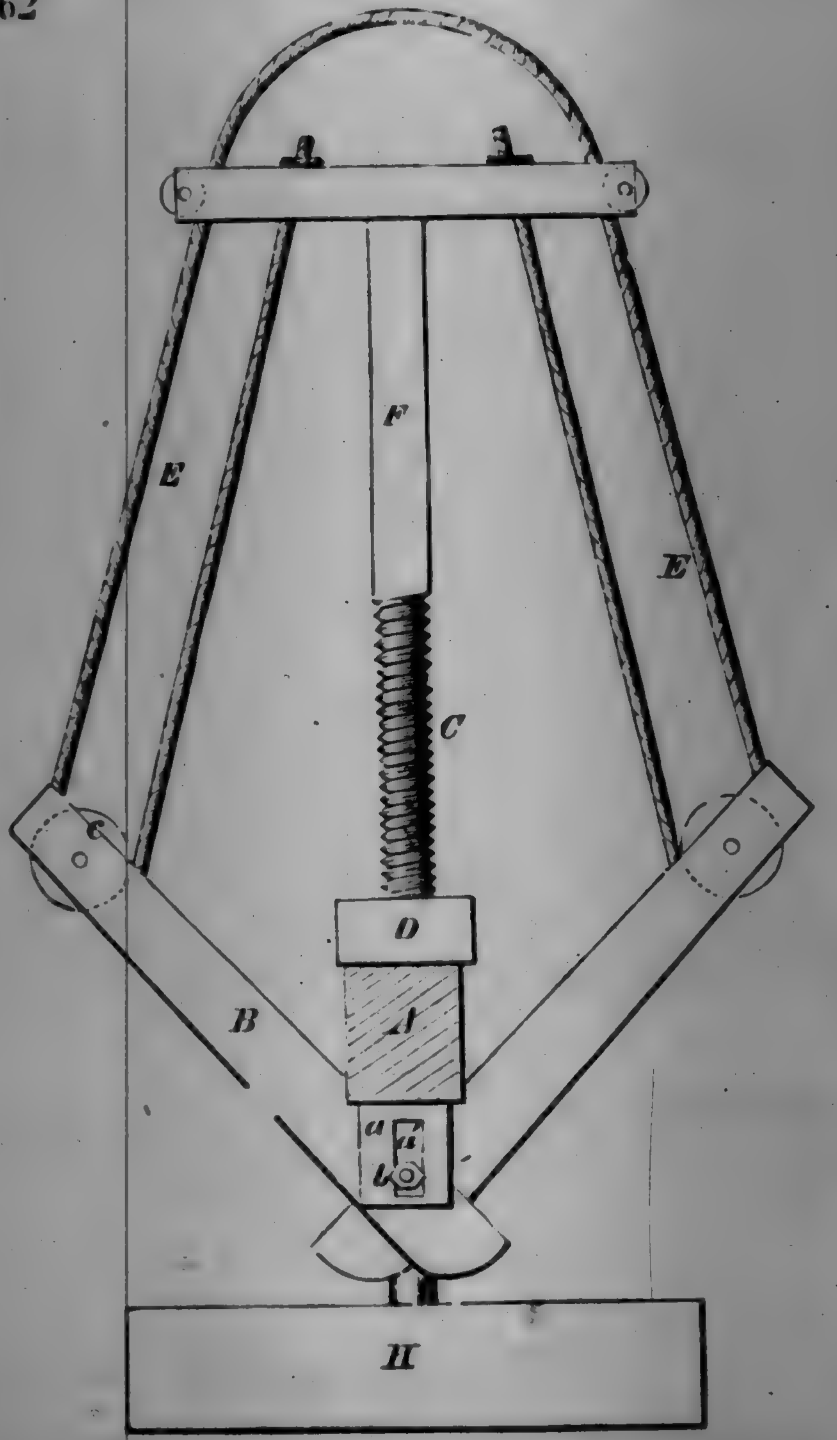

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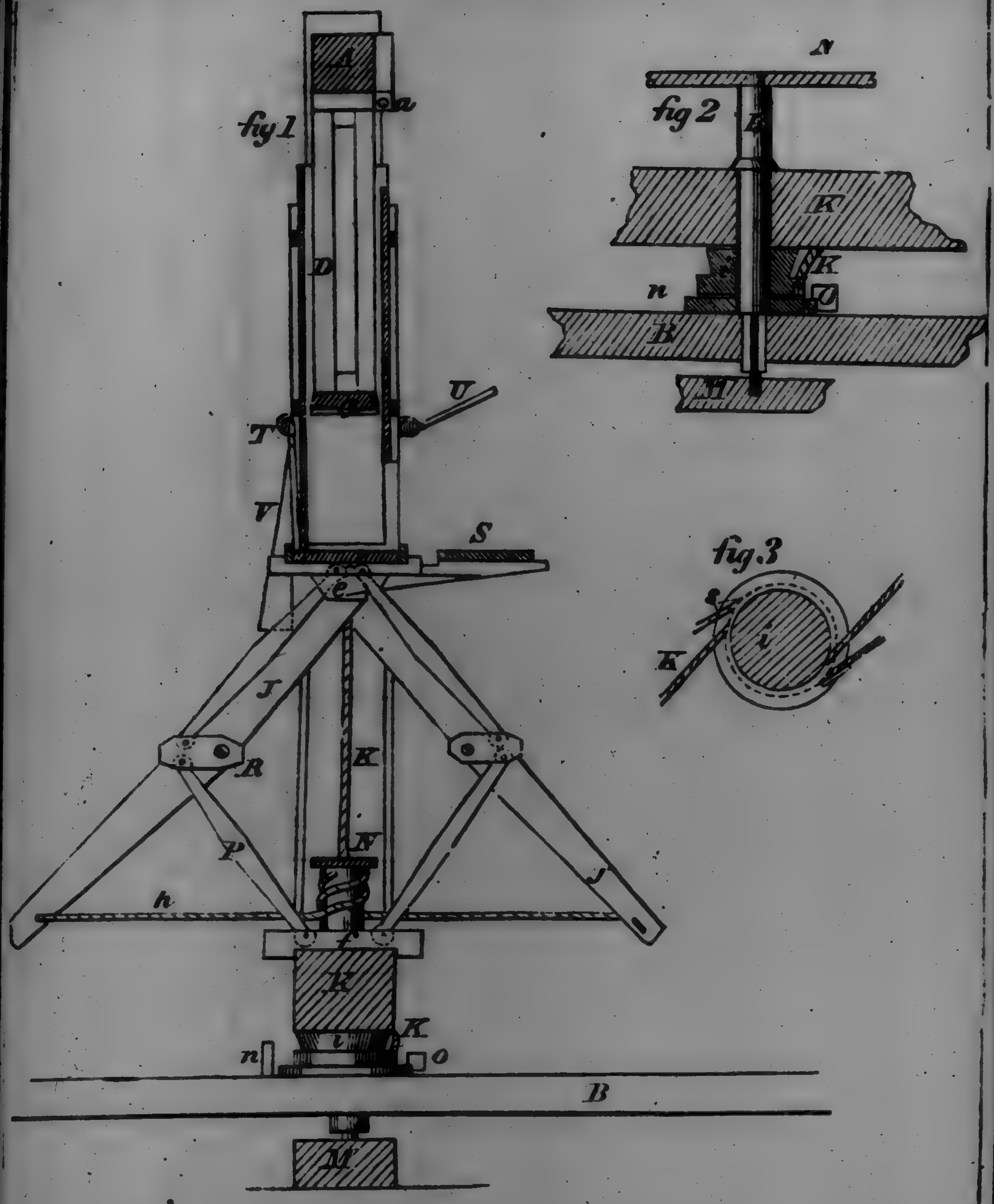

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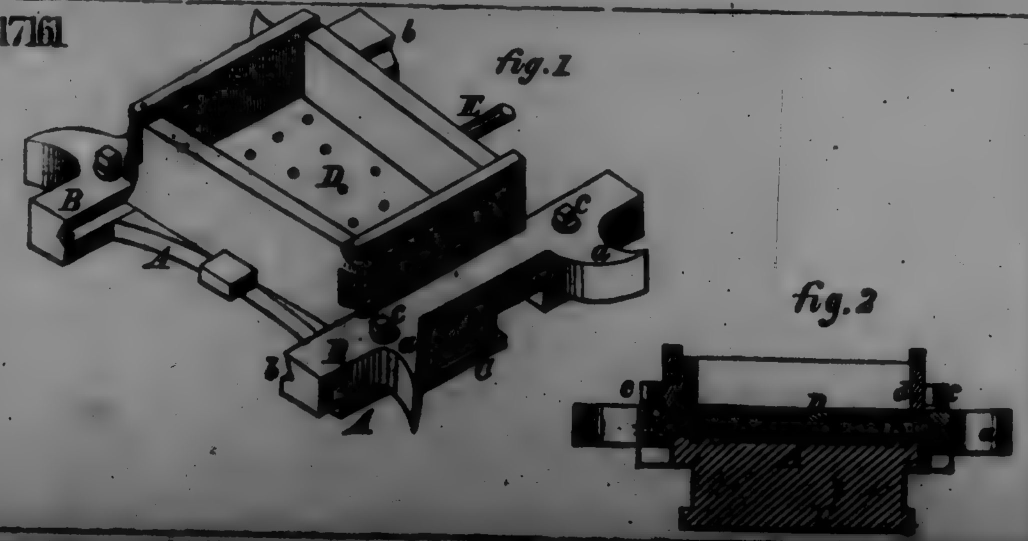

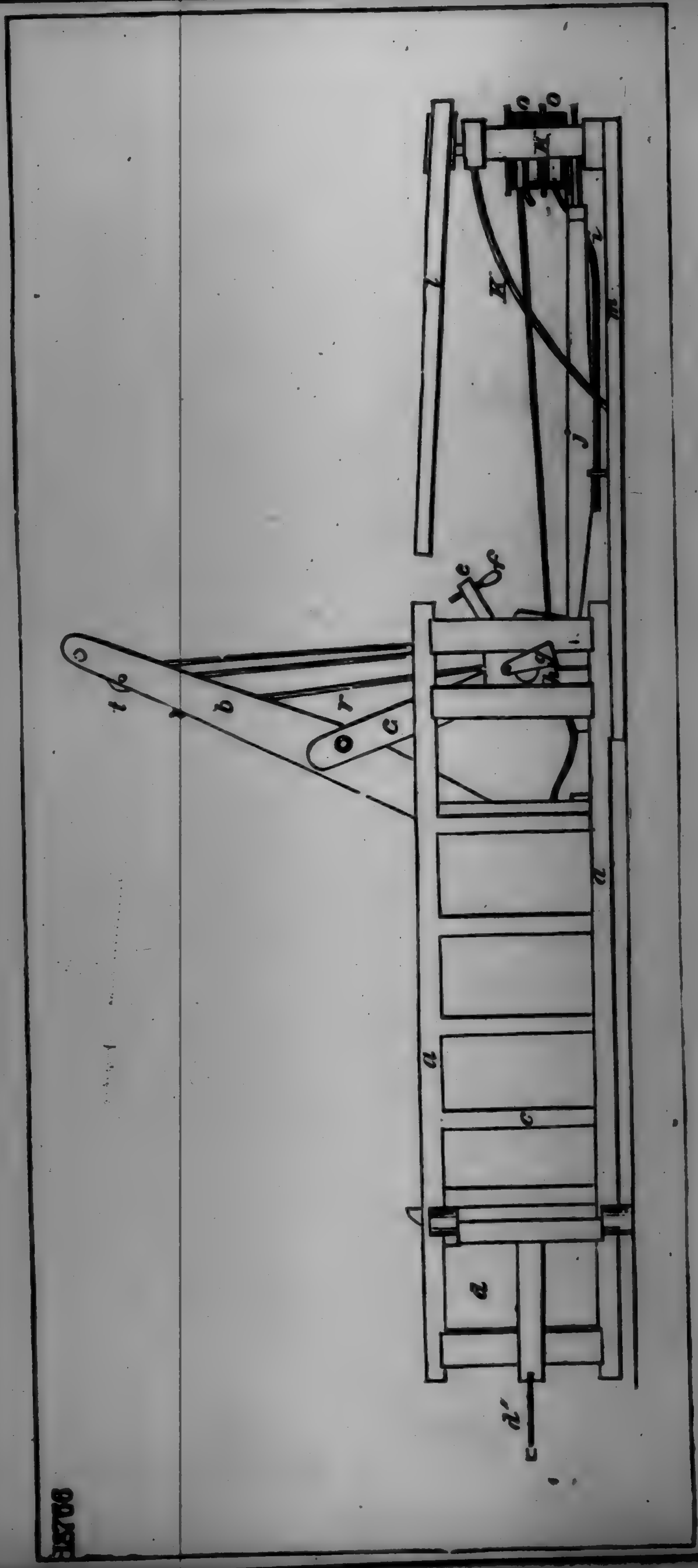
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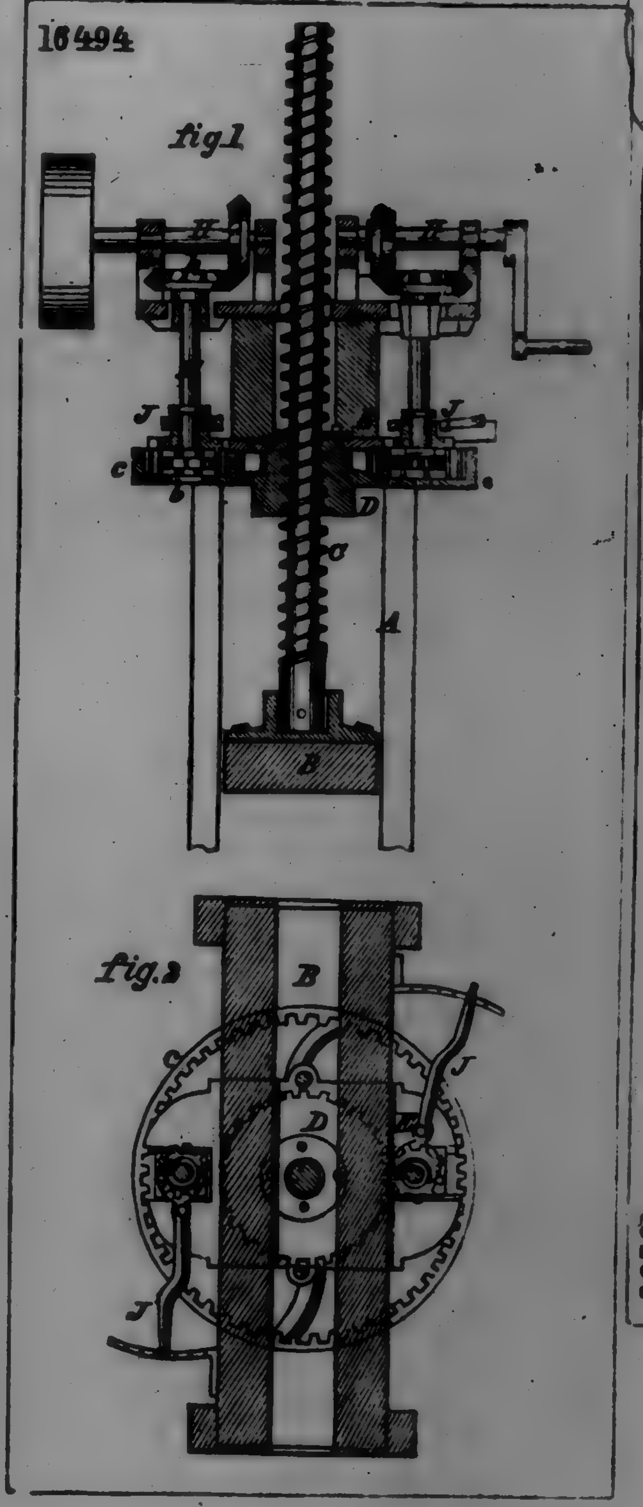
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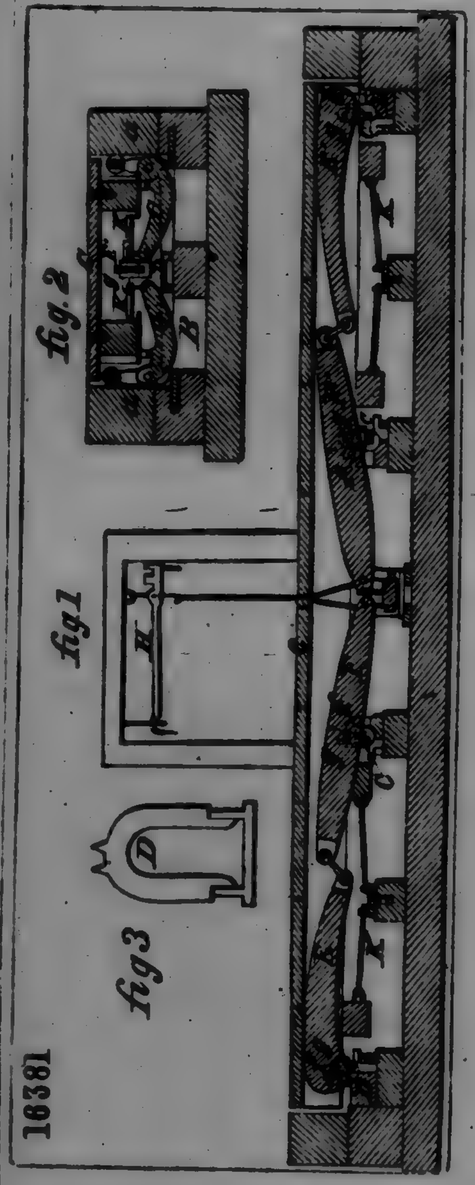
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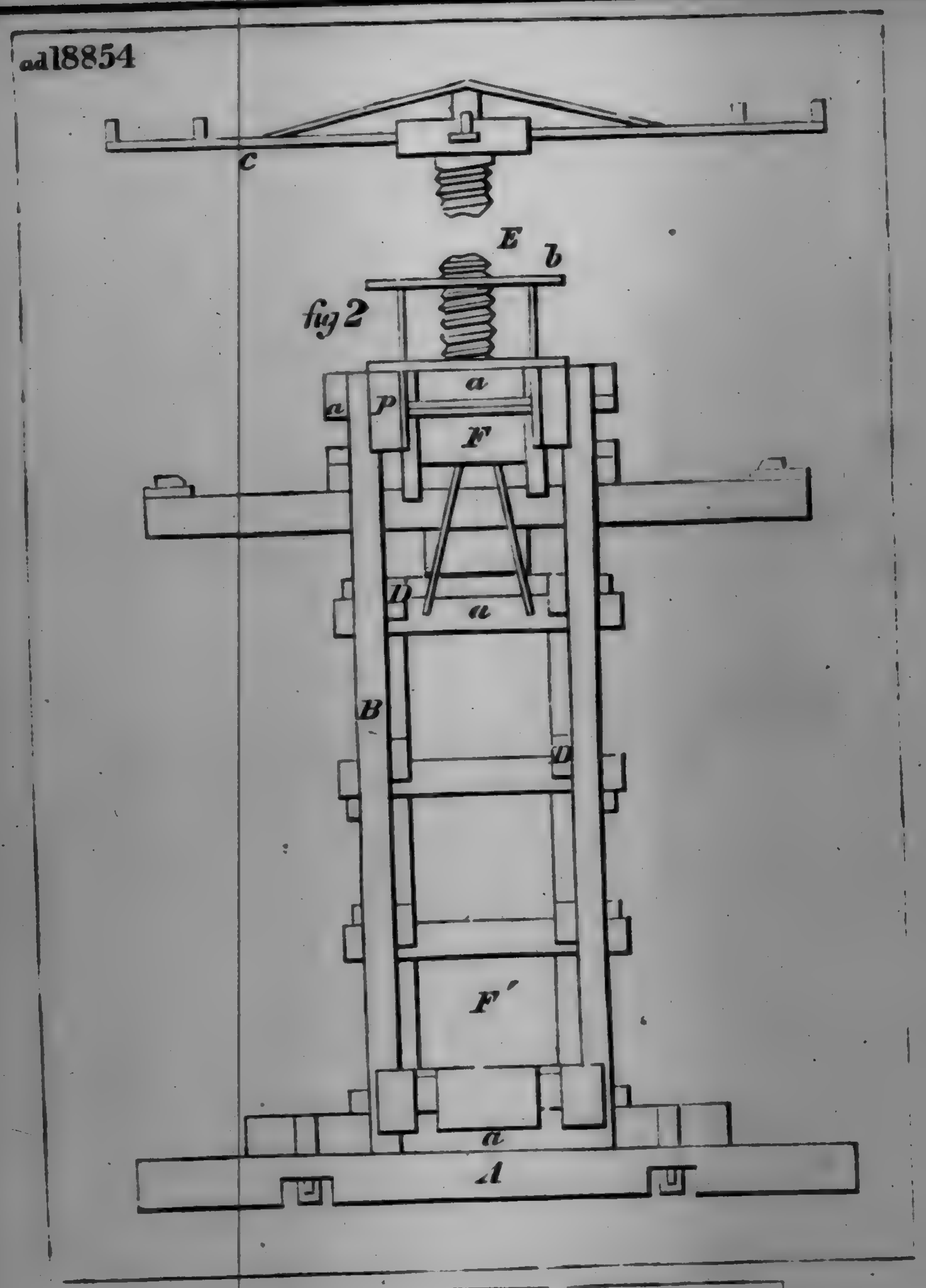

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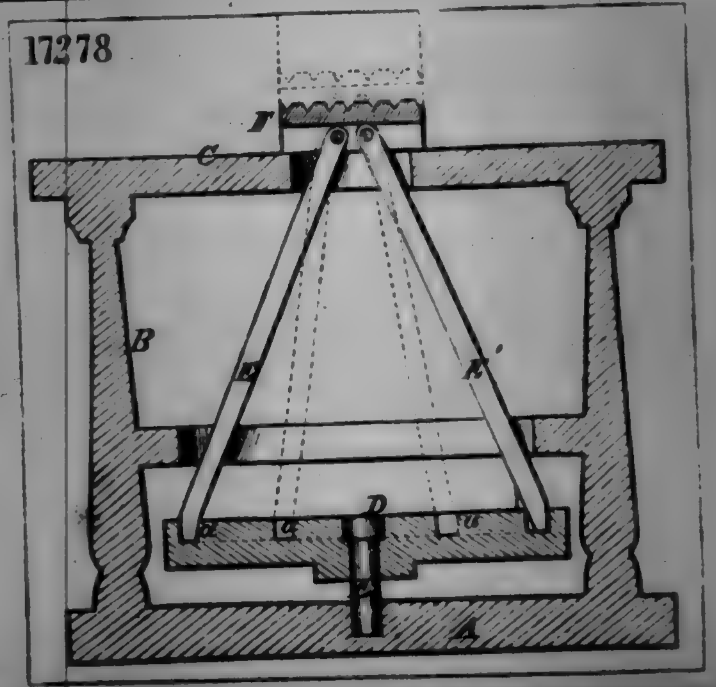

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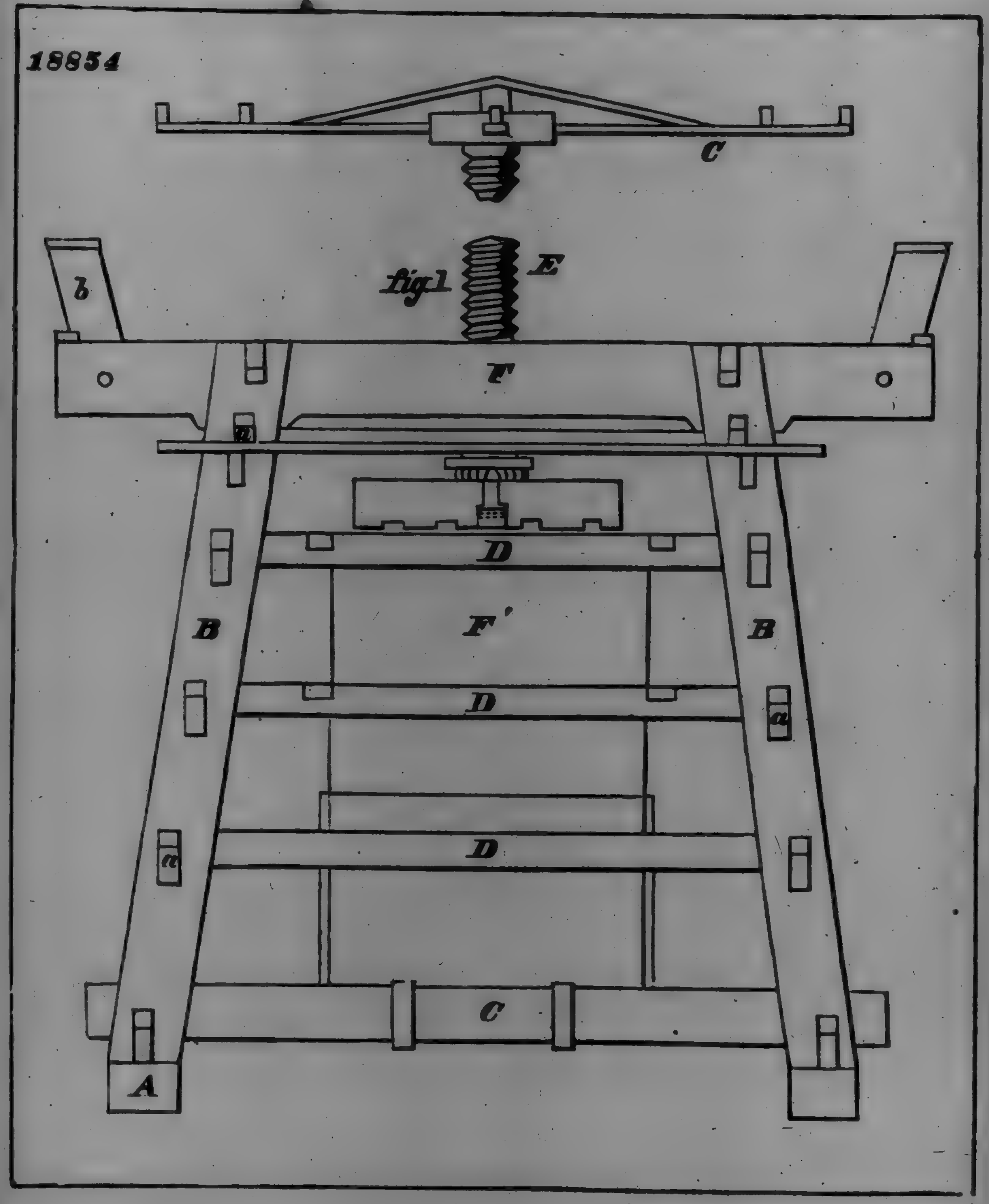

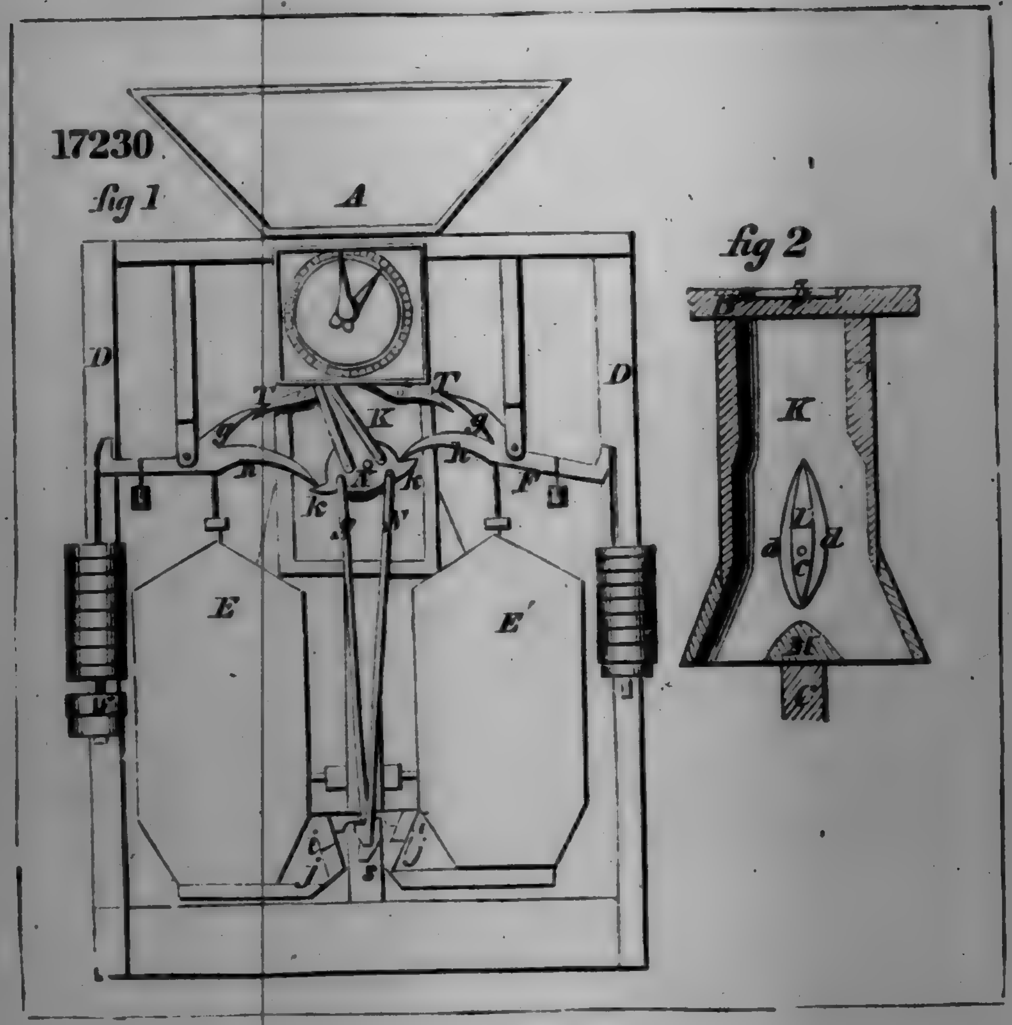
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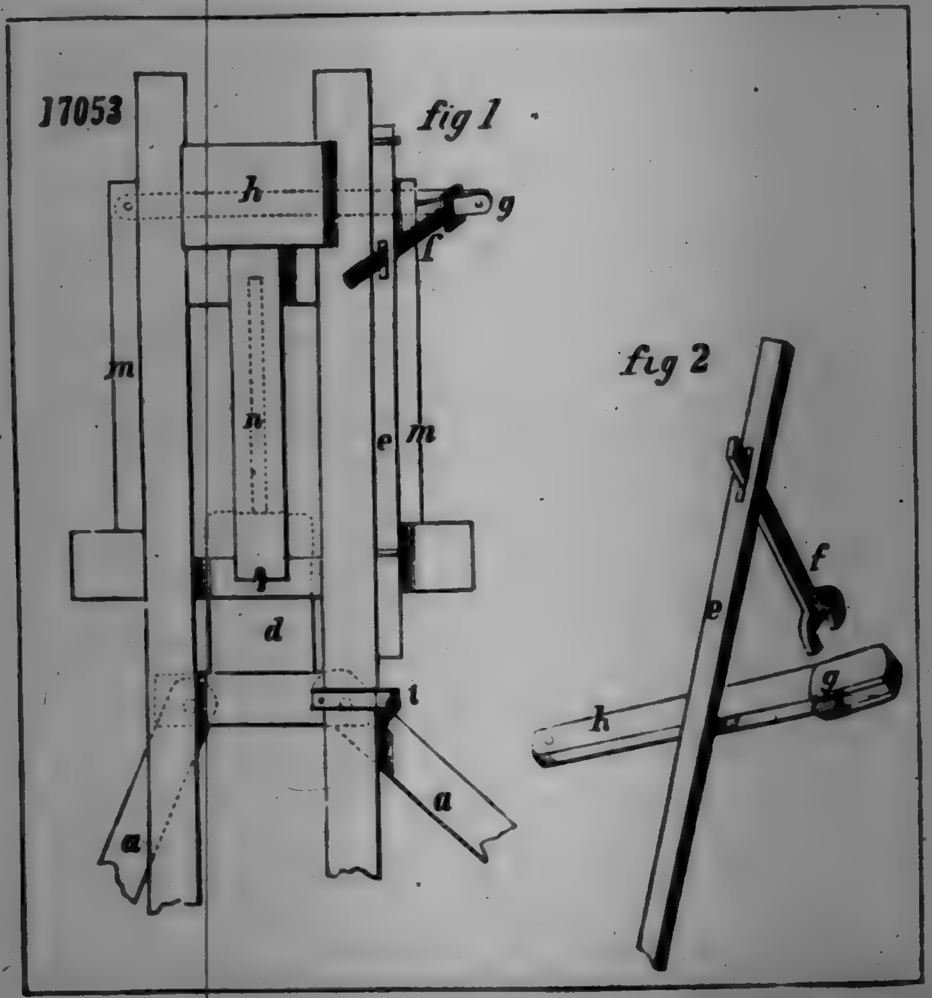
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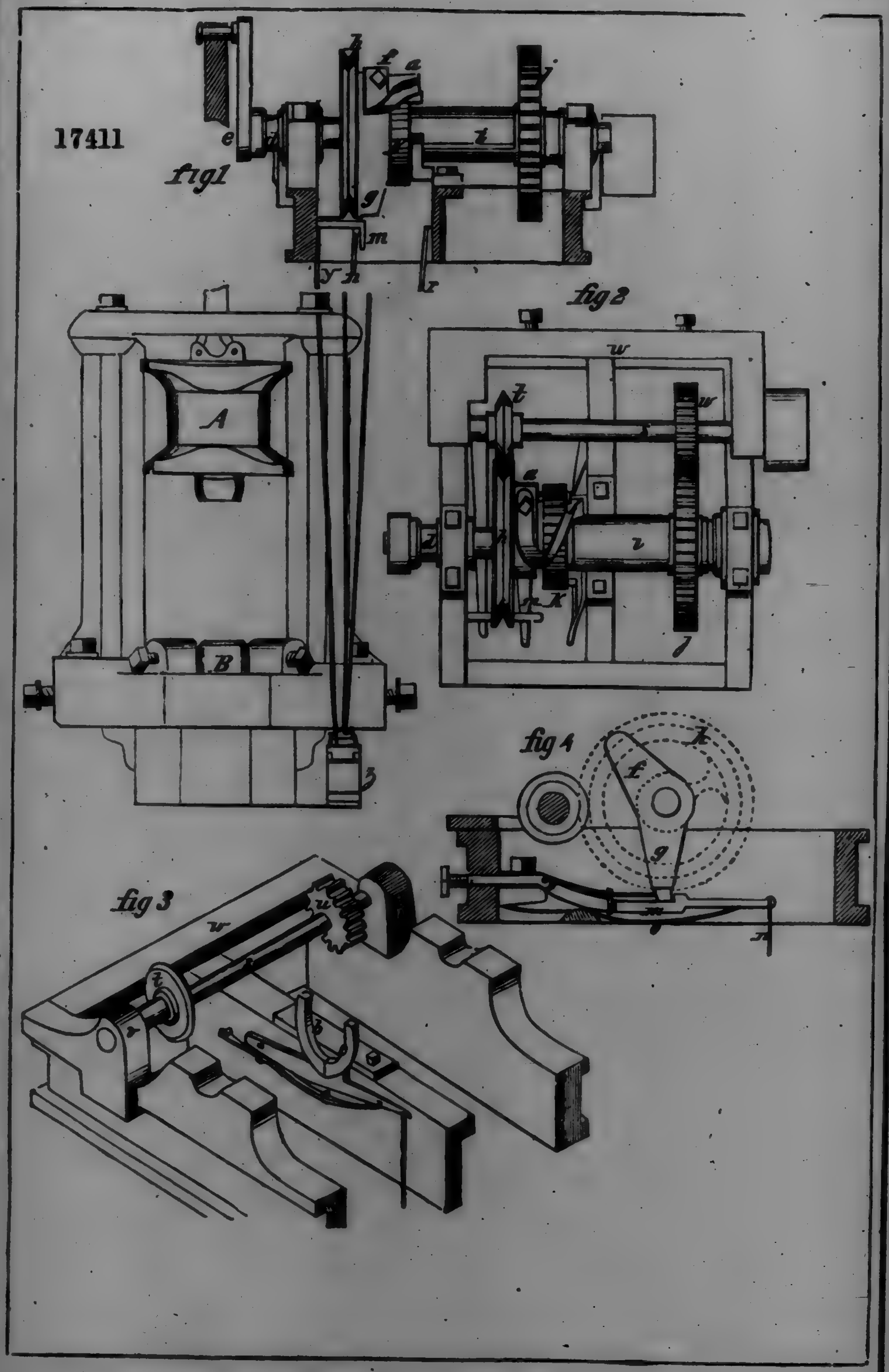
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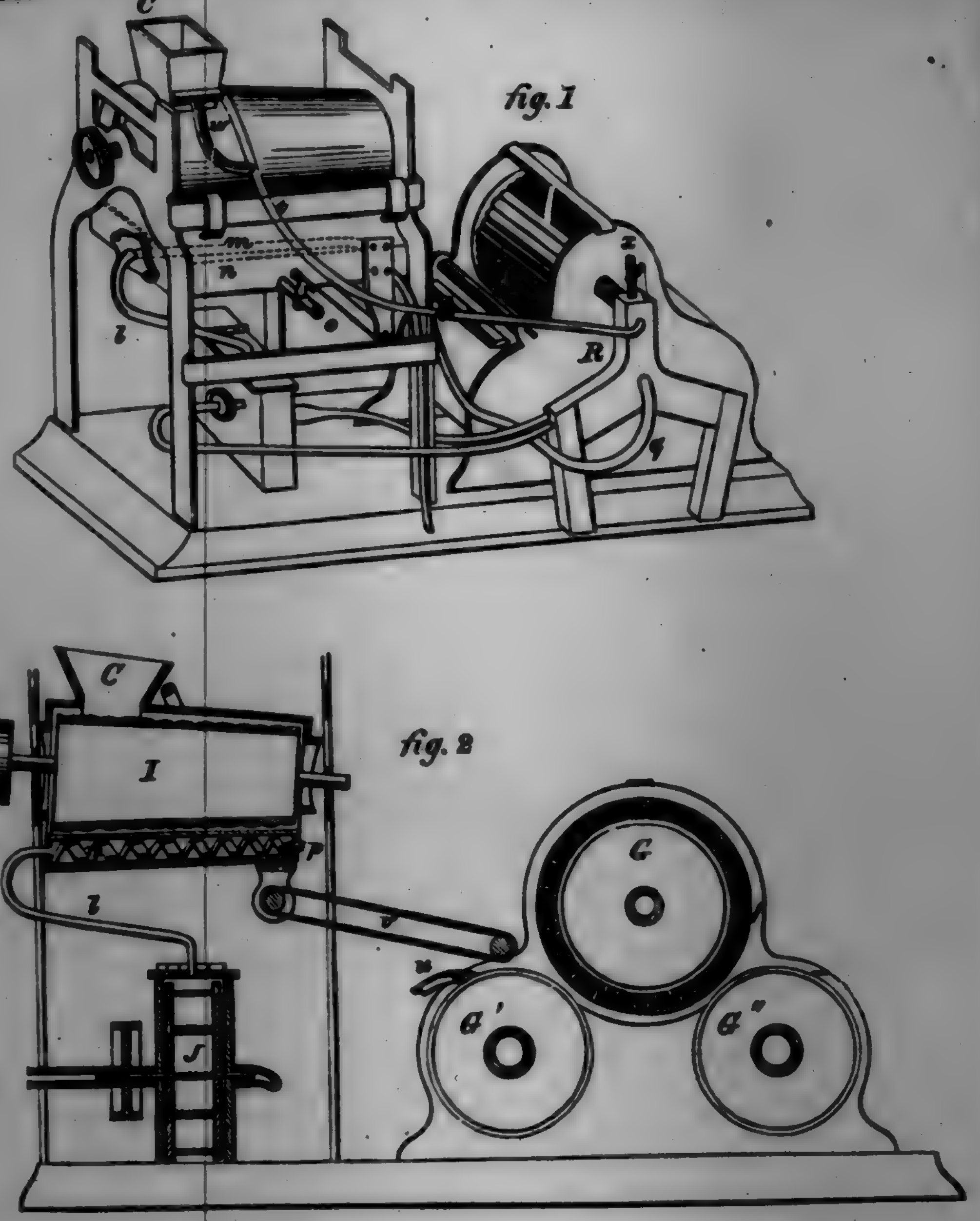

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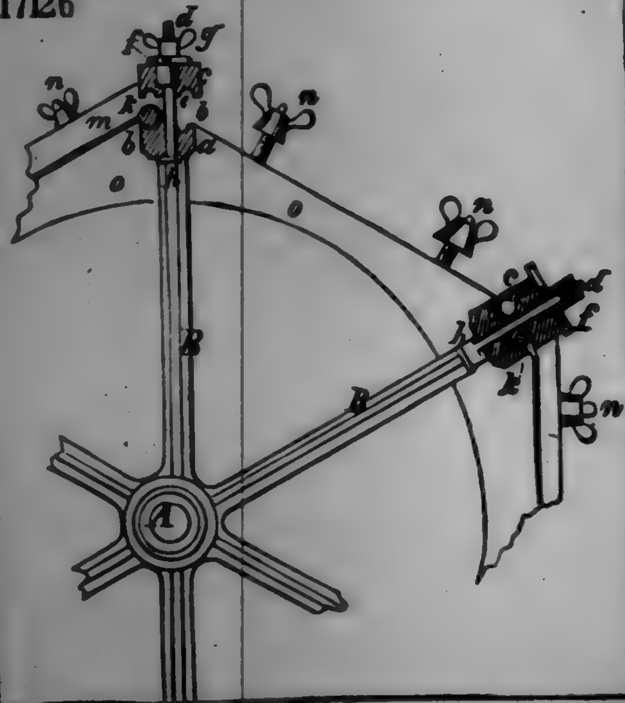

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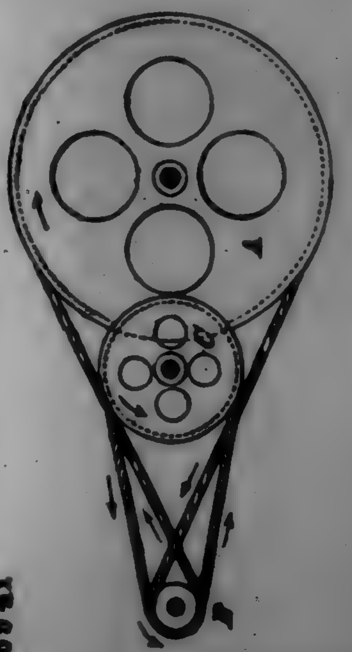

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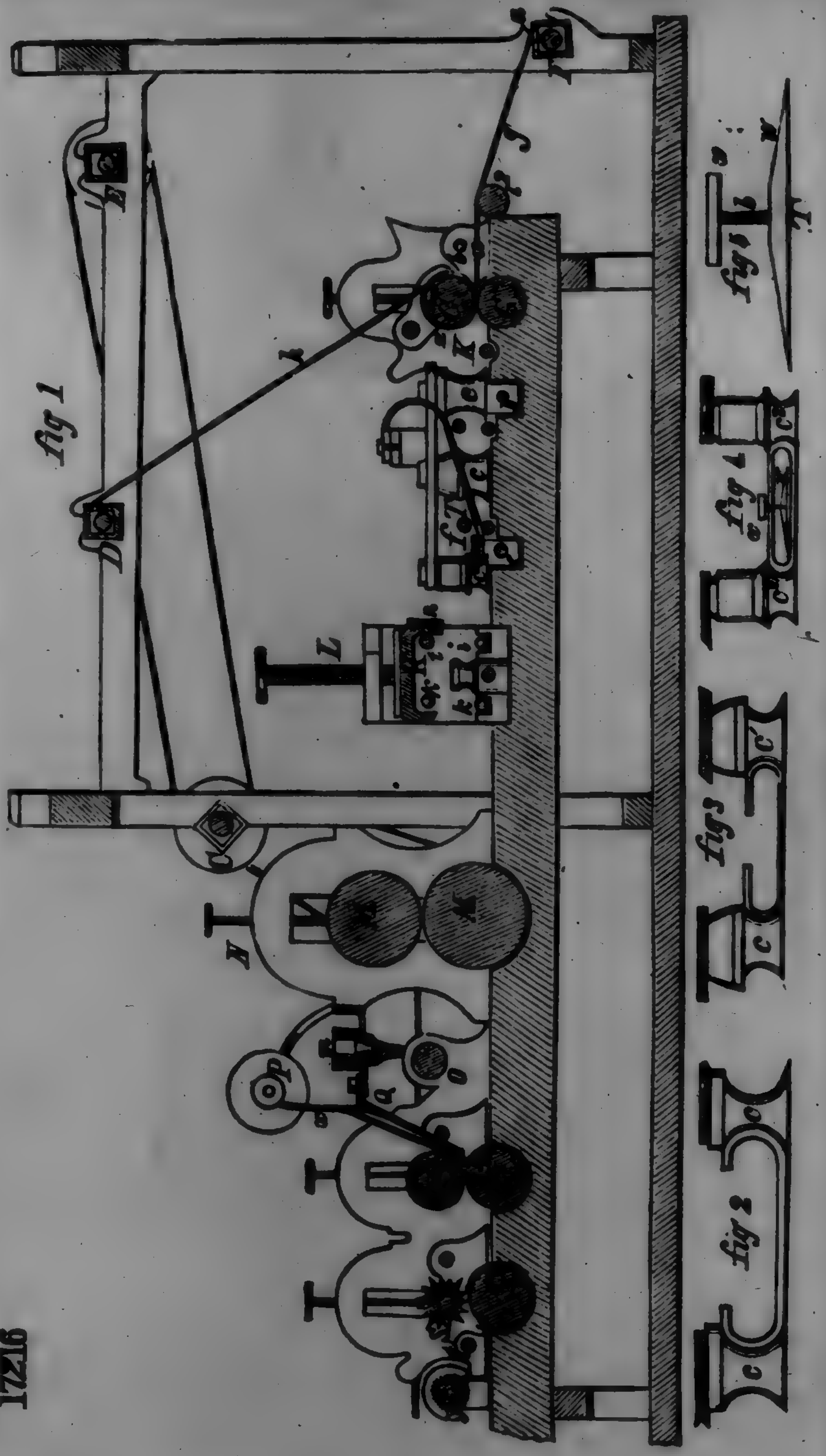

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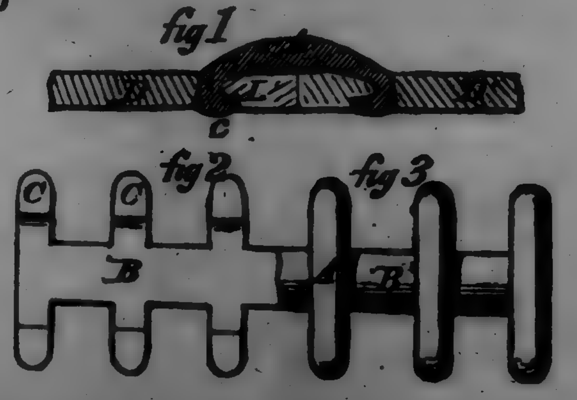

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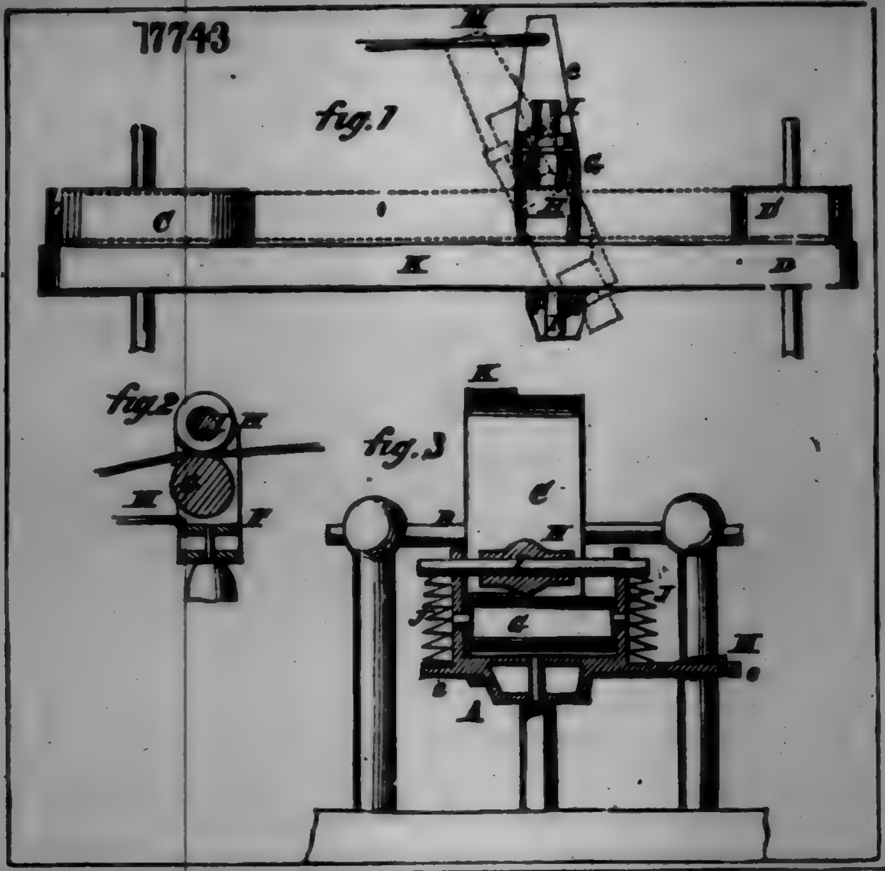

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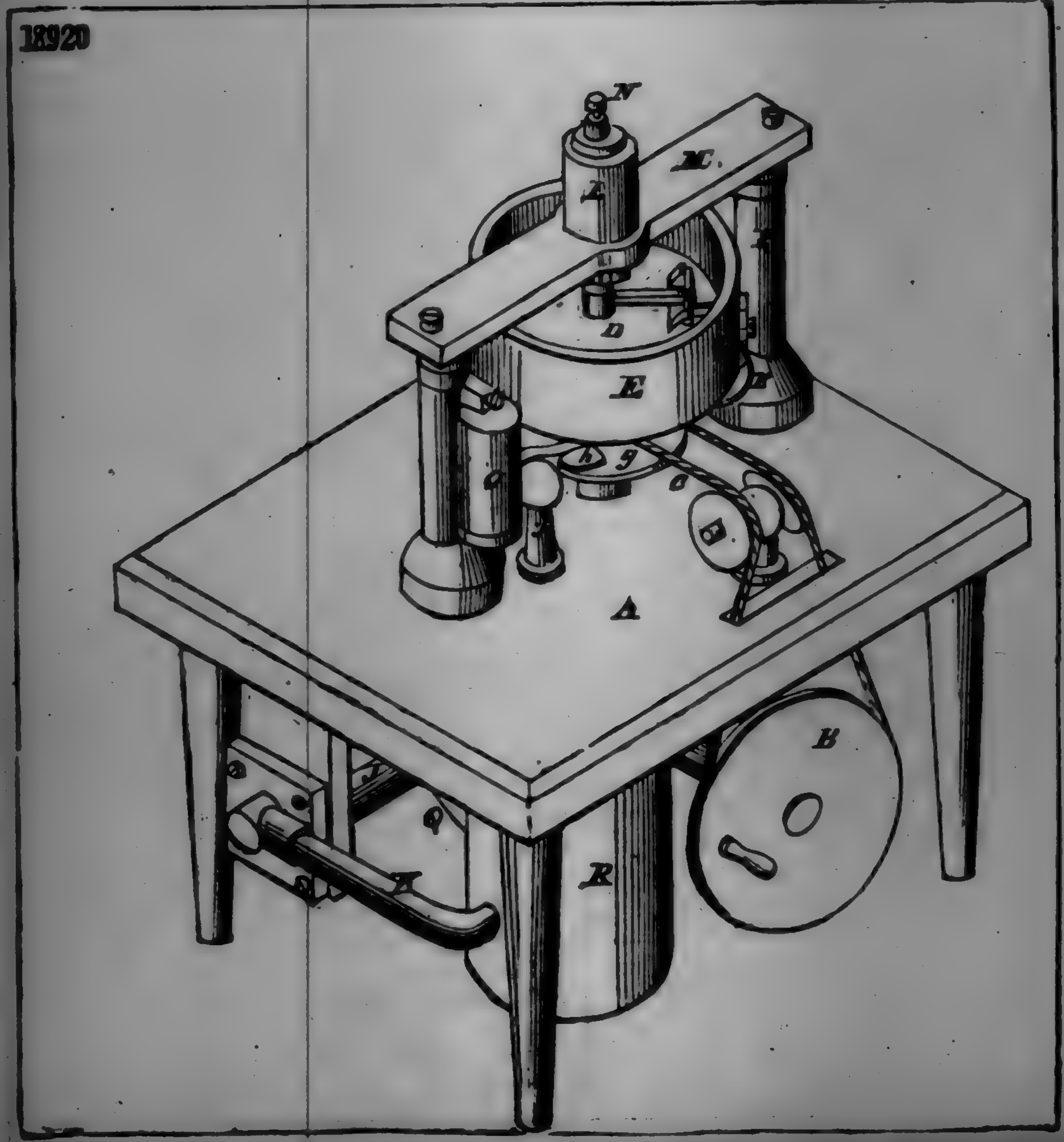

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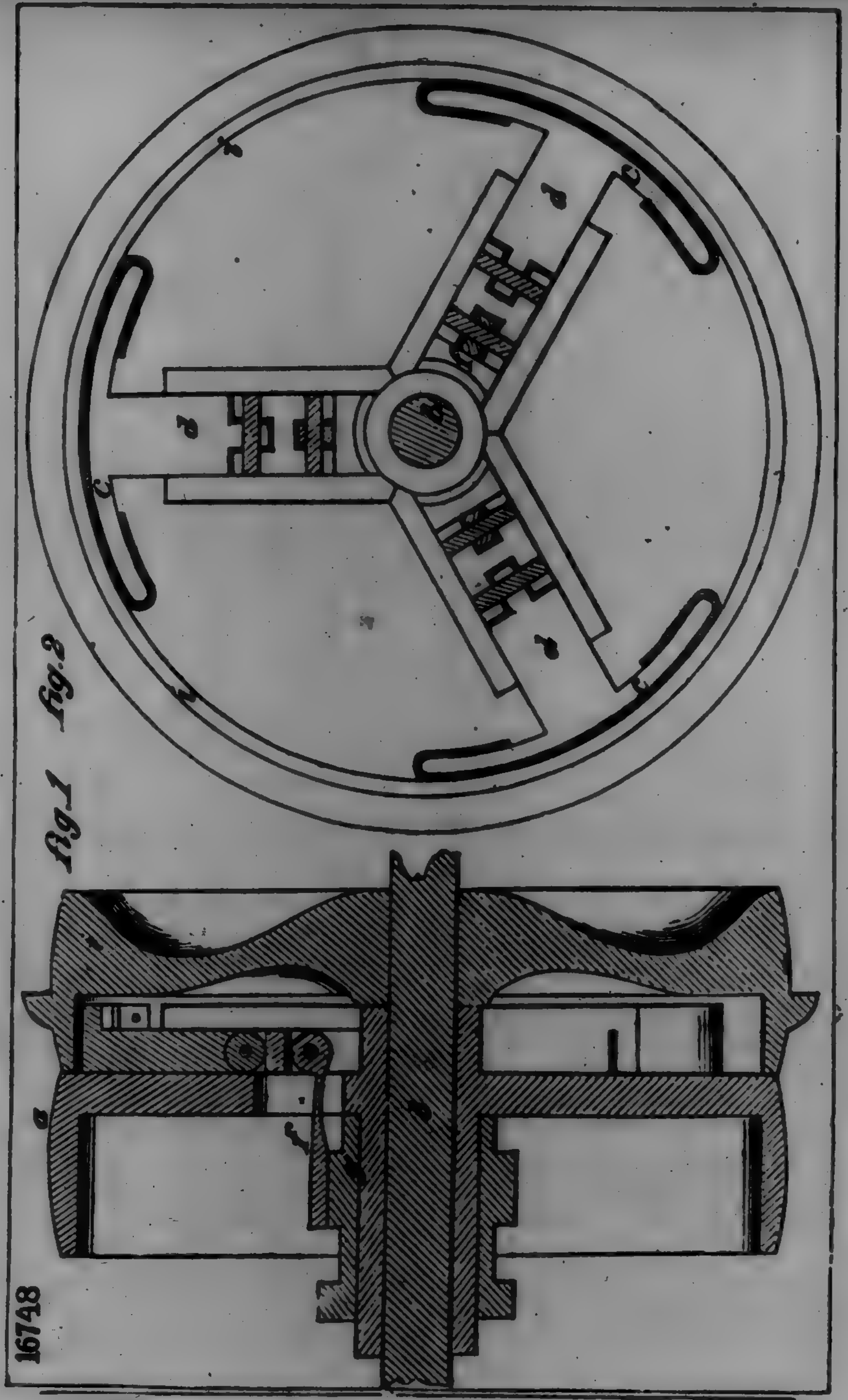

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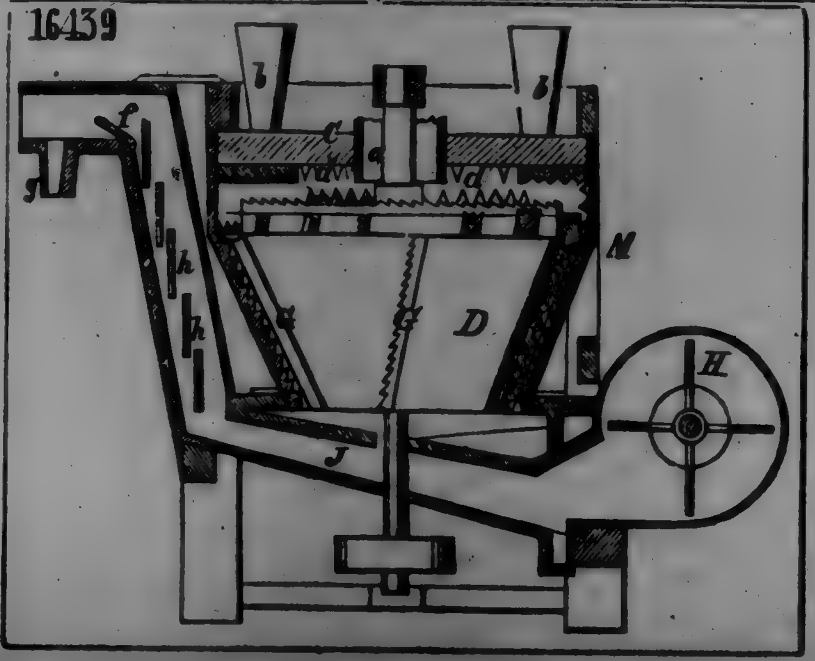

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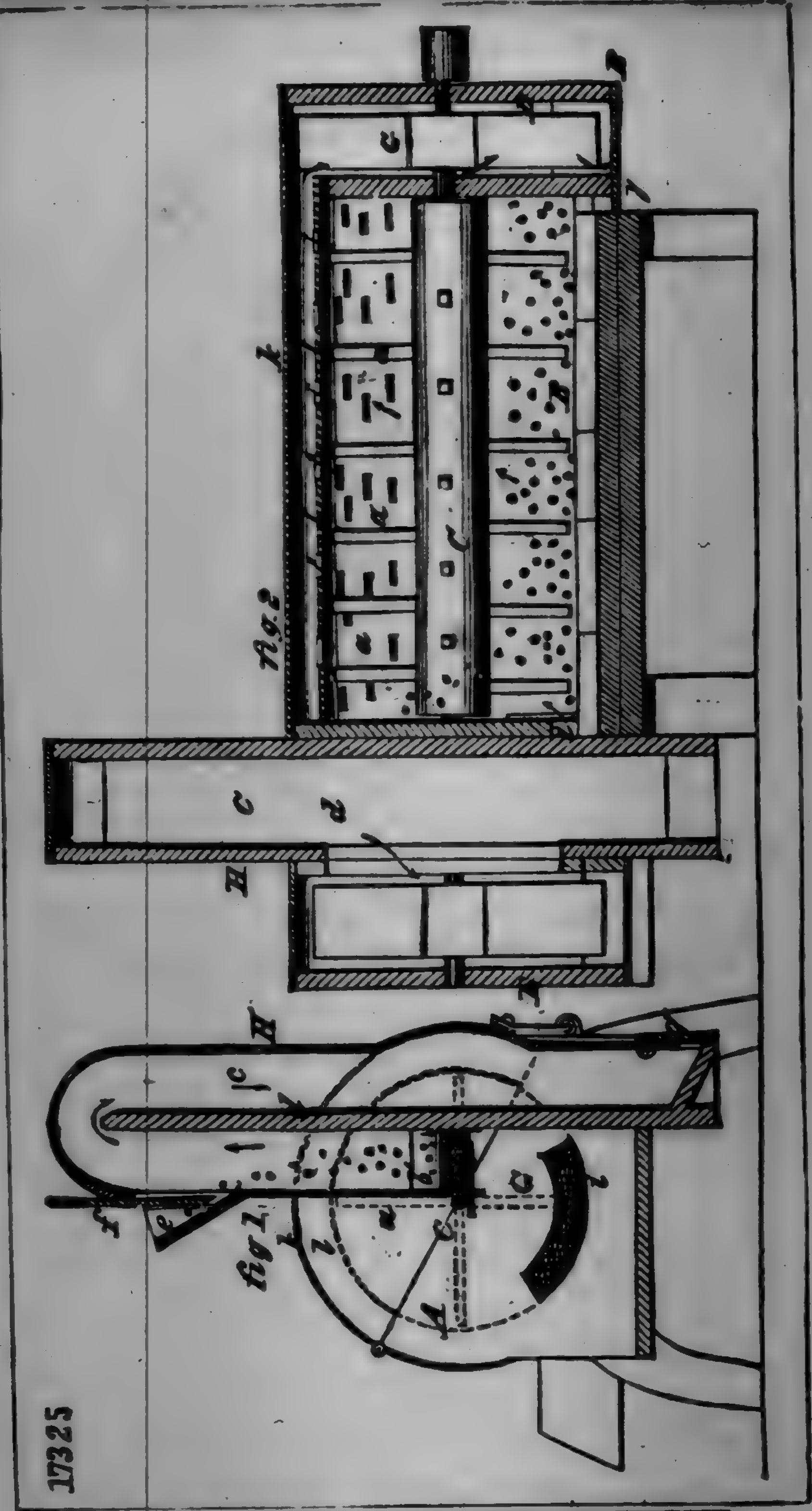

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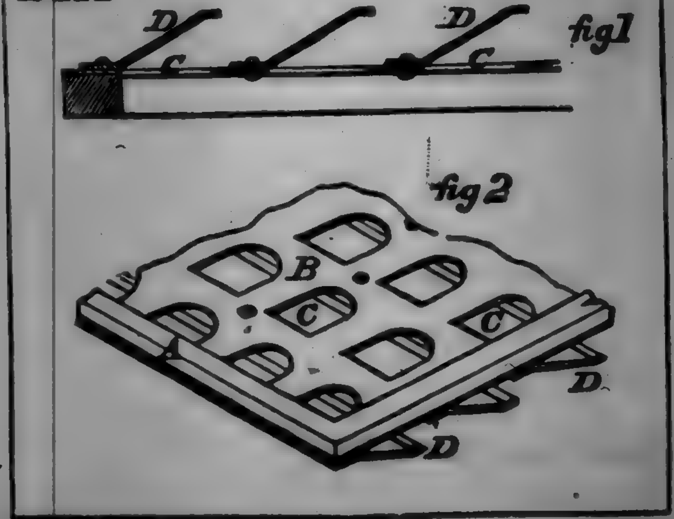

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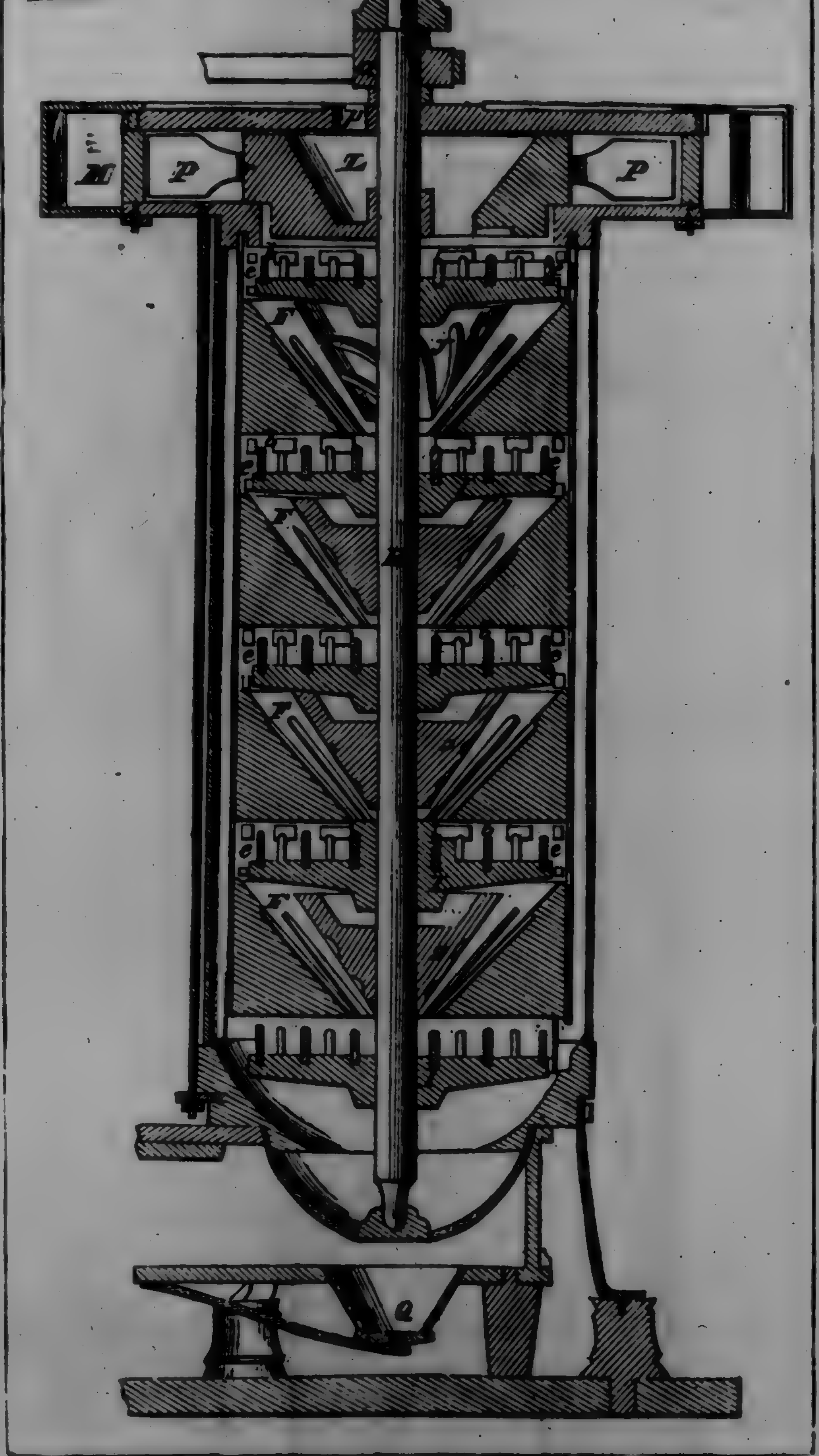

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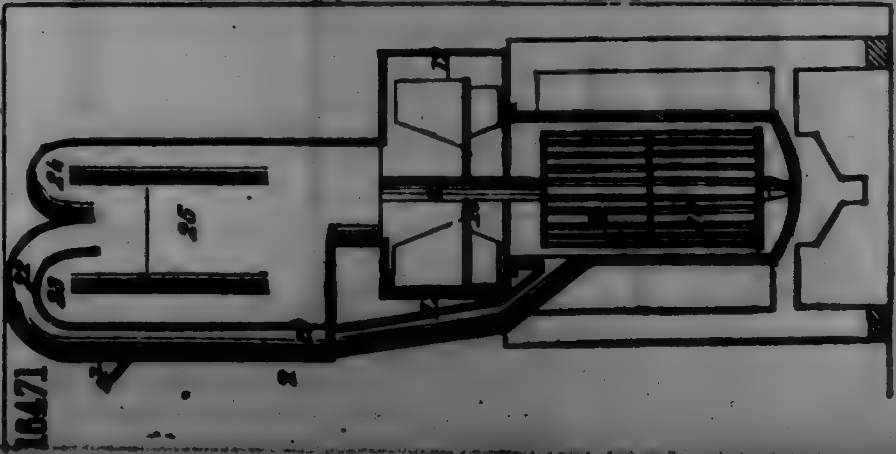

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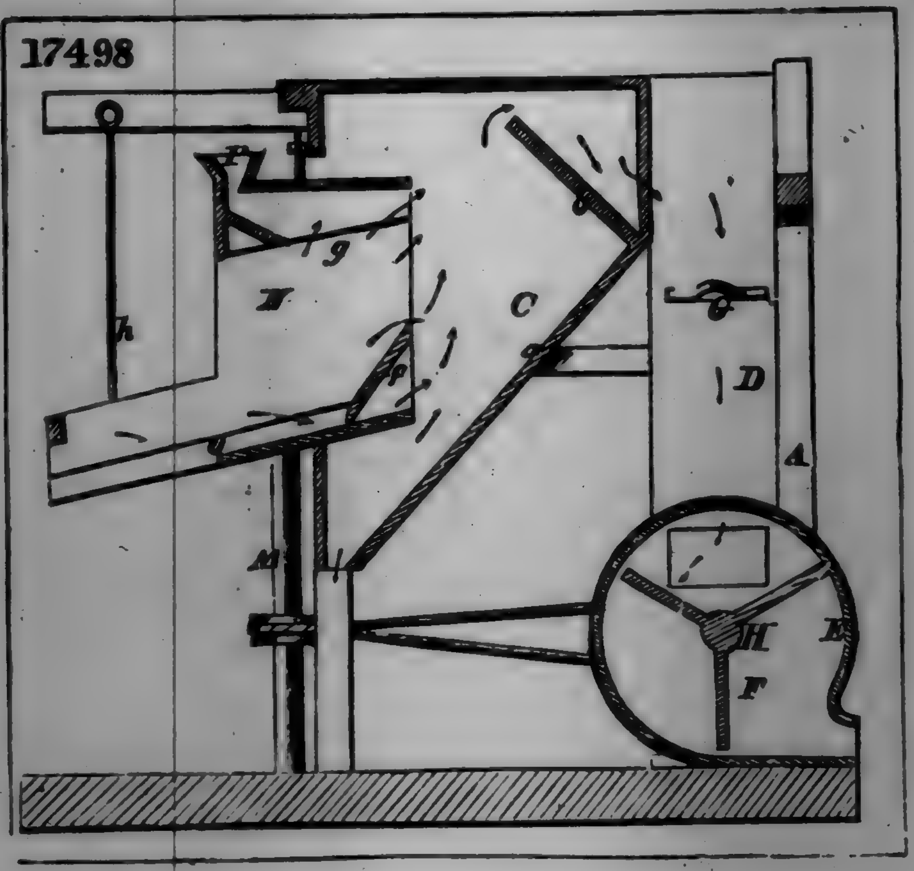

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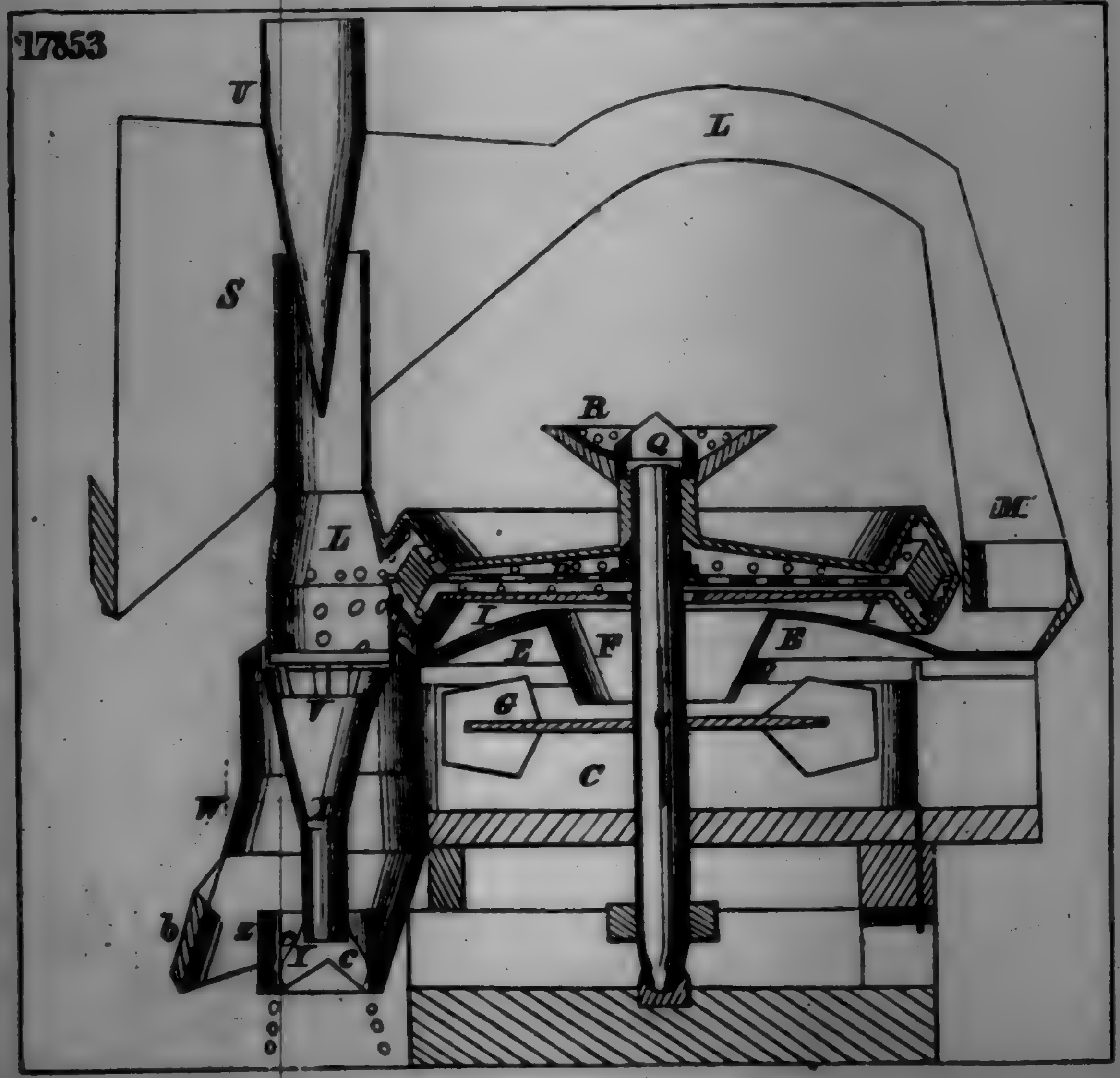

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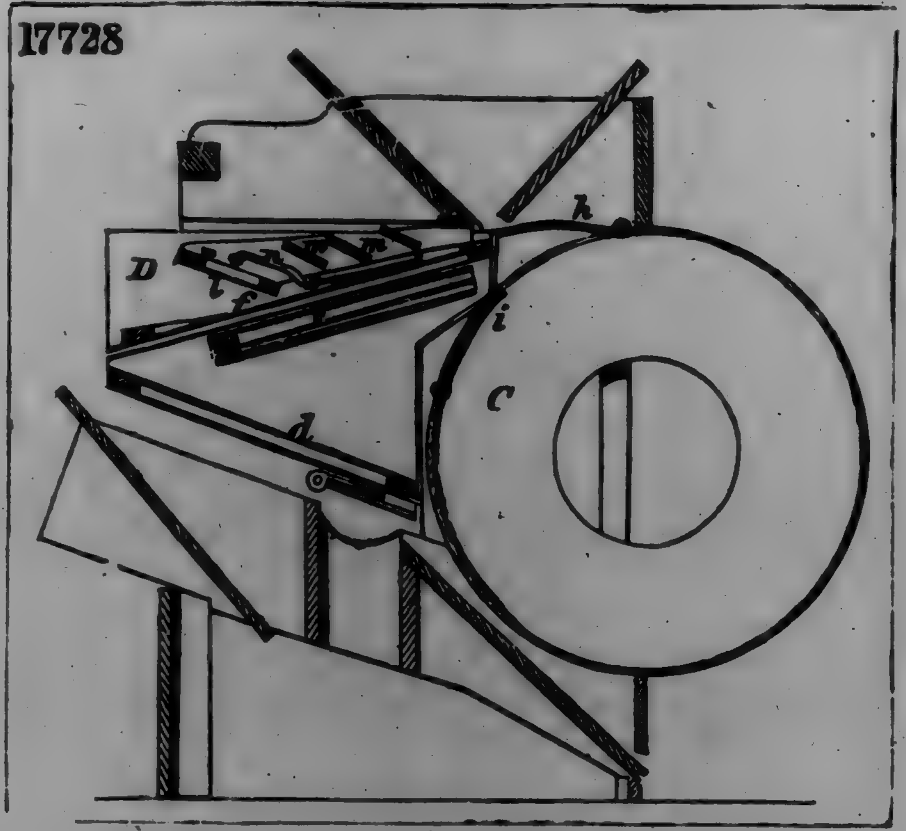

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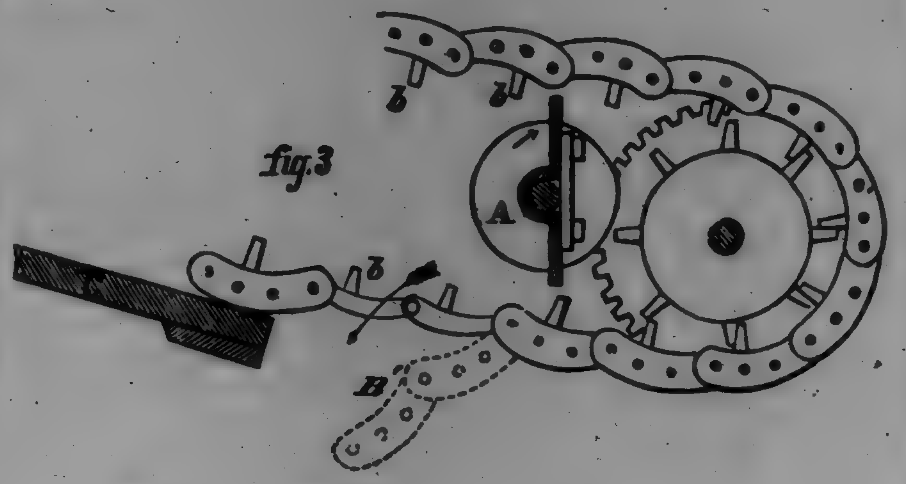

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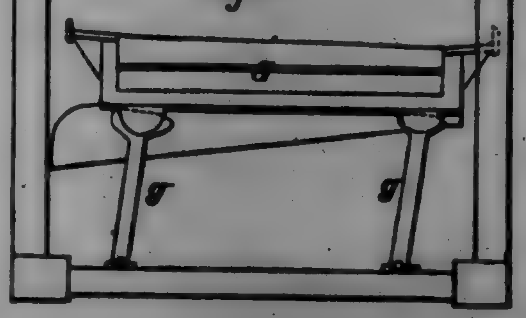

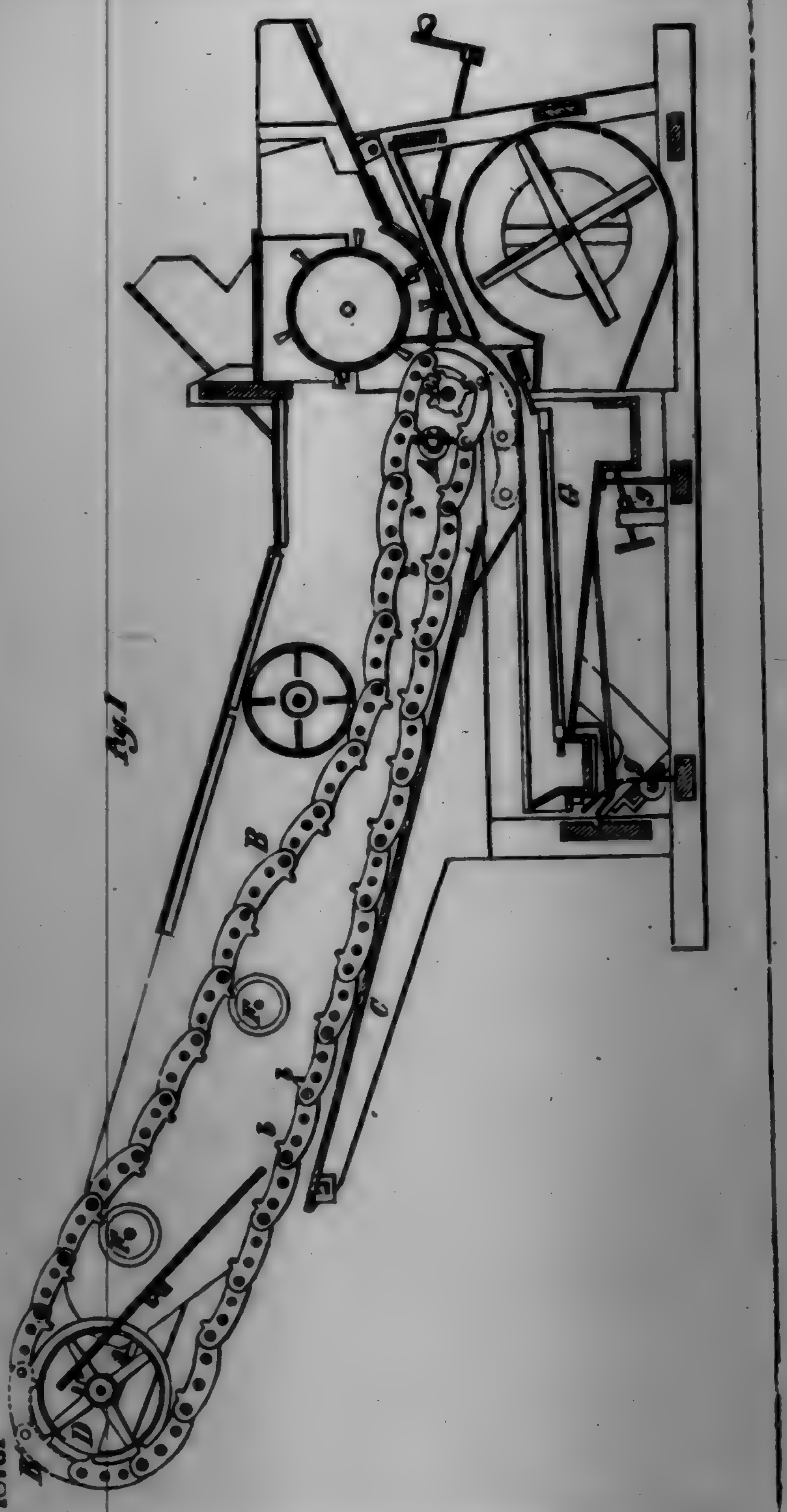

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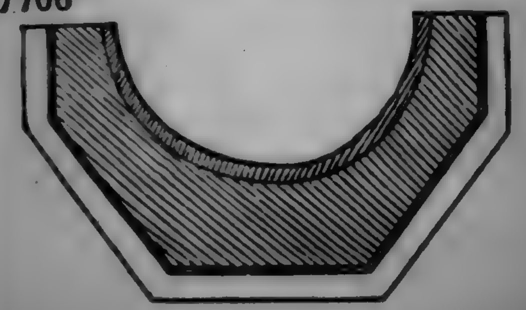

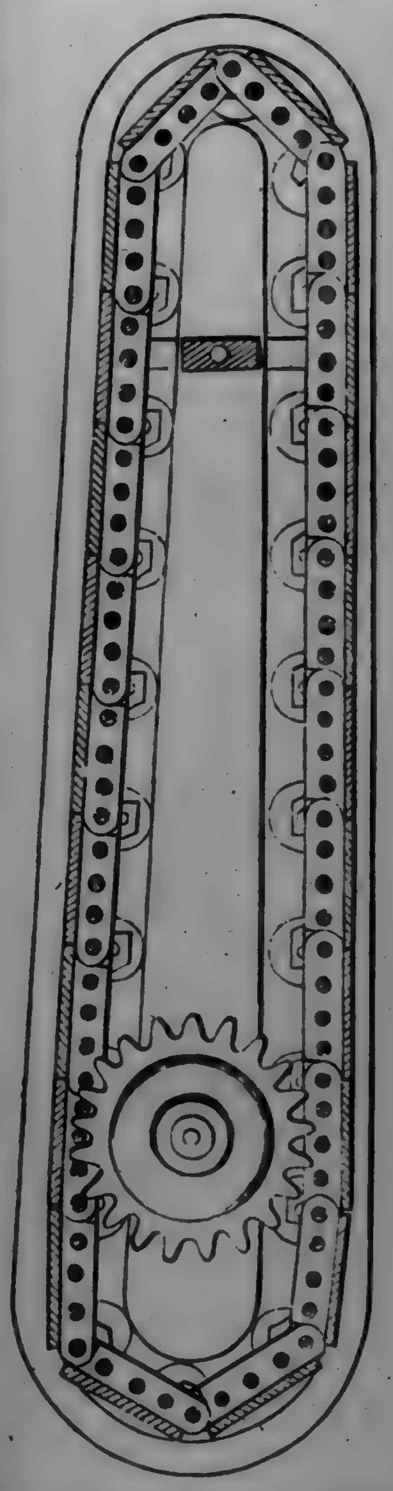

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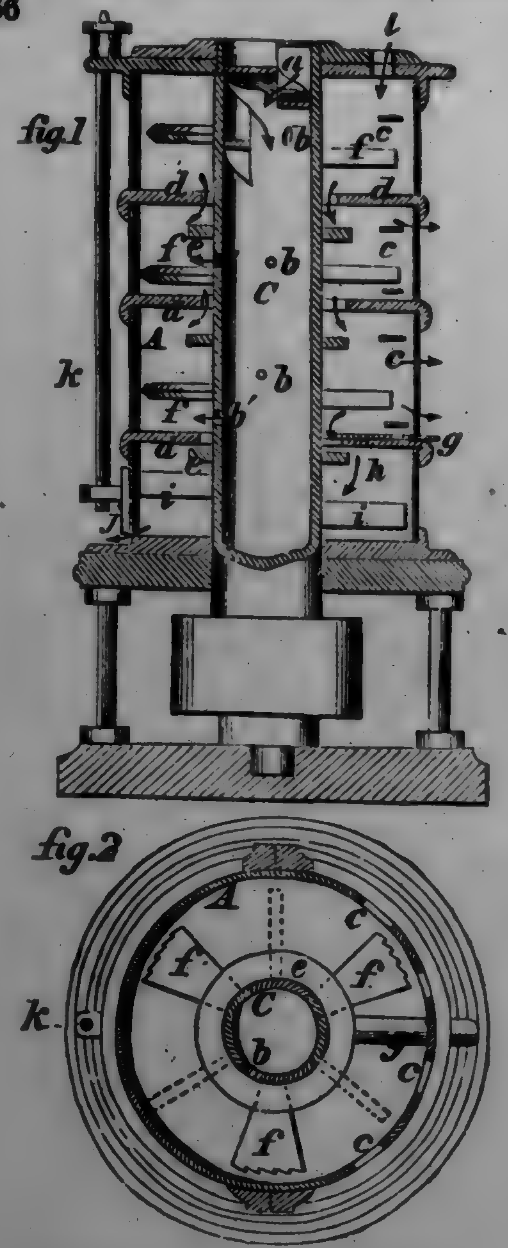

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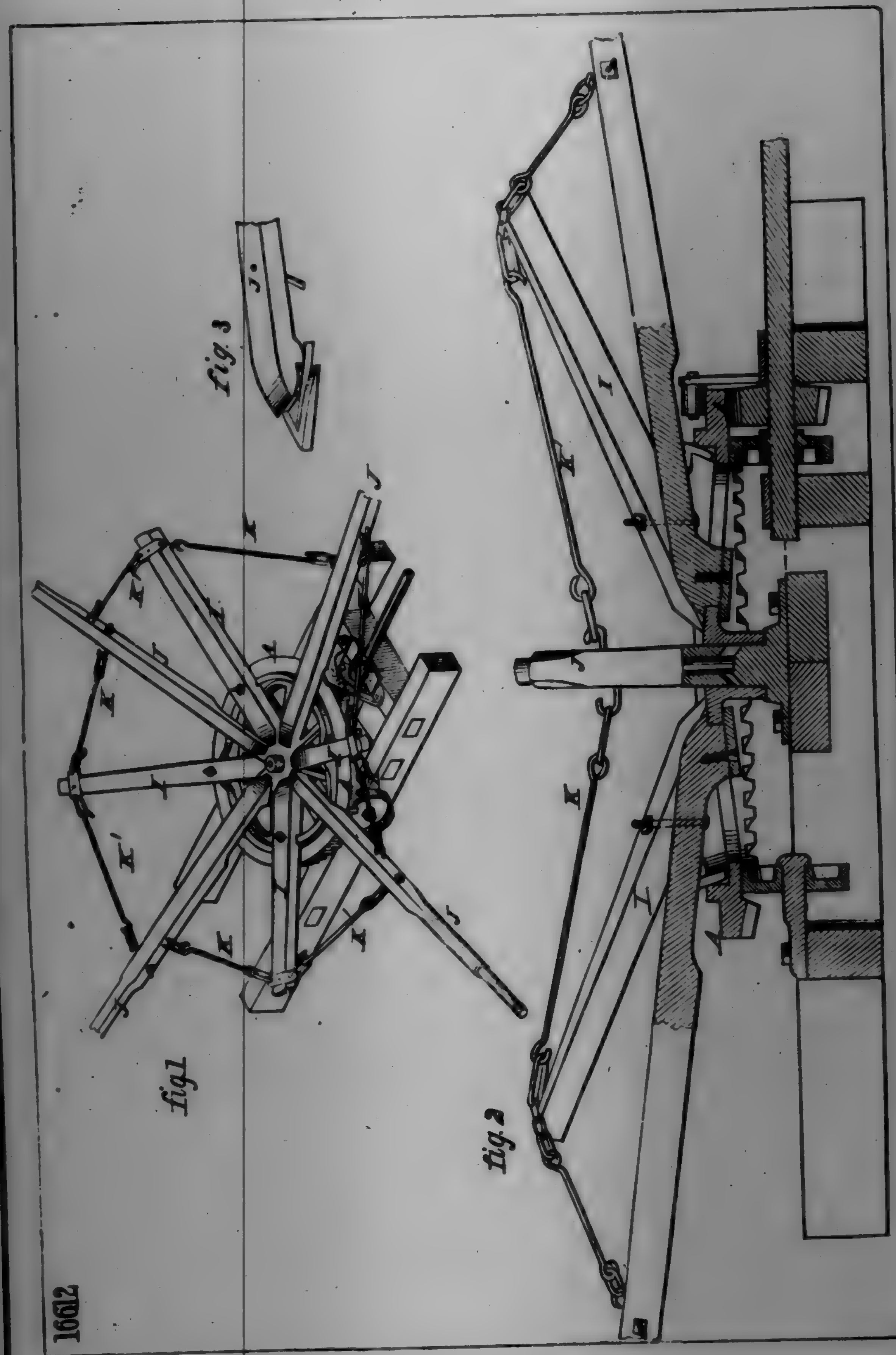

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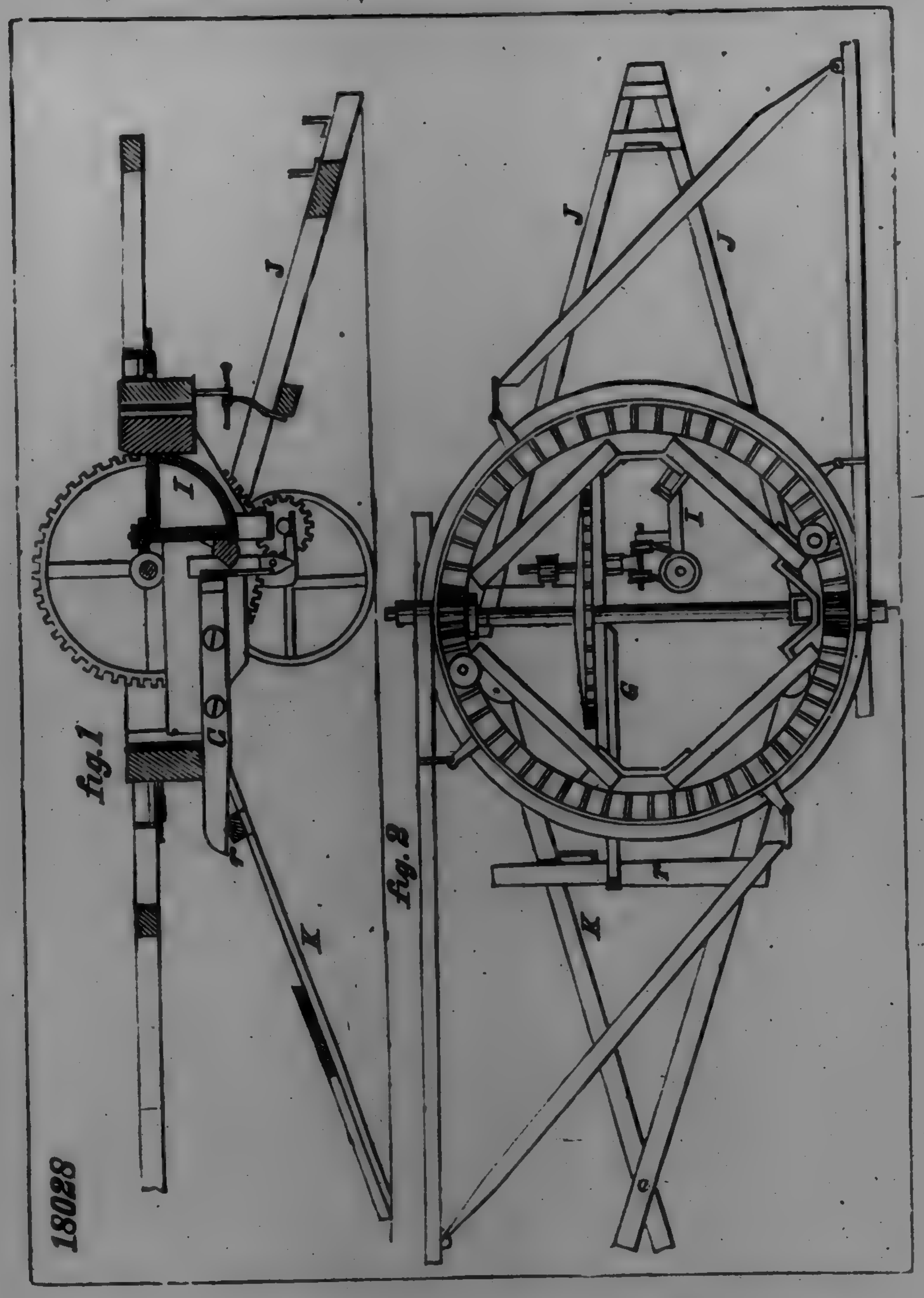

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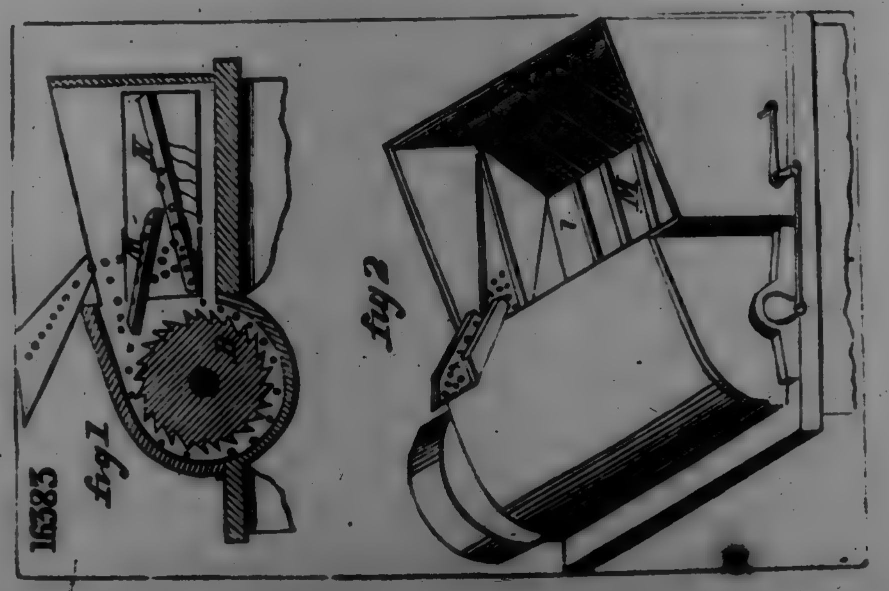

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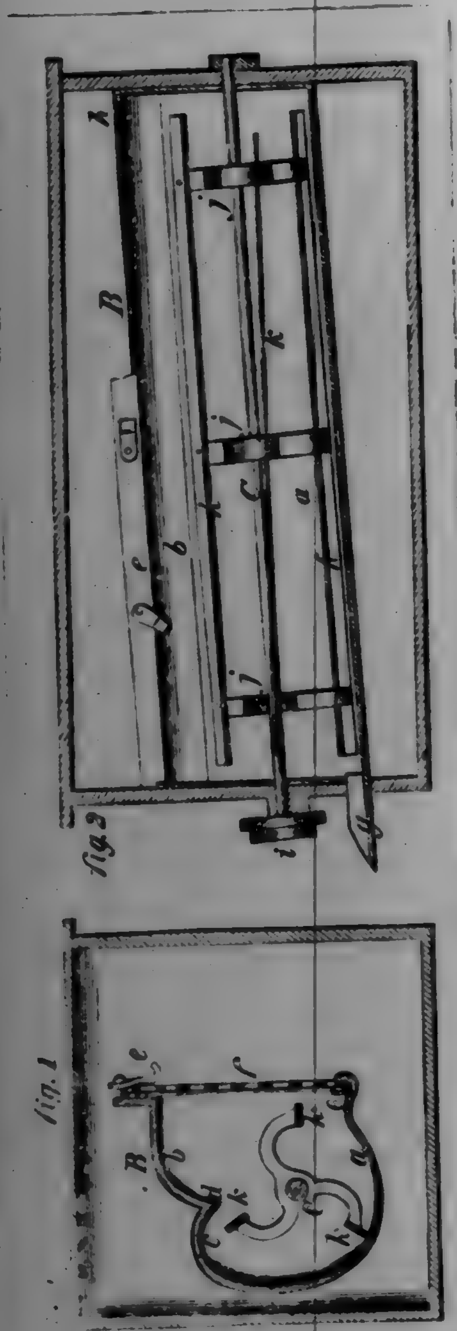

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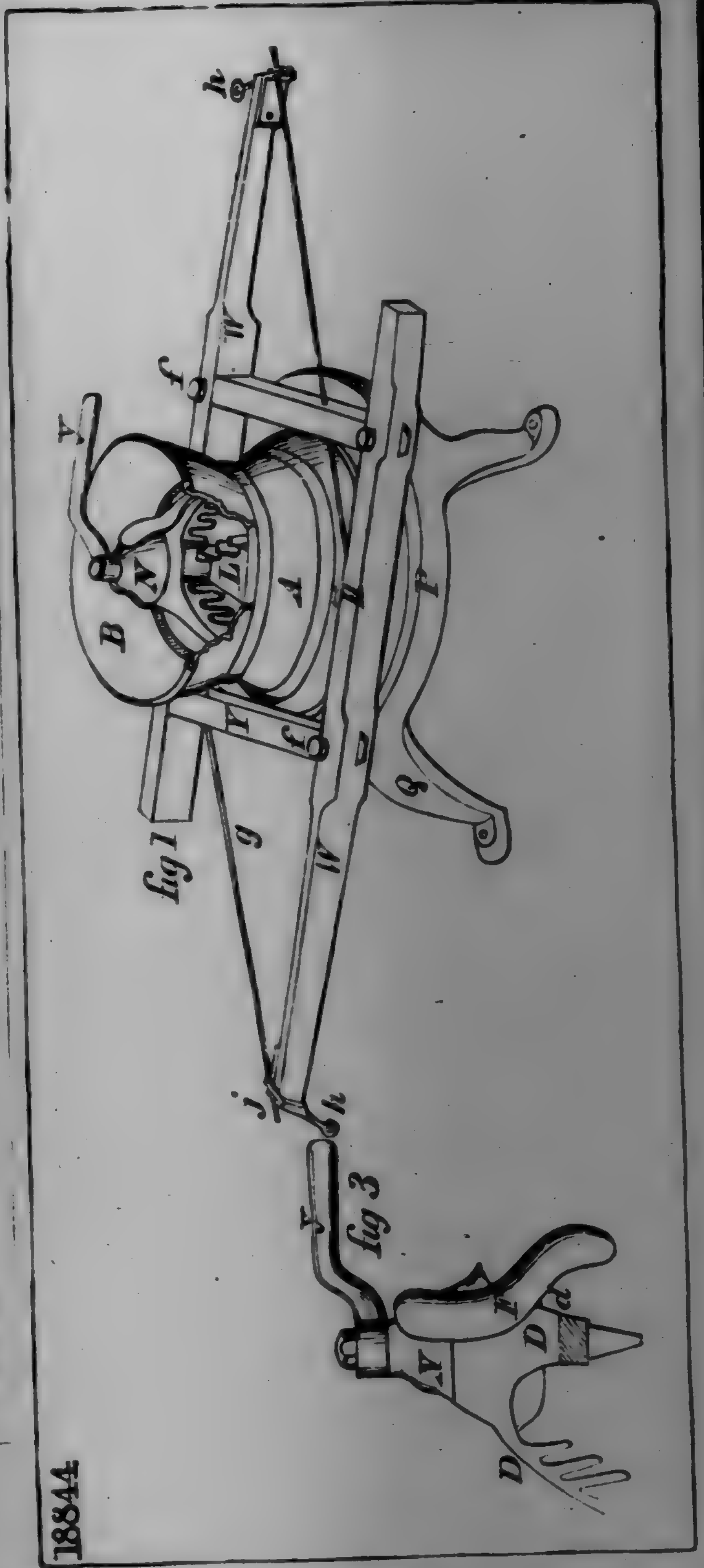

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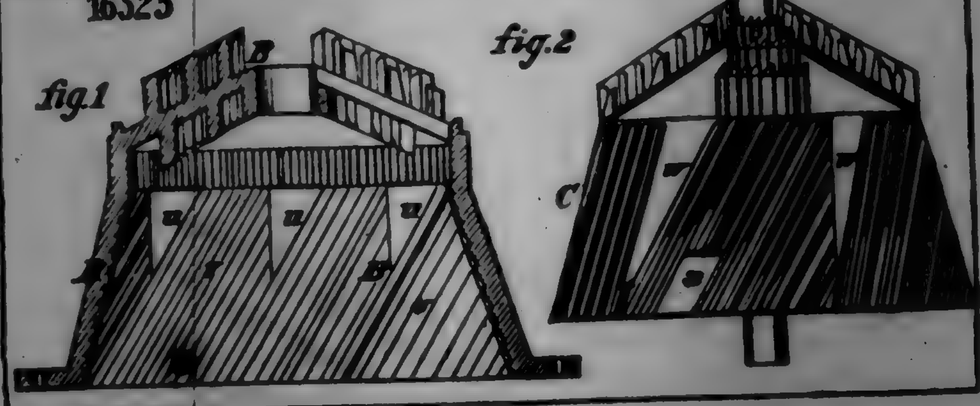

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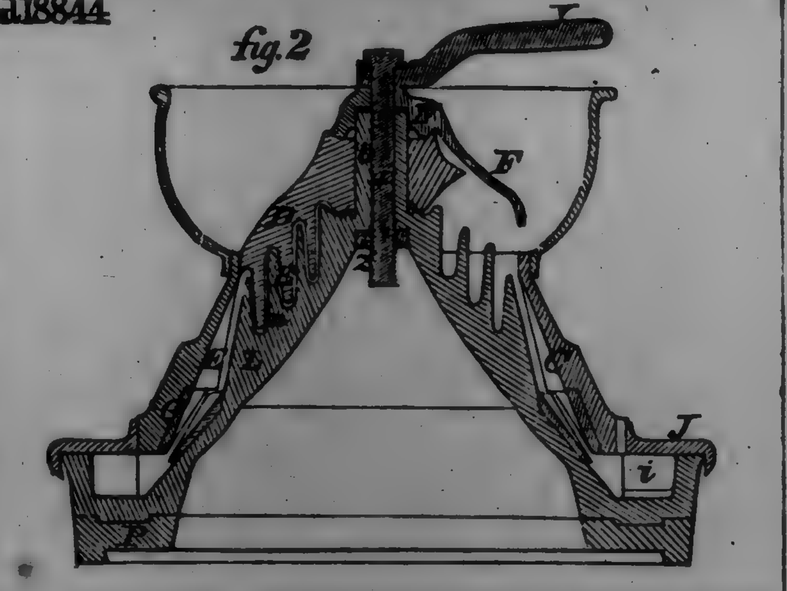

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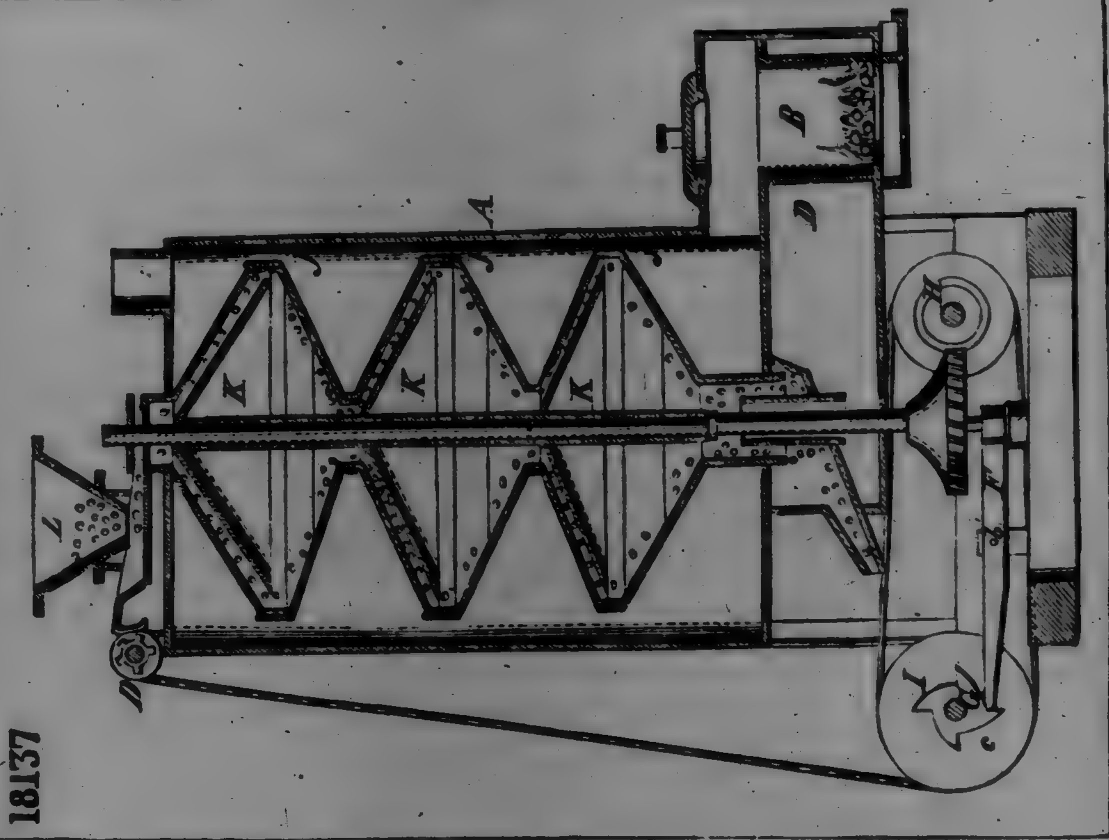

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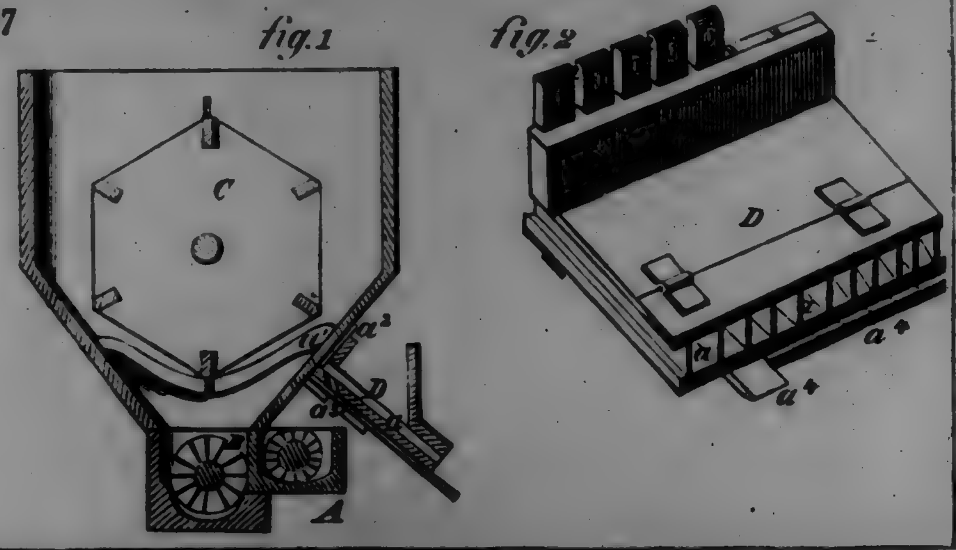

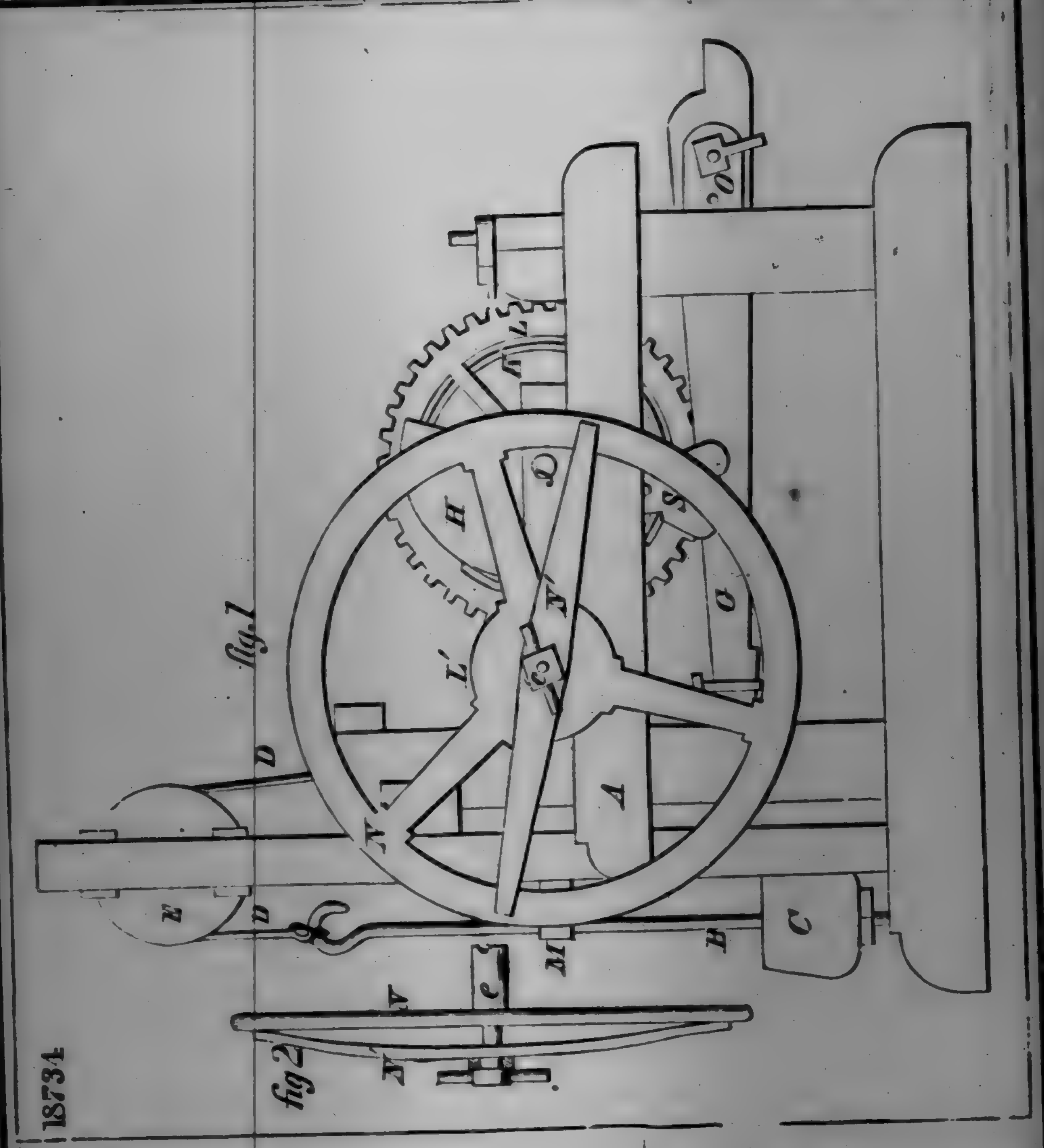
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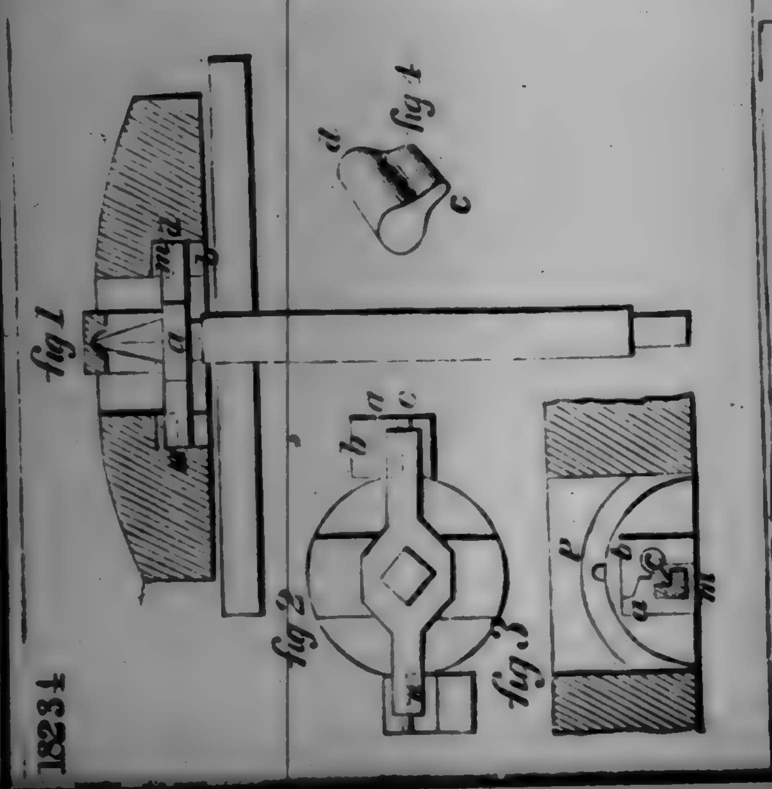
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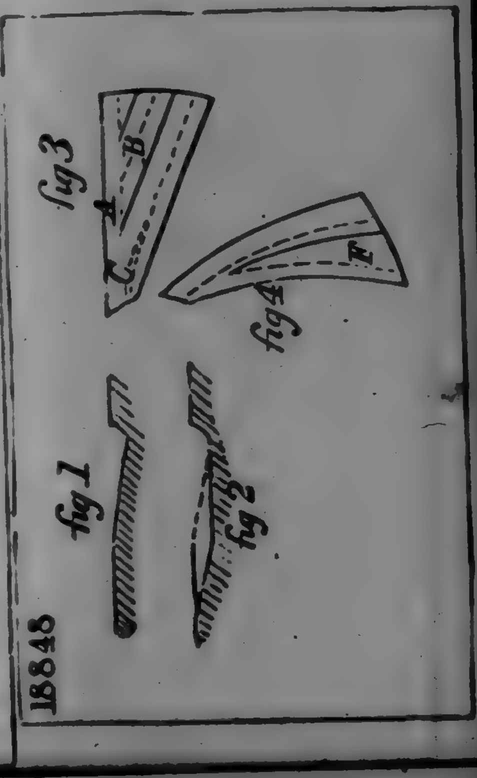
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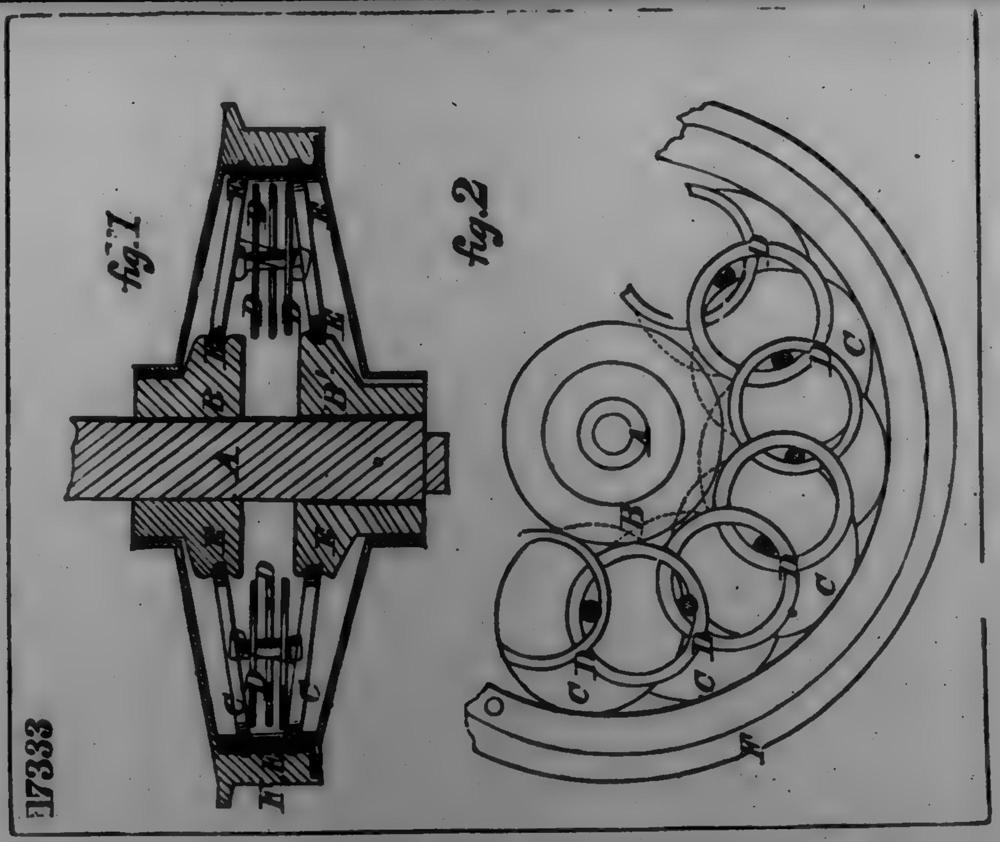
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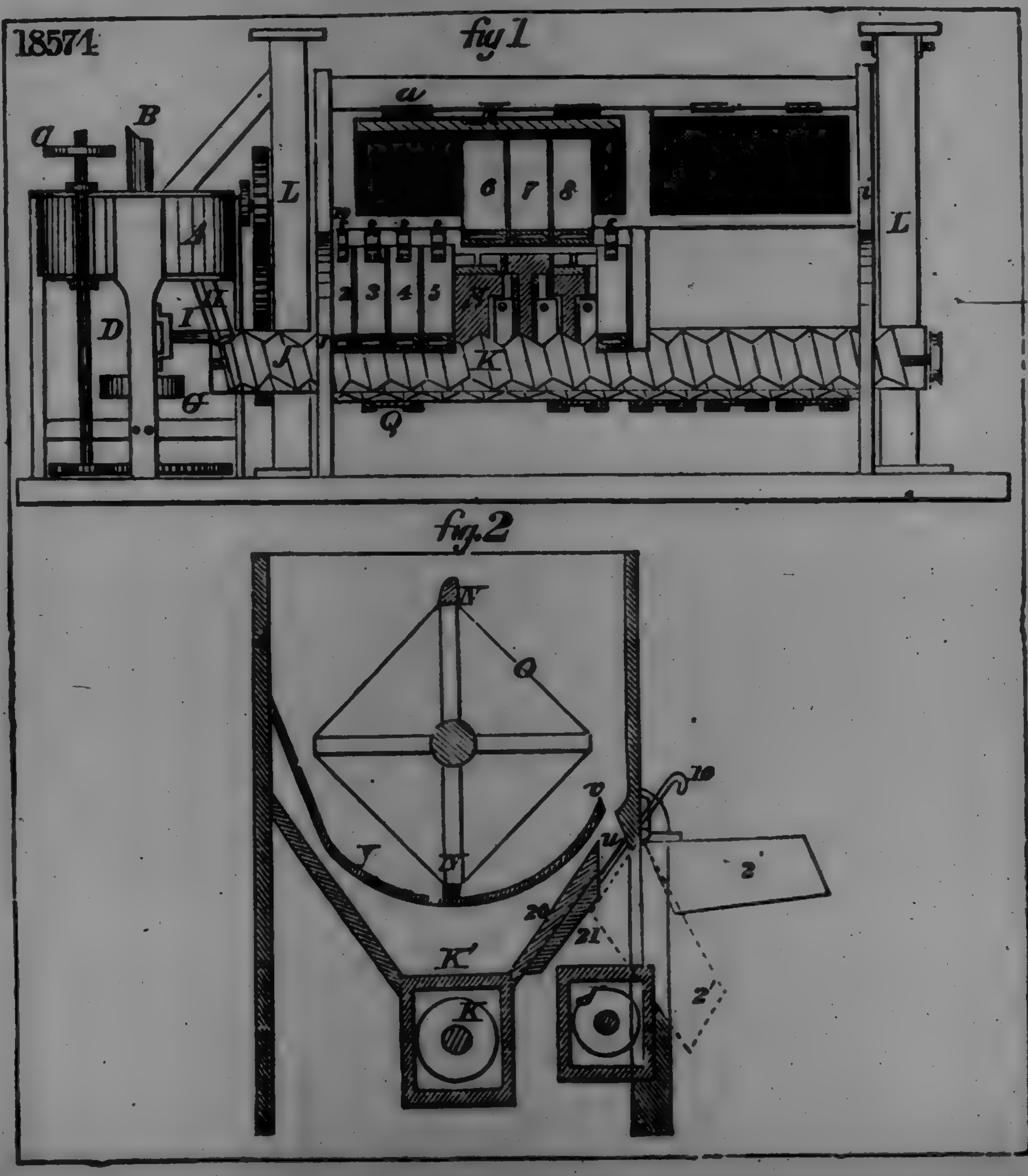
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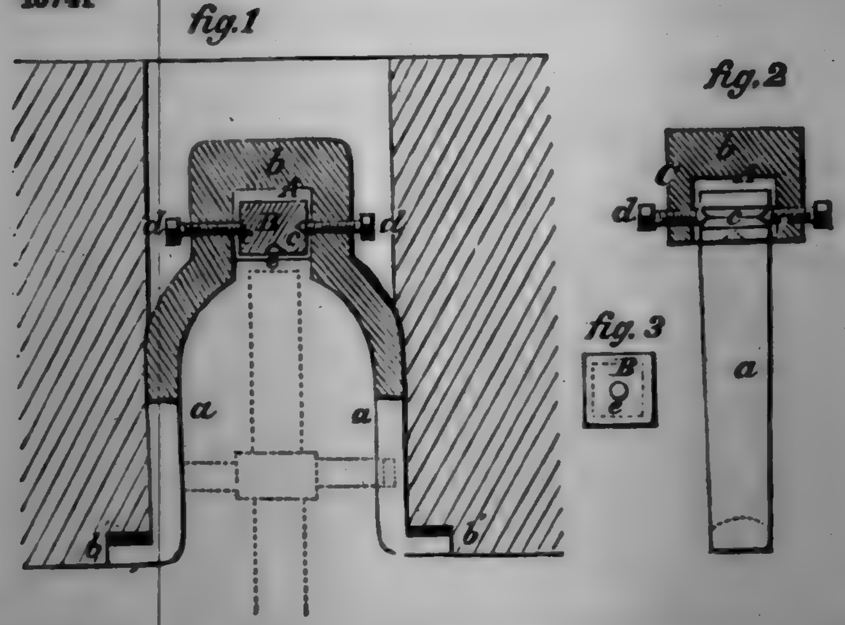

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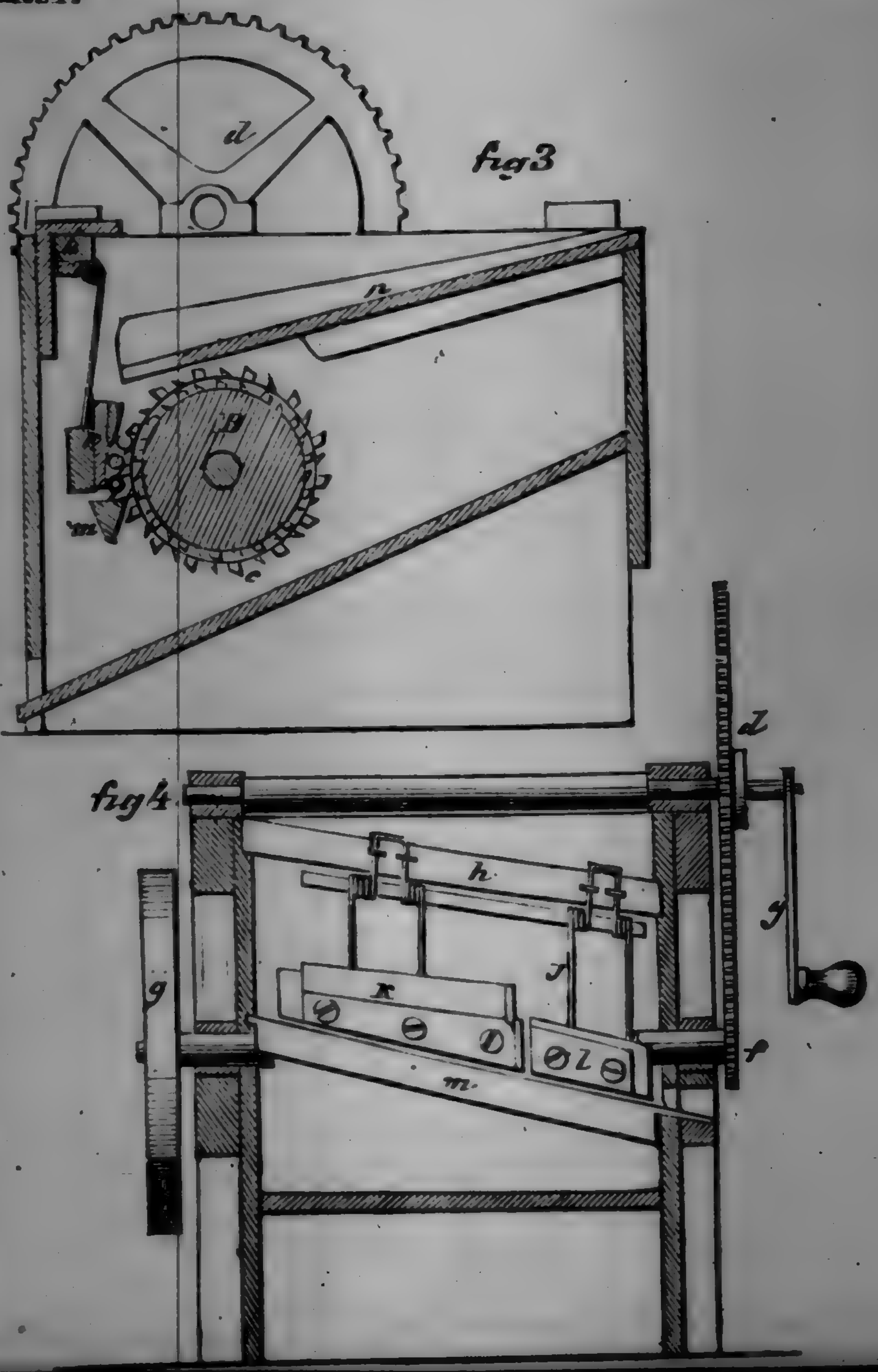

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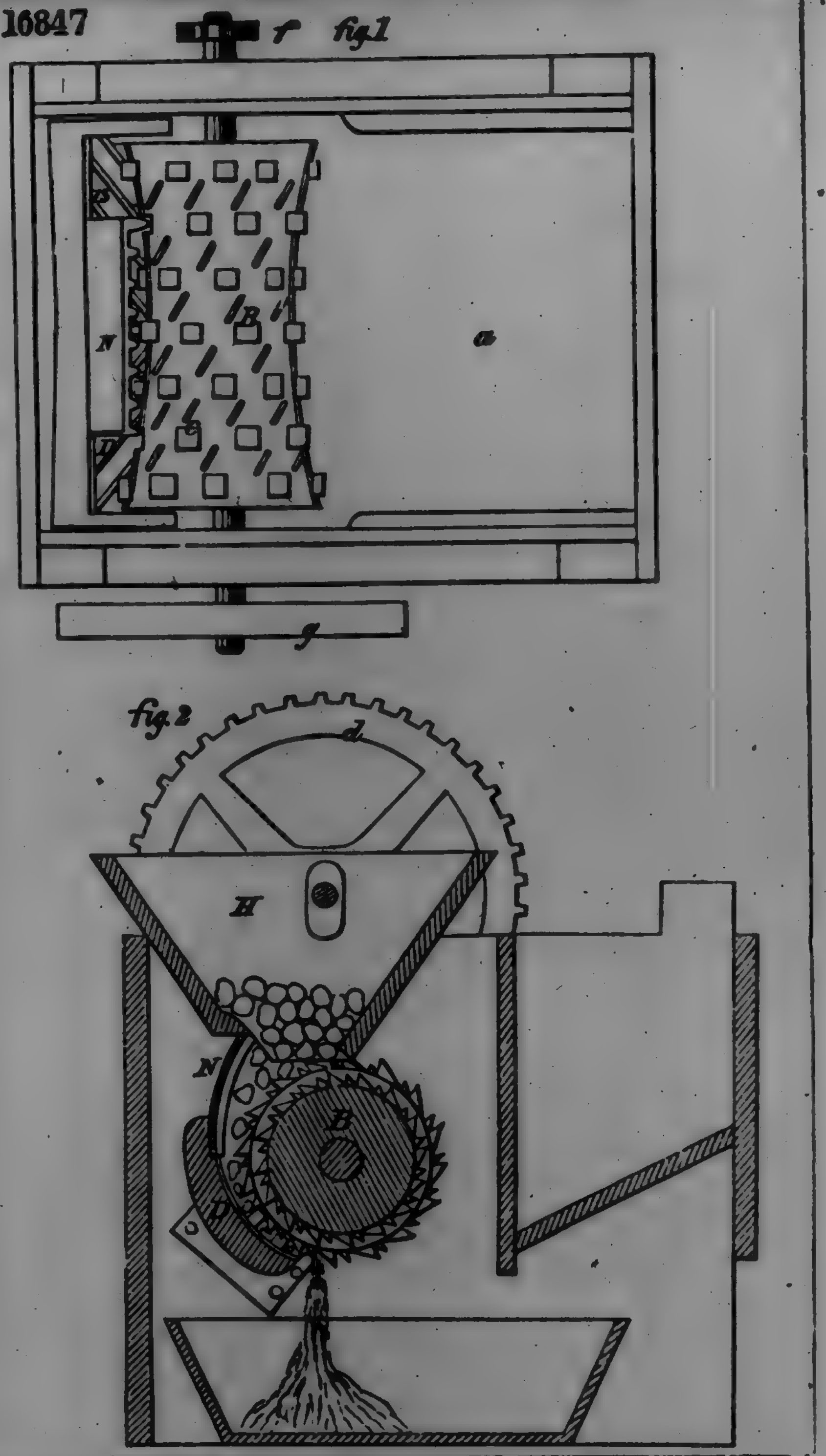

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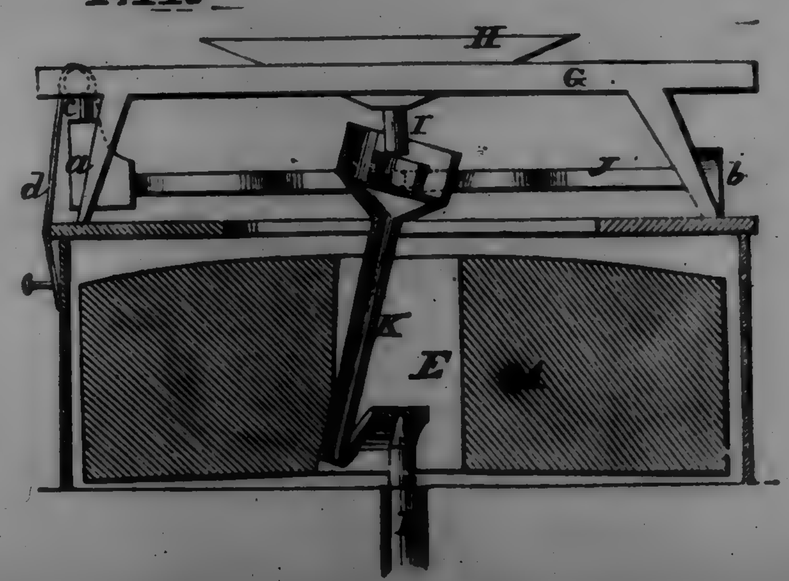

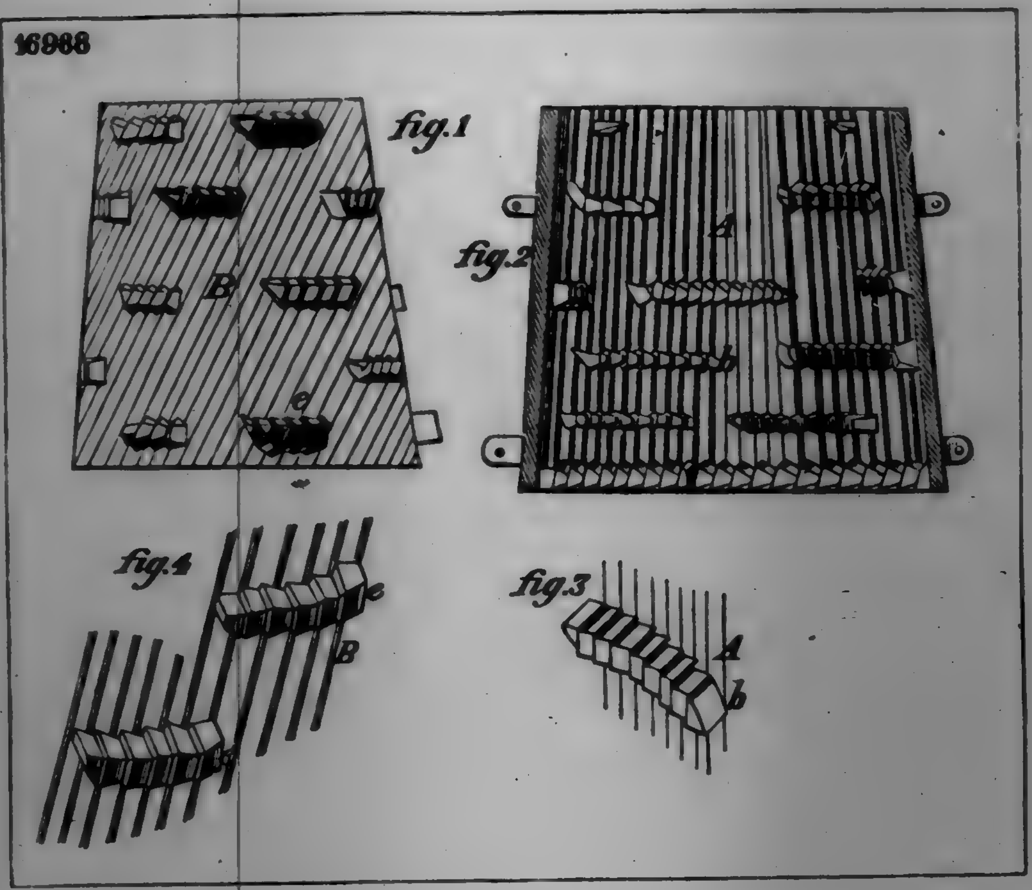
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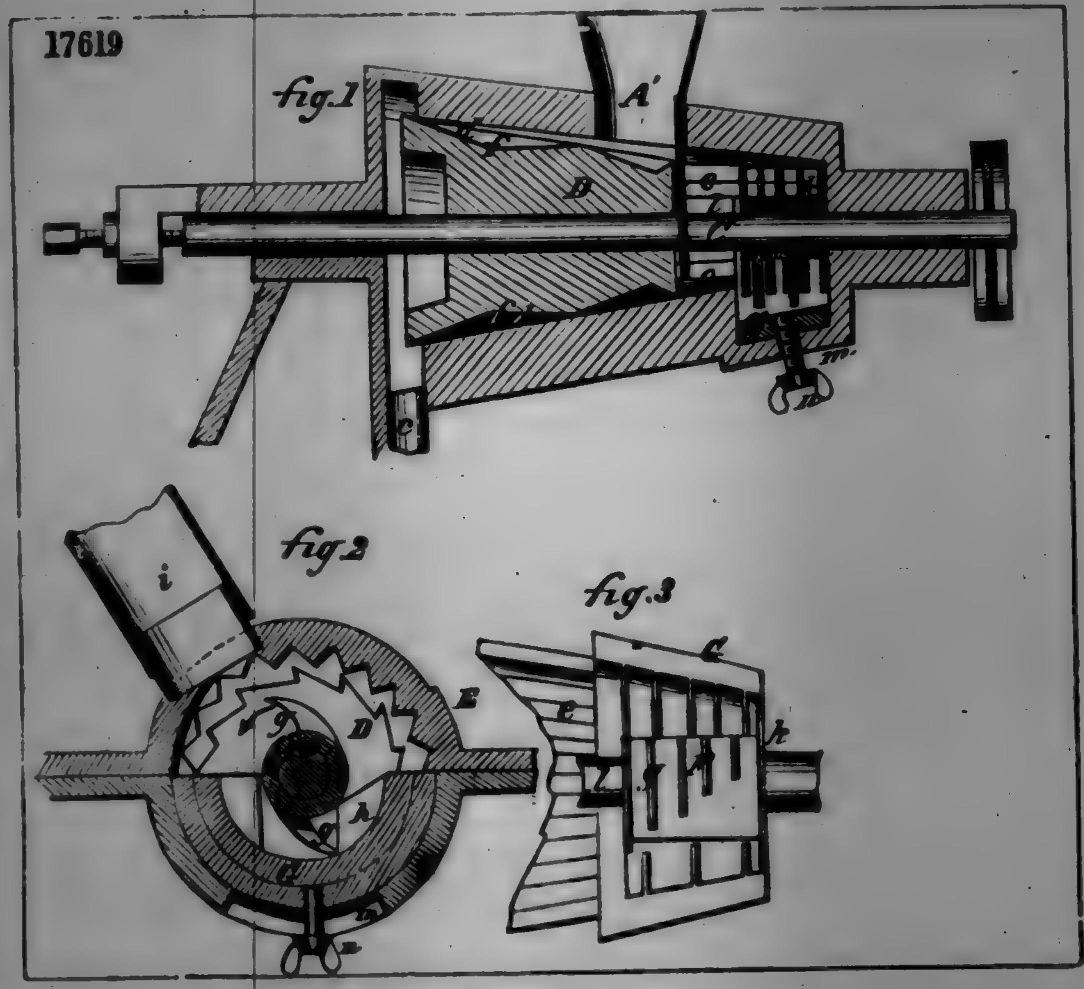
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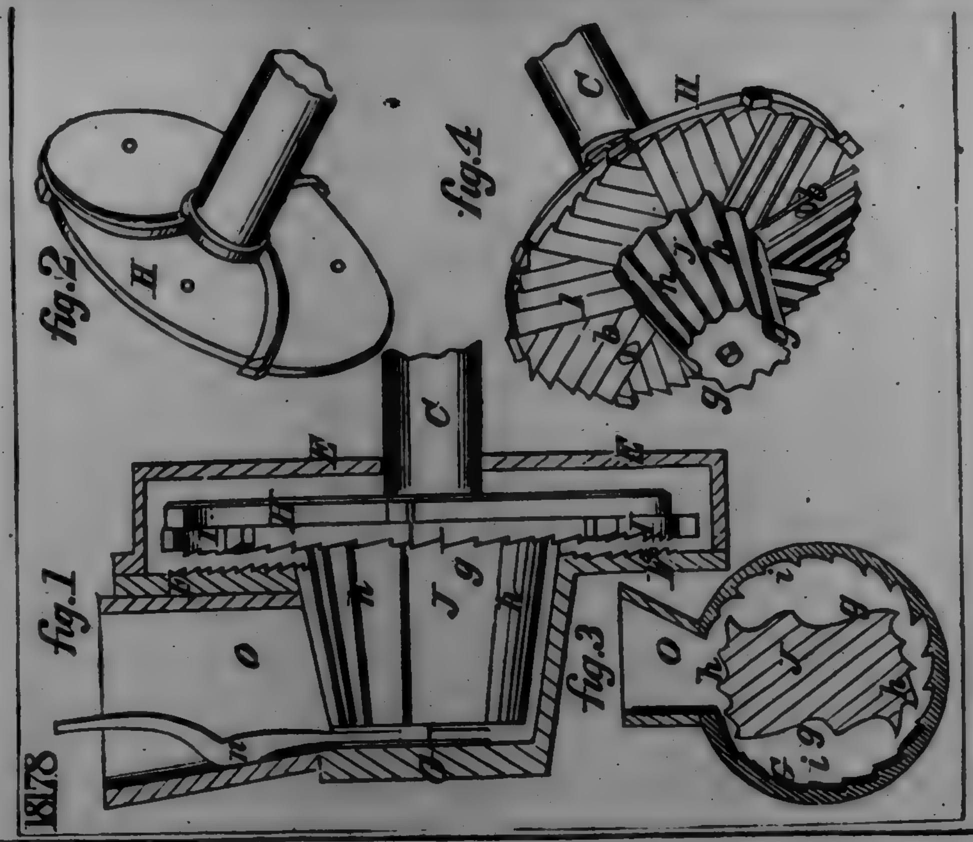
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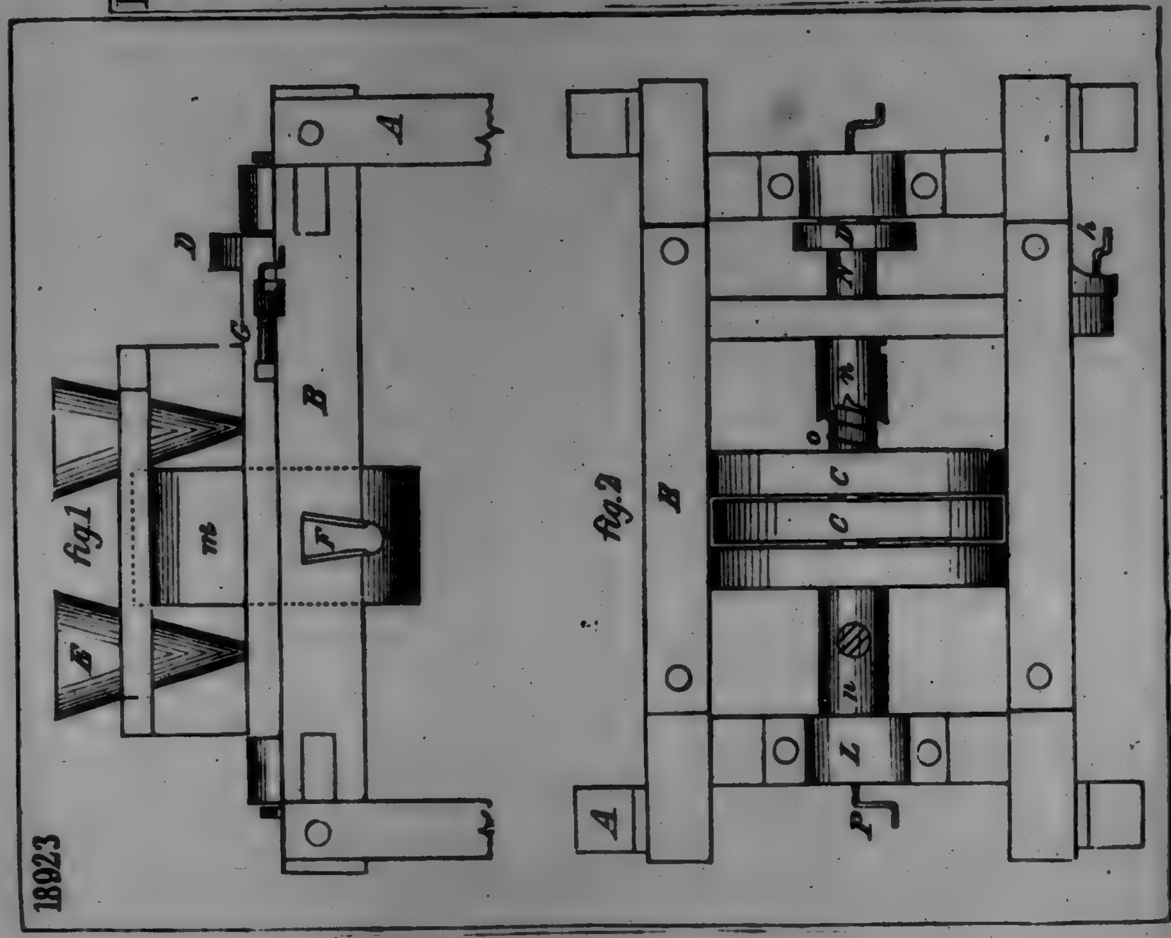
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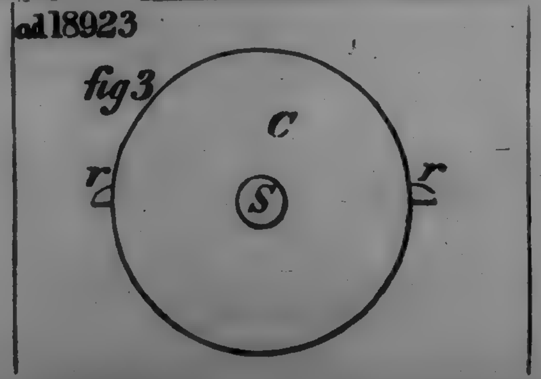
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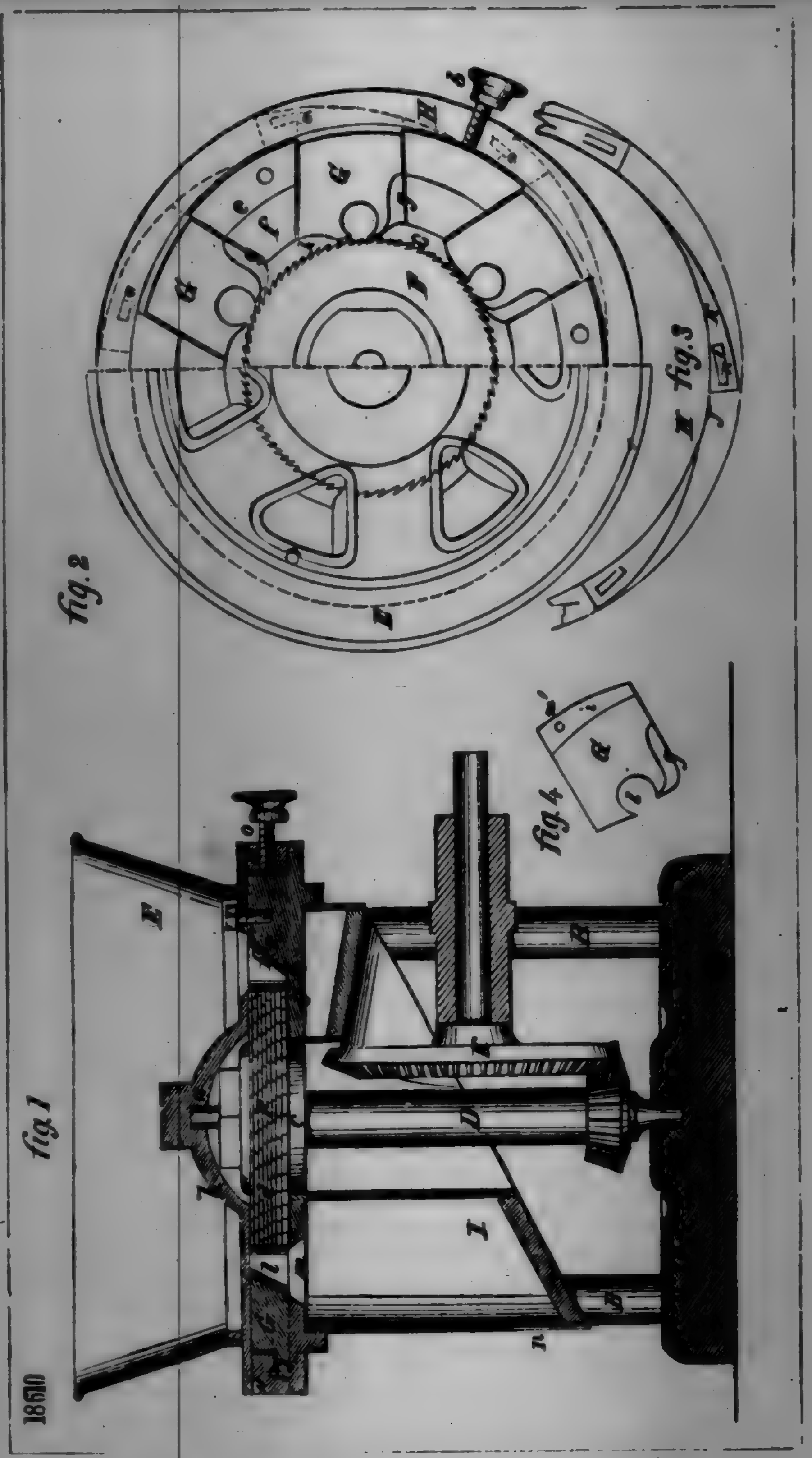

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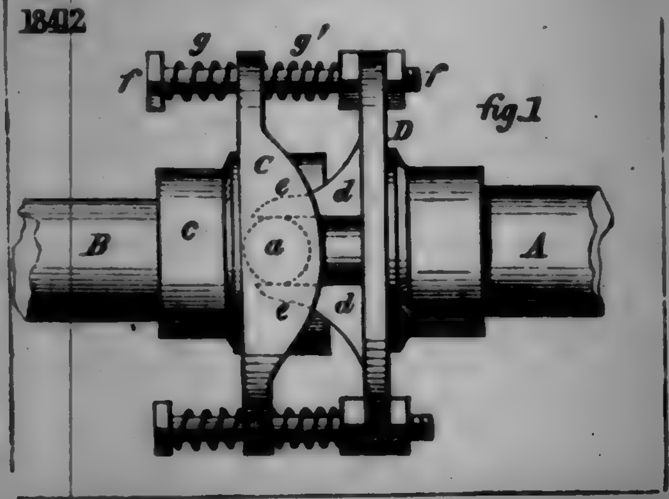

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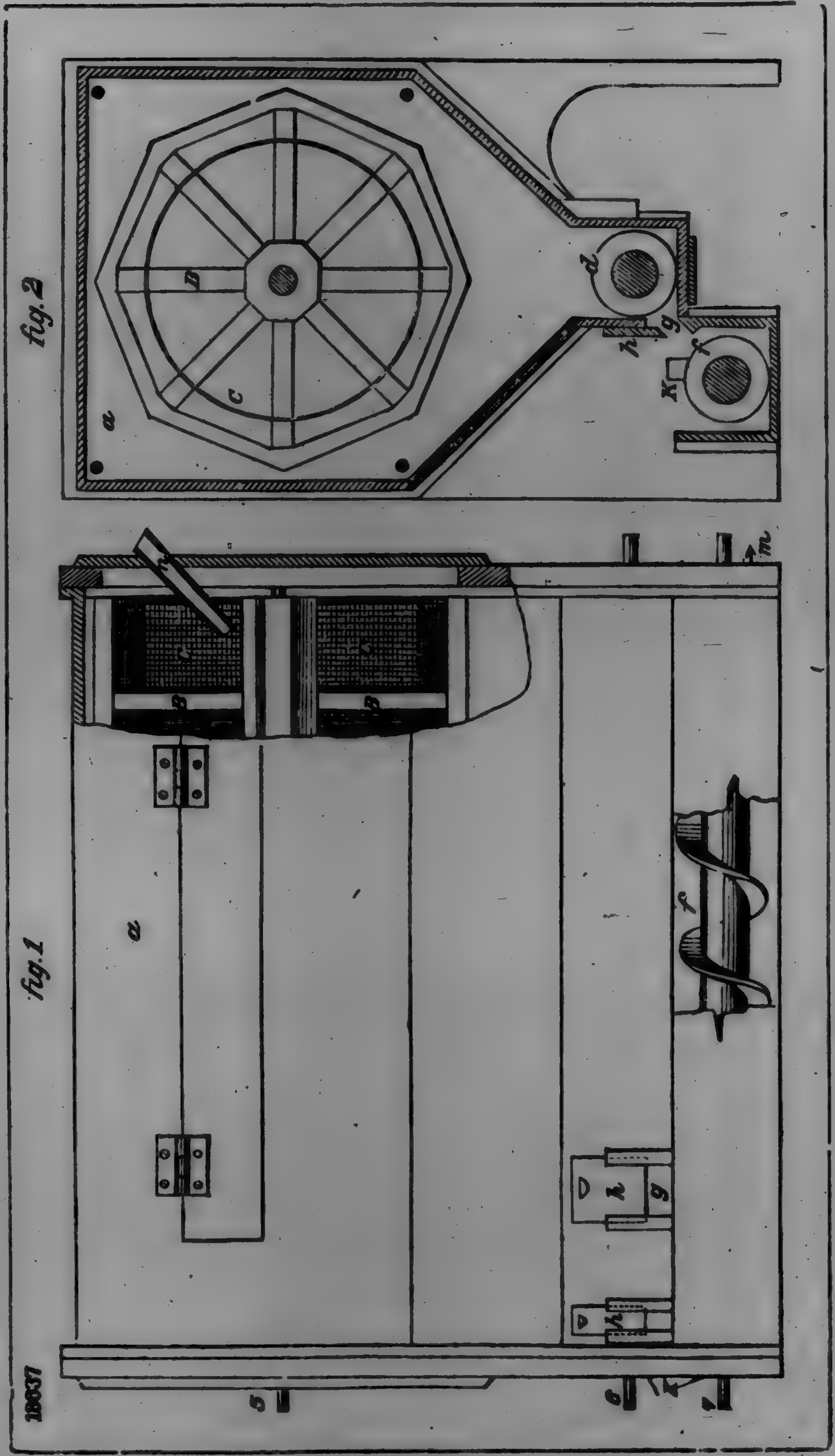

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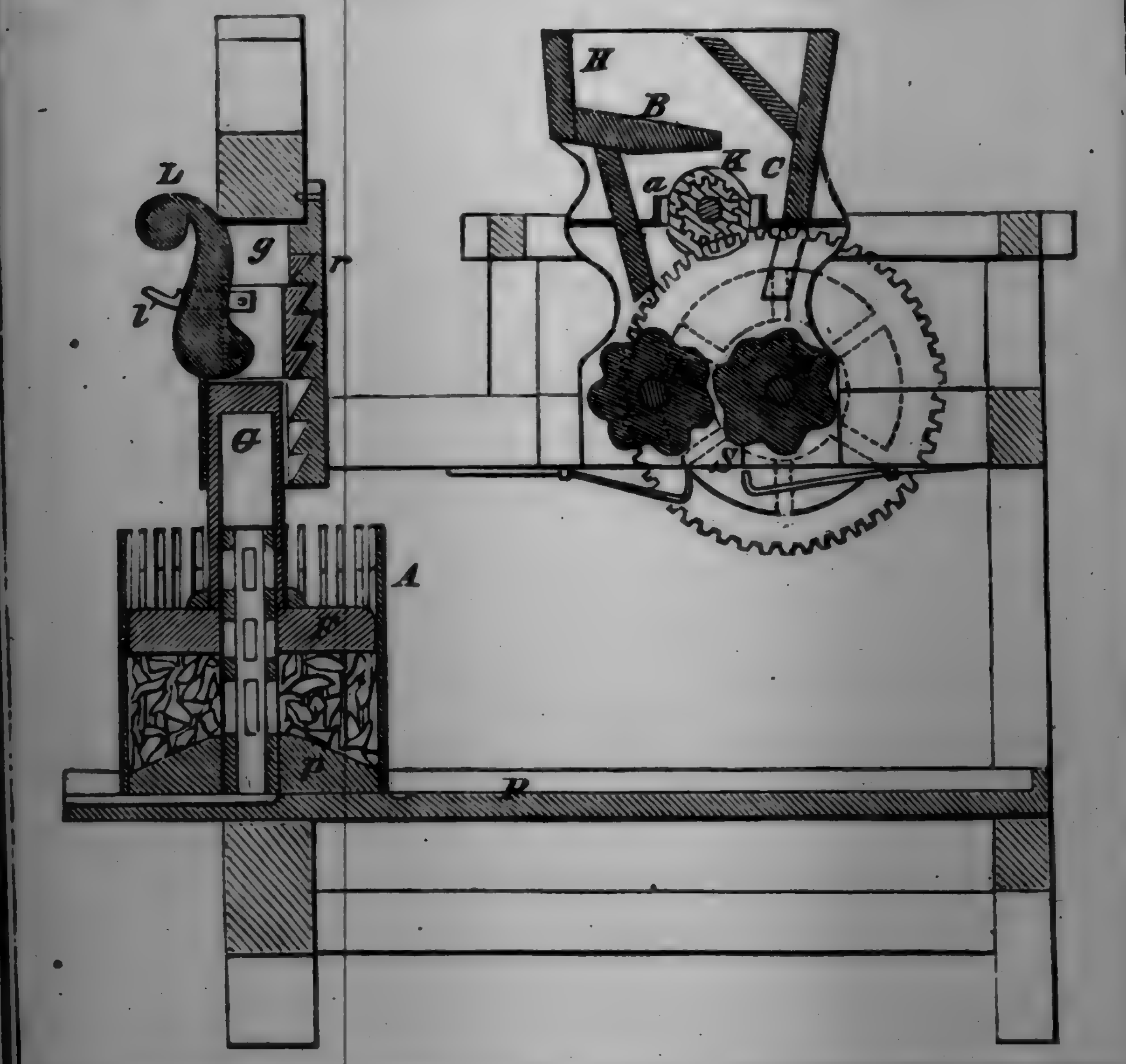

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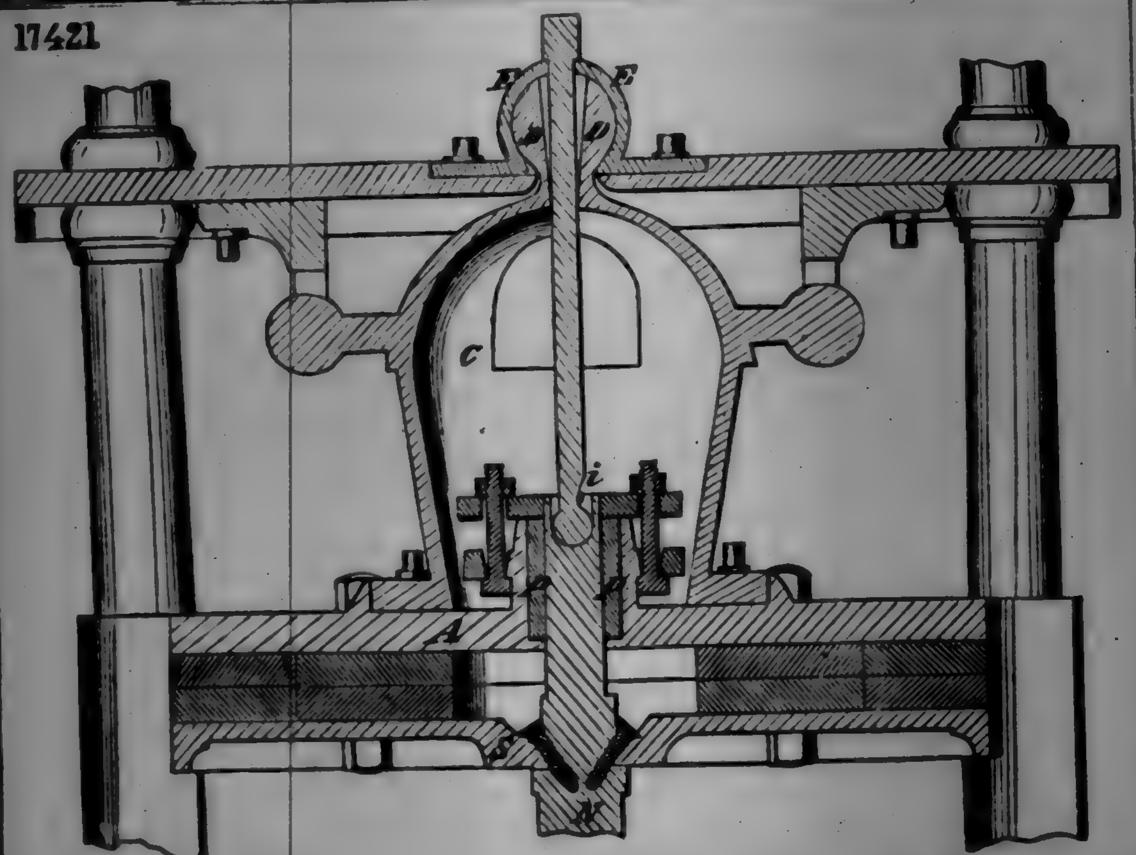

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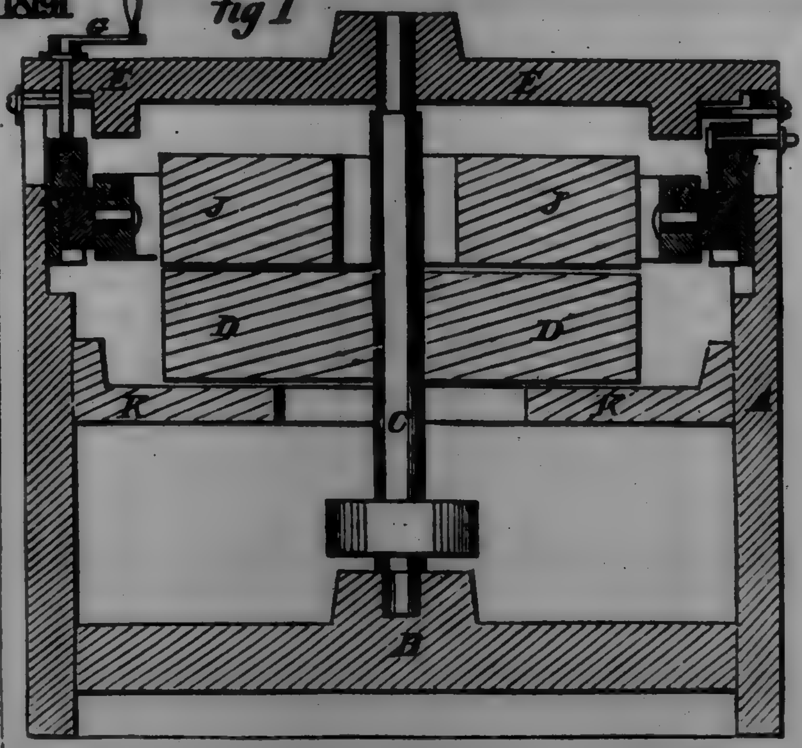

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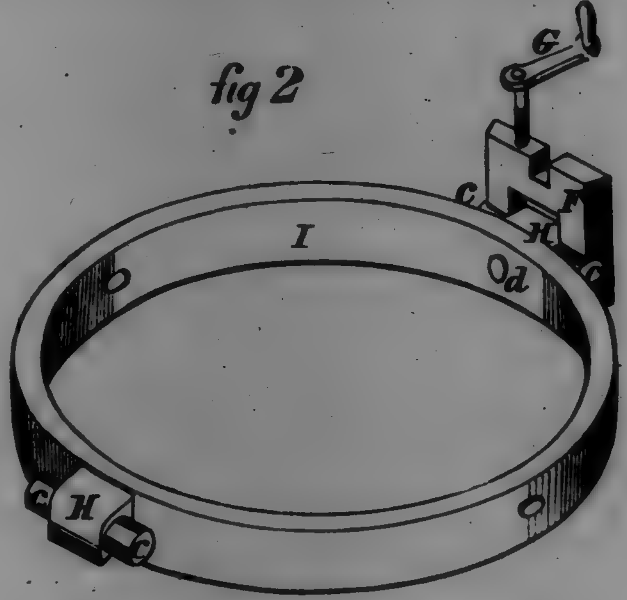

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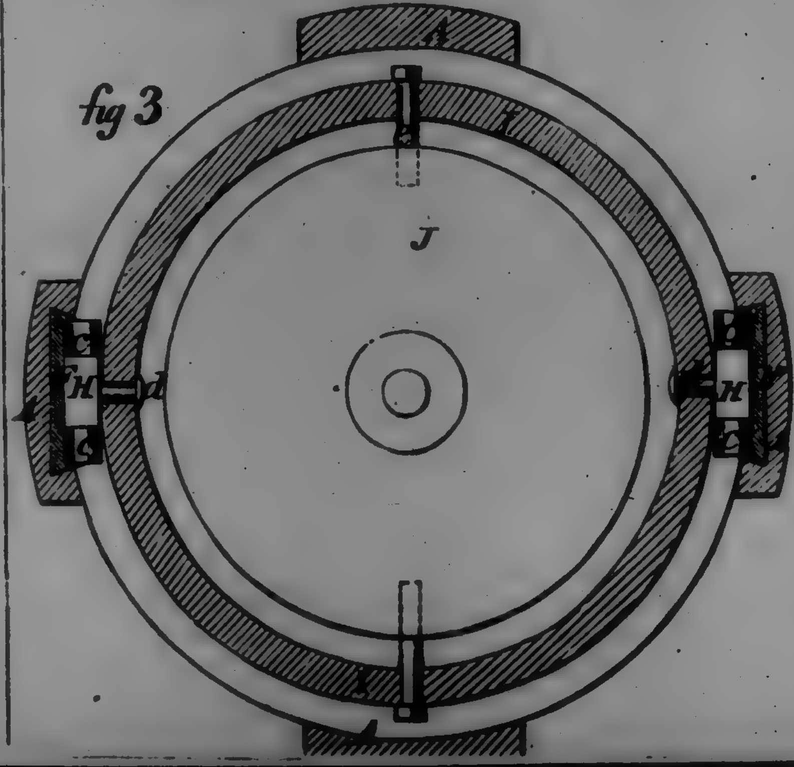

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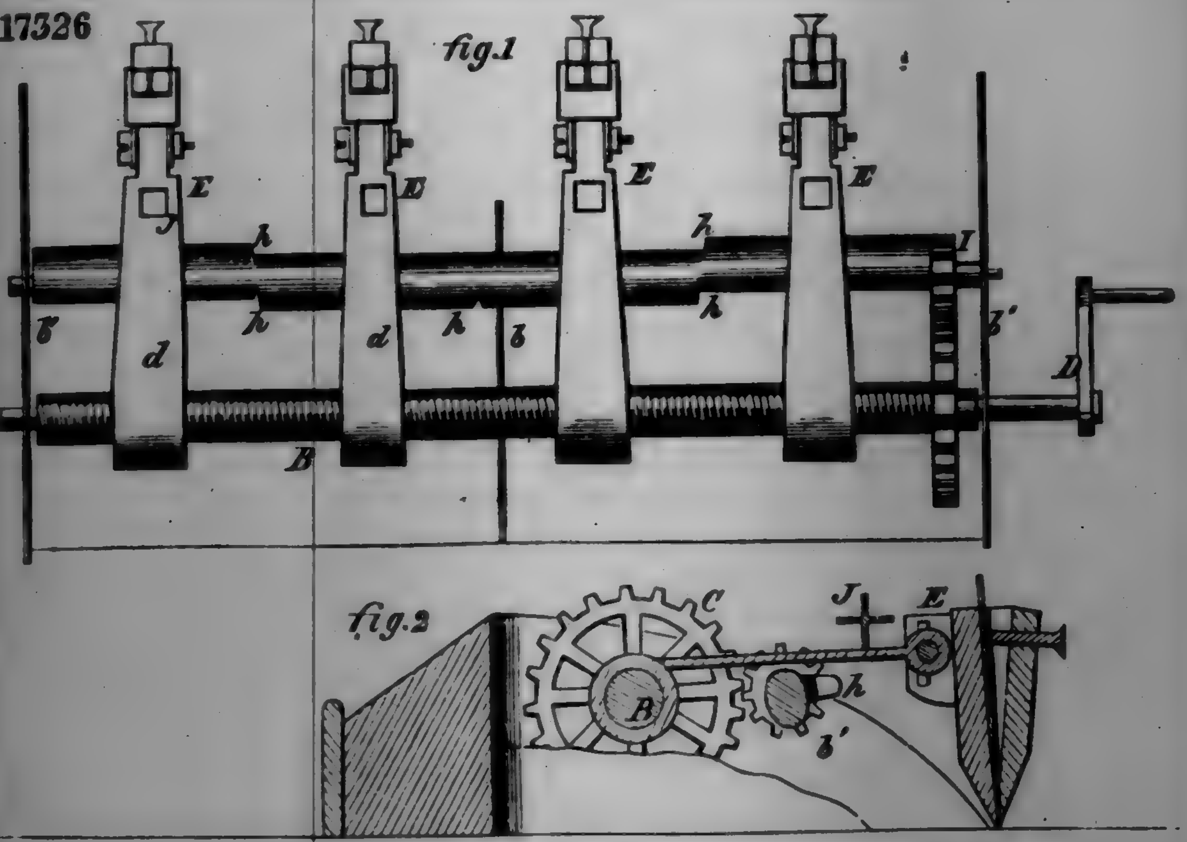

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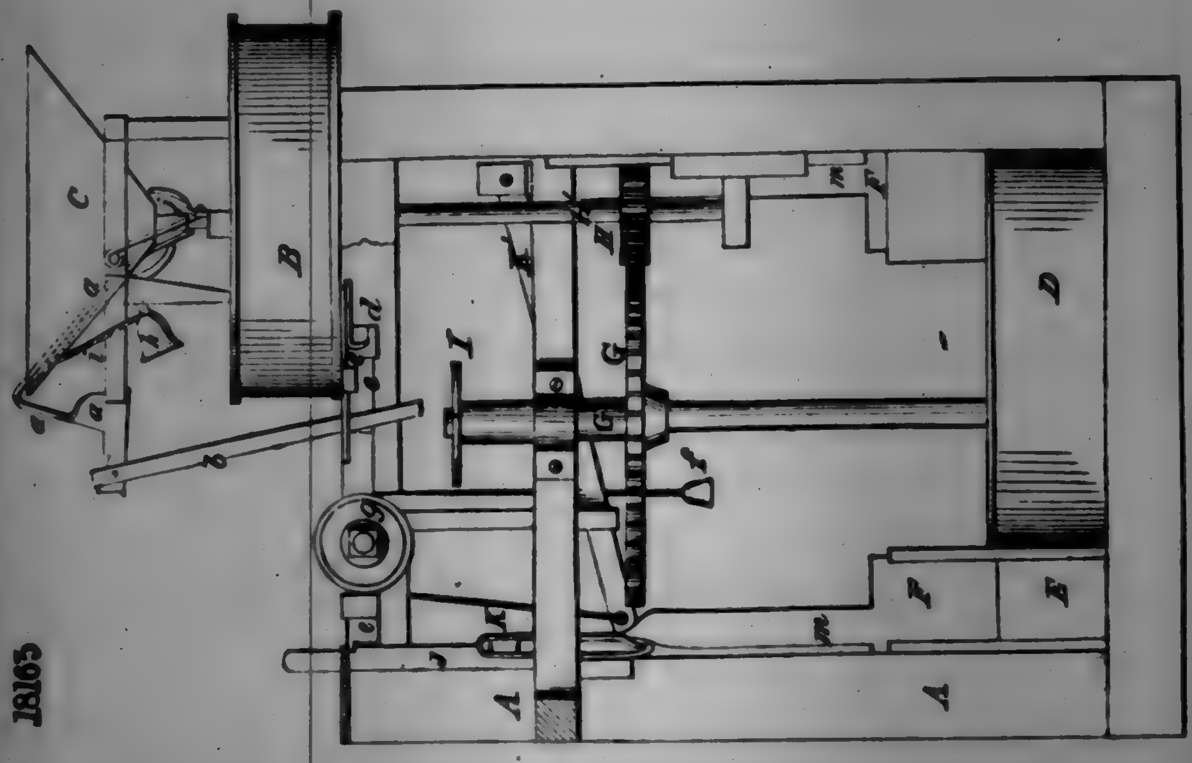

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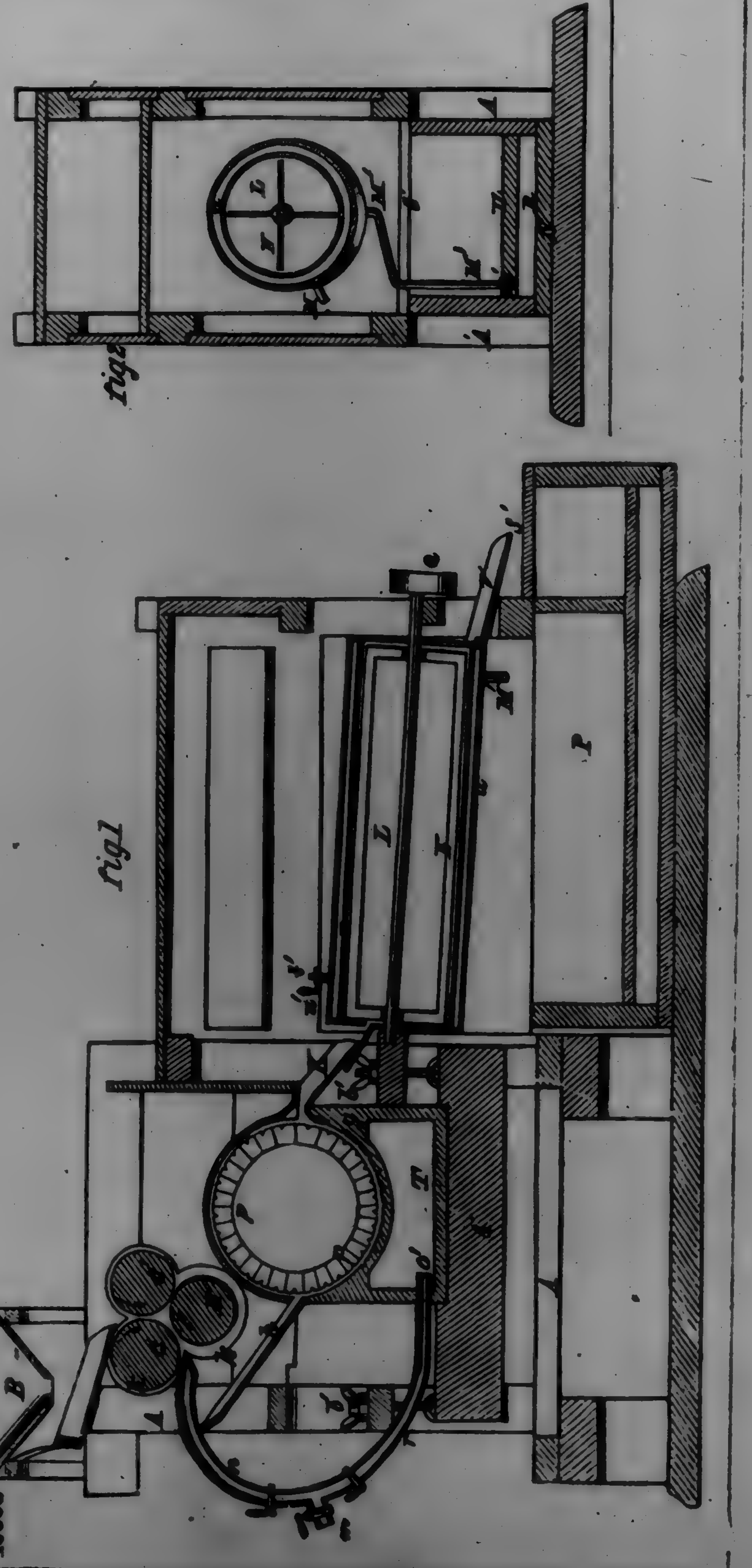

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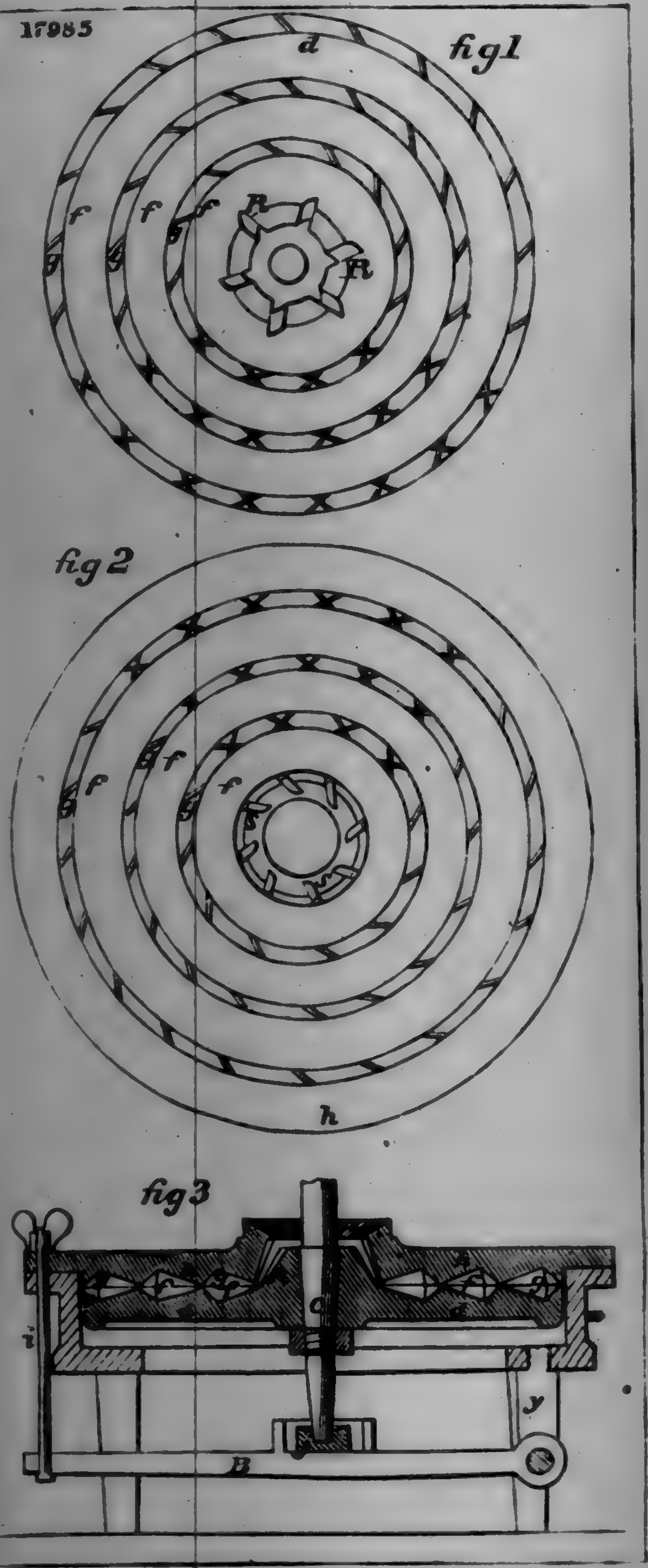

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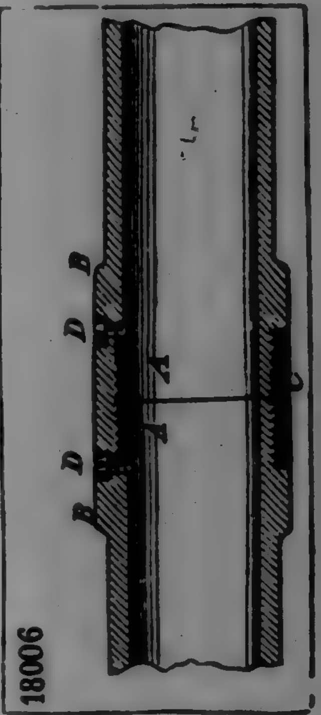

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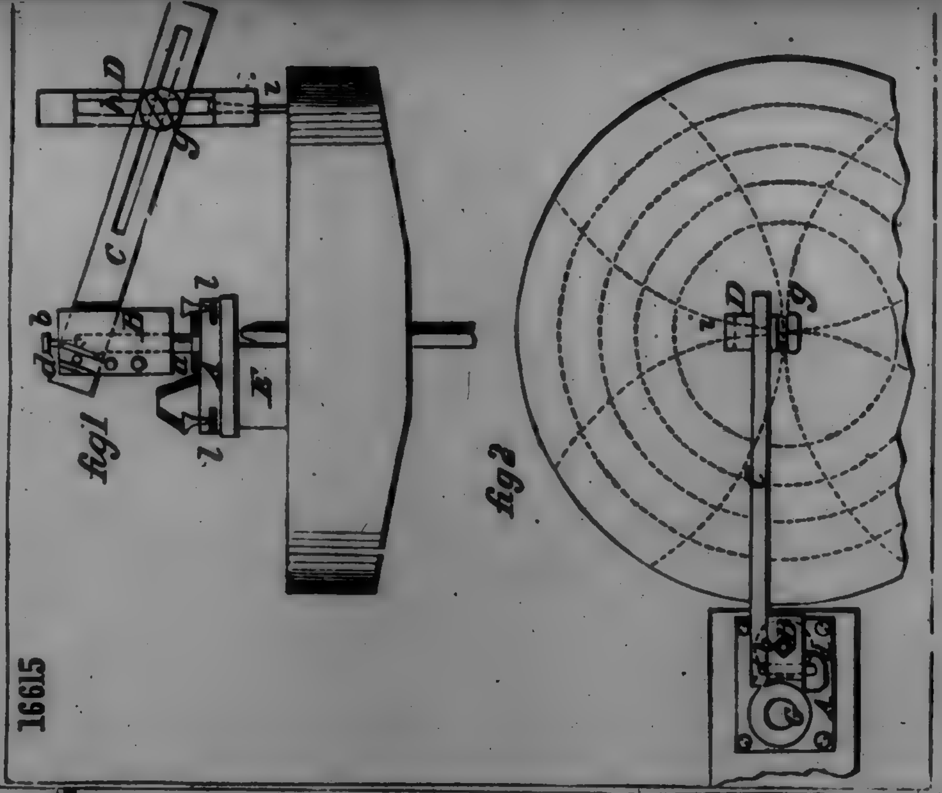

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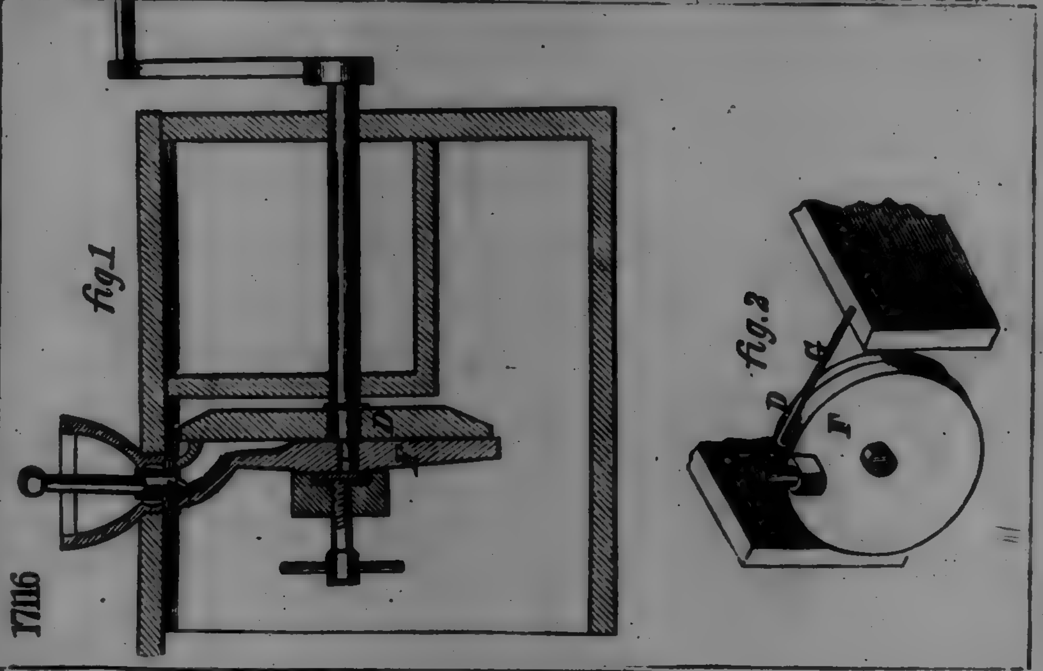

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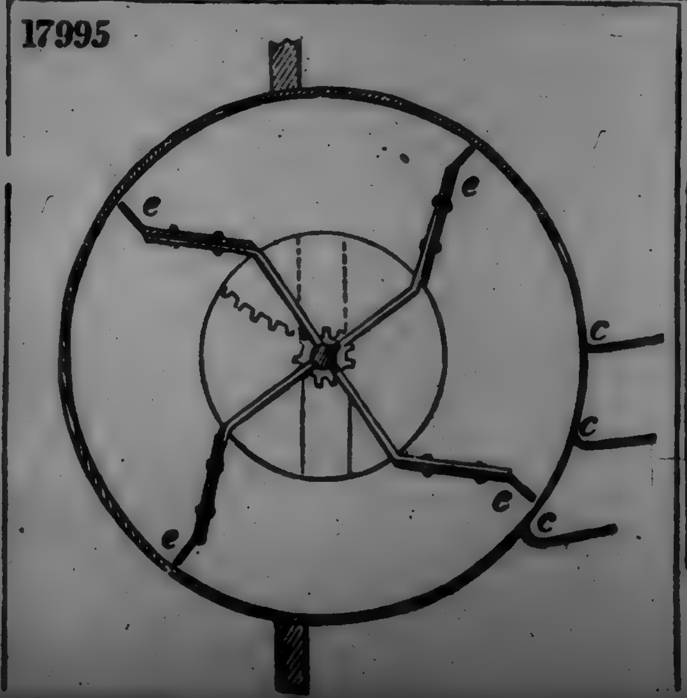

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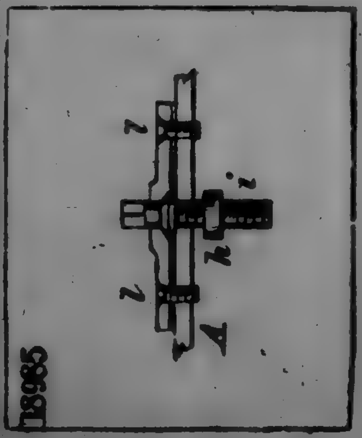

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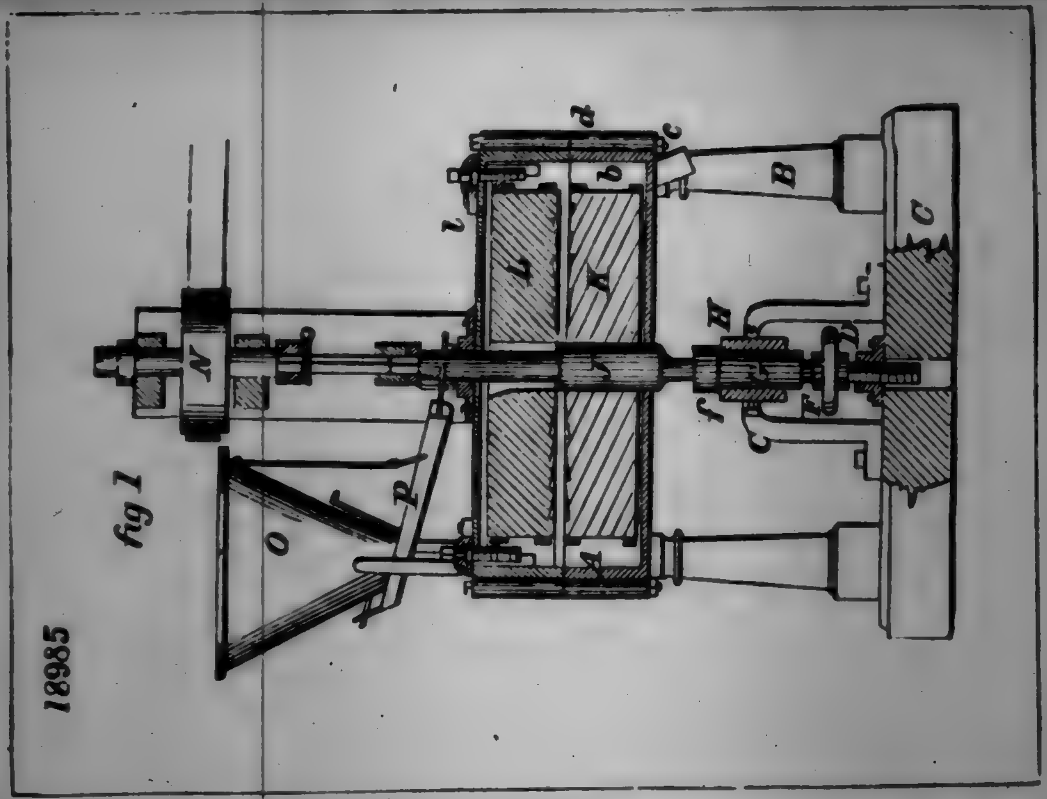

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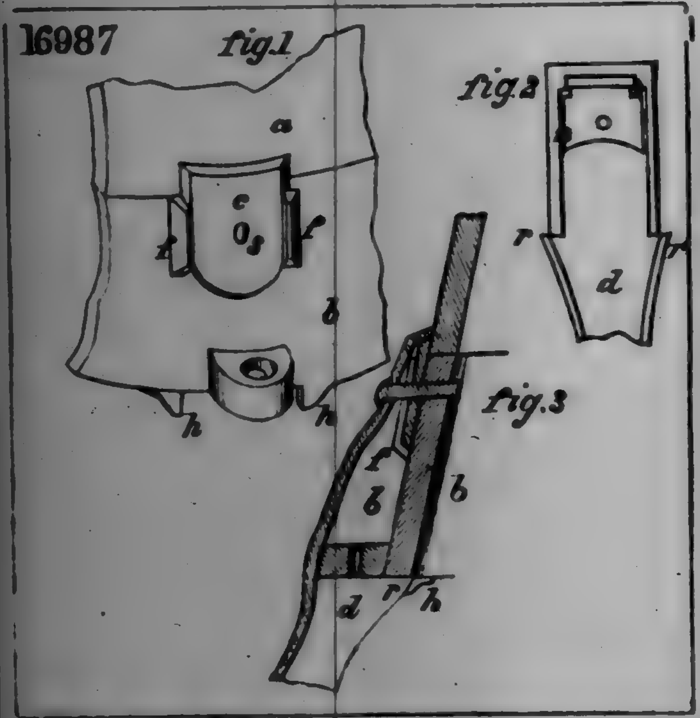

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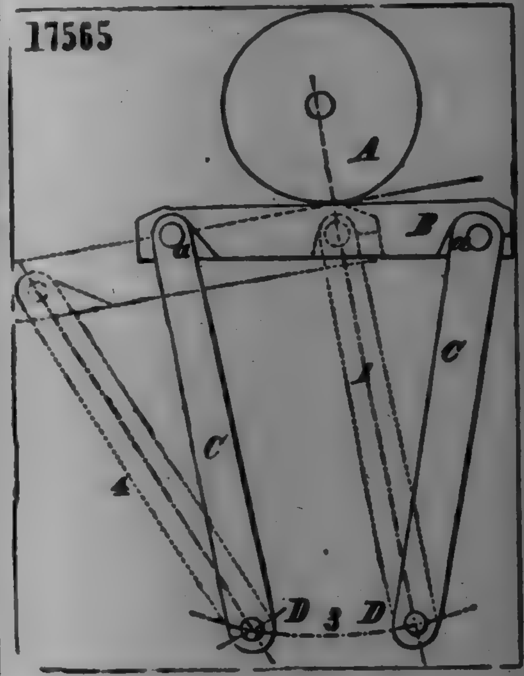

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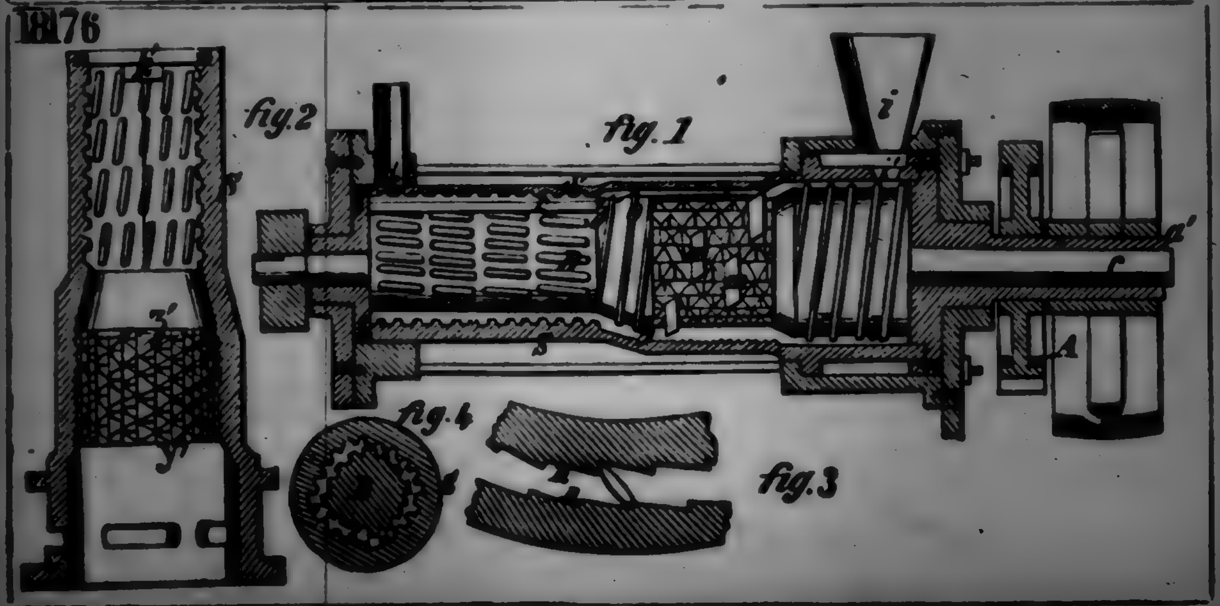

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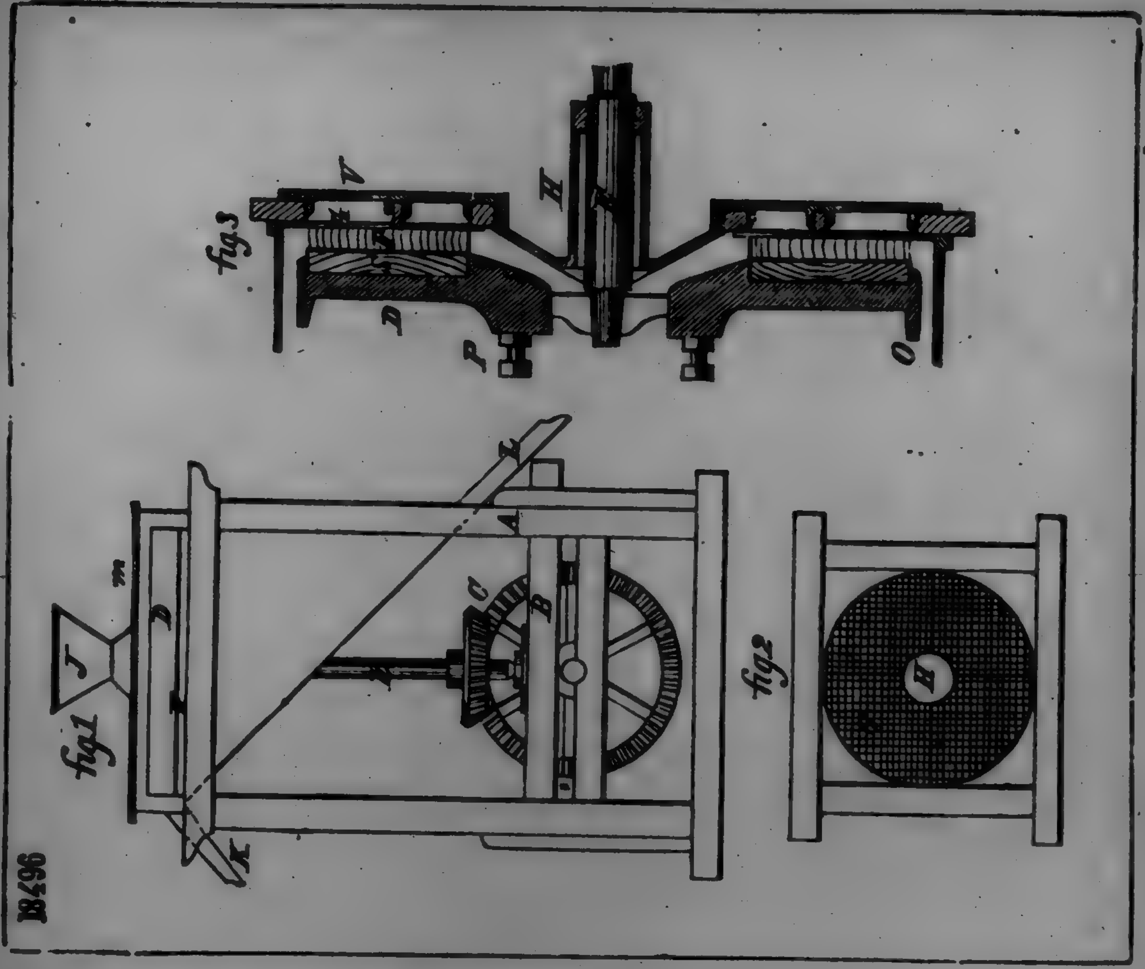

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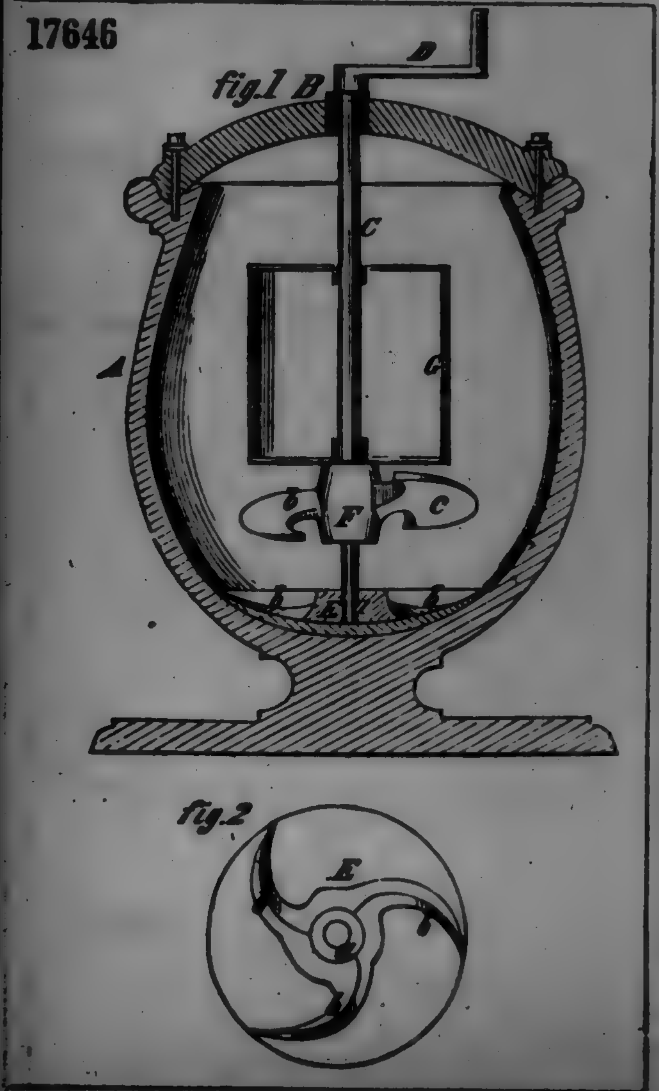

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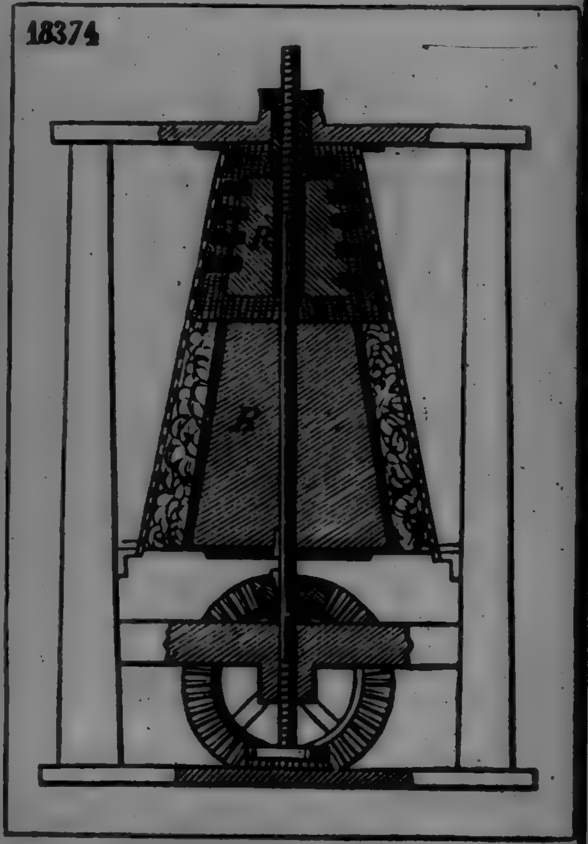

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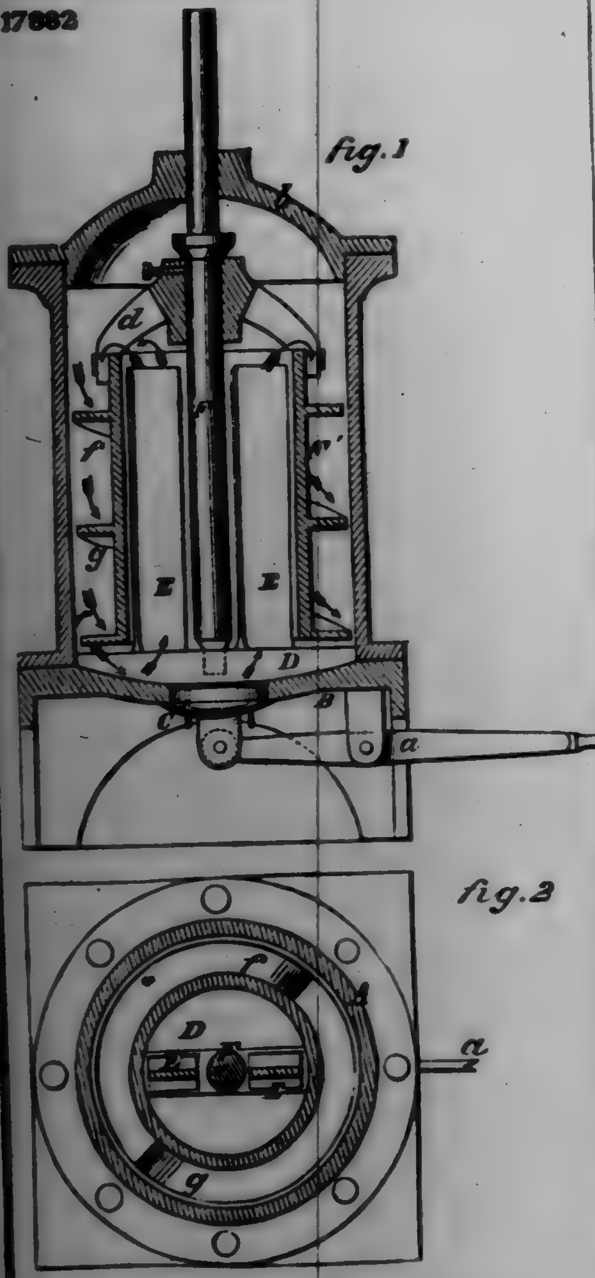

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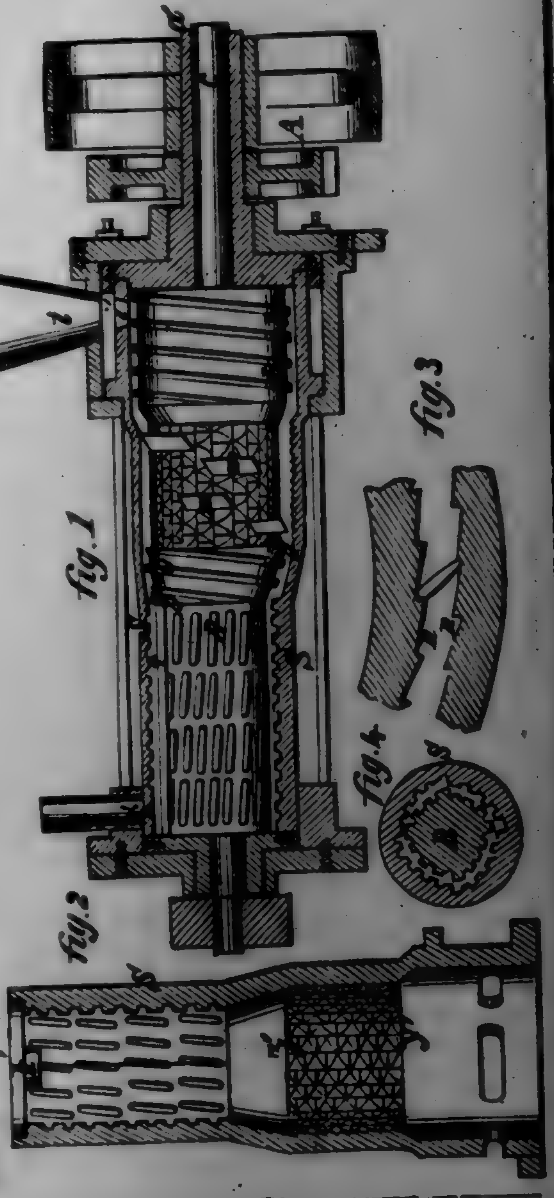

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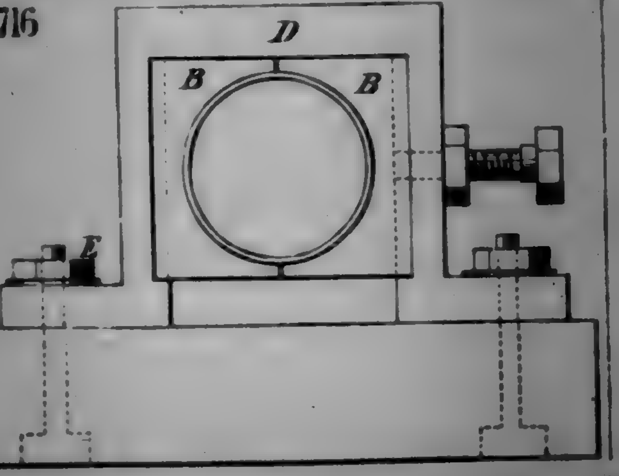

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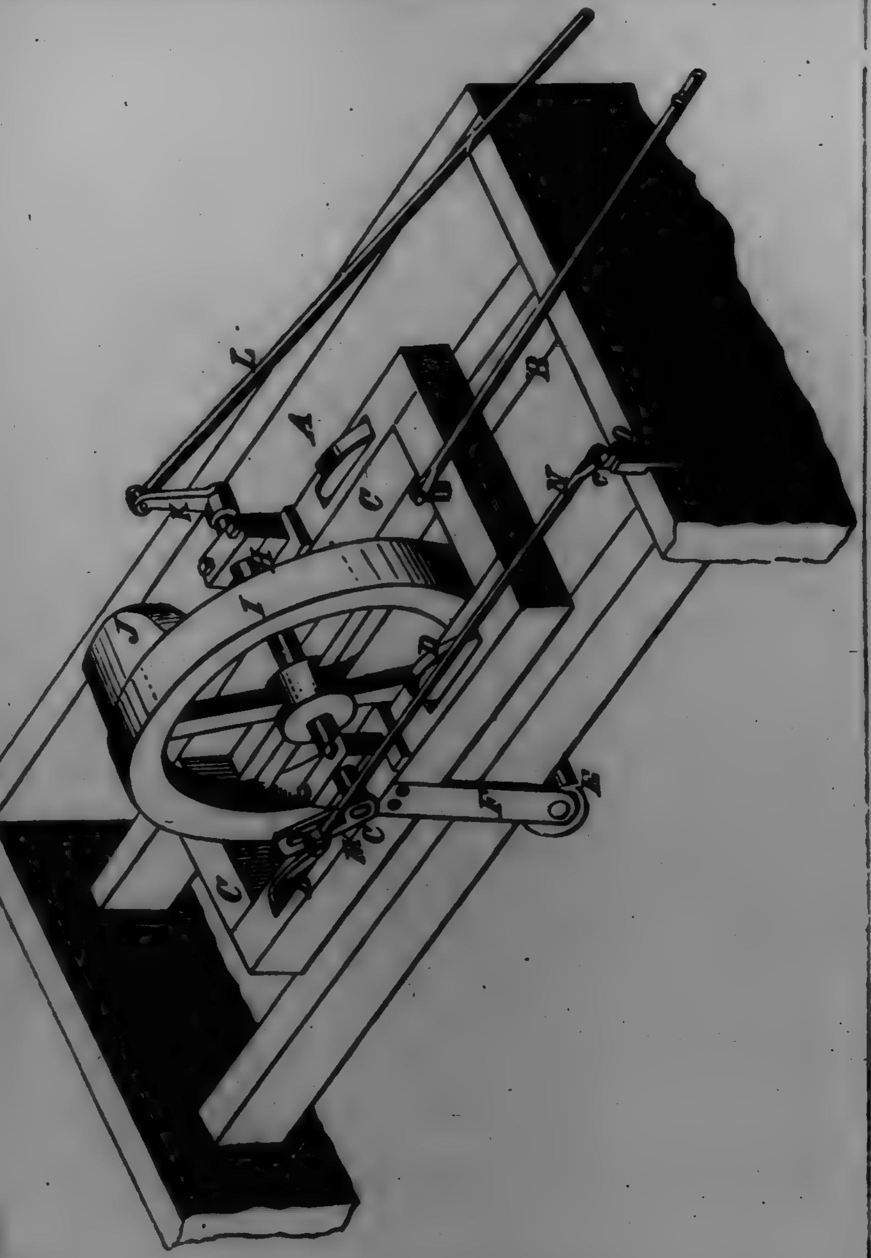

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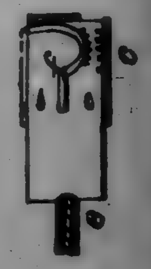

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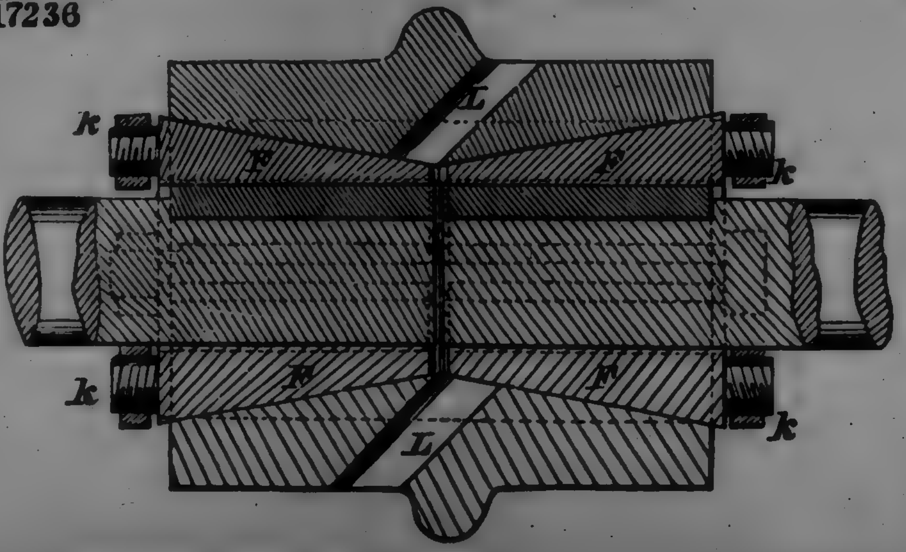

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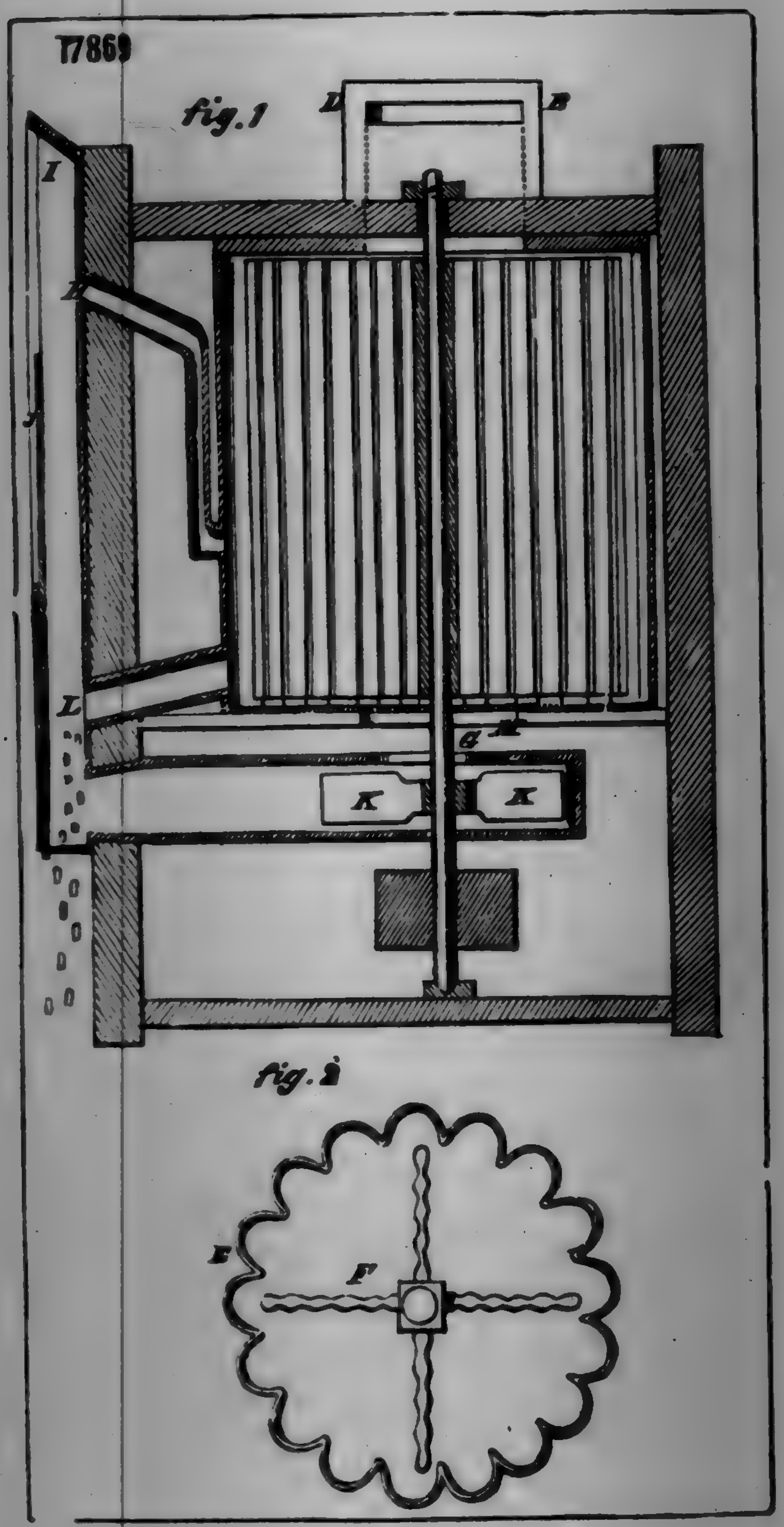

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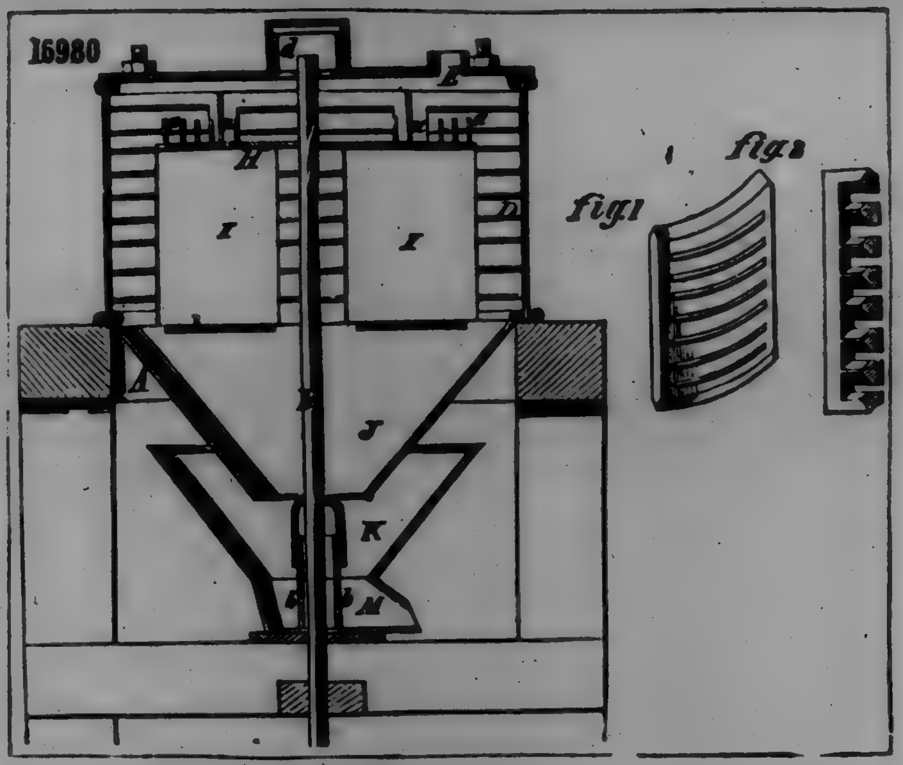

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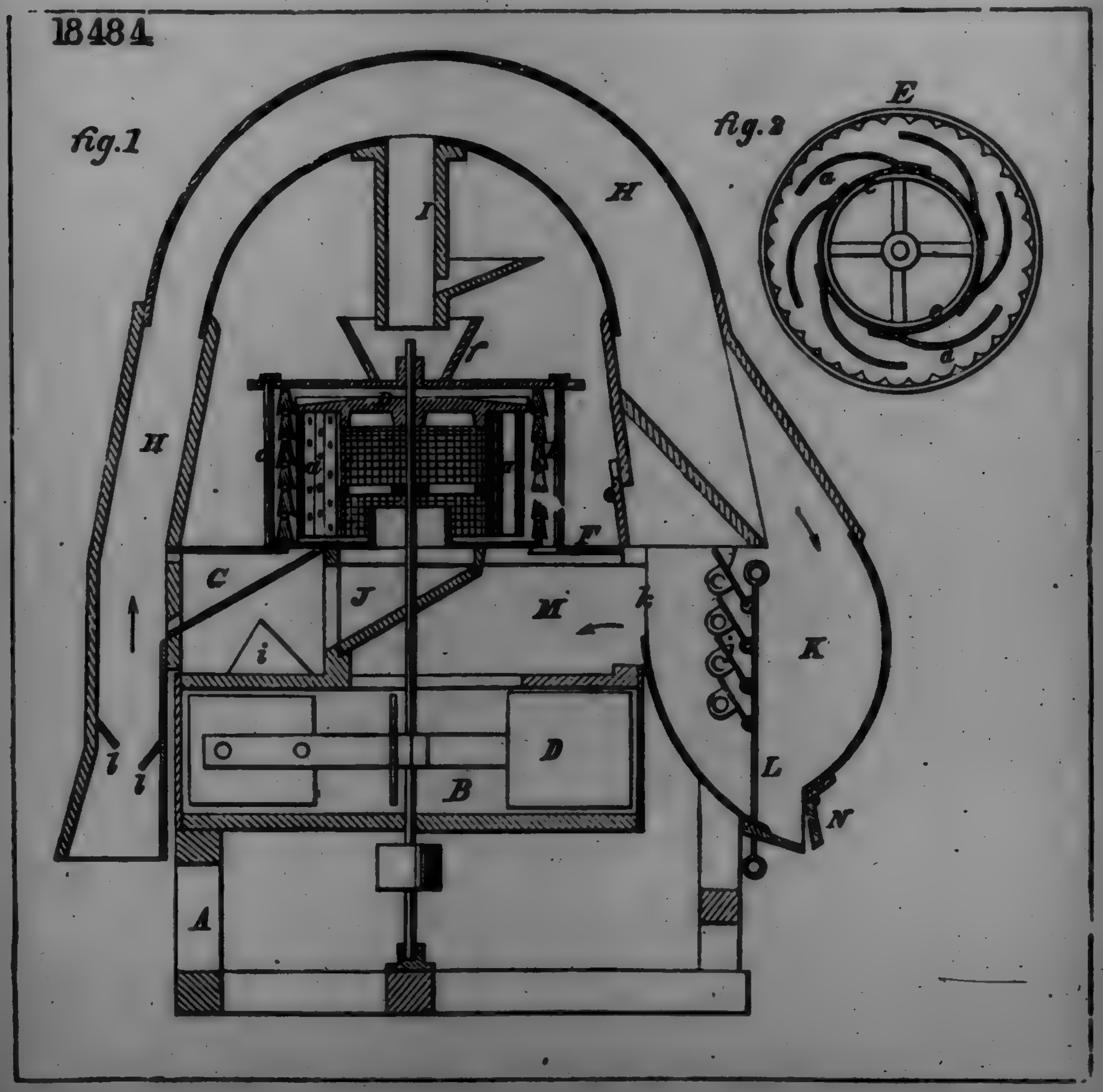

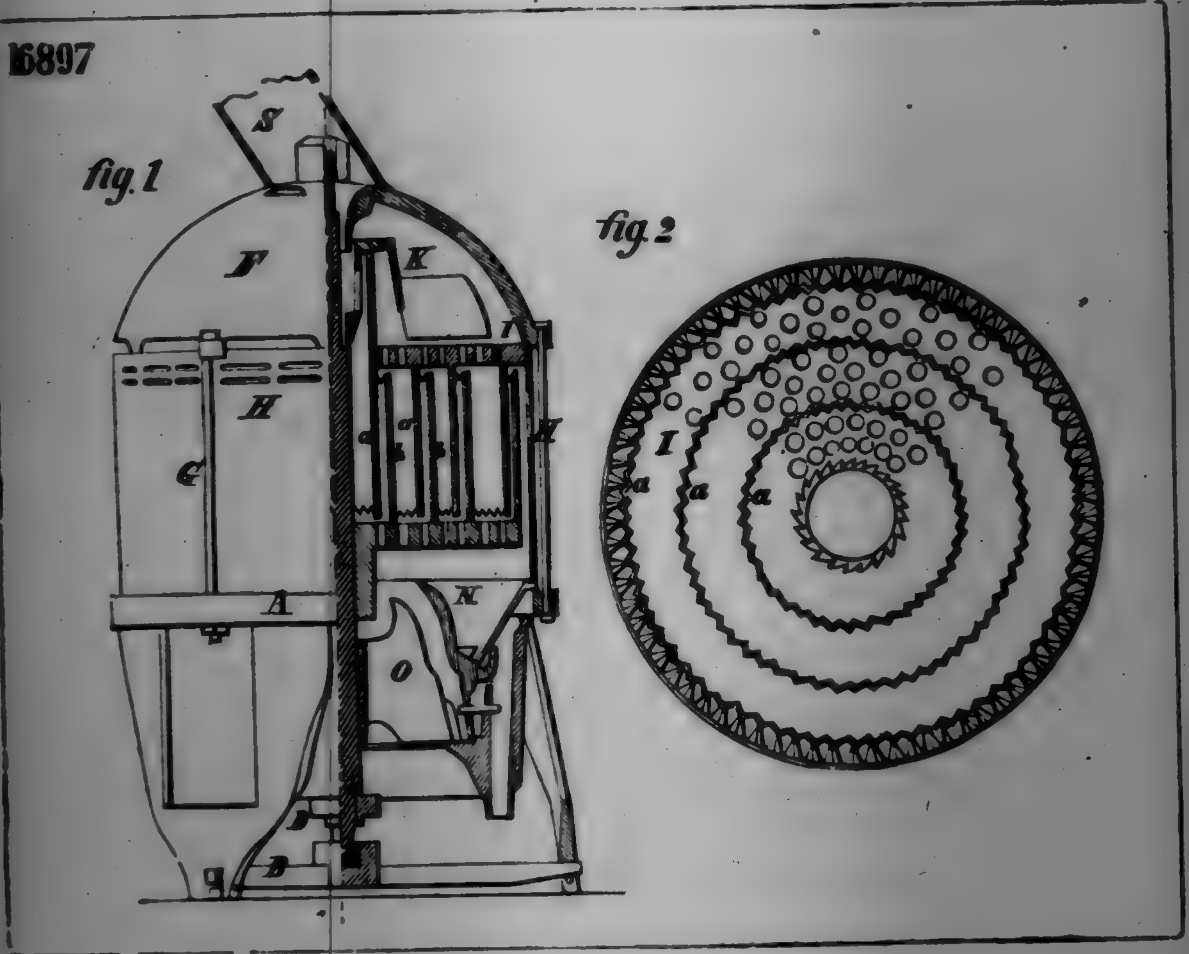
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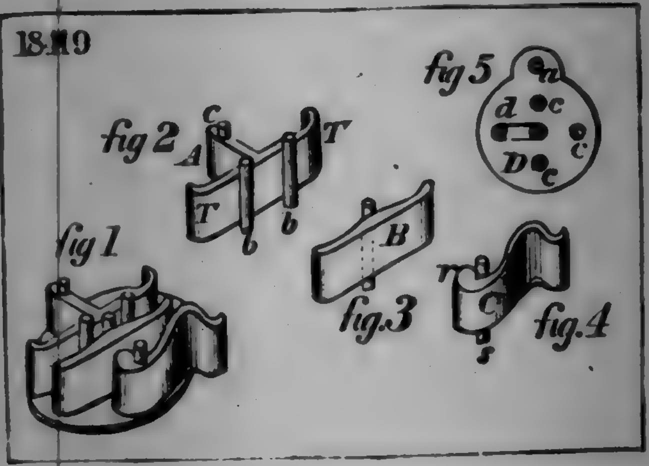
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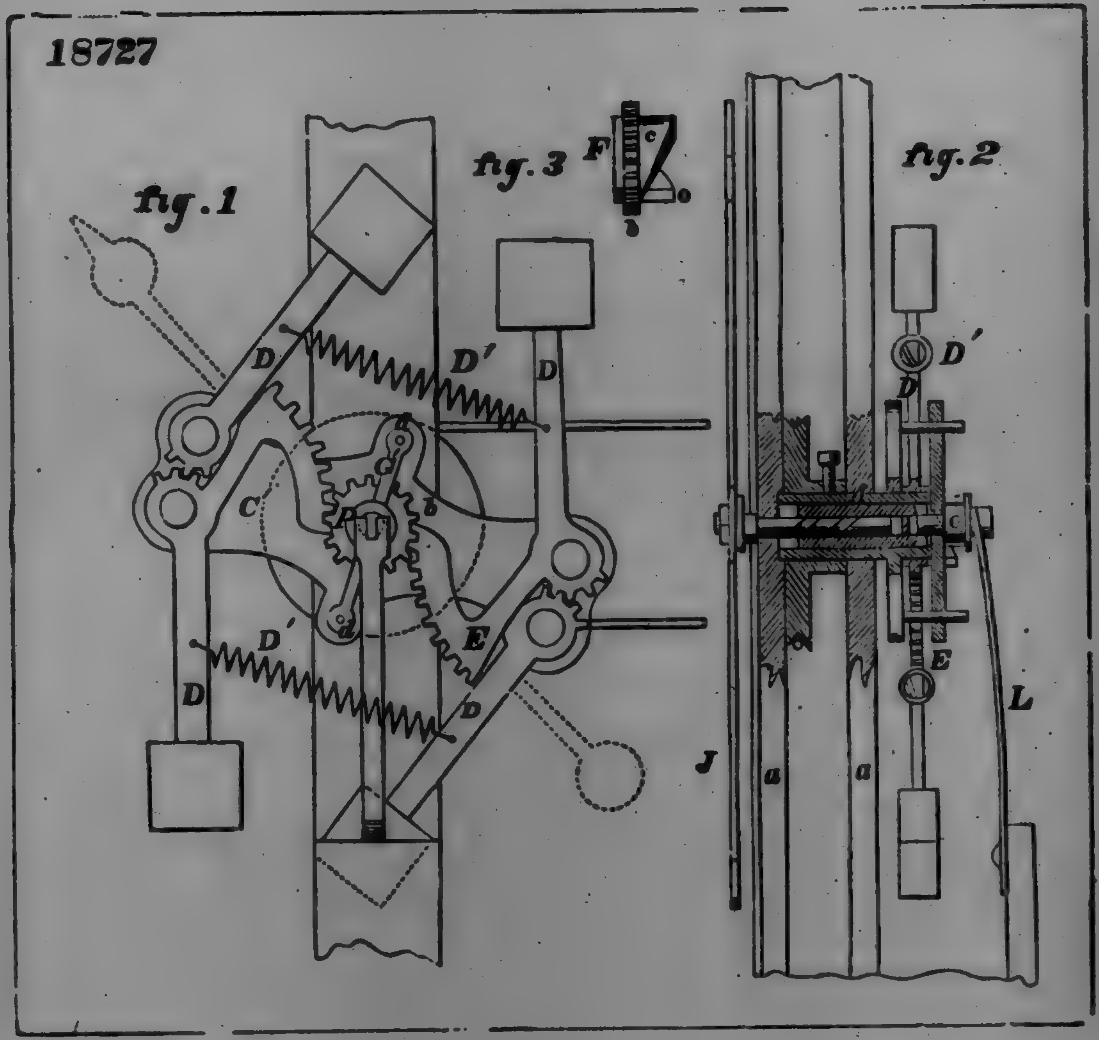
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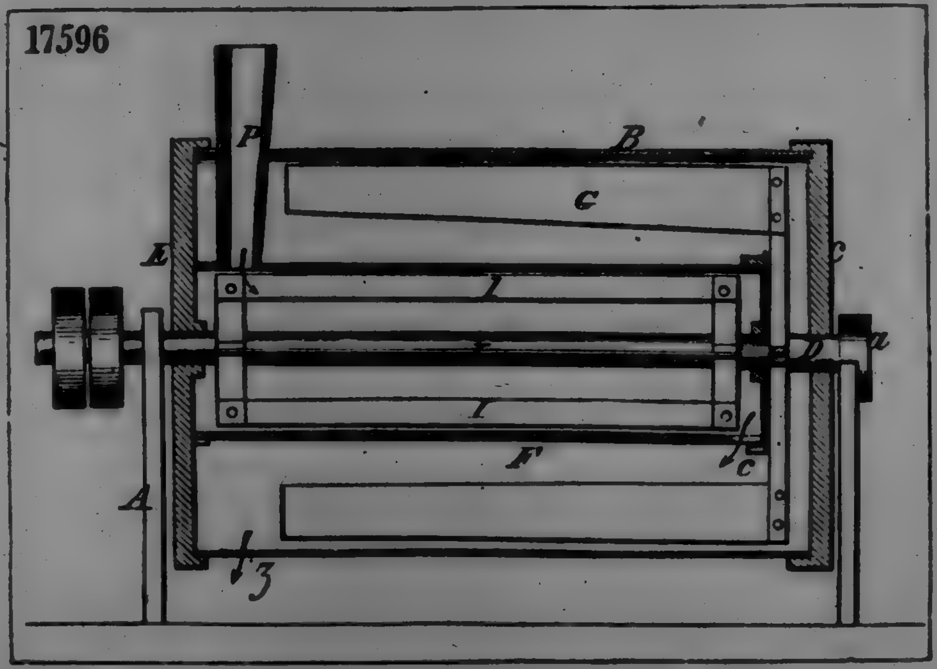
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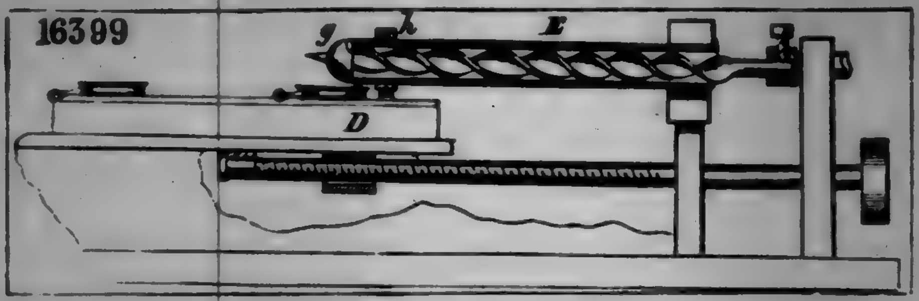
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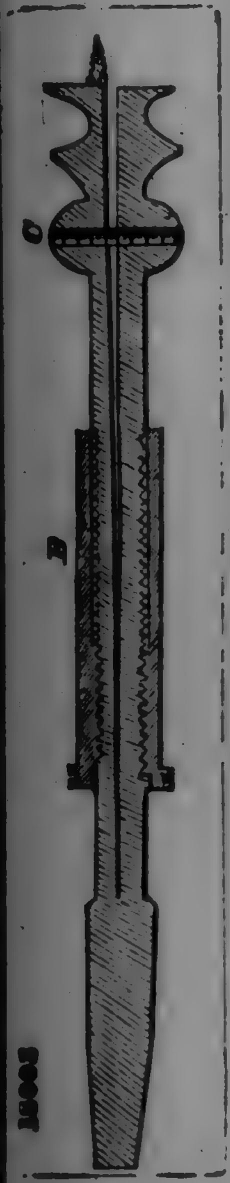
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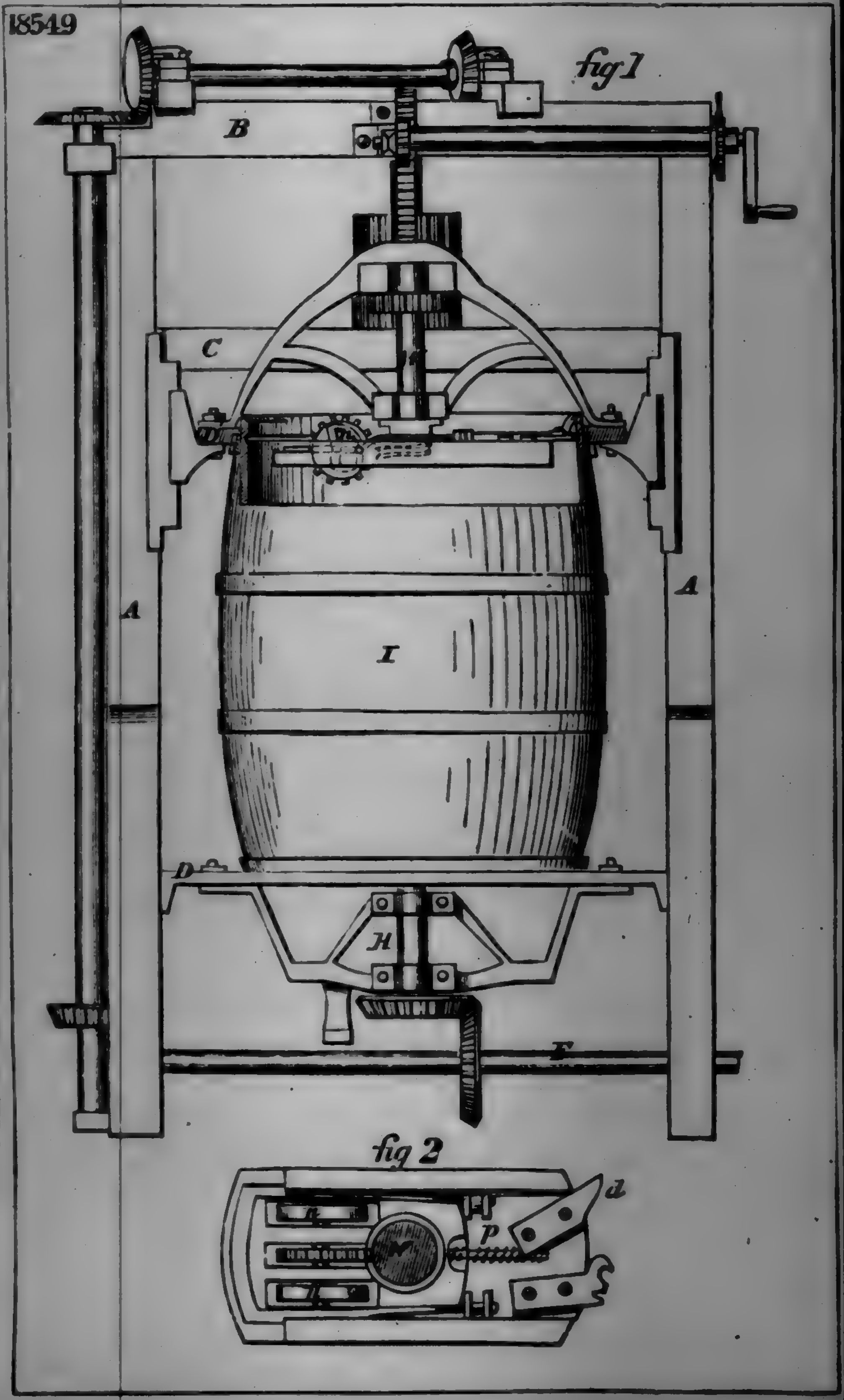
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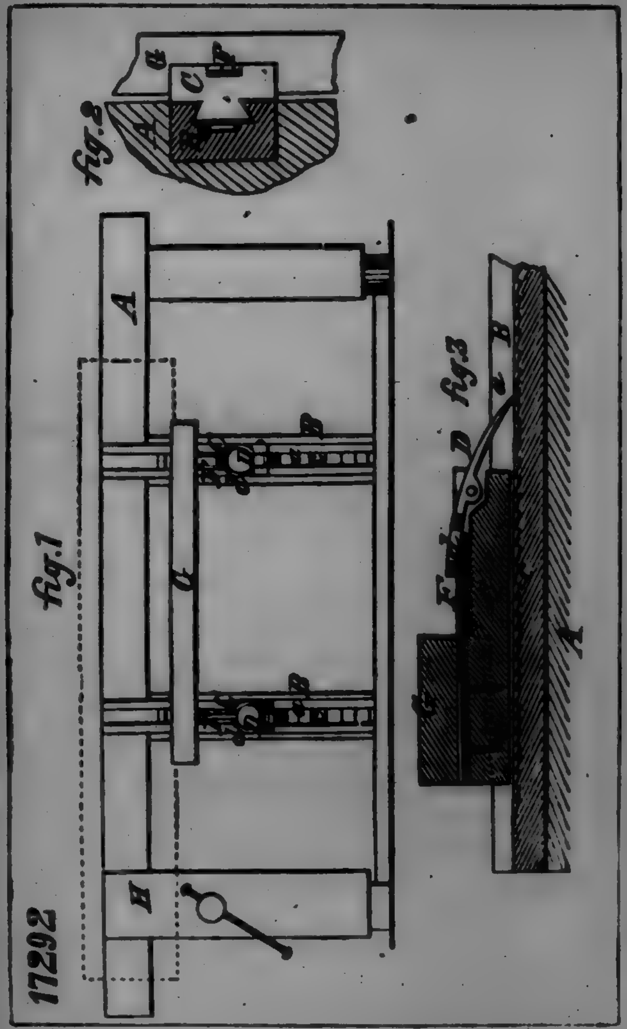
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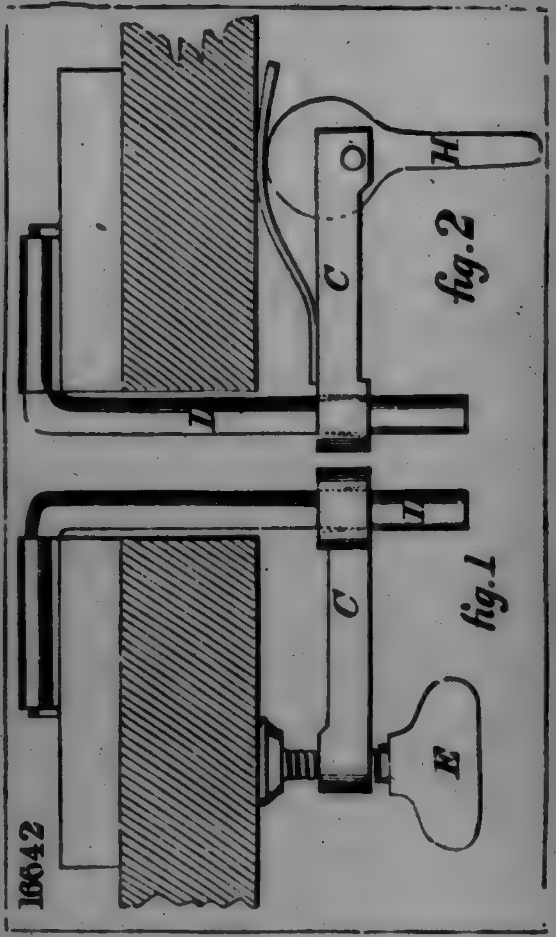
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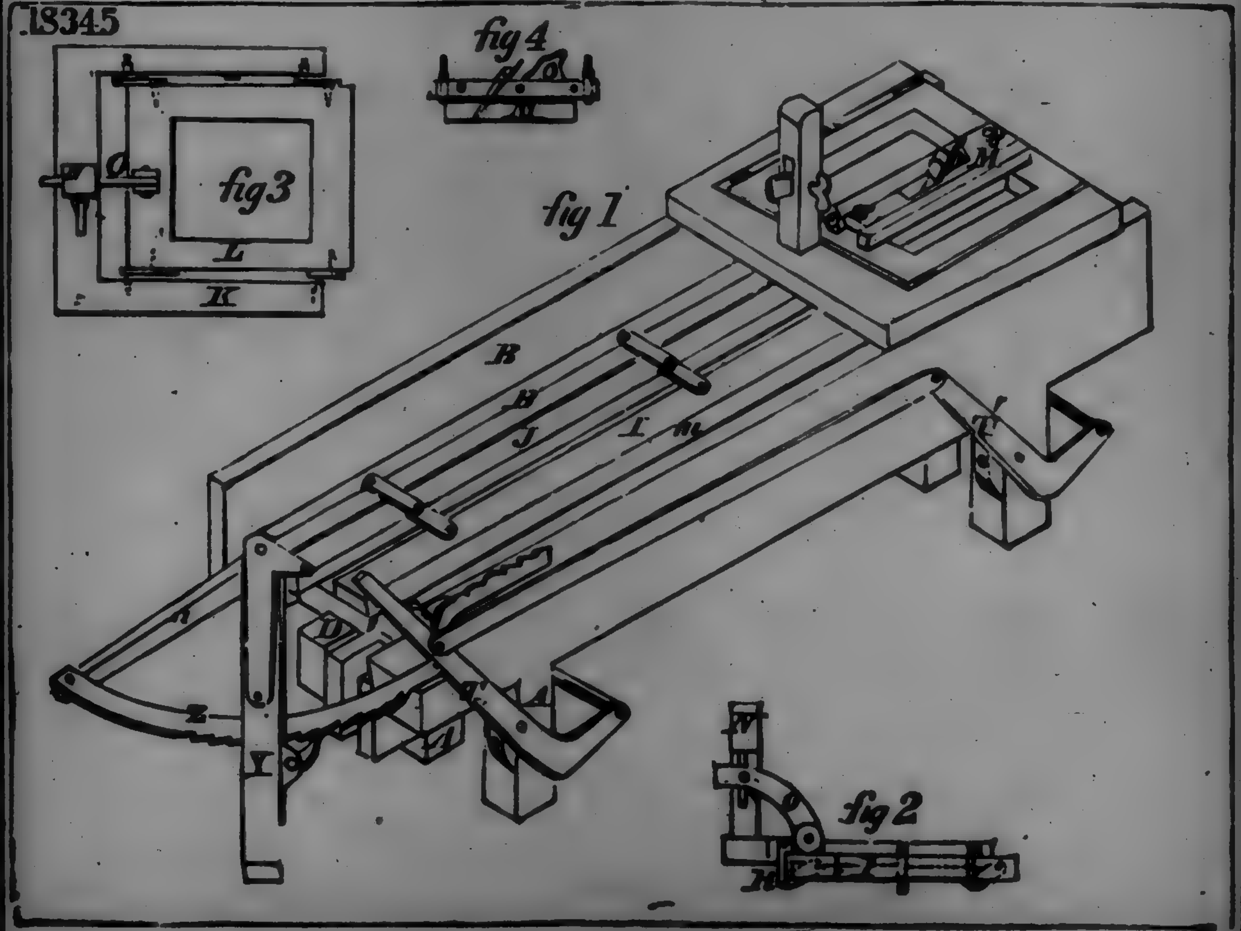
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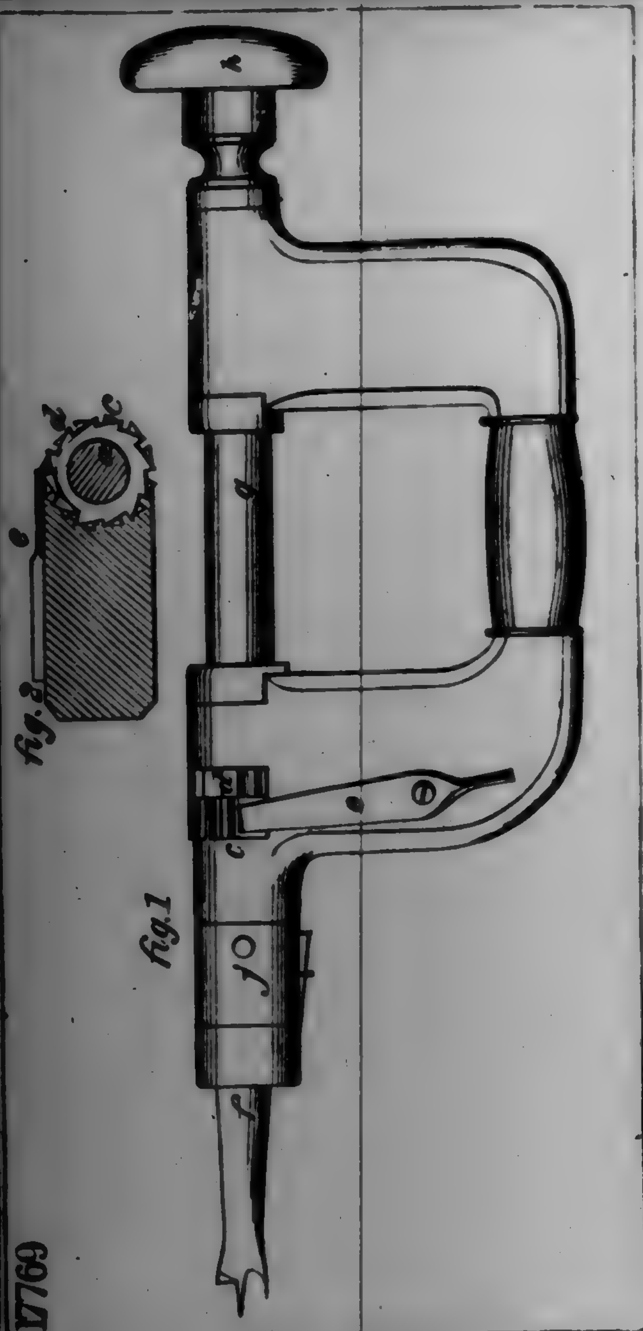

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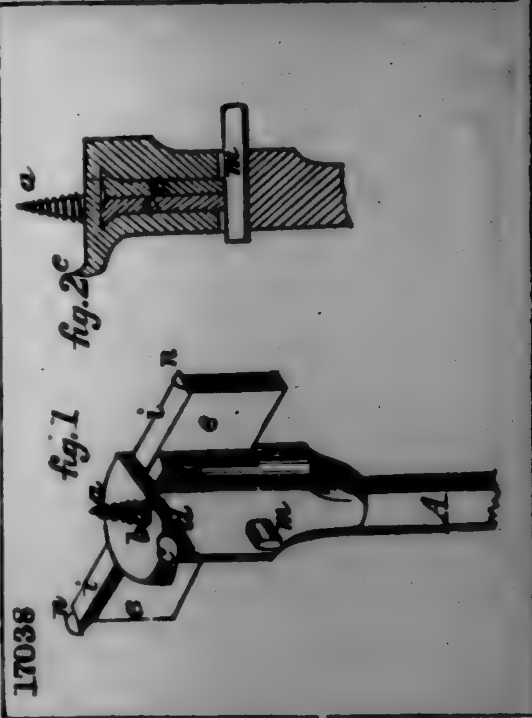

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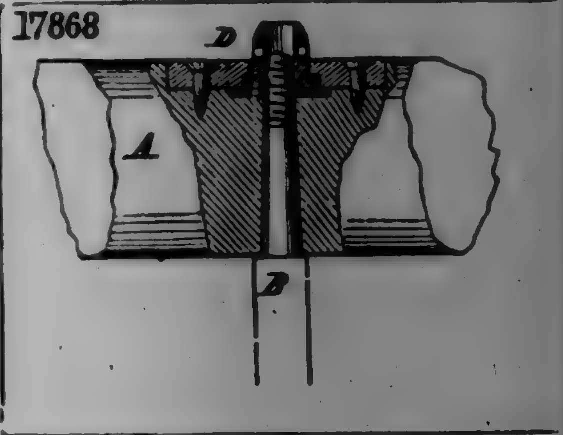

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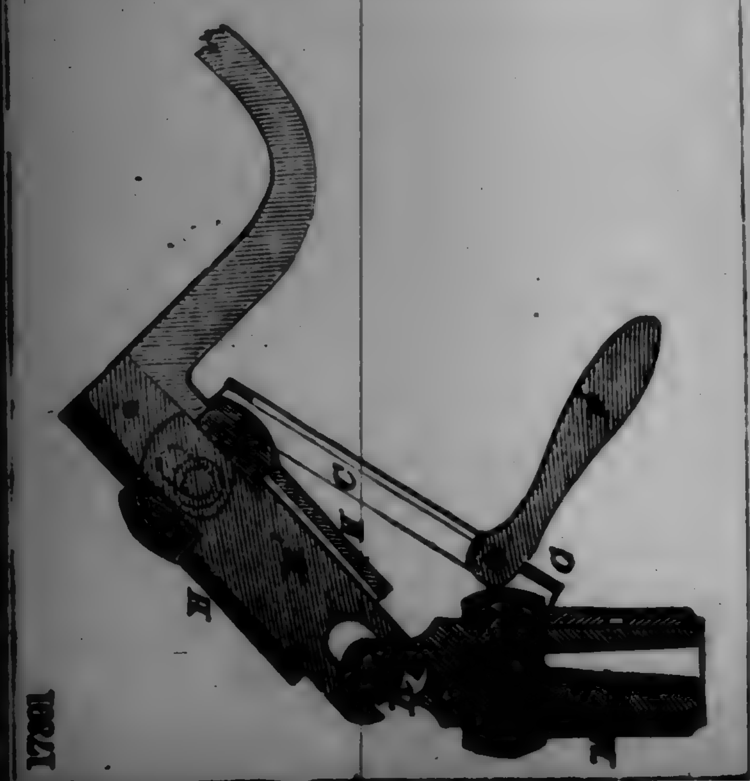

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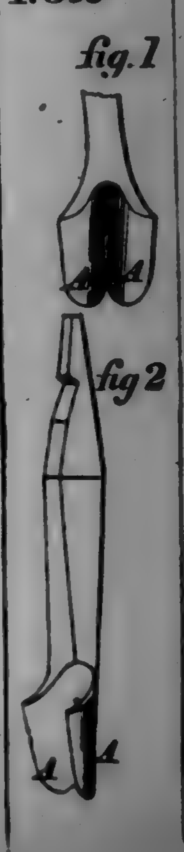

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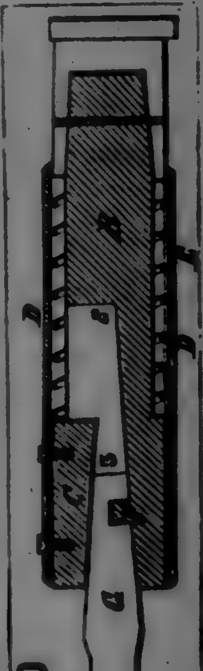

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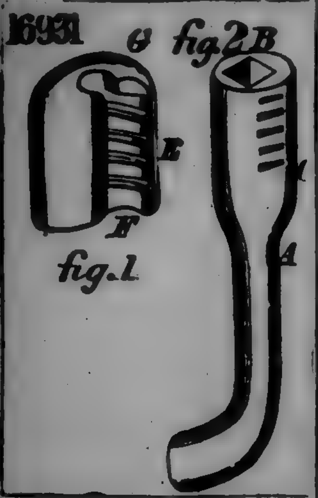

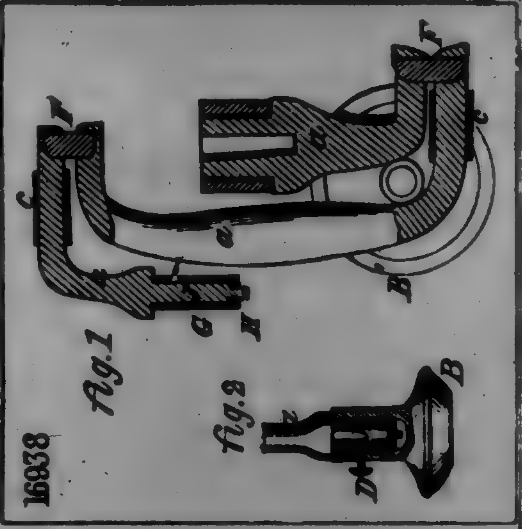

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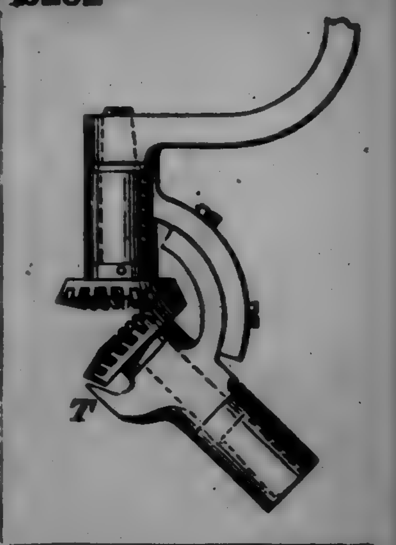

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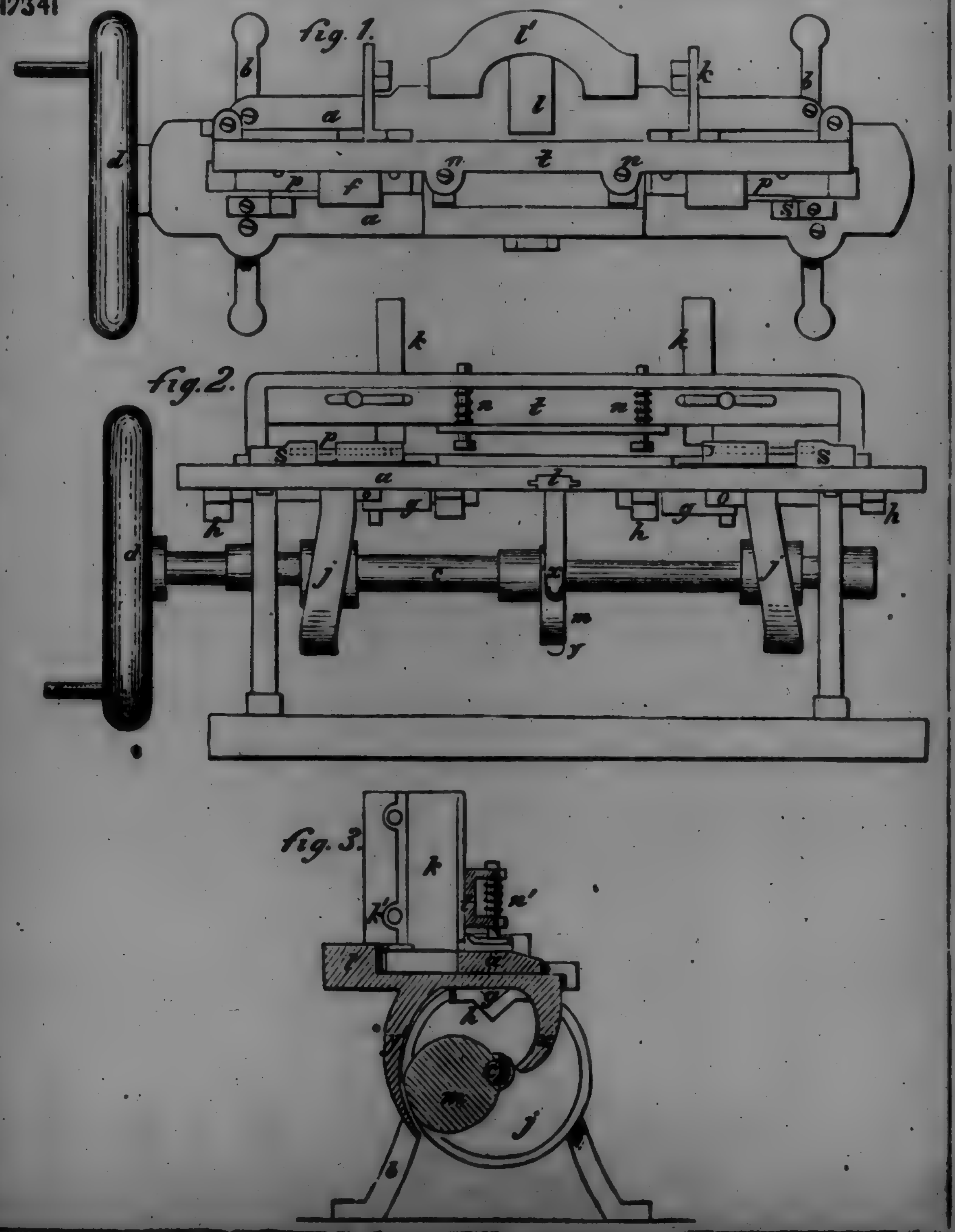

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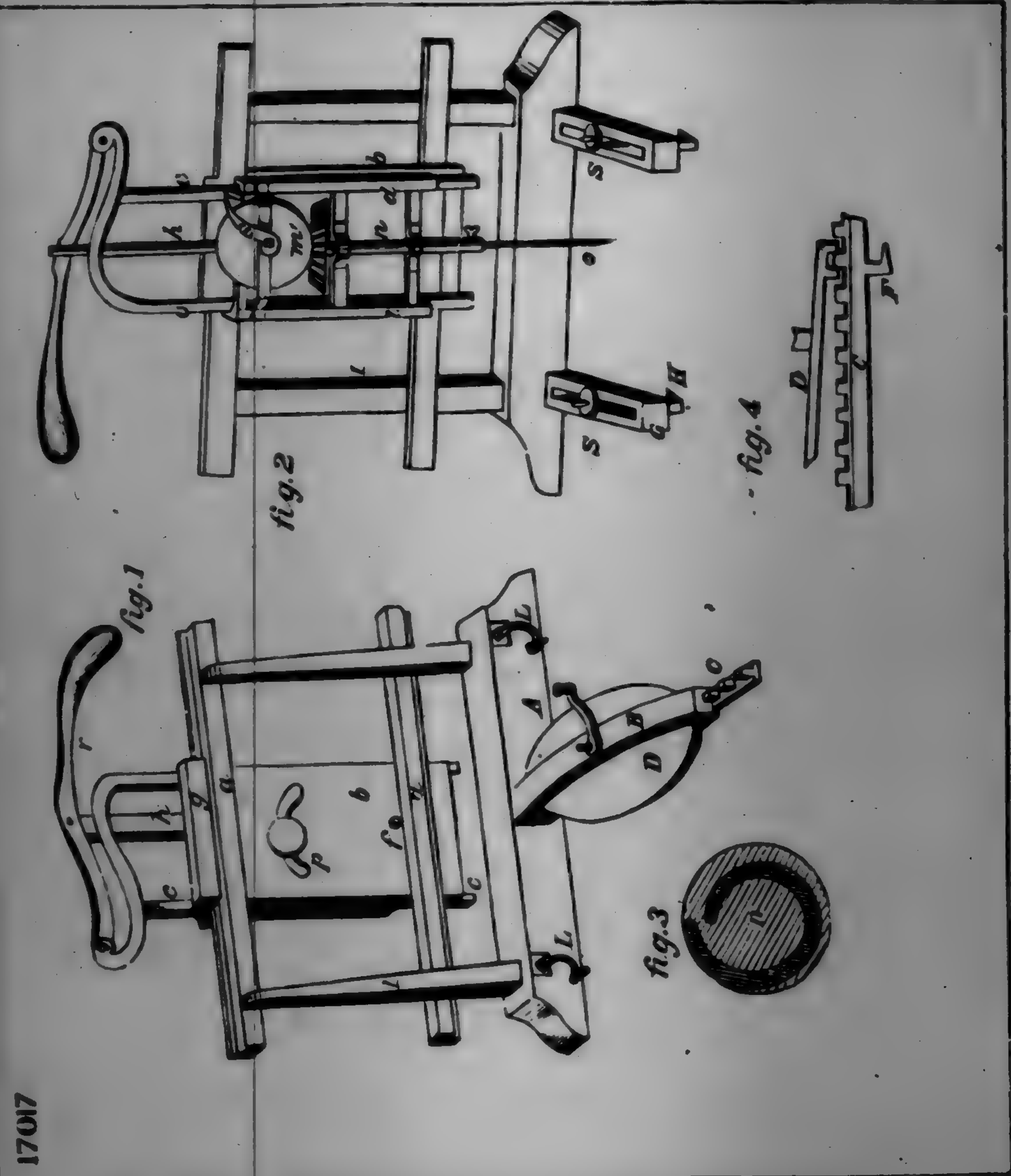

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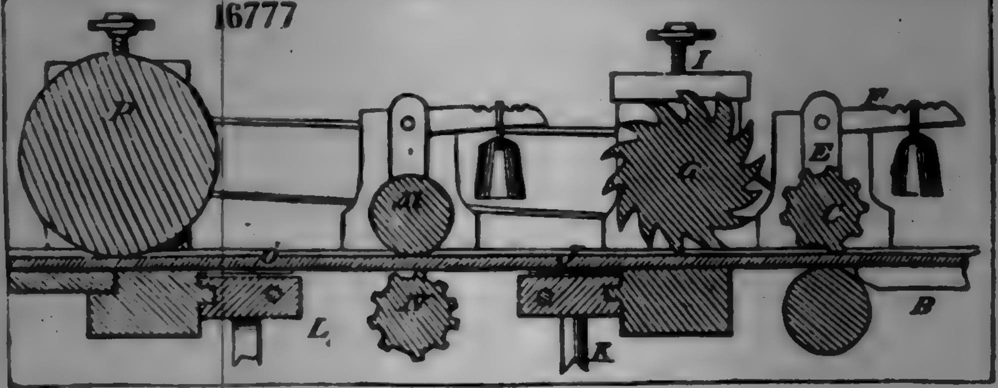

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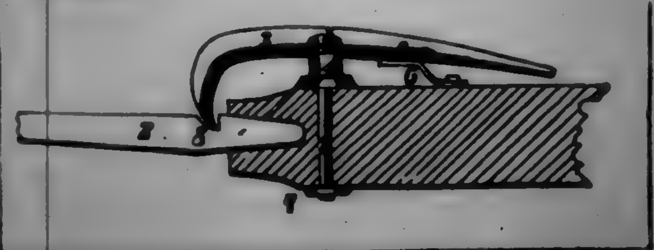

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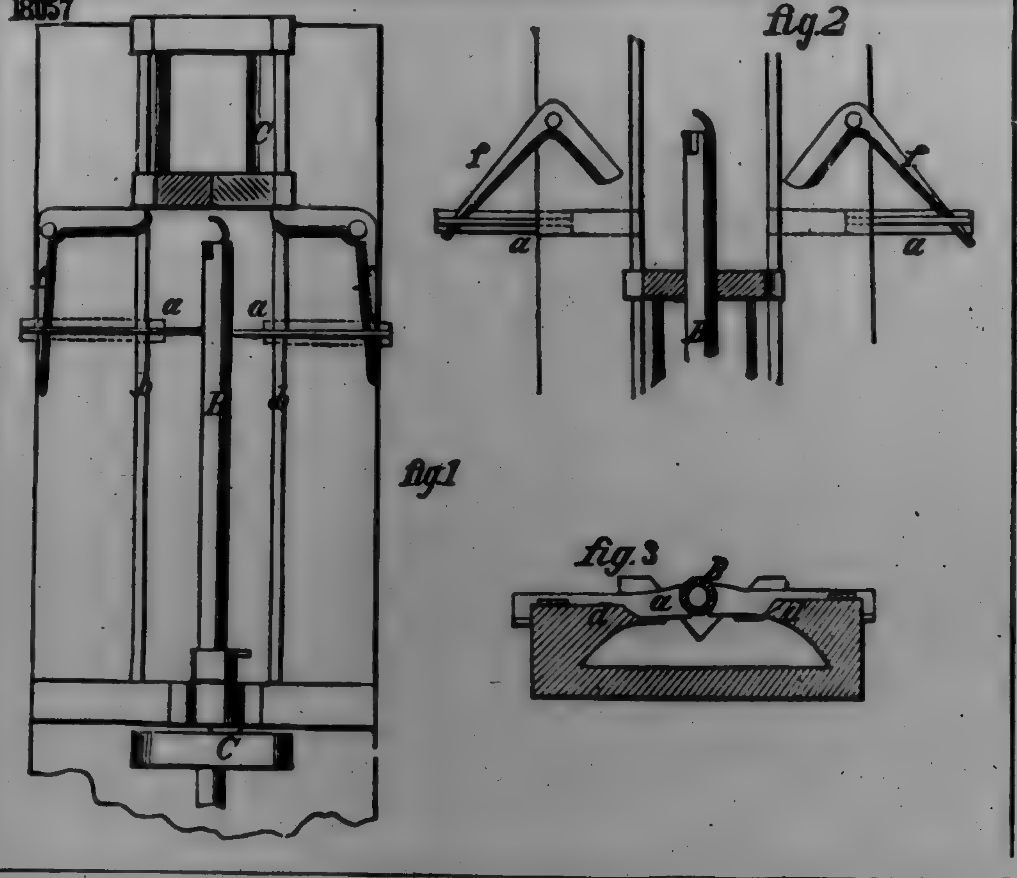

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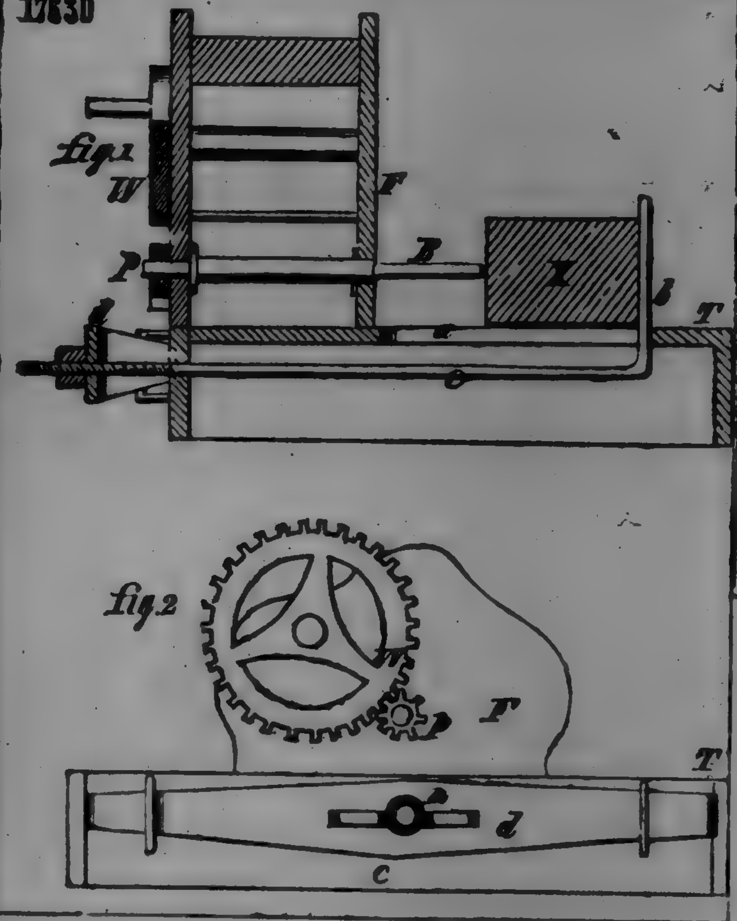

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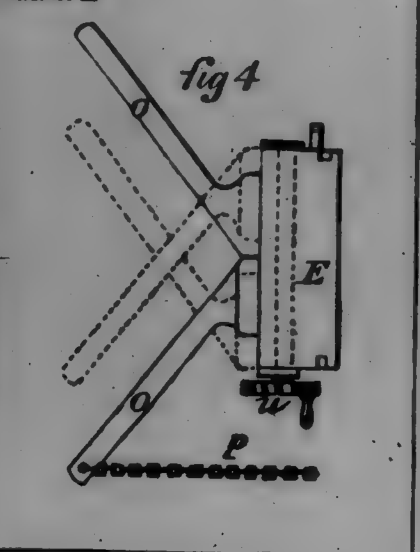

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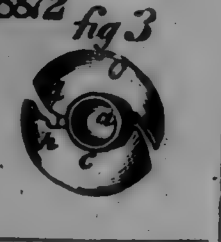

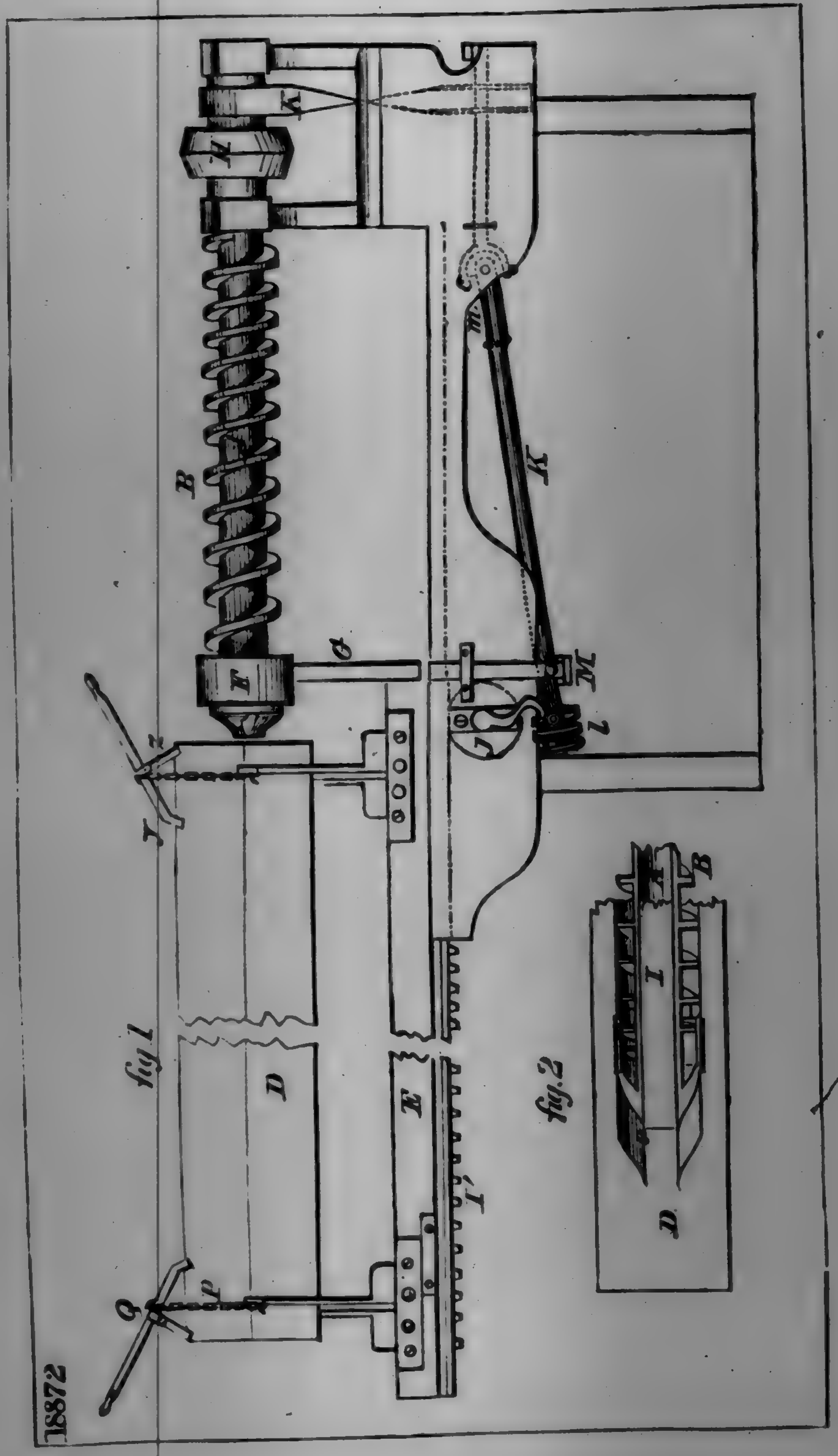
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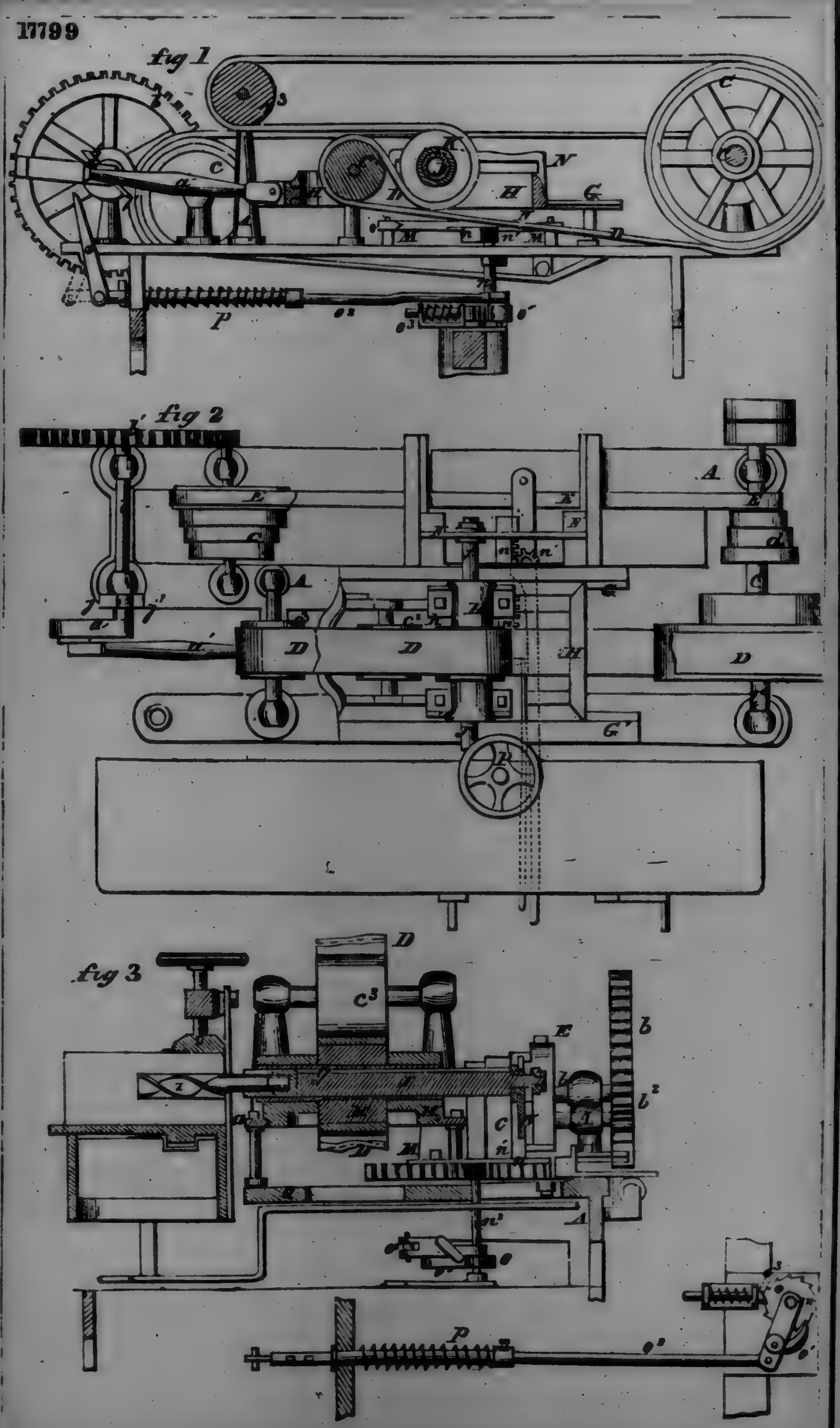
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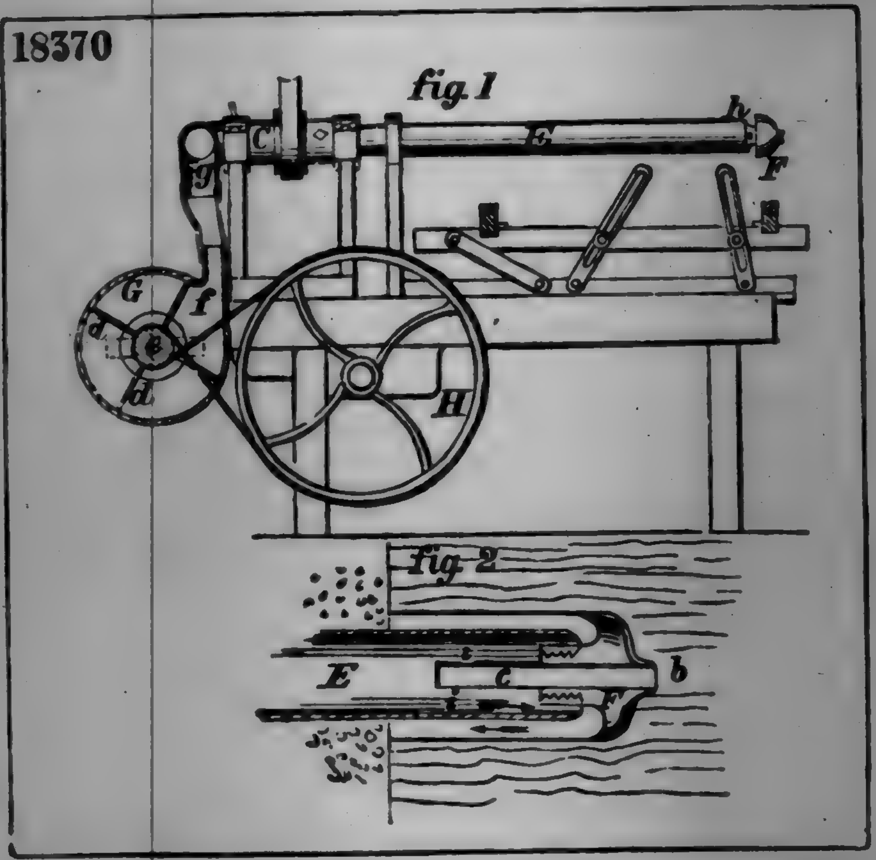

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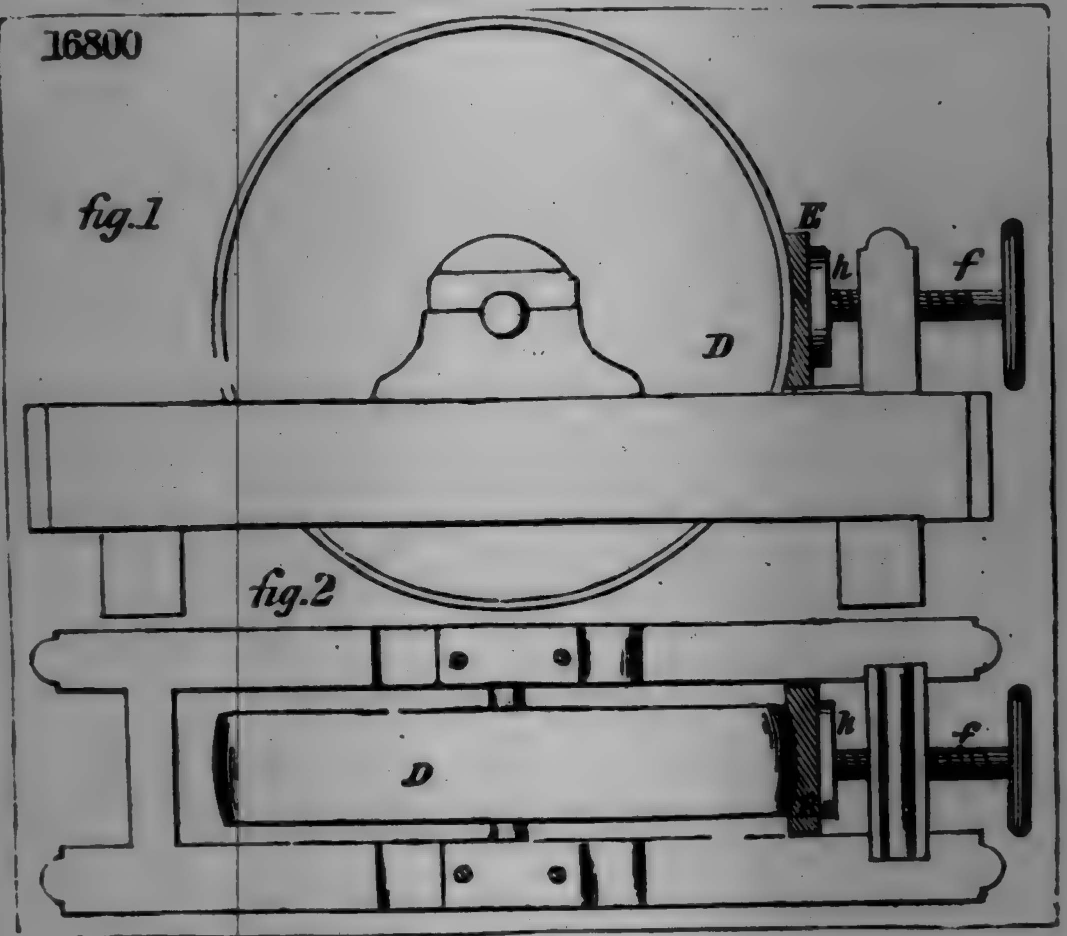

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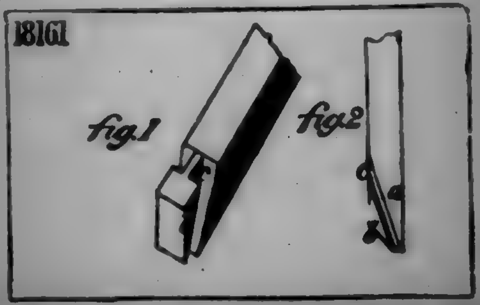

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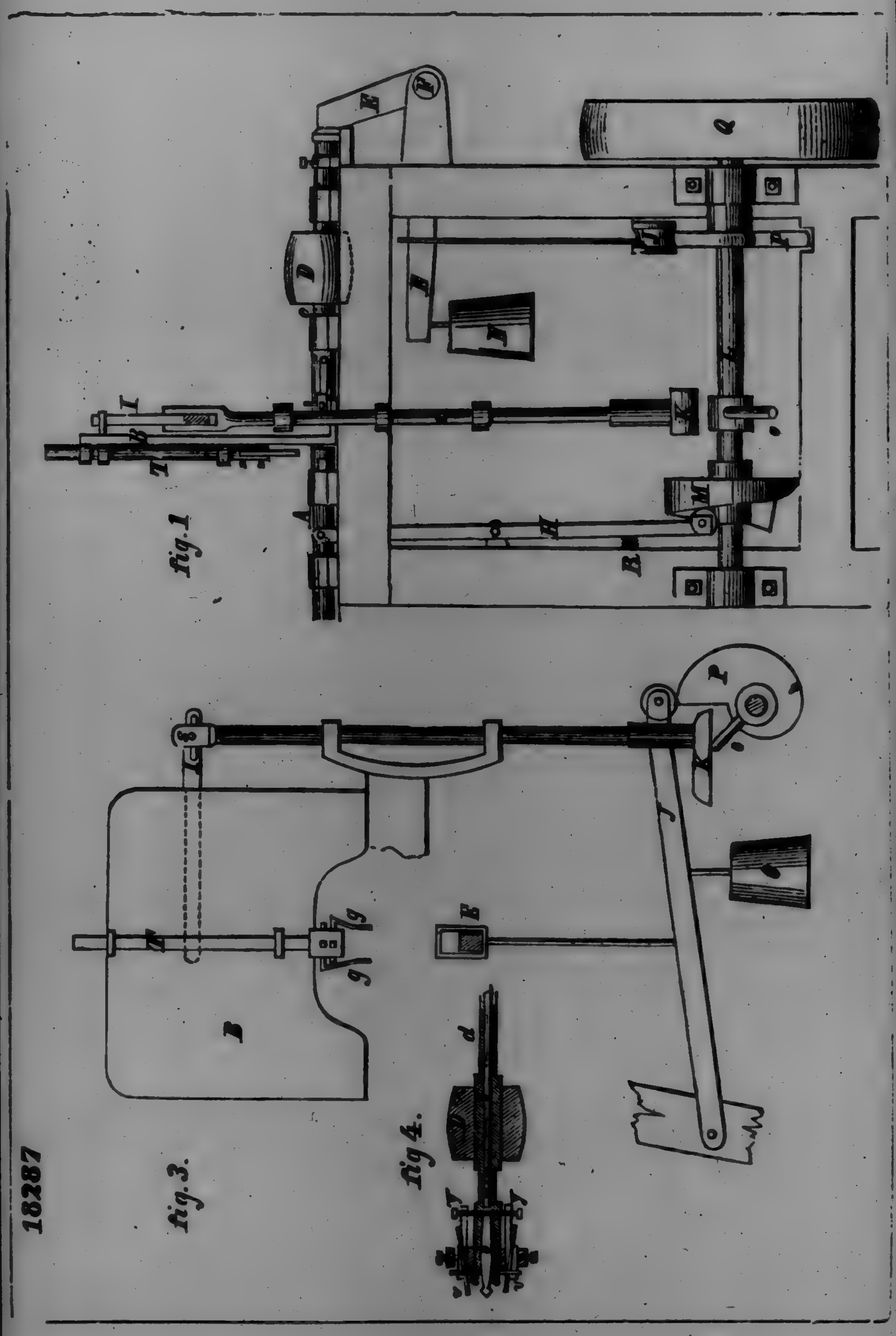

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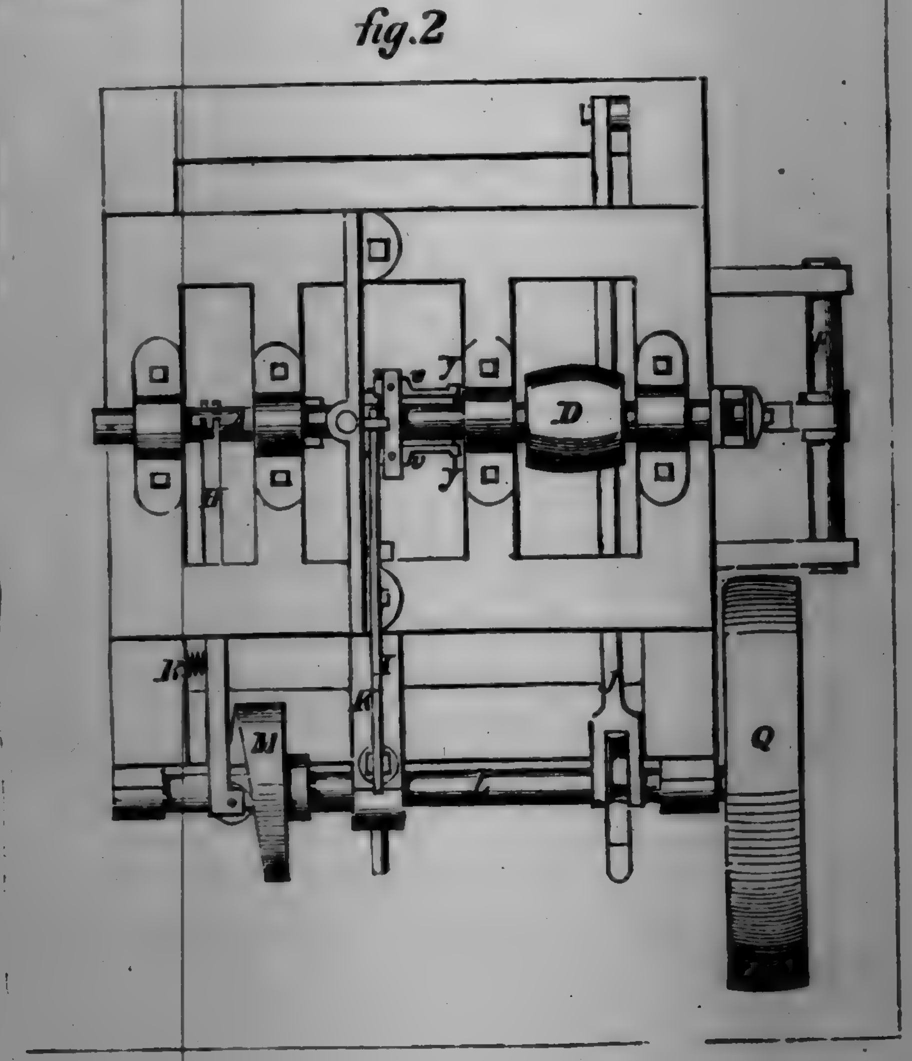

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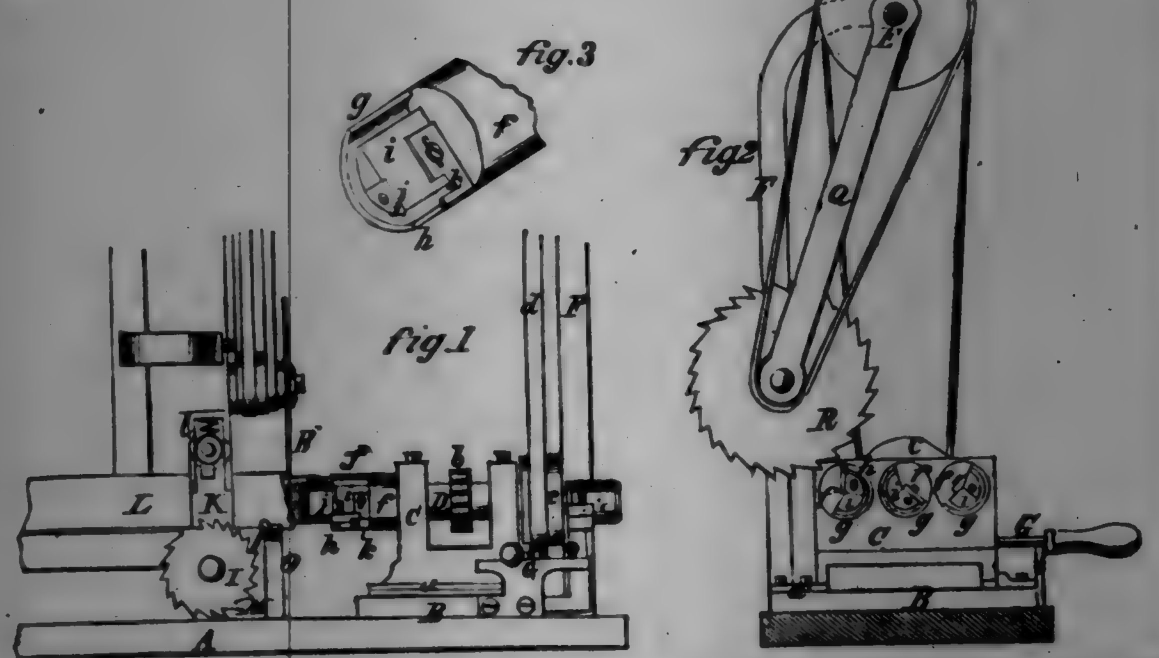

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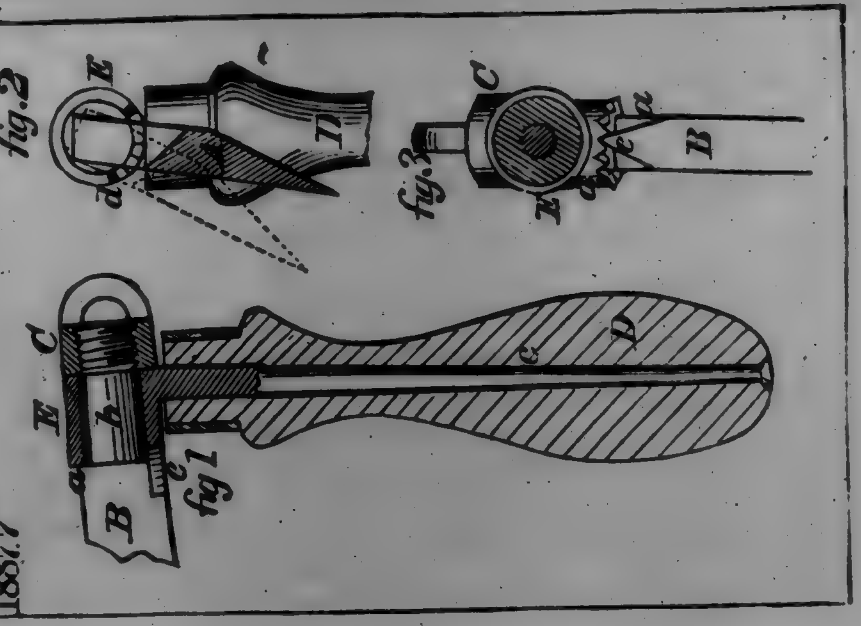

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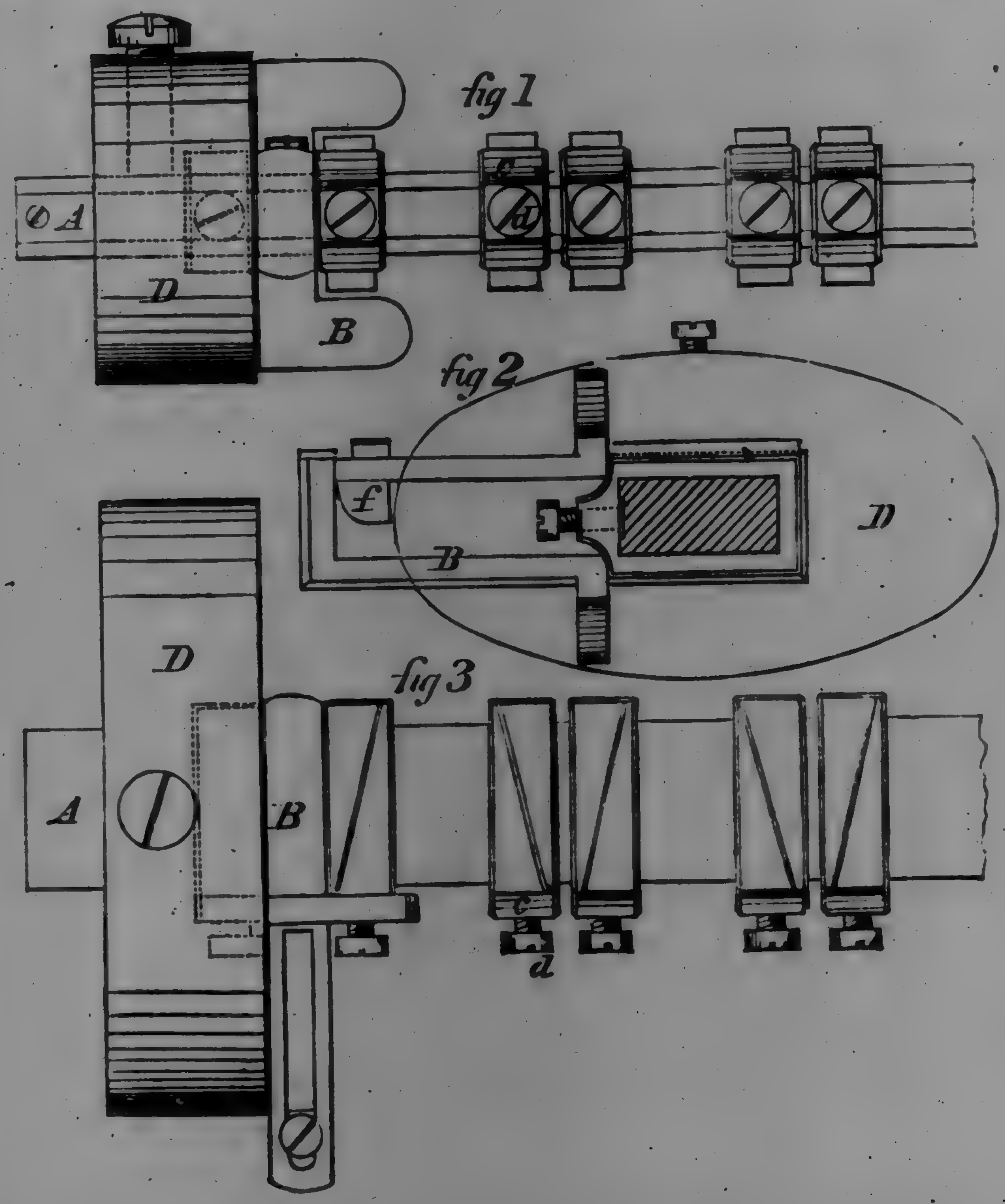

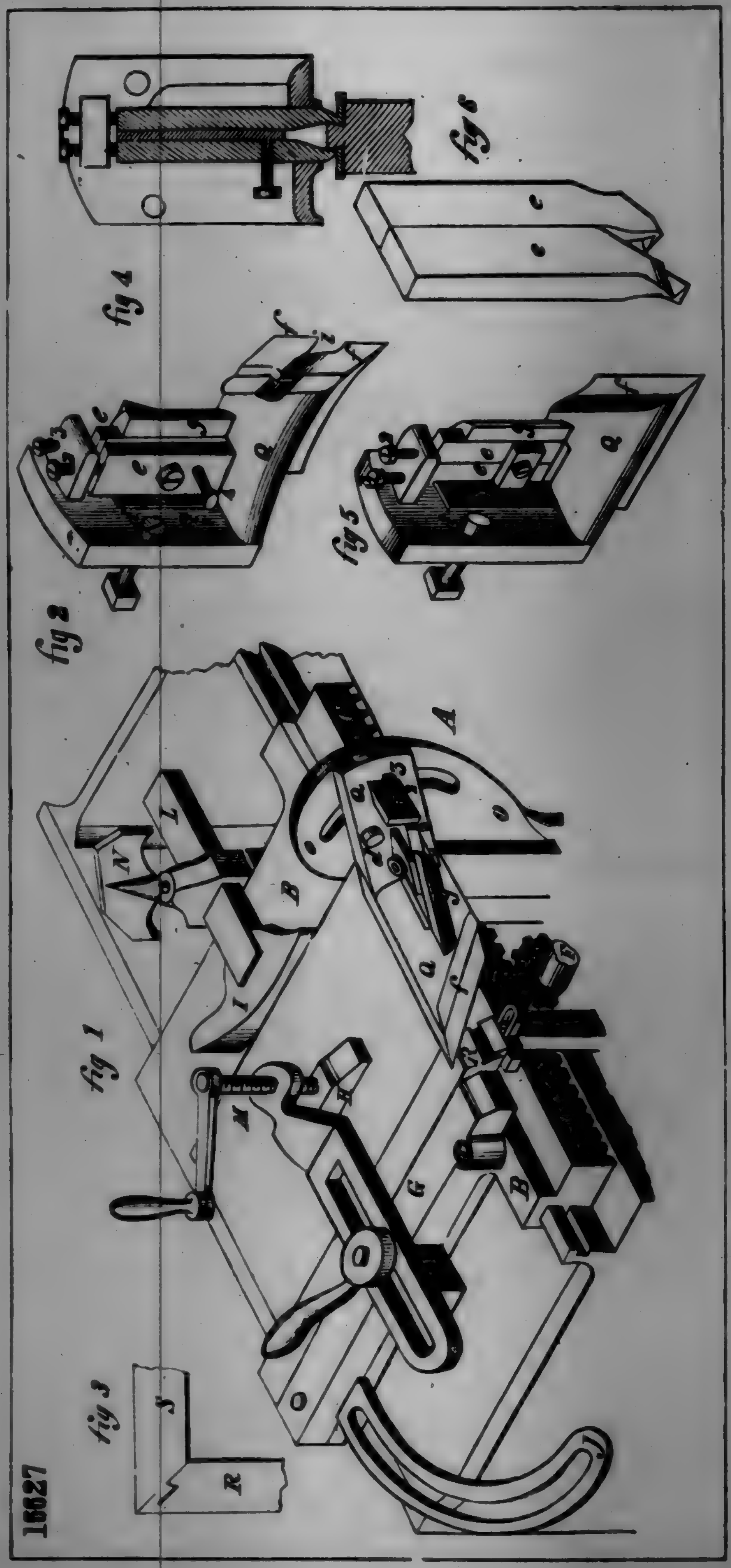
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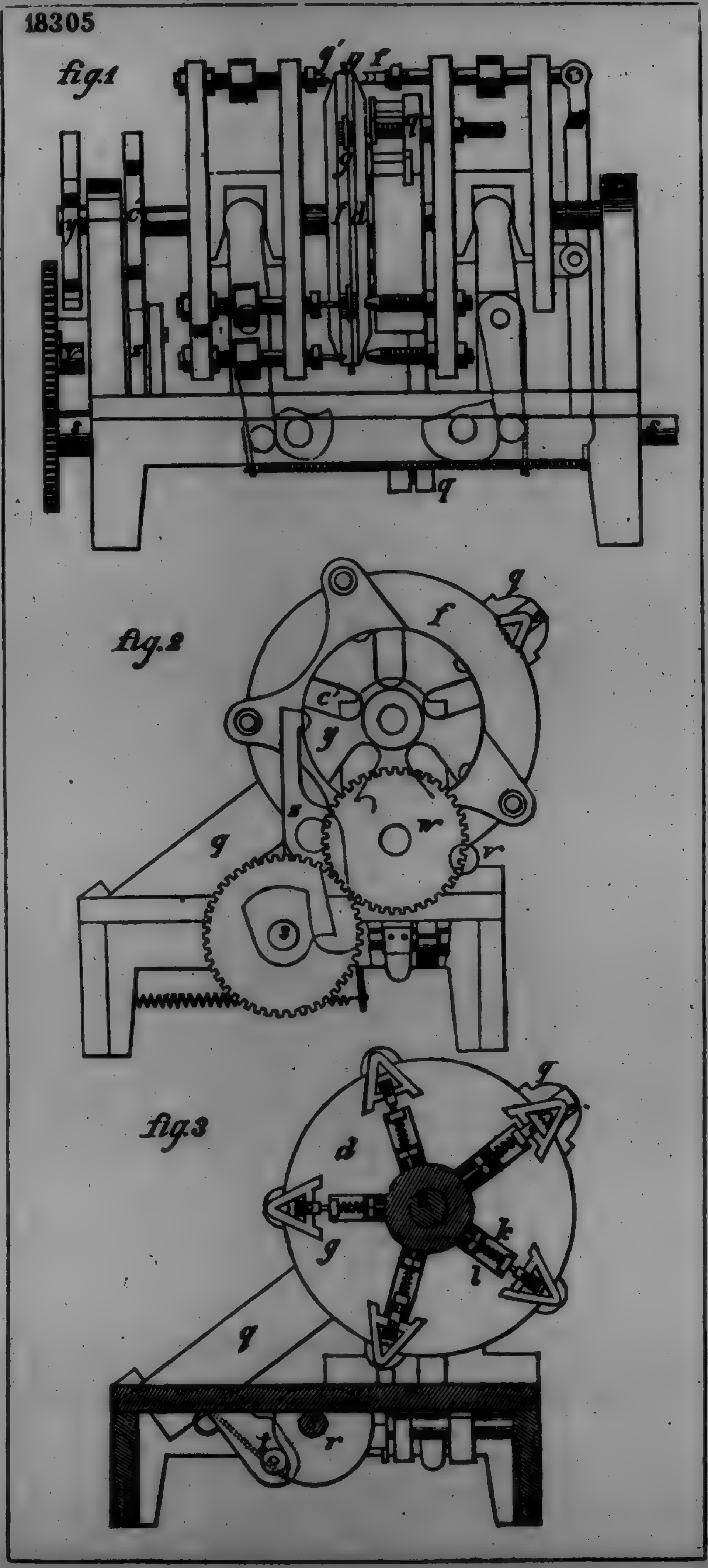
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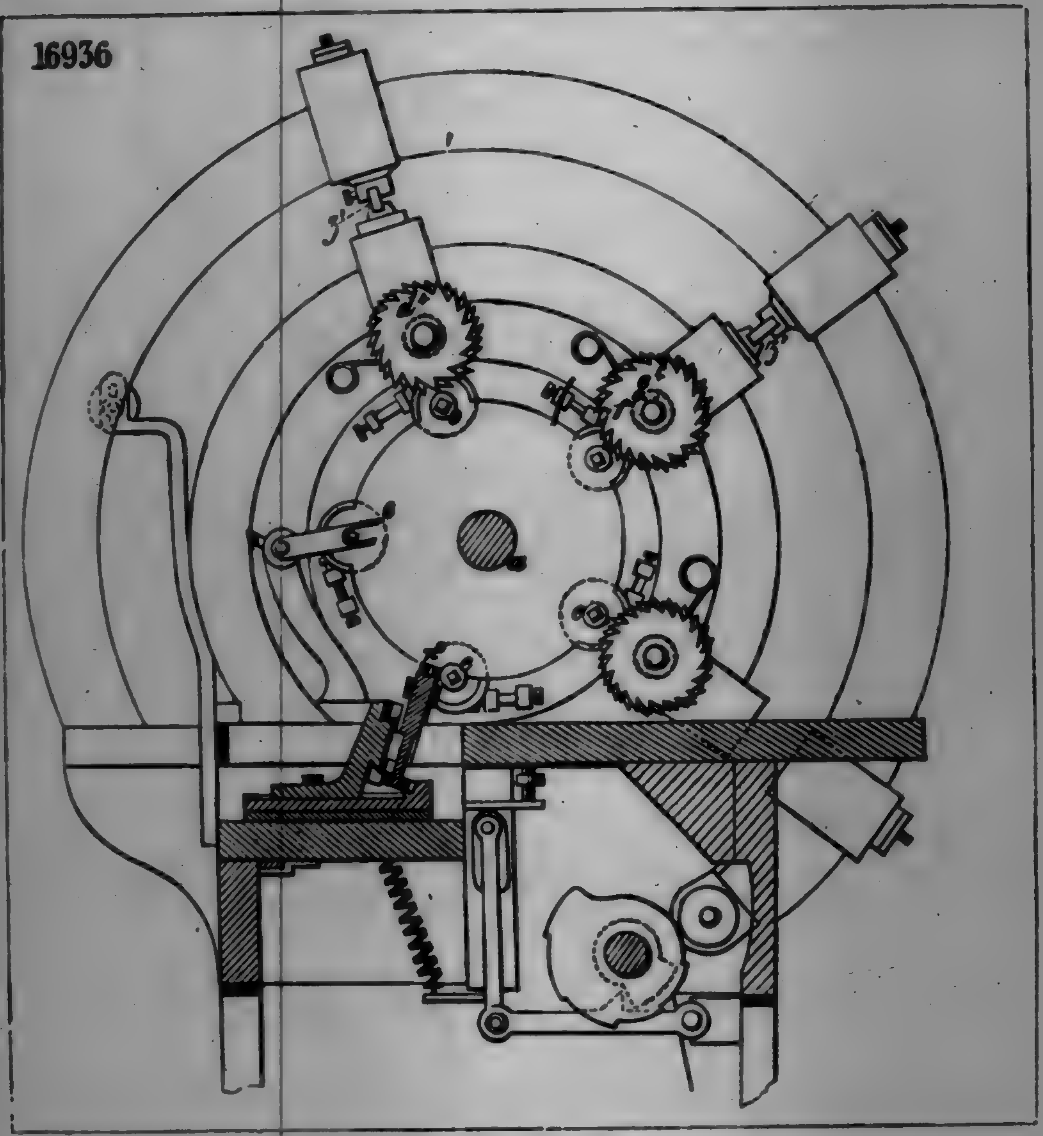

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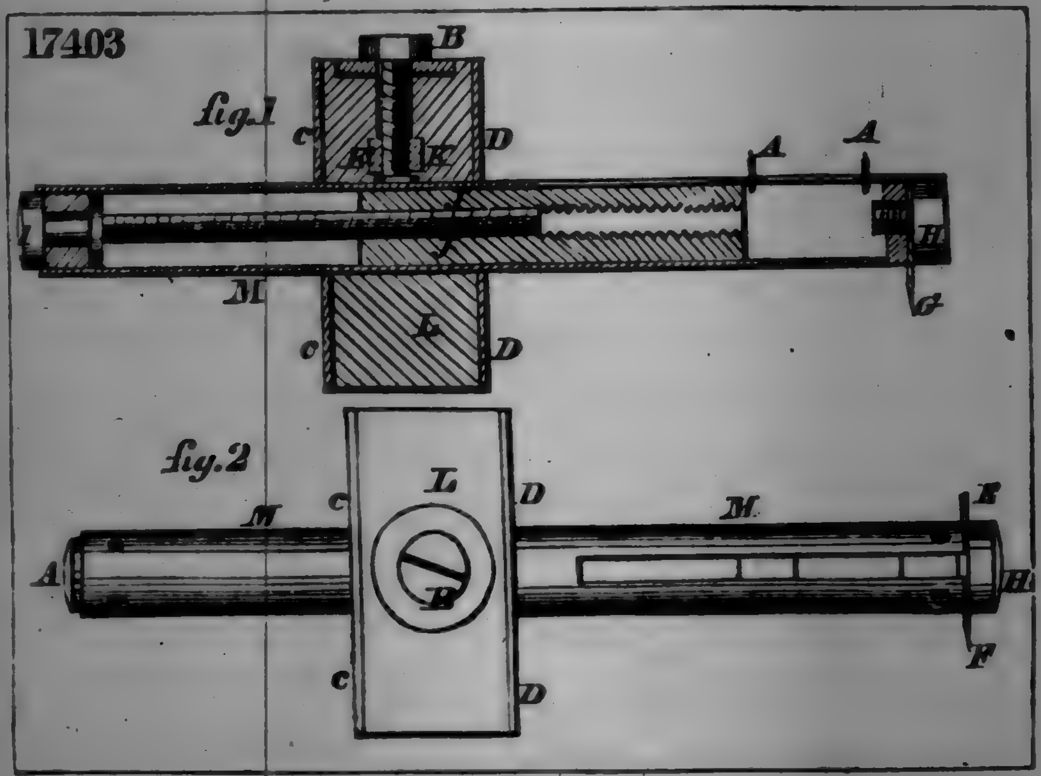

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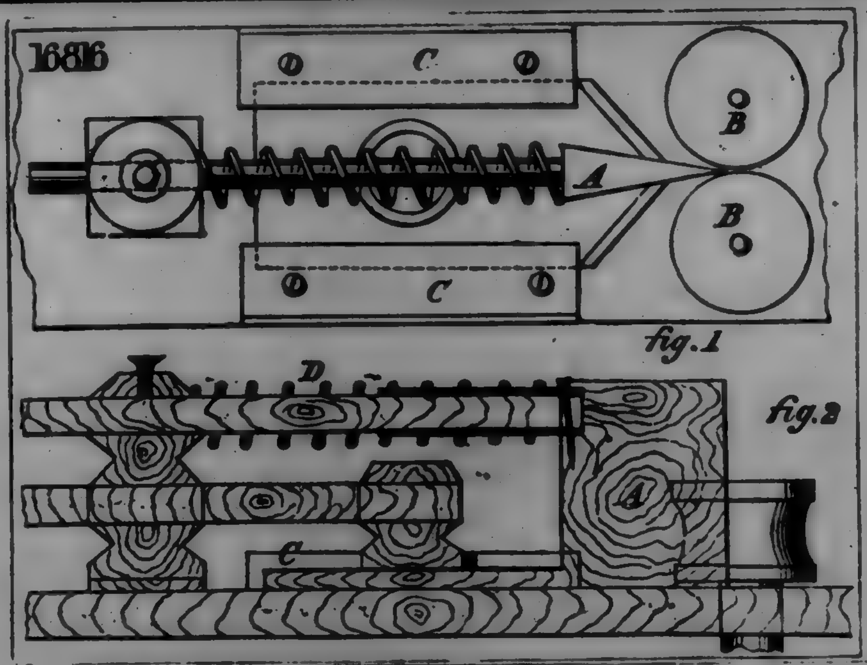

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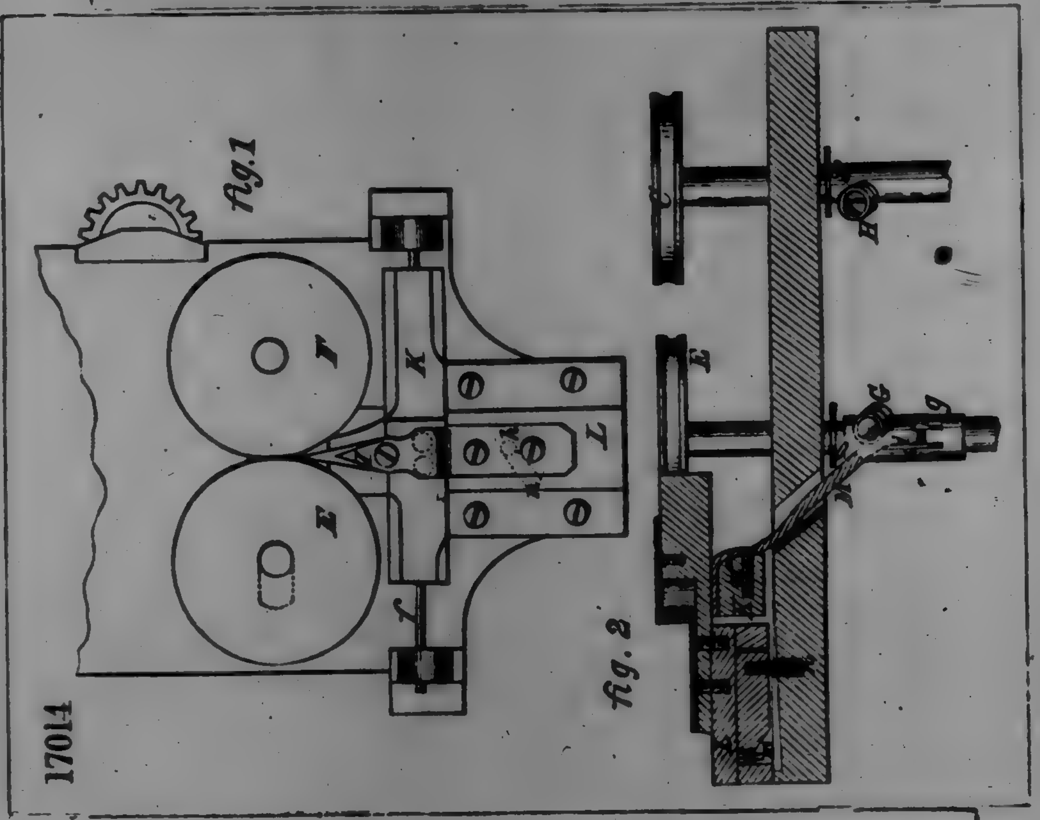

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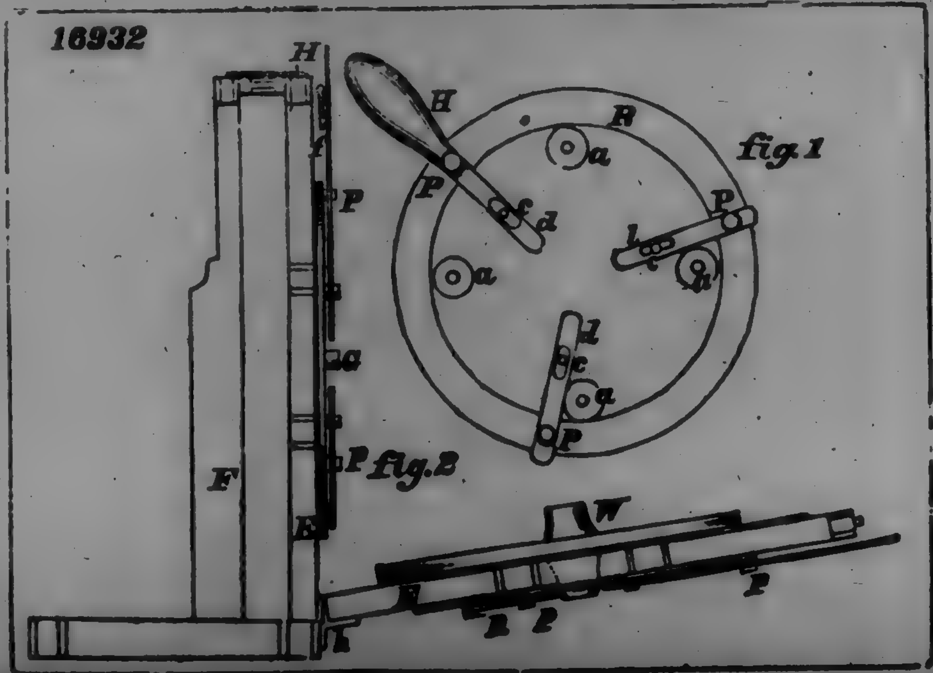

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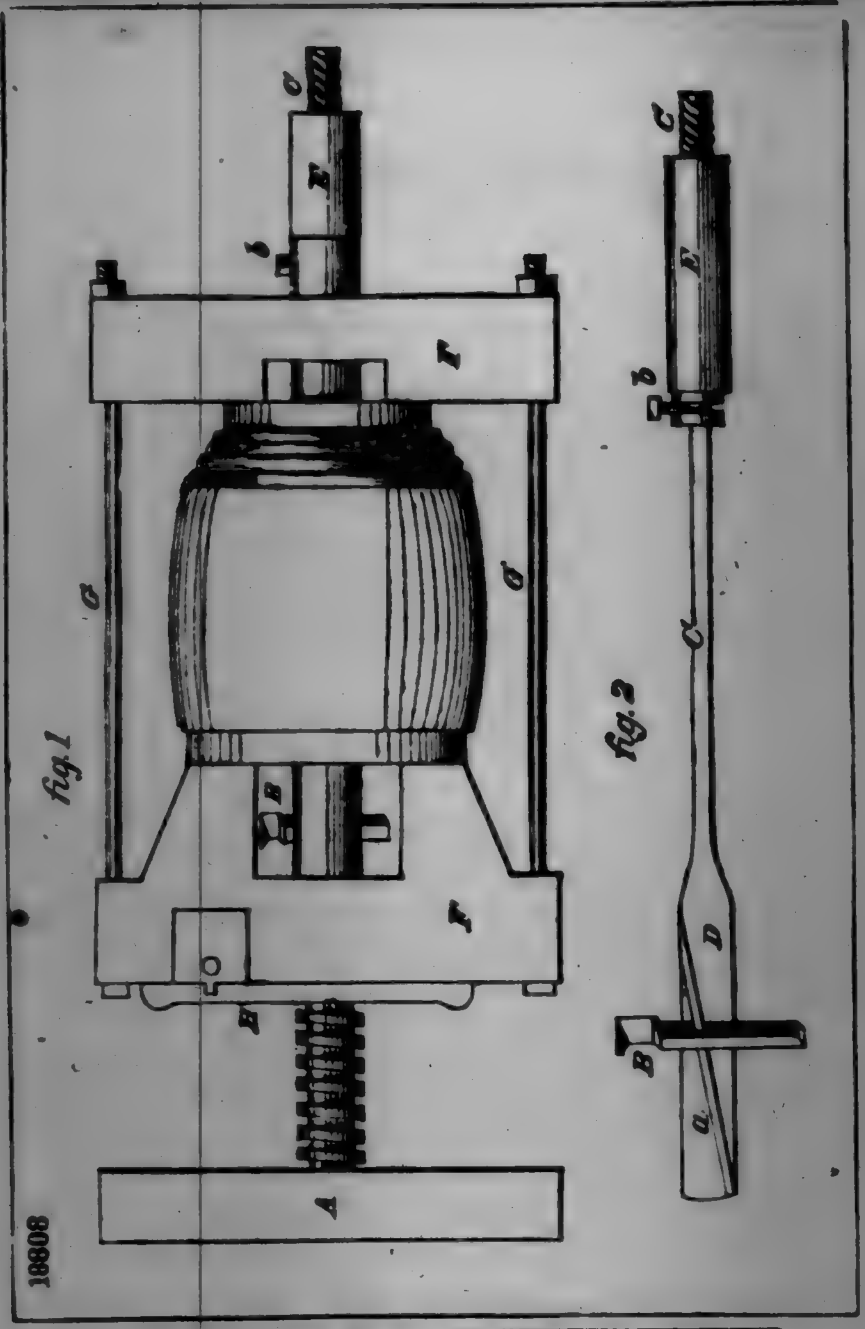

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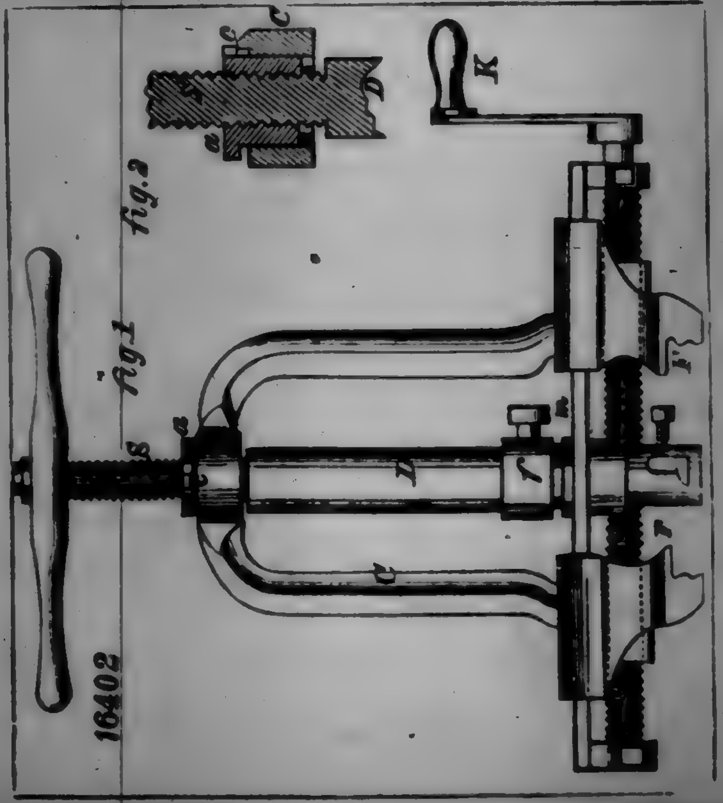

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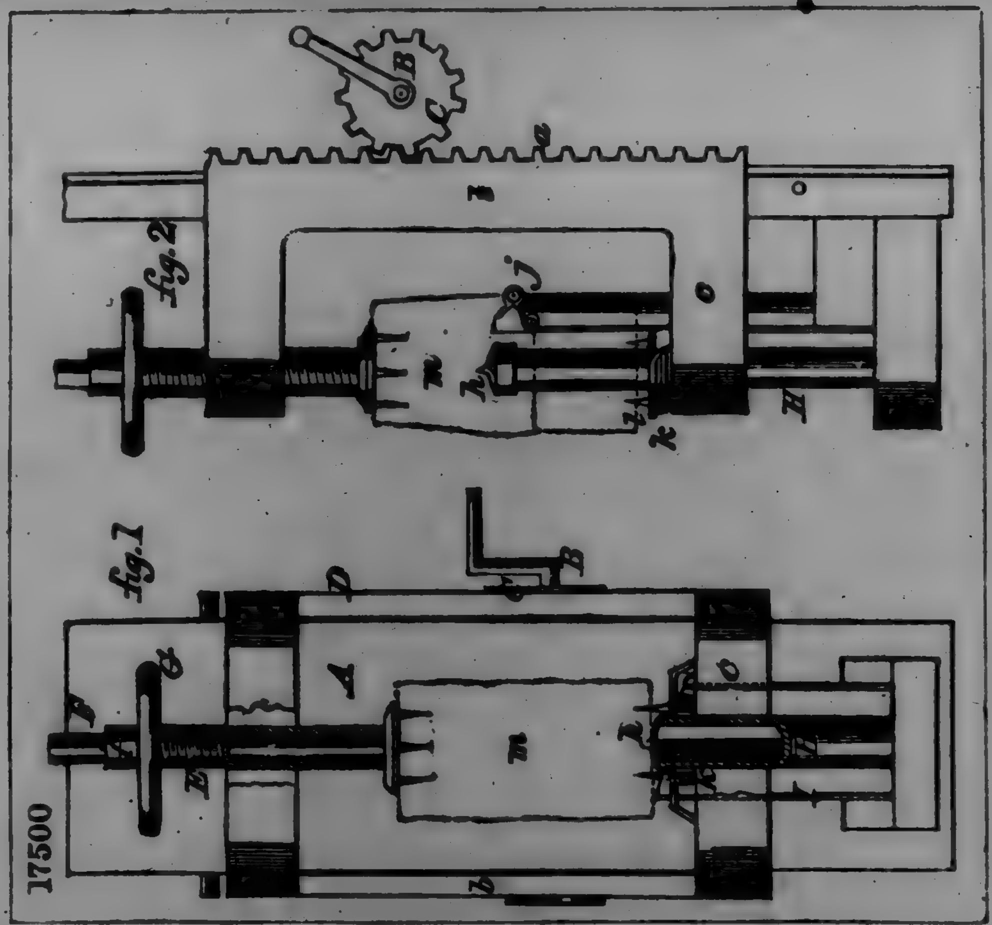

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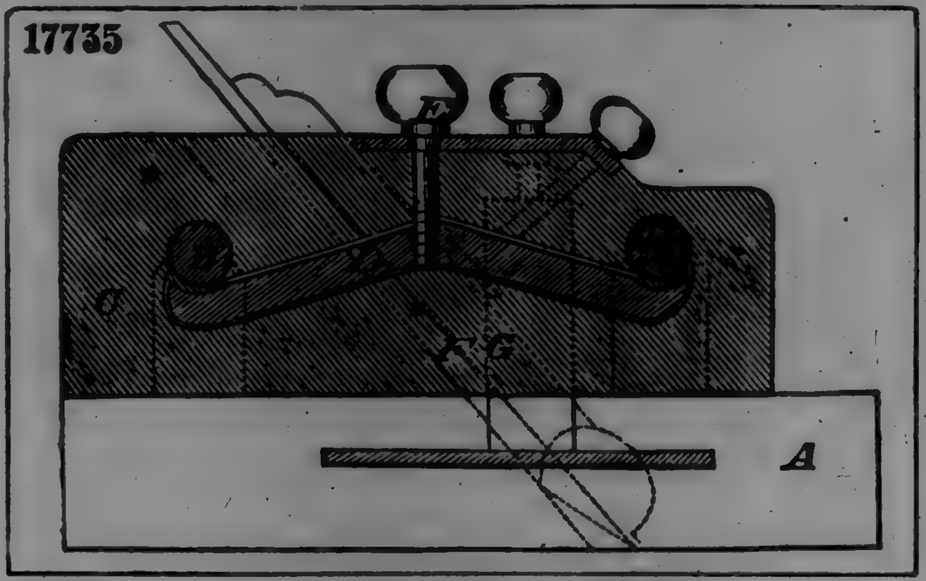

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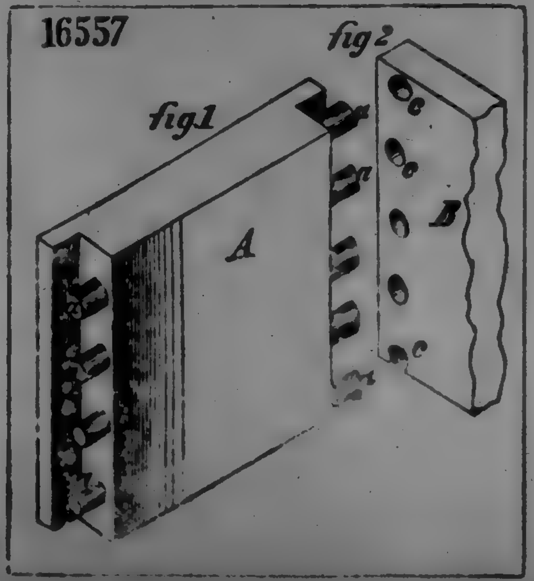

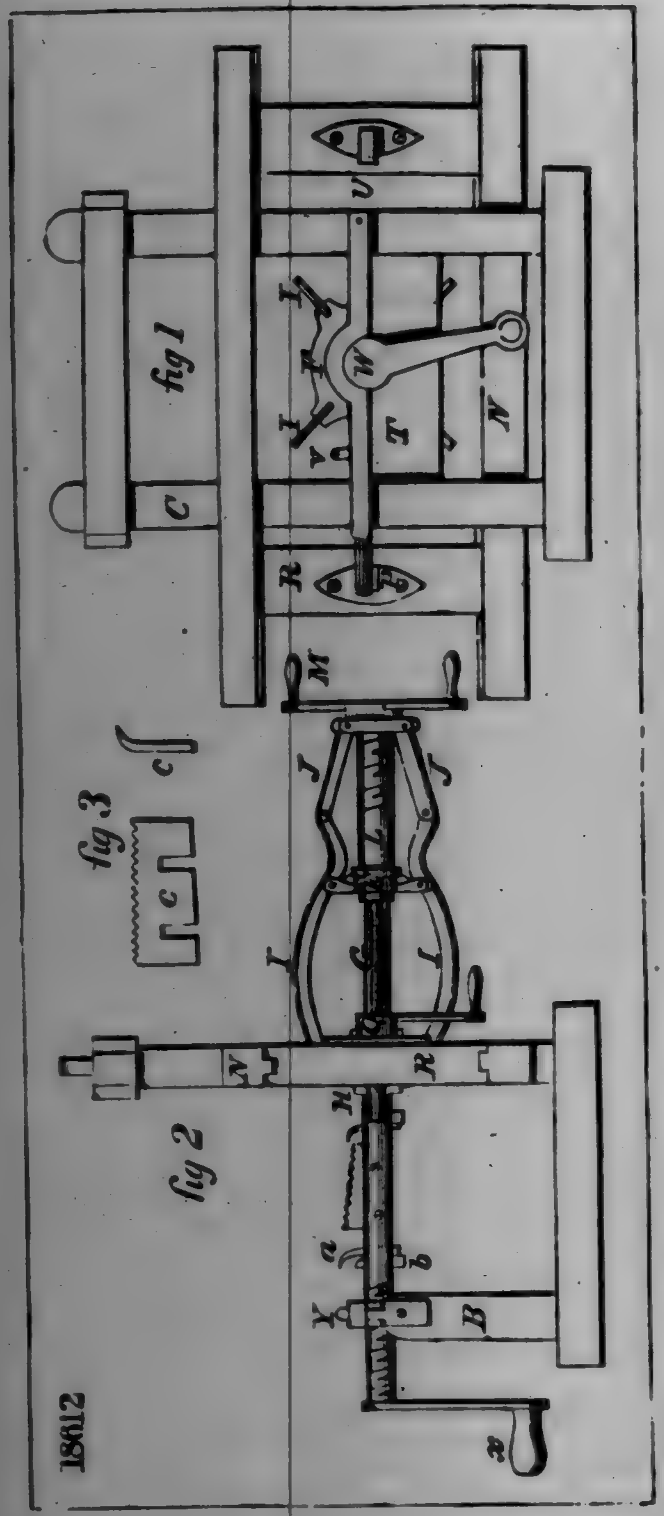
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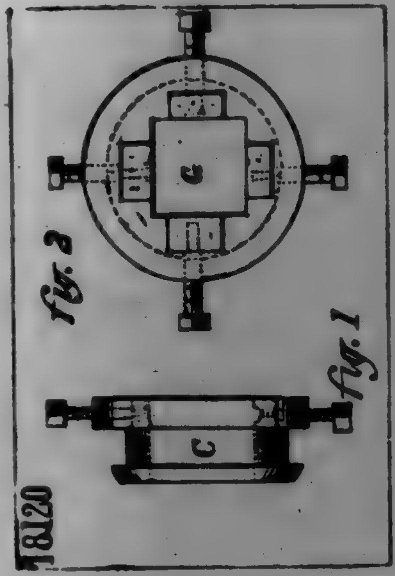
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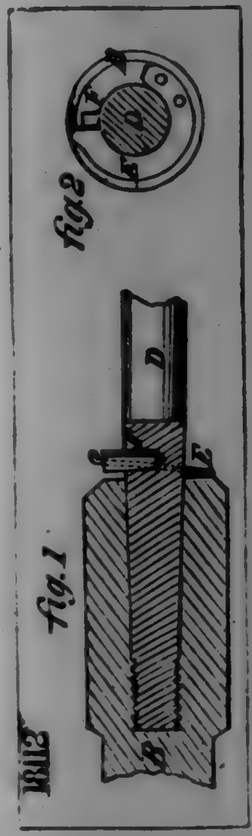
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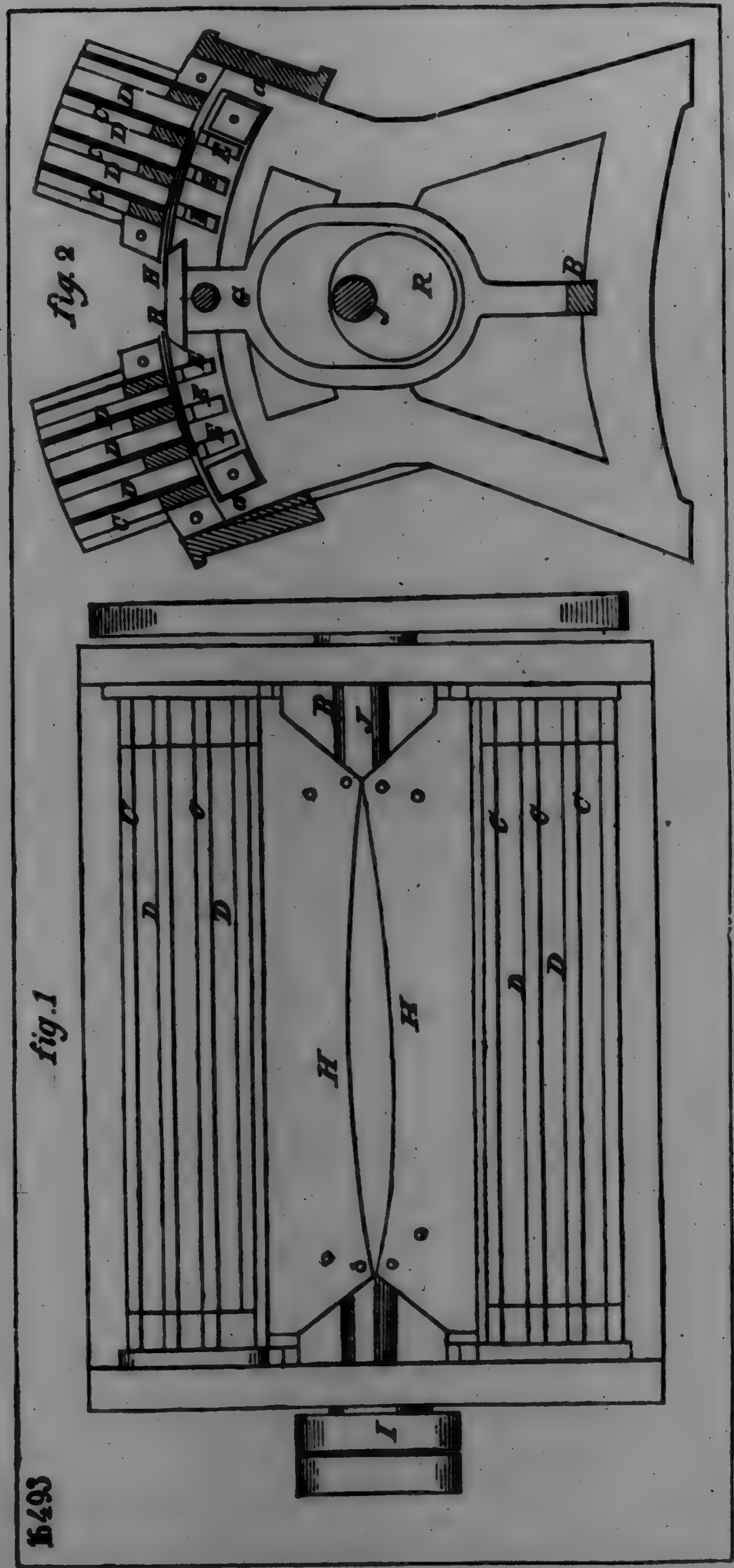
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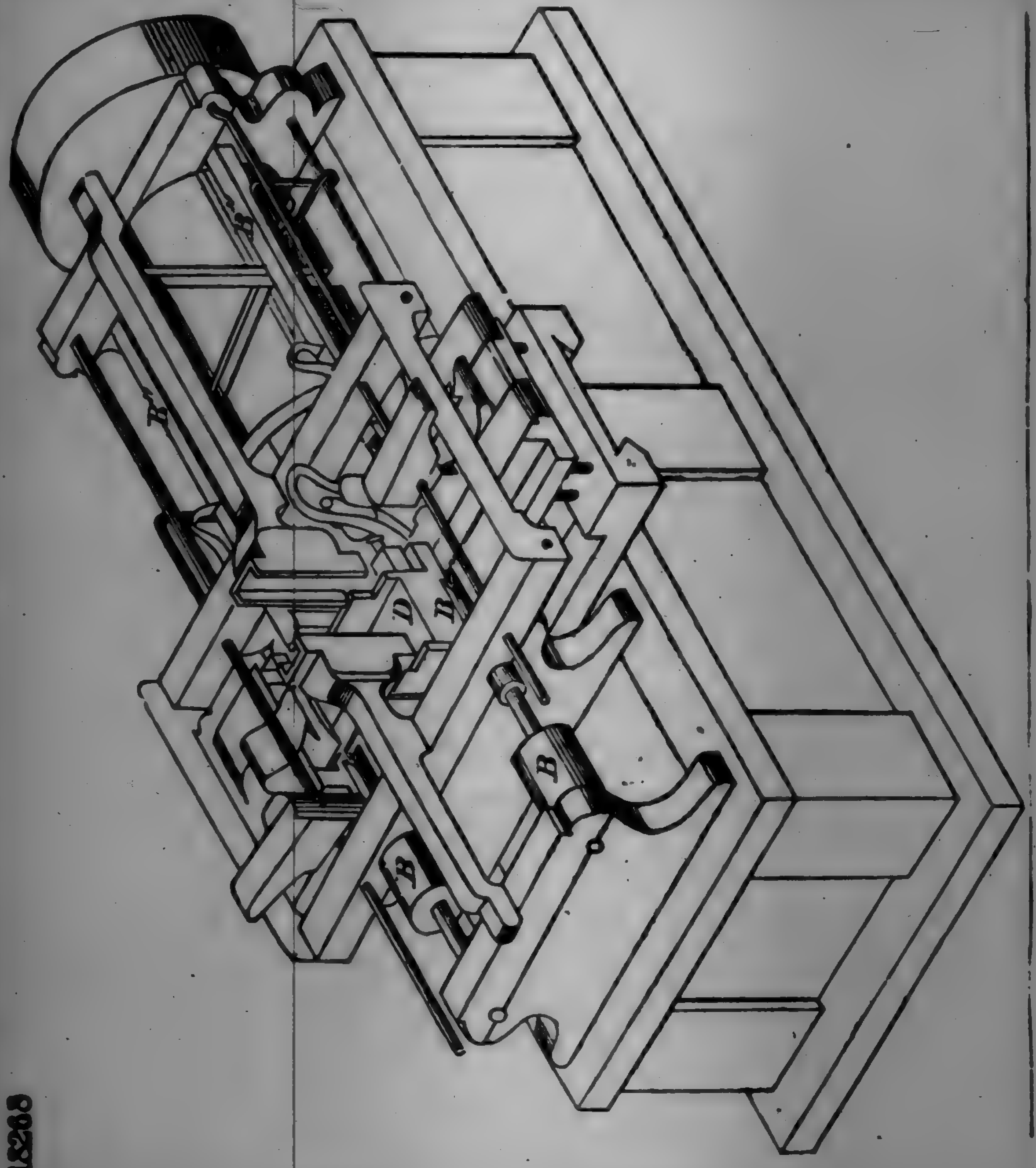

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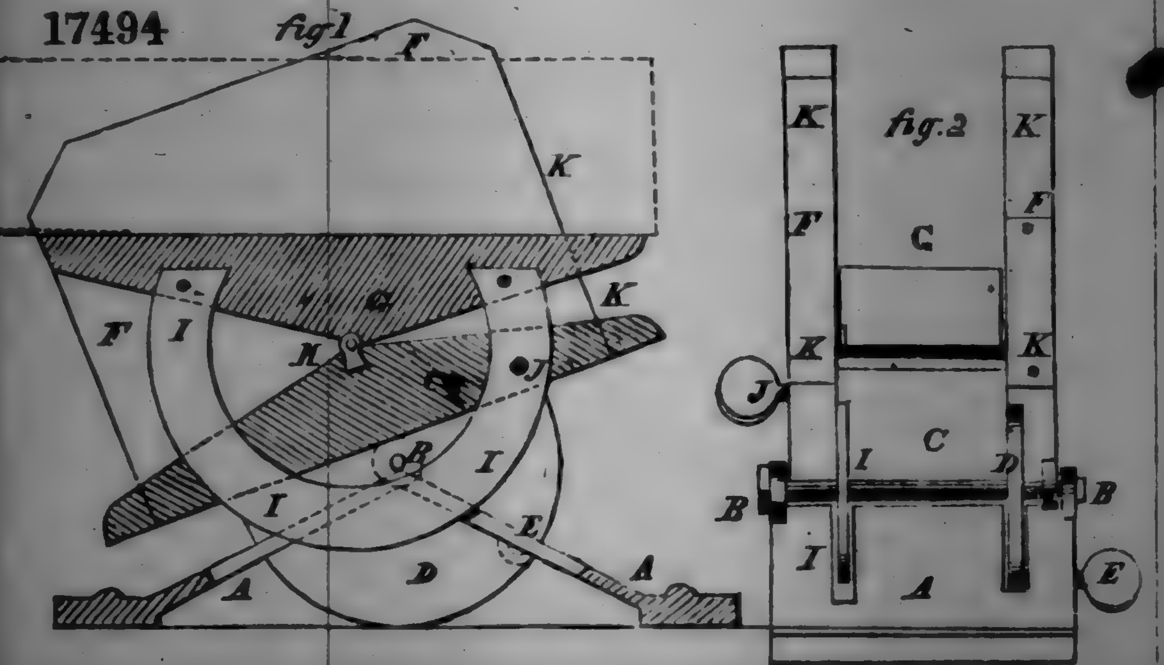

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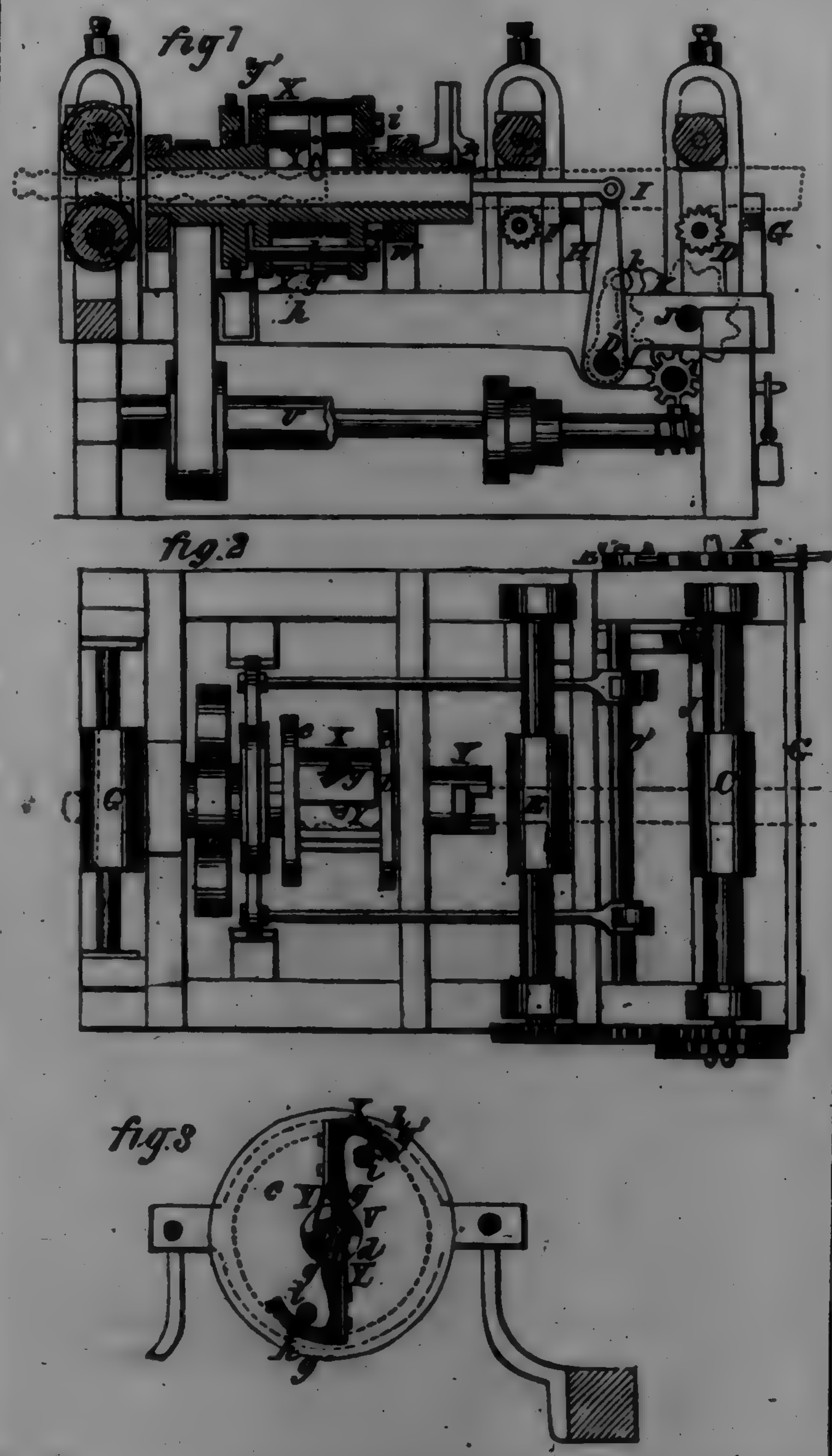

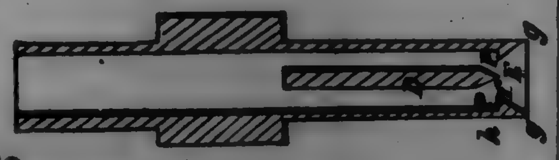

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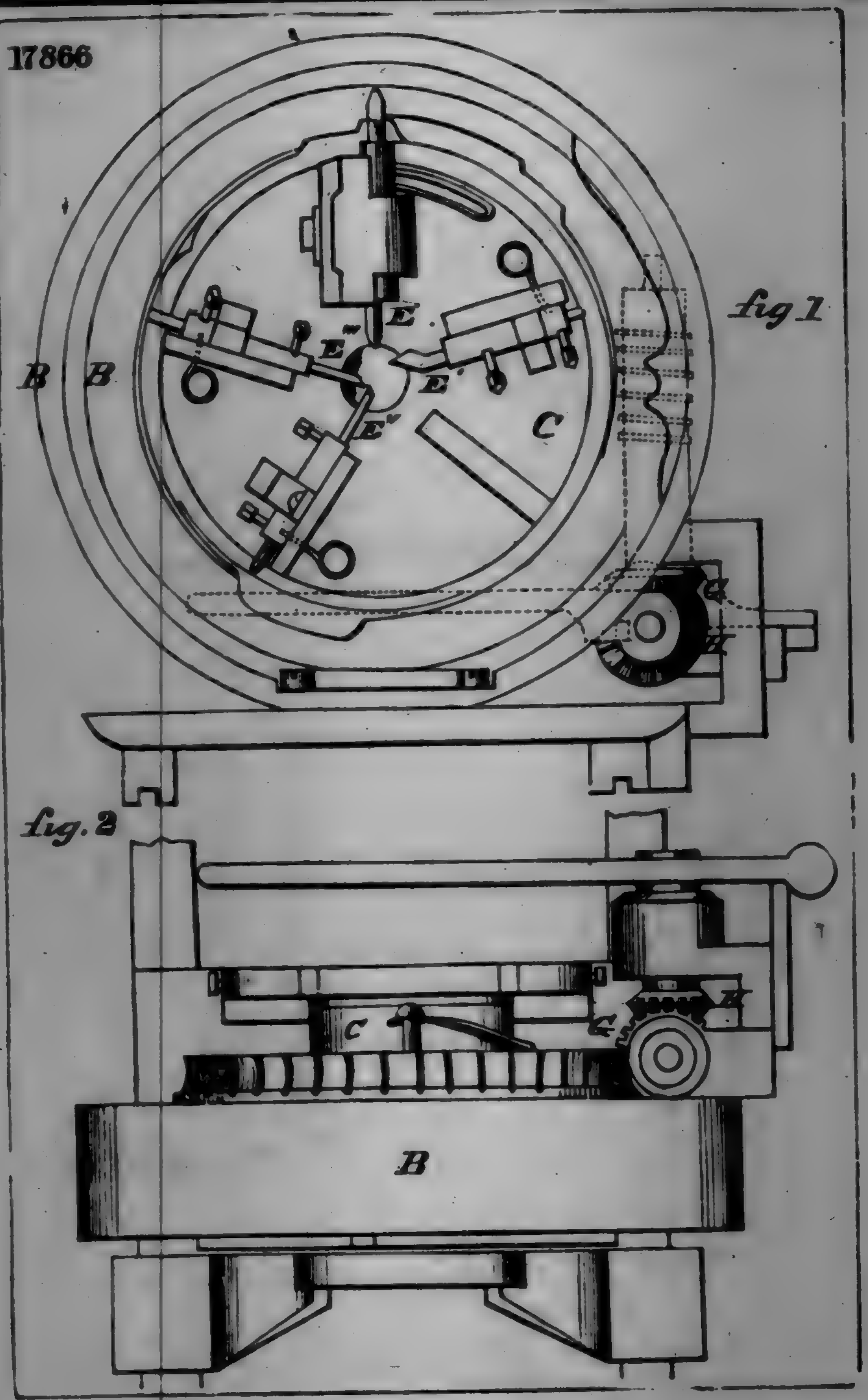

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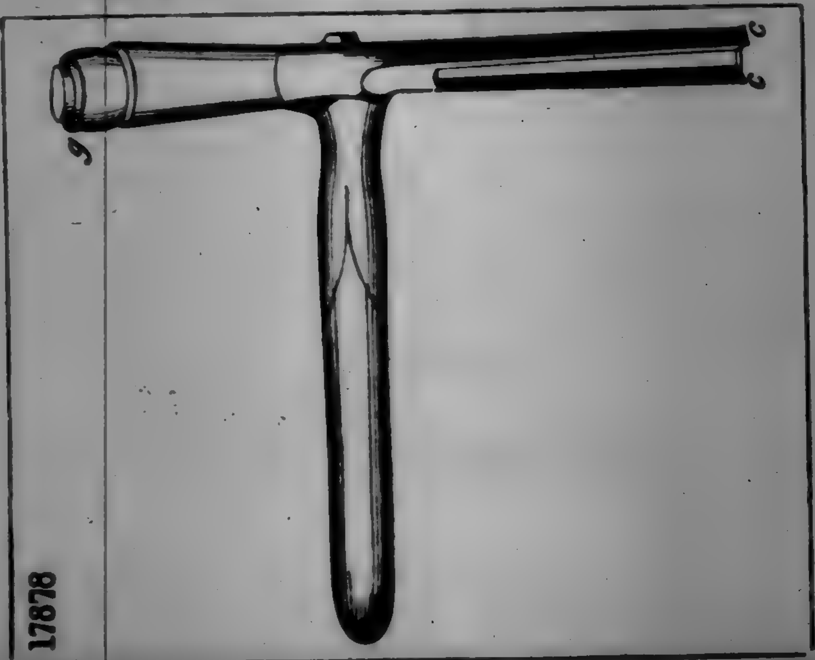

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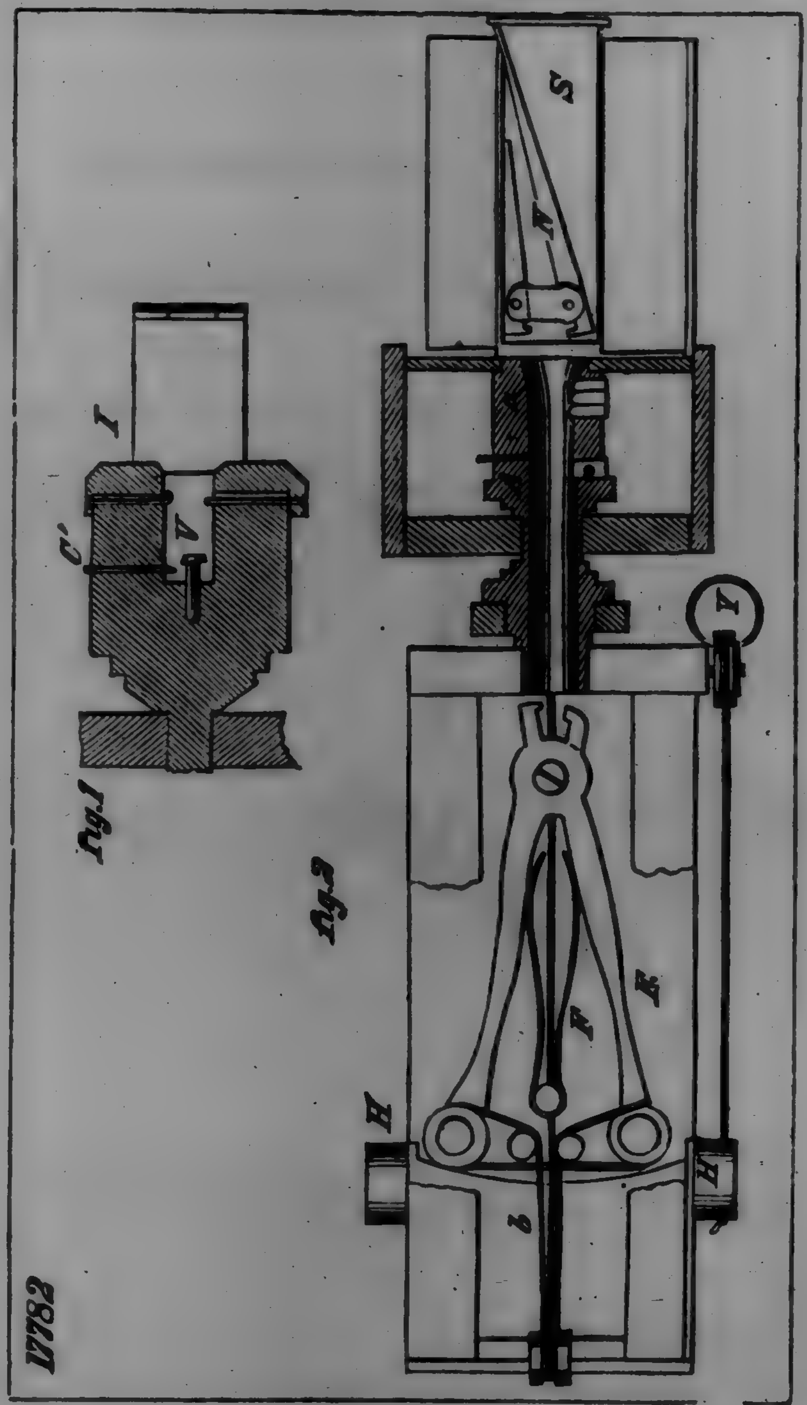

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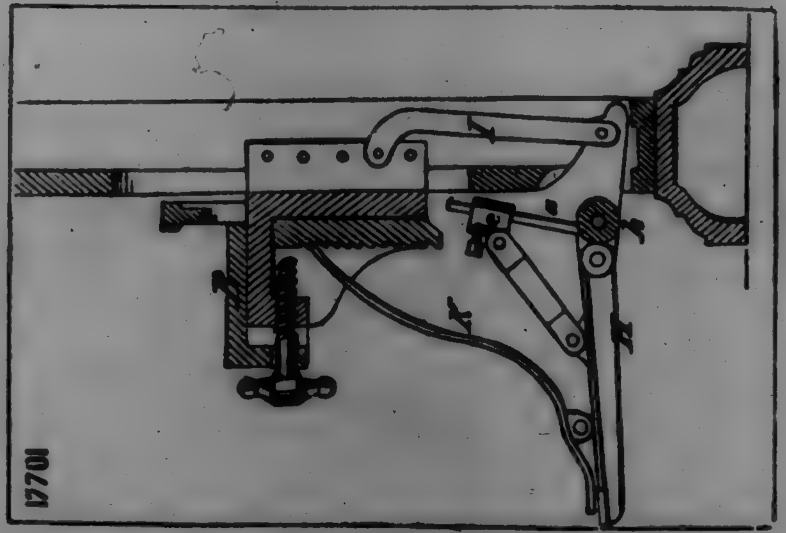

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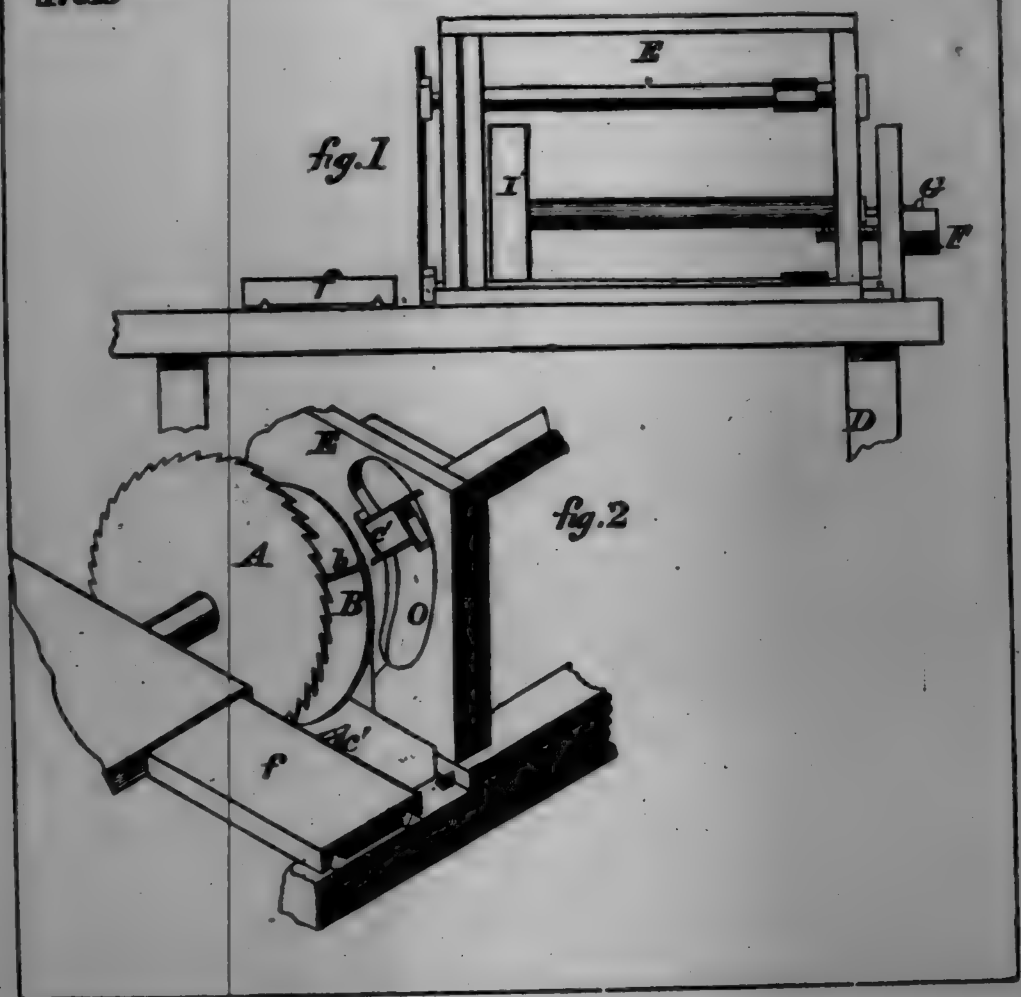

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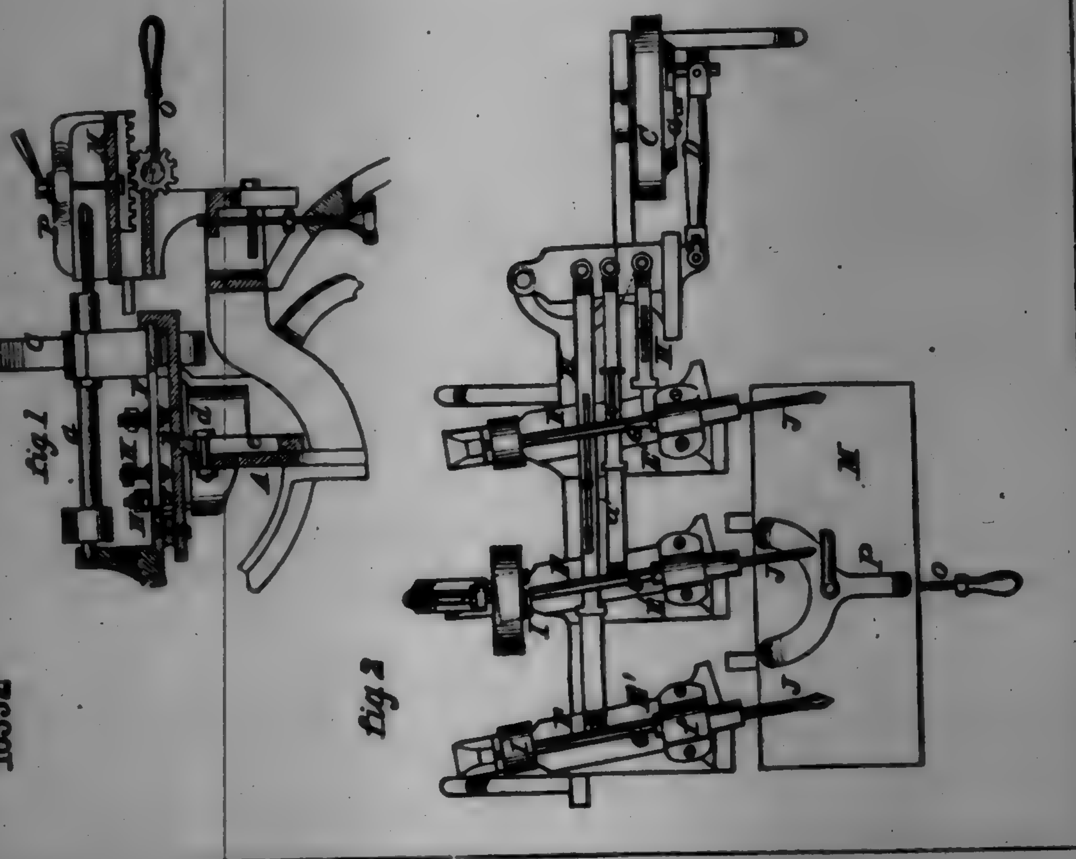

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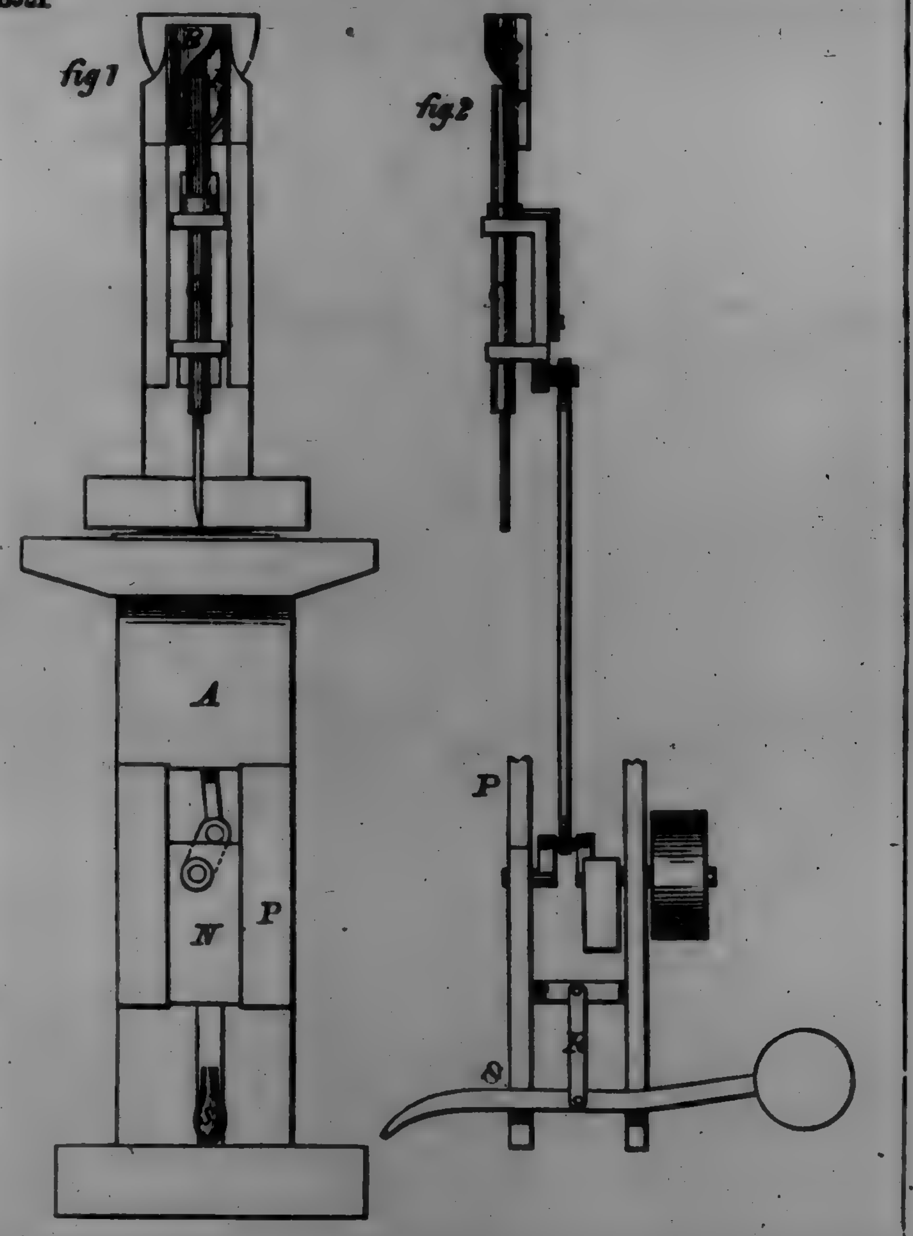

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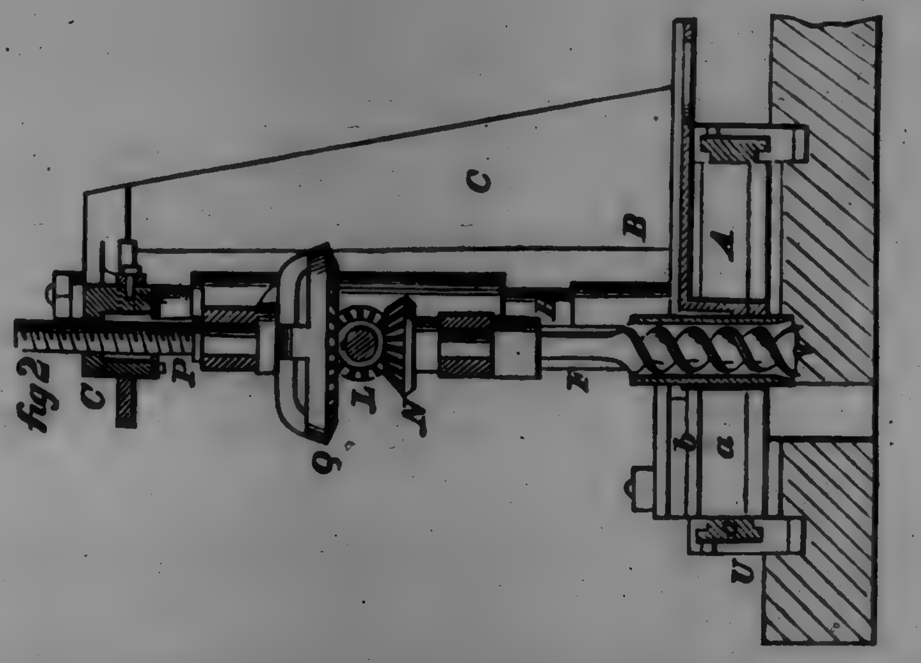

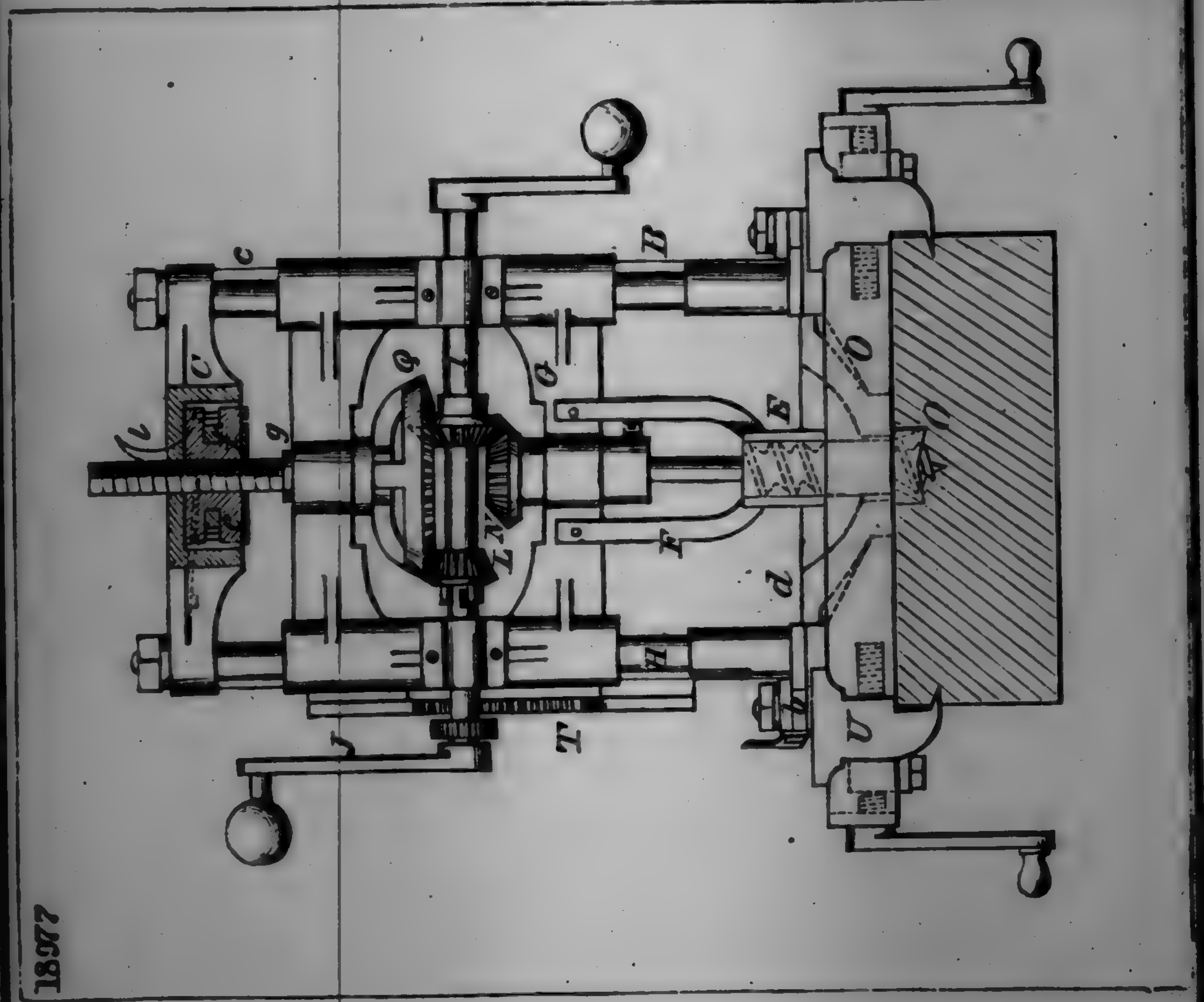

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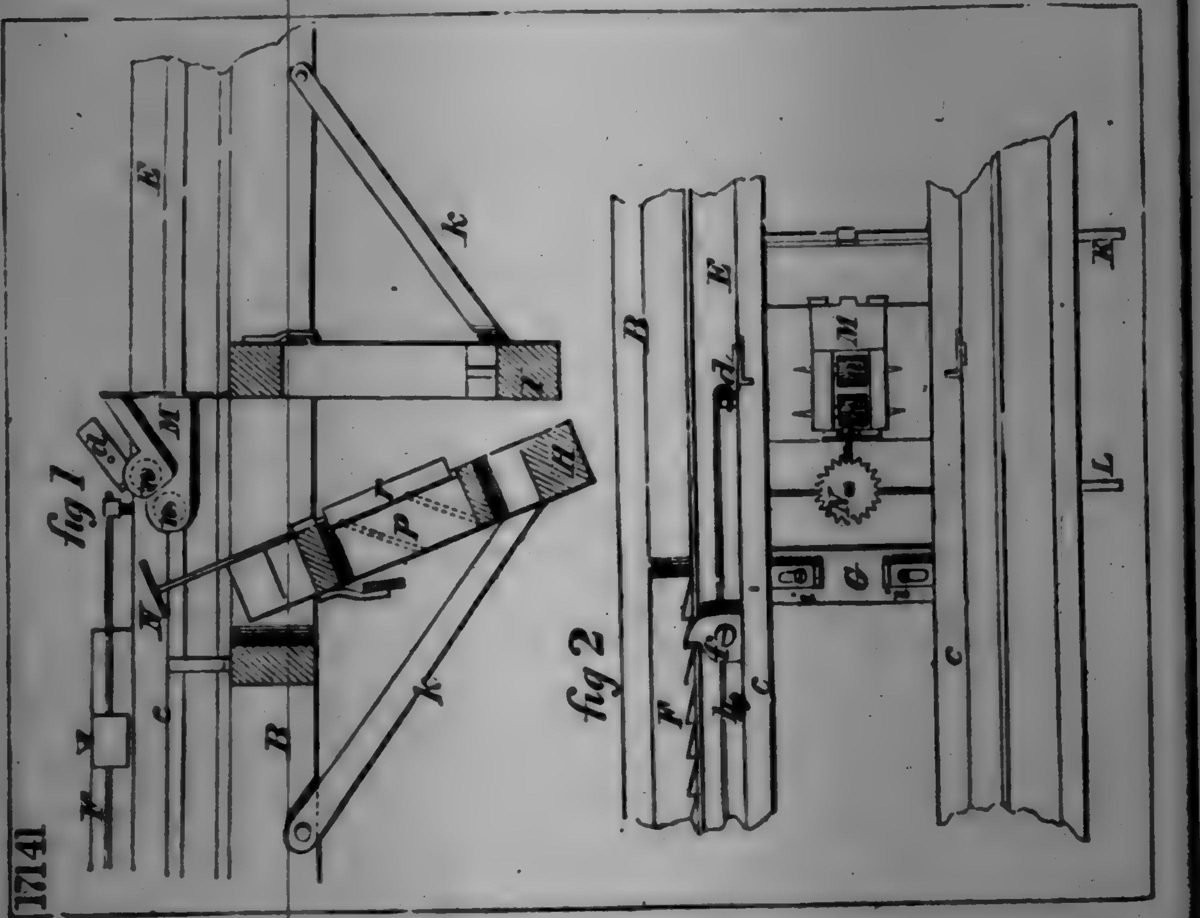

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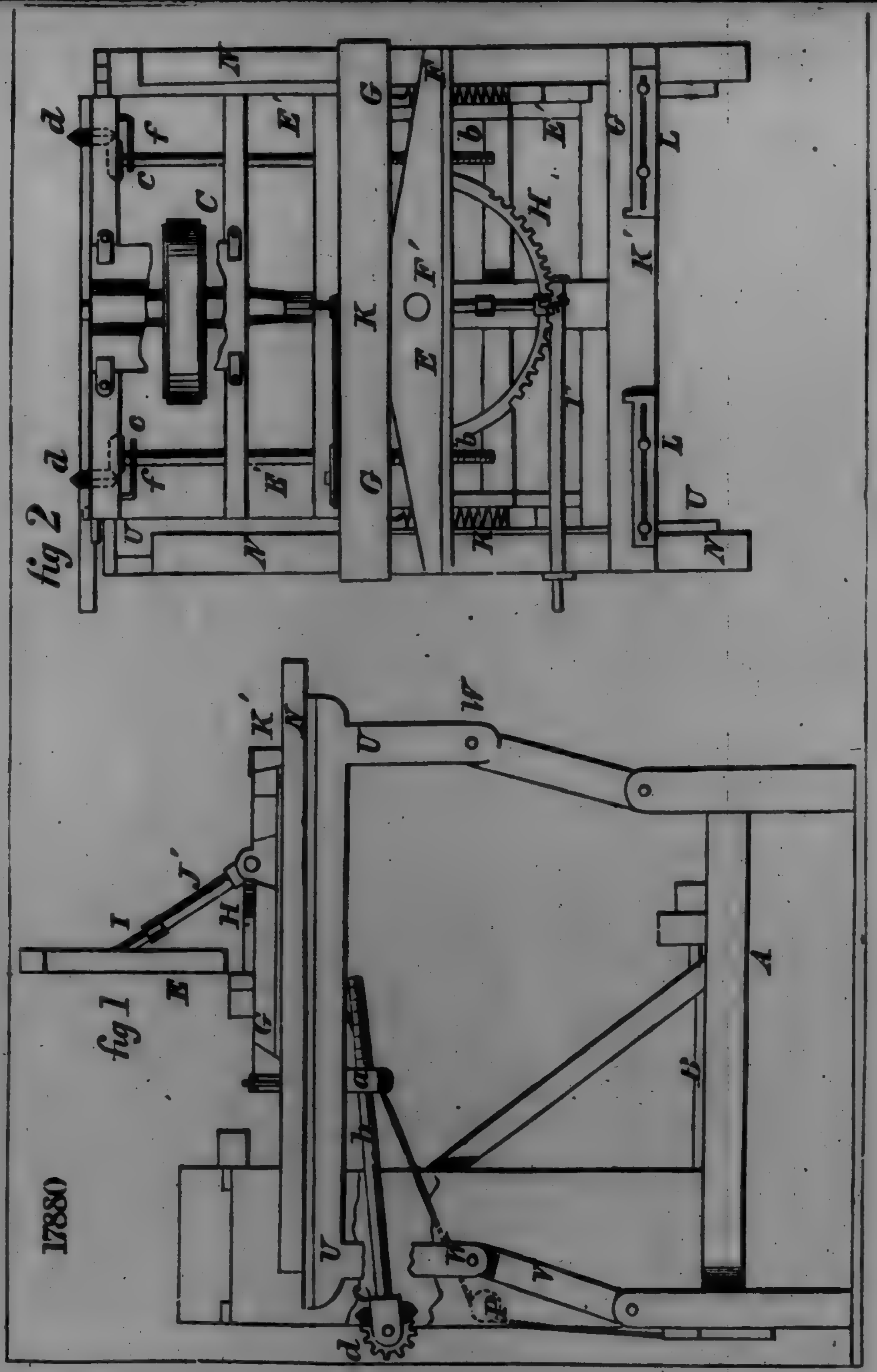

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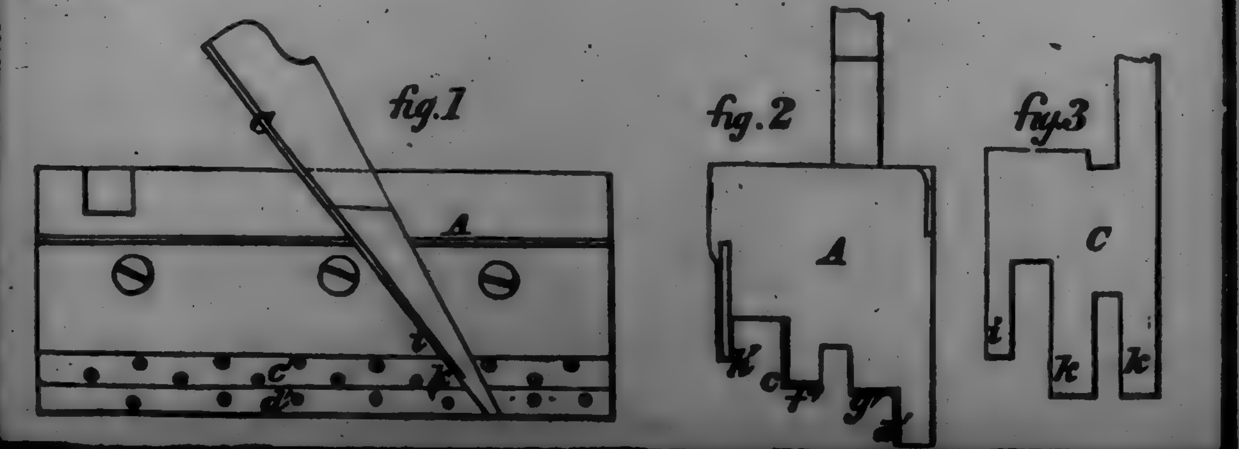

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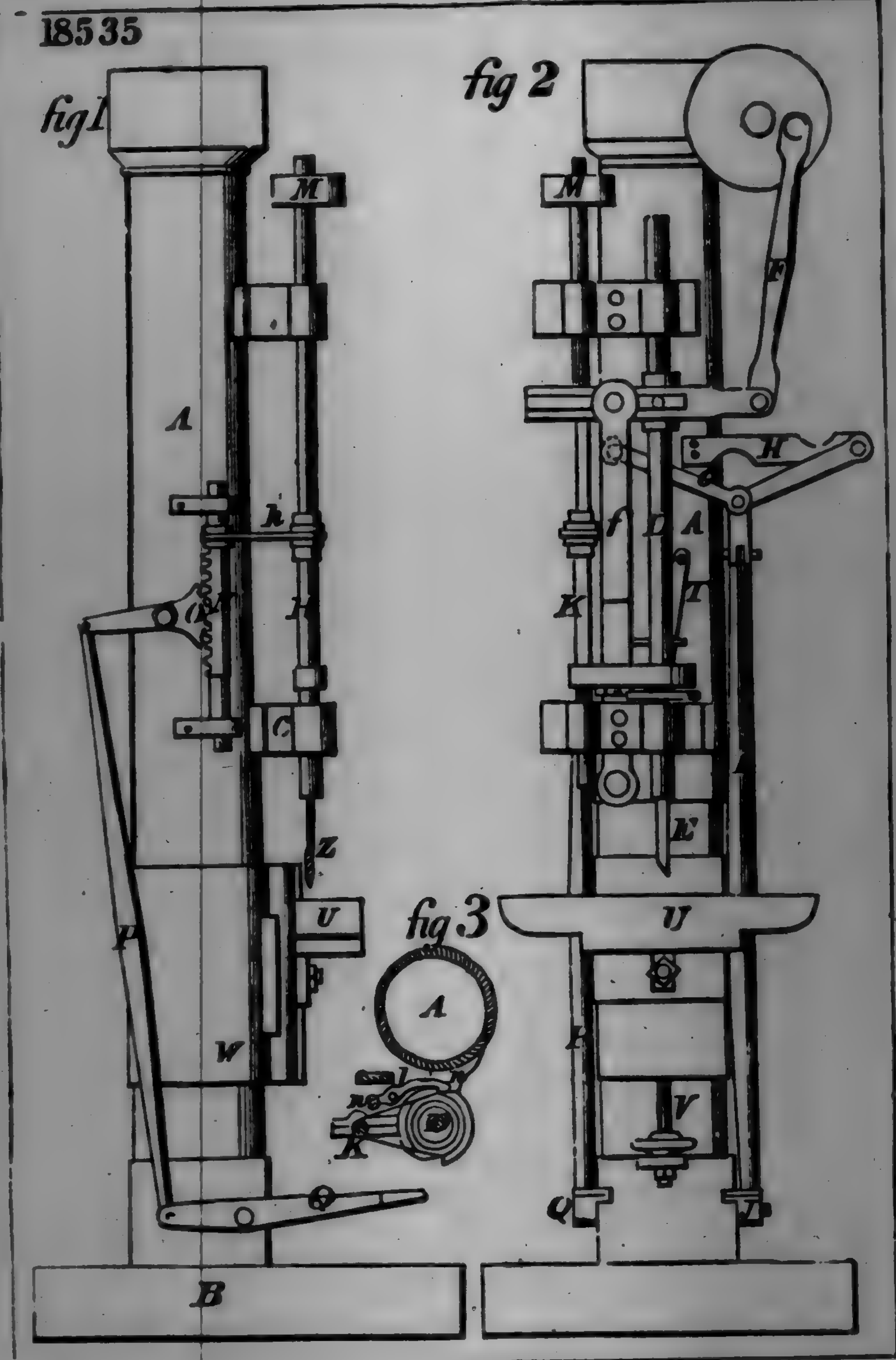

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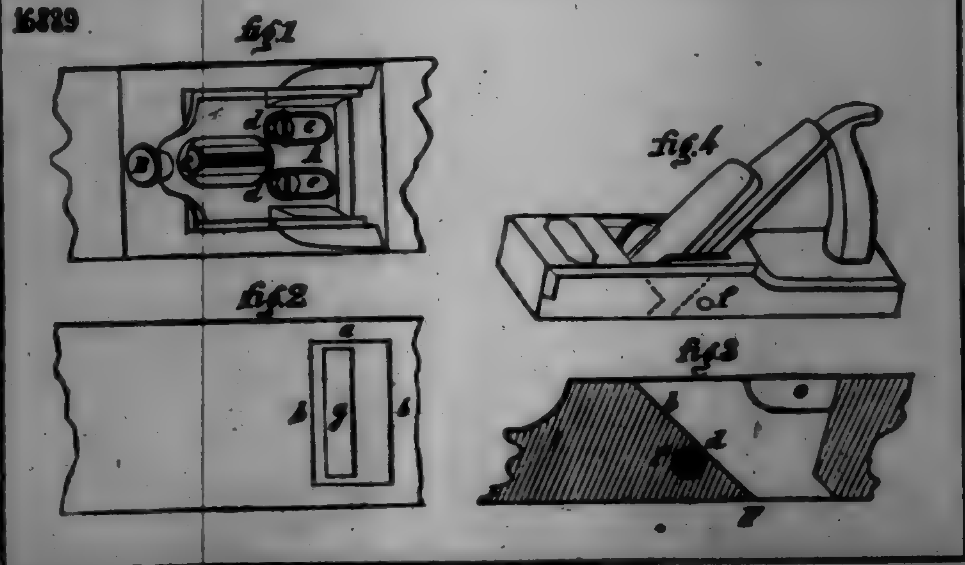

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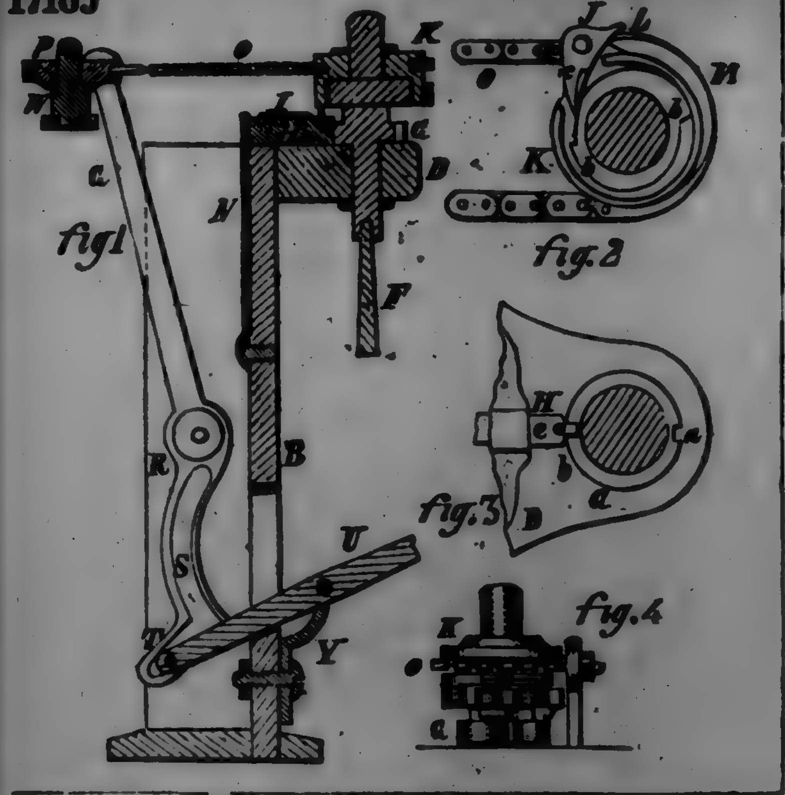

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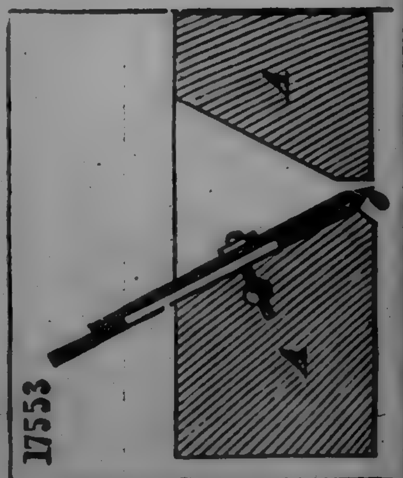

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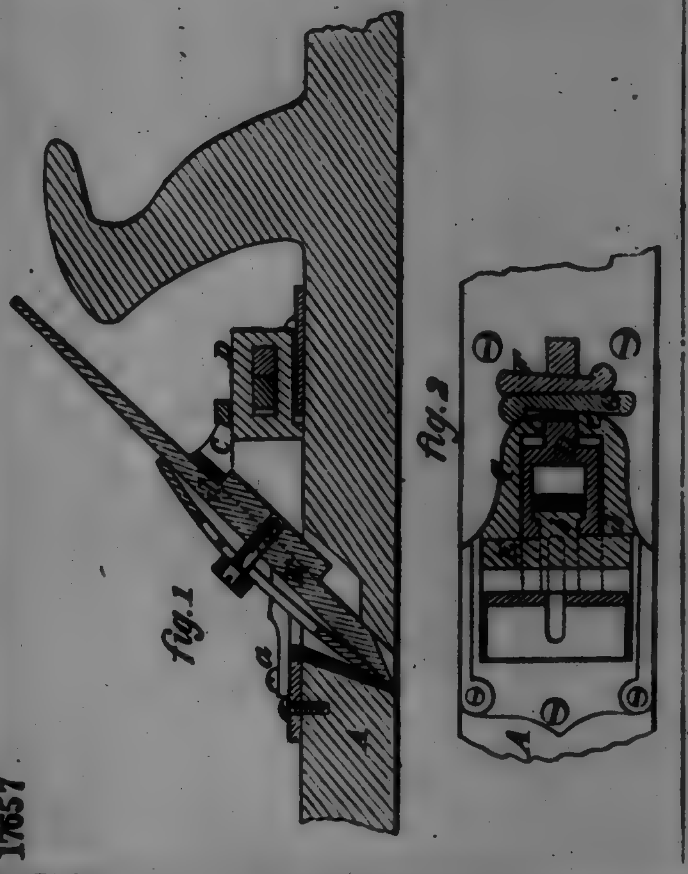

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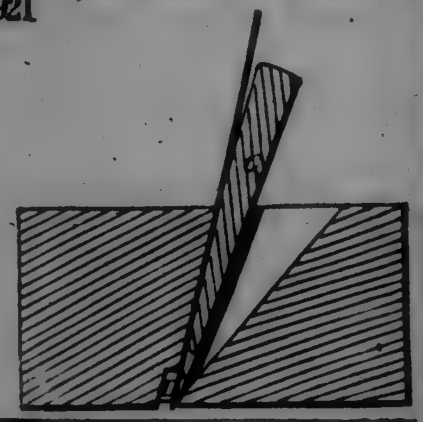

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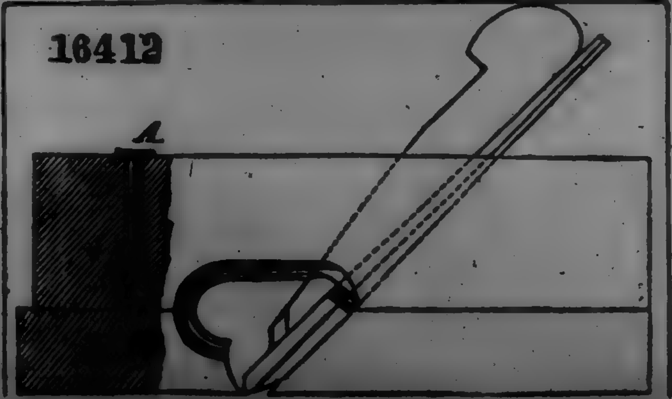

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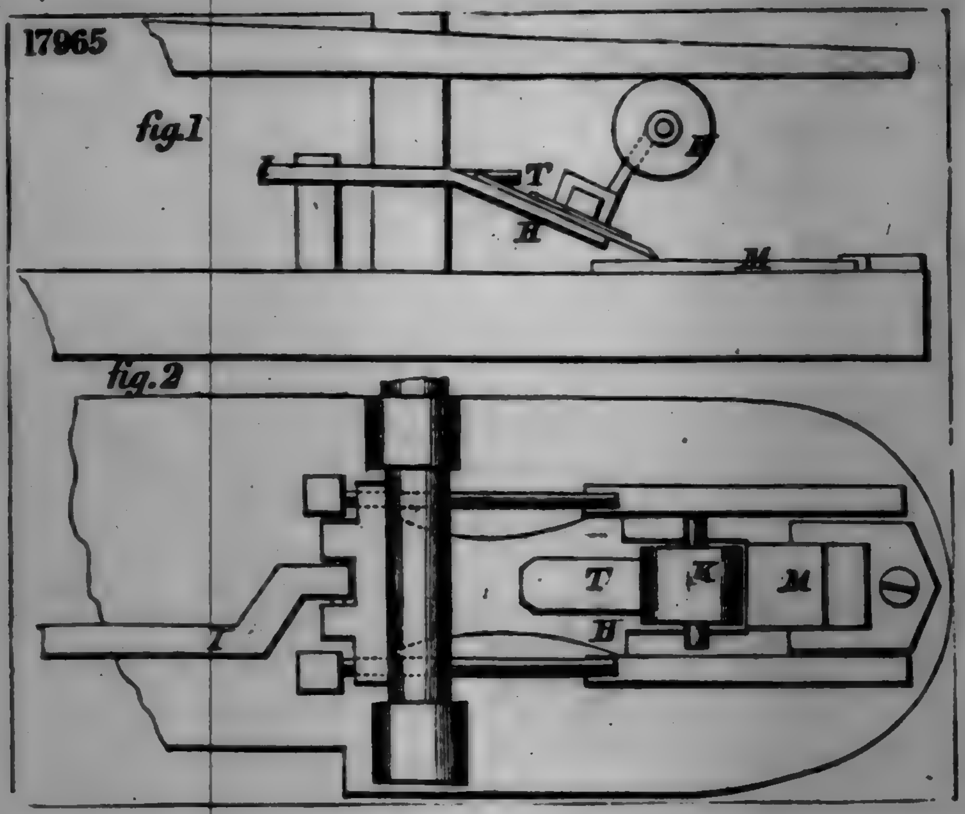

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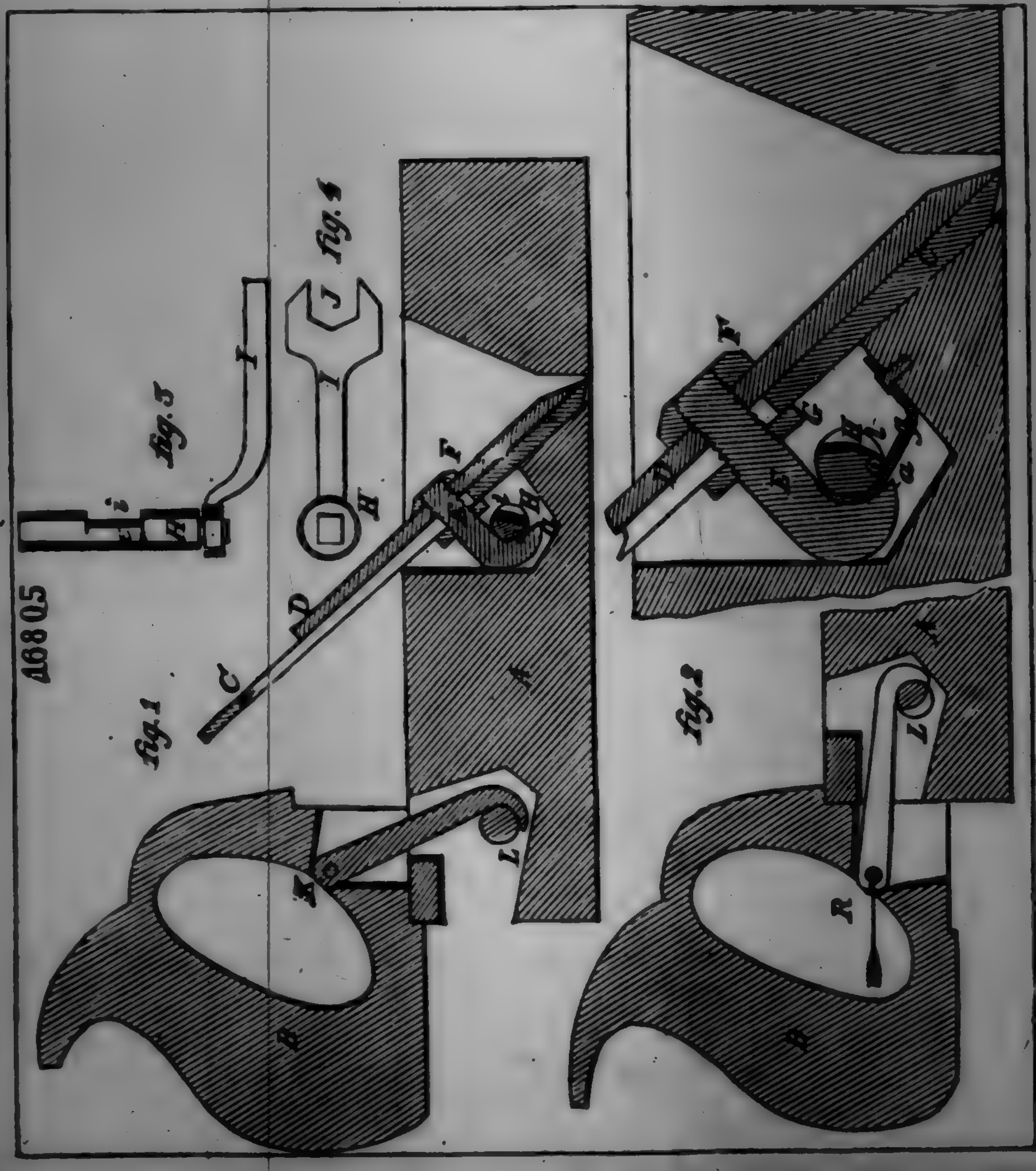

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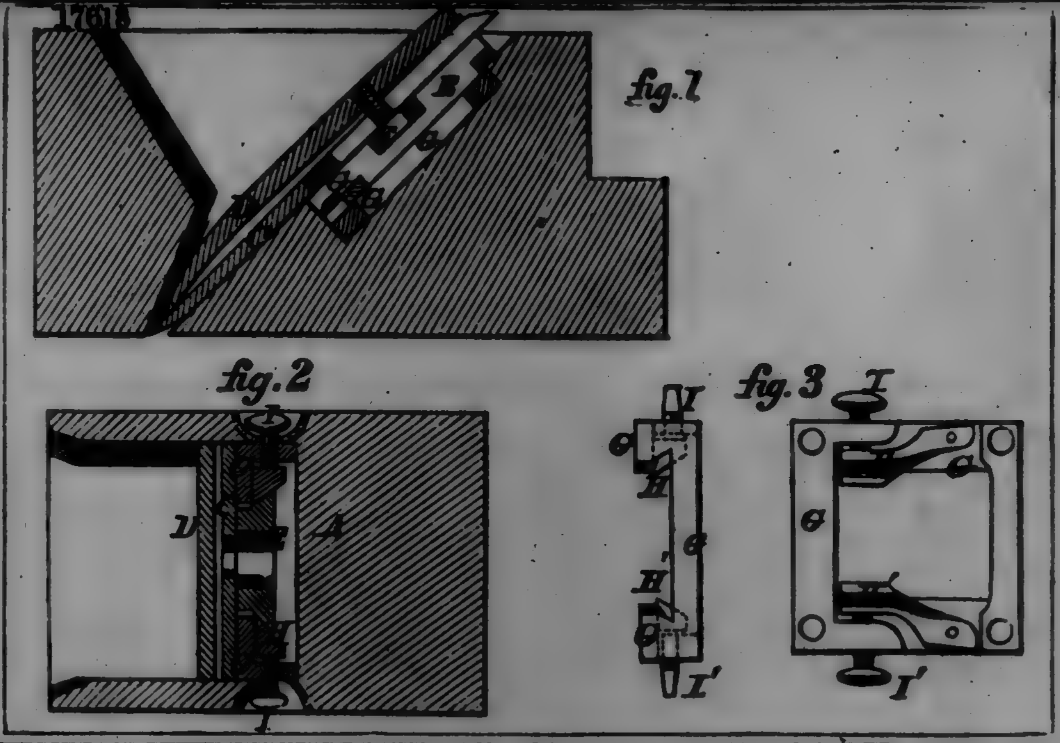

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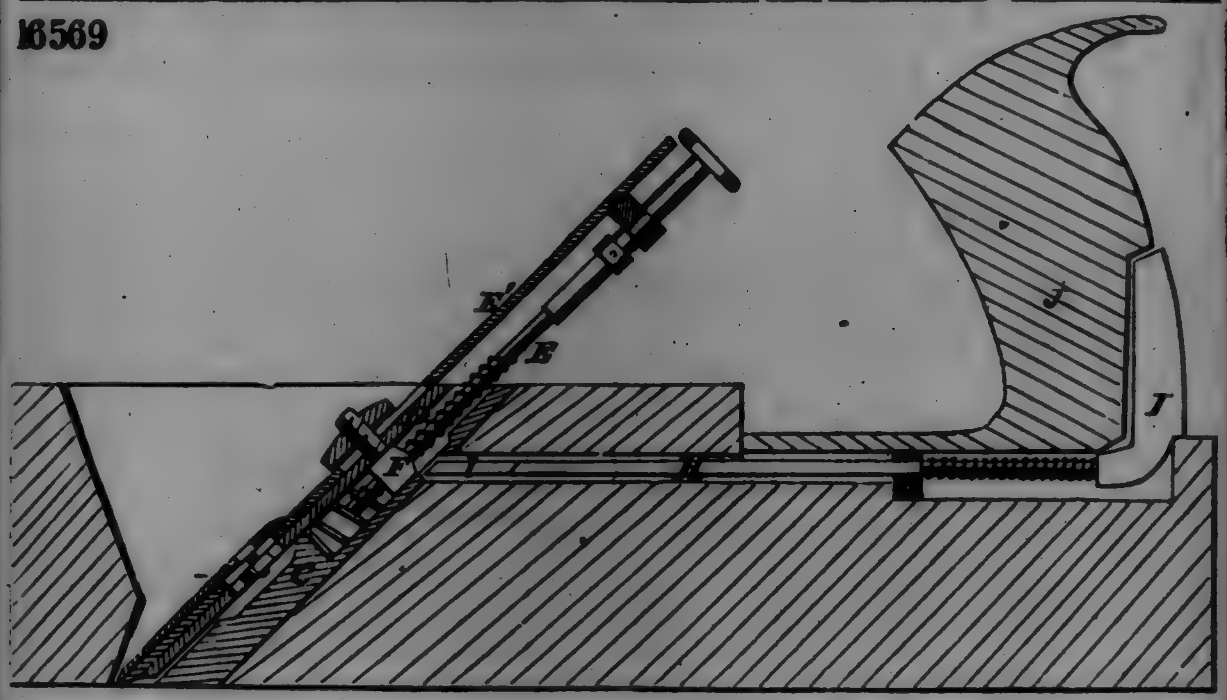

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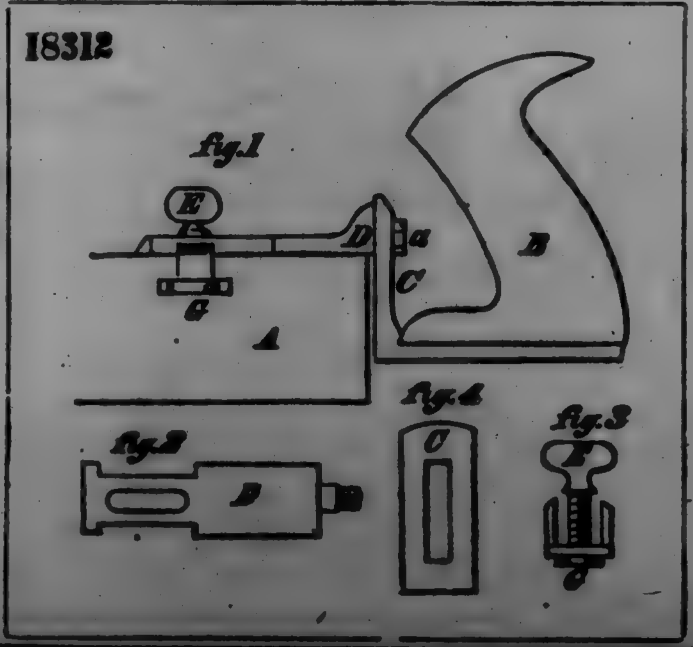

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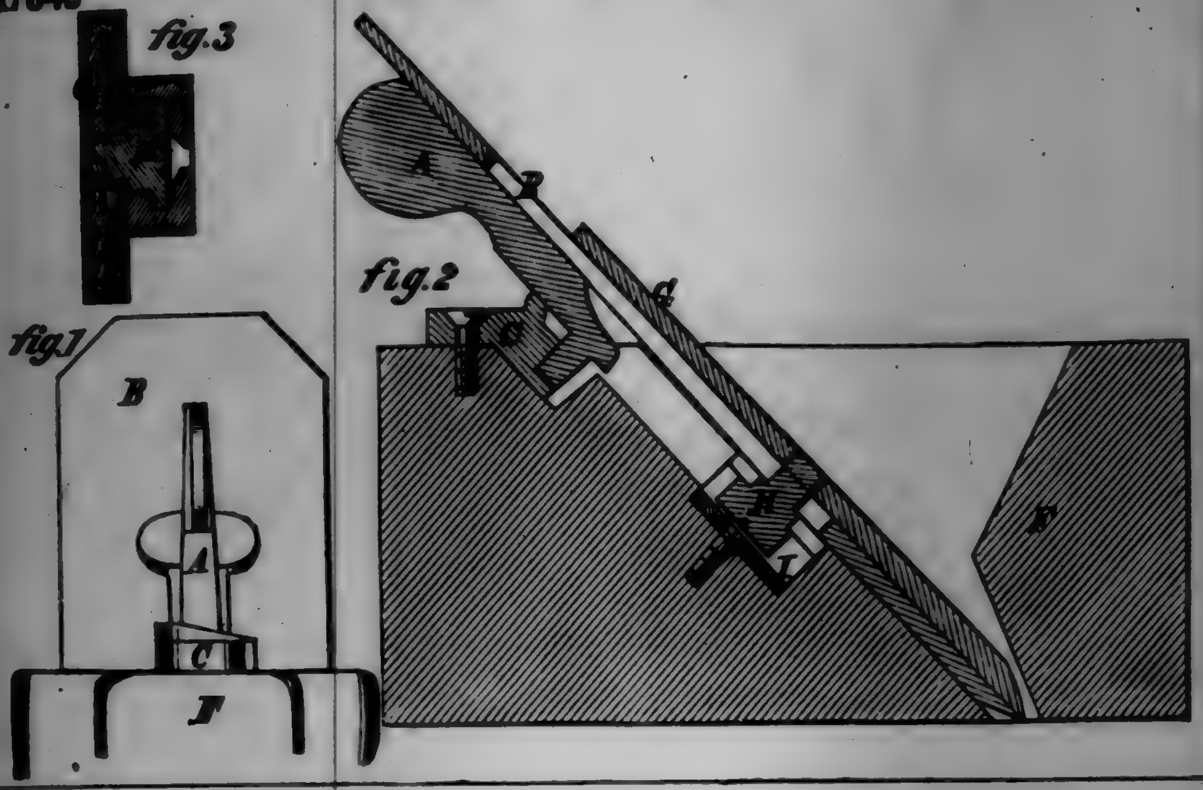

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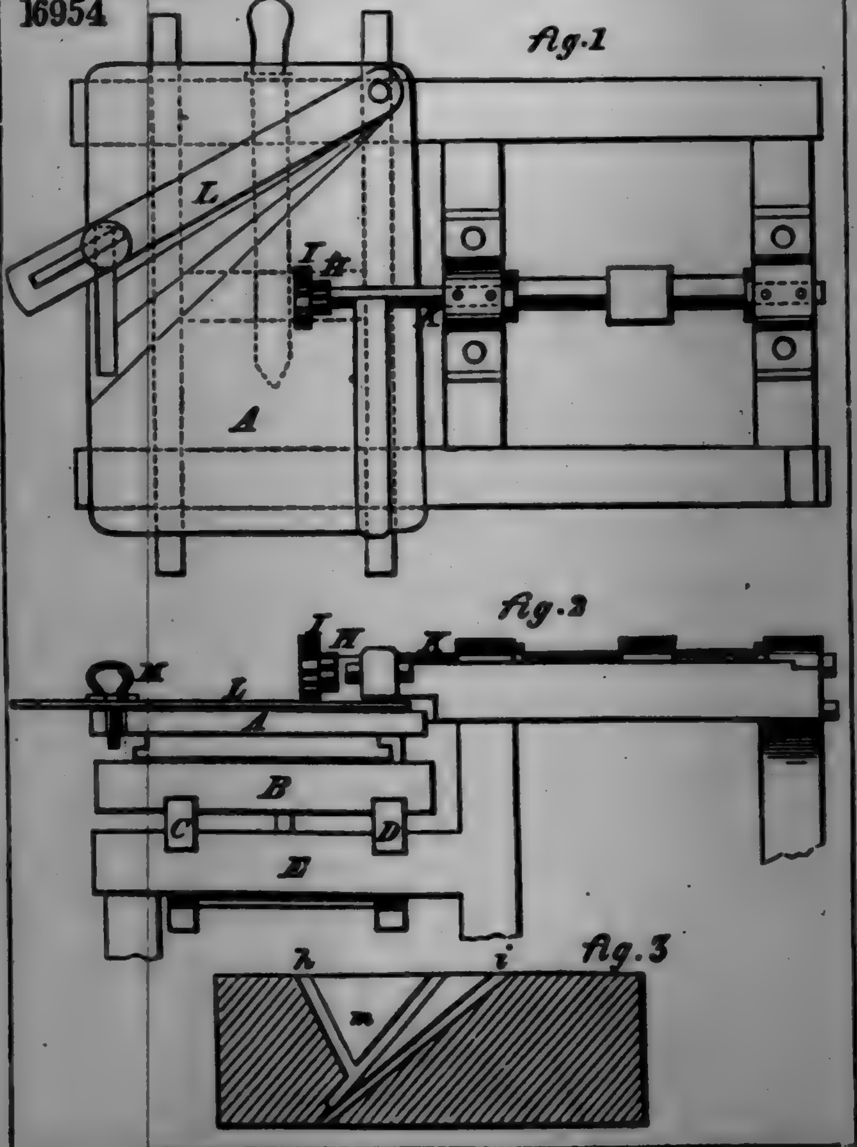

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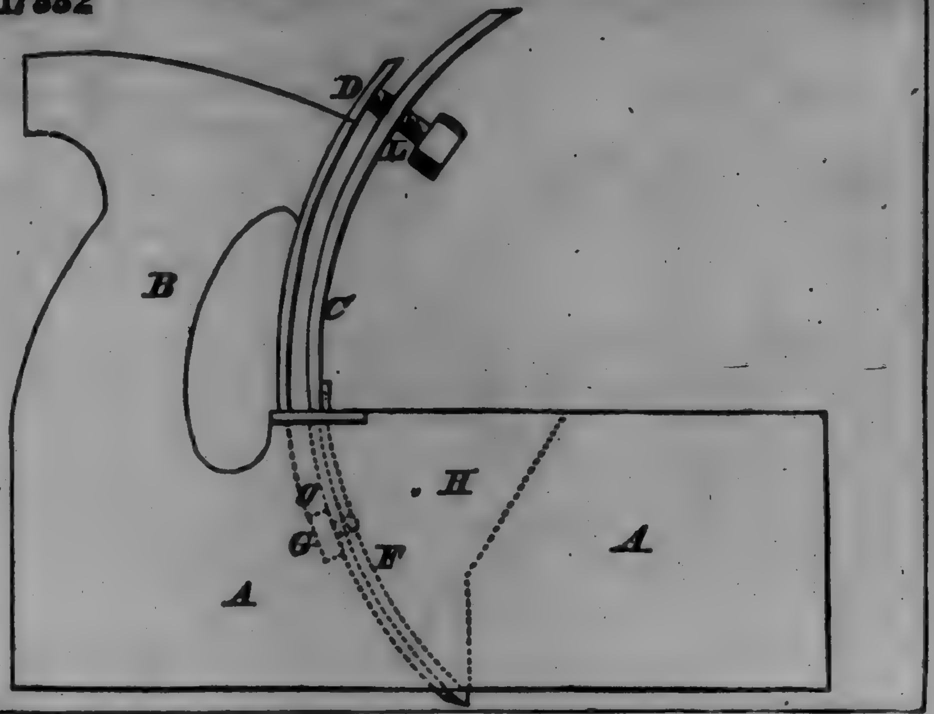

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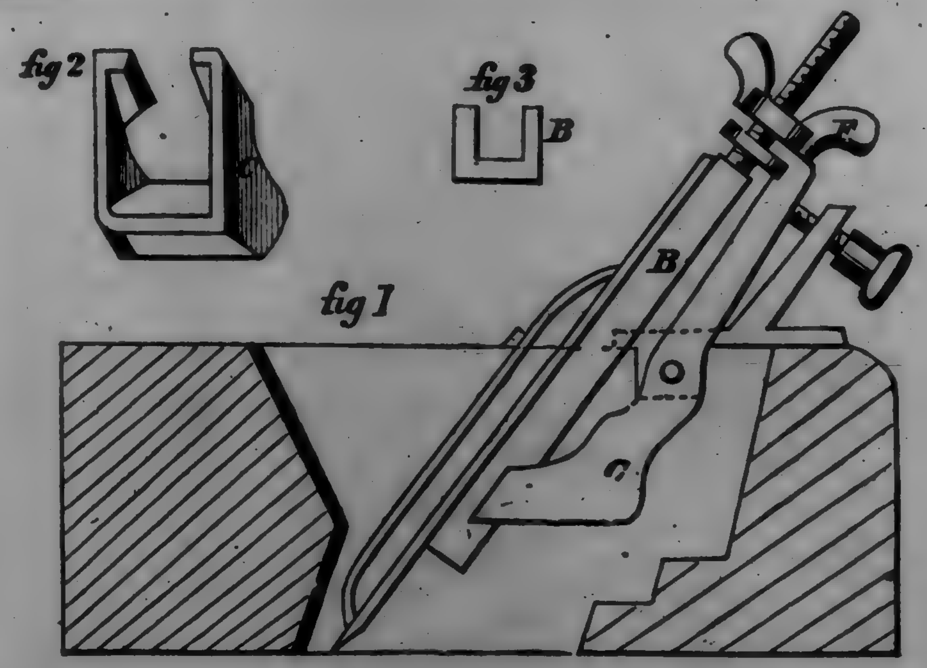

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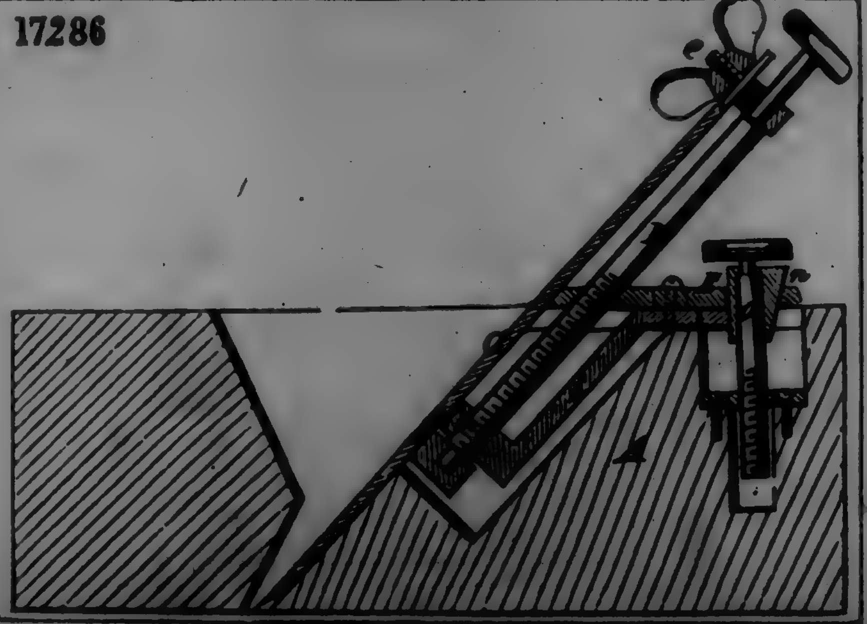

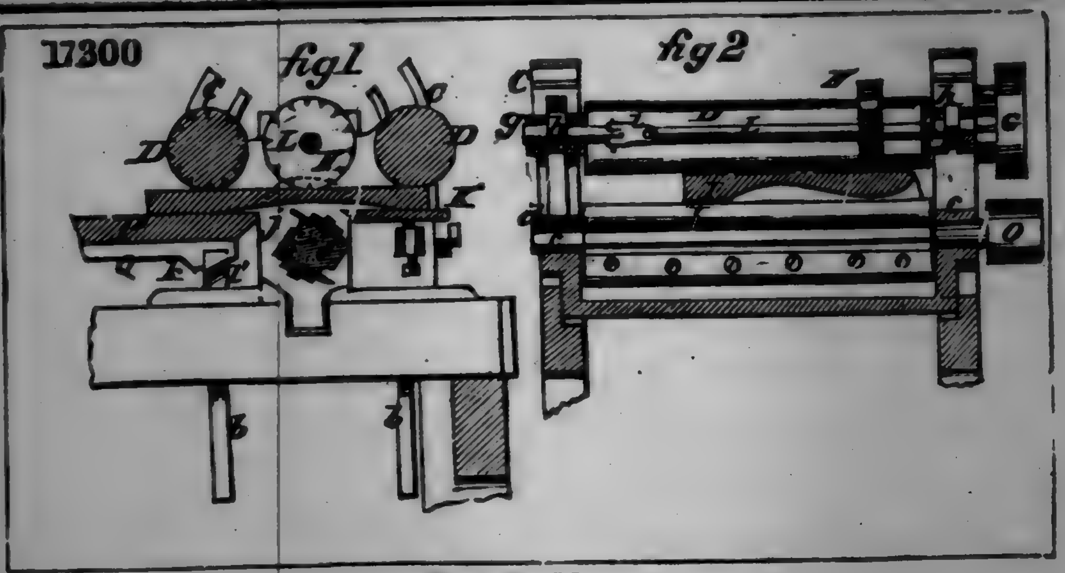
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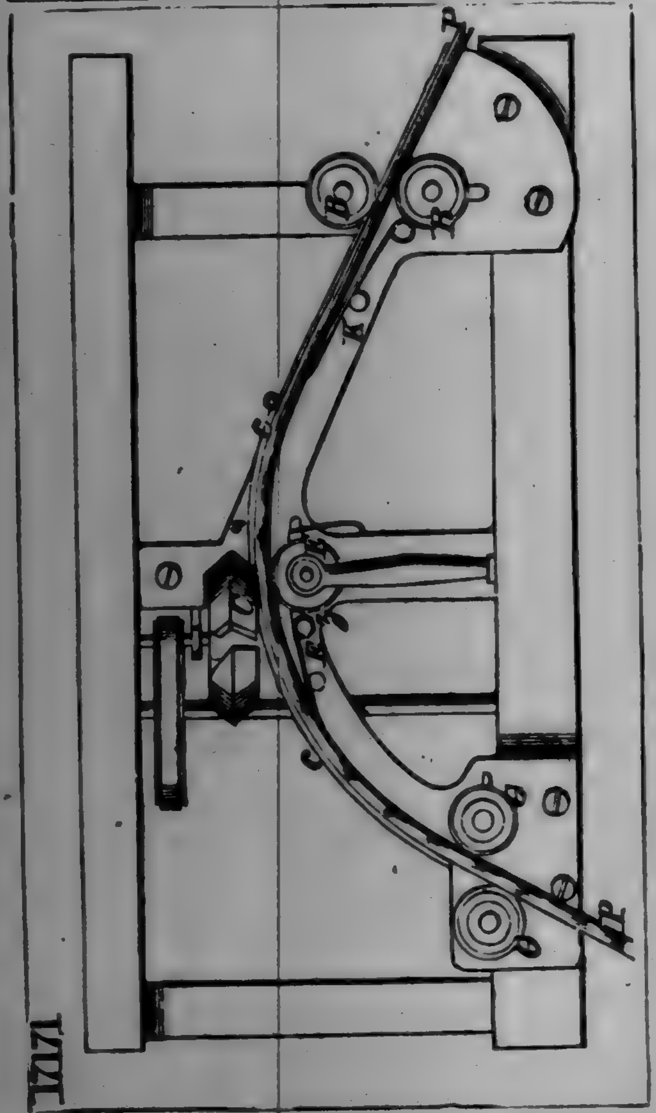
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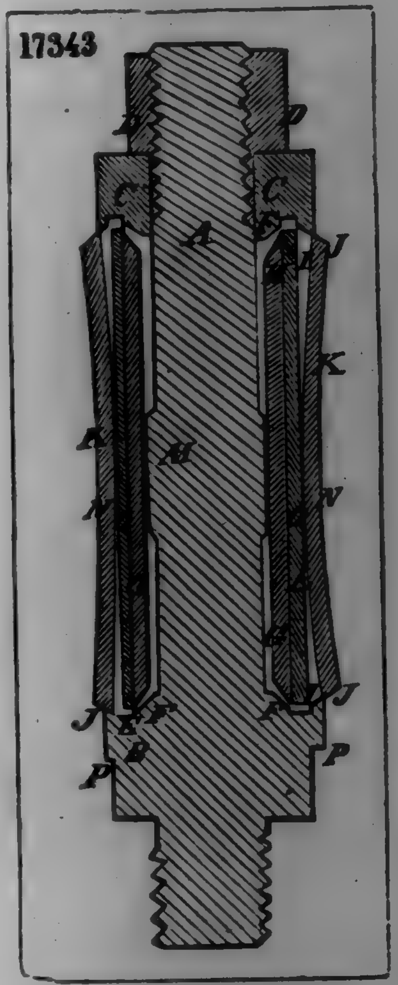
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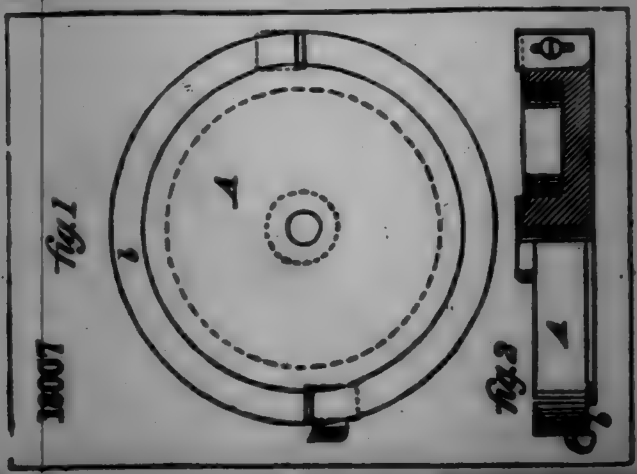
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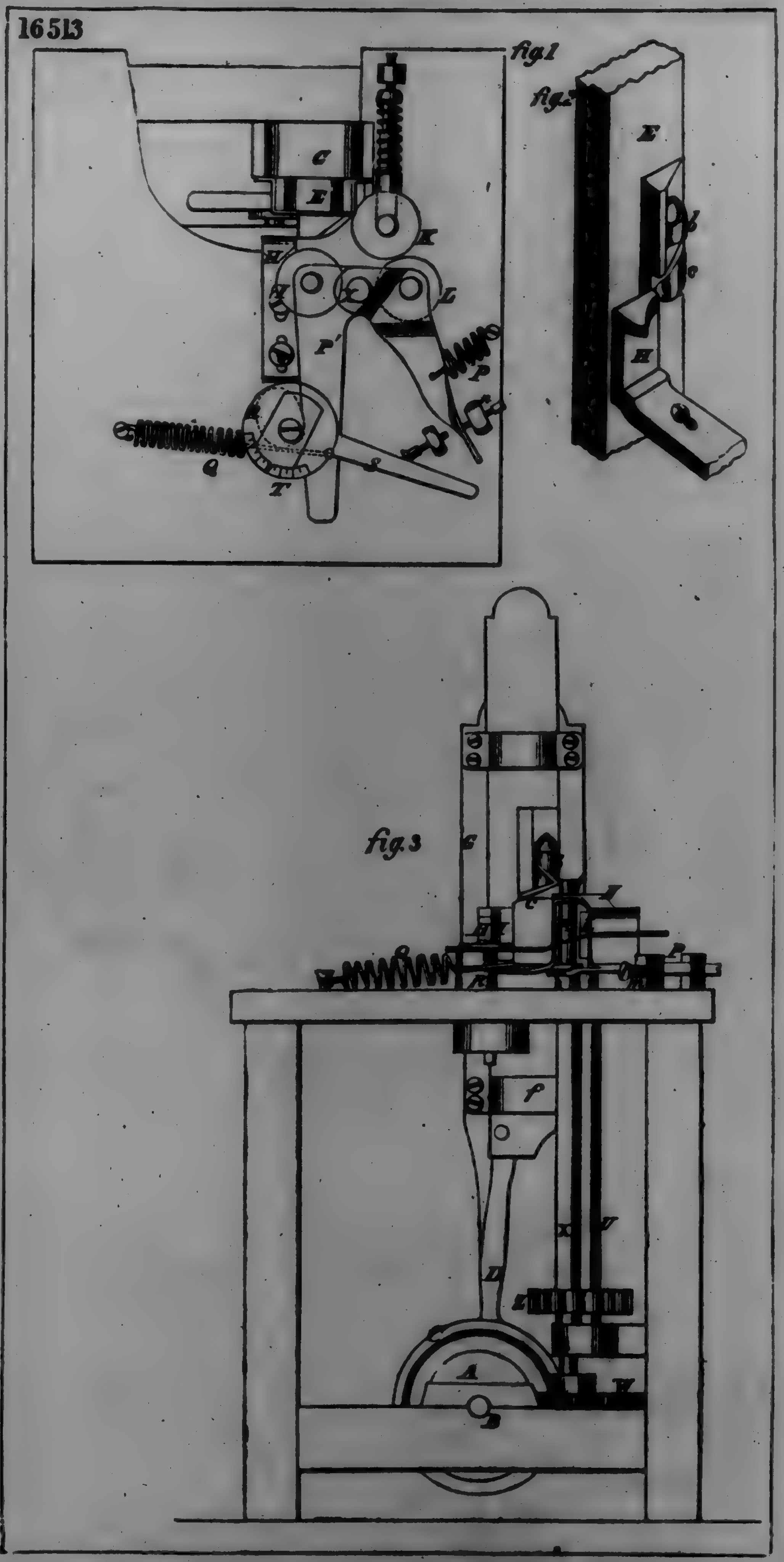
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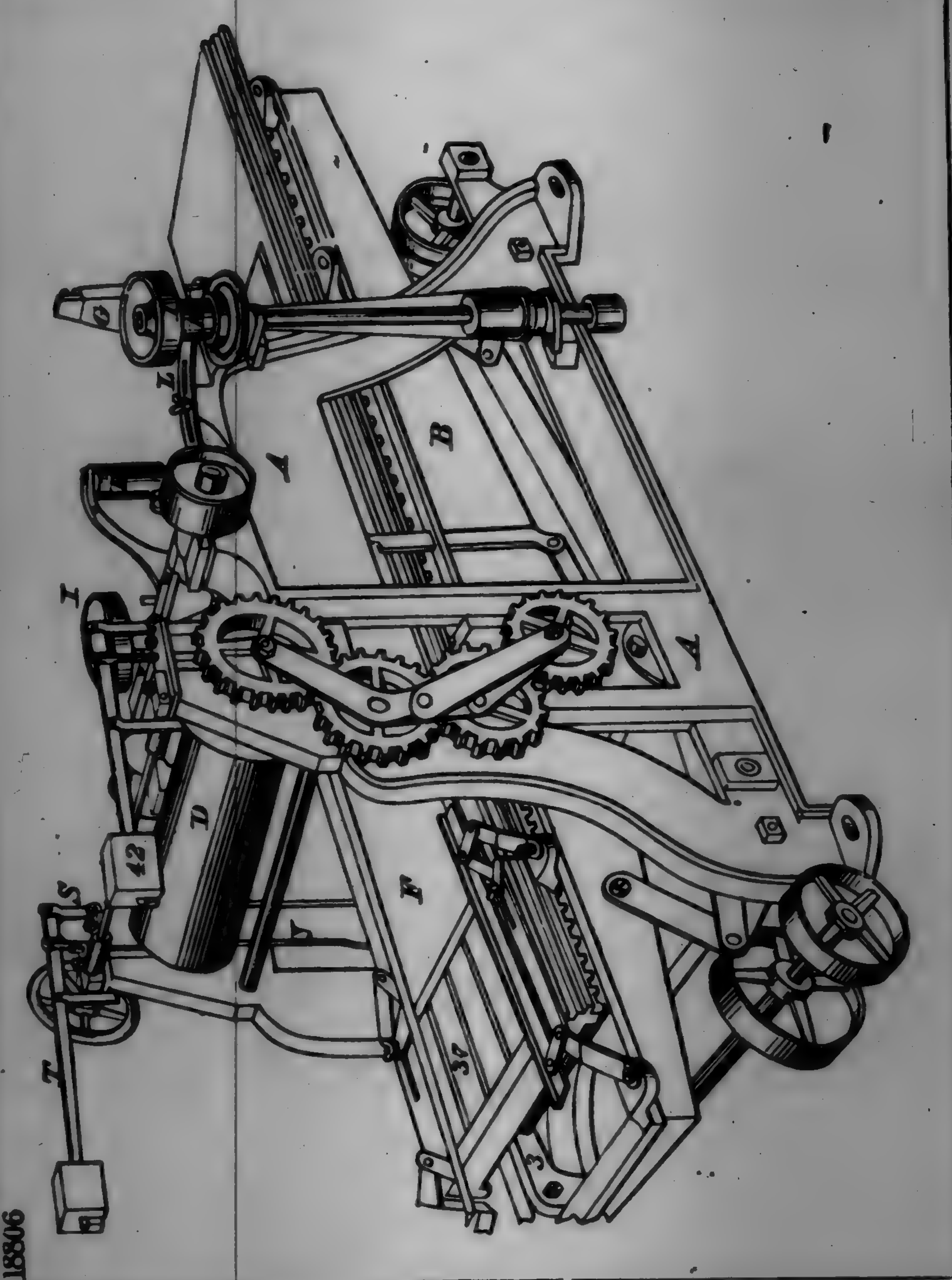

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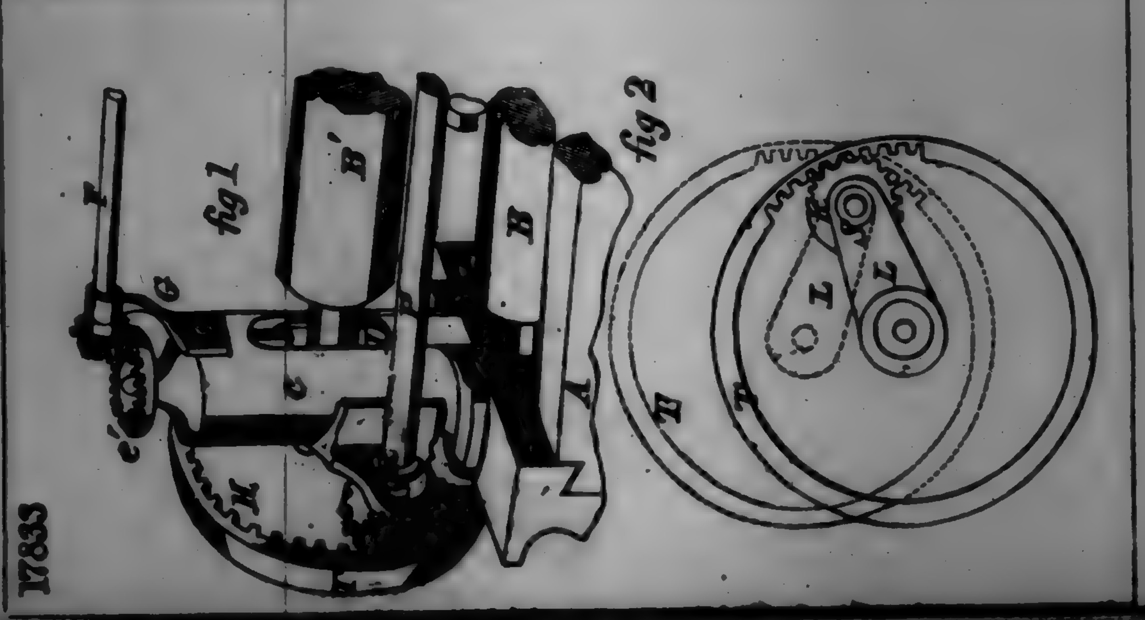

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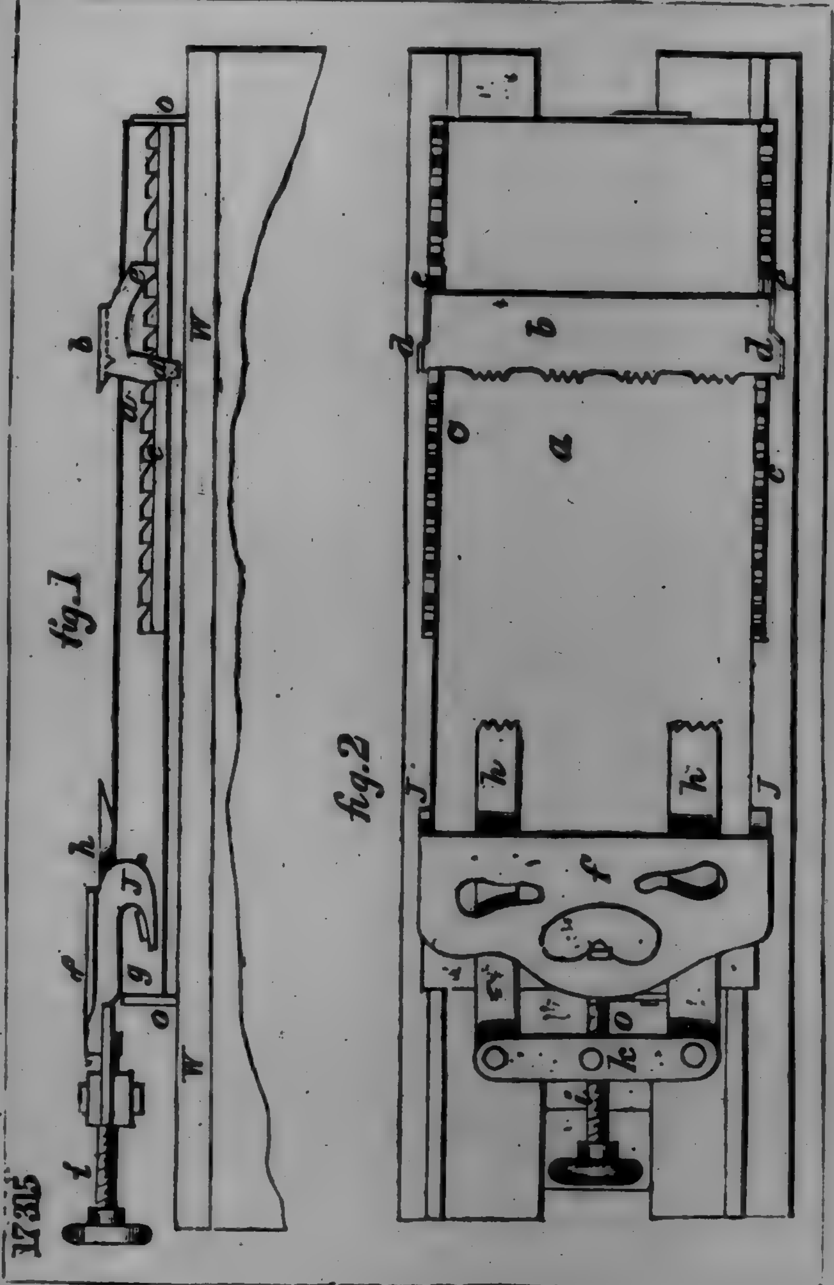

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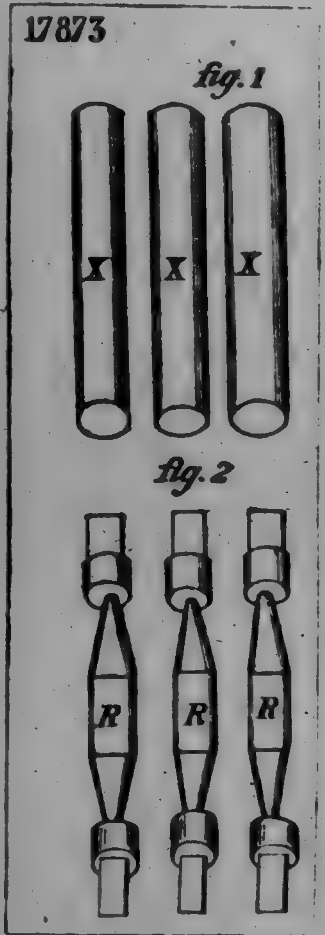

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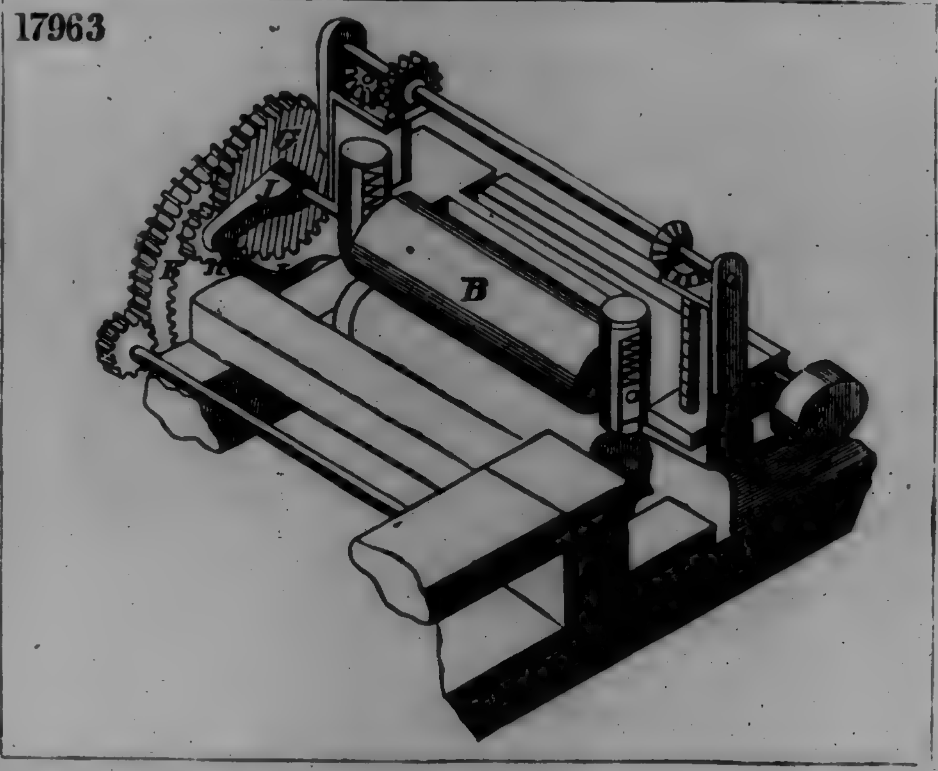

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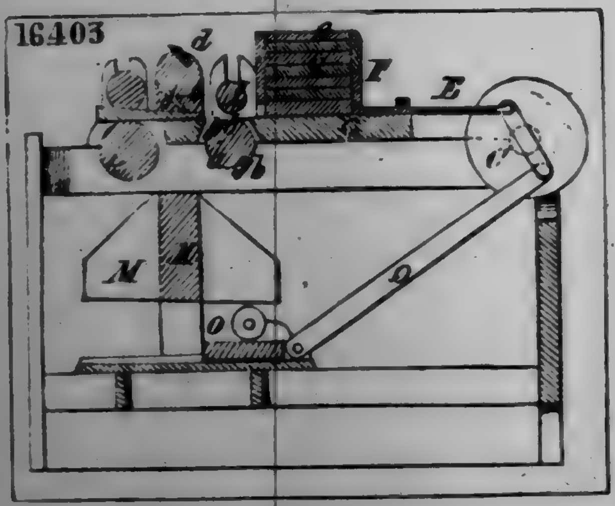

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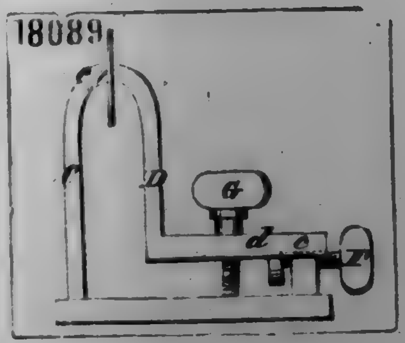

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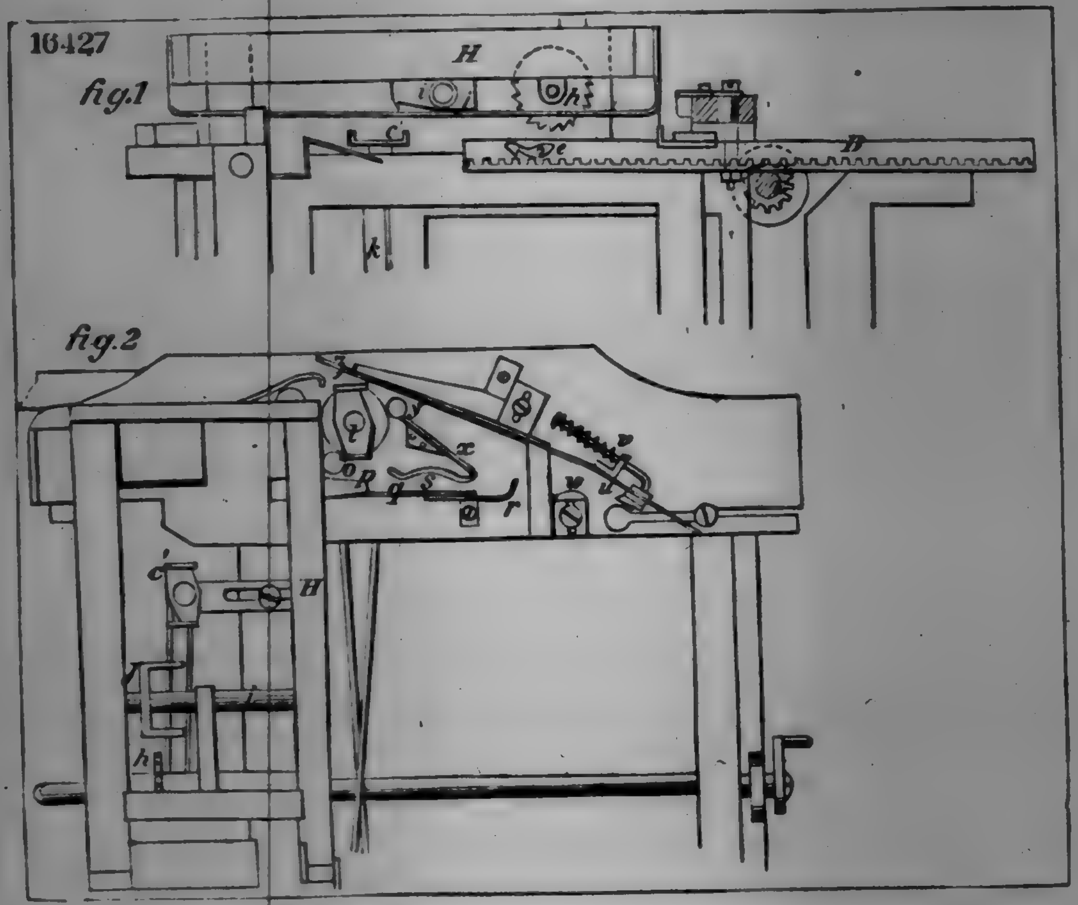

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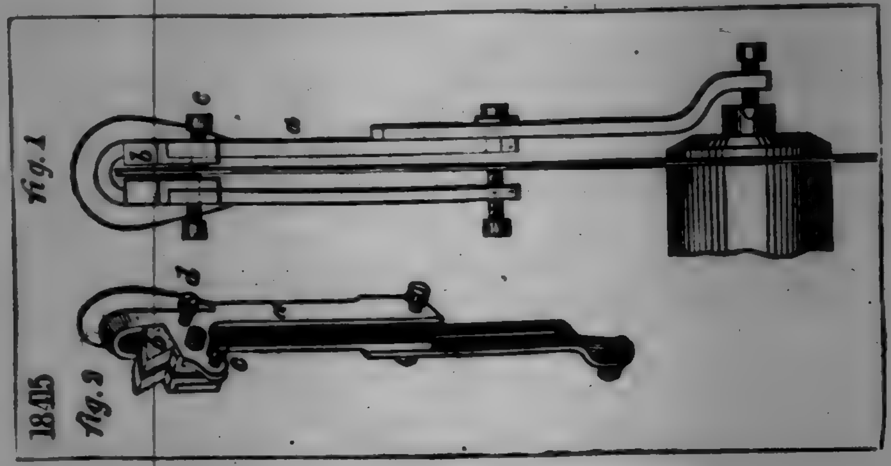

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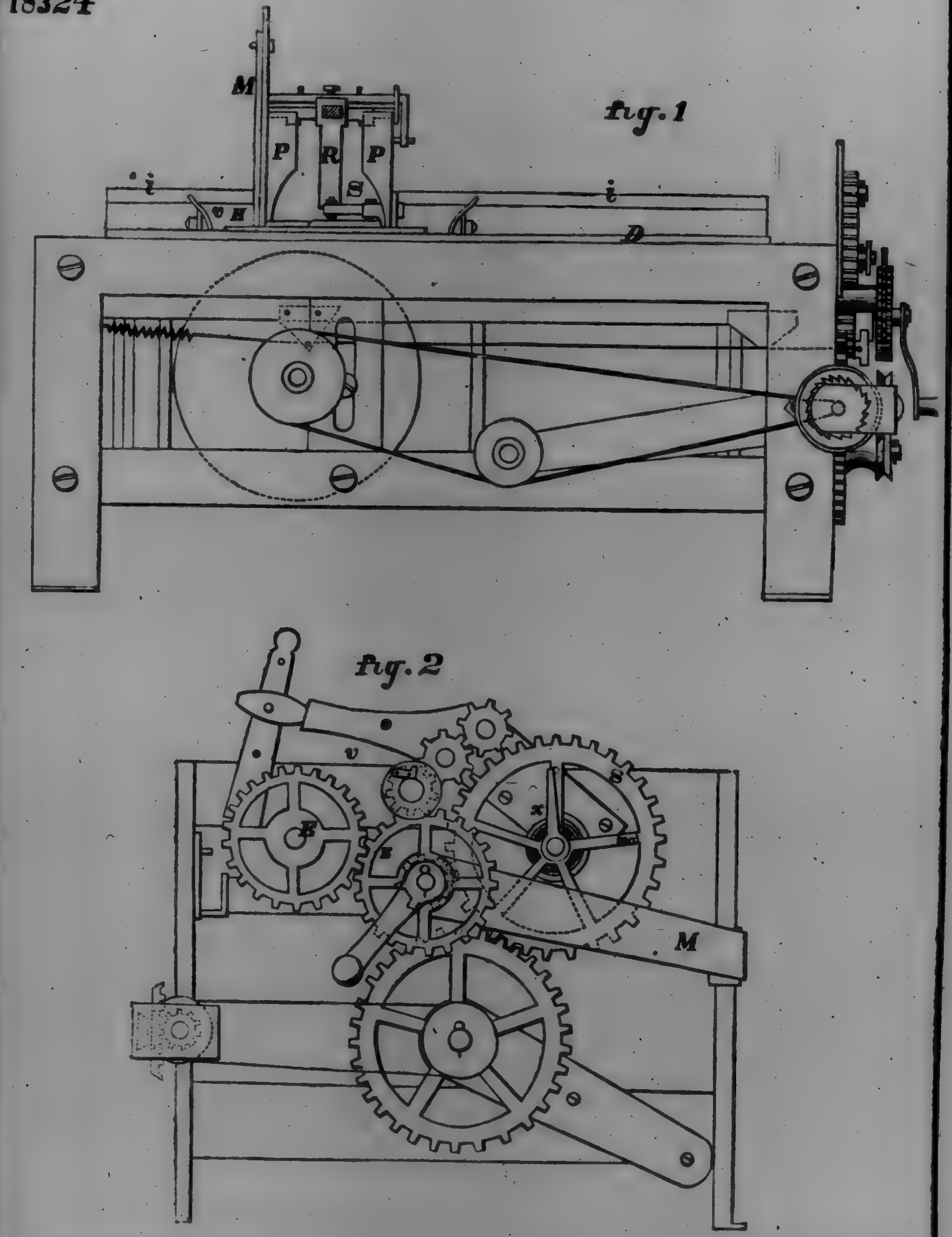

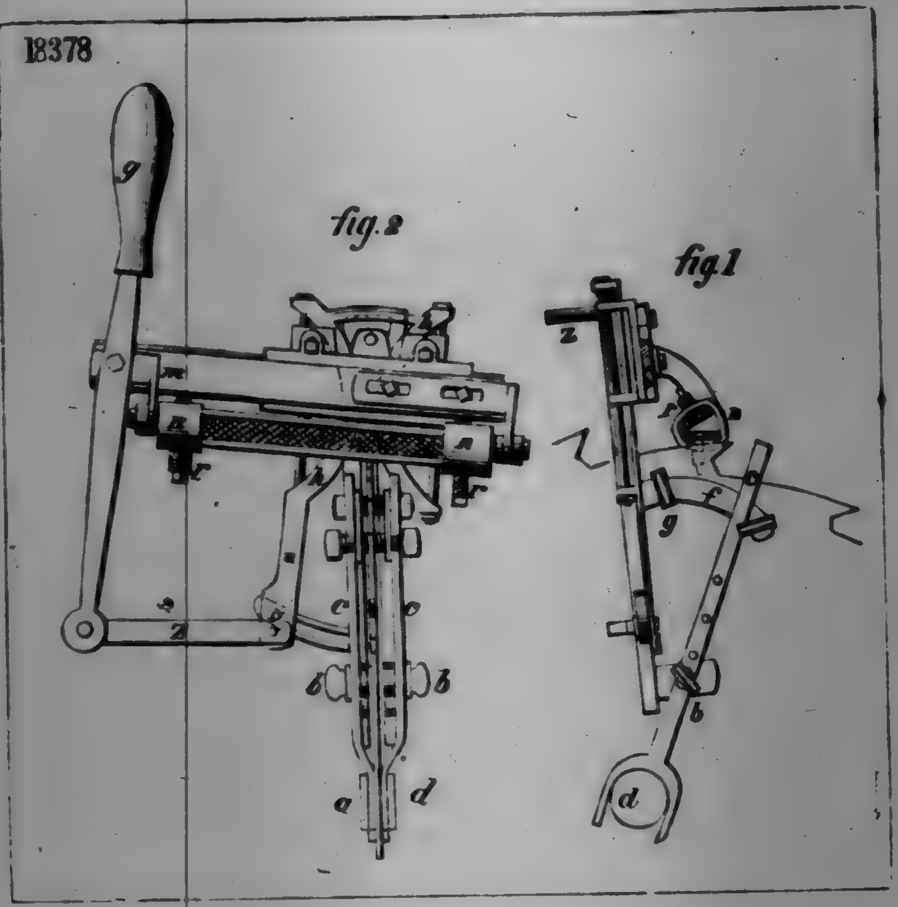
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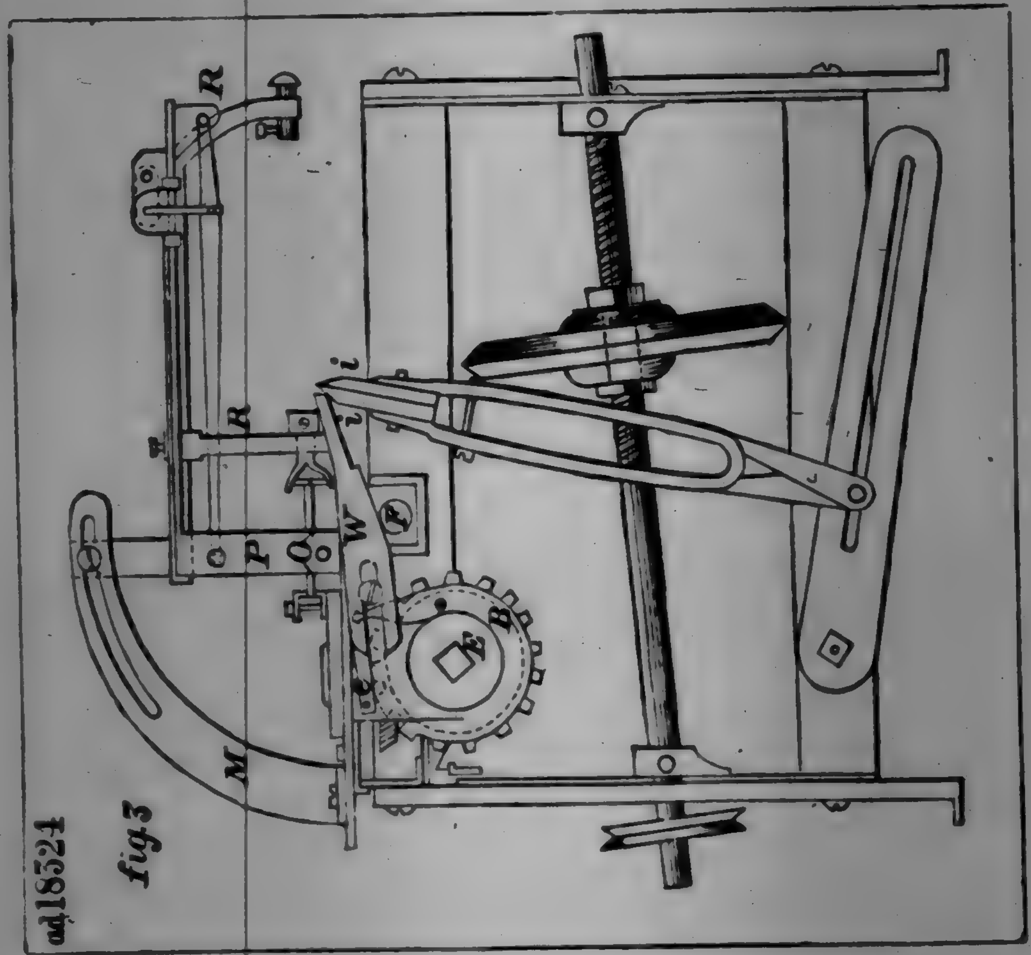
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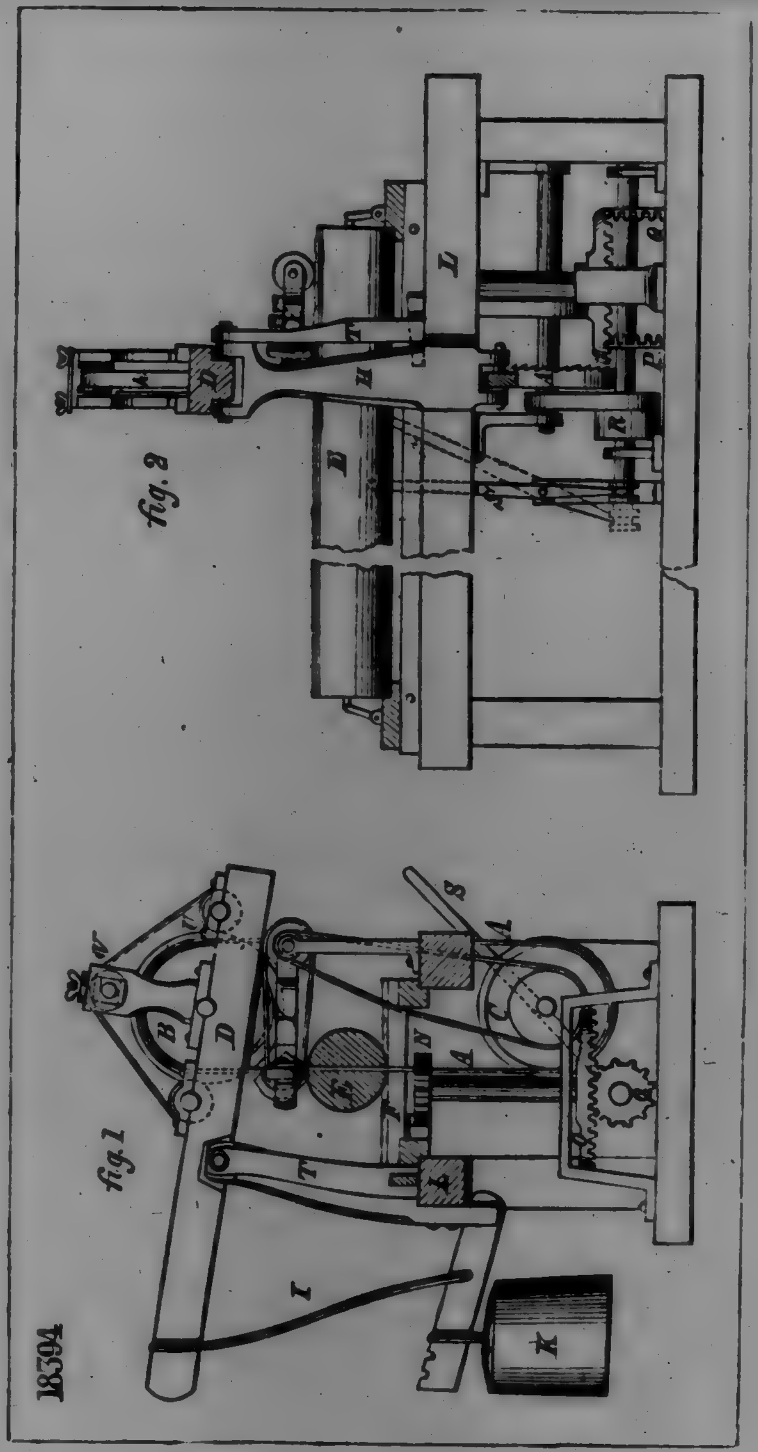
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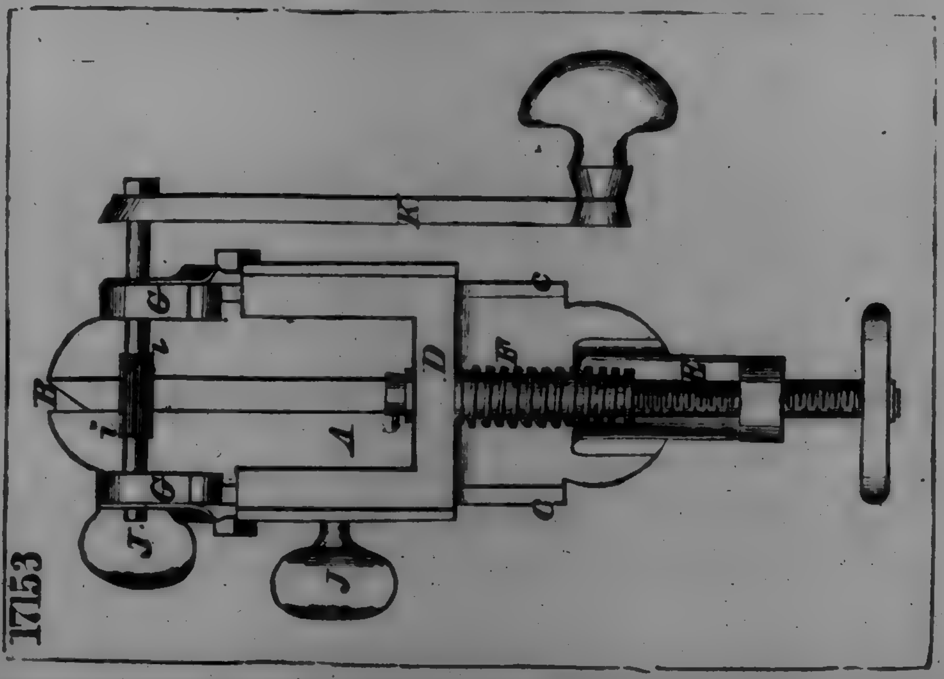
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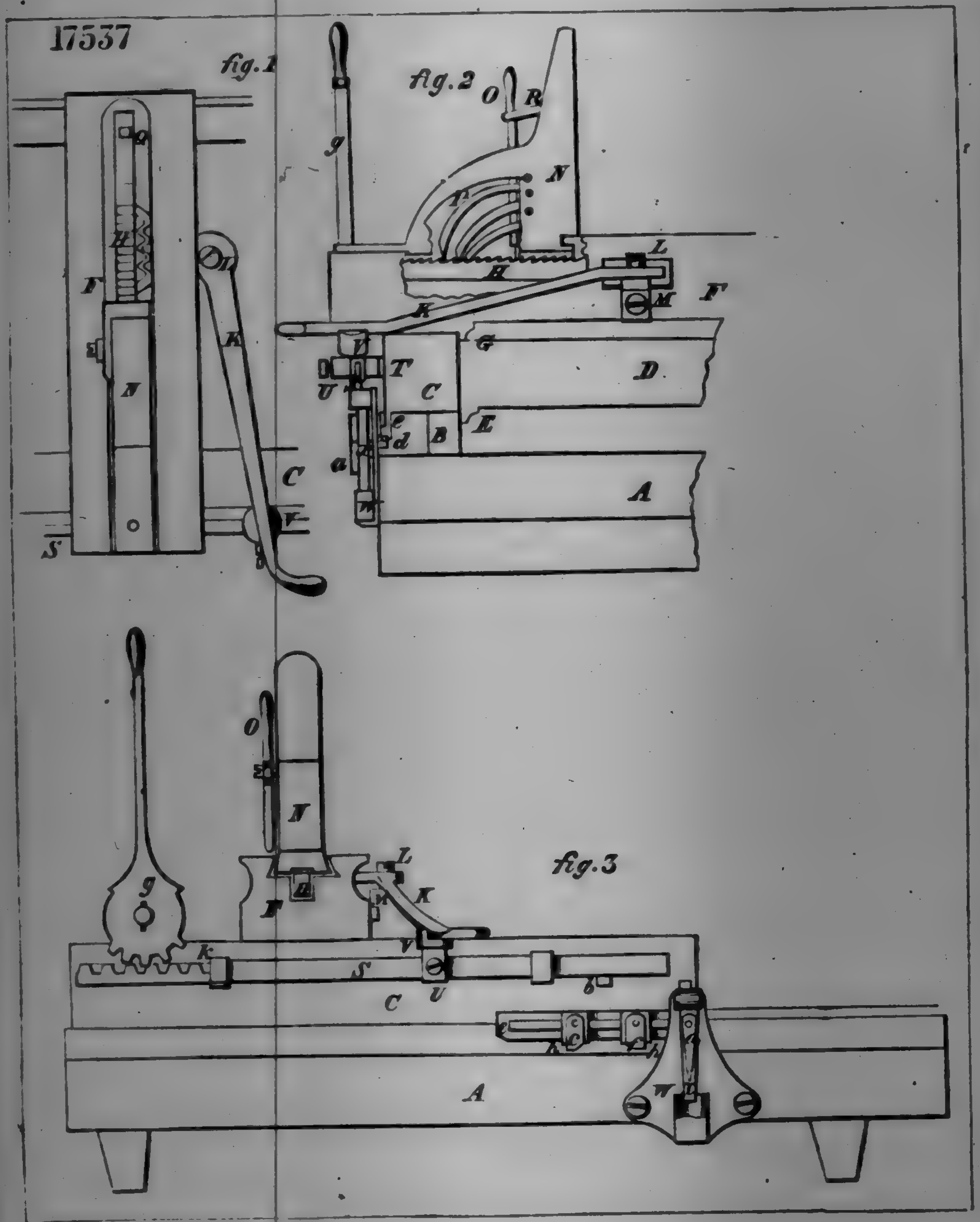
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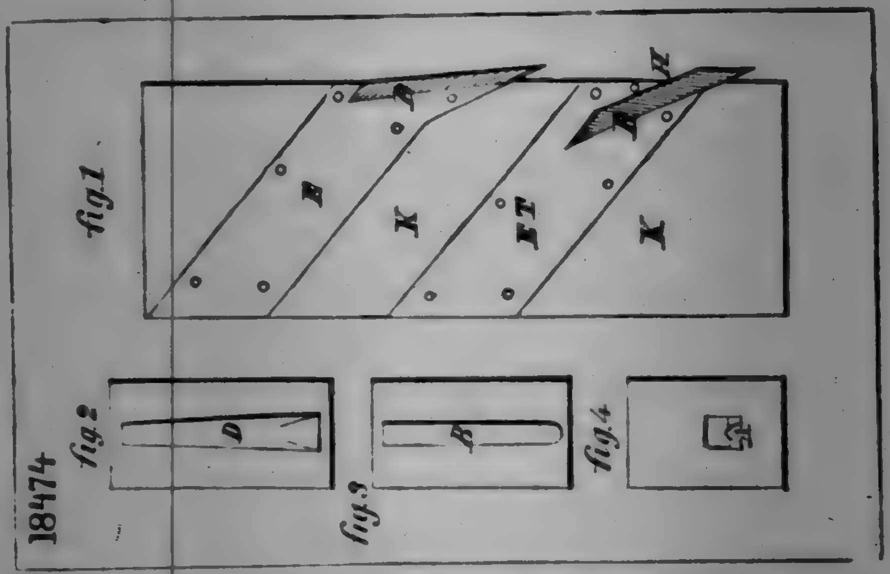
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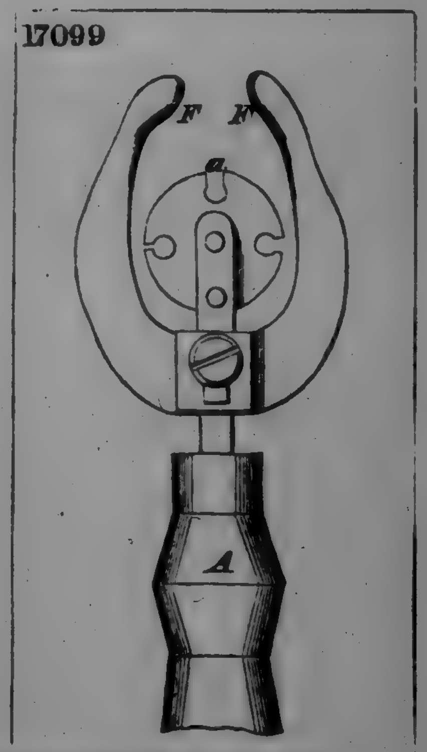
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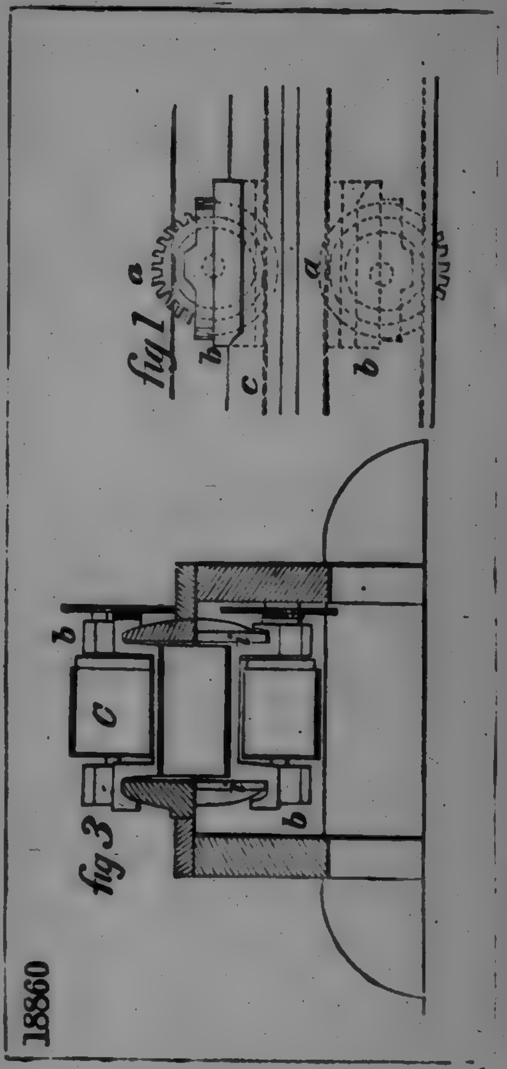
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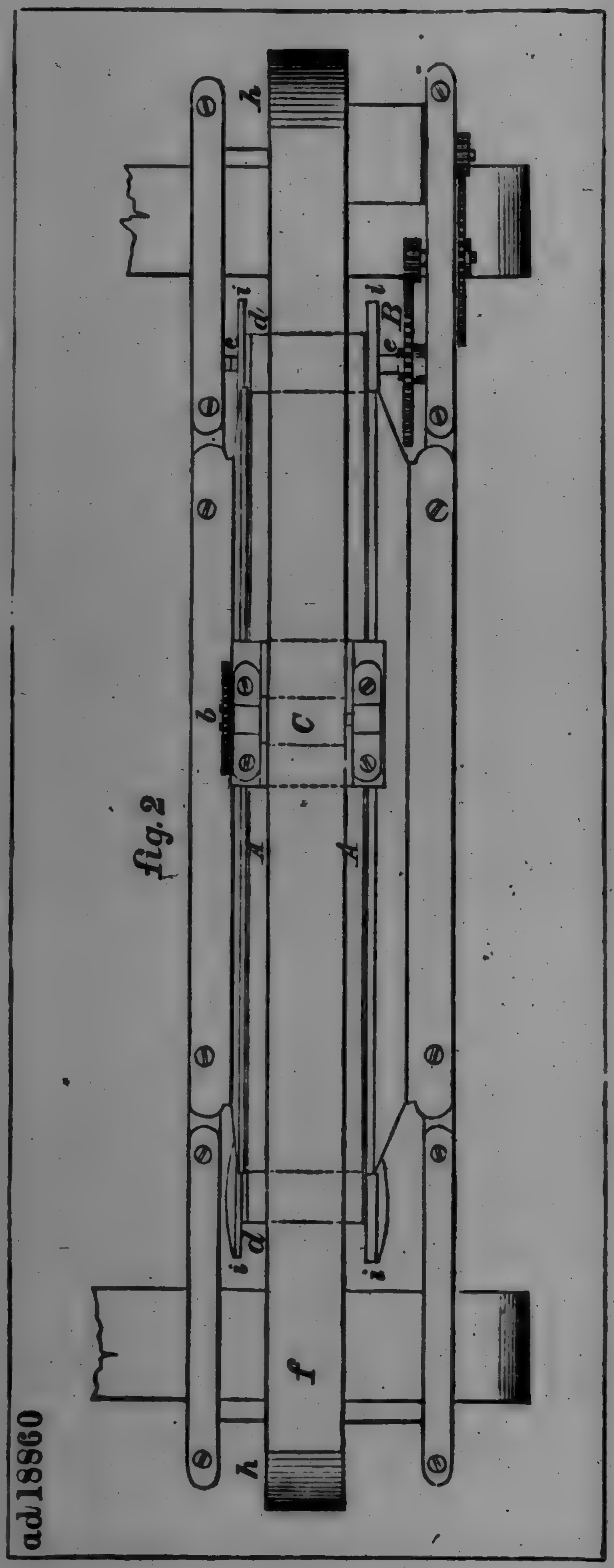
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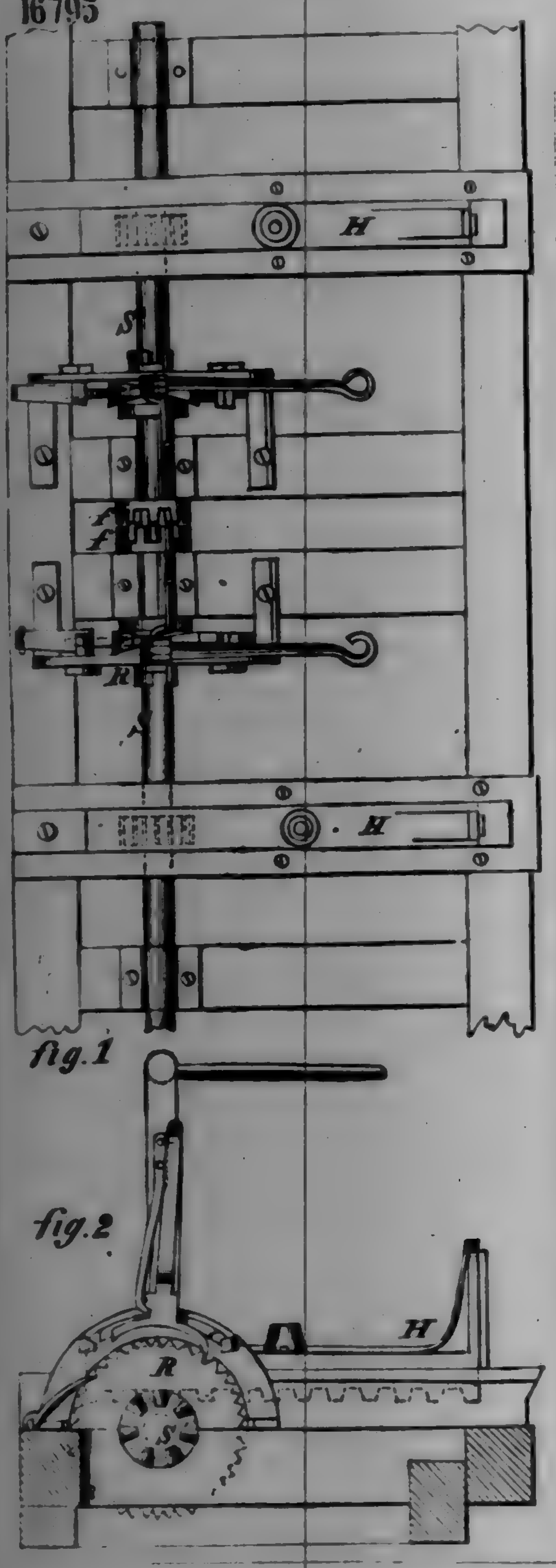

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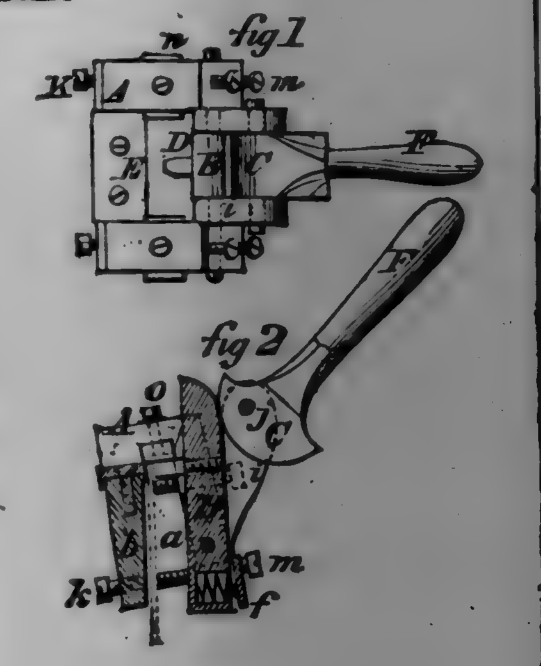

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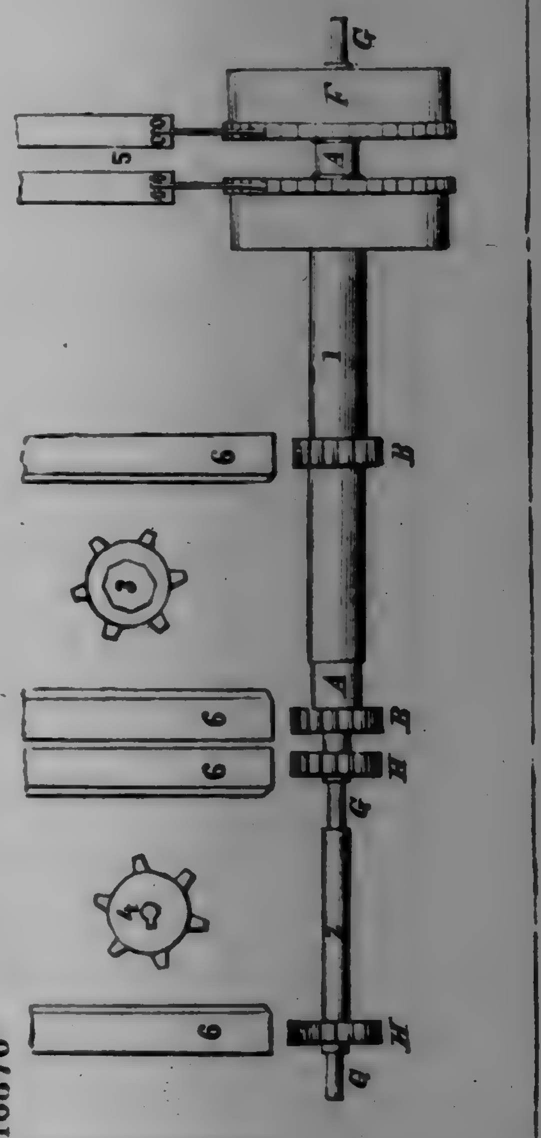

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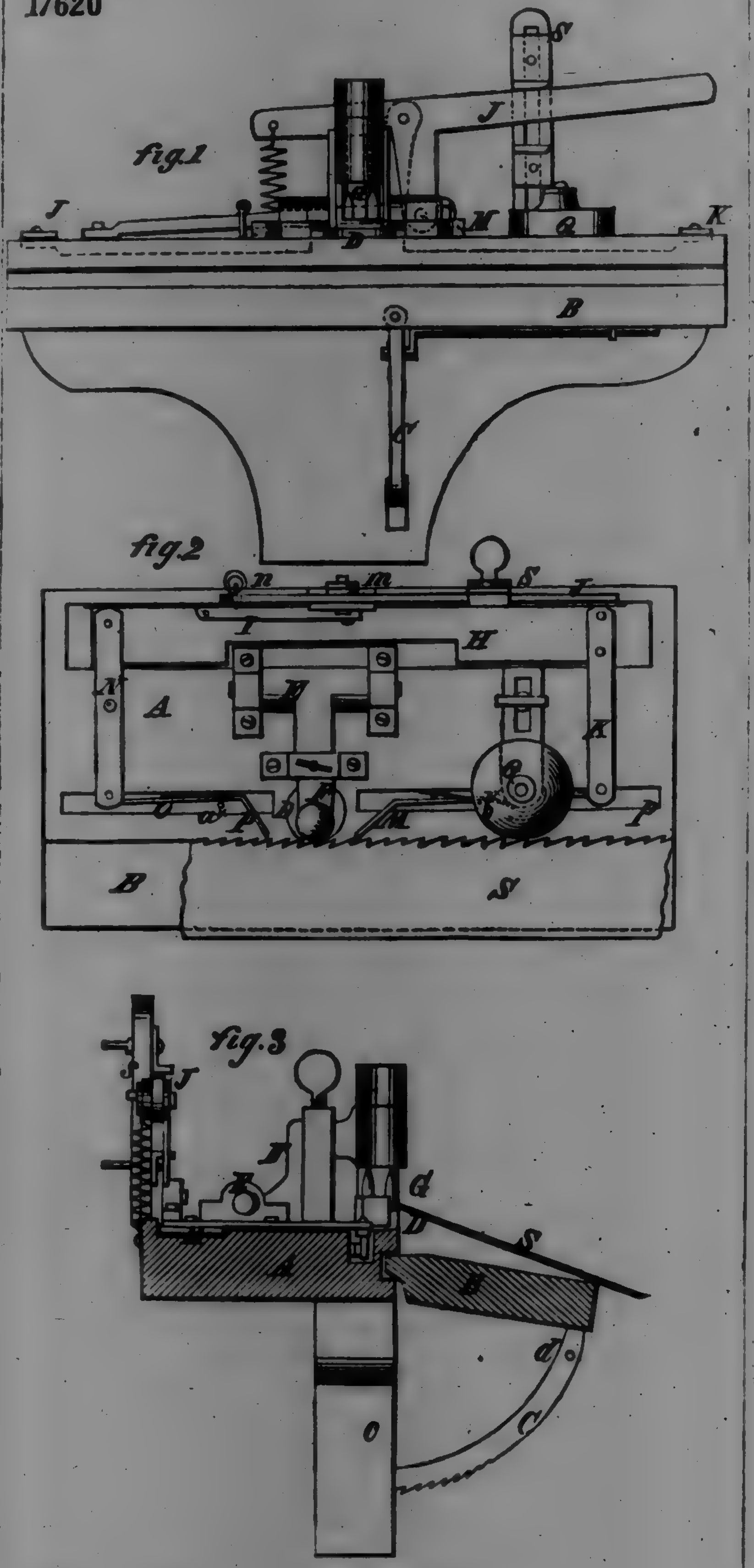

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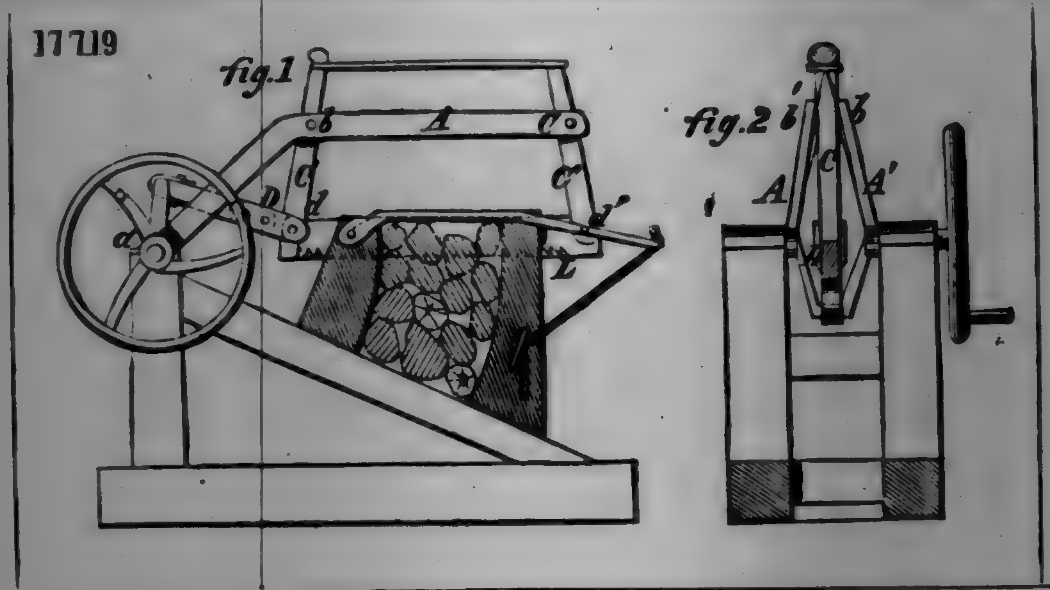

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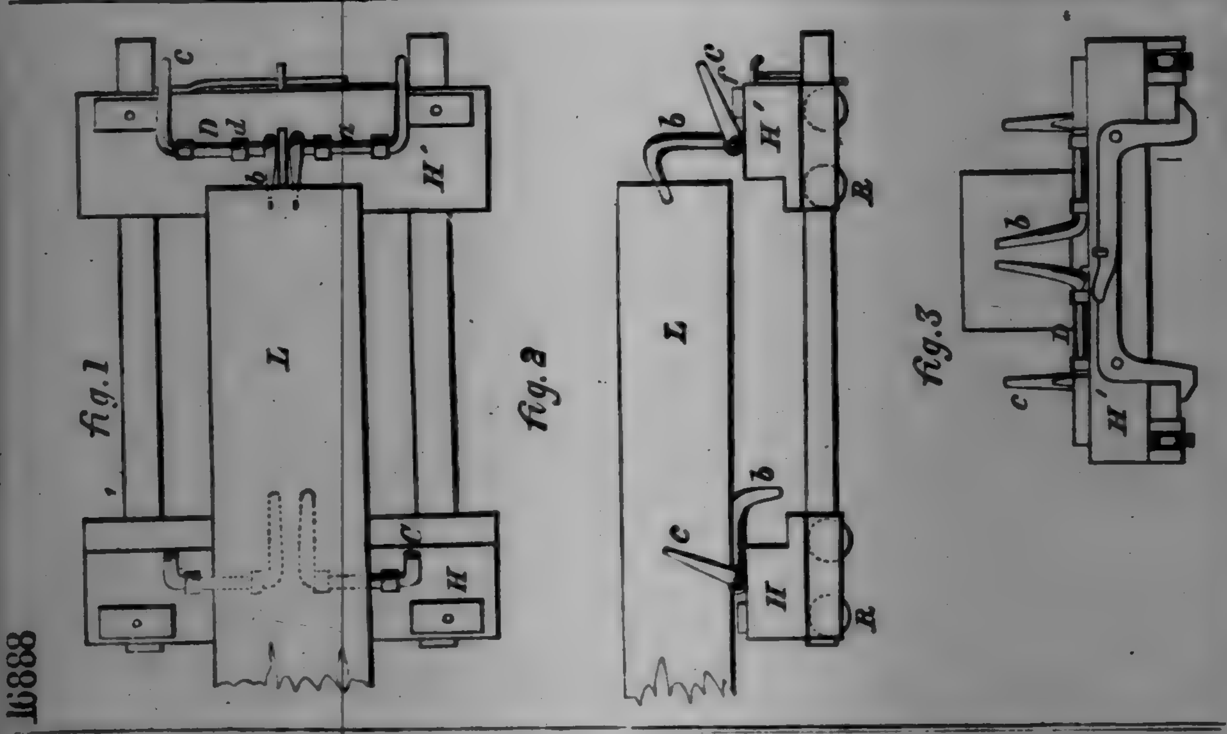

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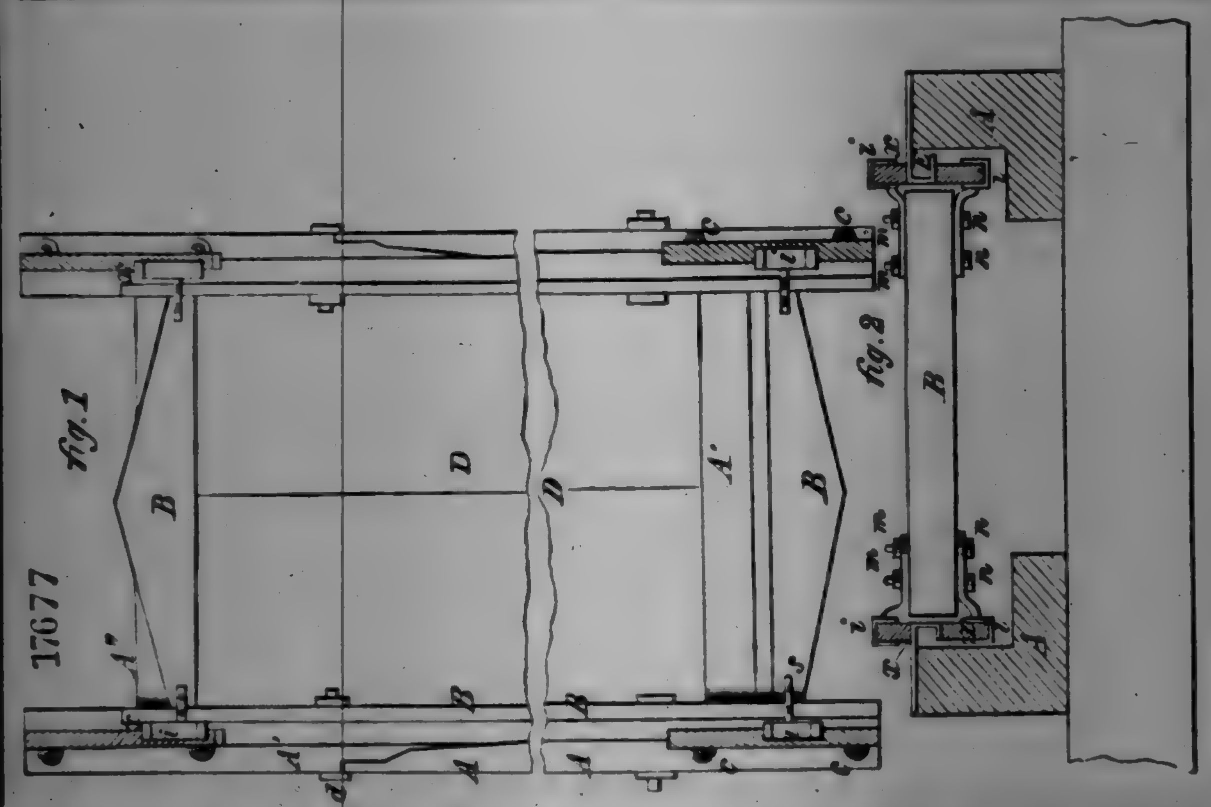

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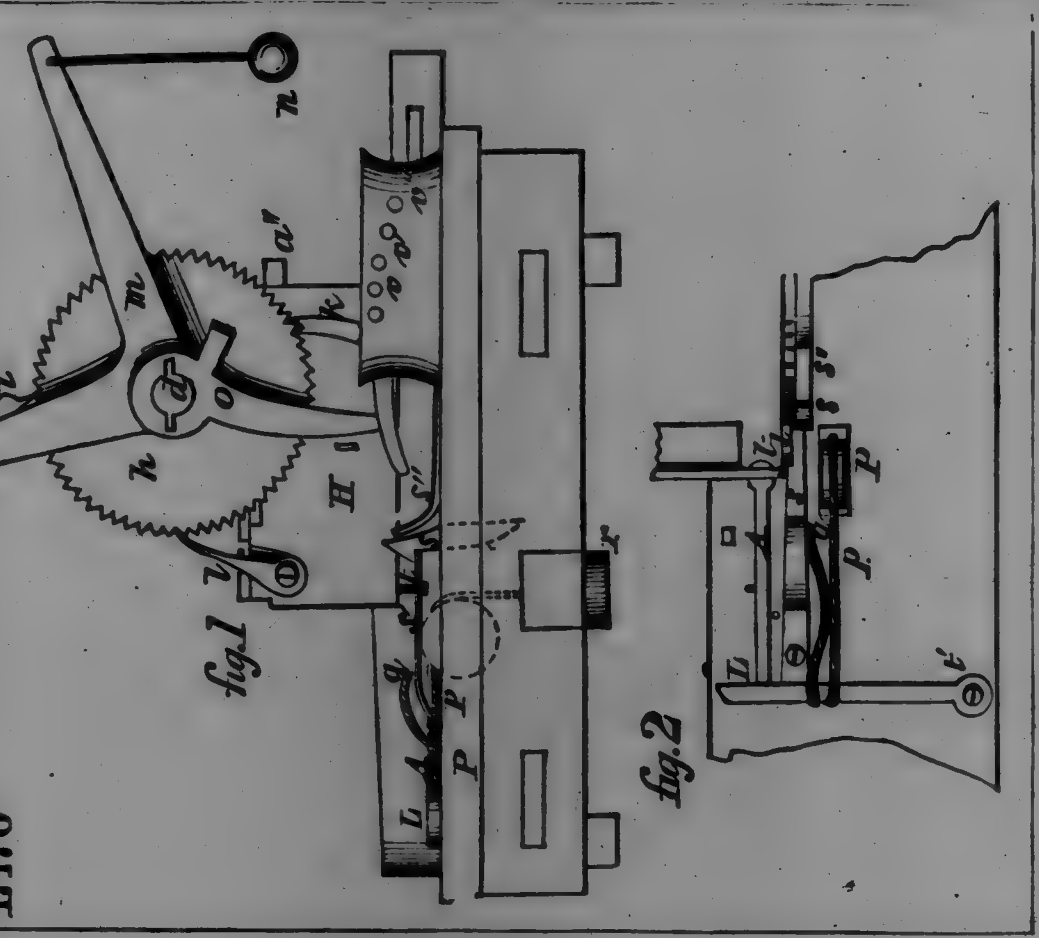

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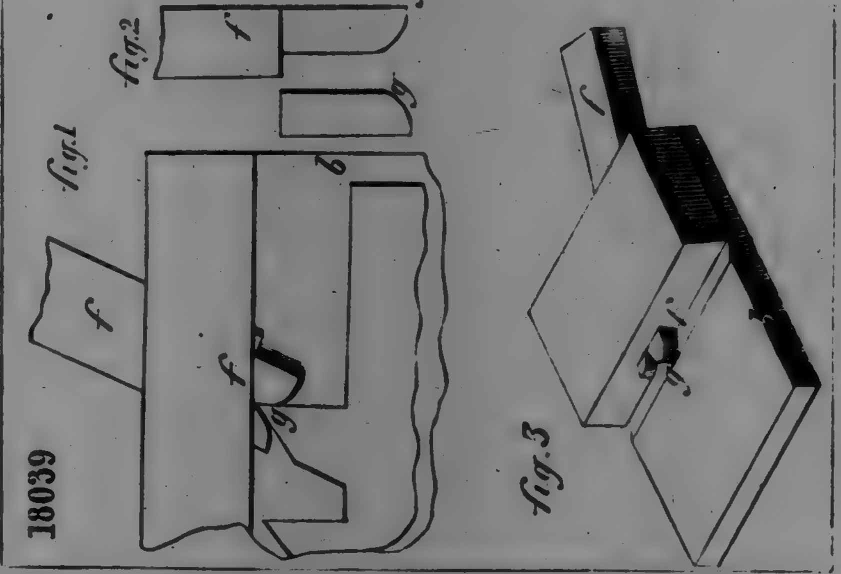

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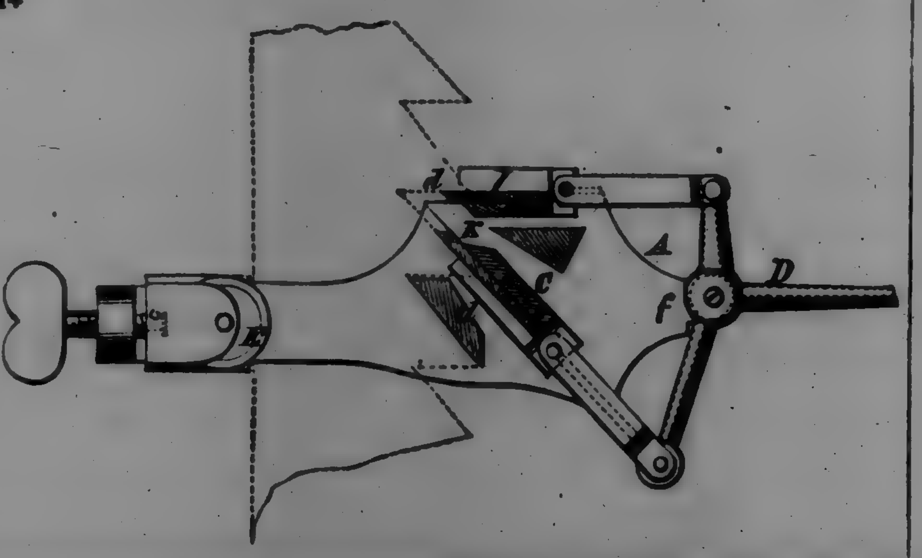

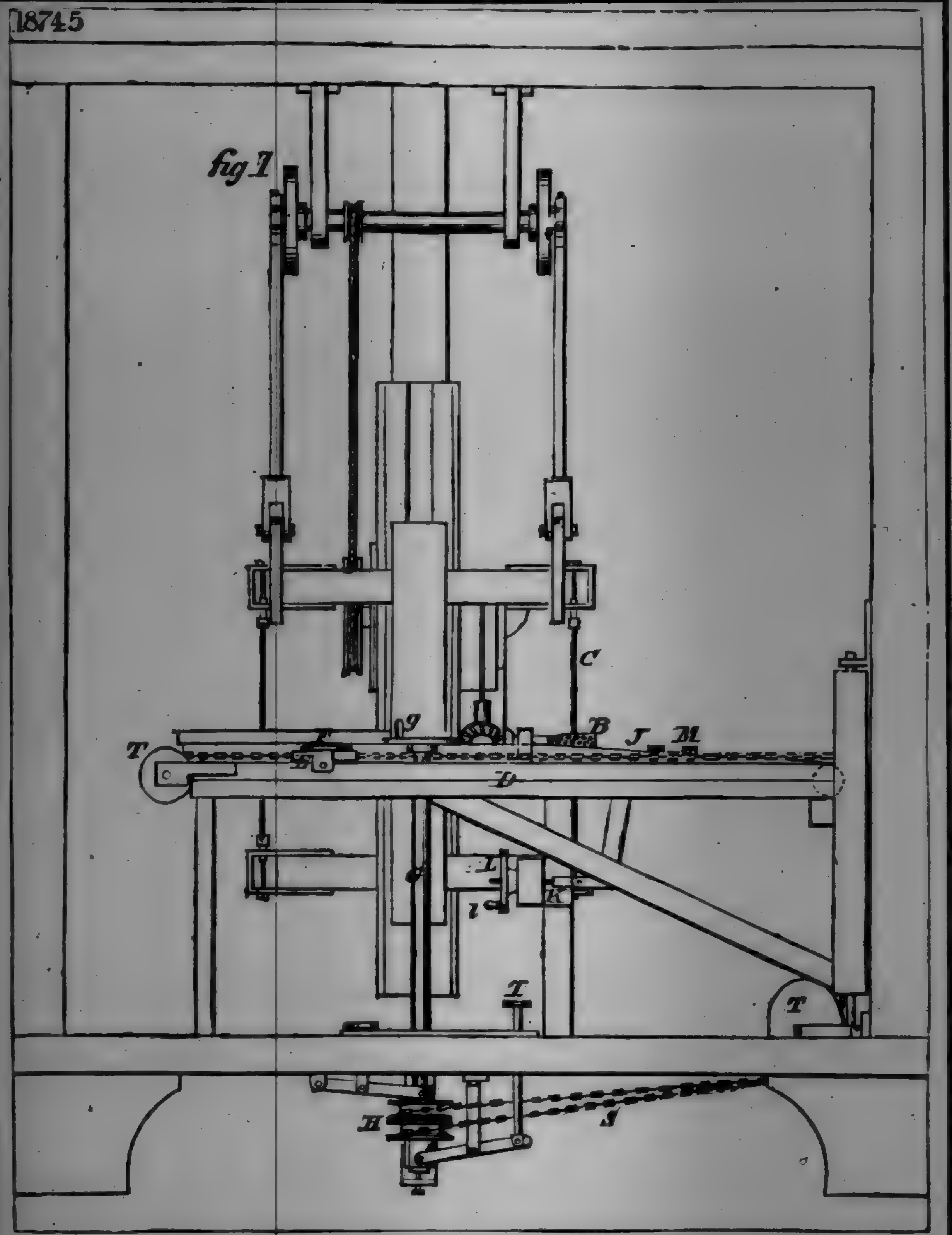
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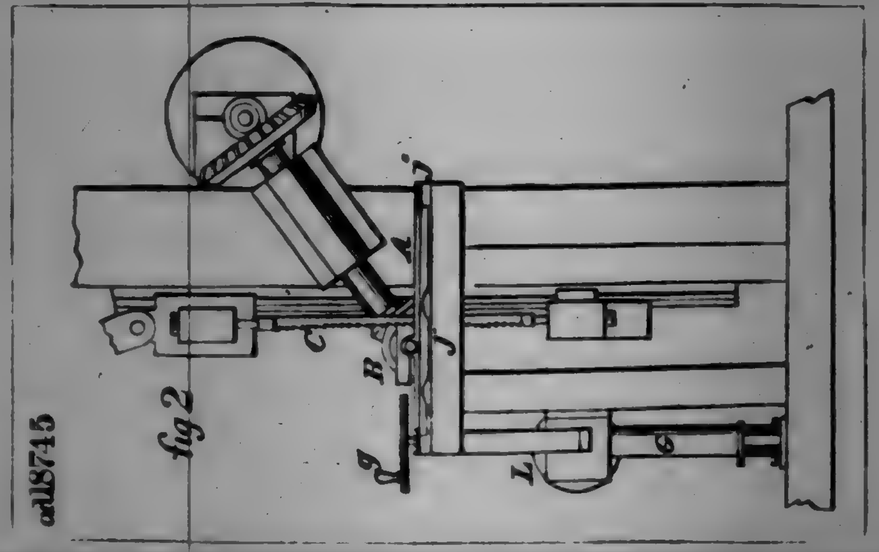
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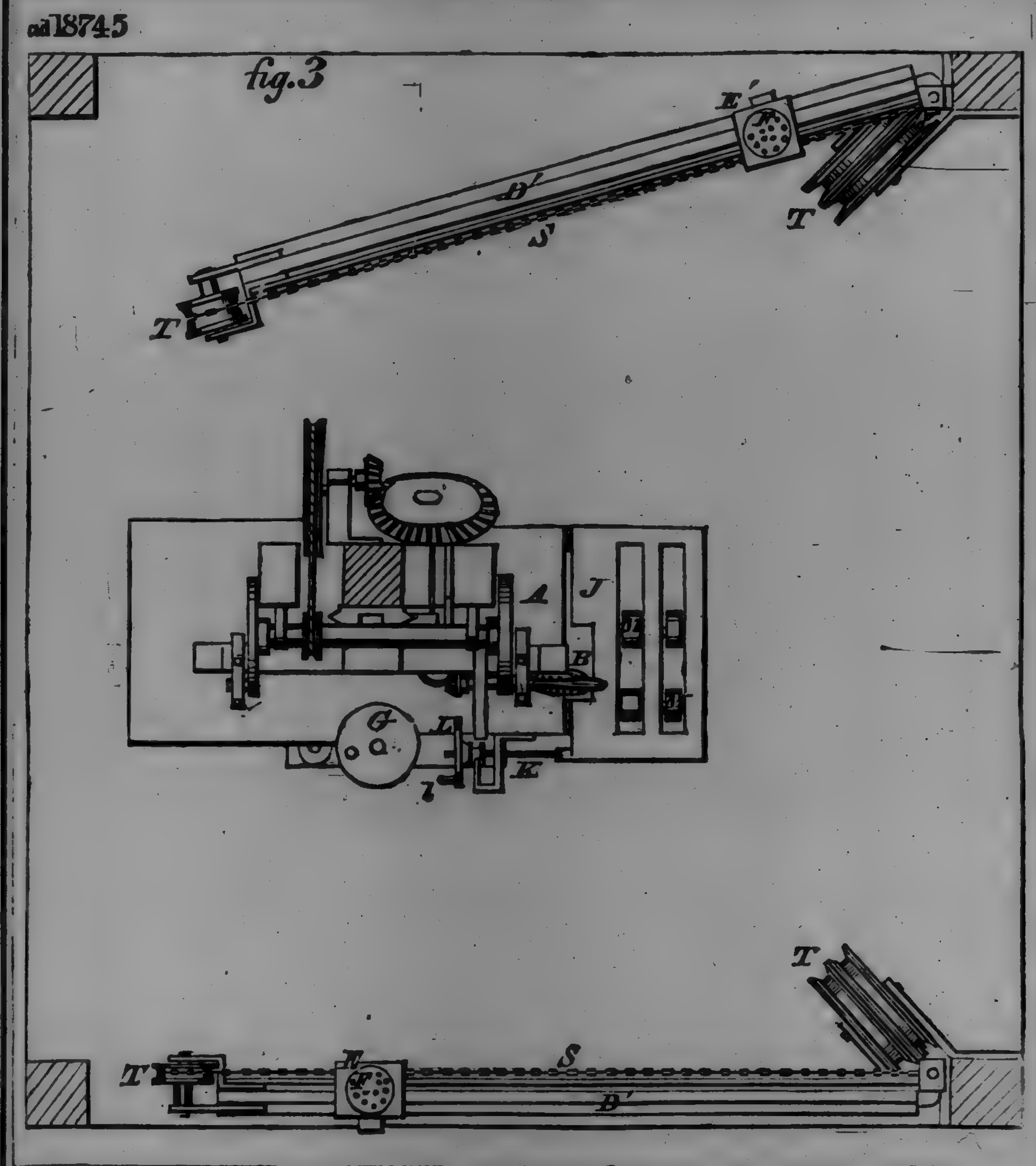
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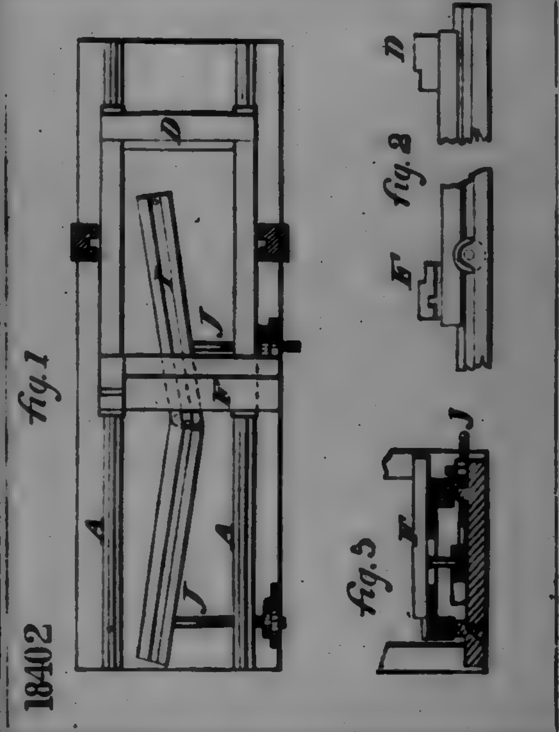
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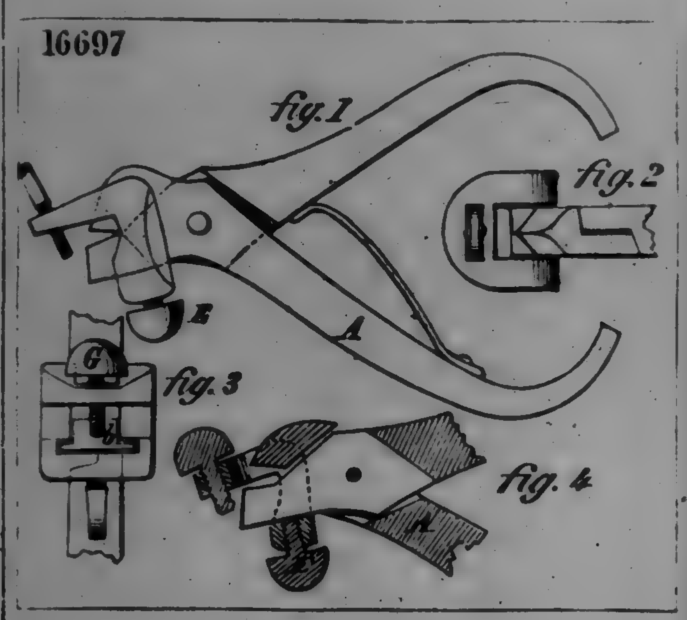
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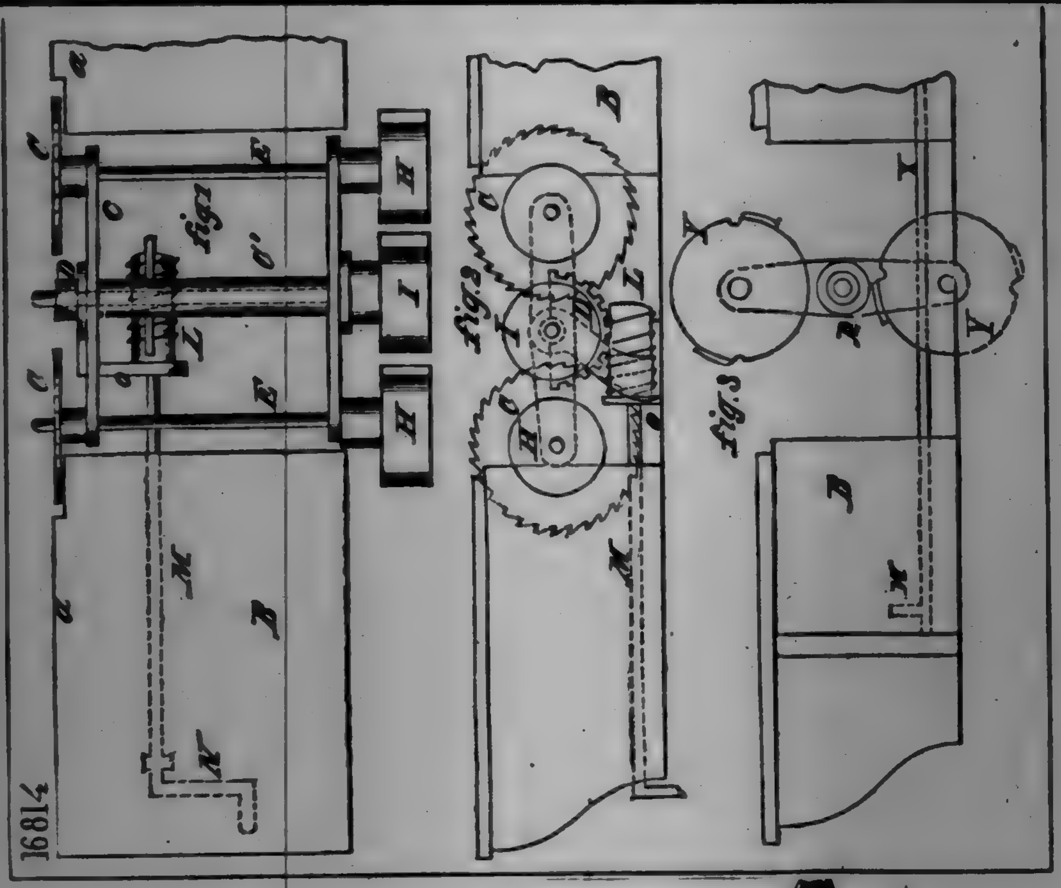
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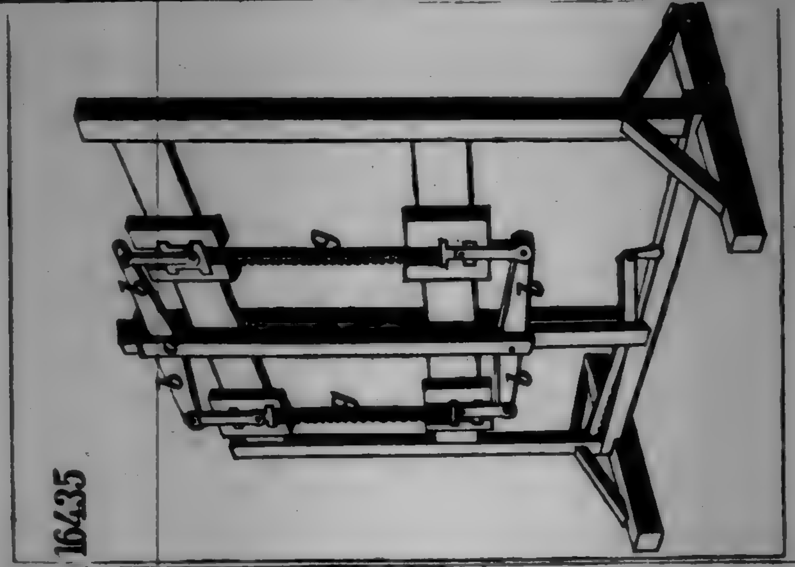
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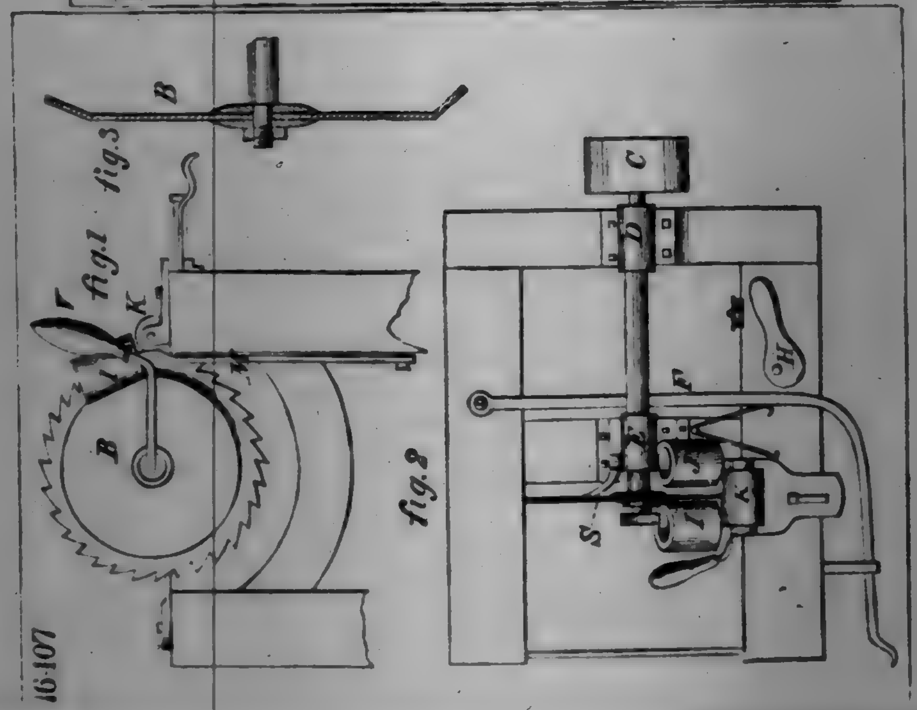
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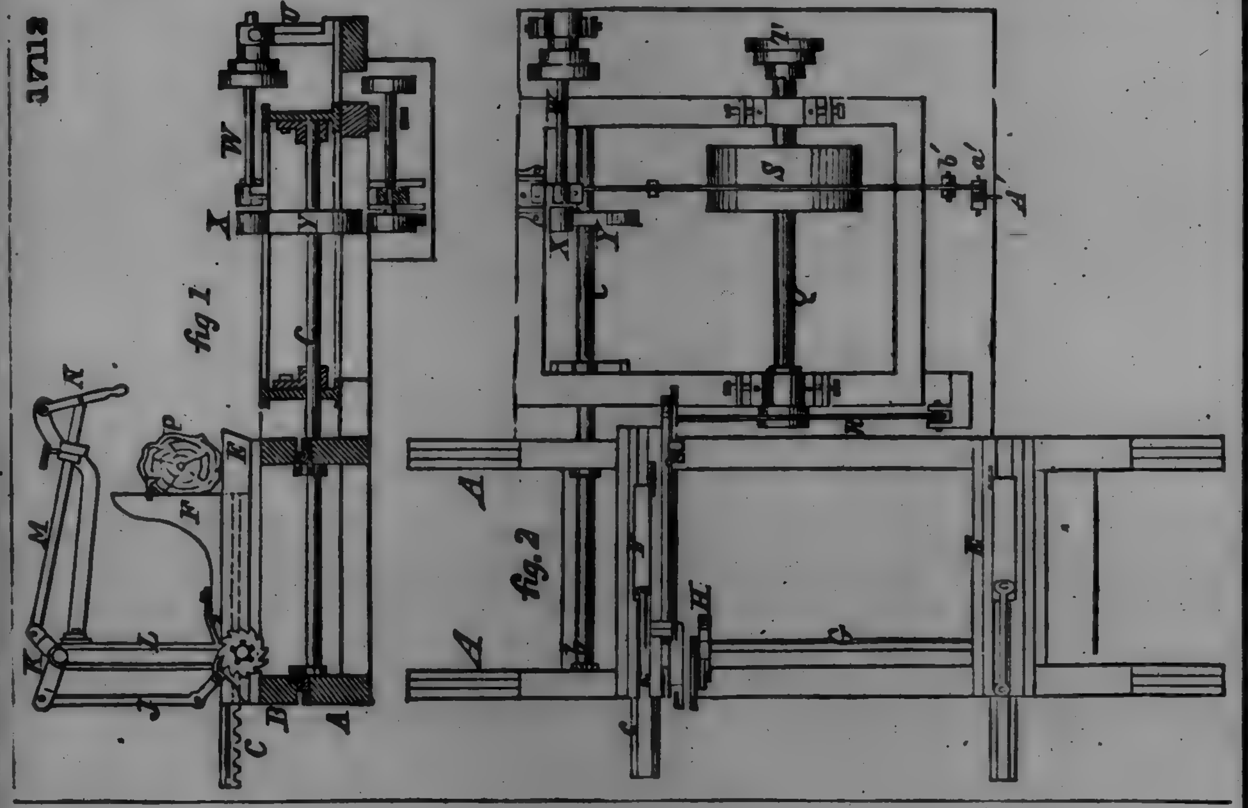
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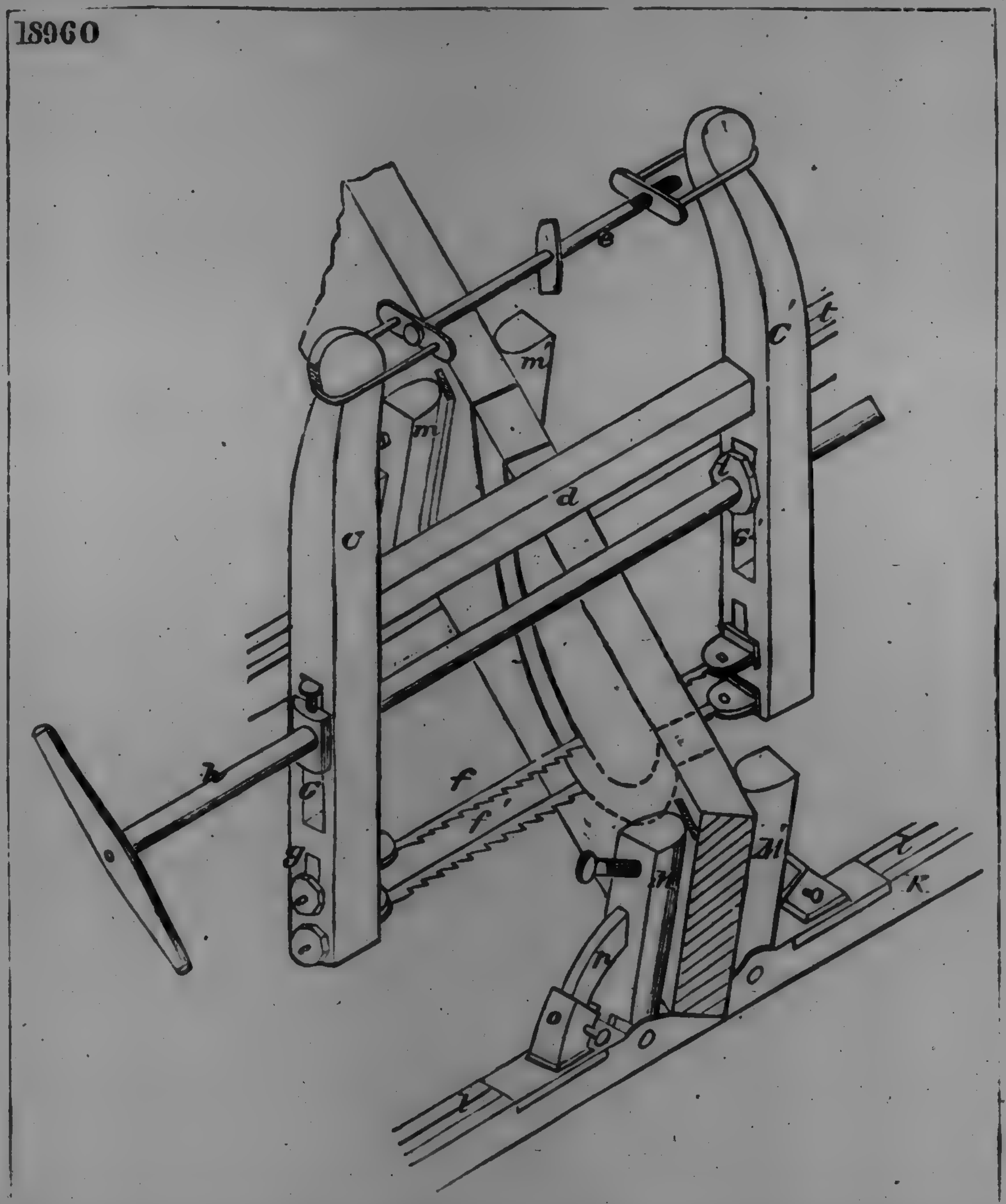
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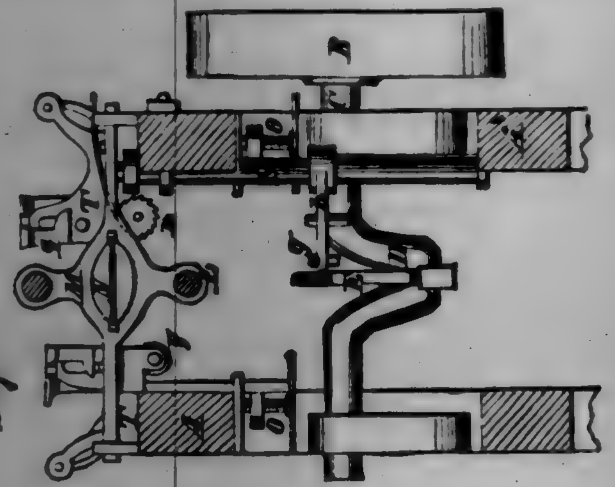

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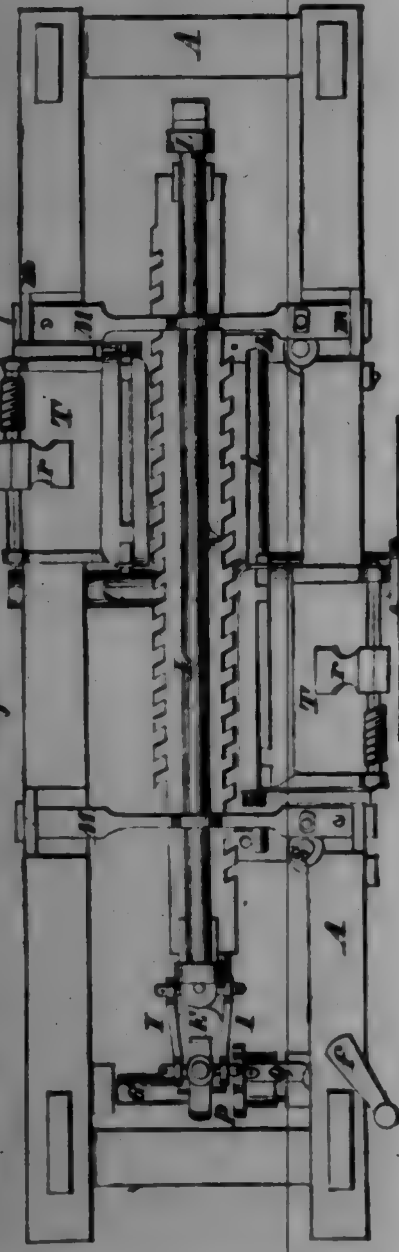

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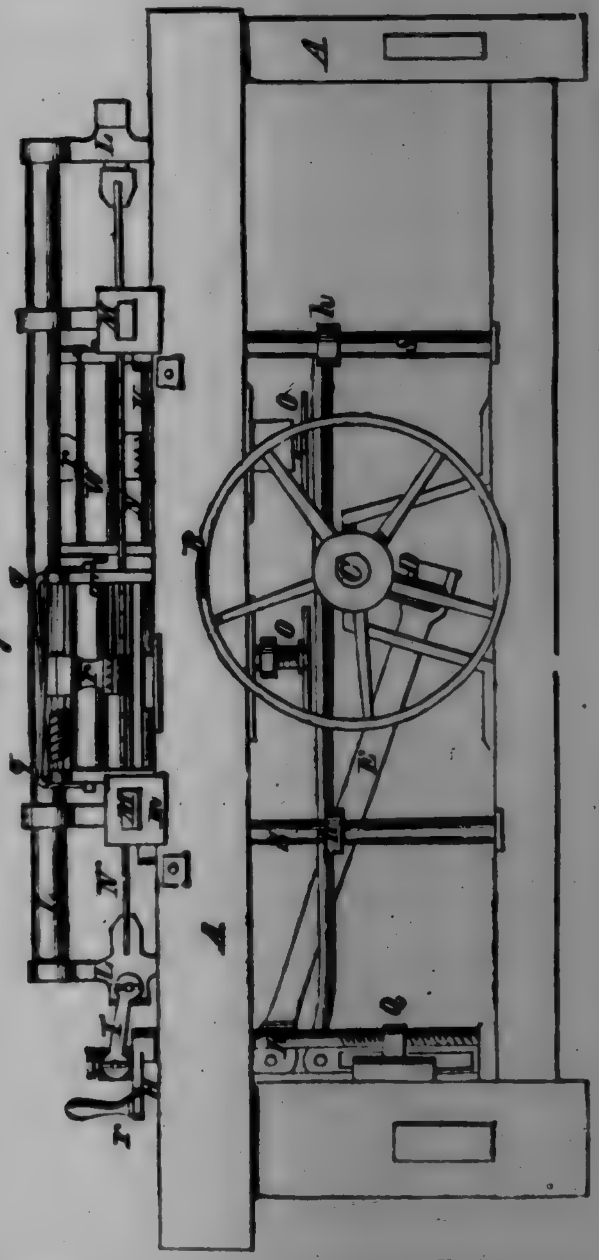

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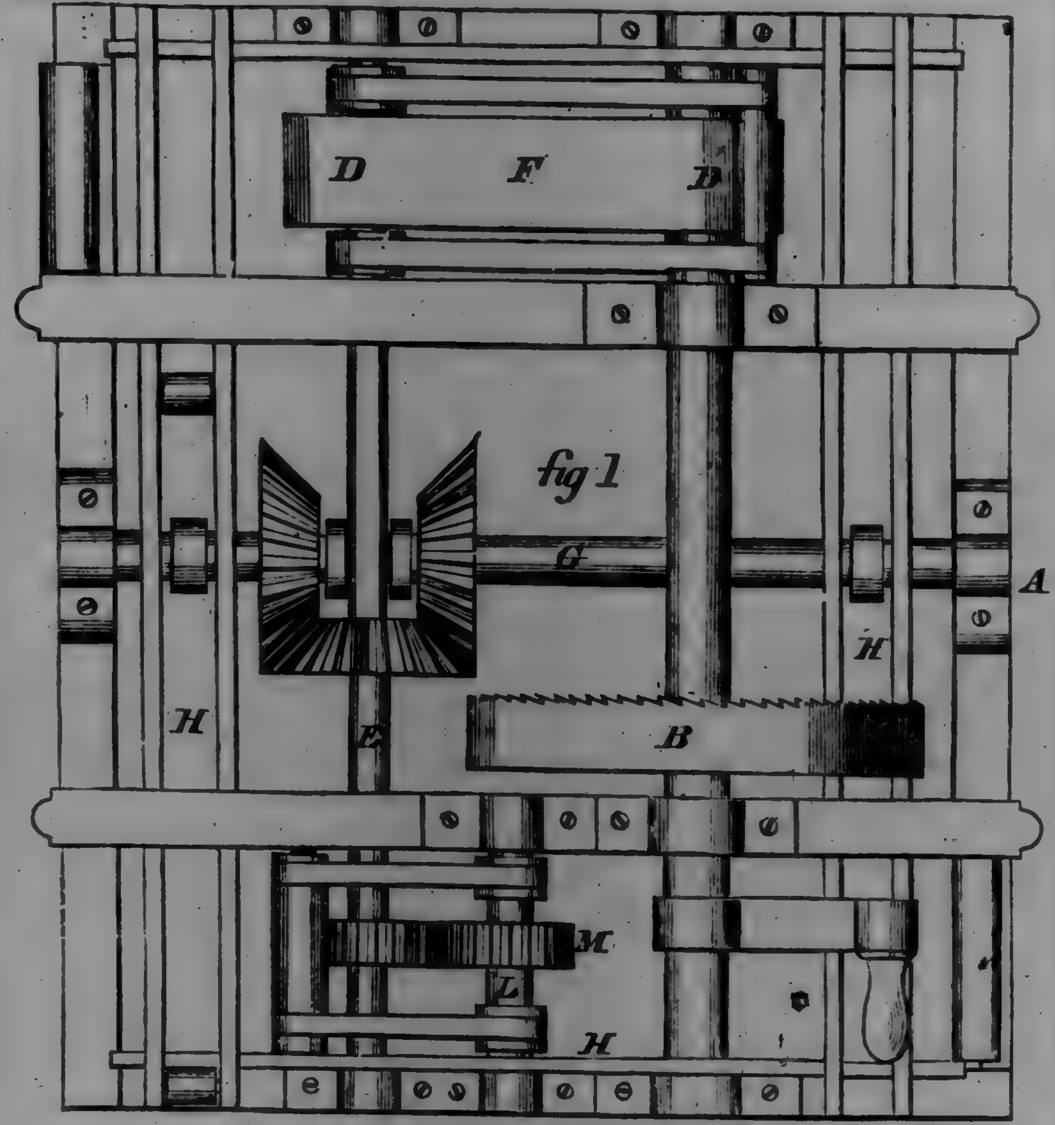

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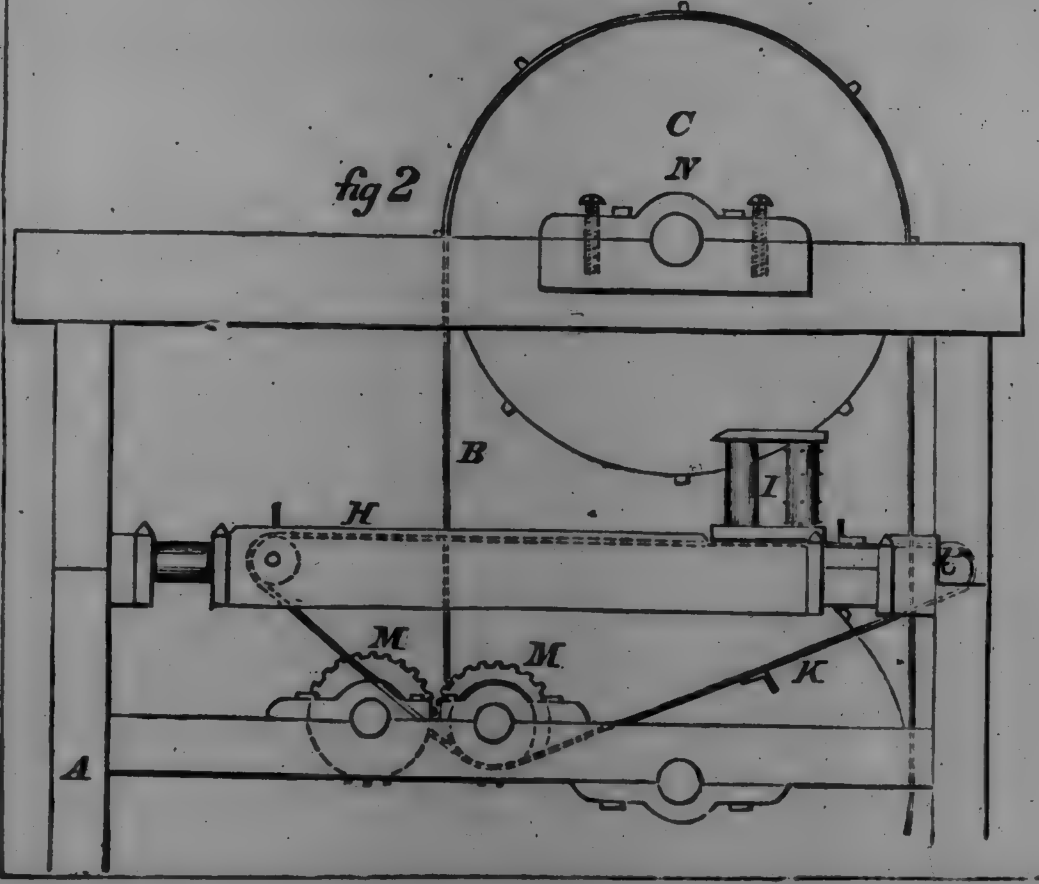

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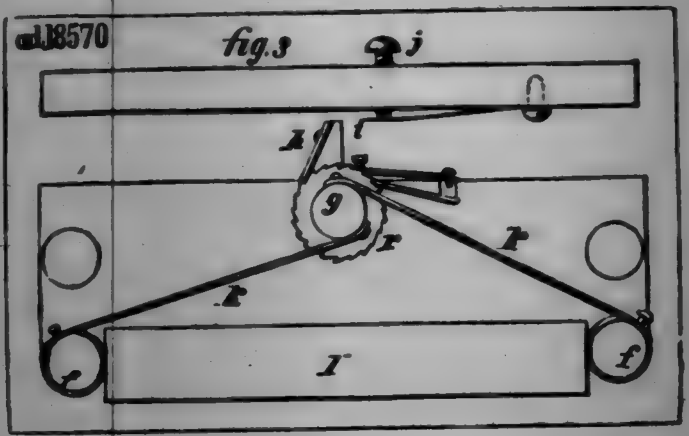

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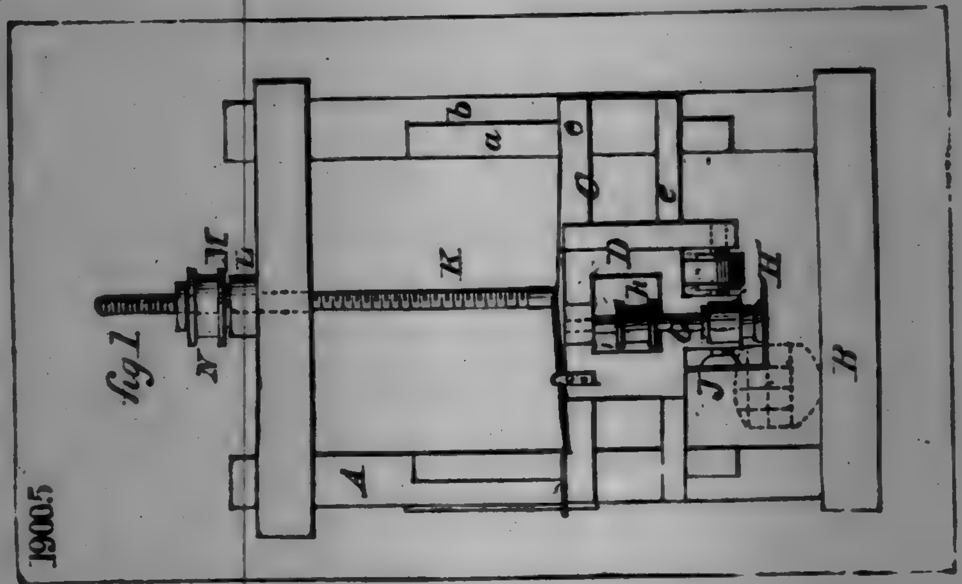

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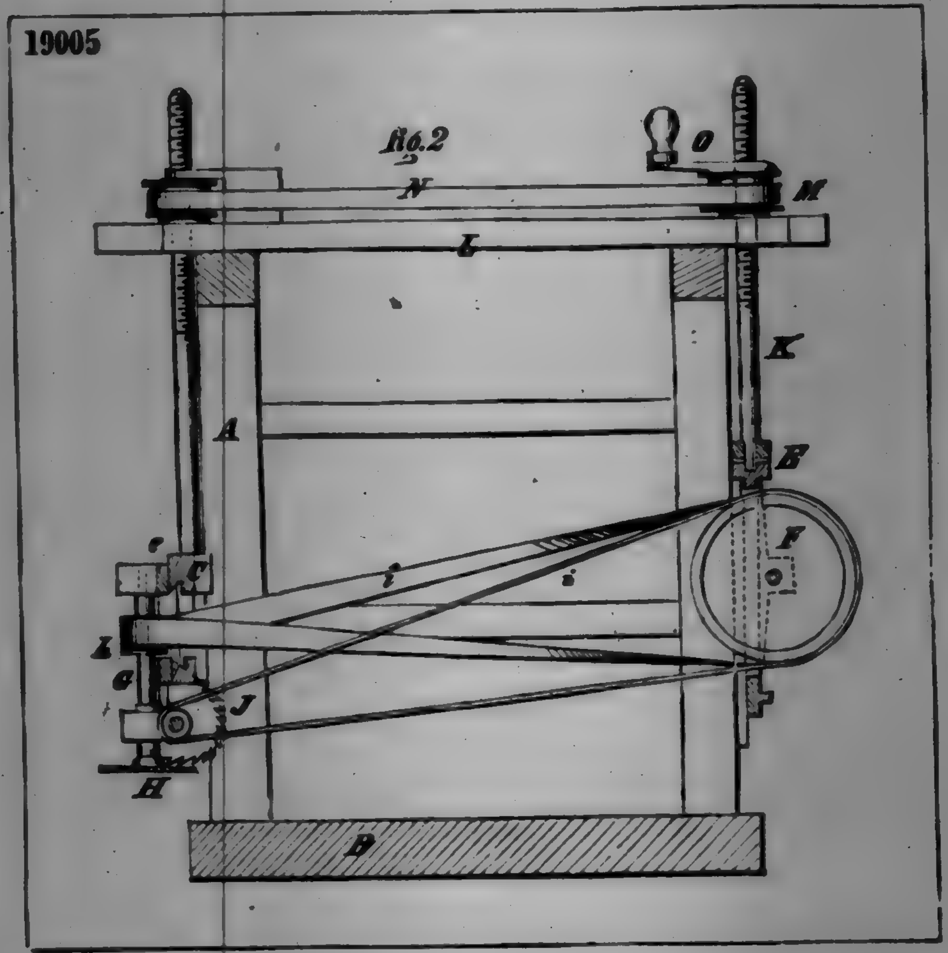

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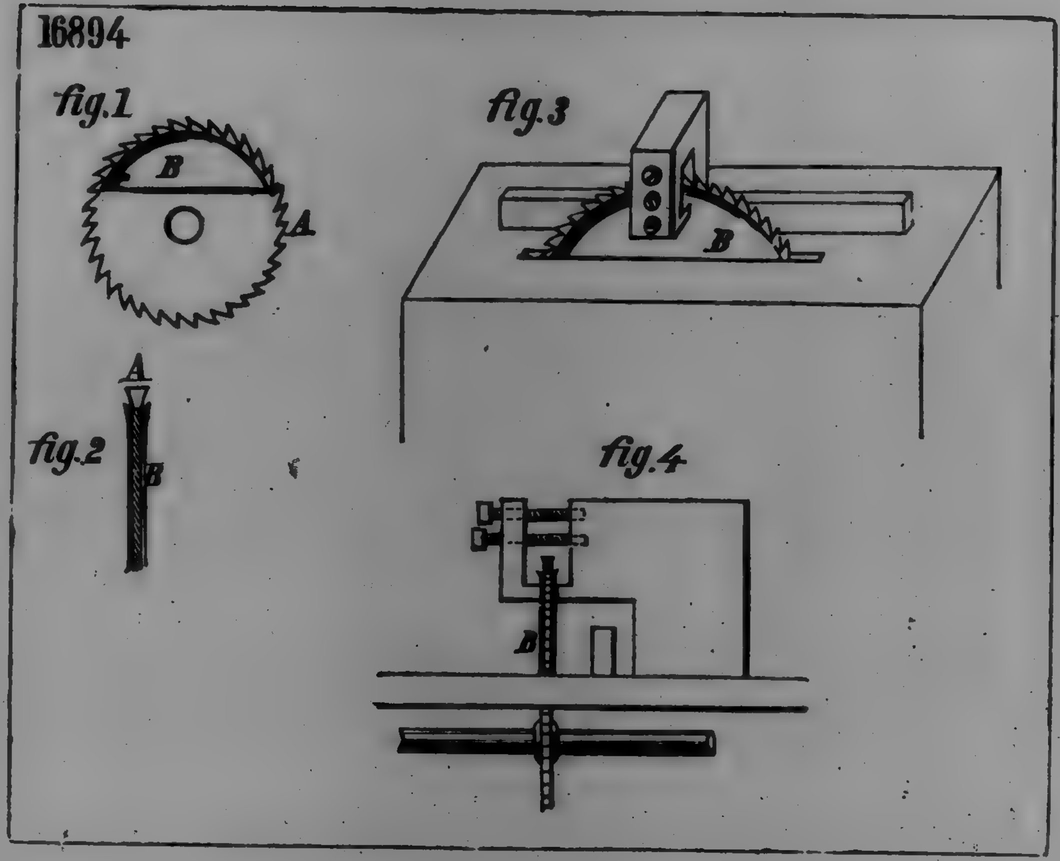

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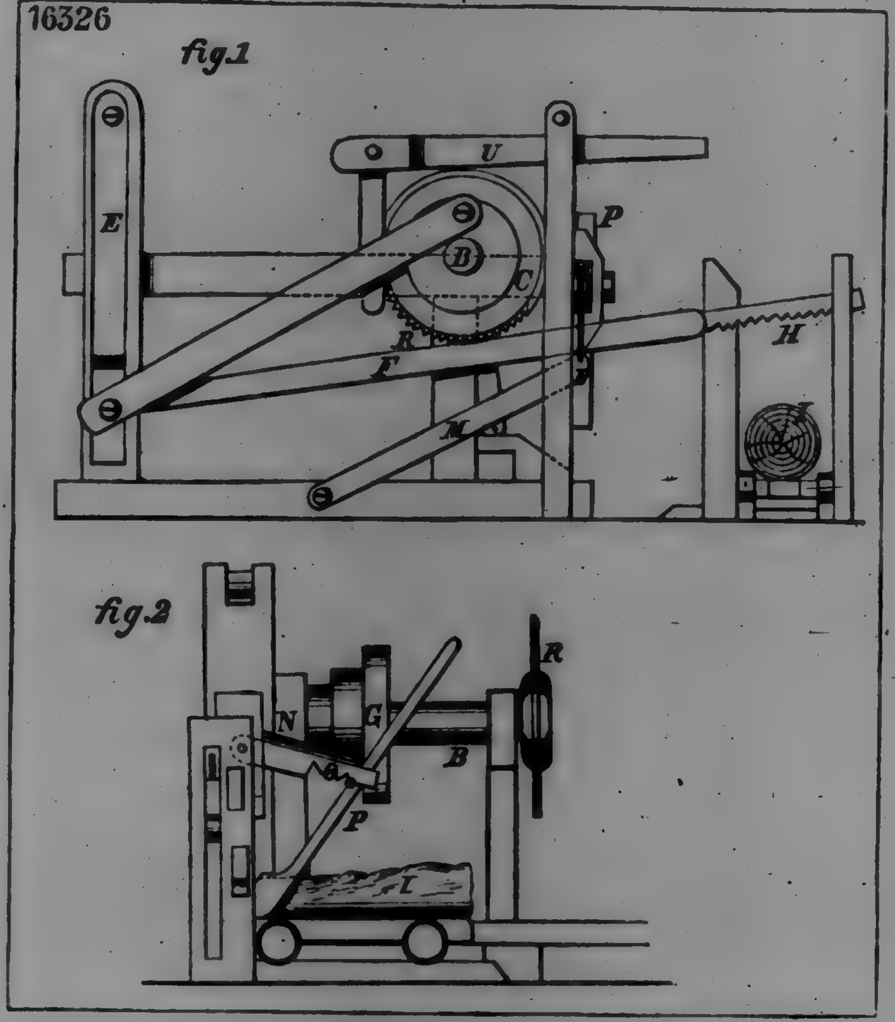

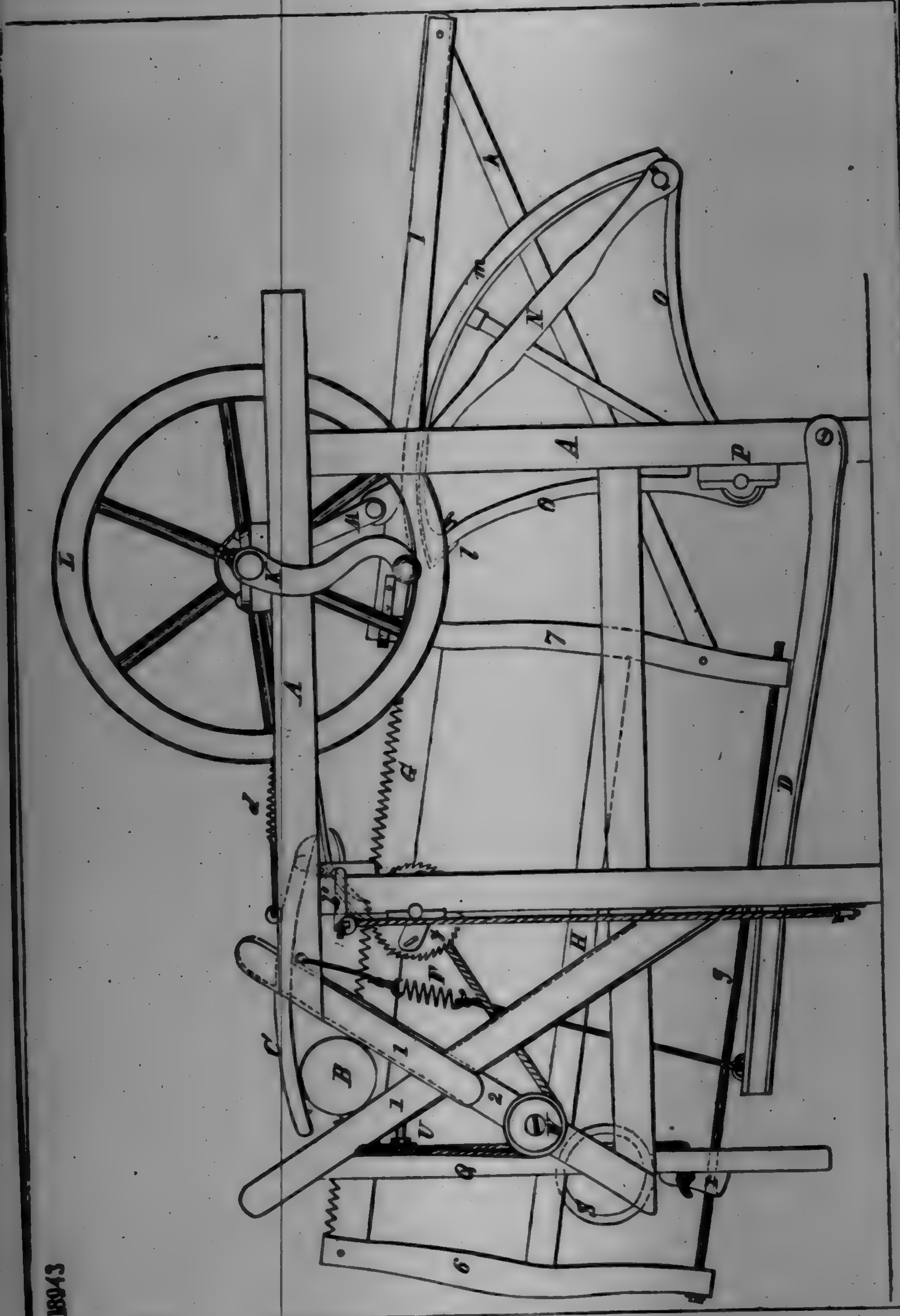

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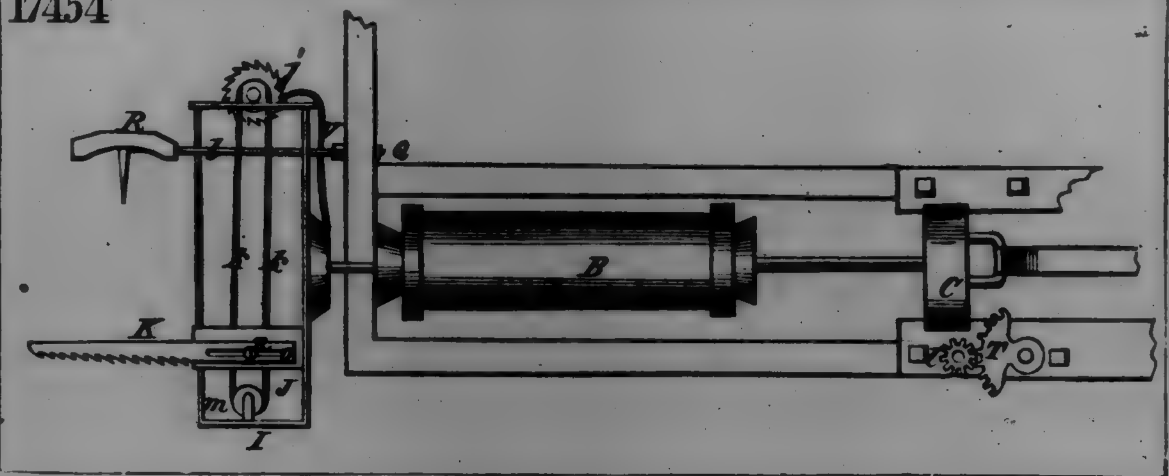

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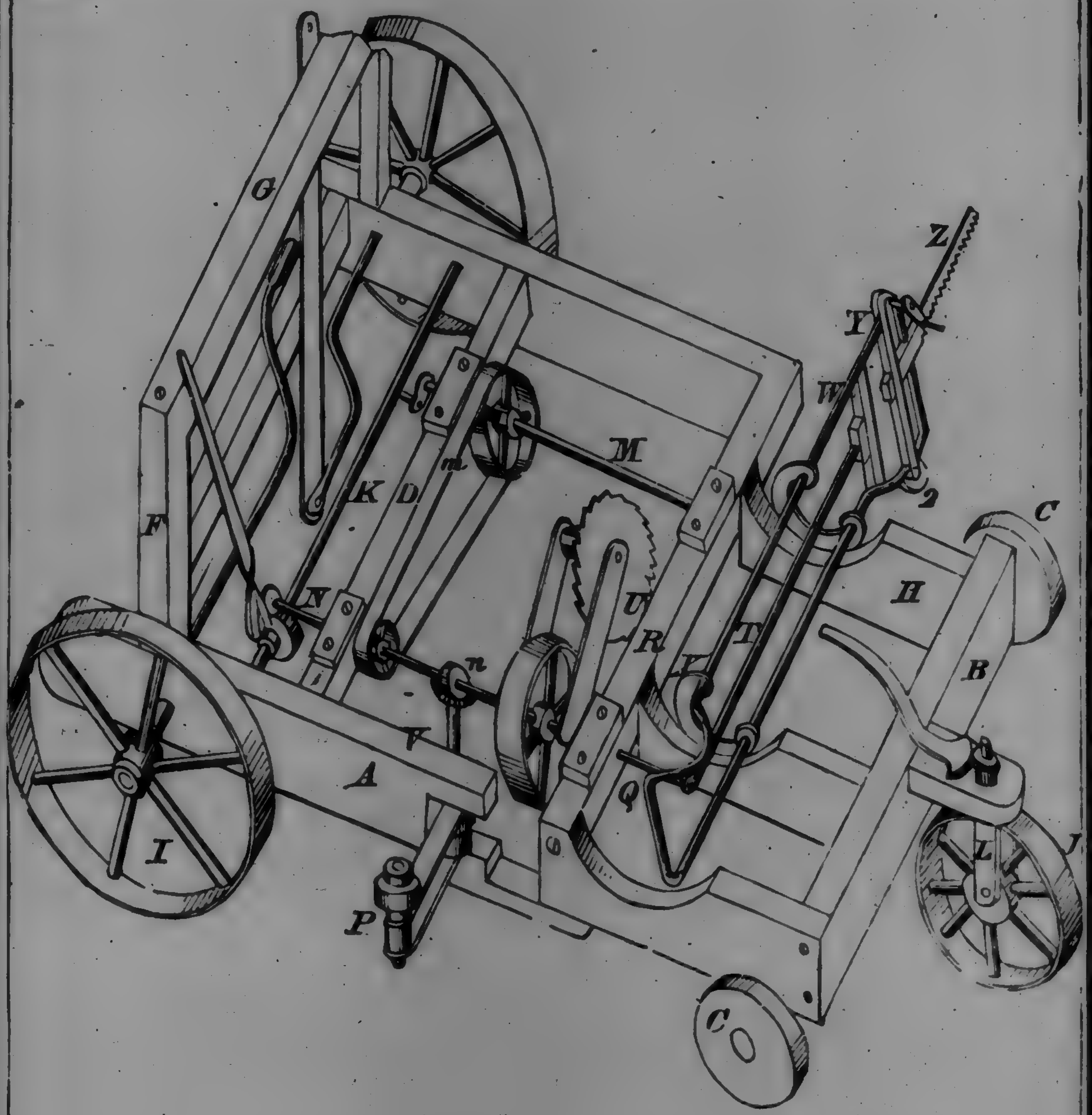

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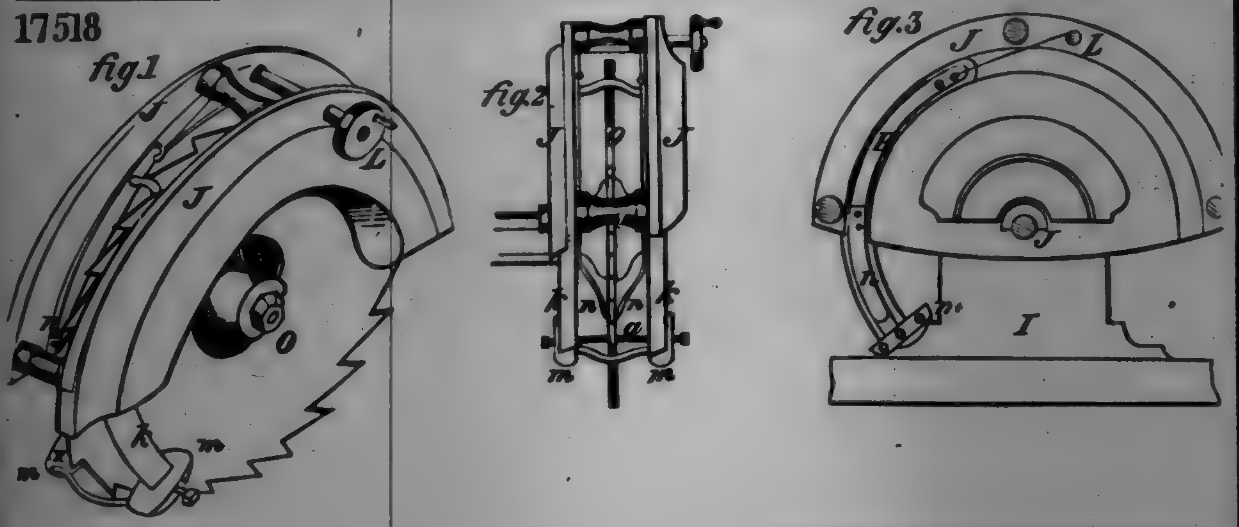

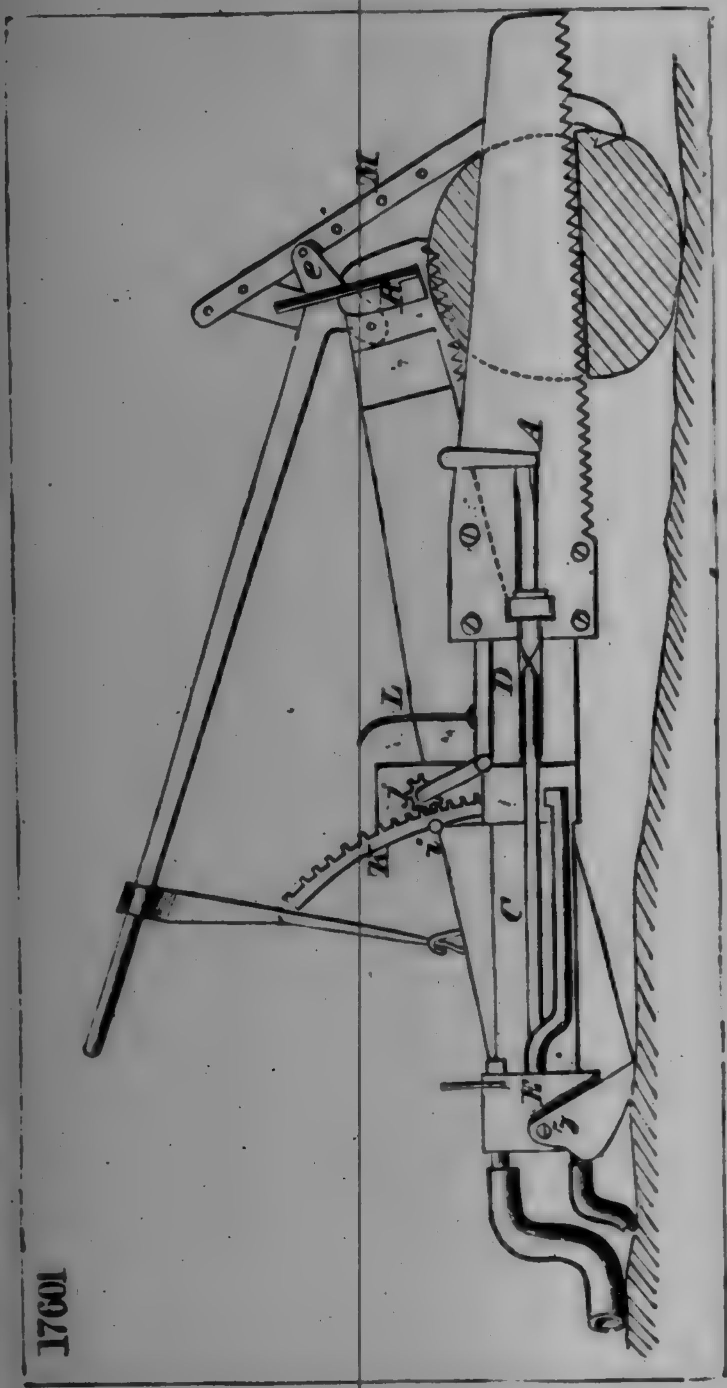

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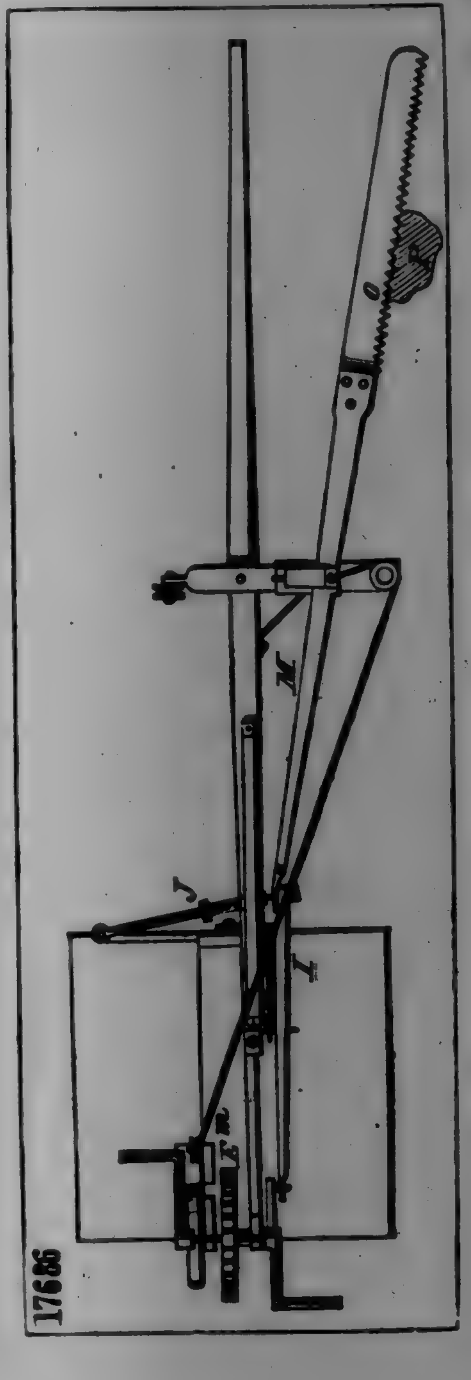

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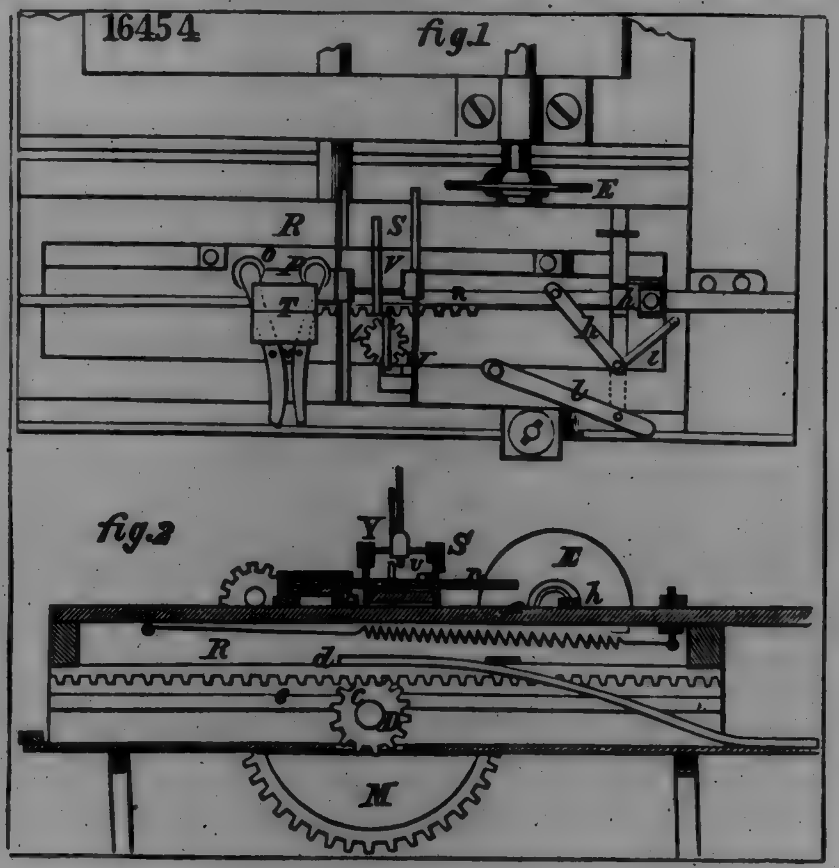

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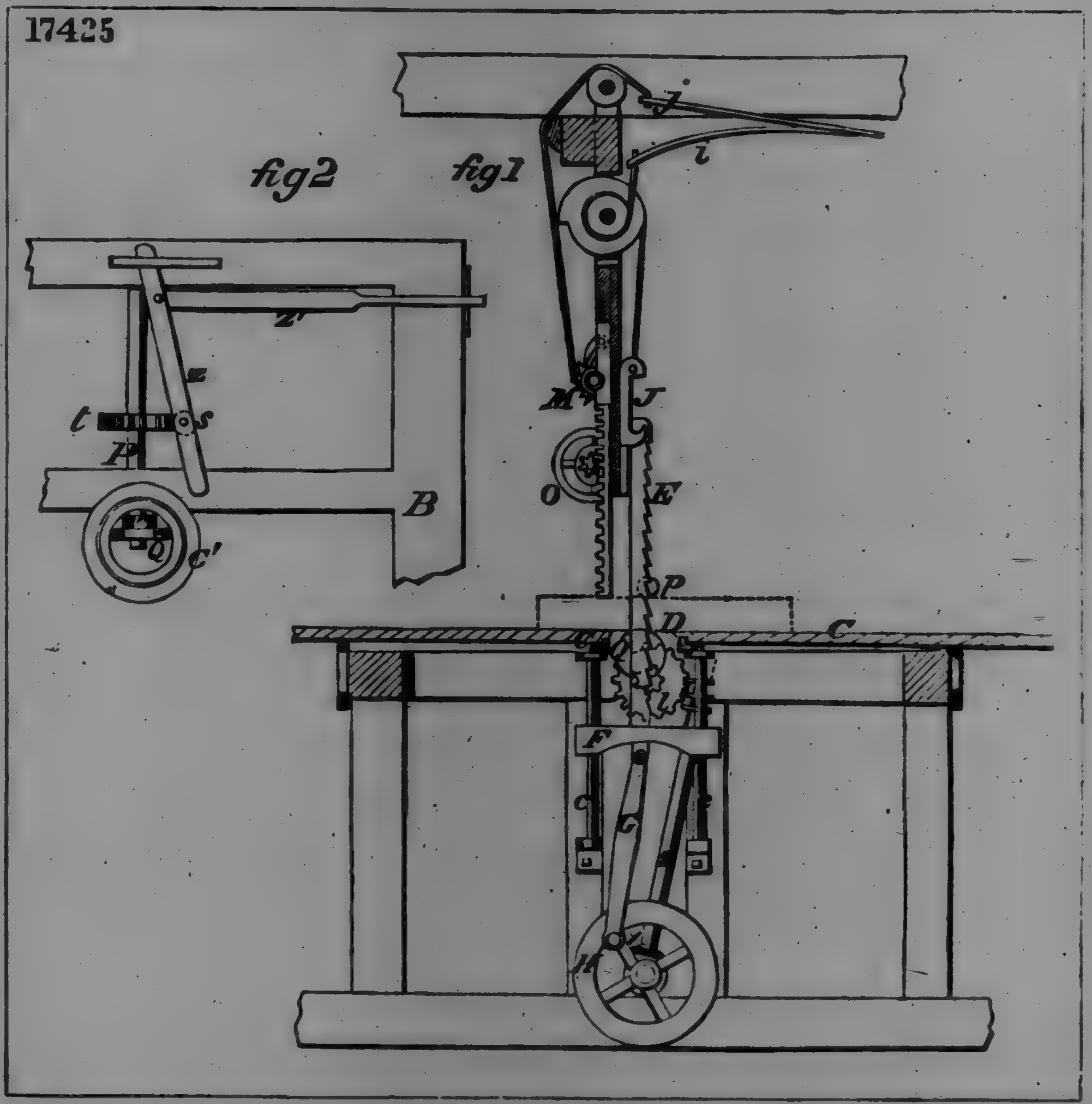

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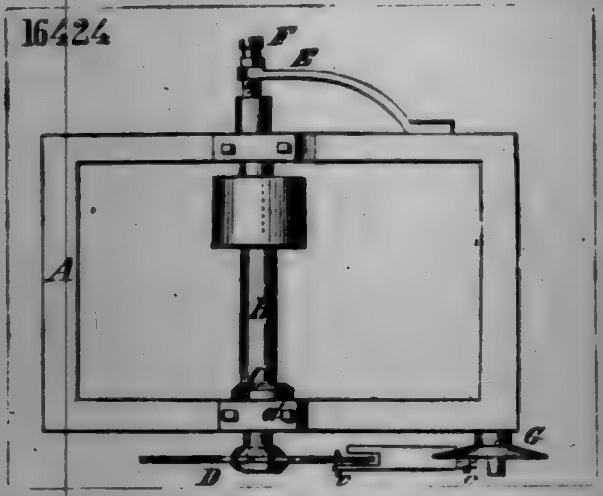

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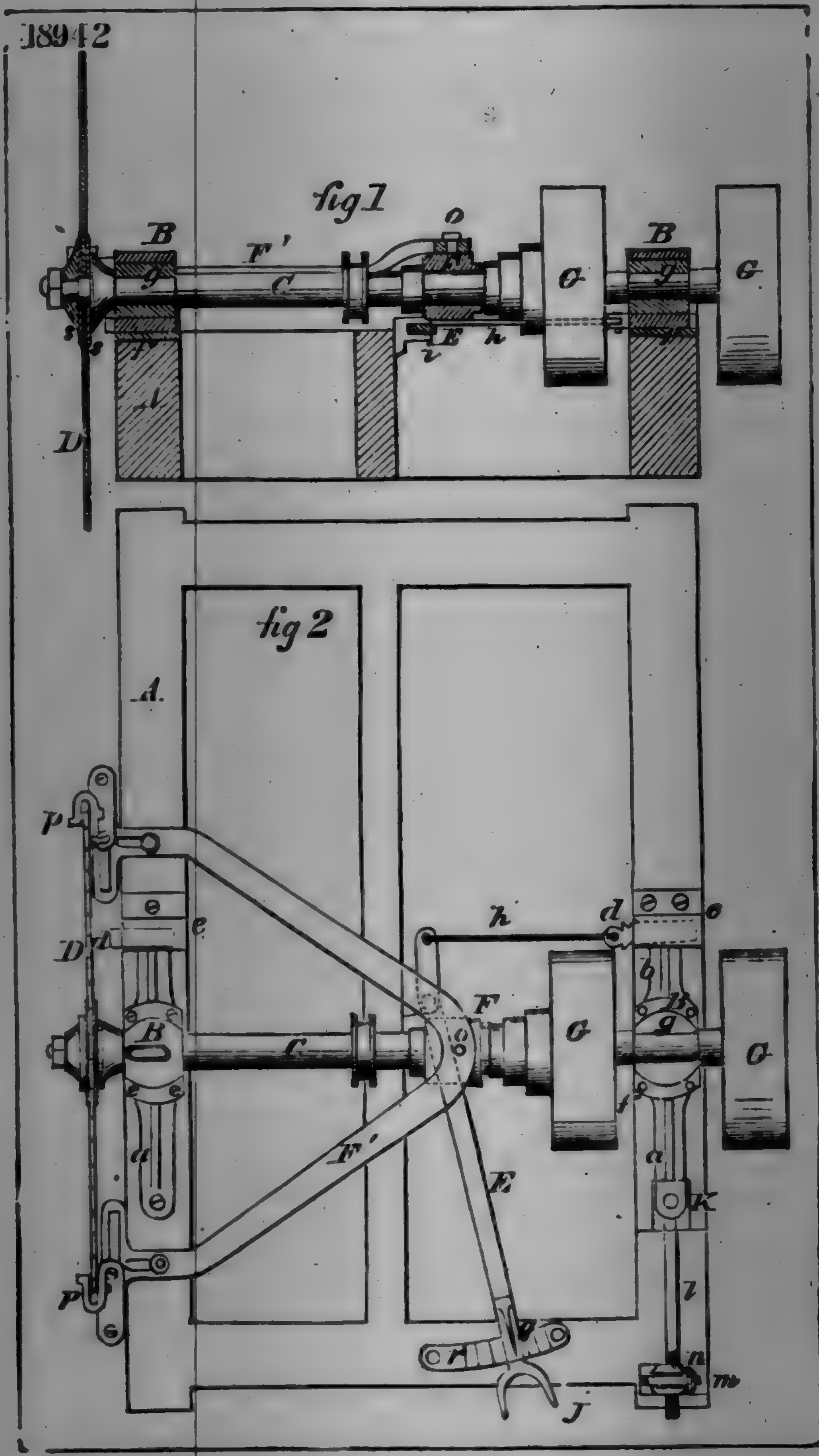

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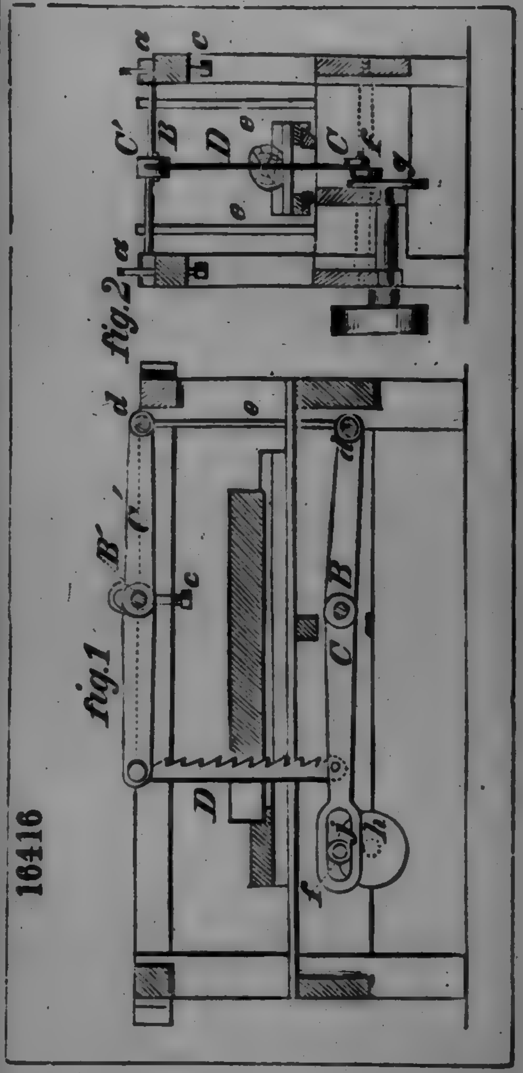

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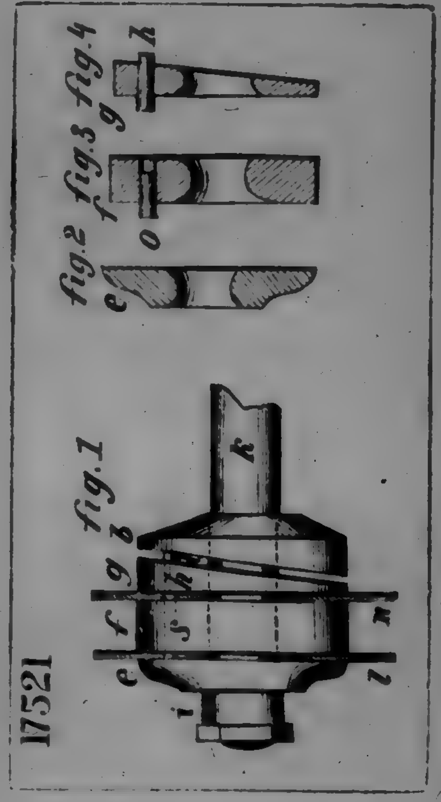

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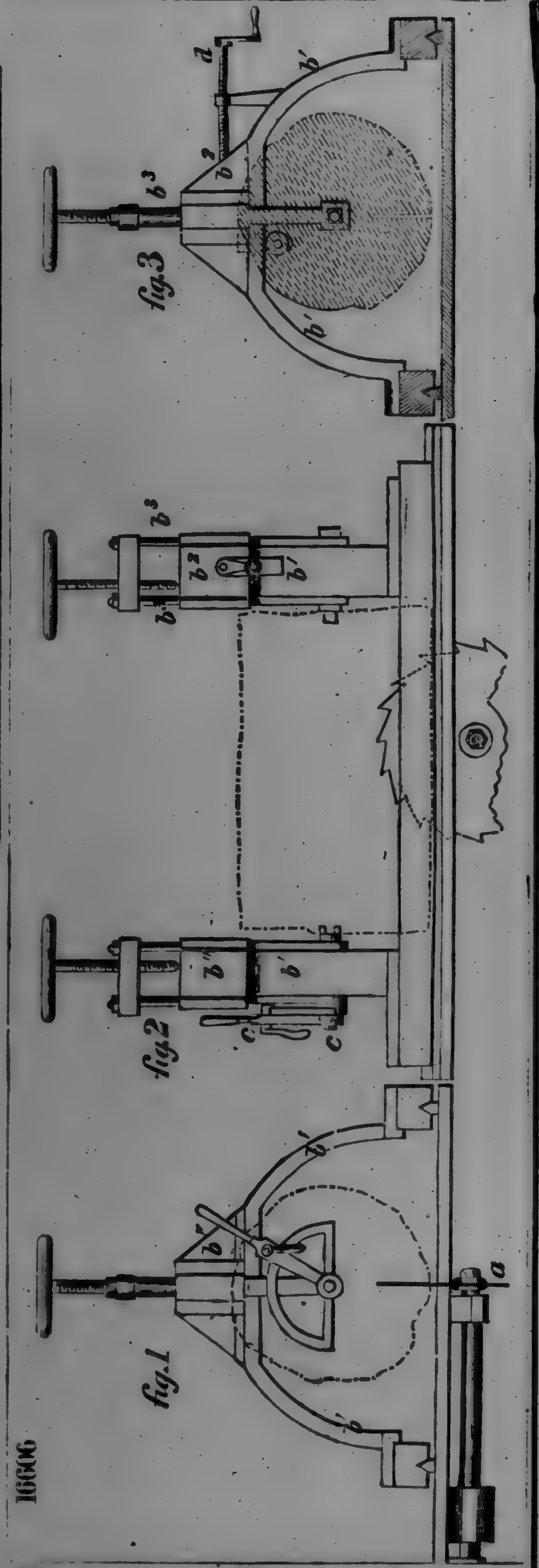

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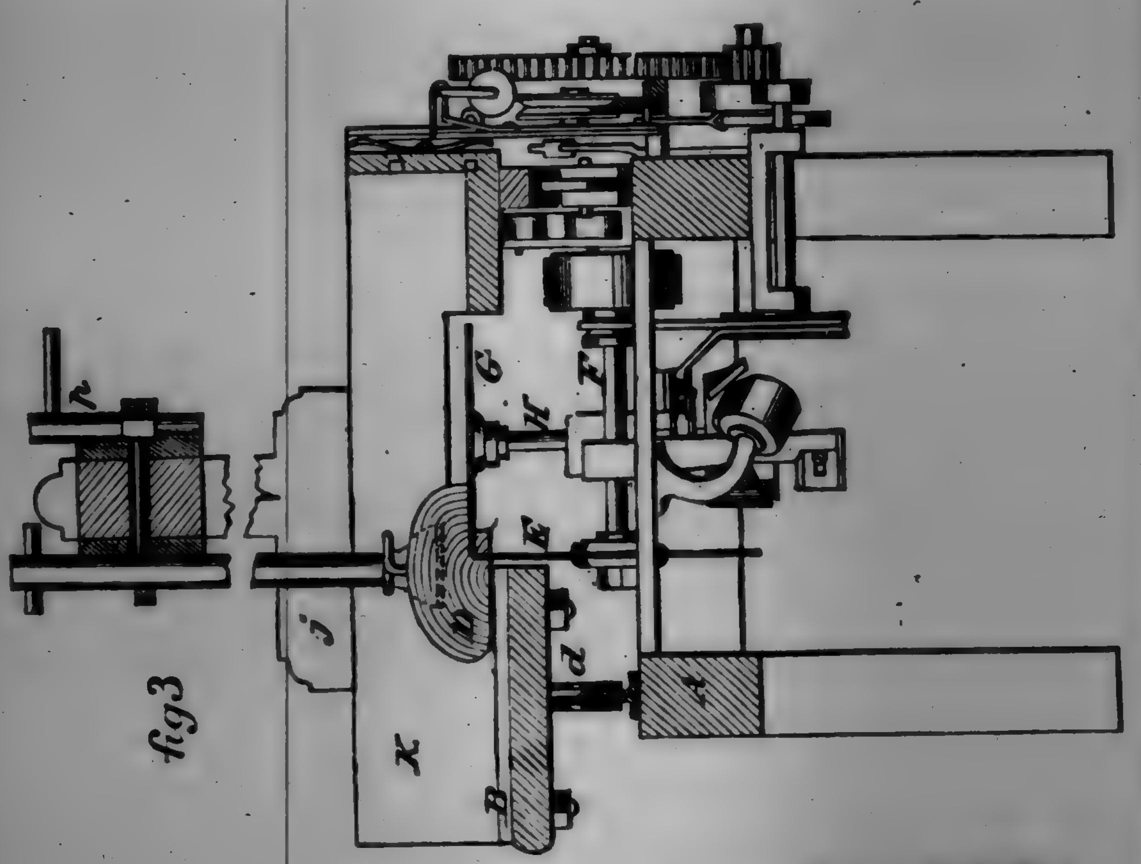

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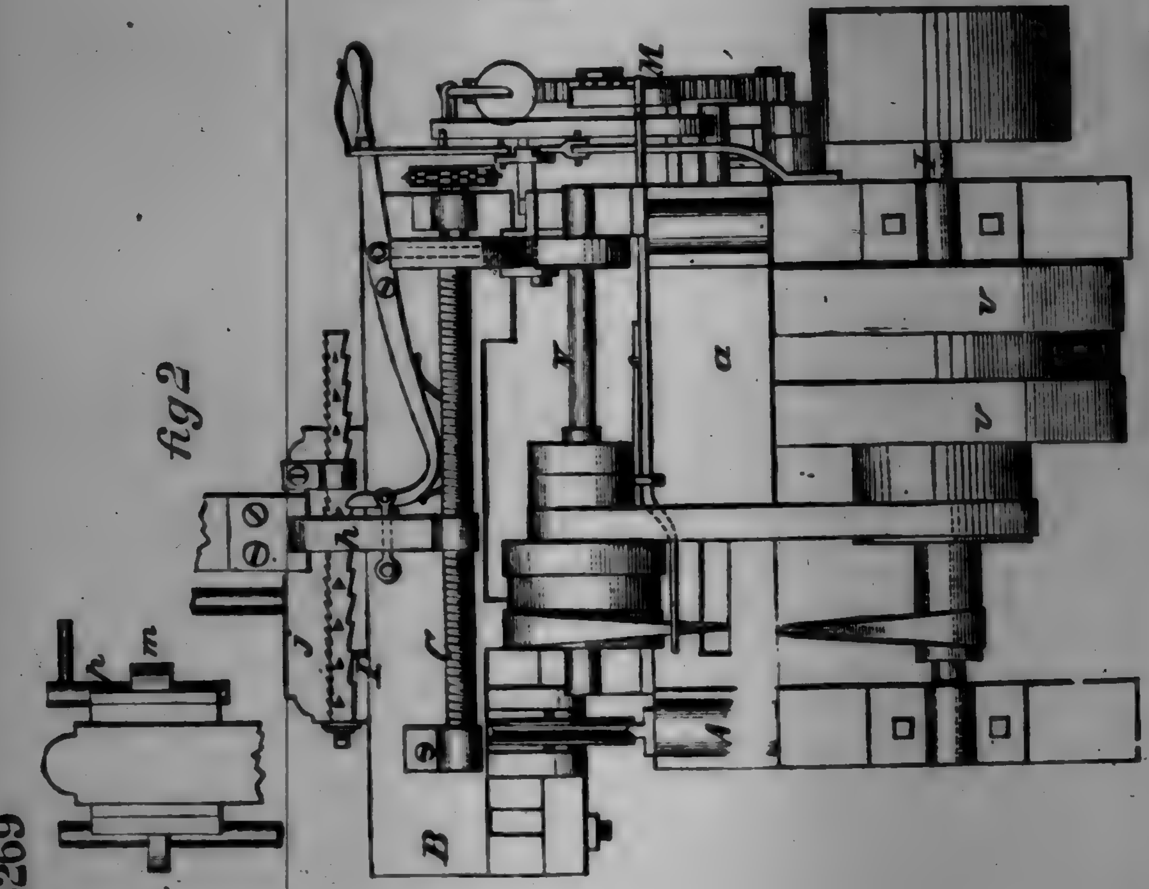

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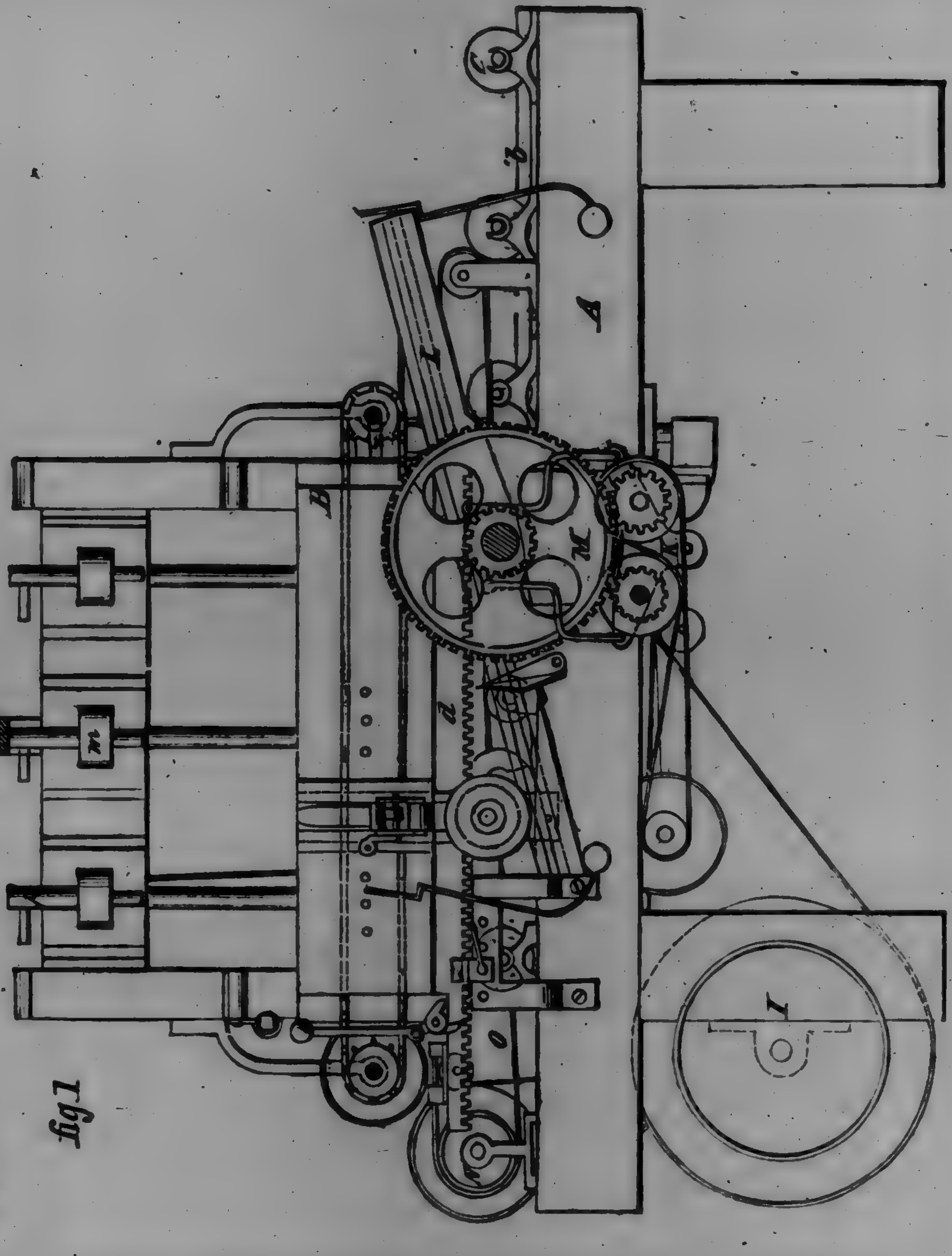

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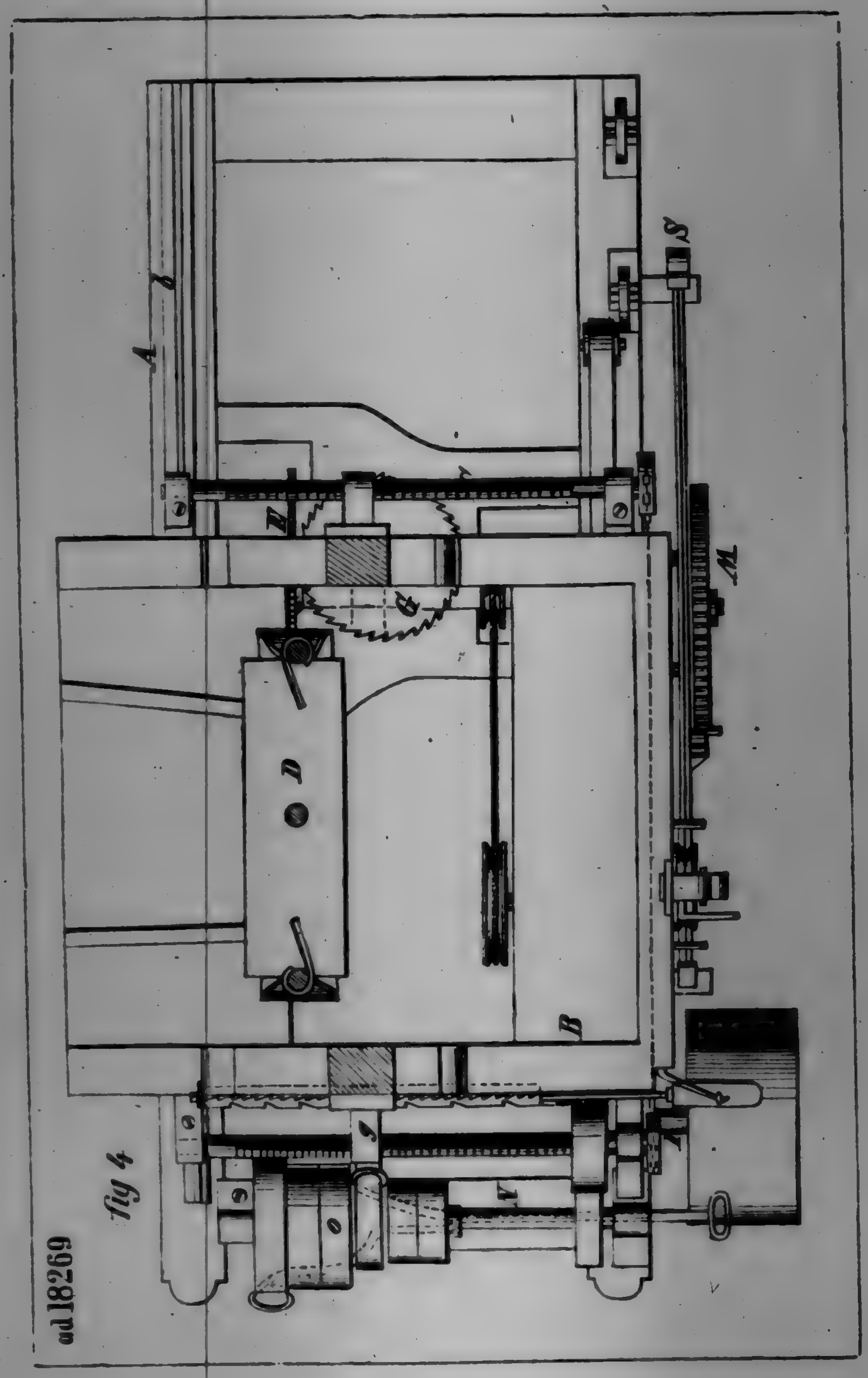
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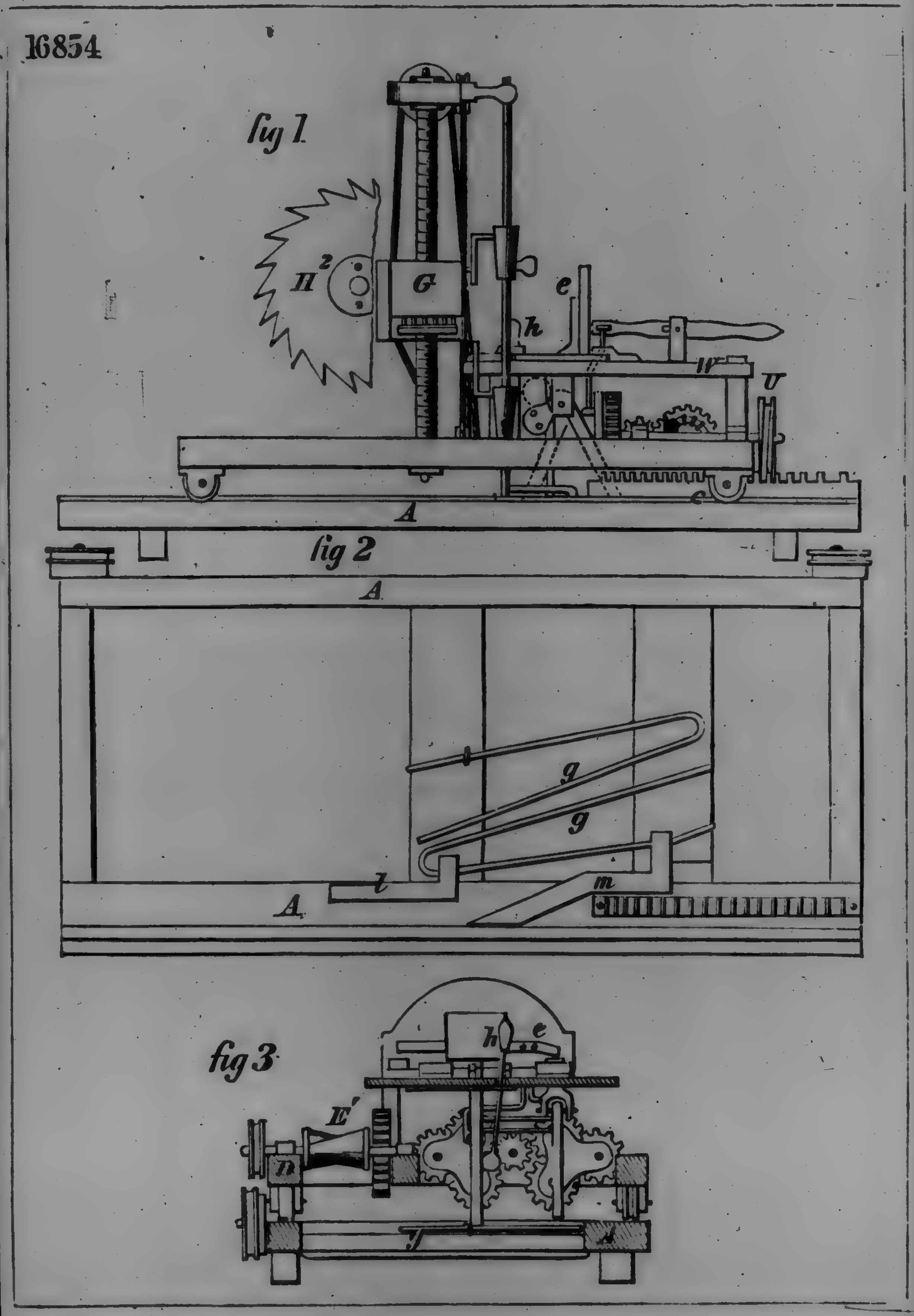
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D

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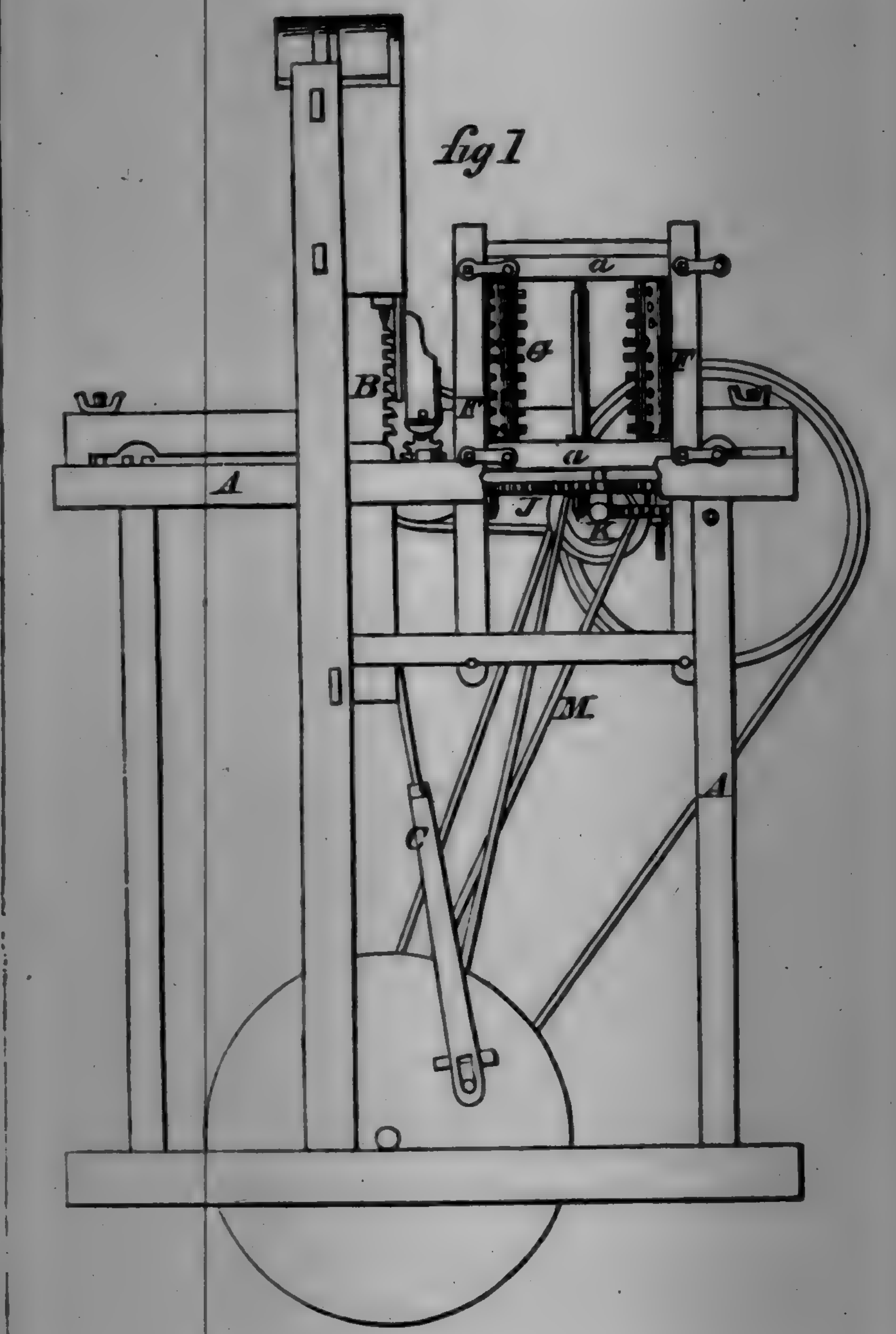

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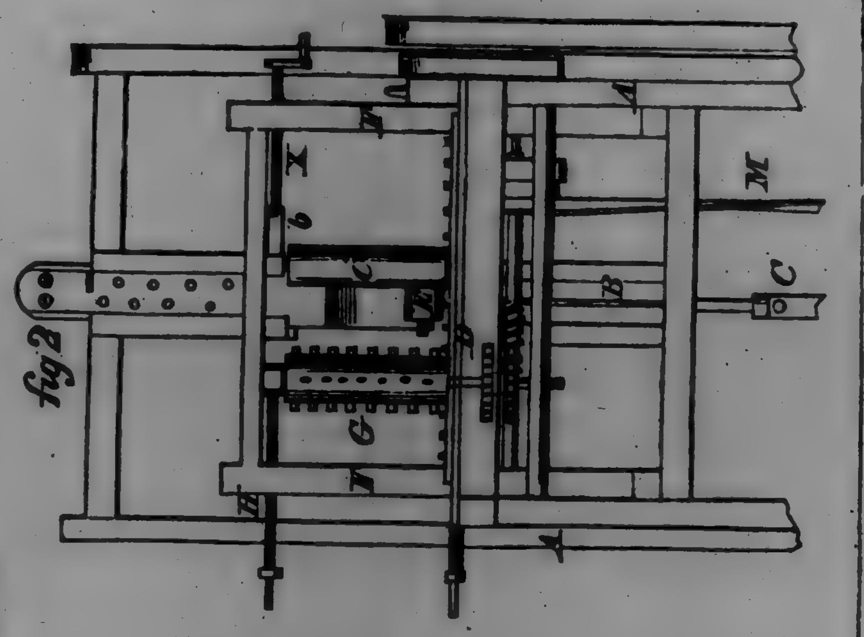

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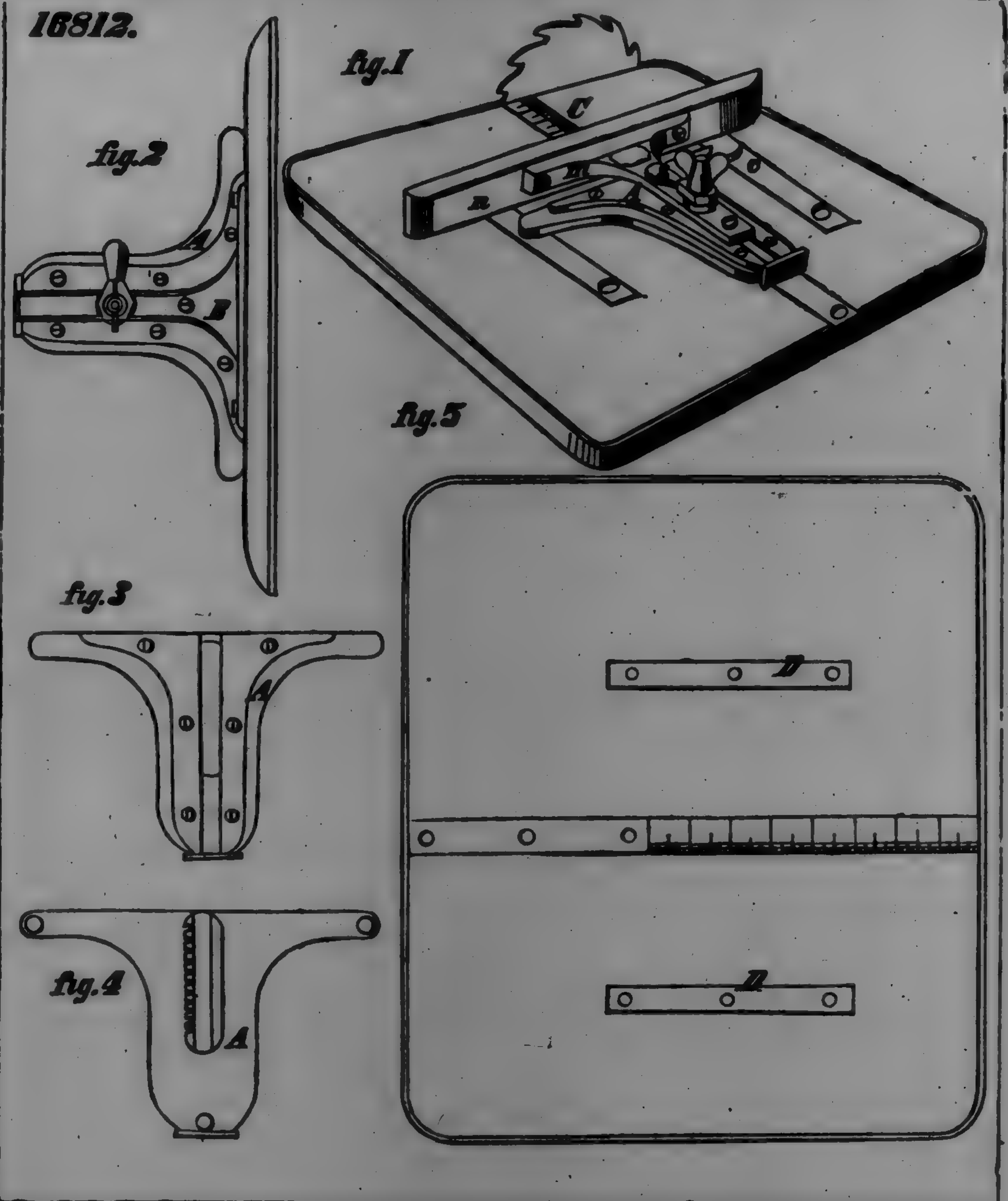

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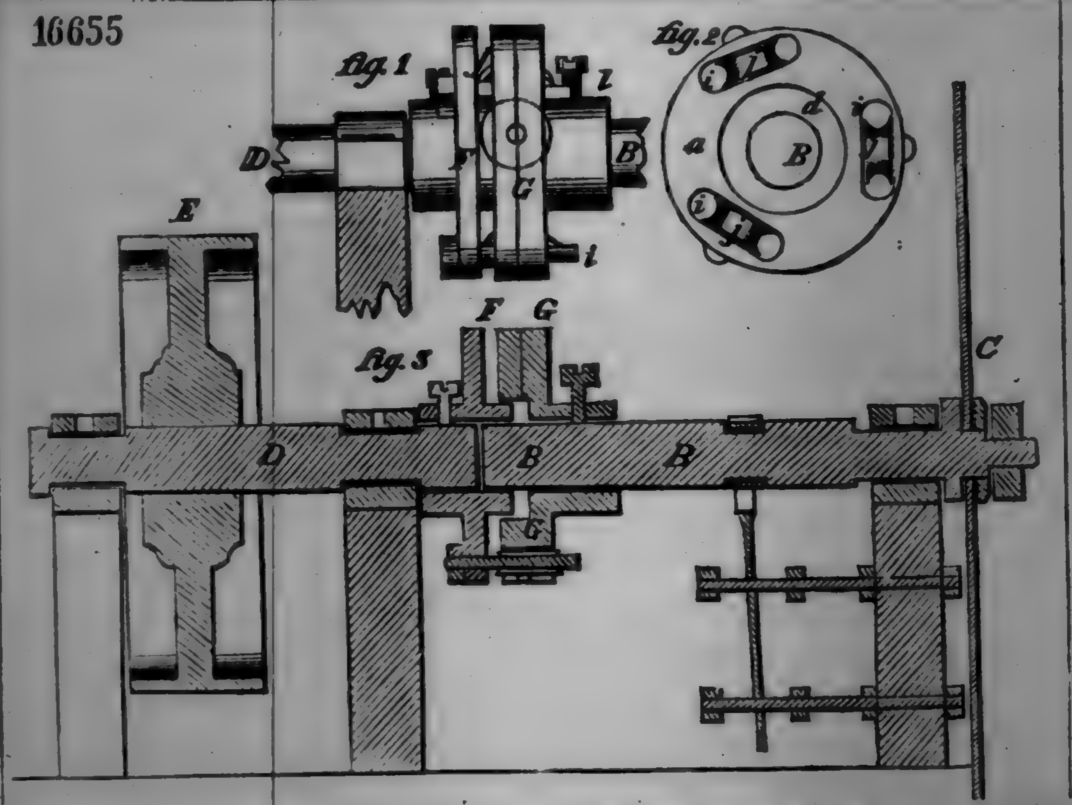

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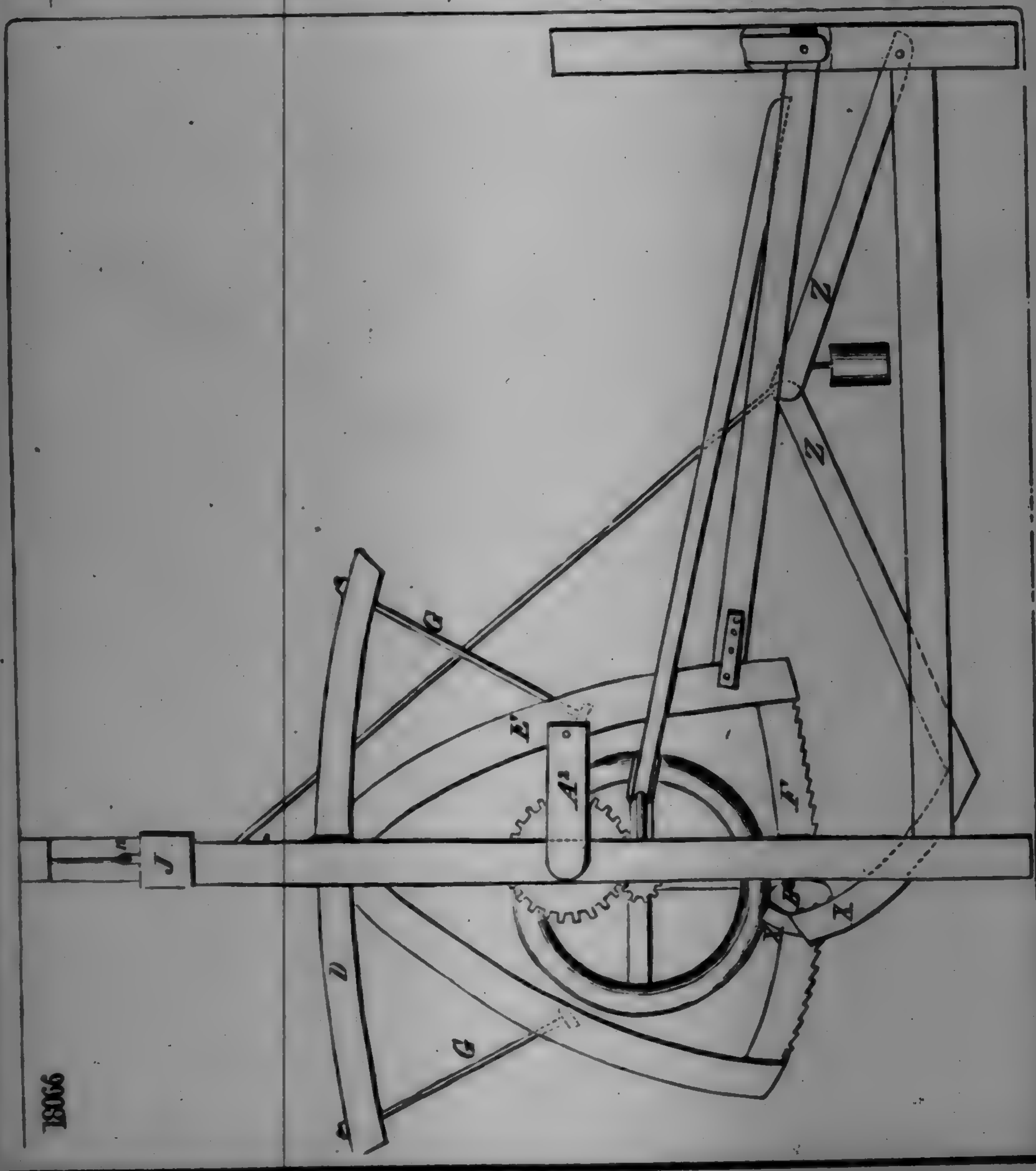

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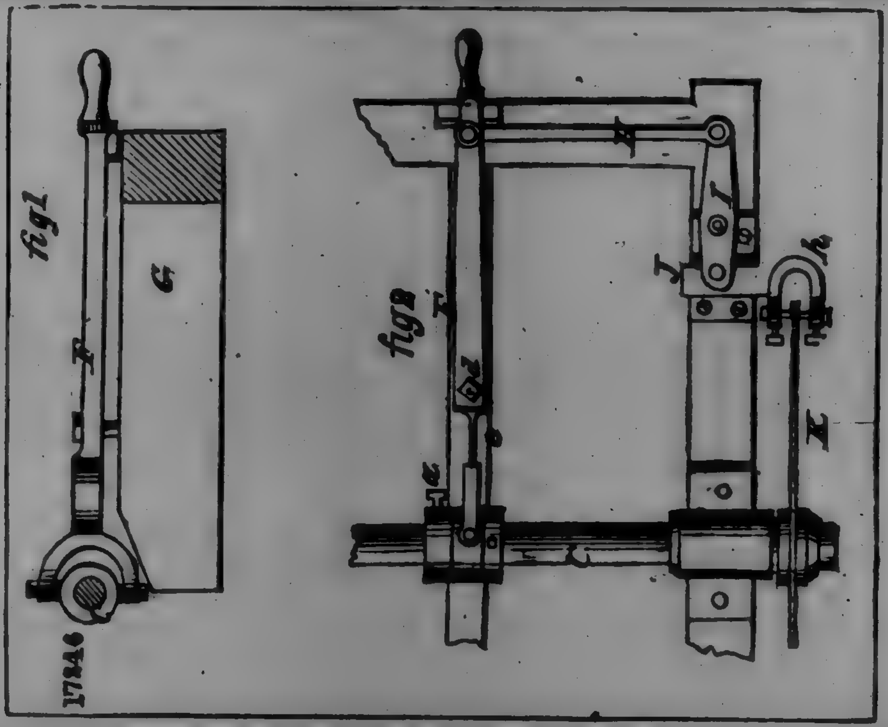

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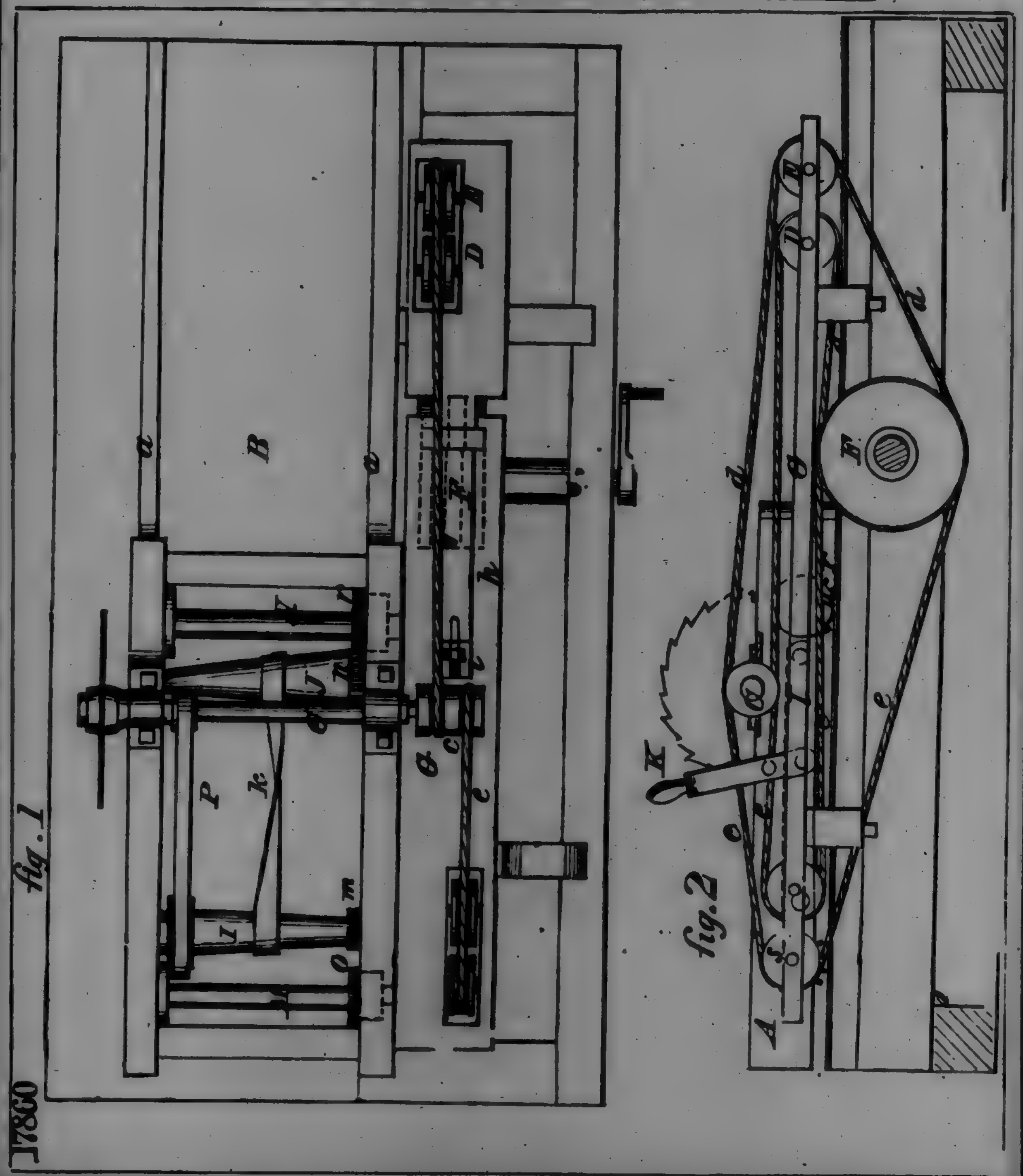

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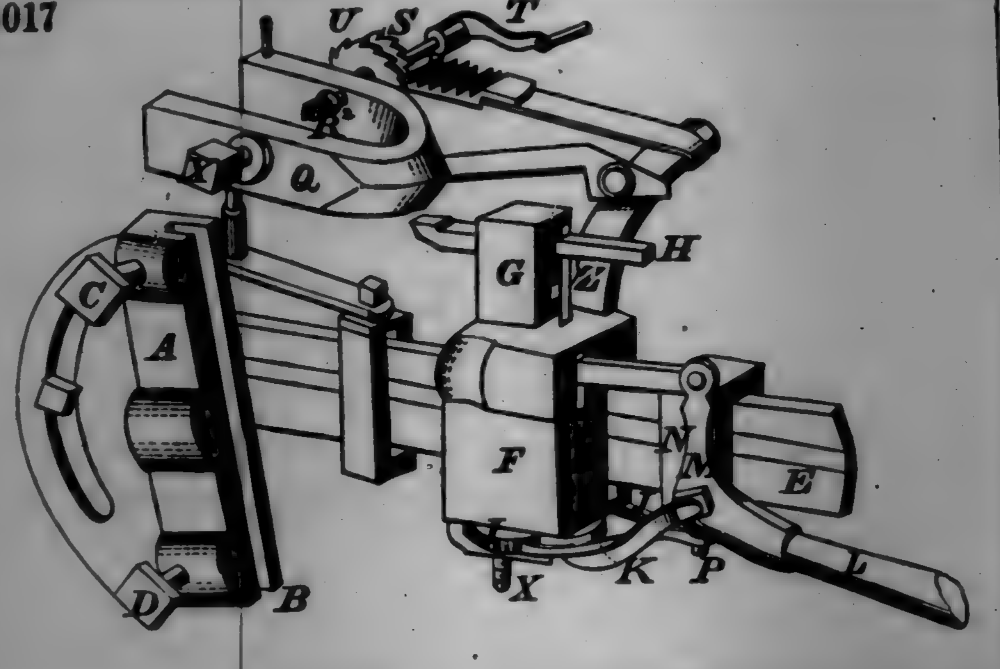

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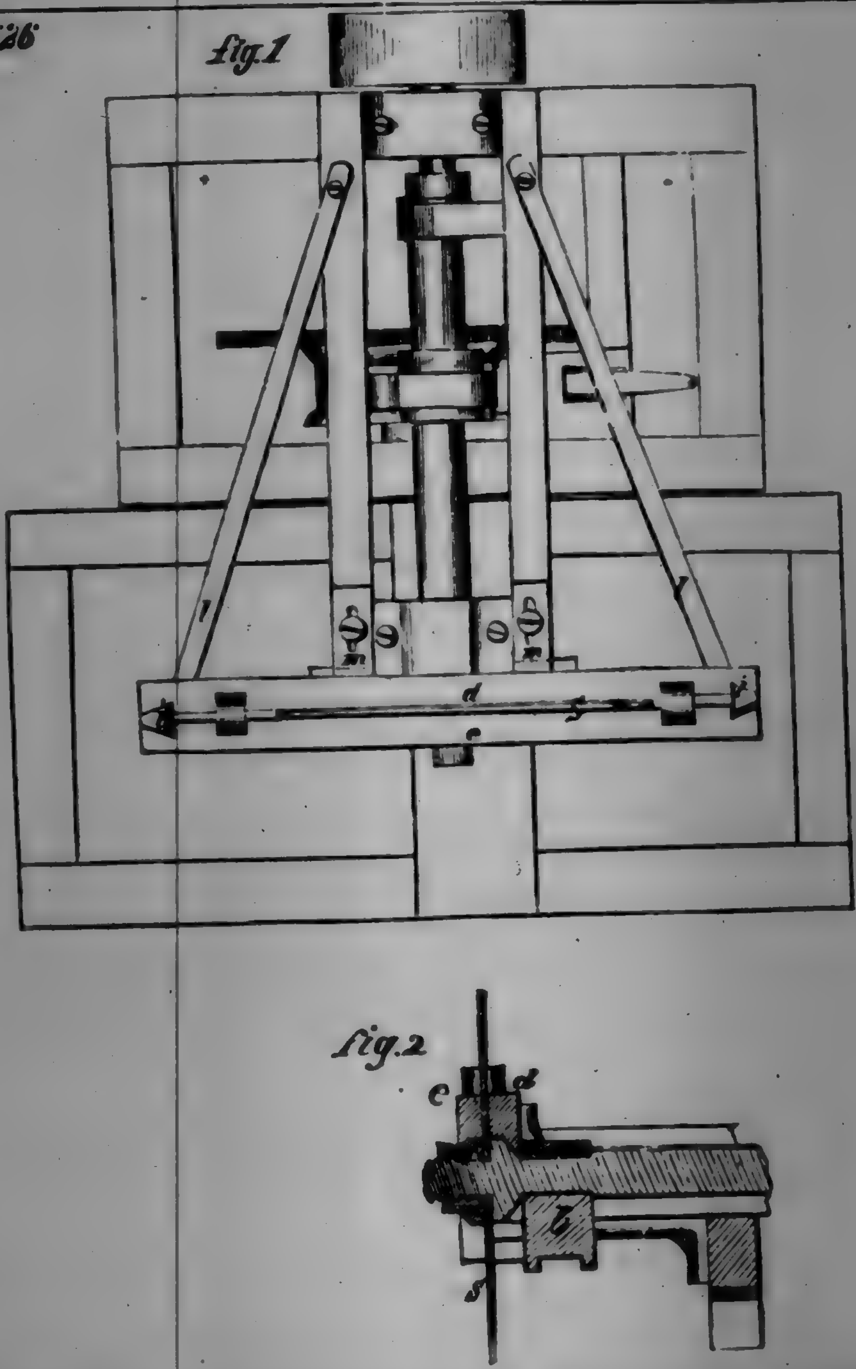

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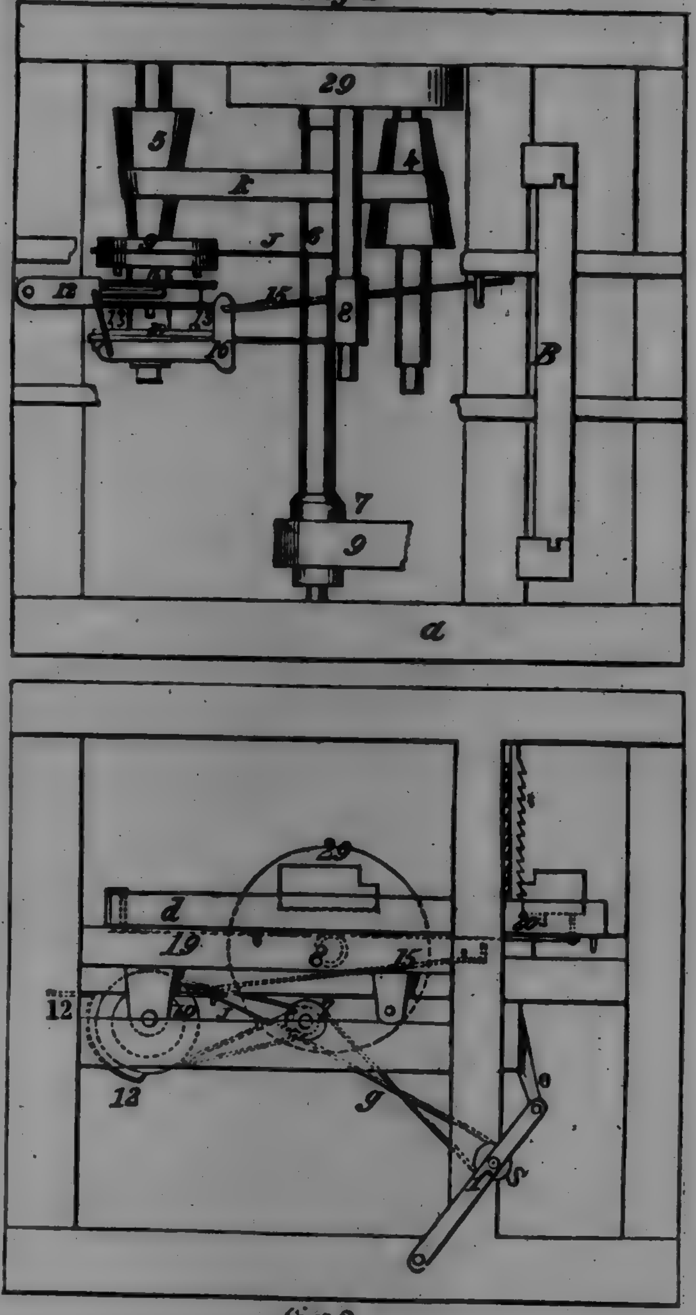

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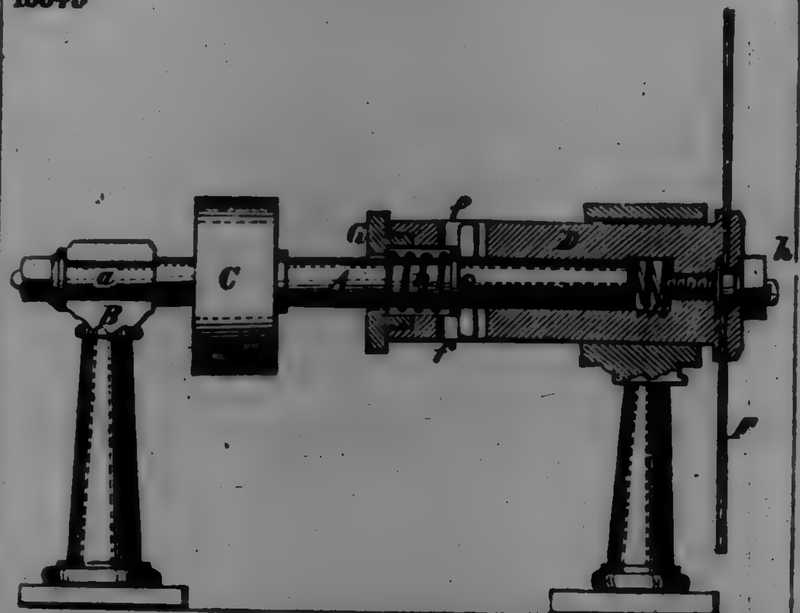

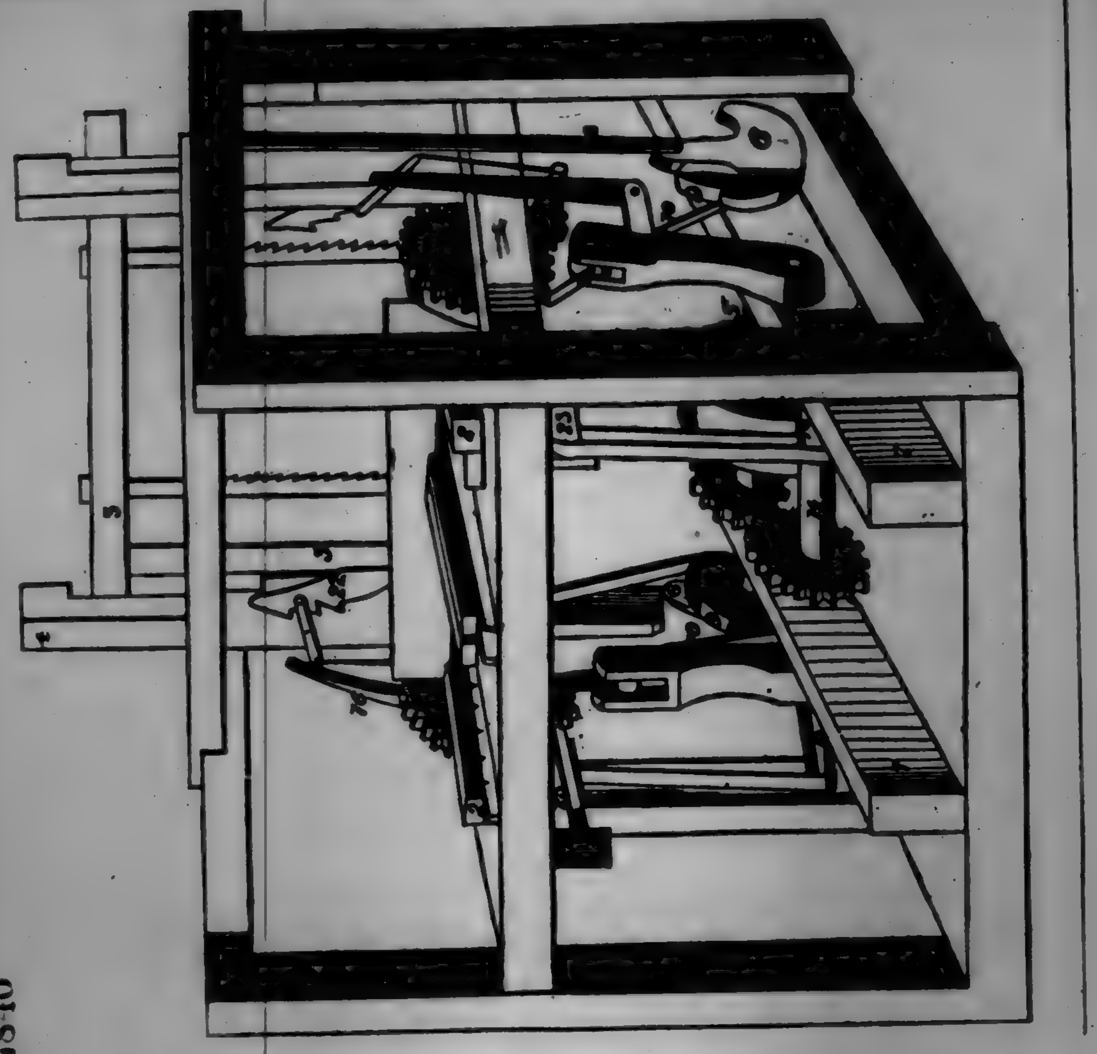
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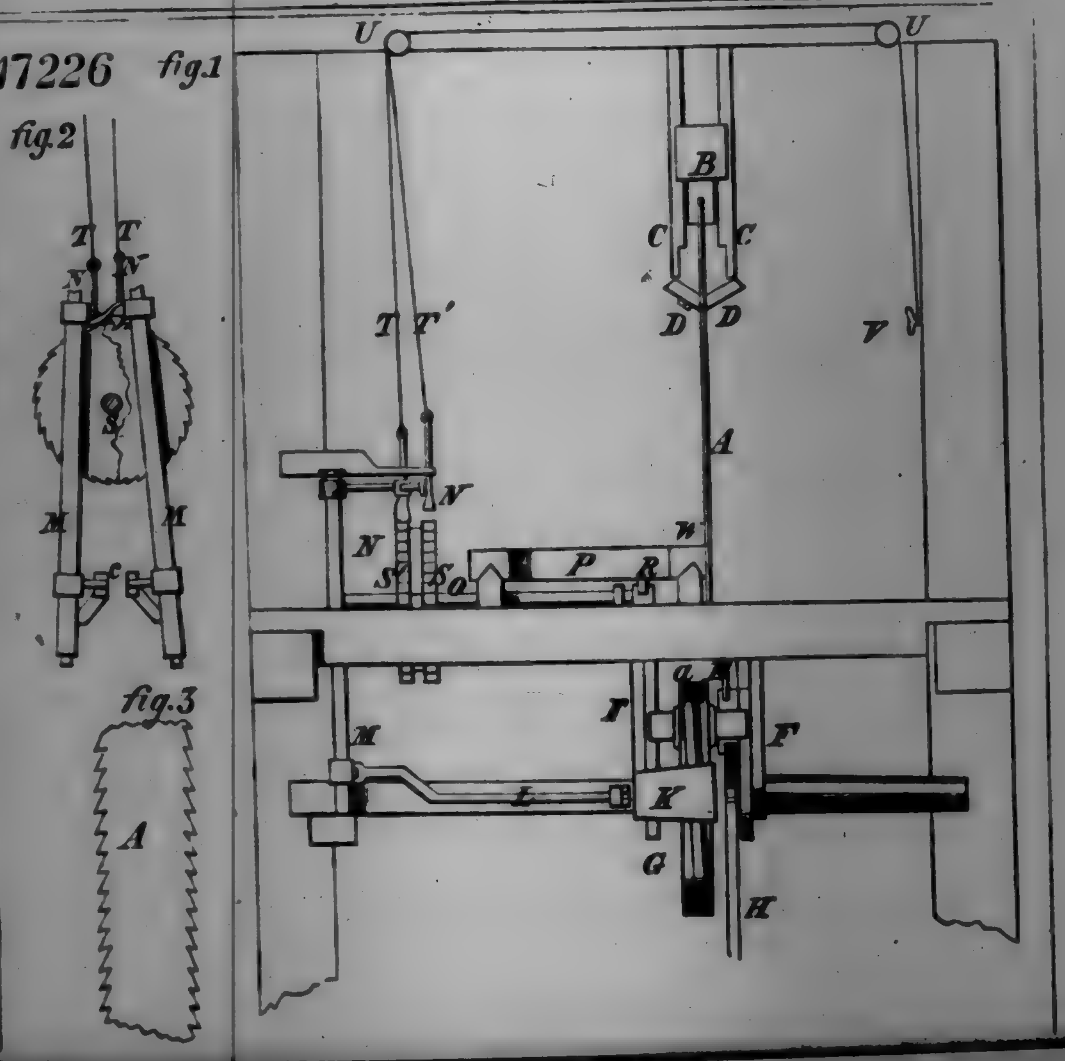
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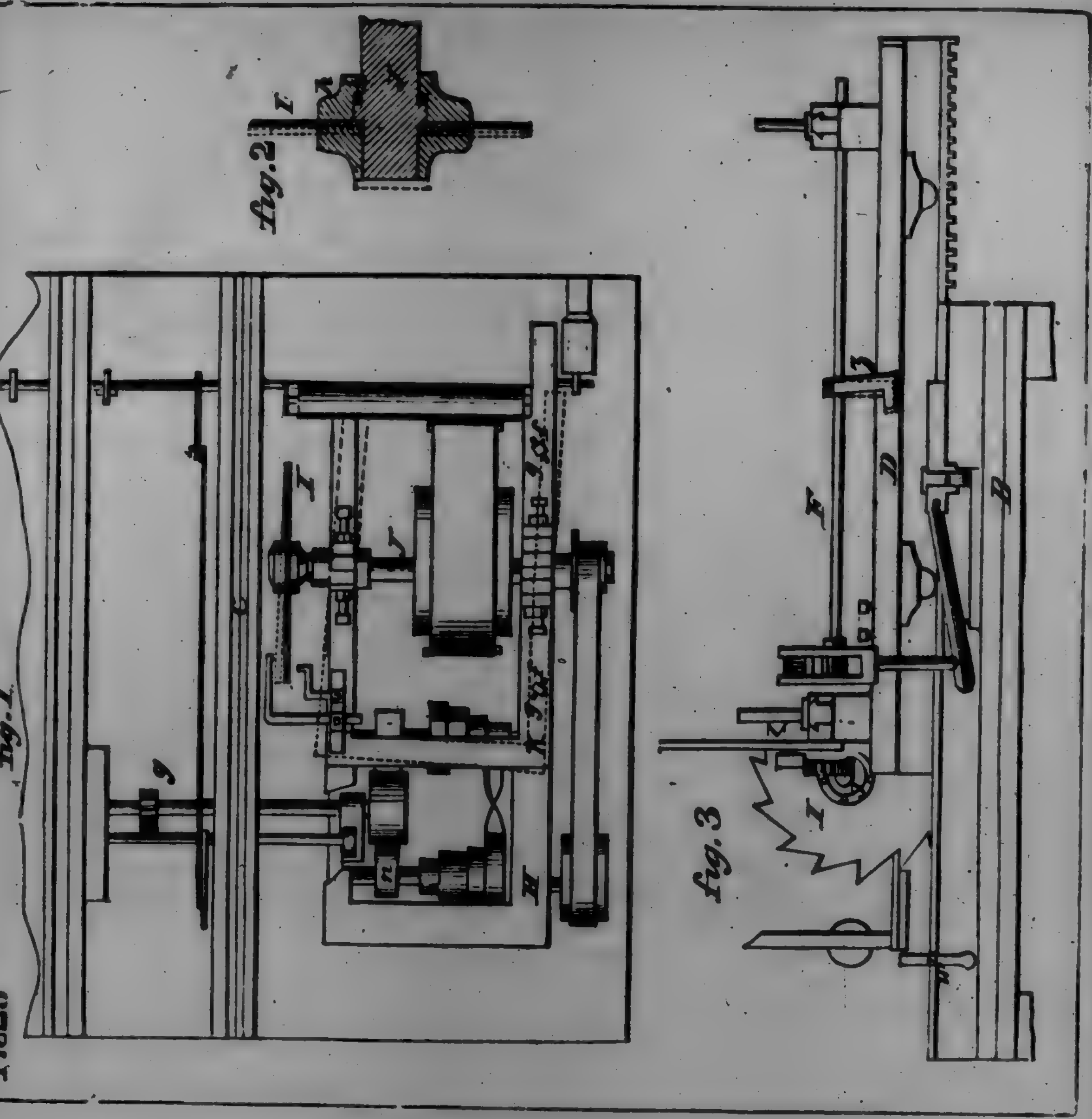
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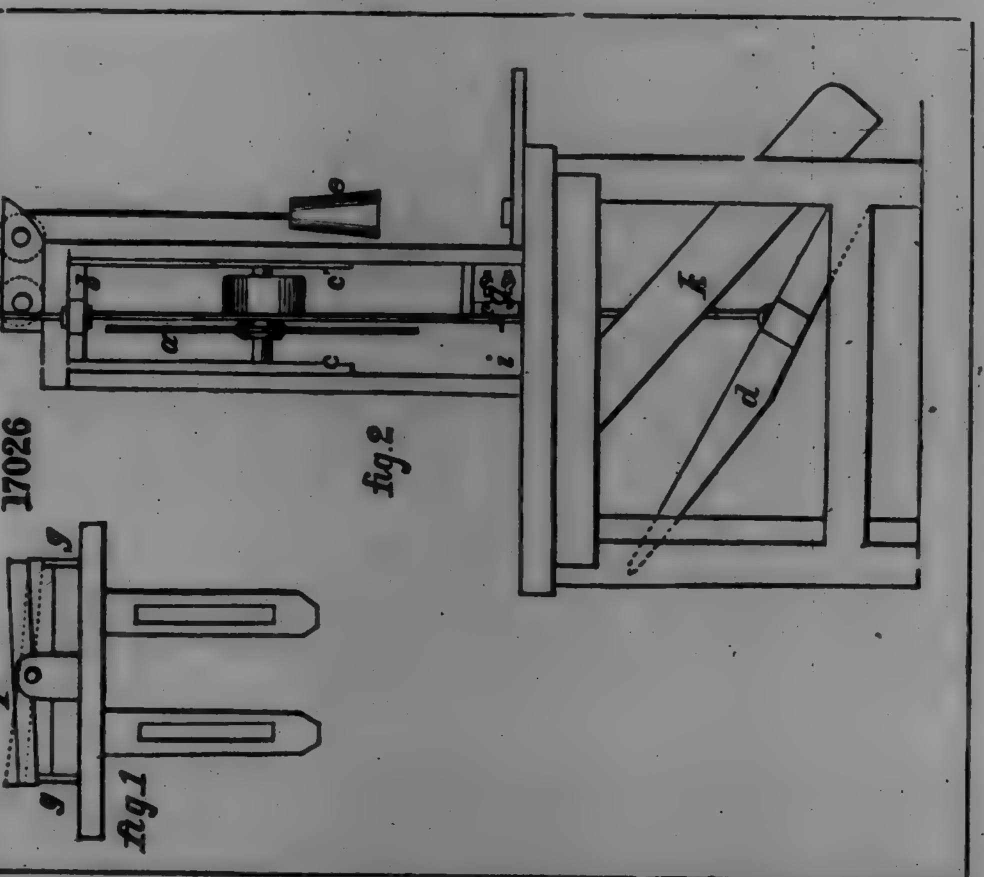
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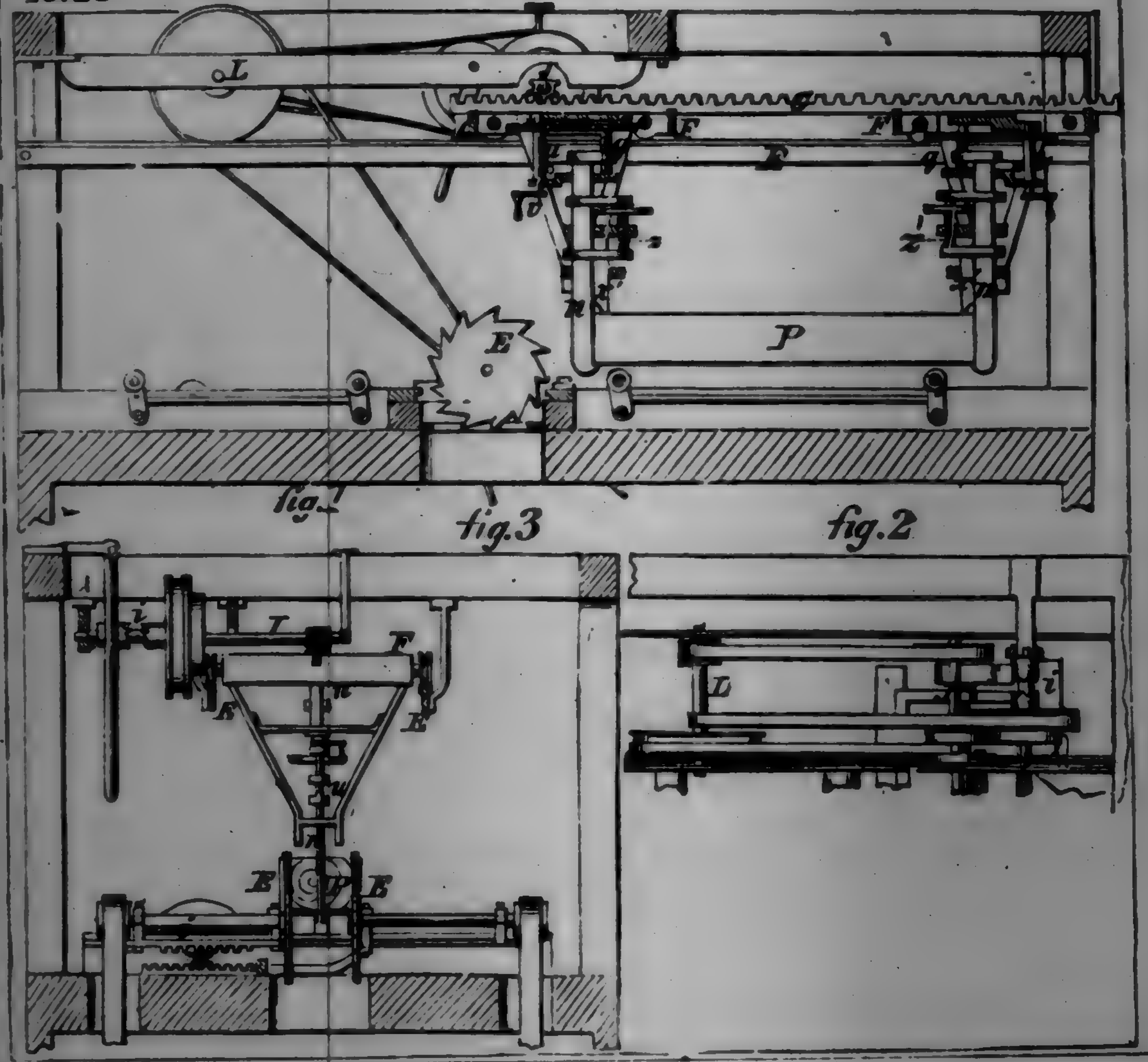

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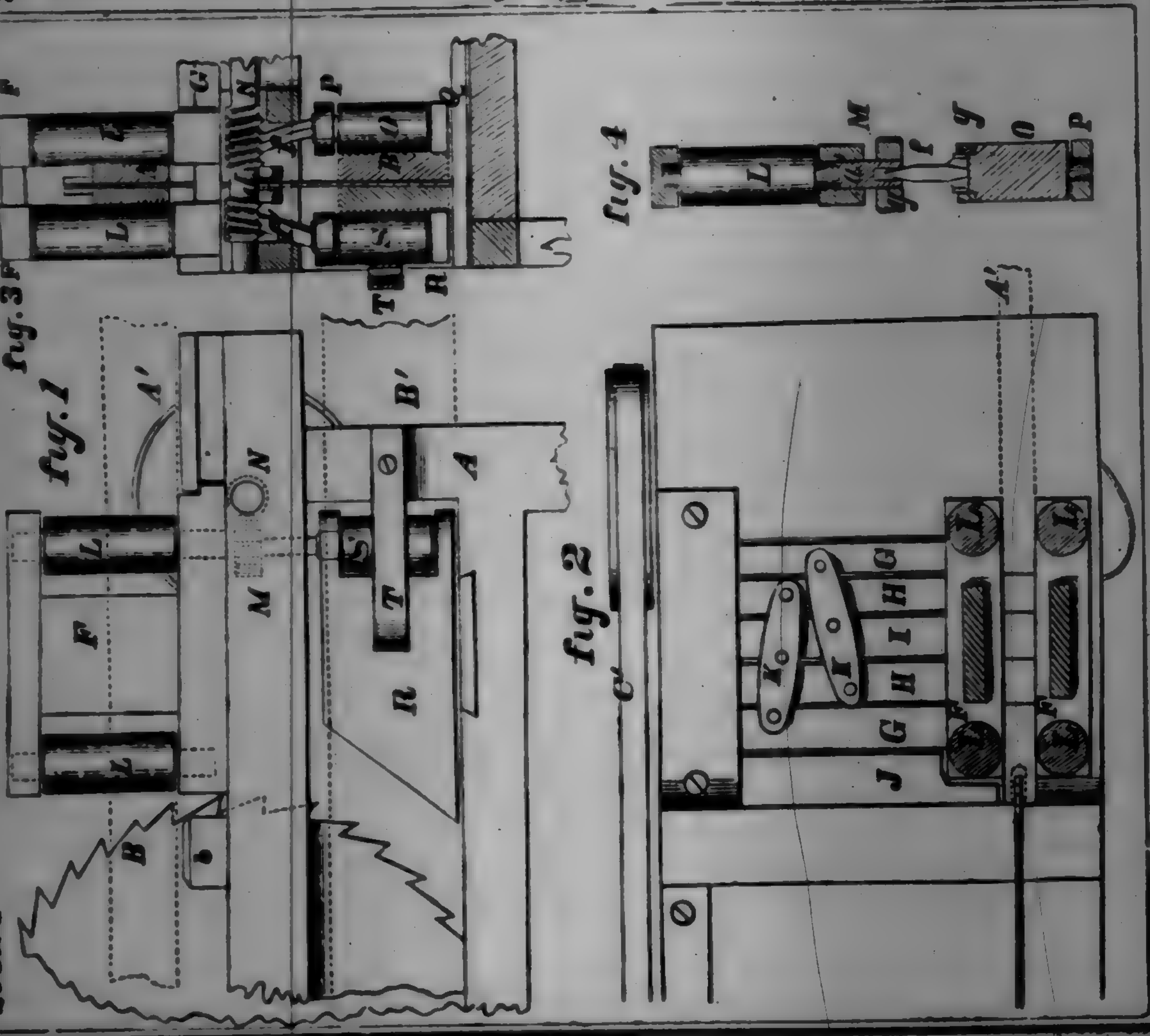

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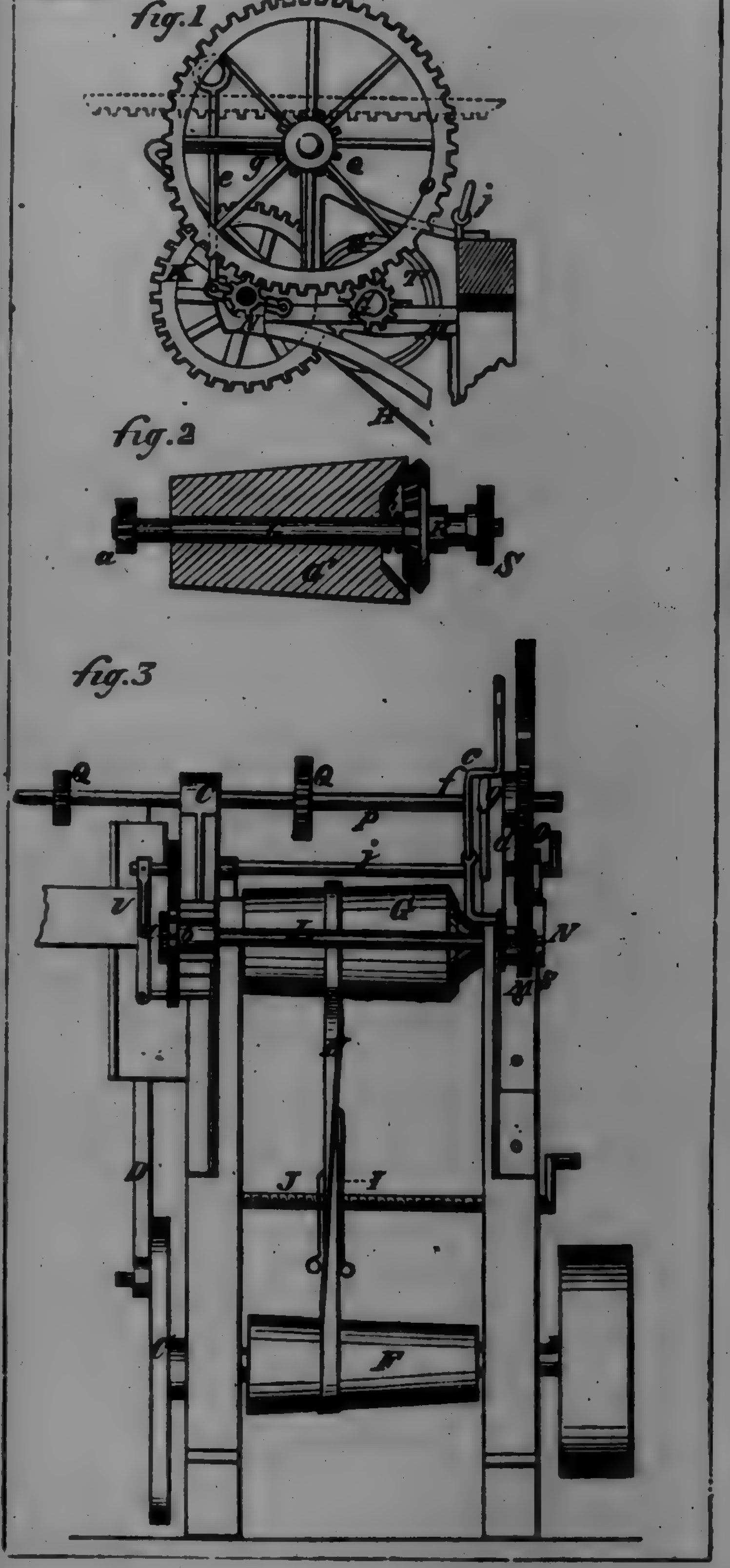

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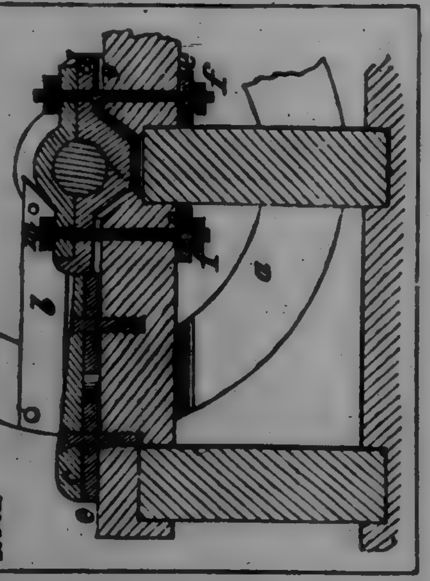

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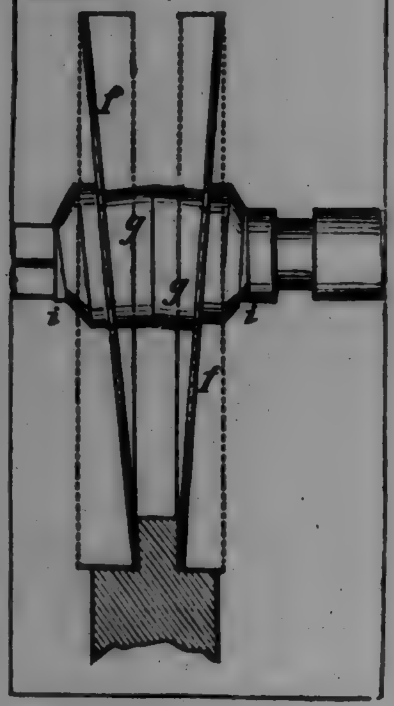

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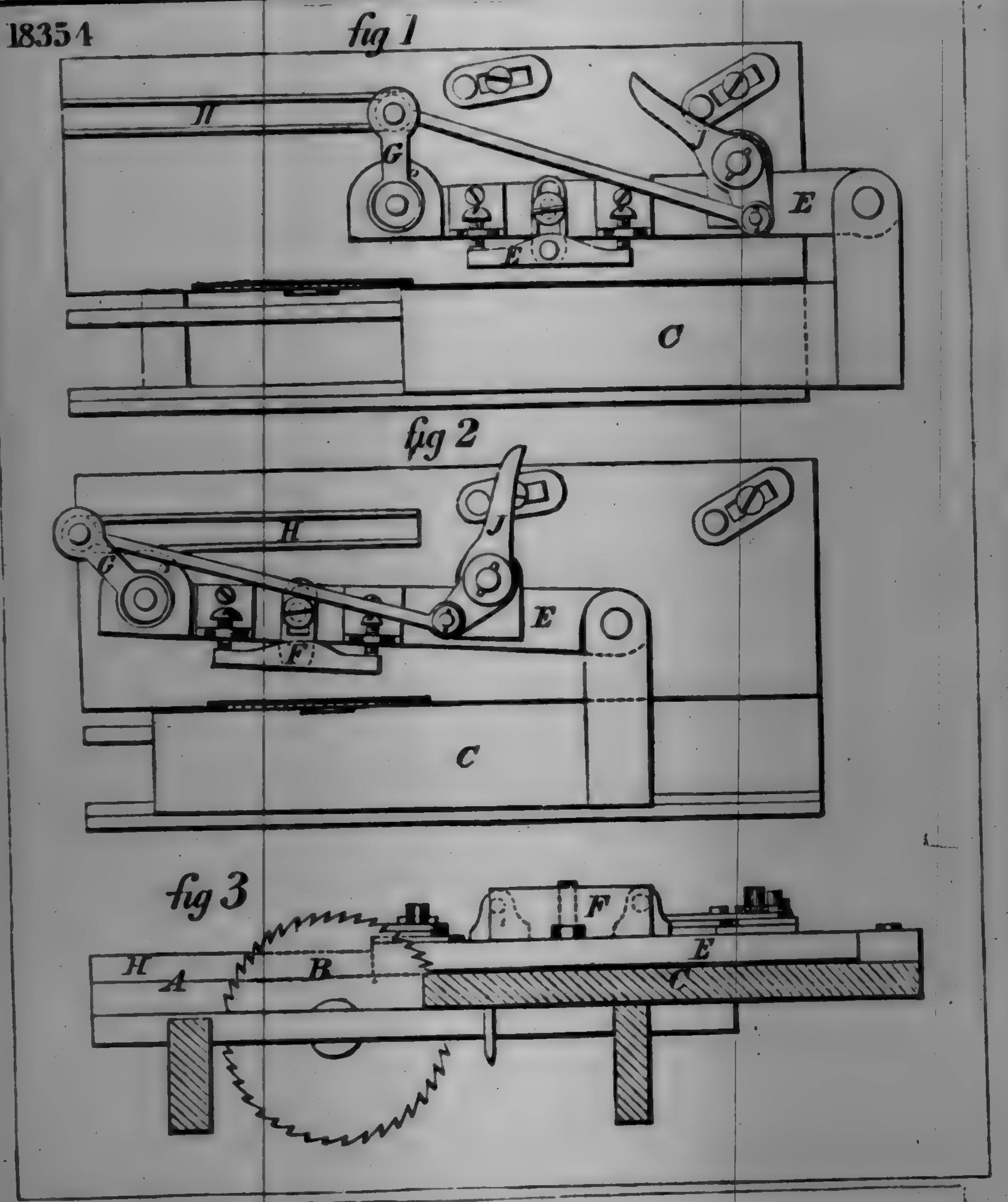

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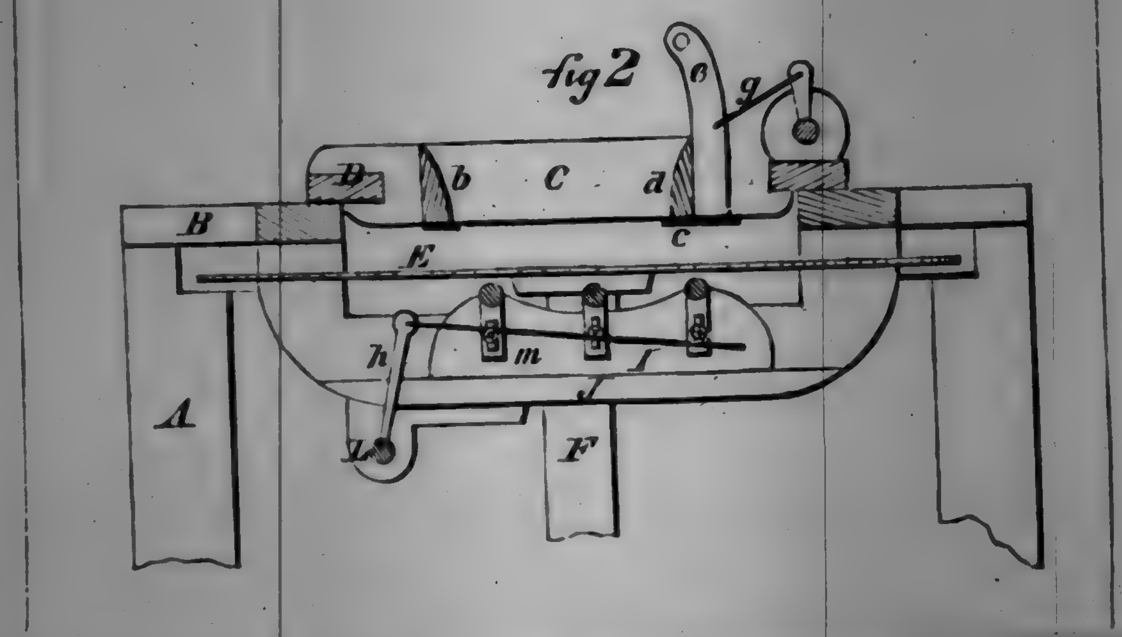

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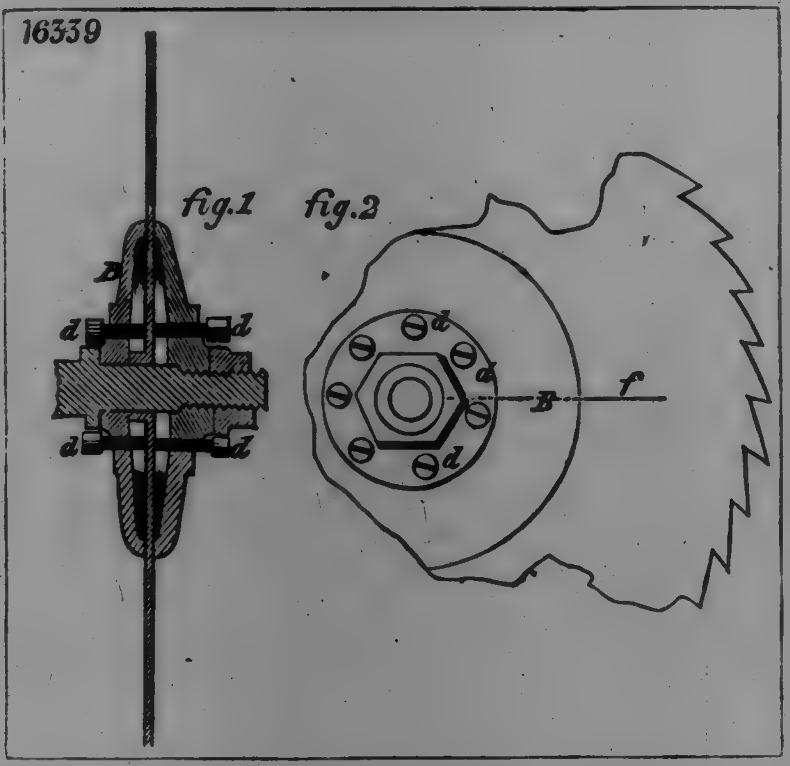

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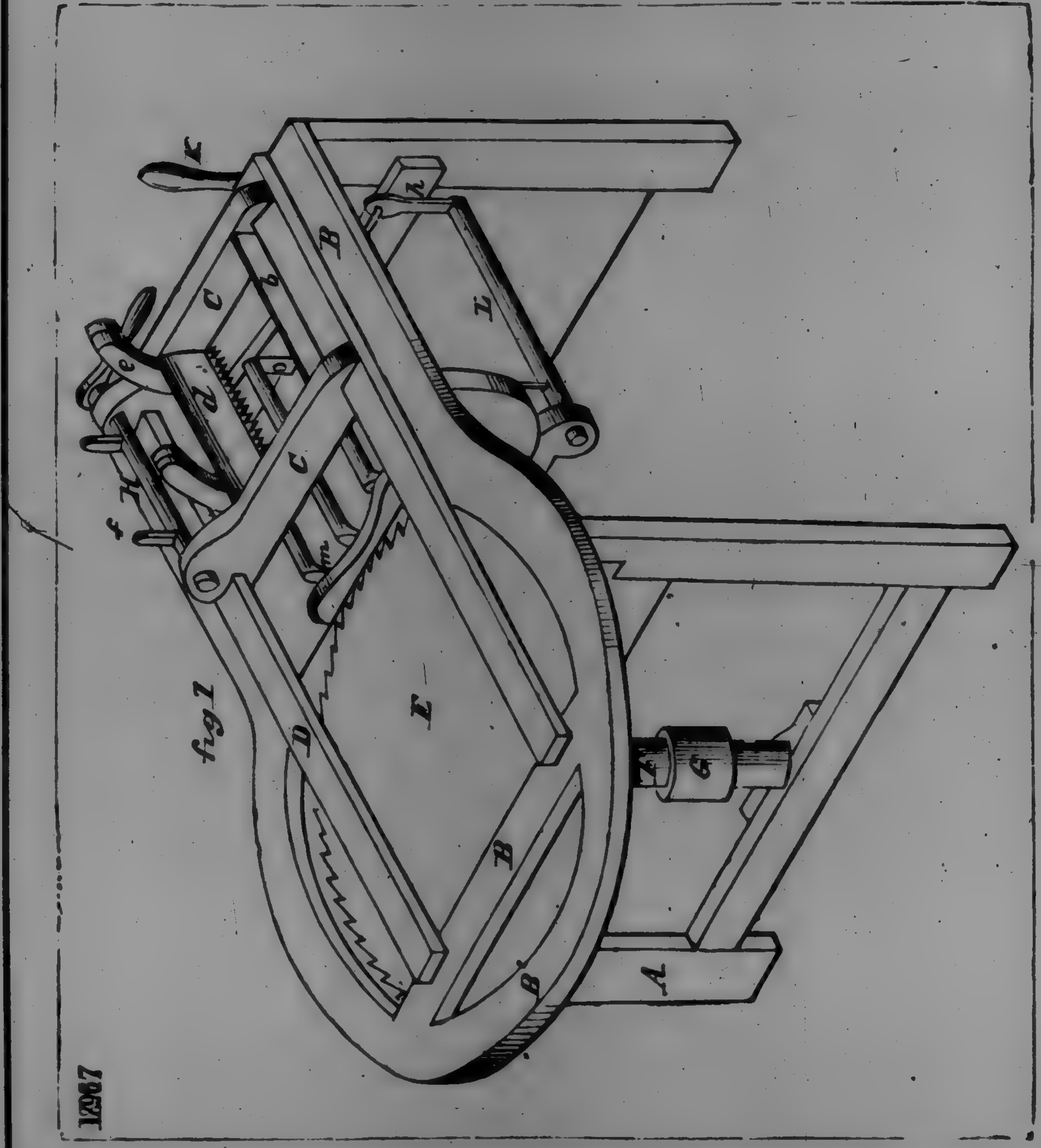

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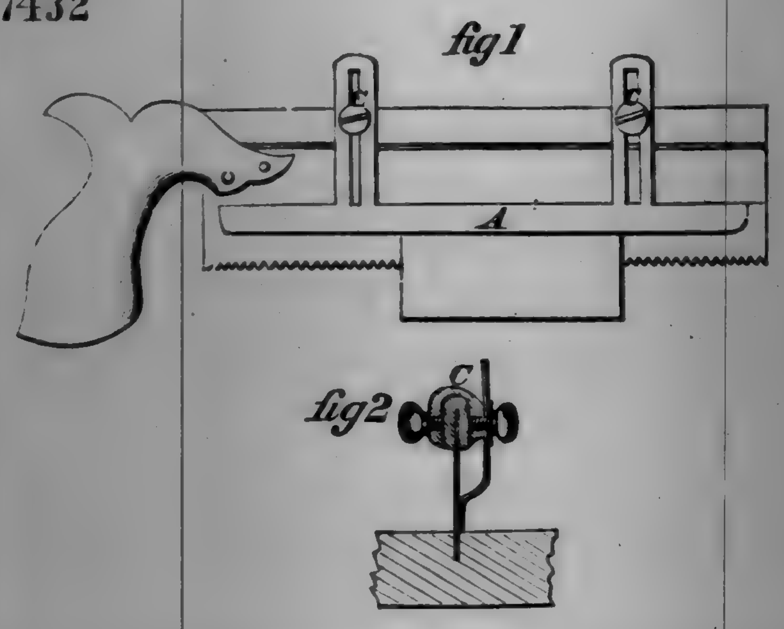

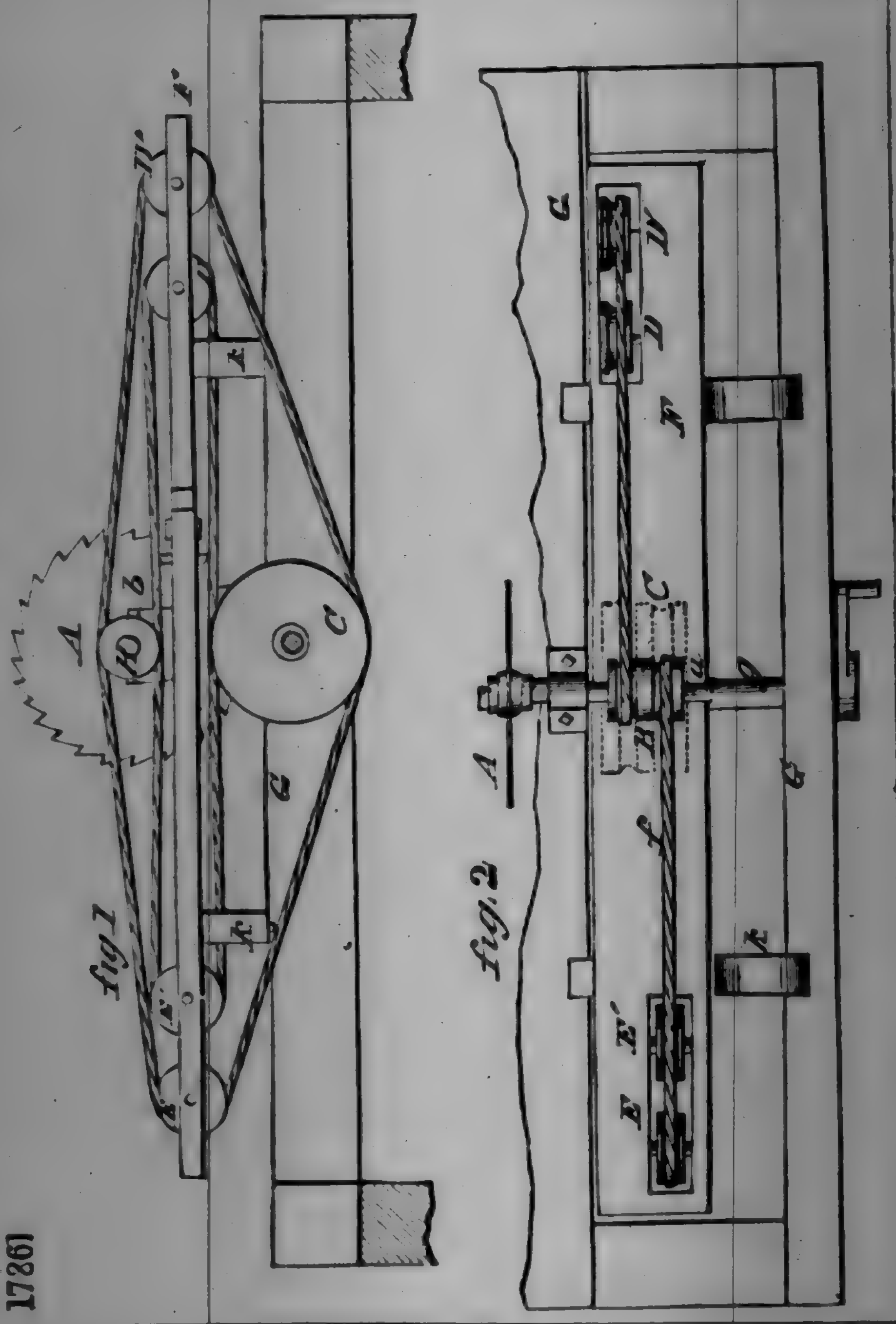

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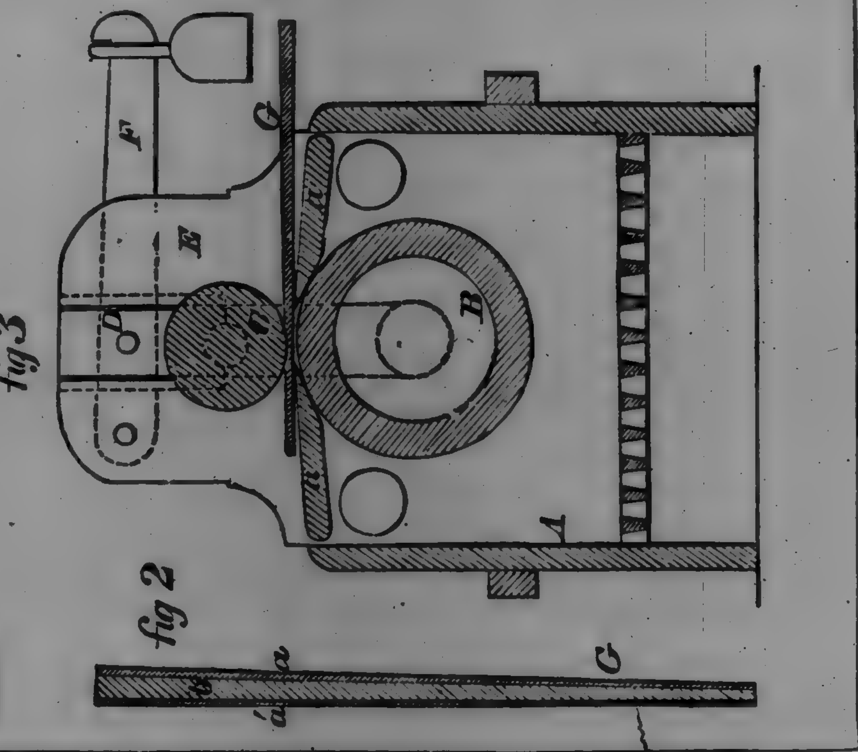

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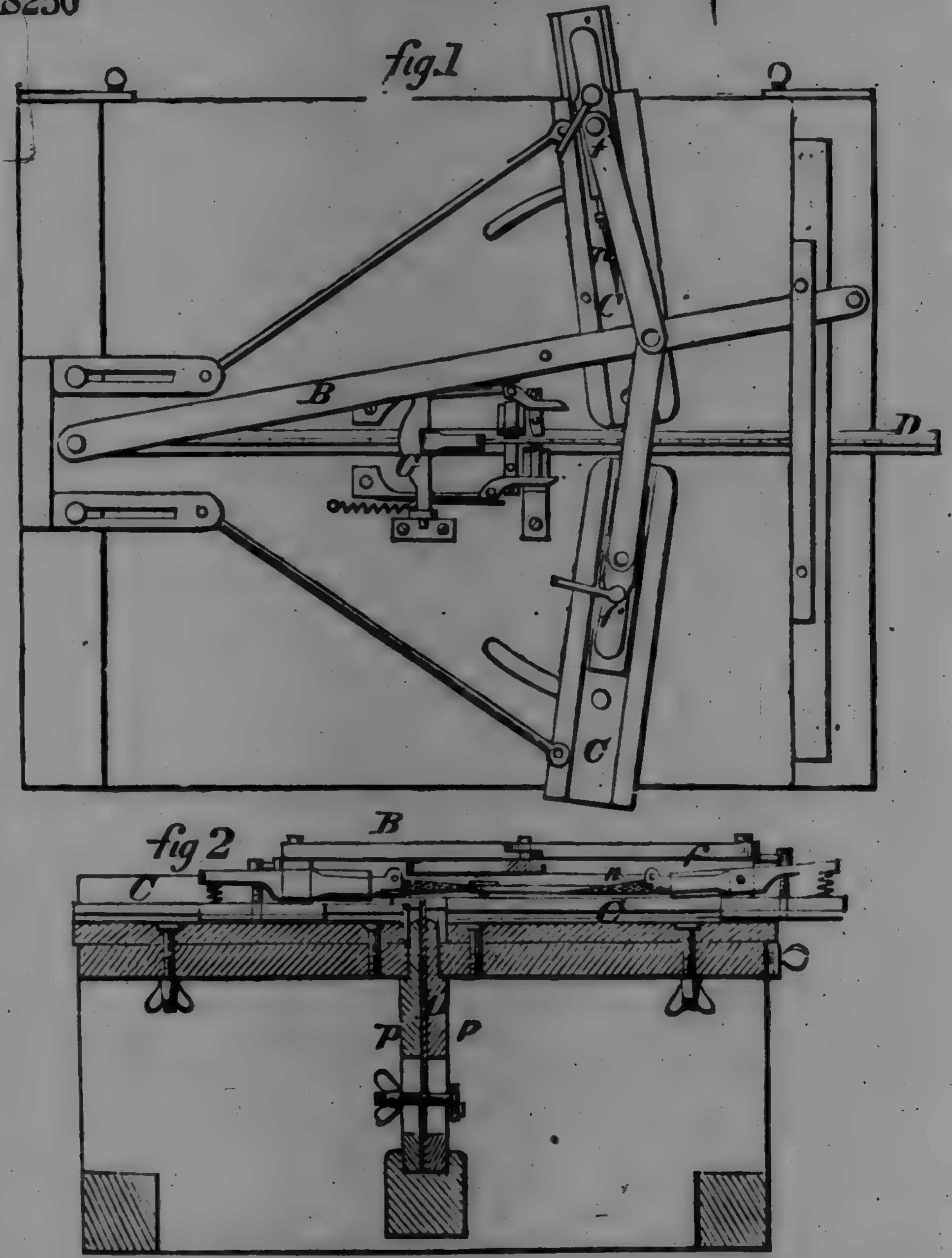

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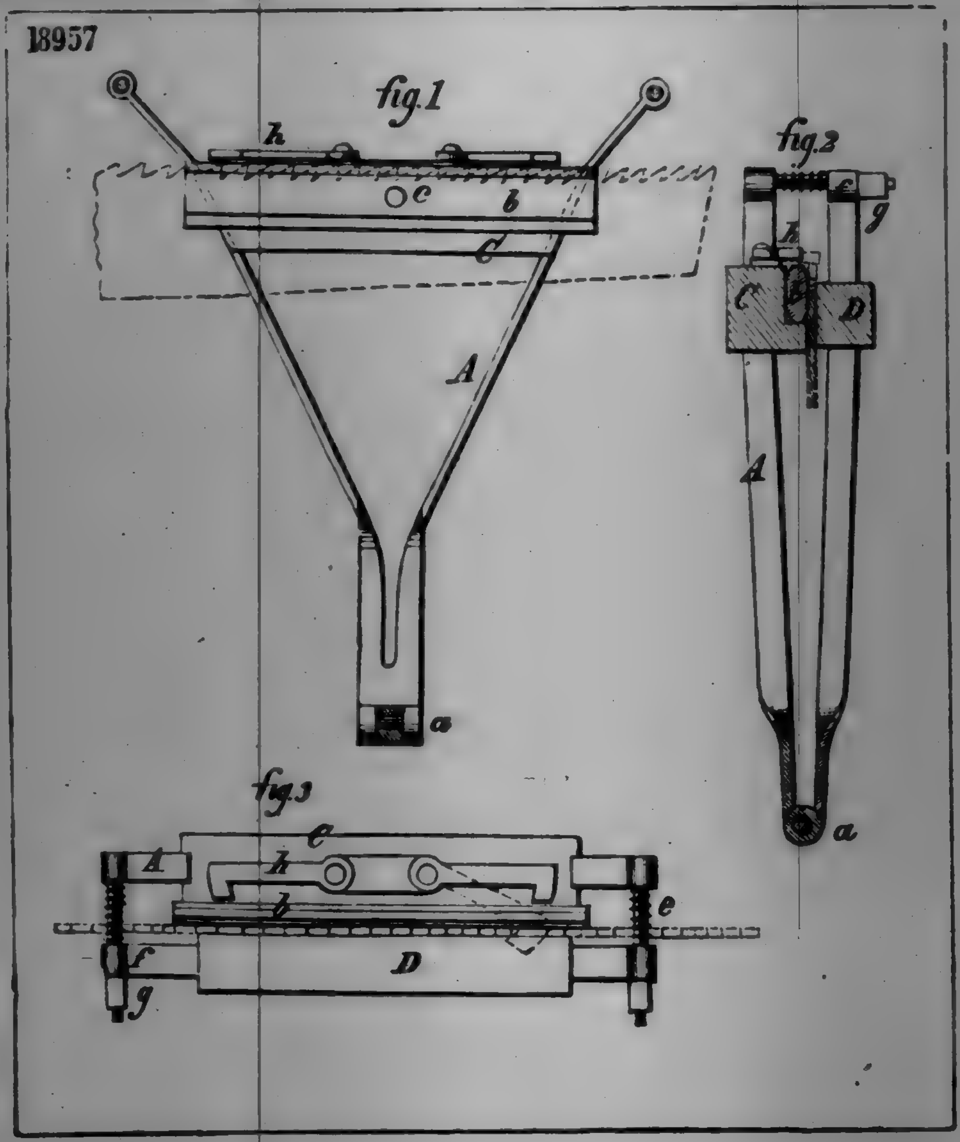

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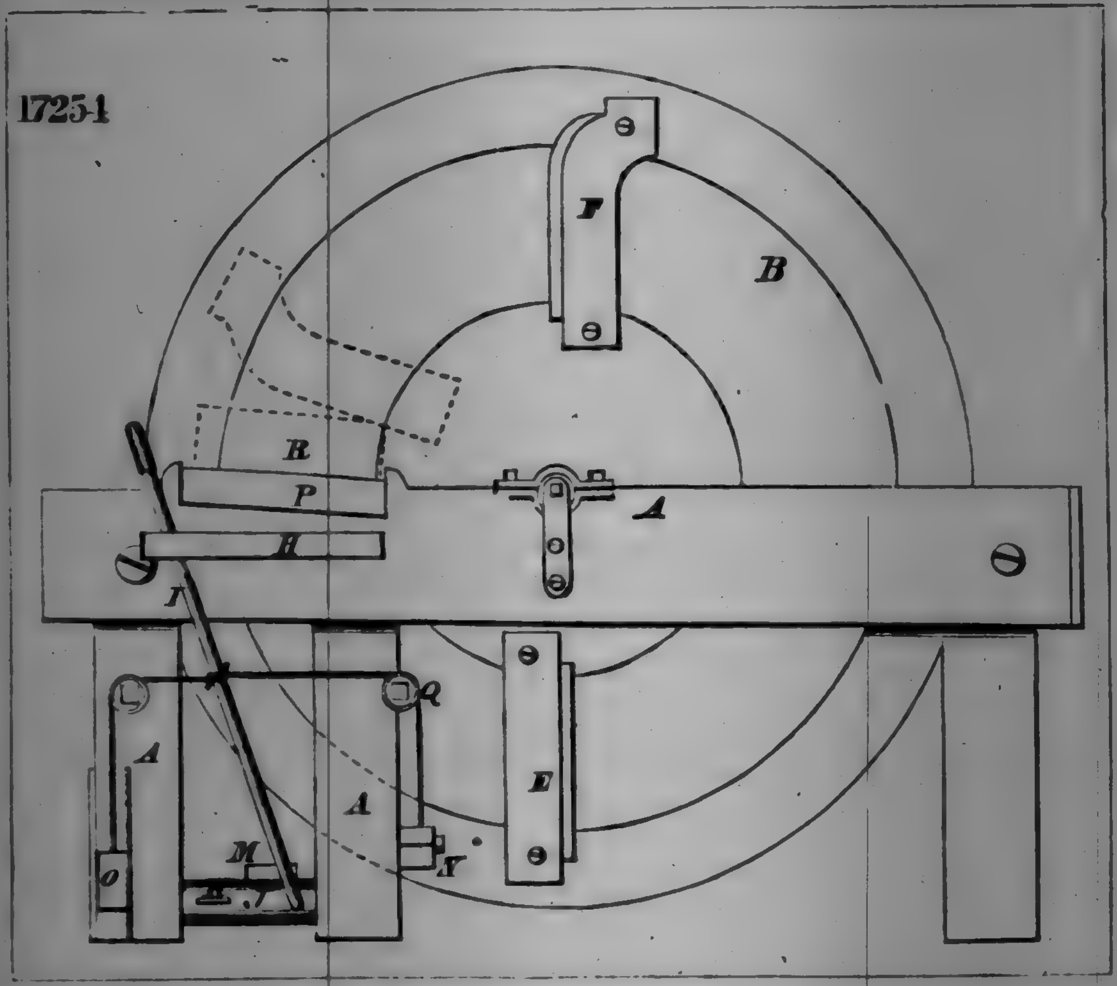

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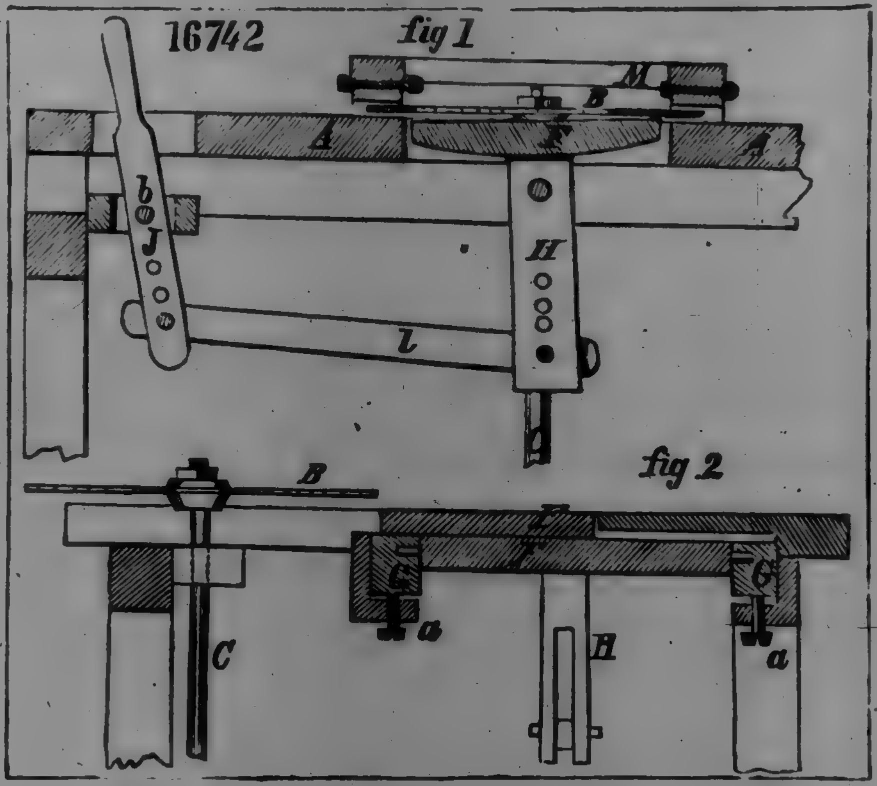

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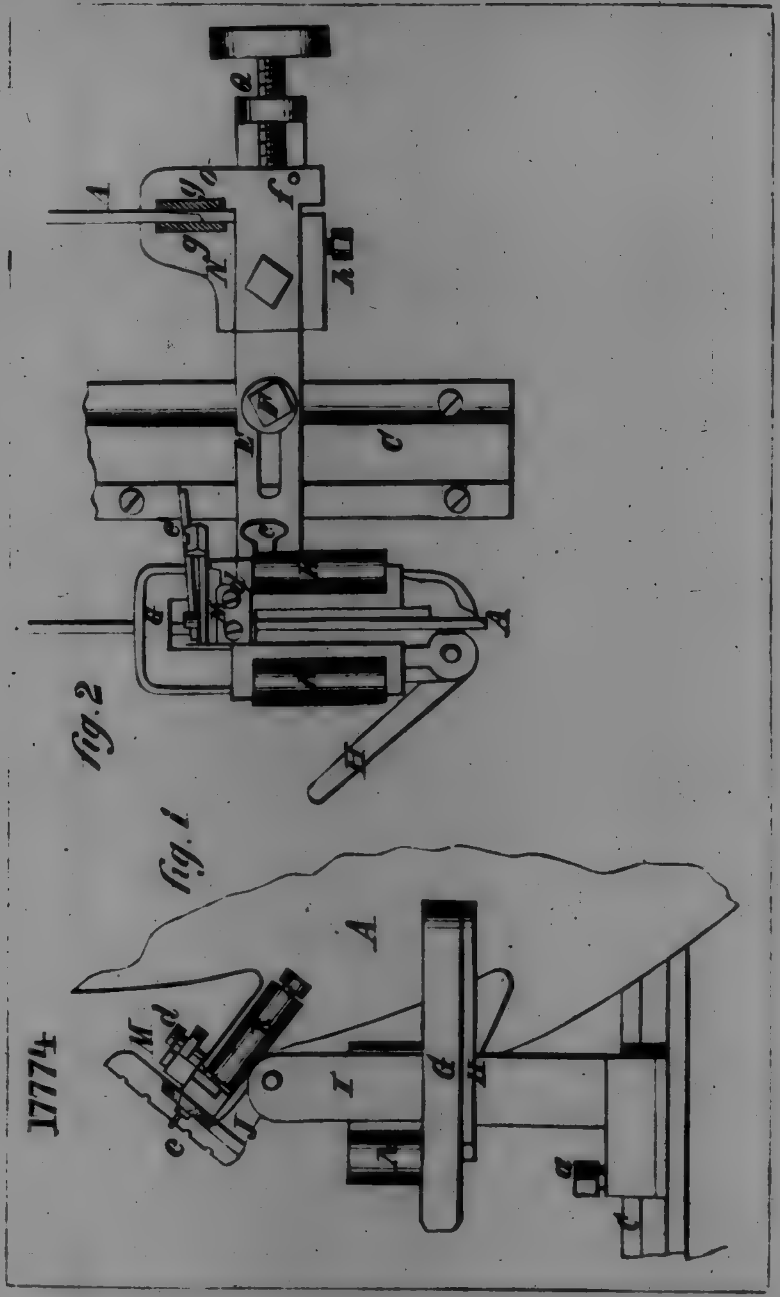

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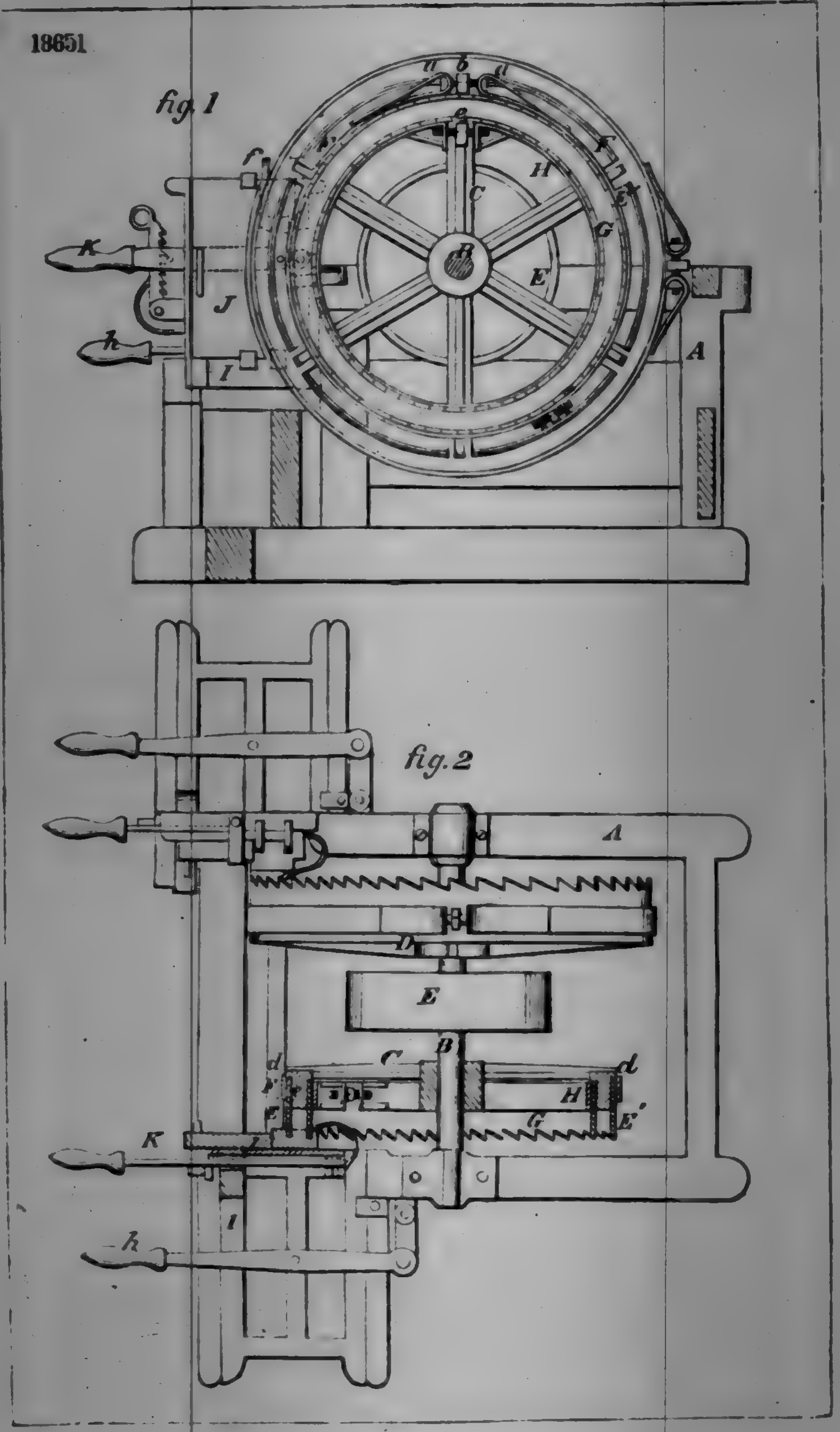

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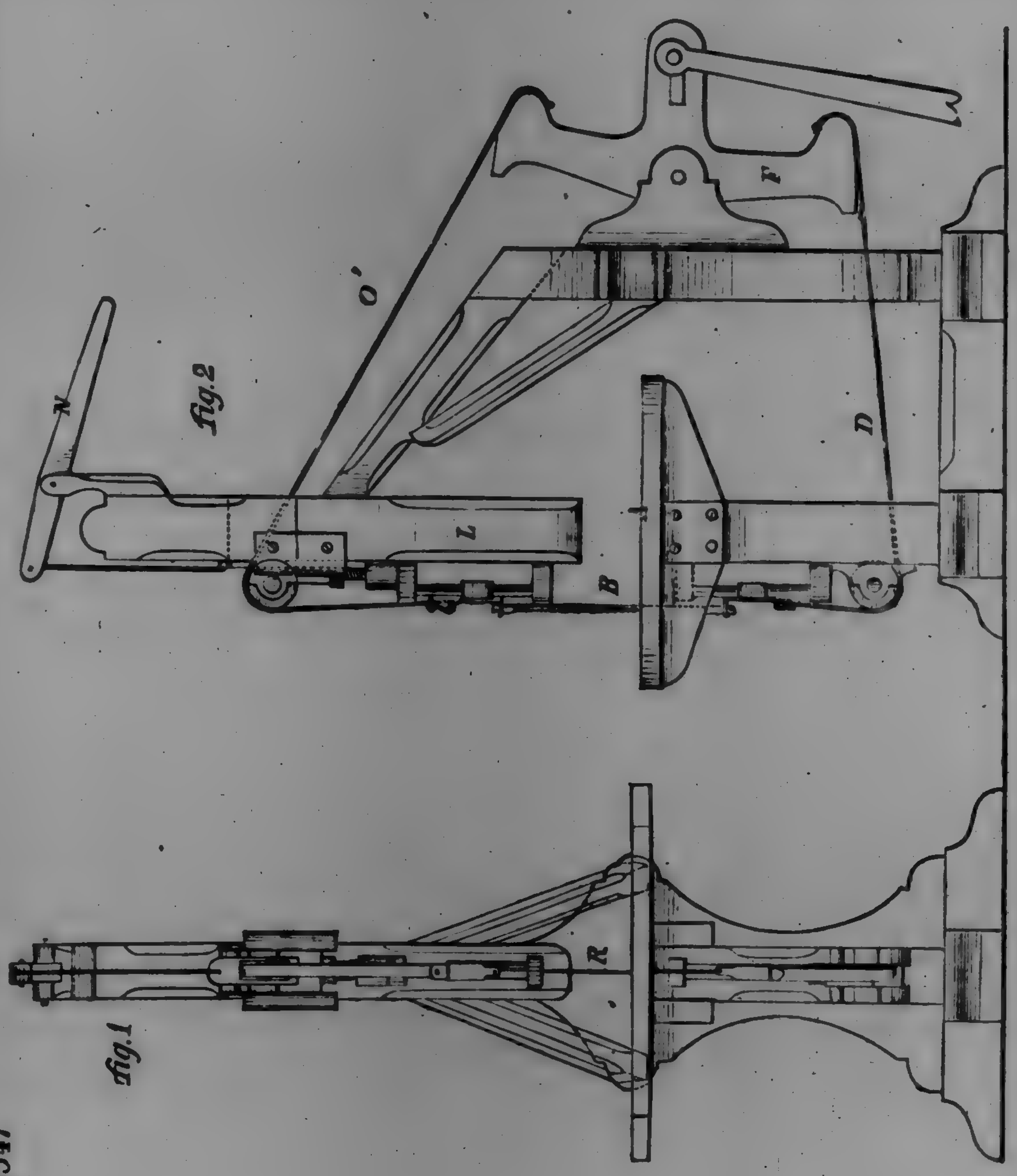

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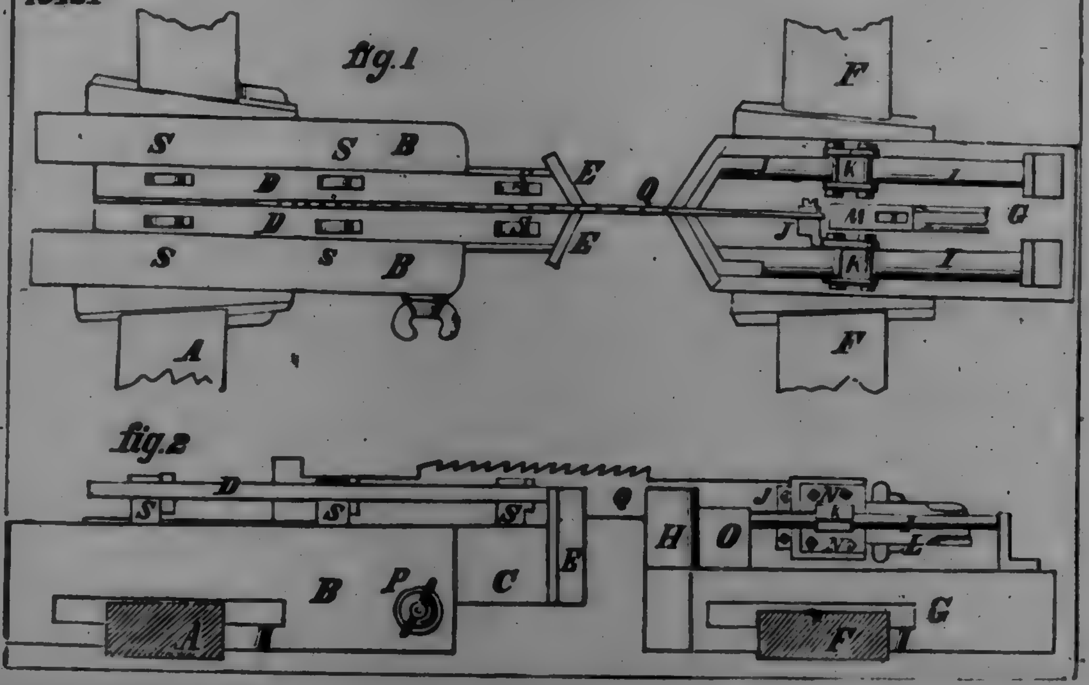

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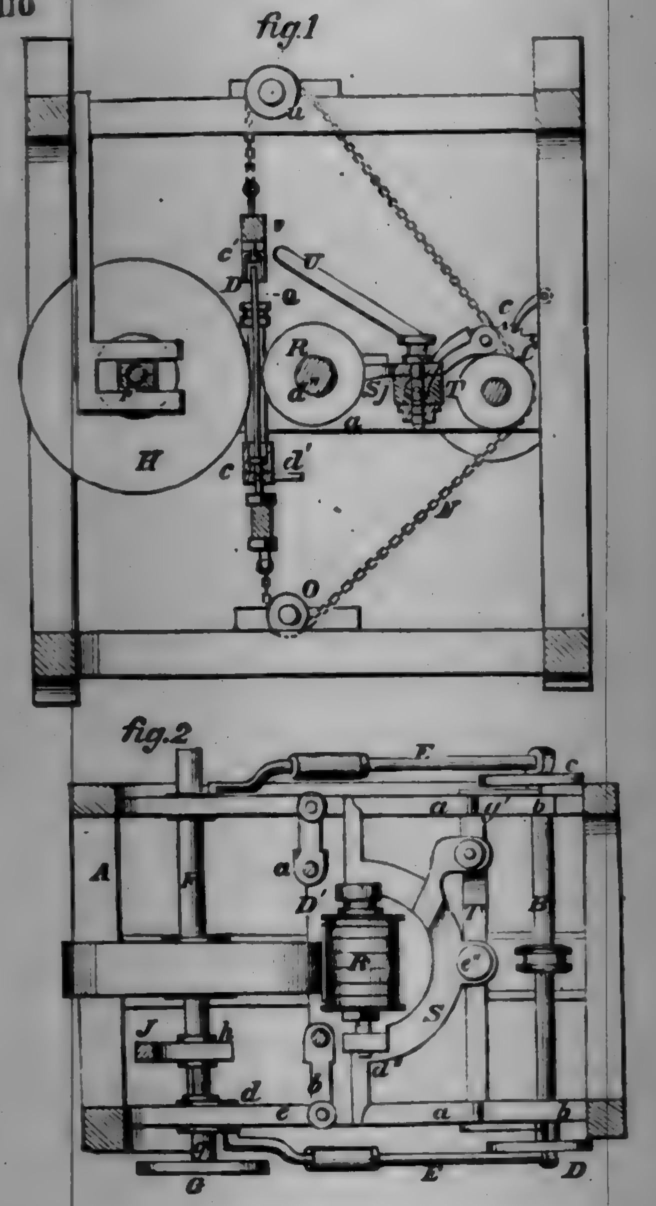

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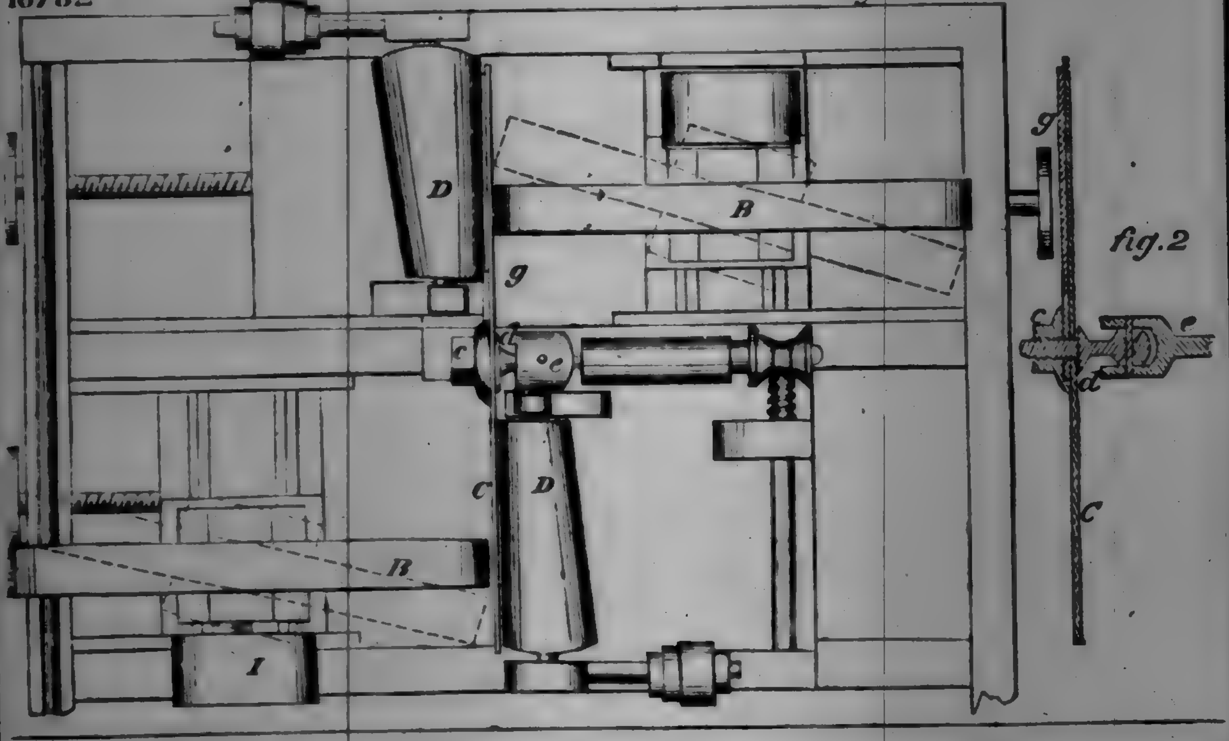

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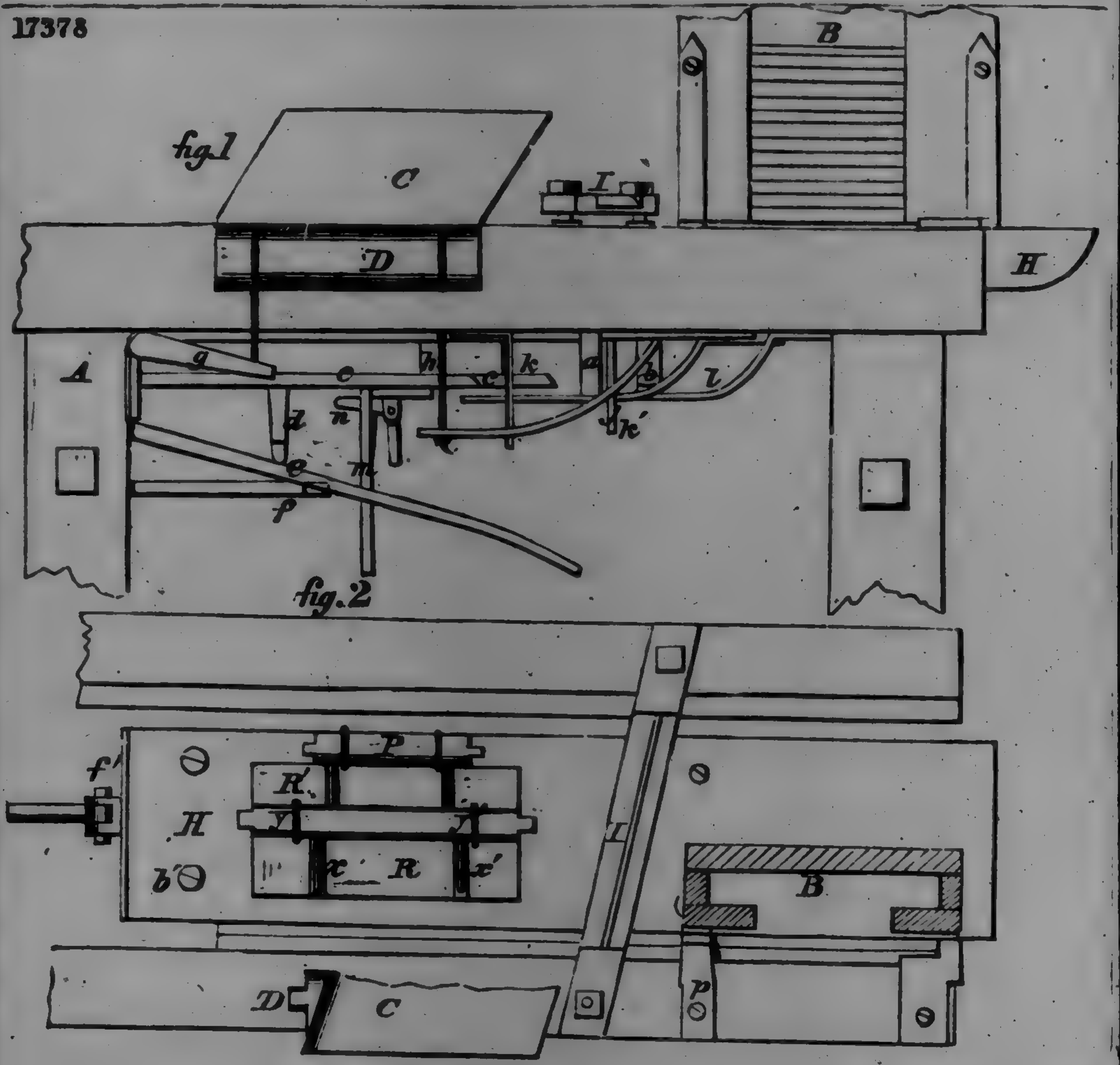

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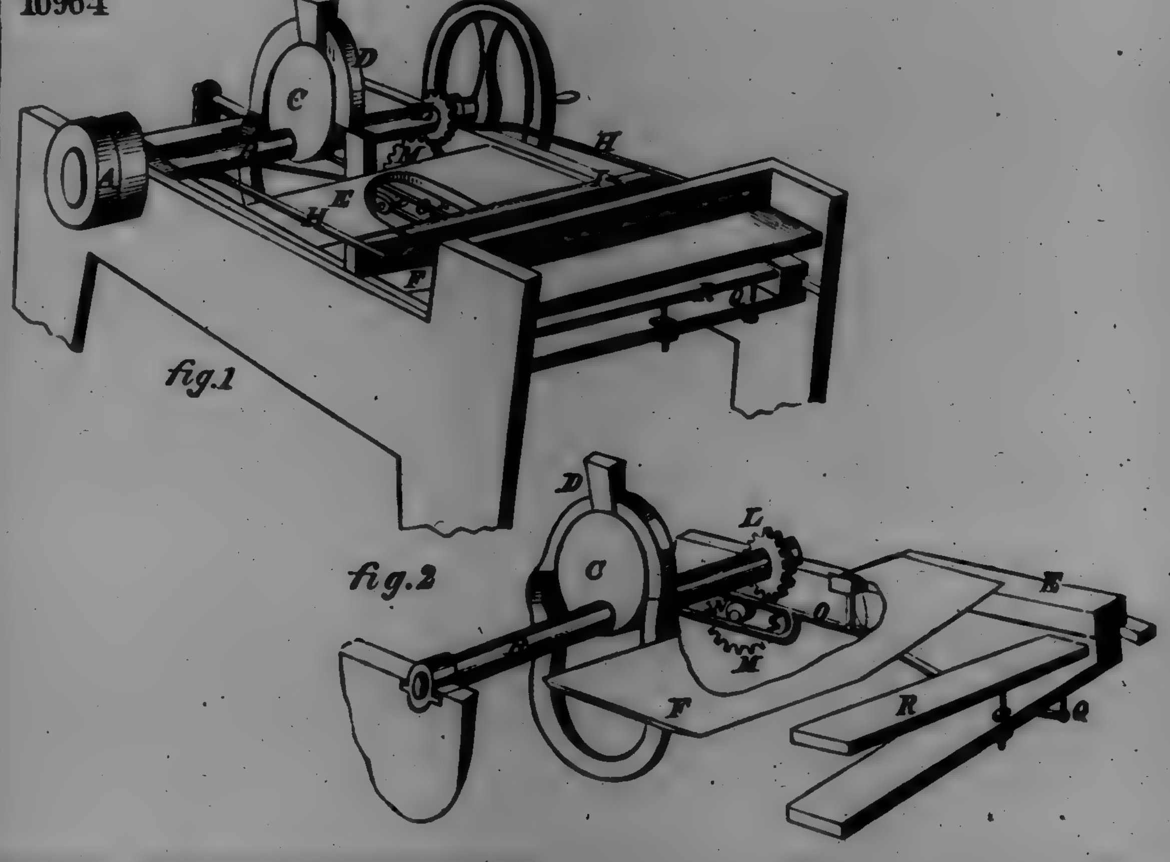

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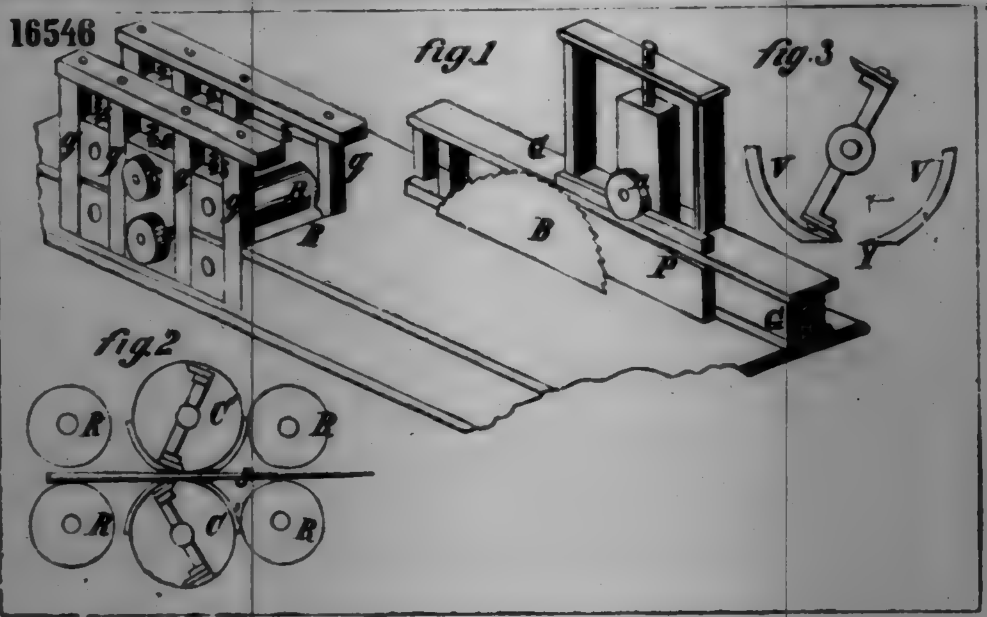

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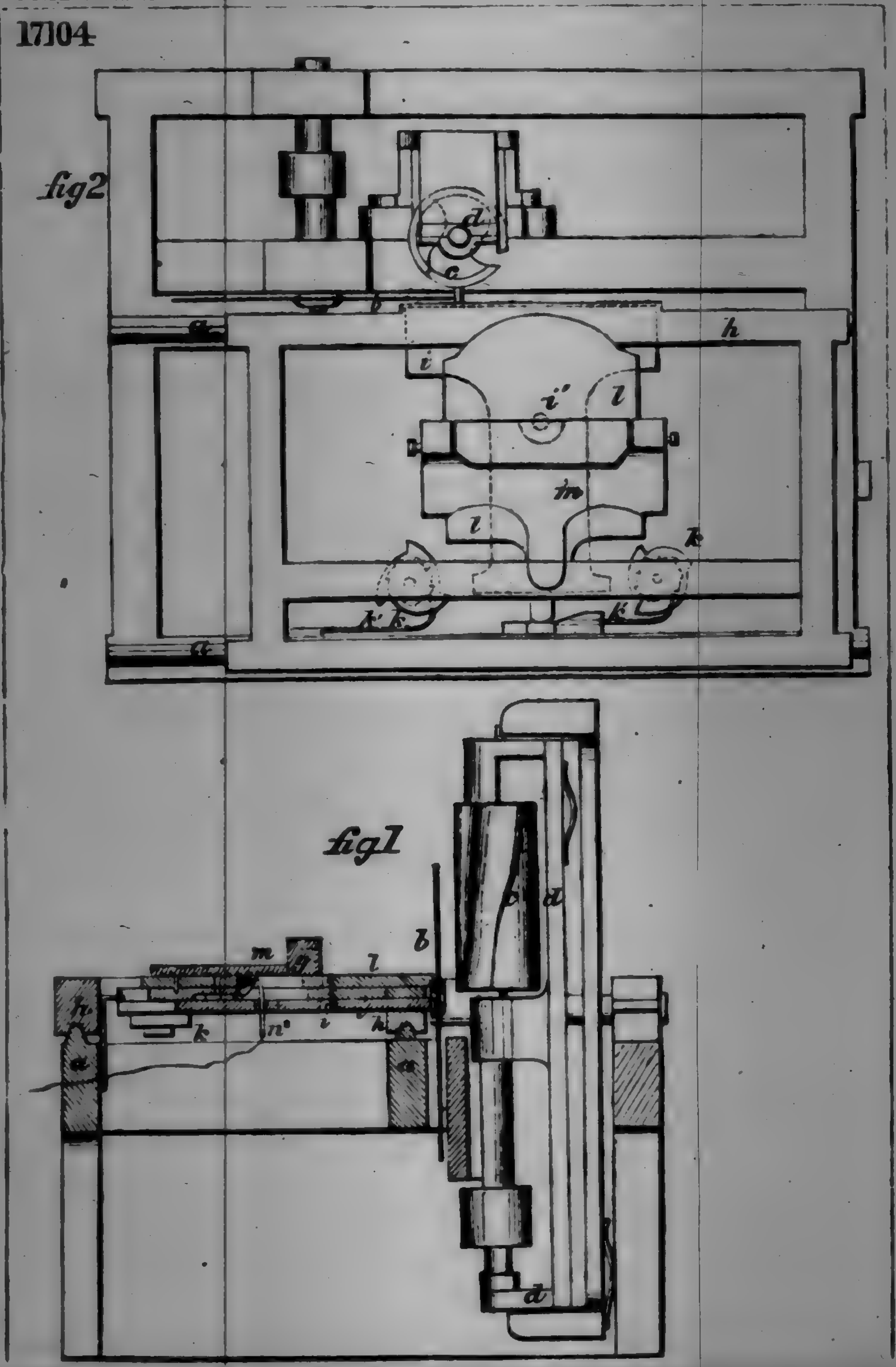

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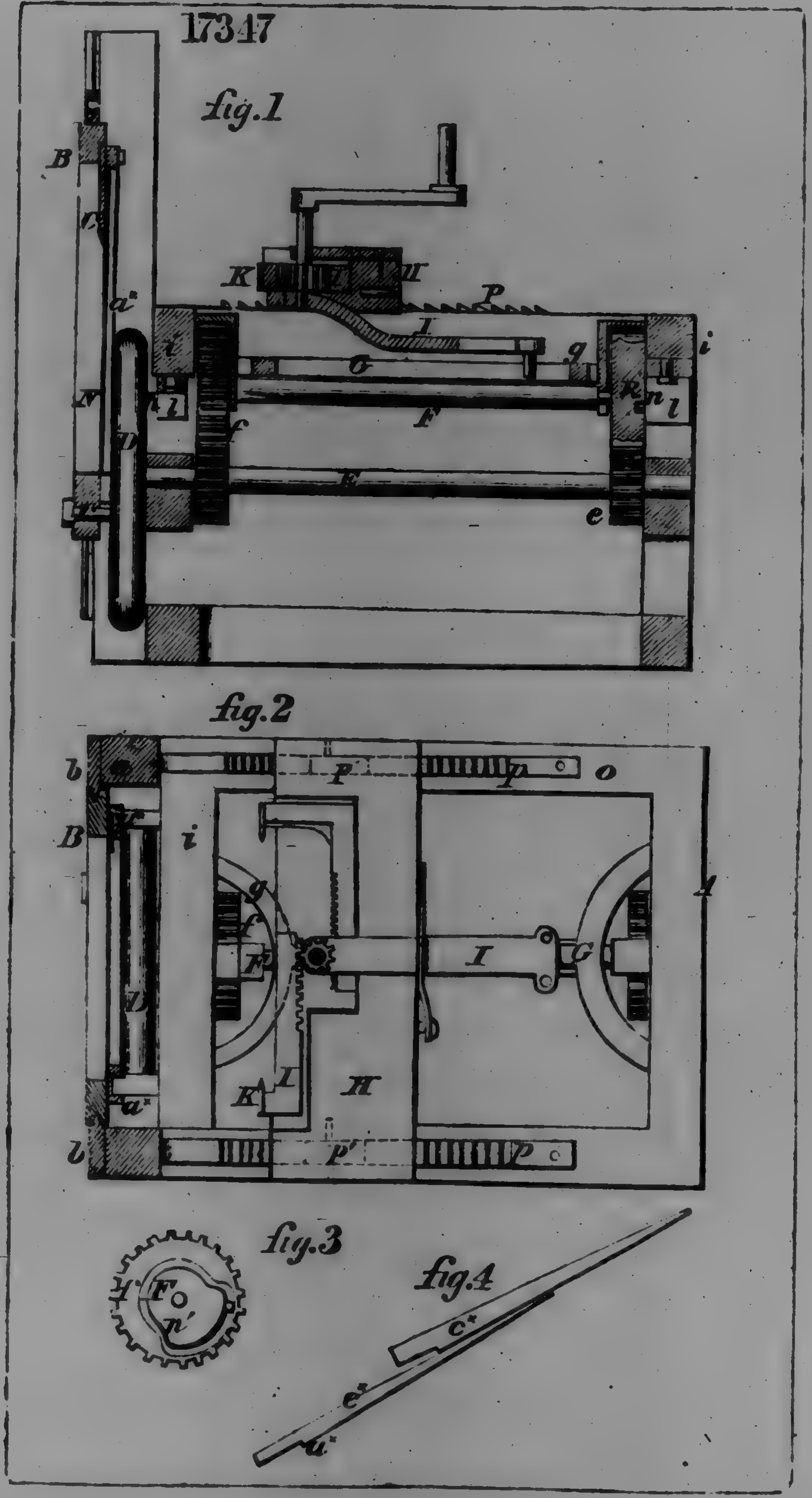

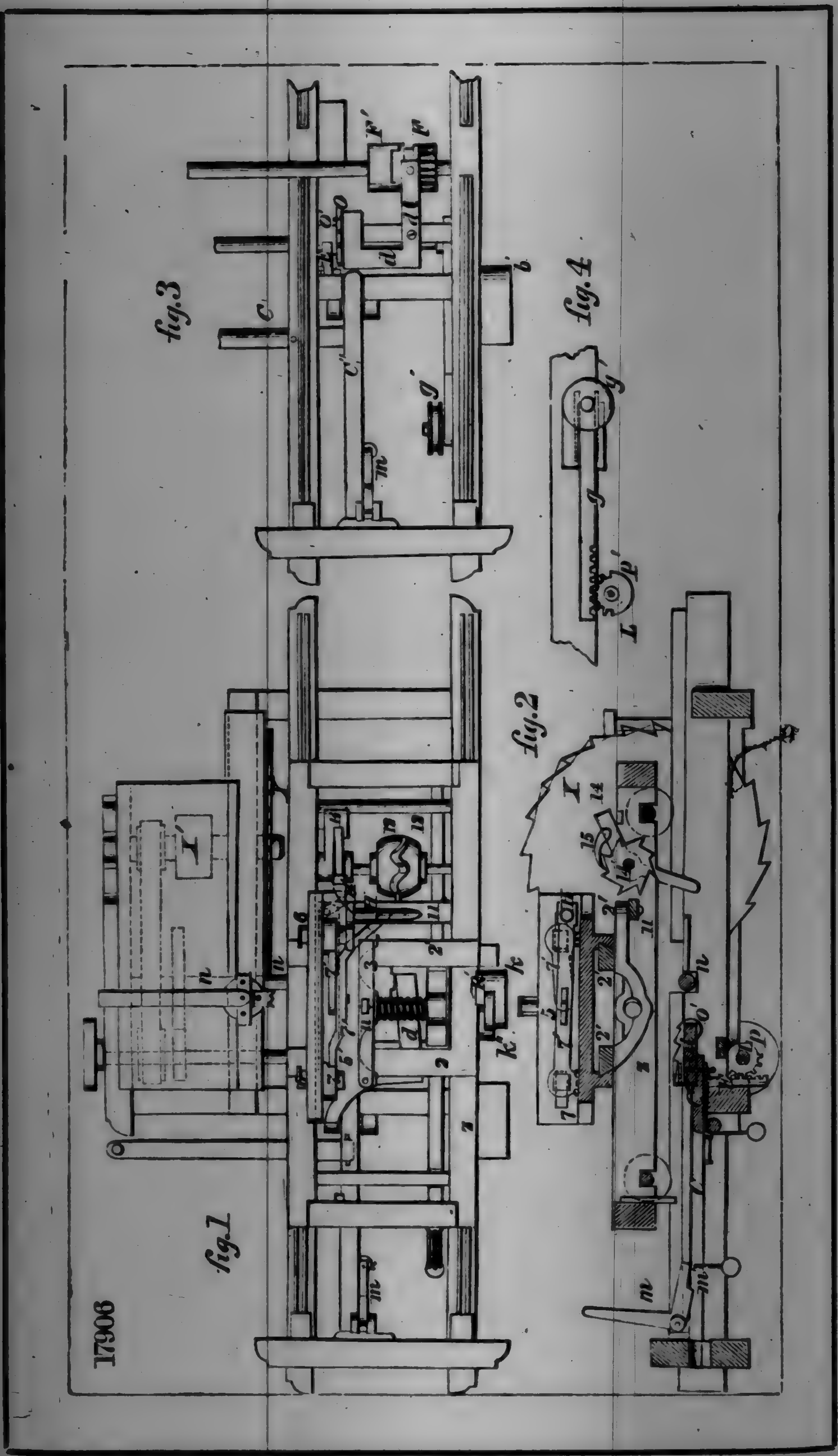
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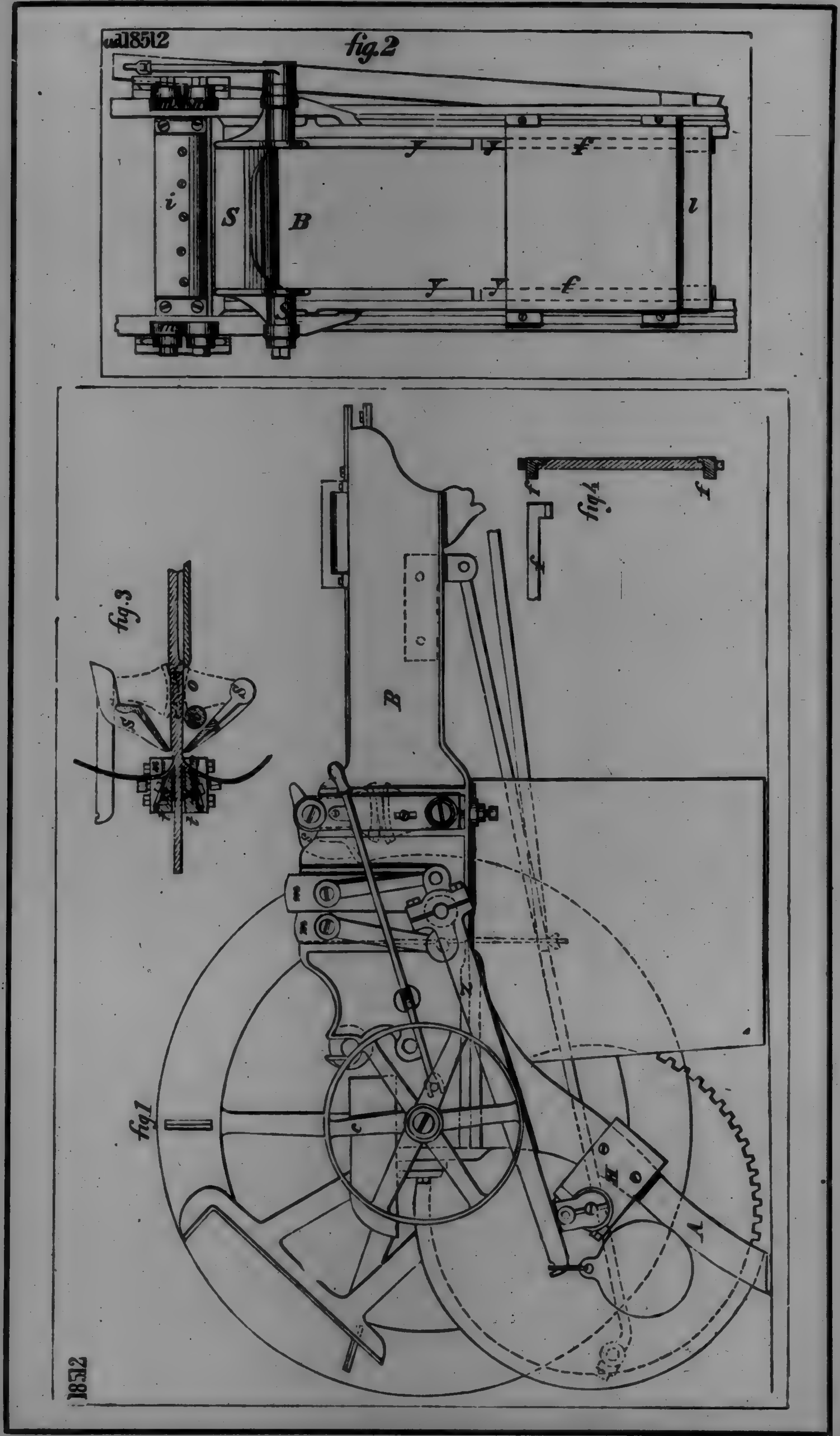
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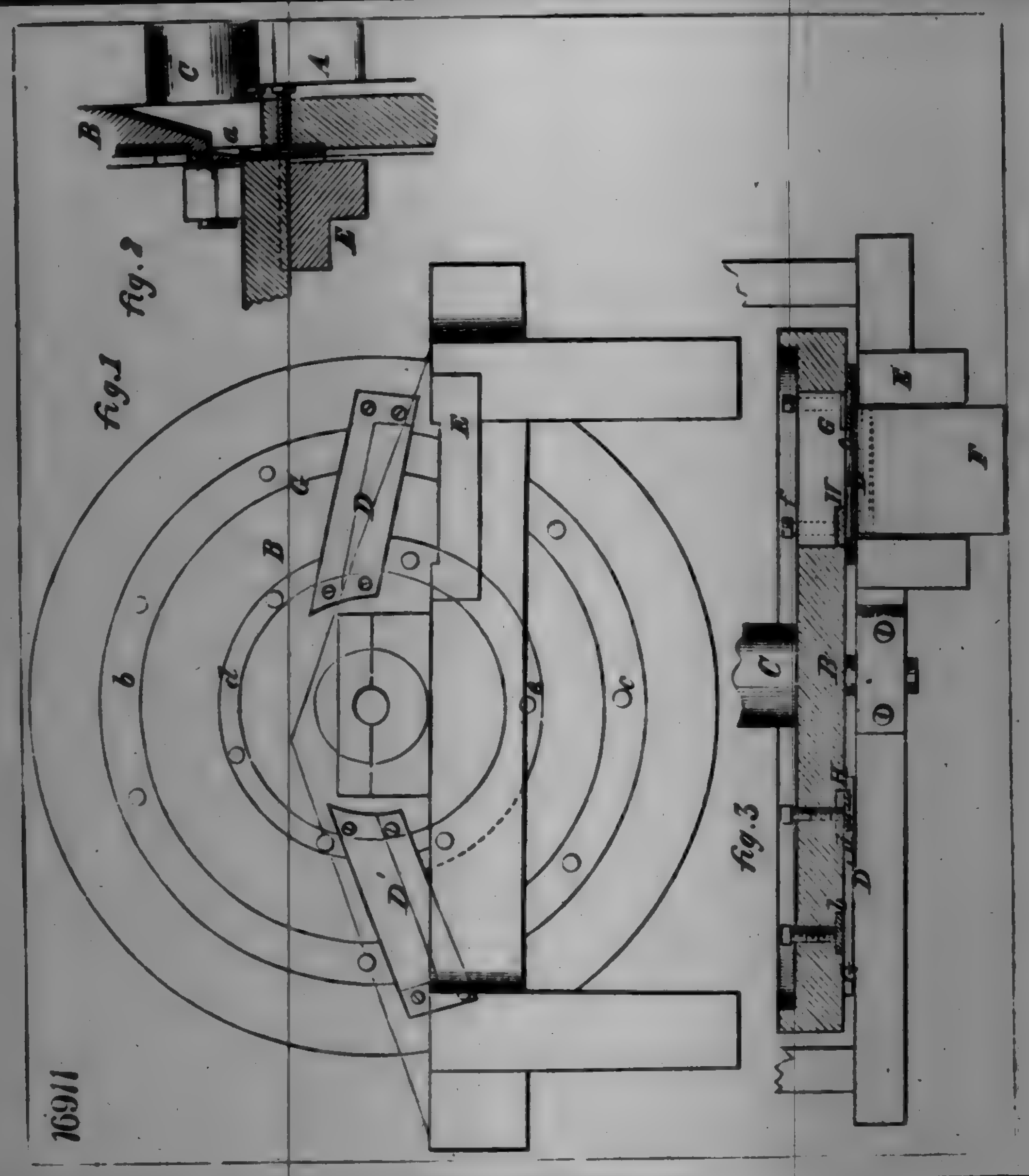
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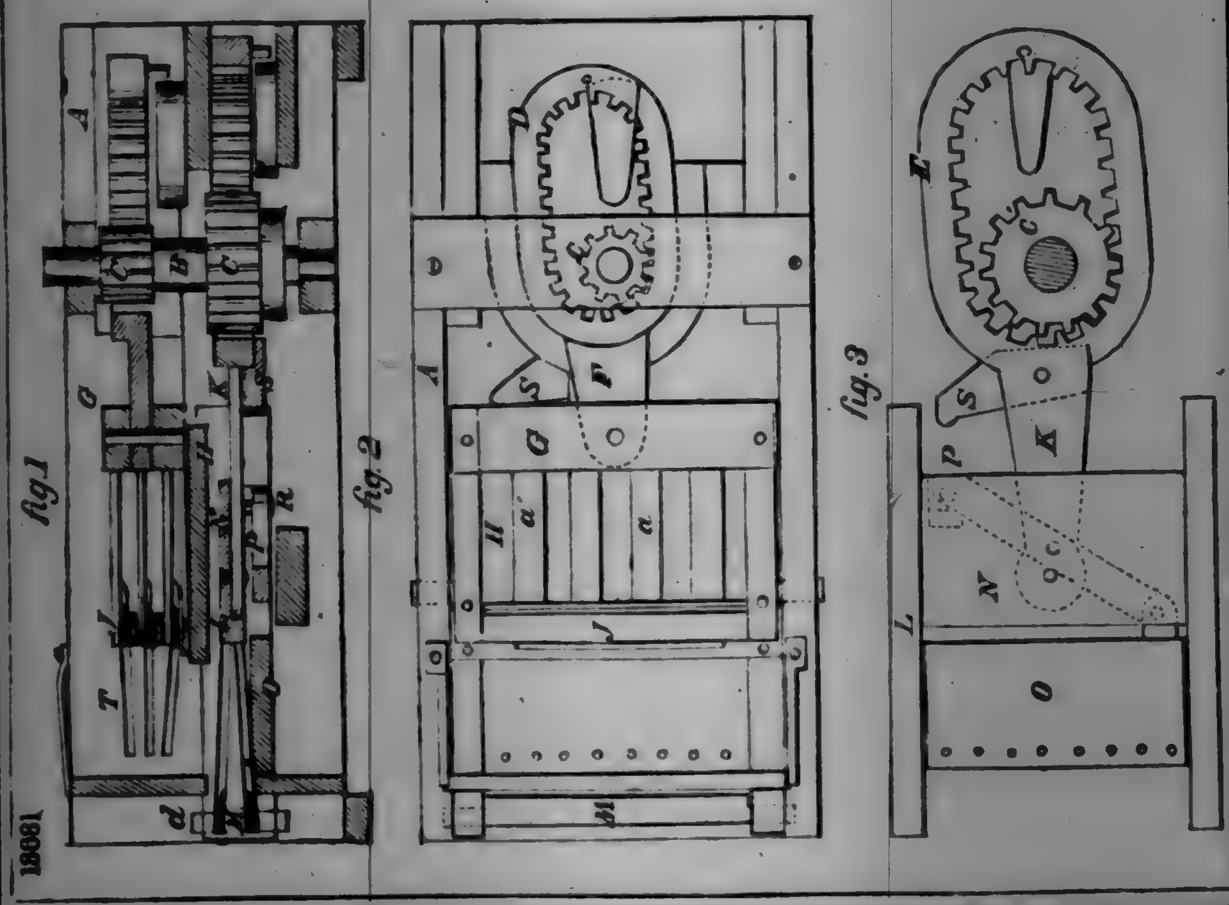
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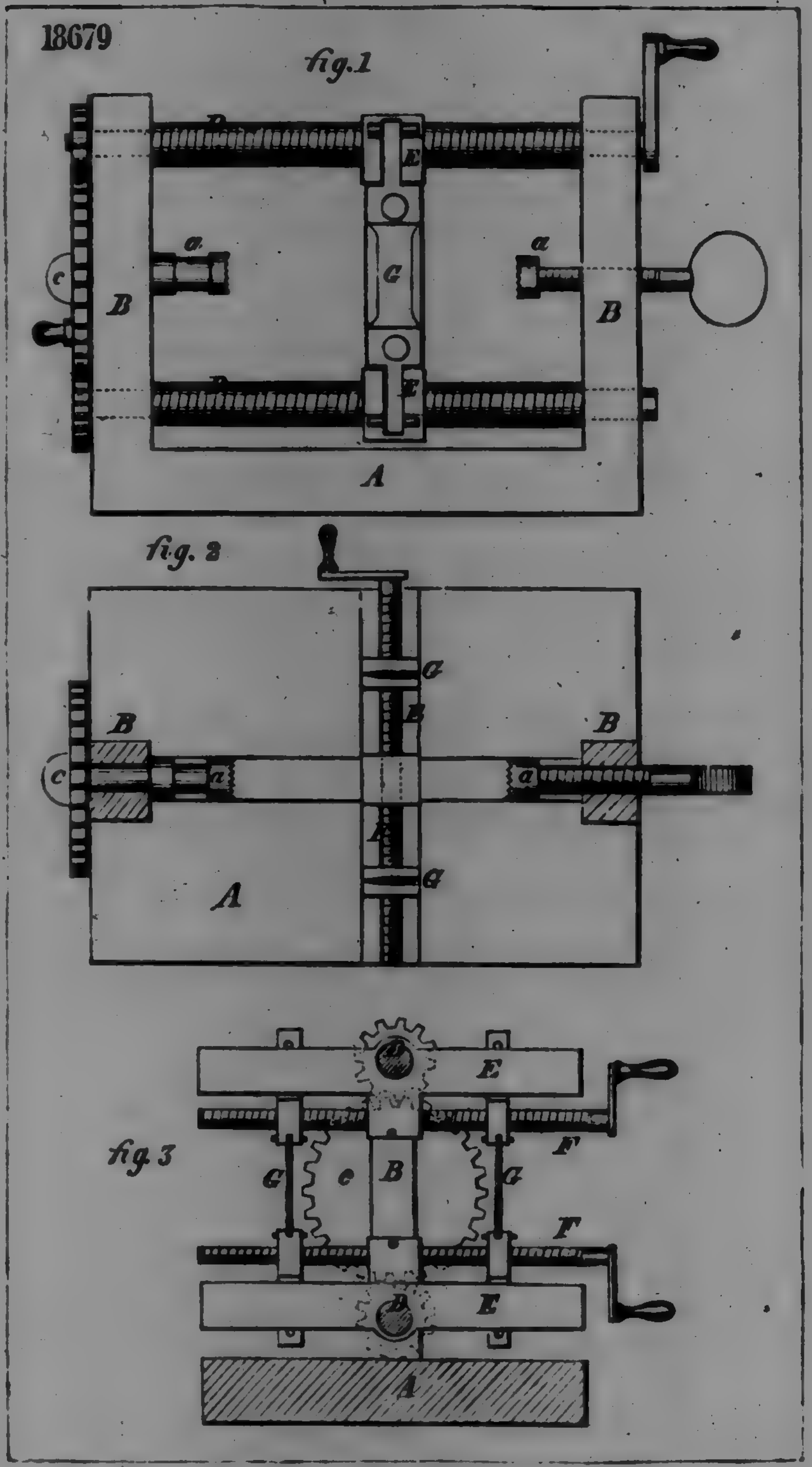
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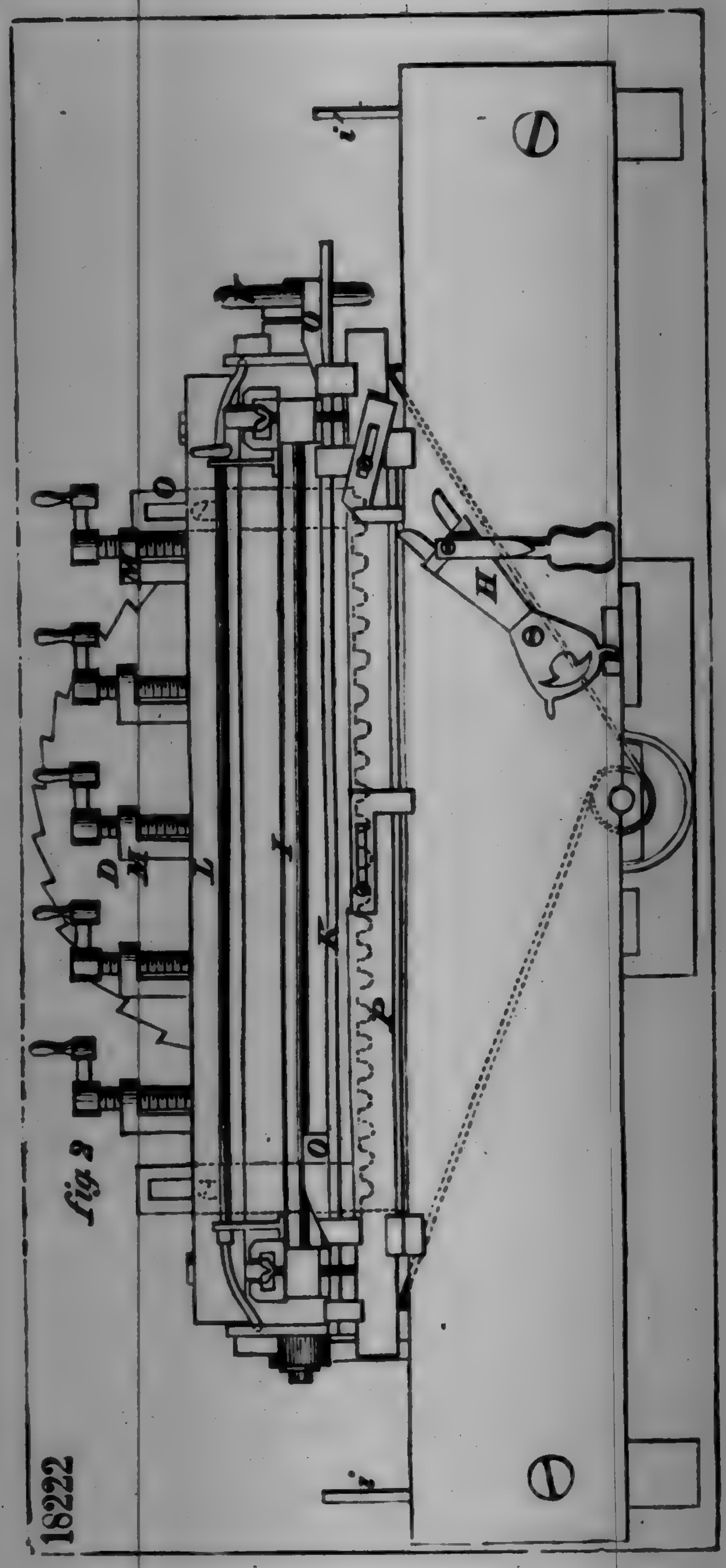

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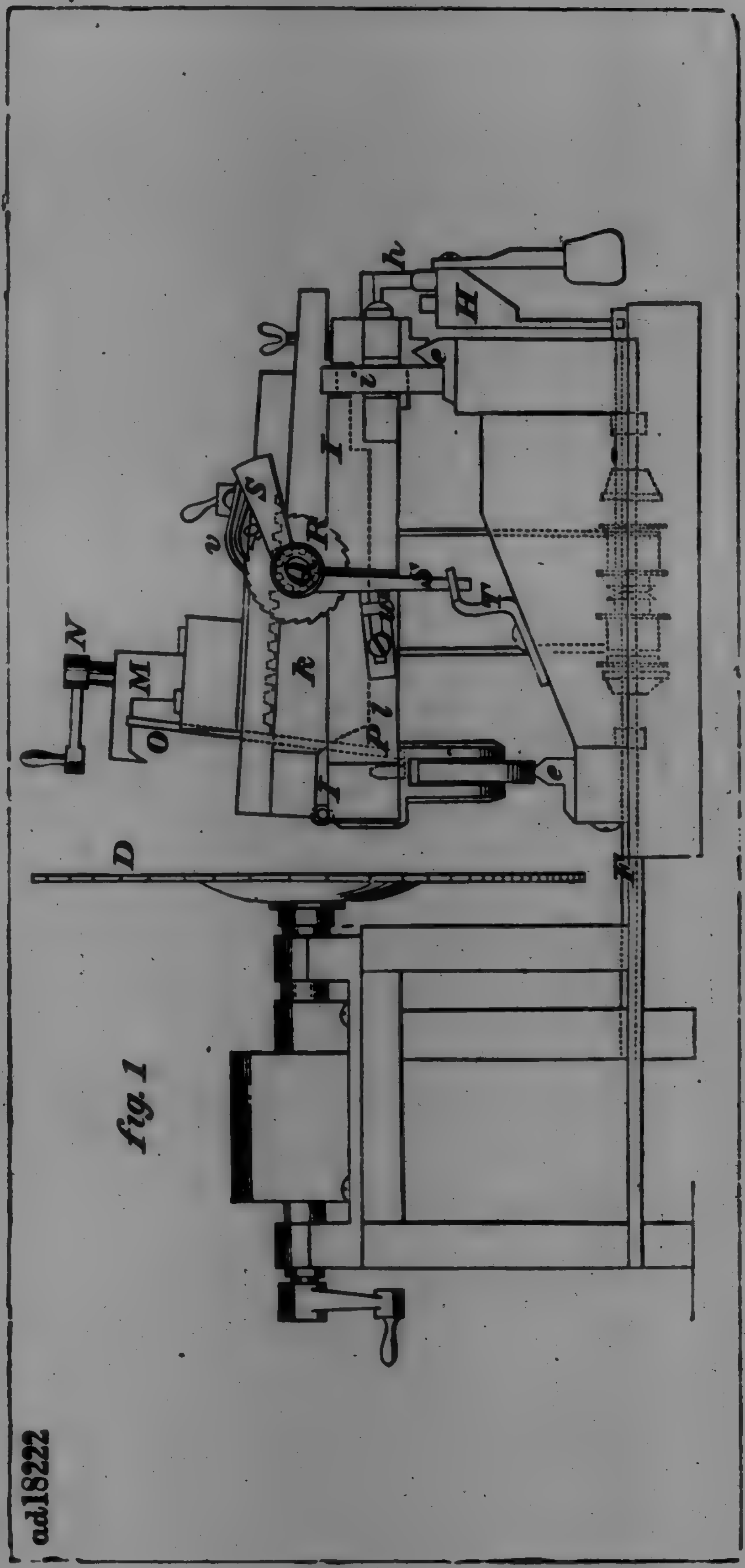

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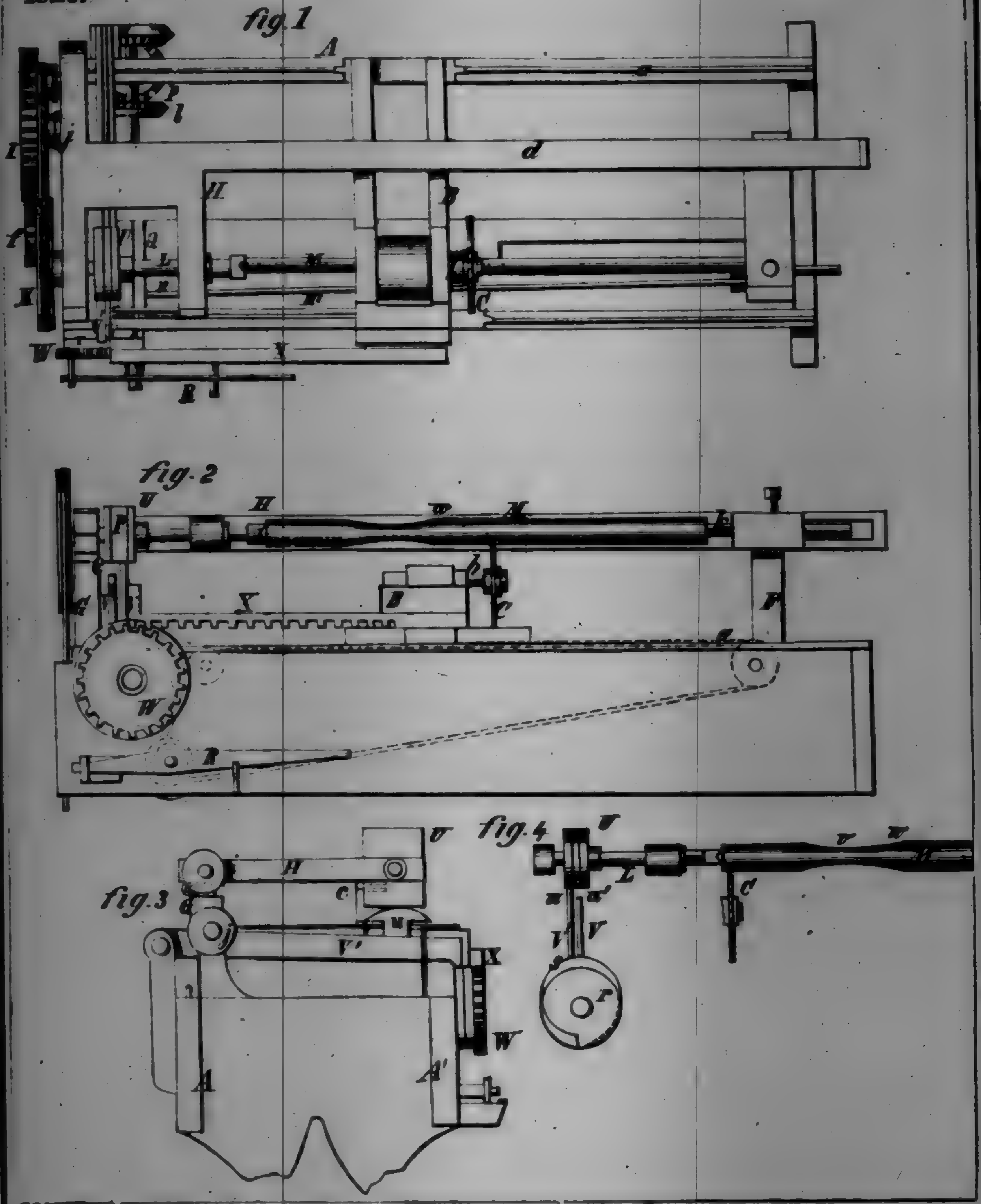

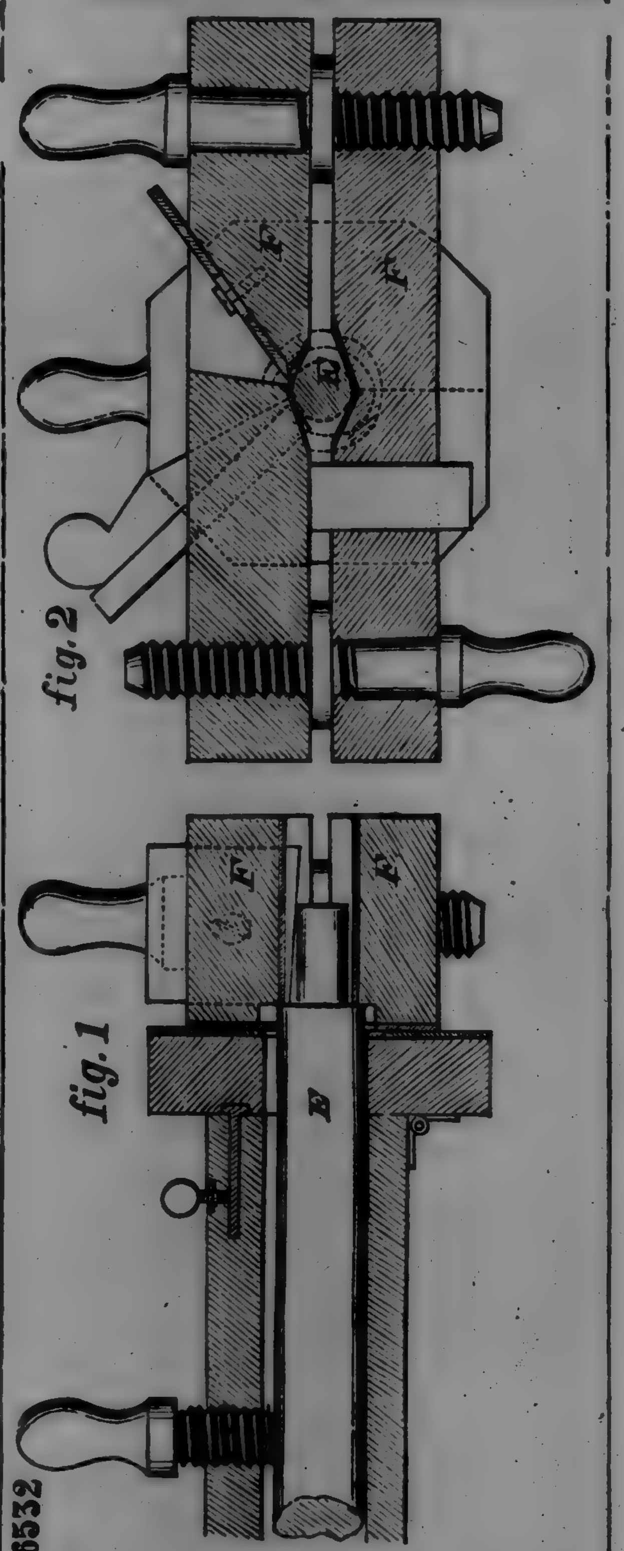

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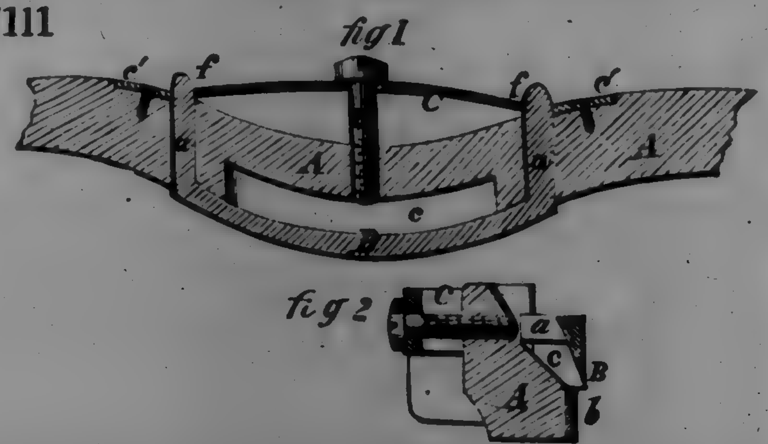

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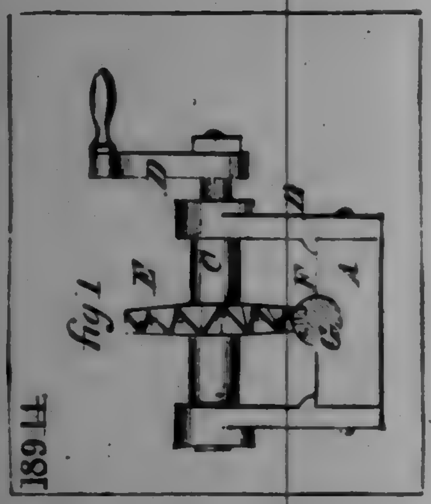

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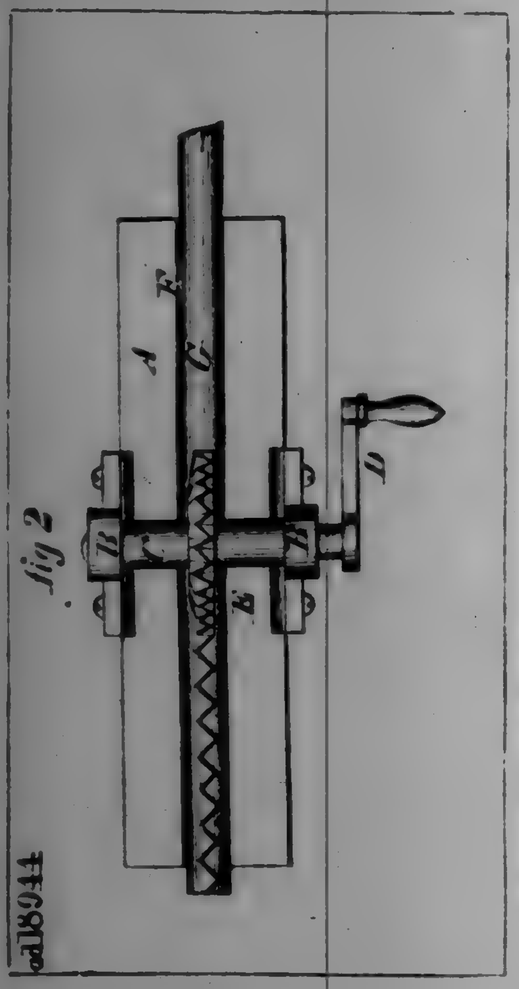

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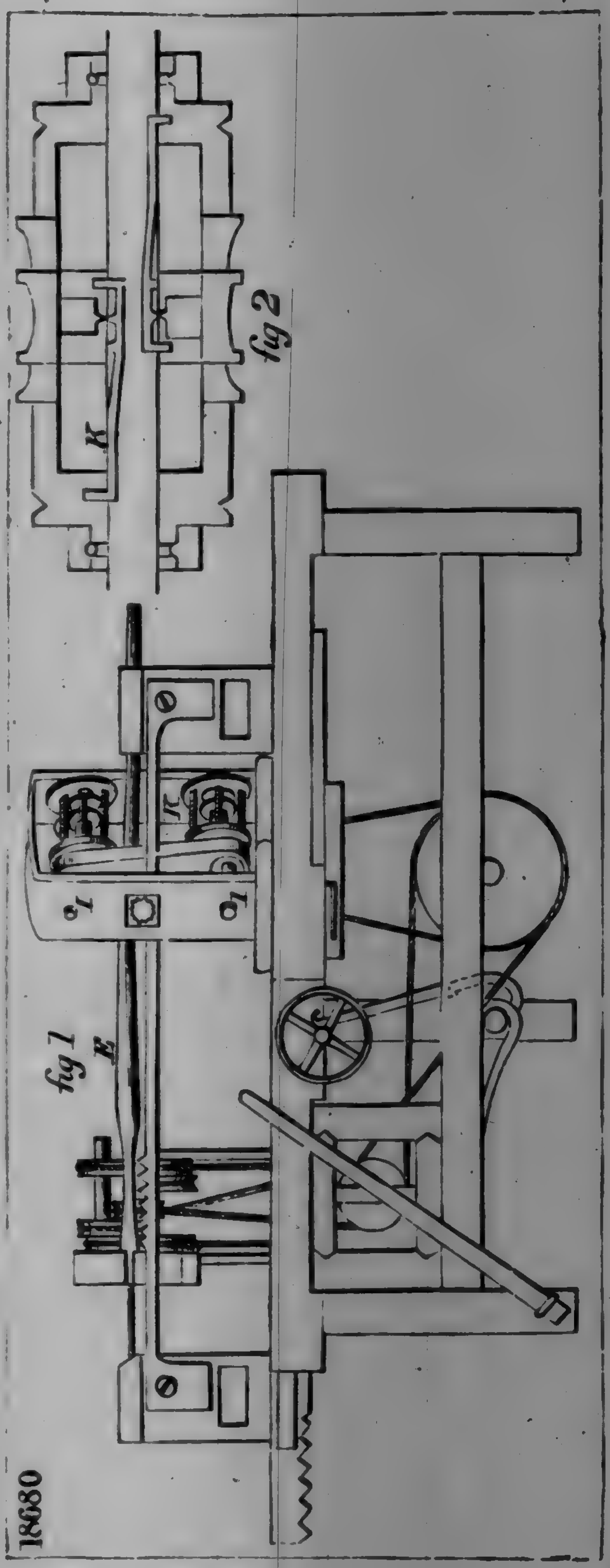

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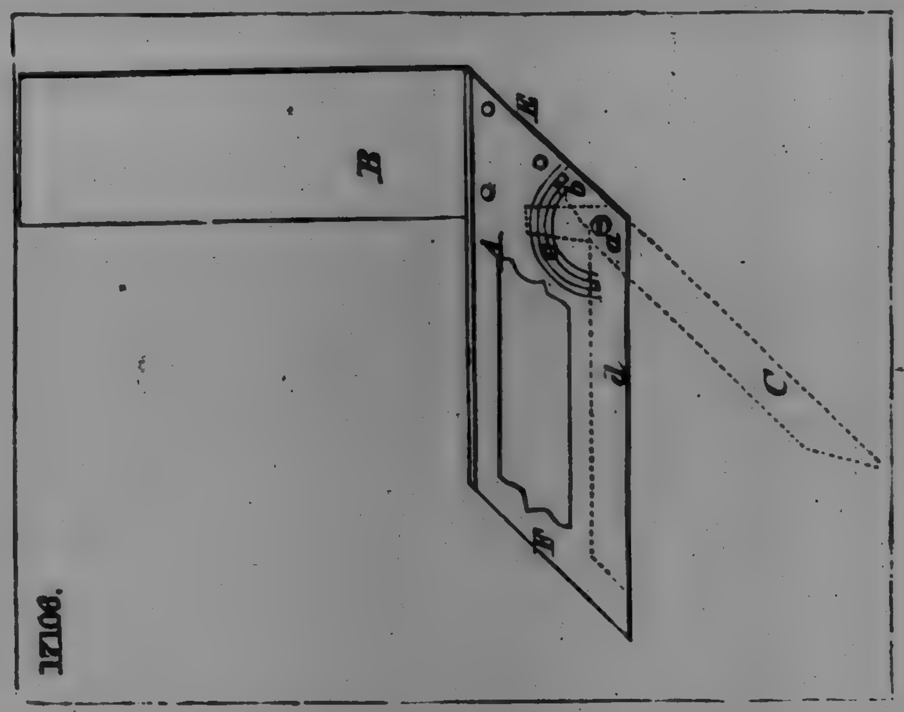

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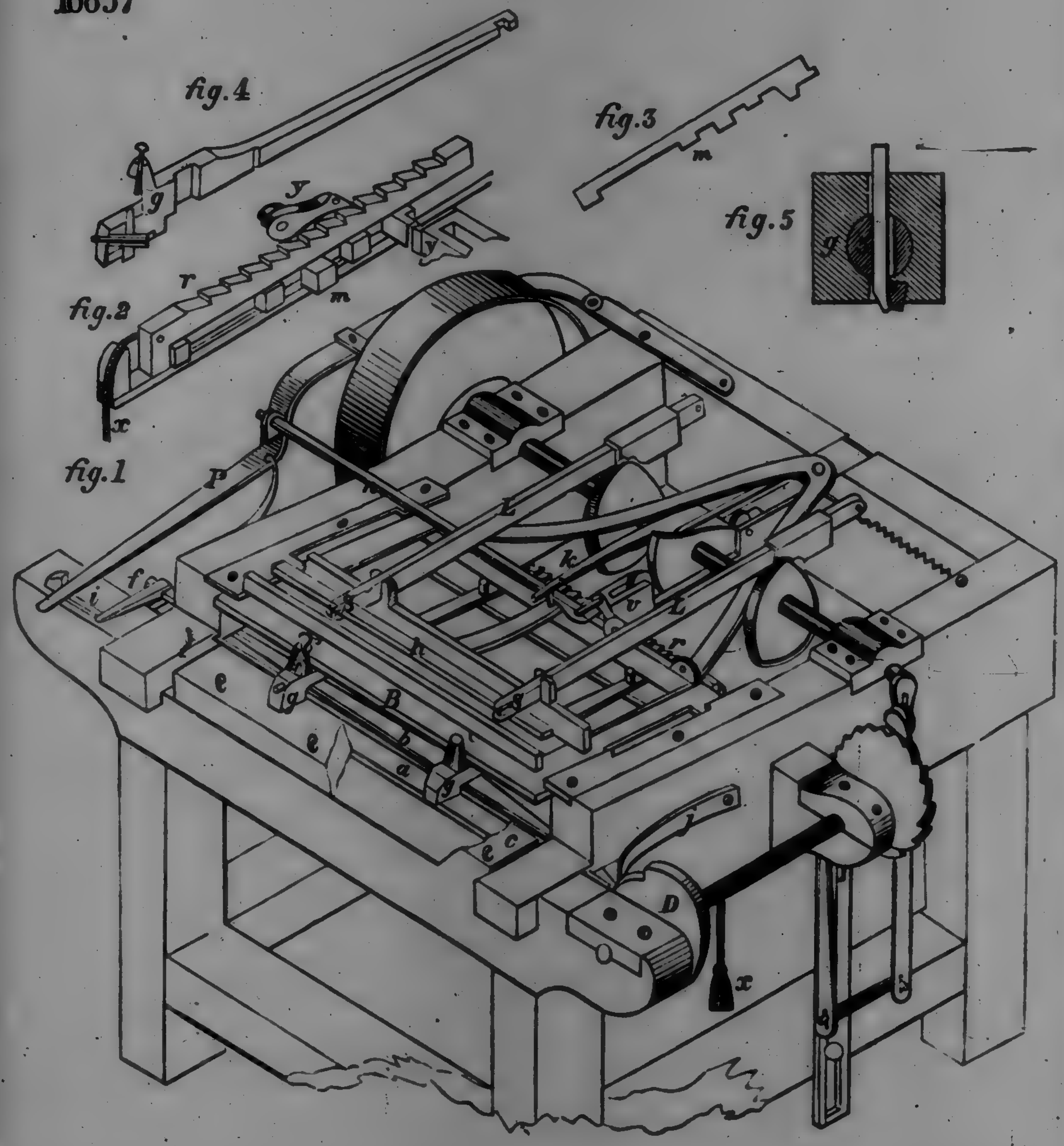

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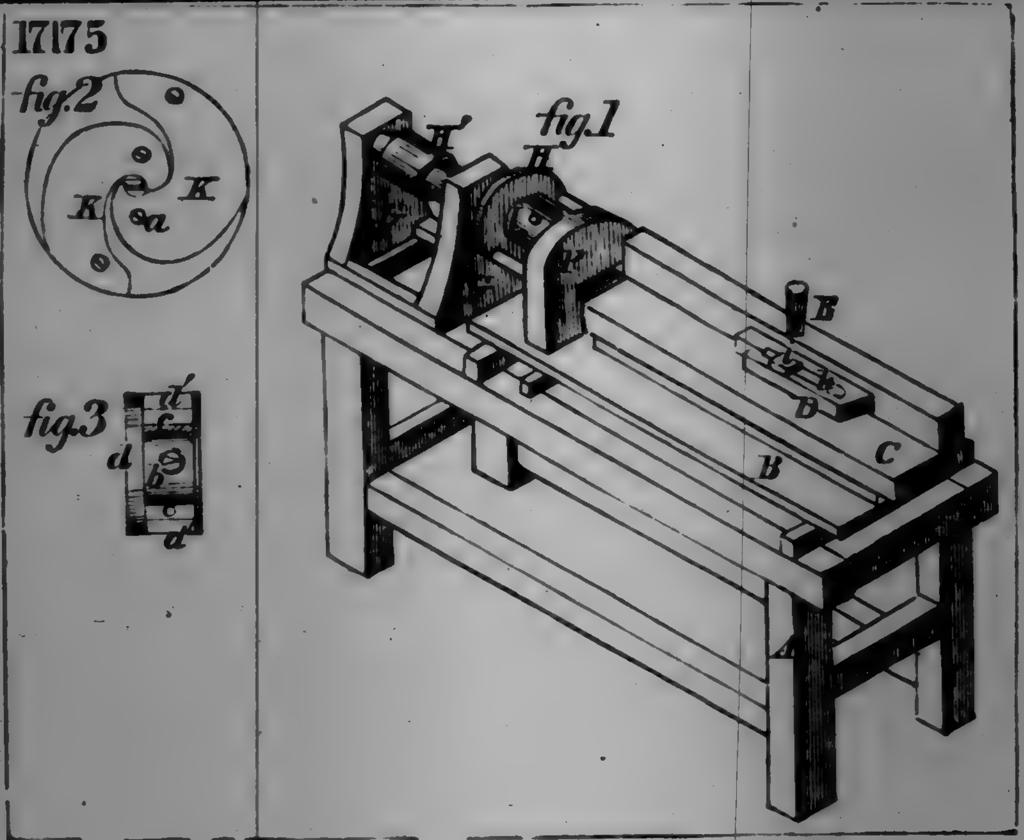

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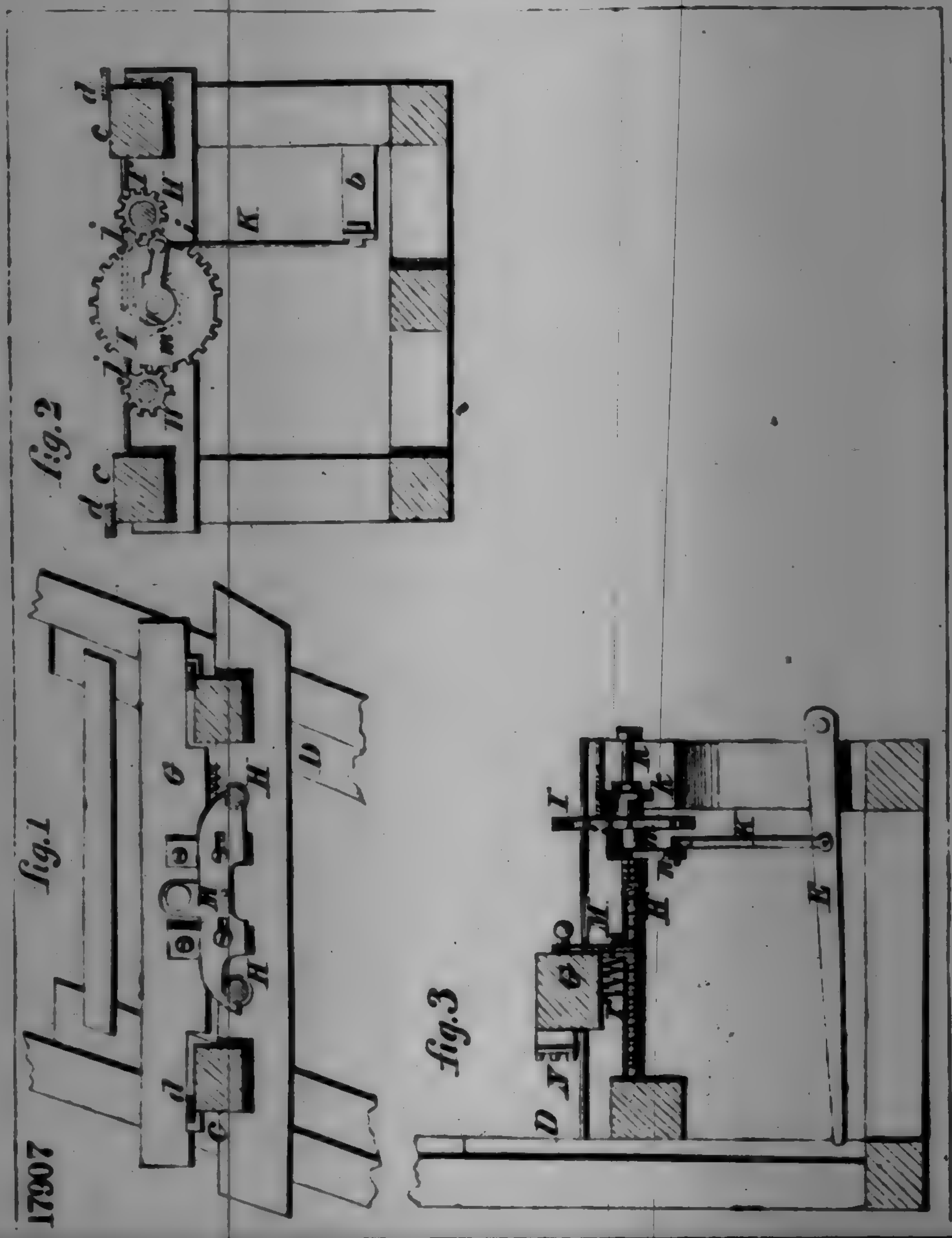

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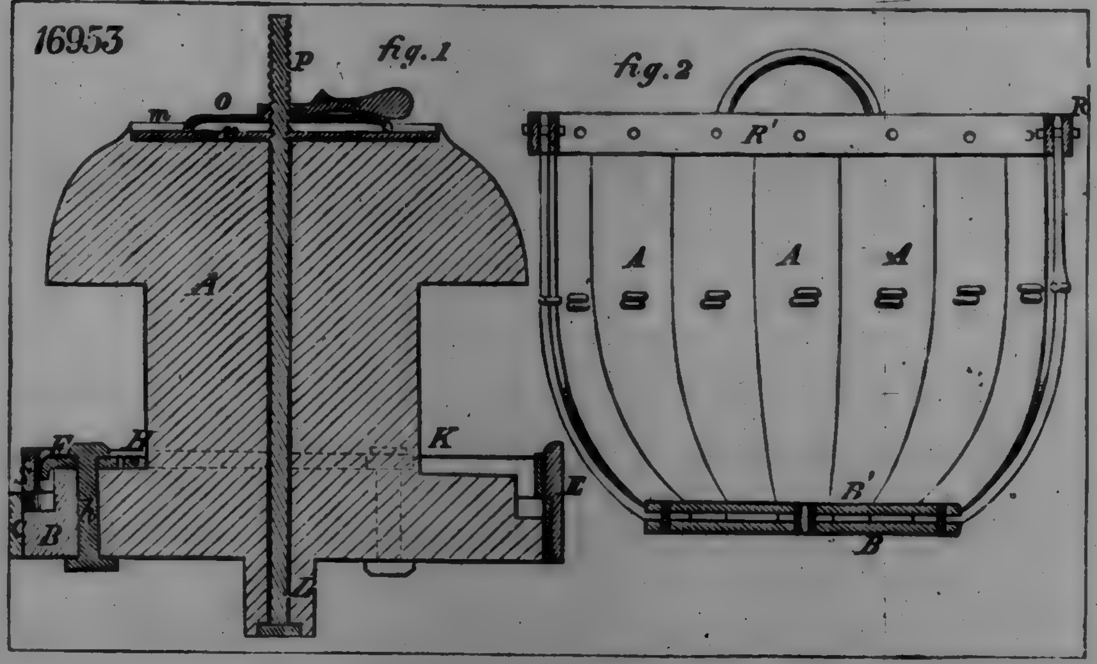

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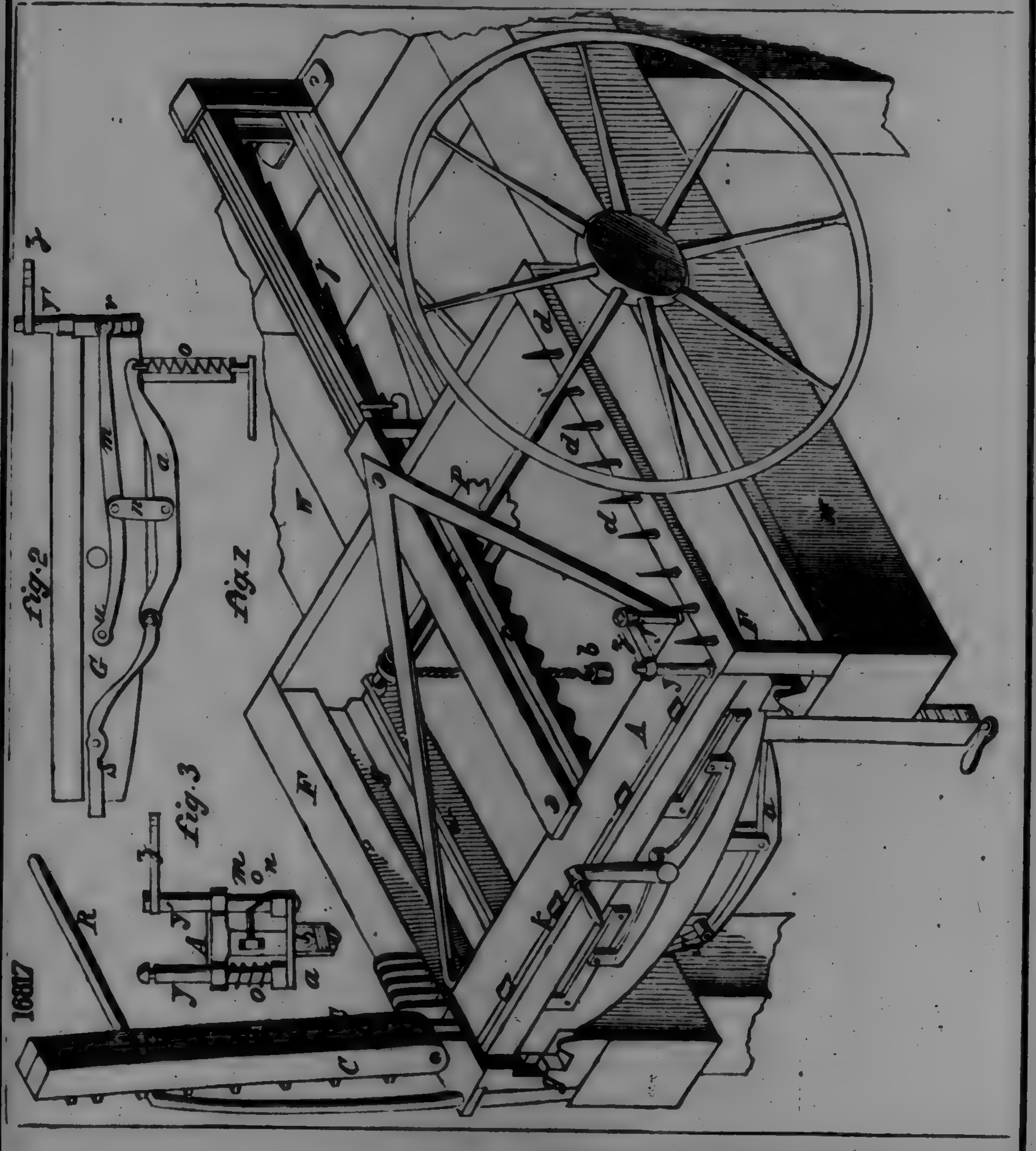

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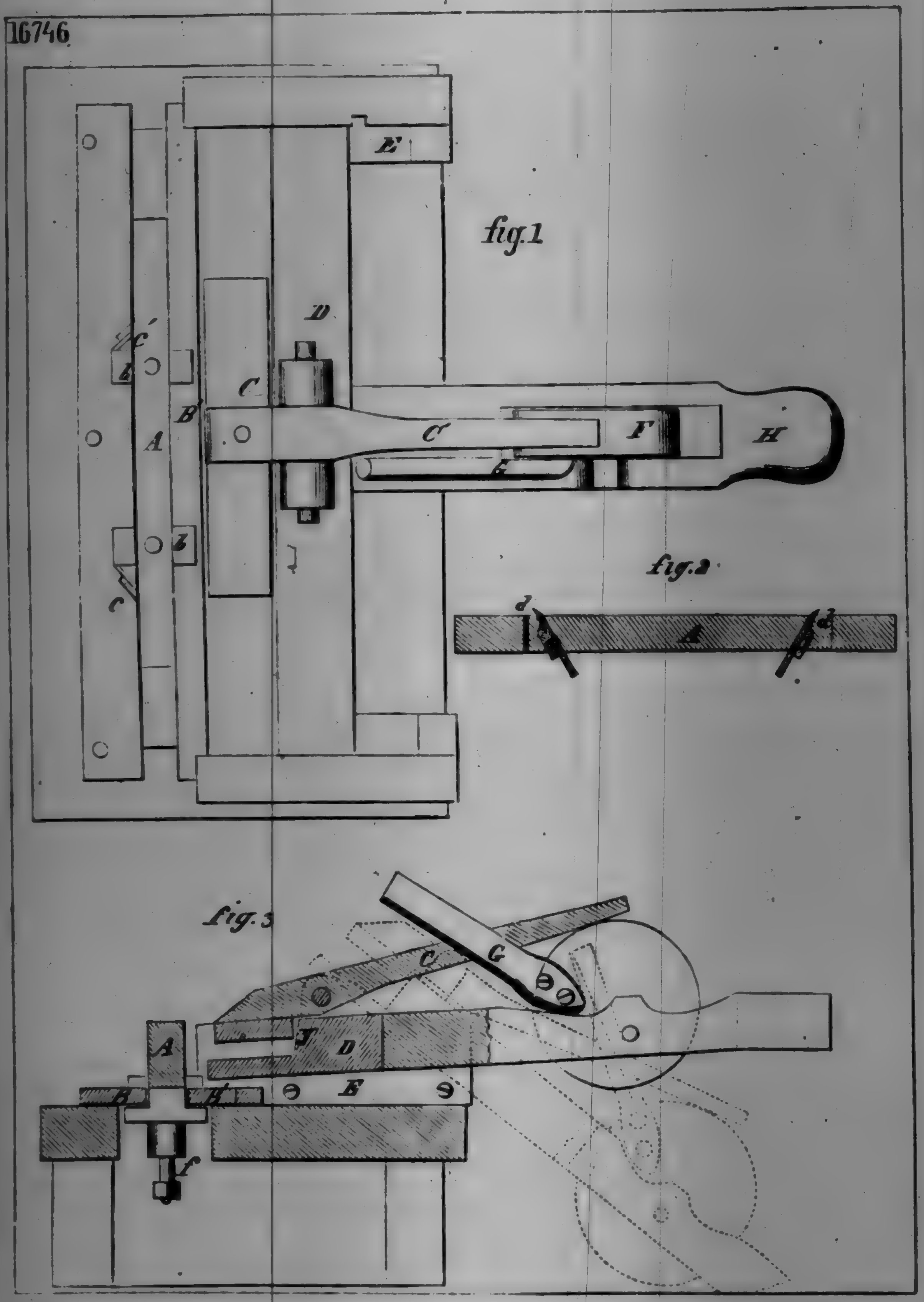

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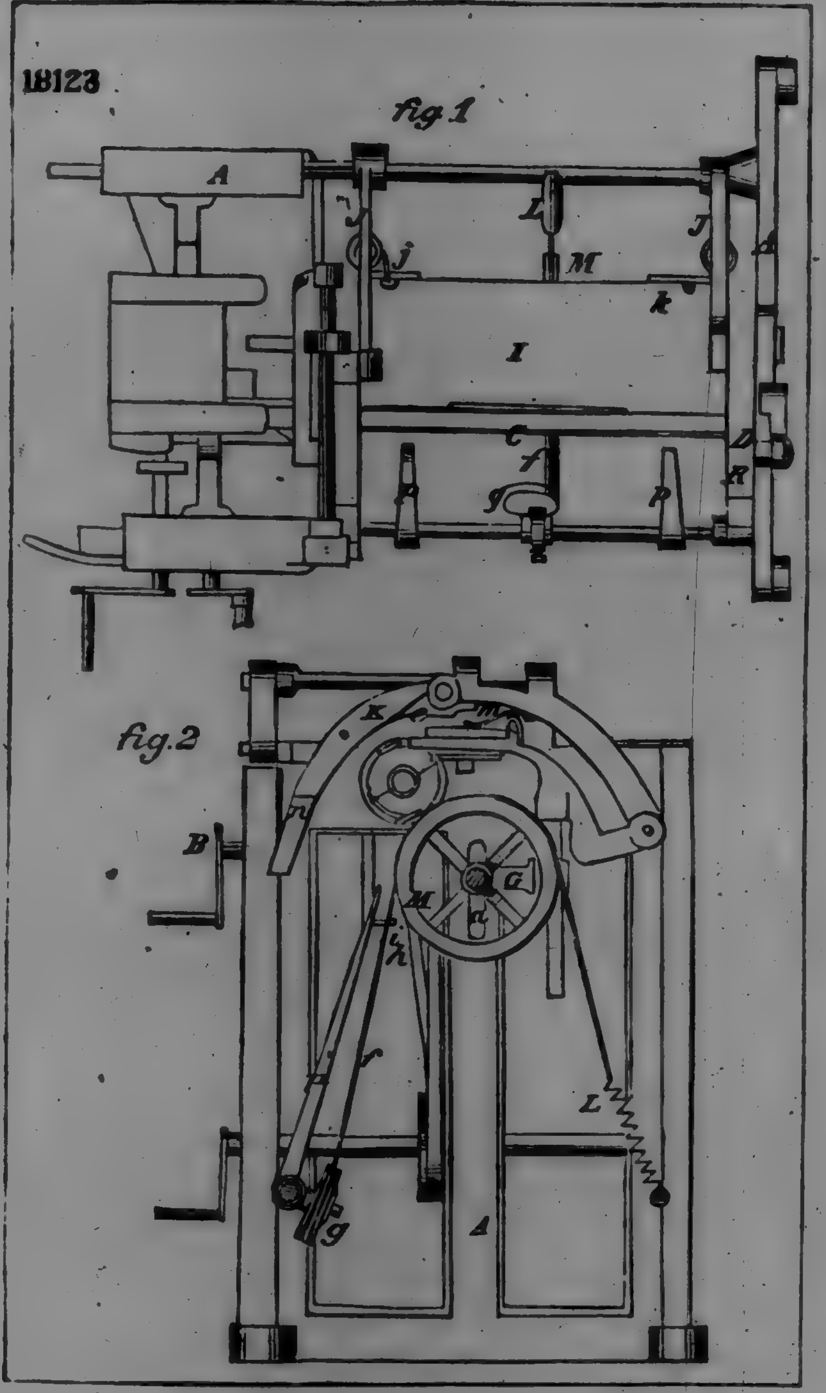

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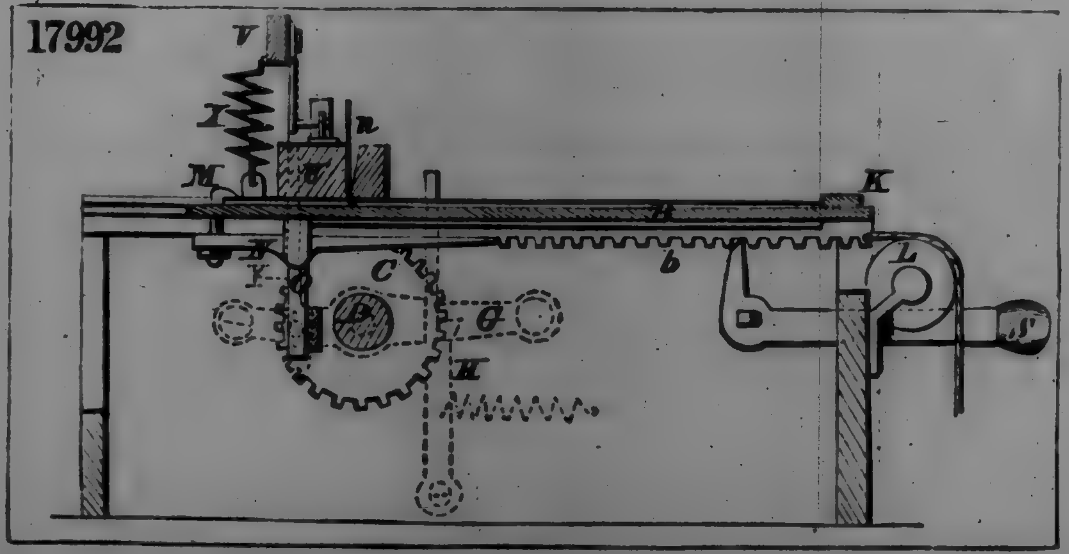

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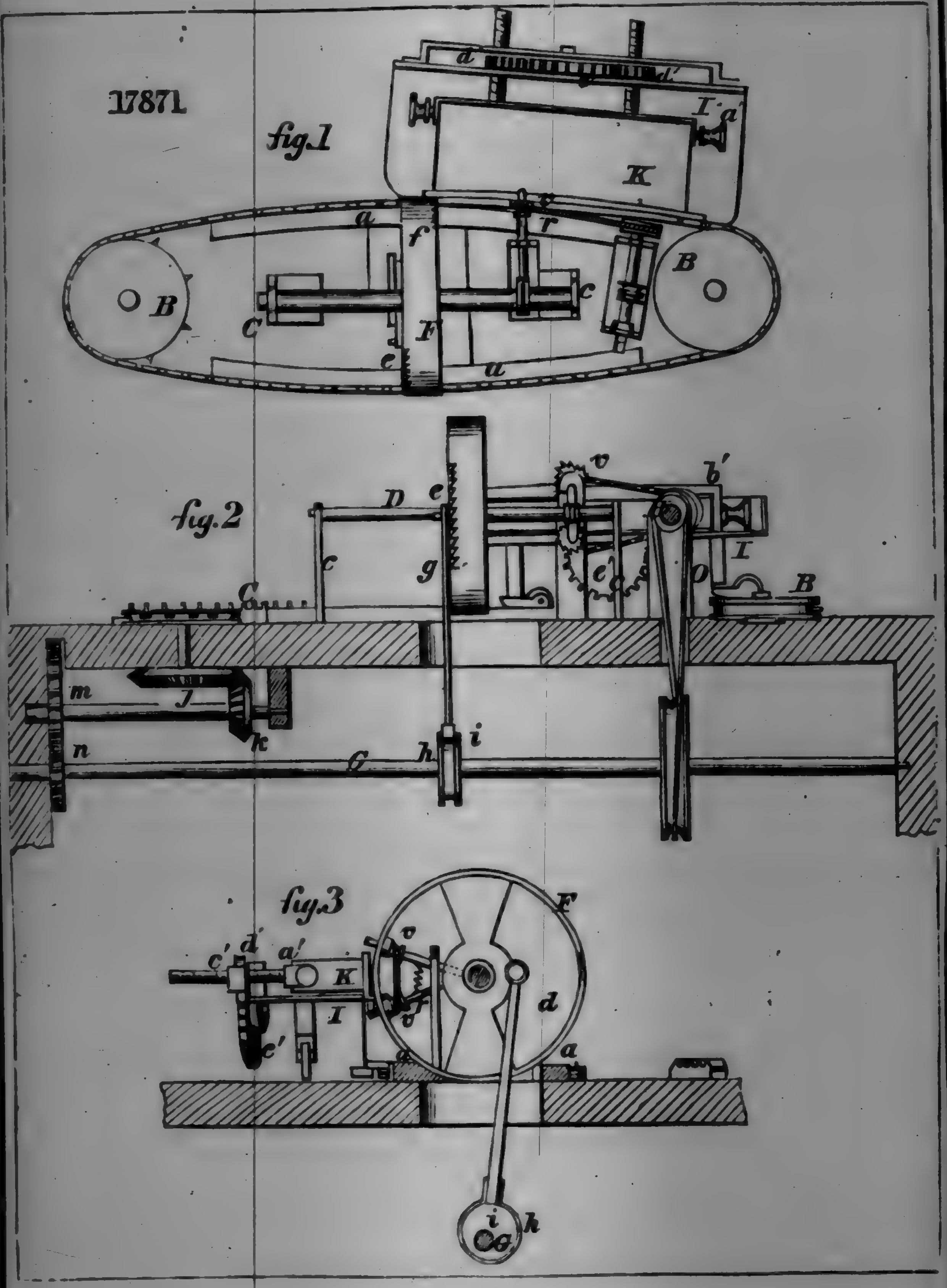
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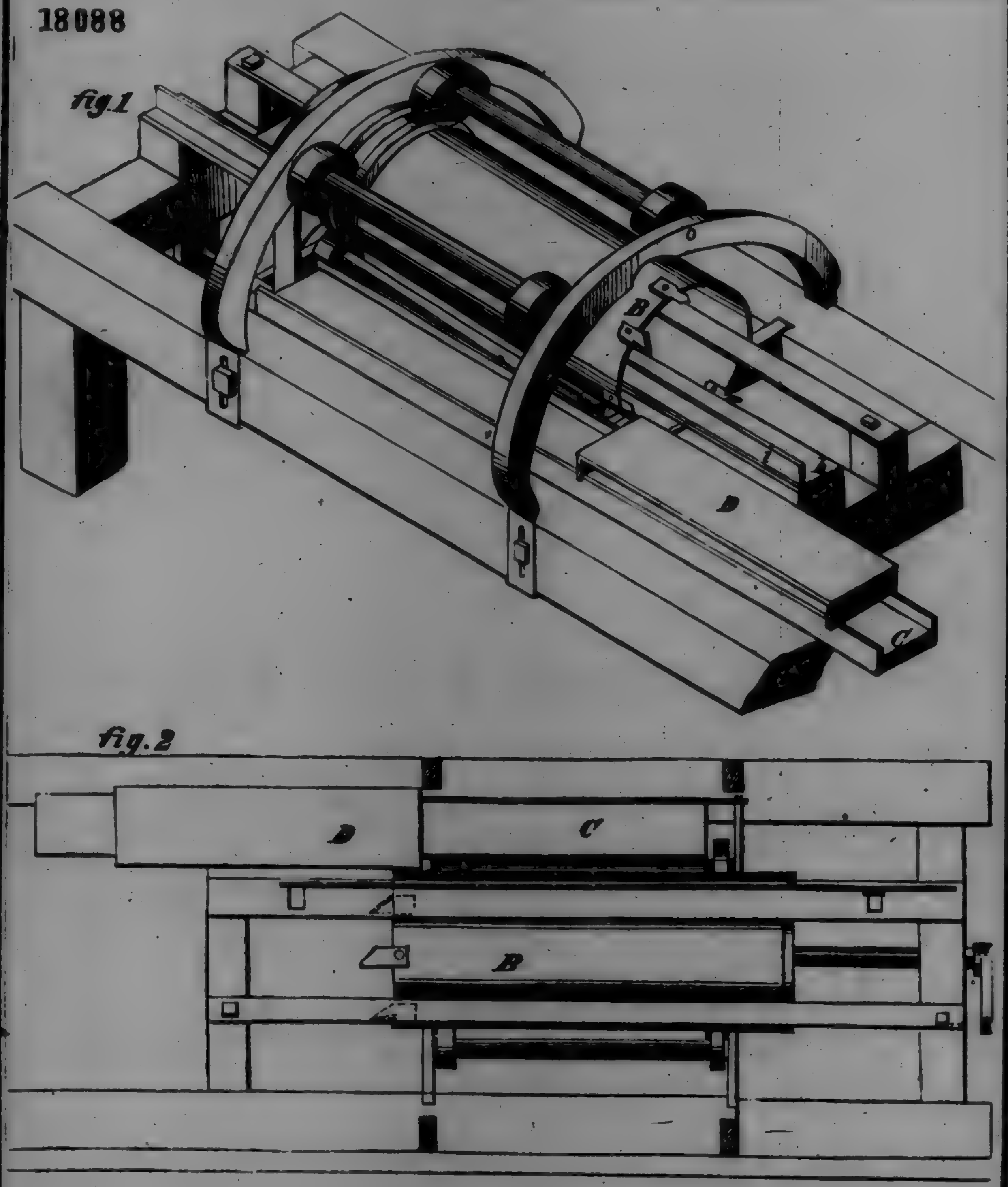
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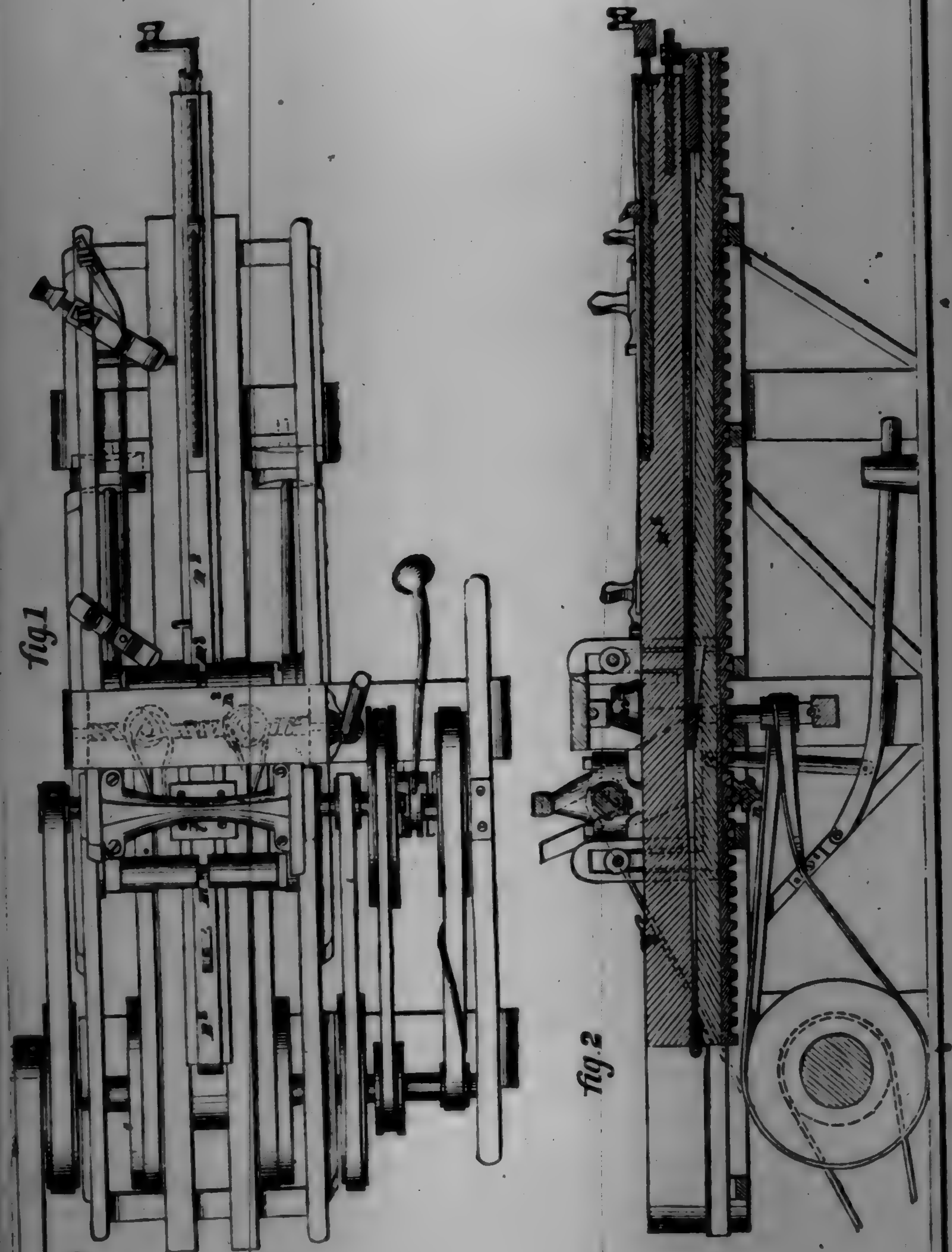

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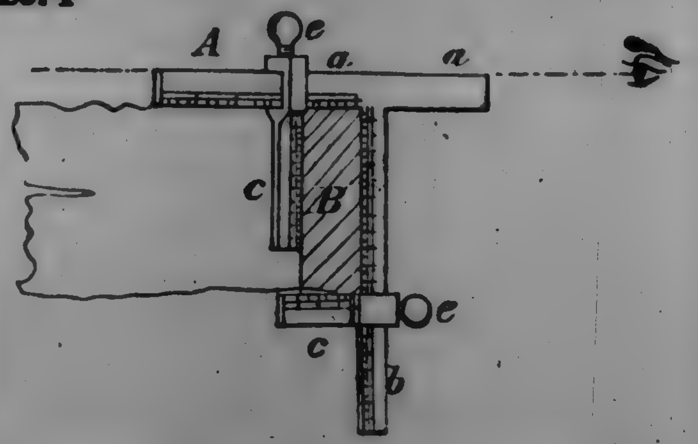

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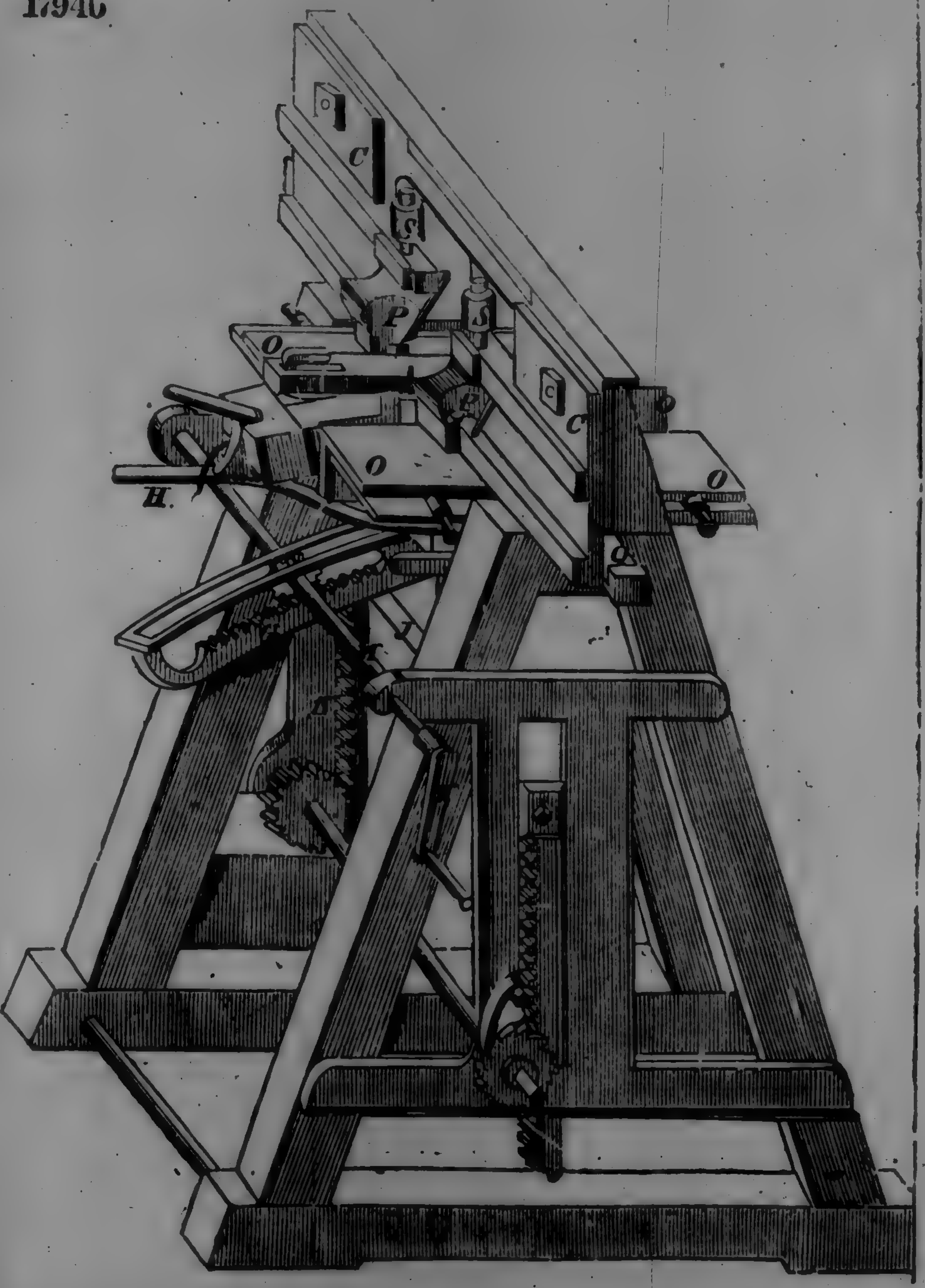

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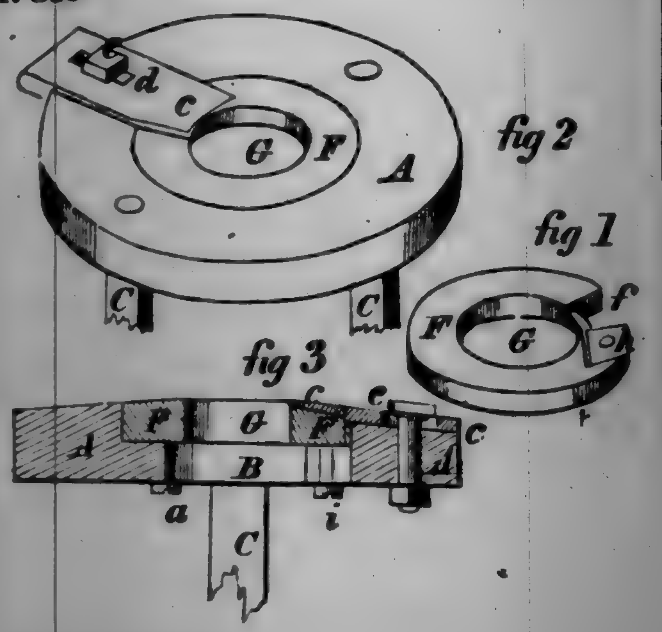

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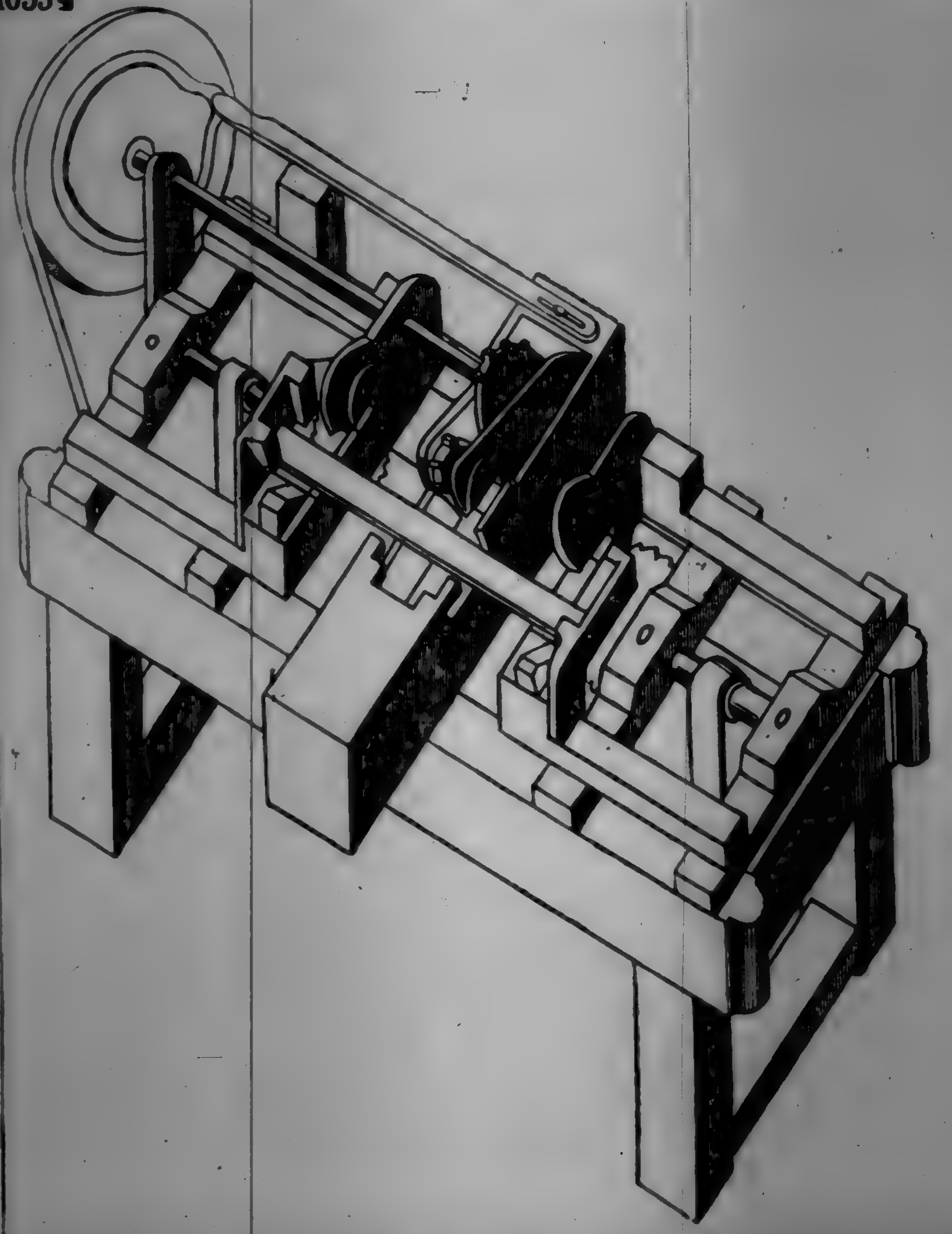

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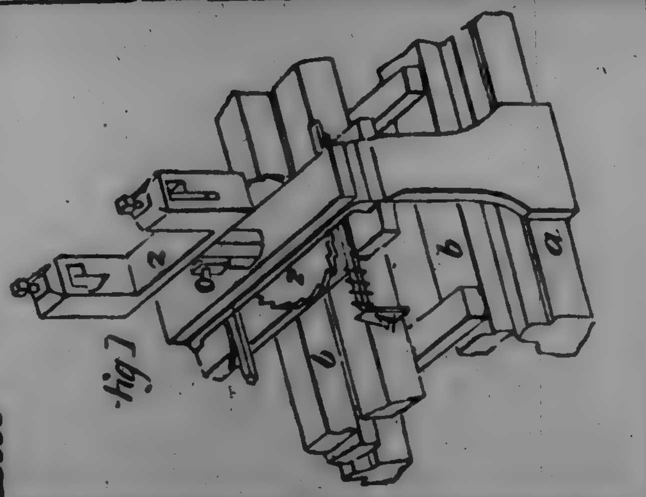

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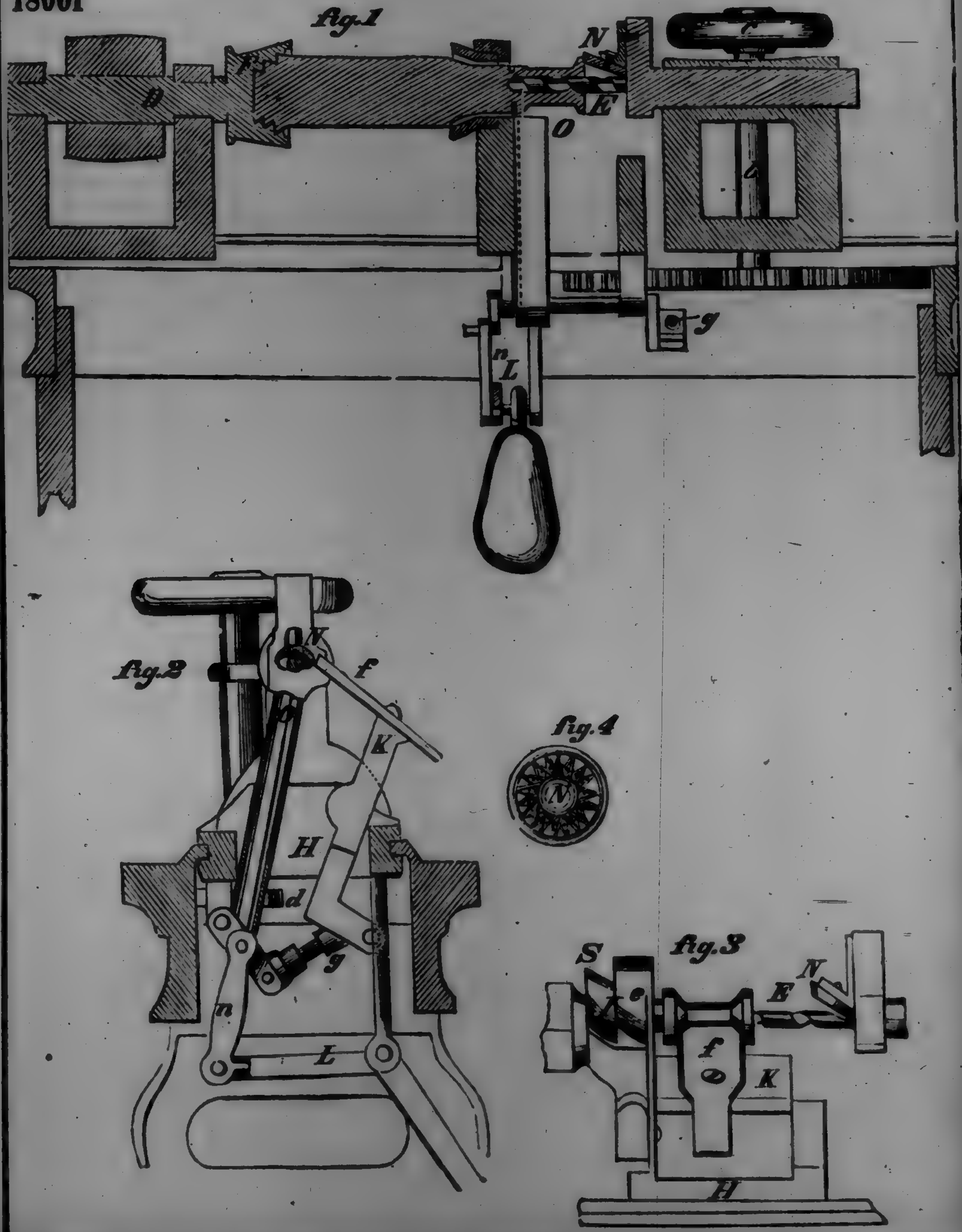

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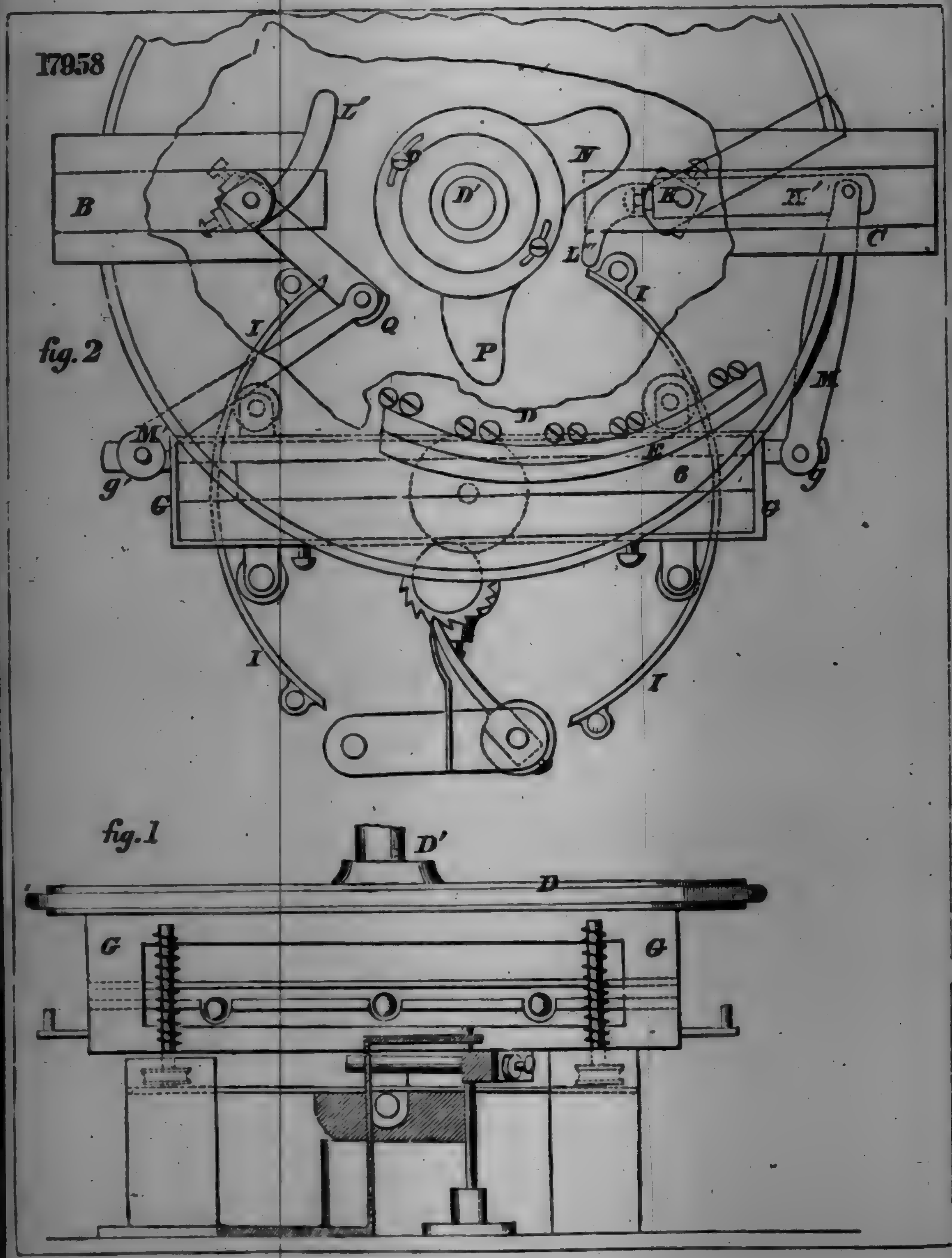

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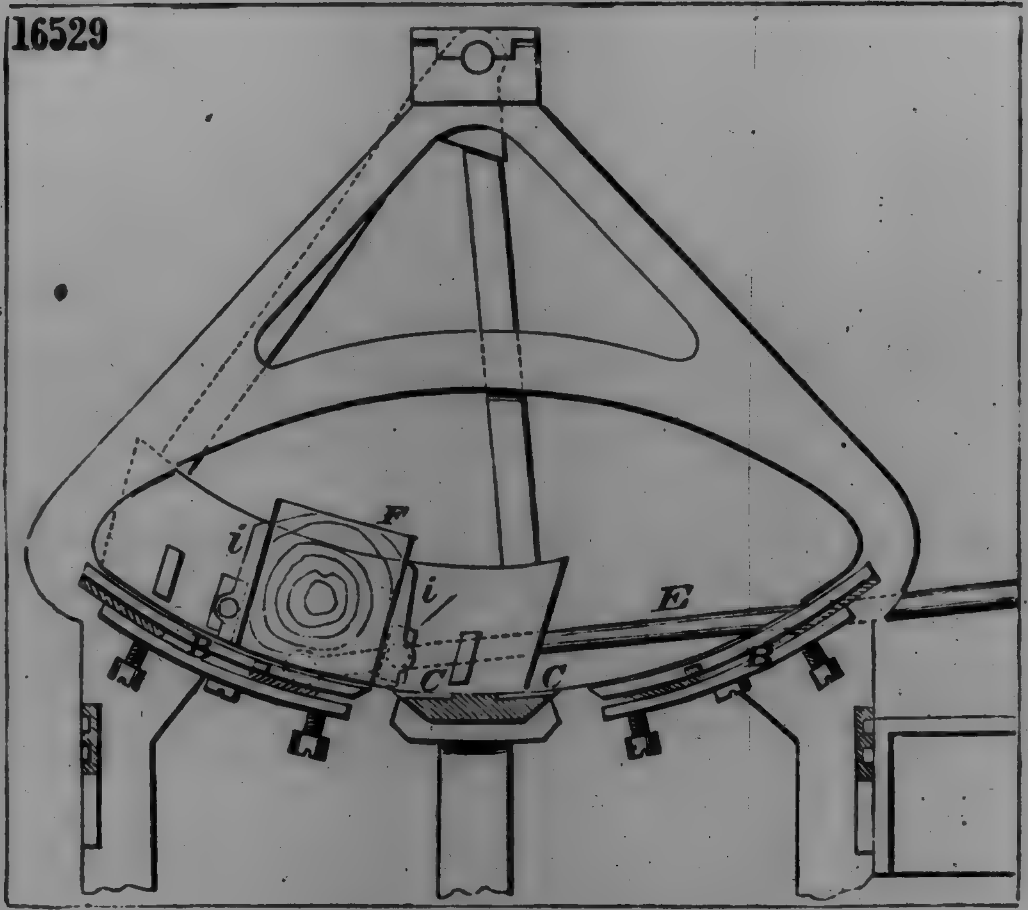

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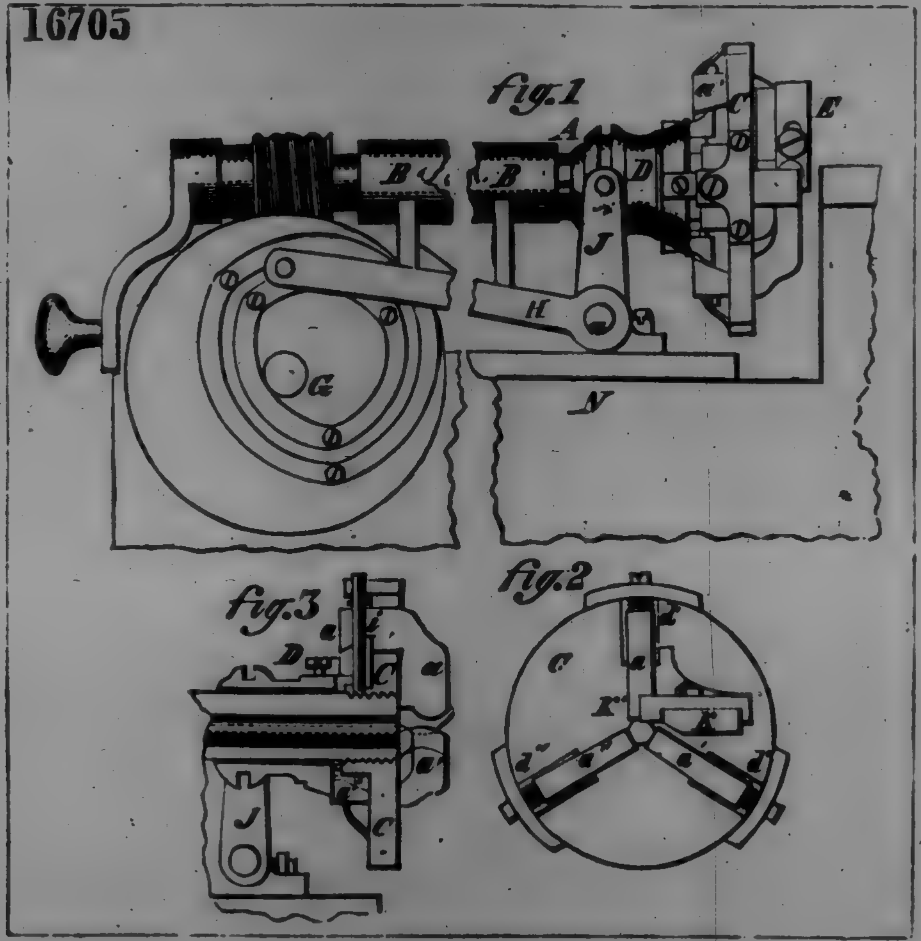

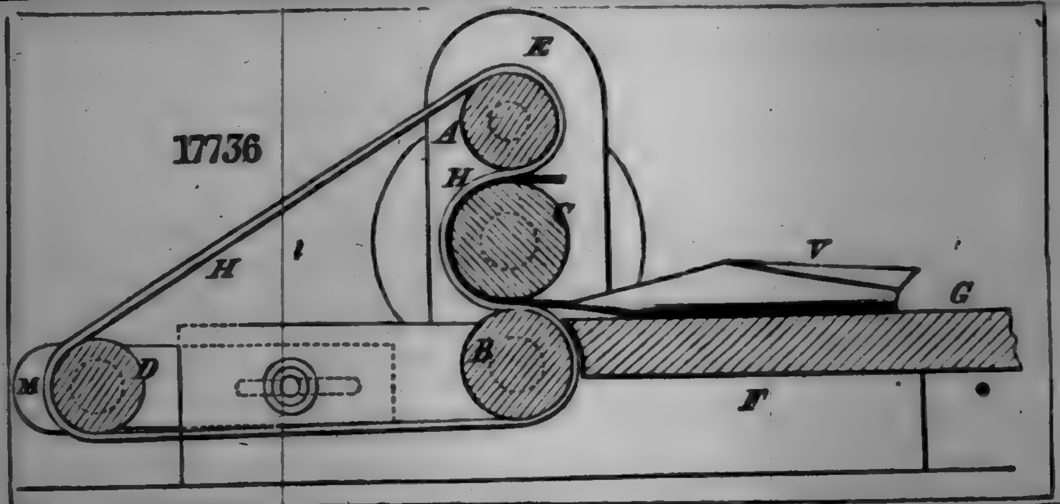
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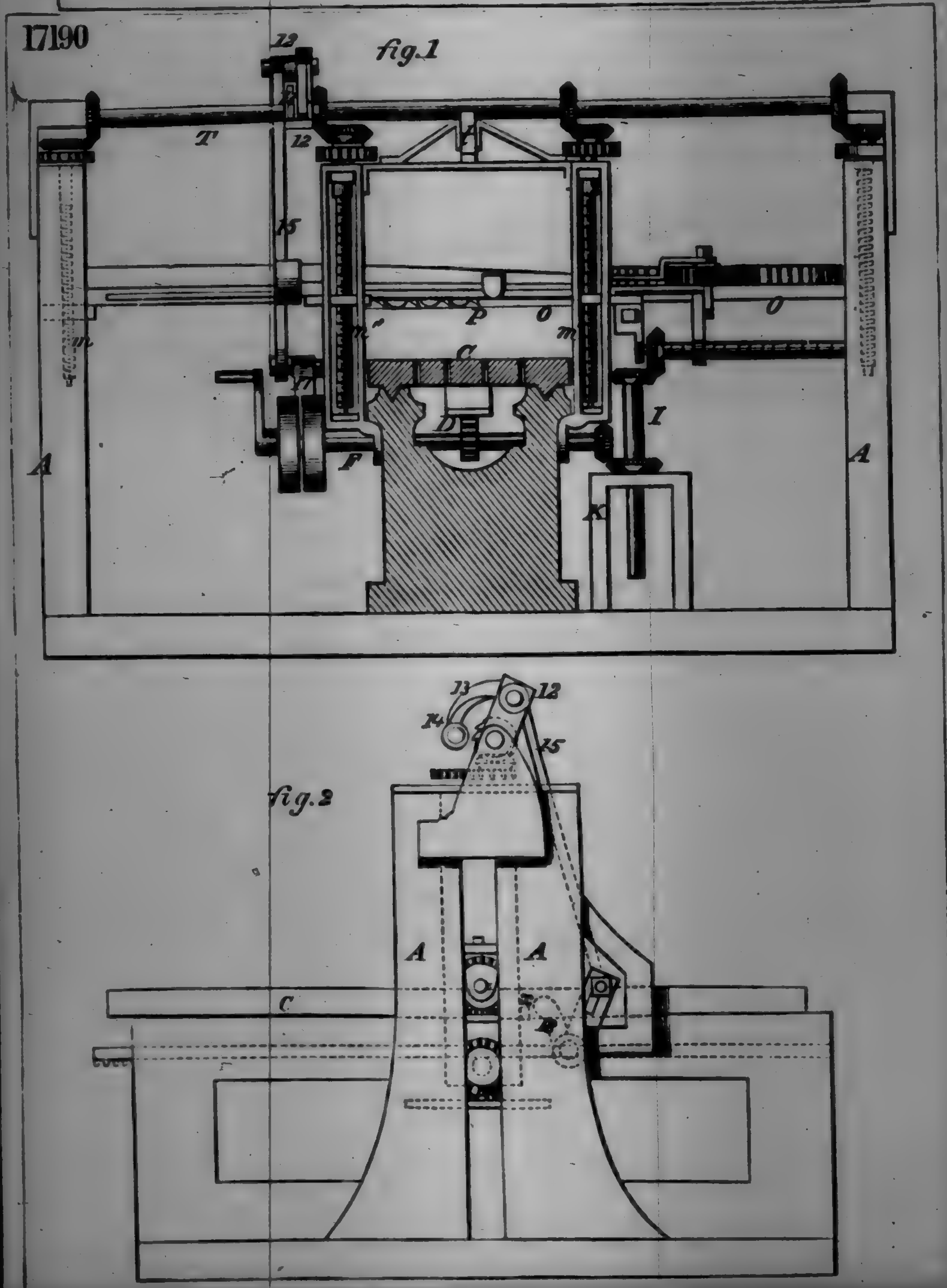
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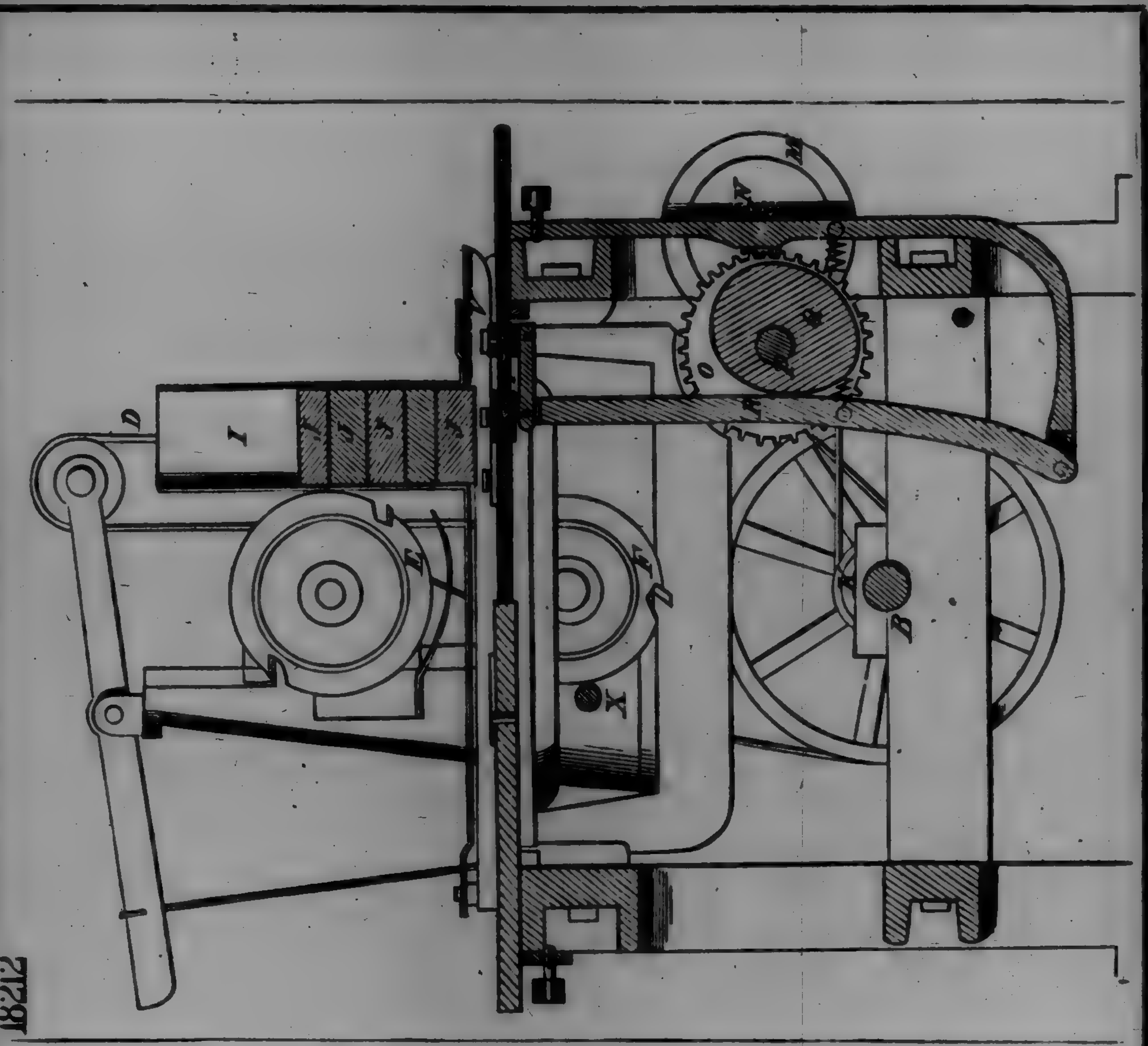
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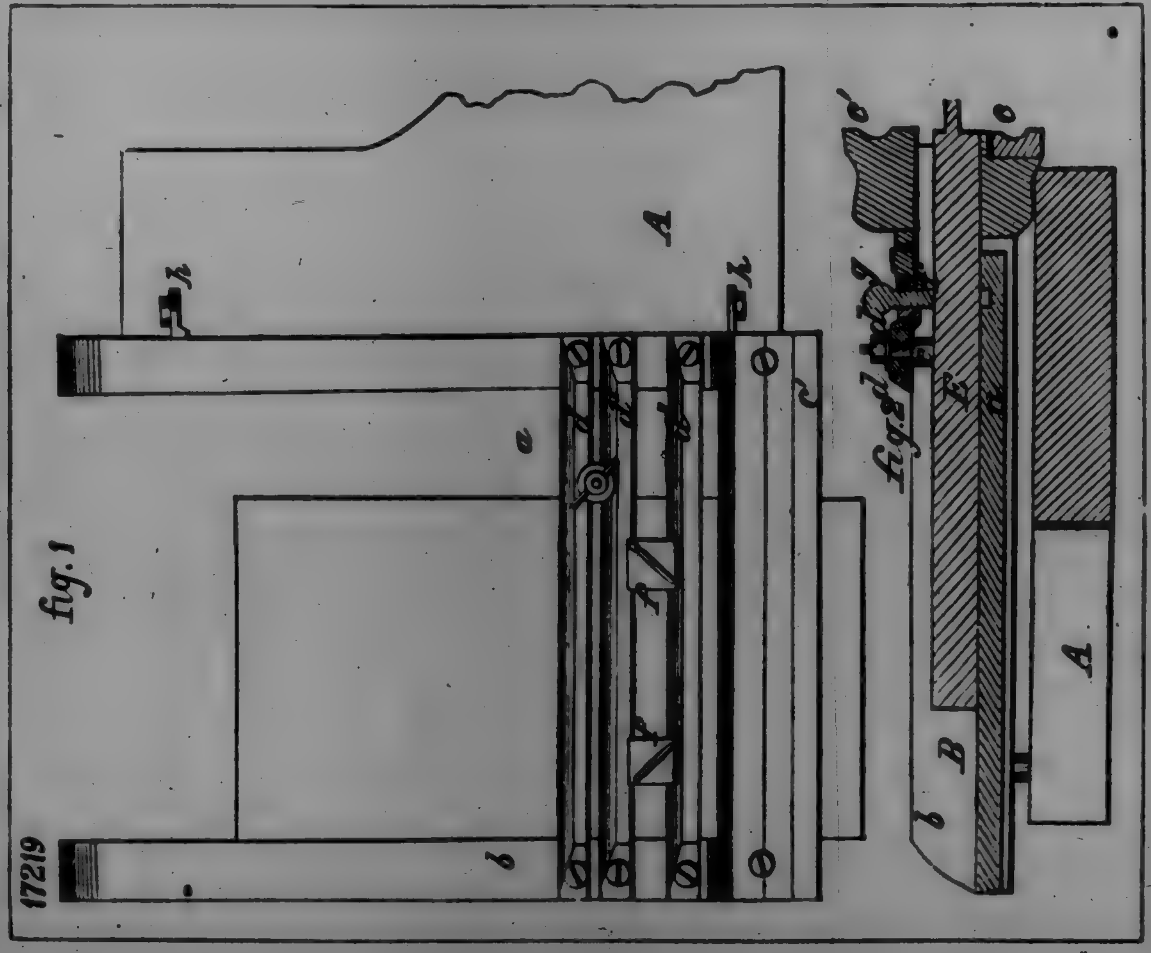
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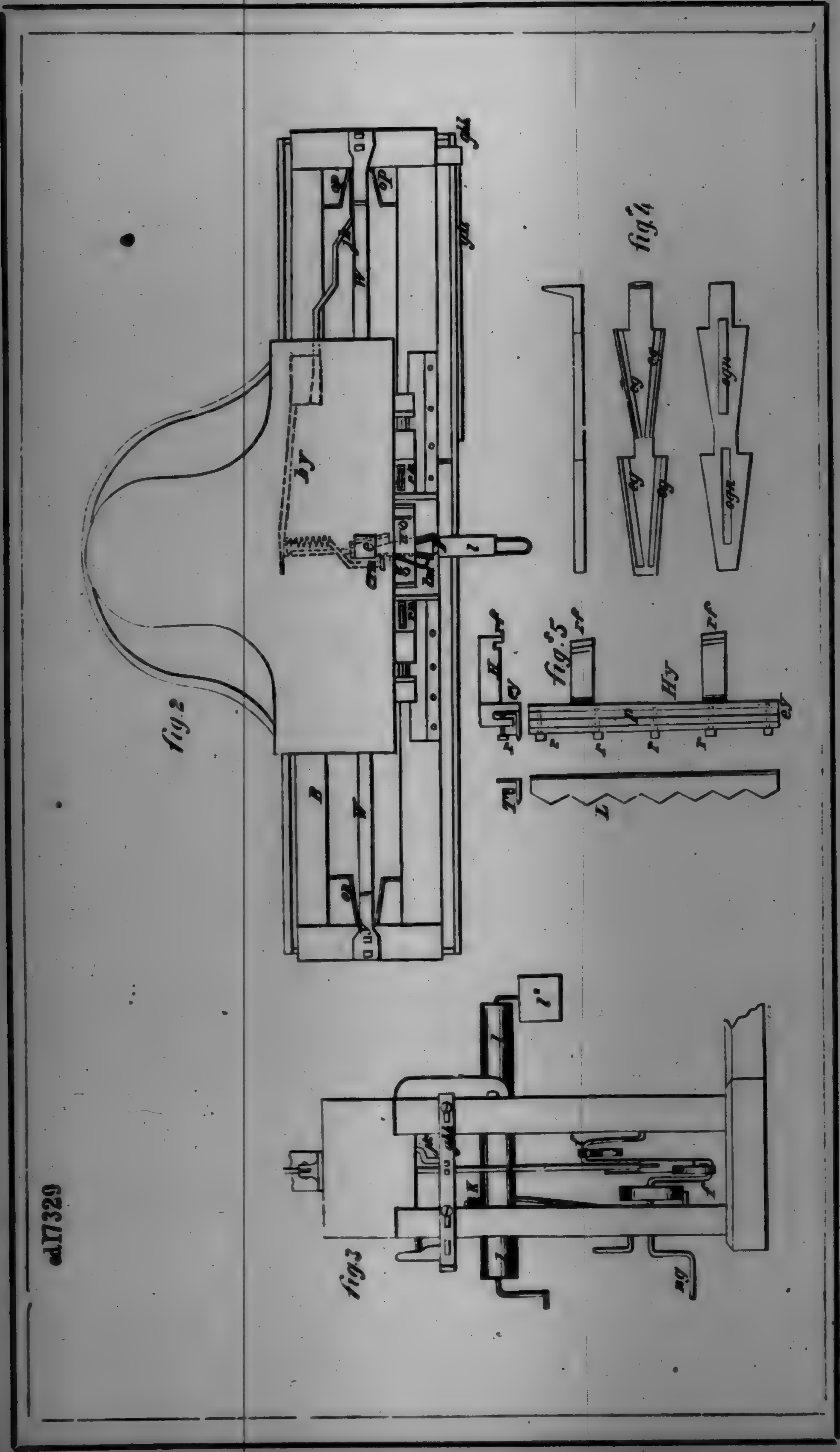
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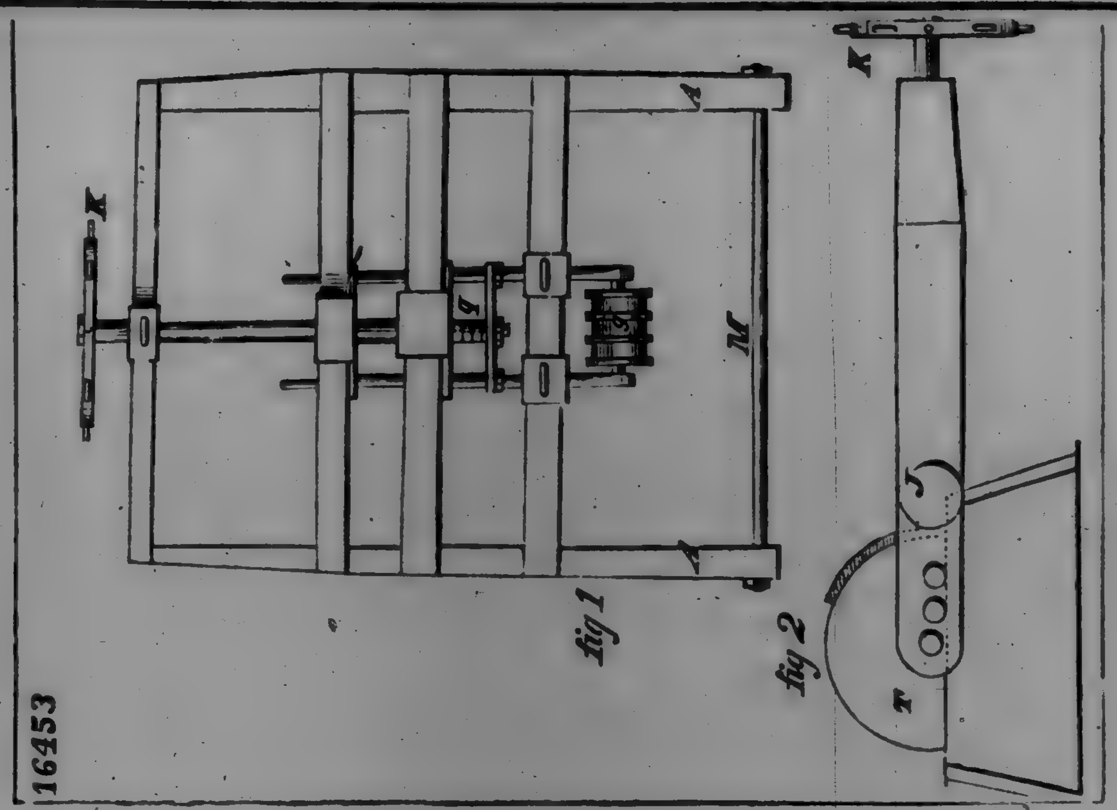
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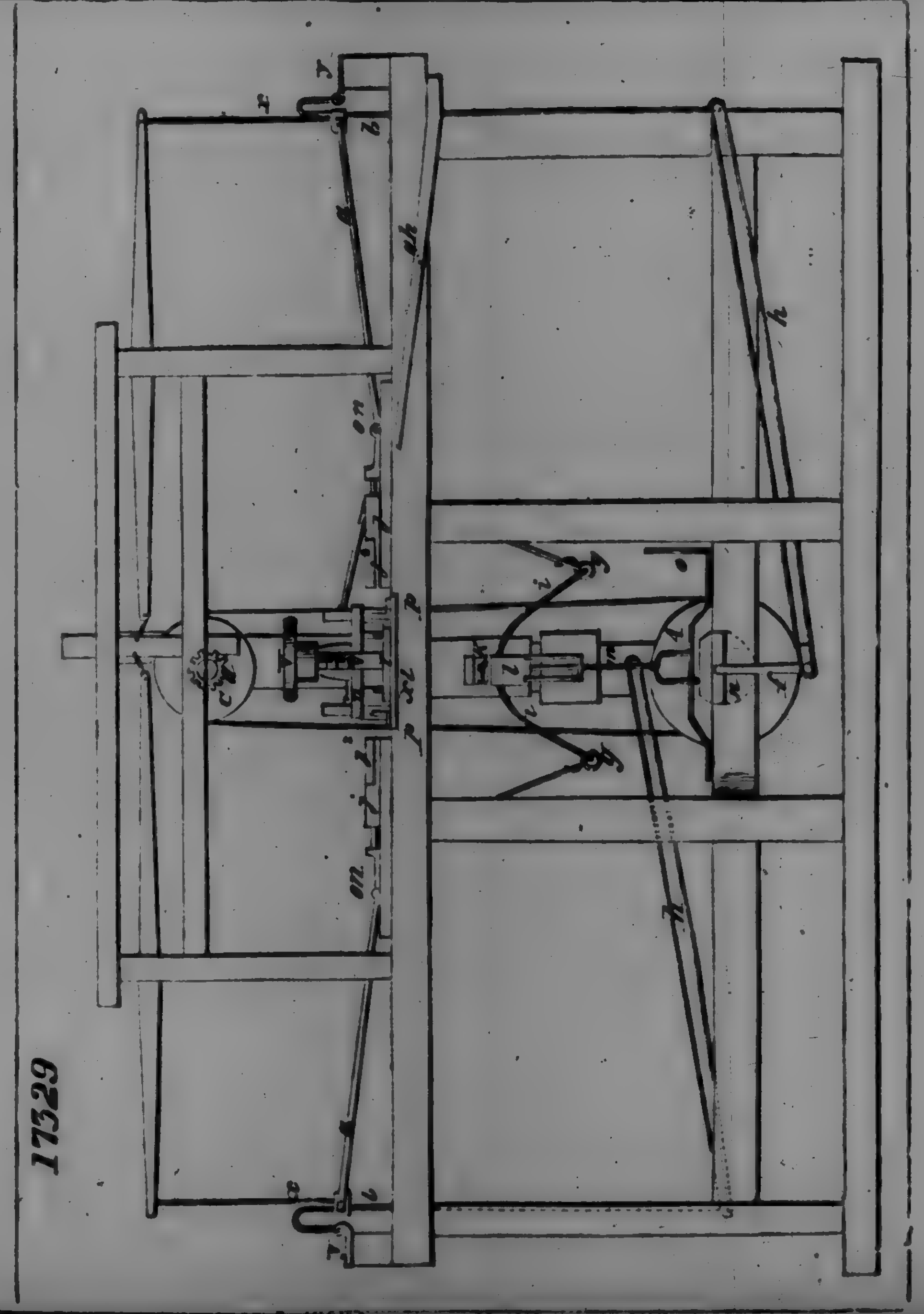
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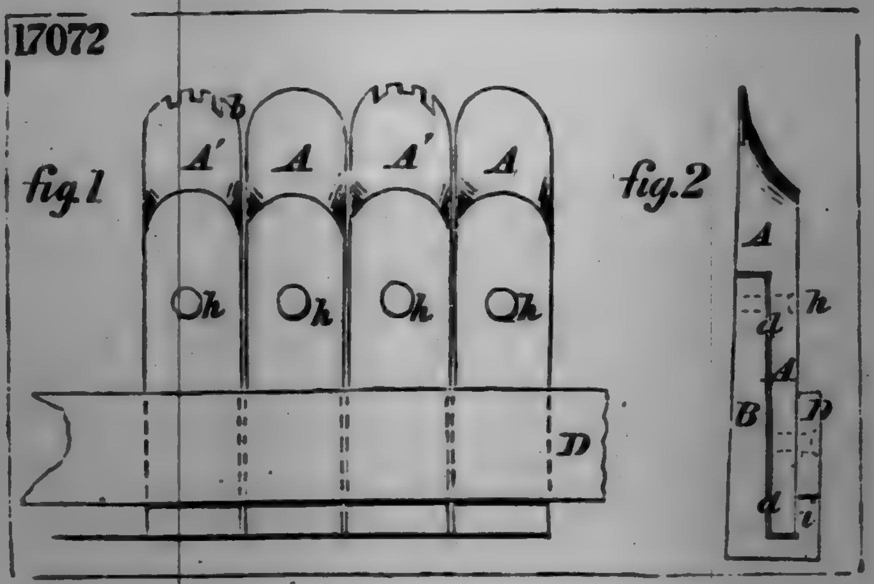

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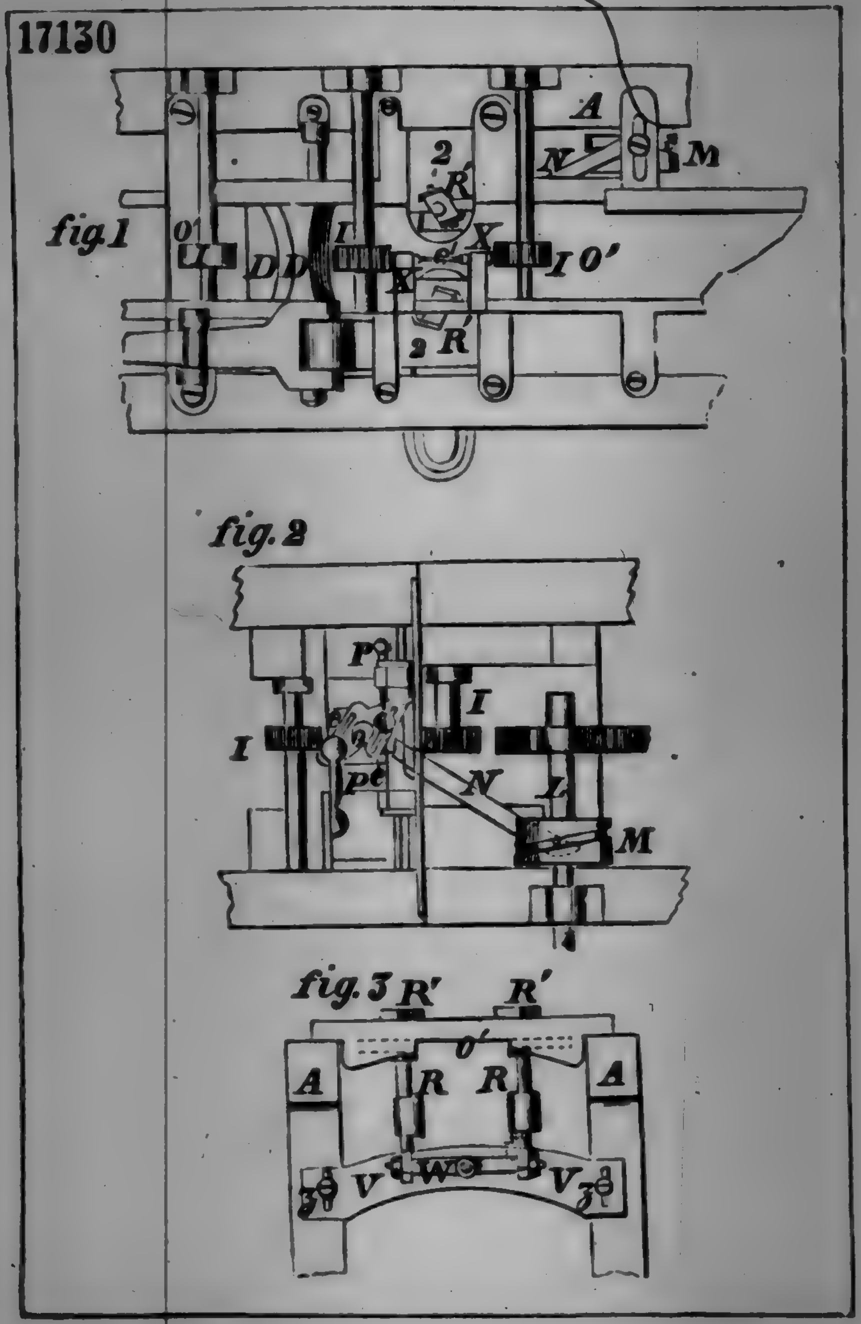

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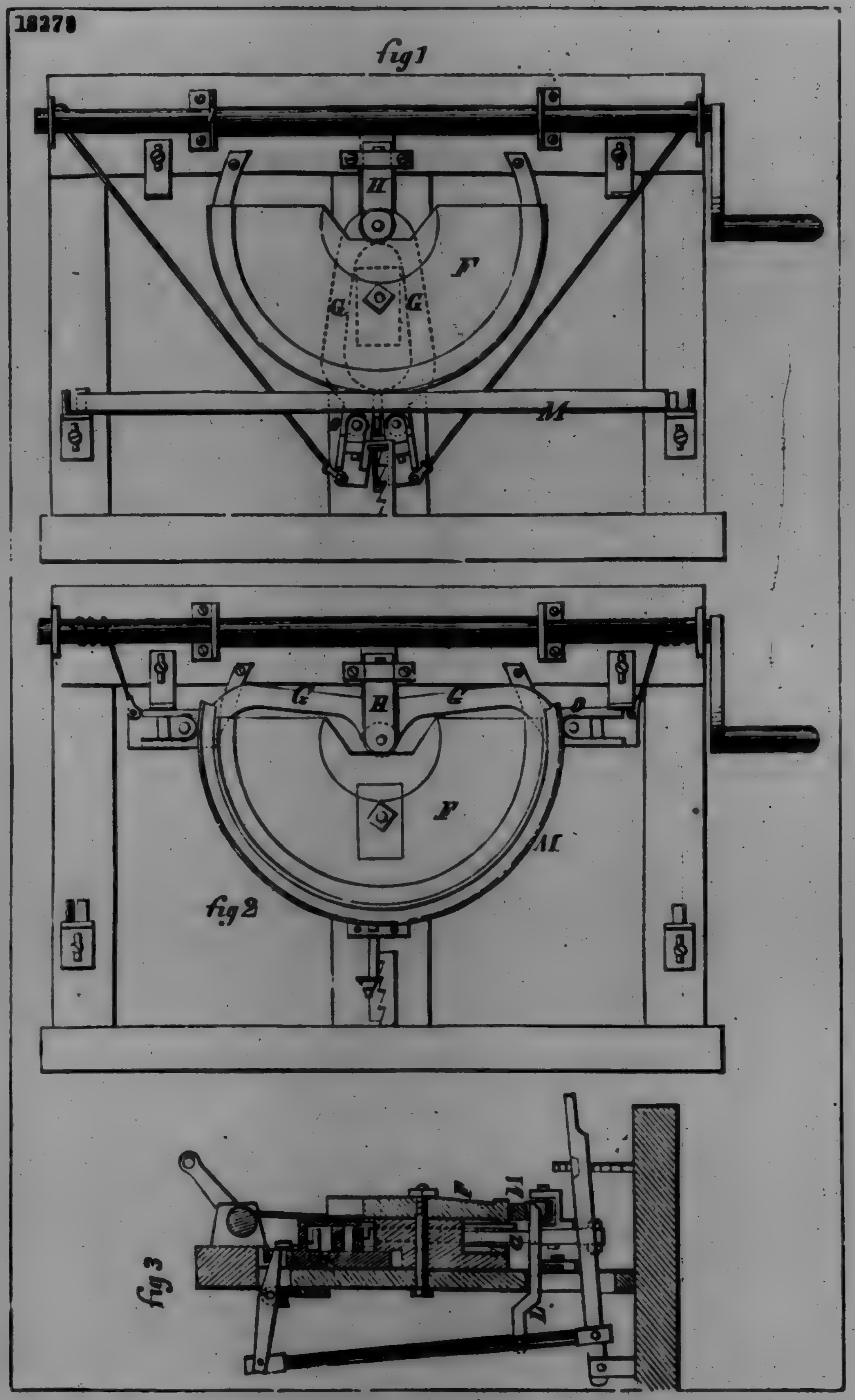

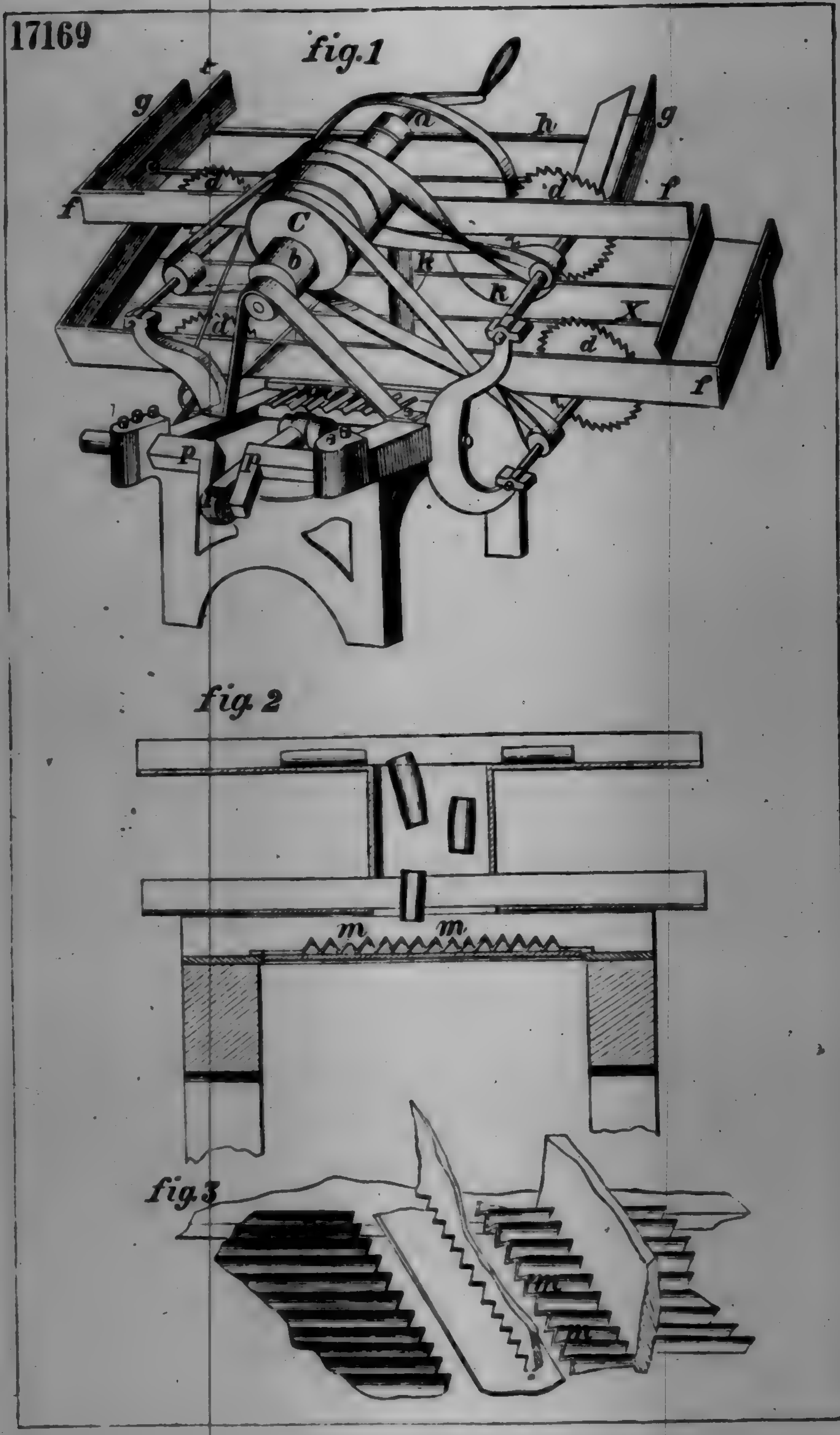
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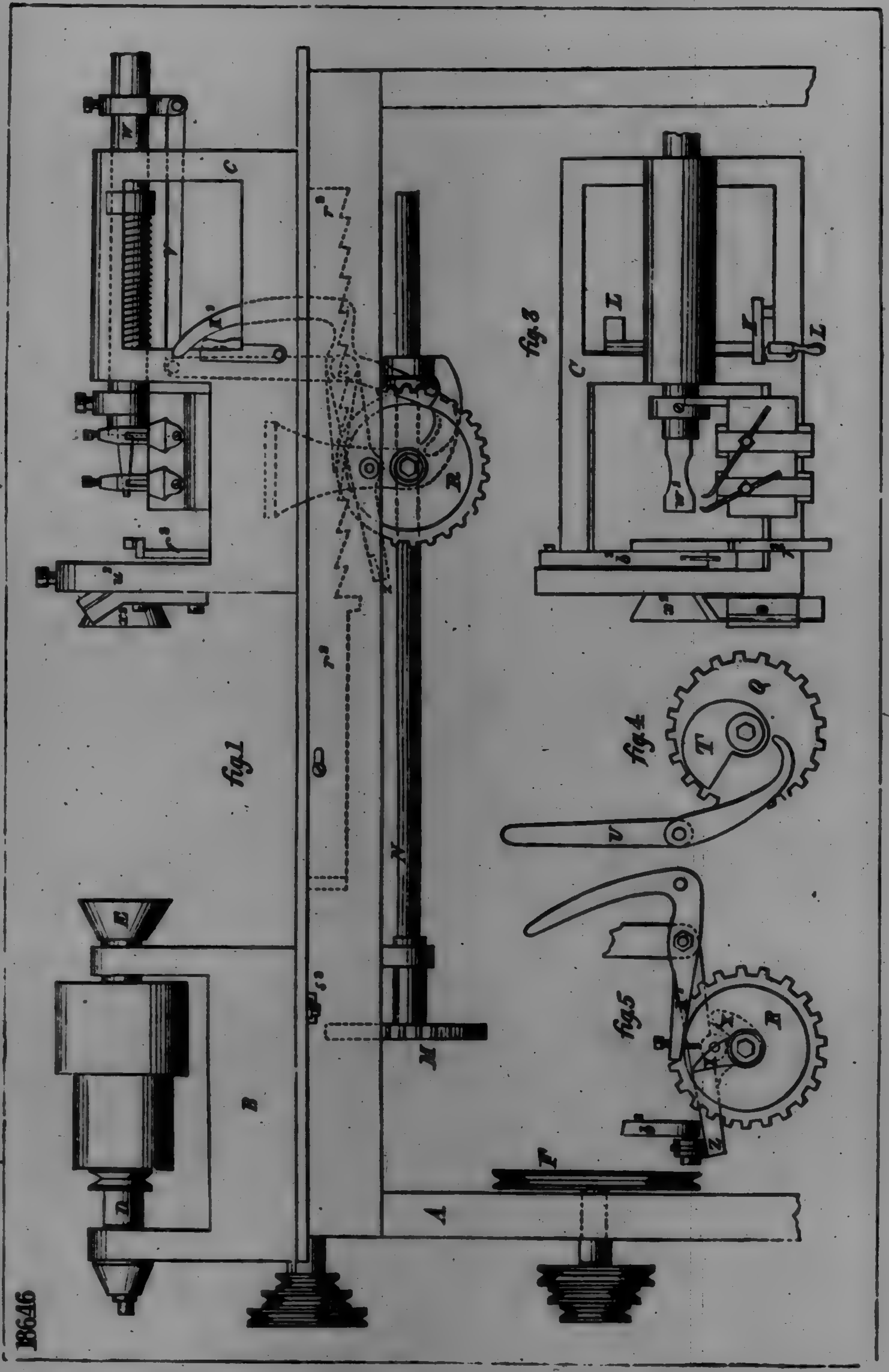
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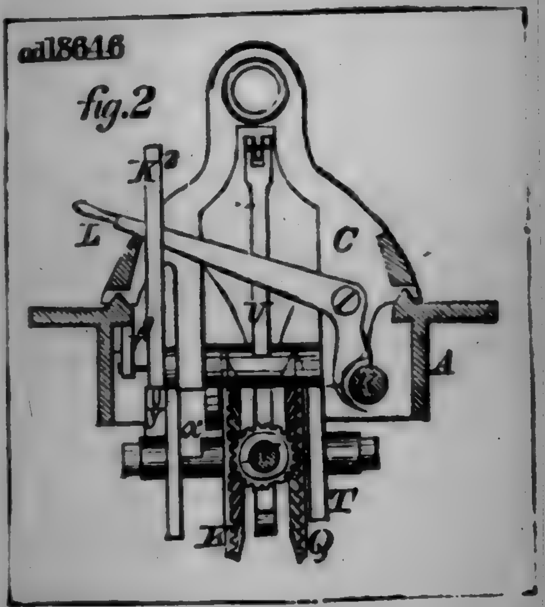

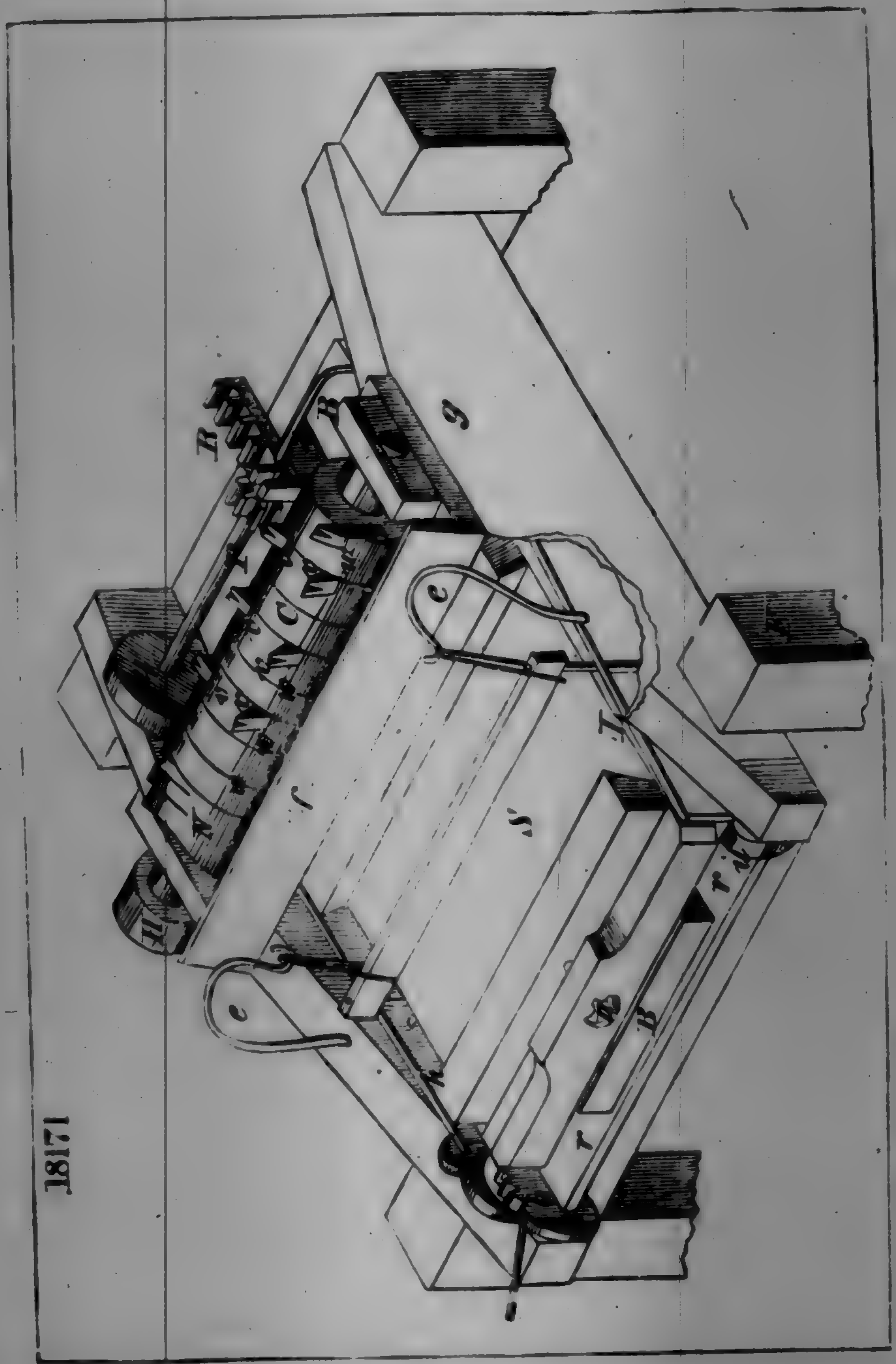

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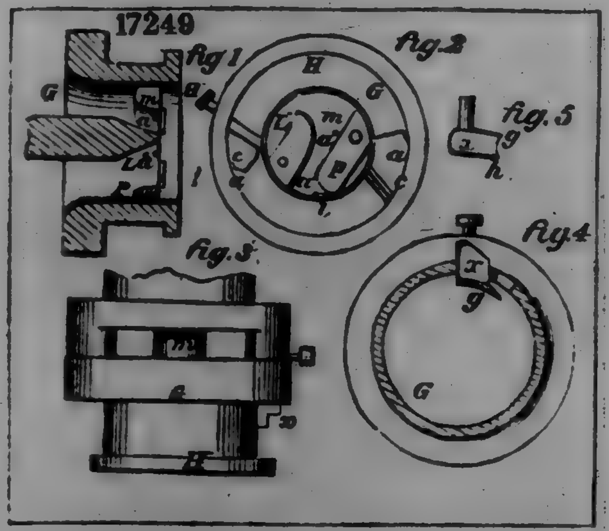

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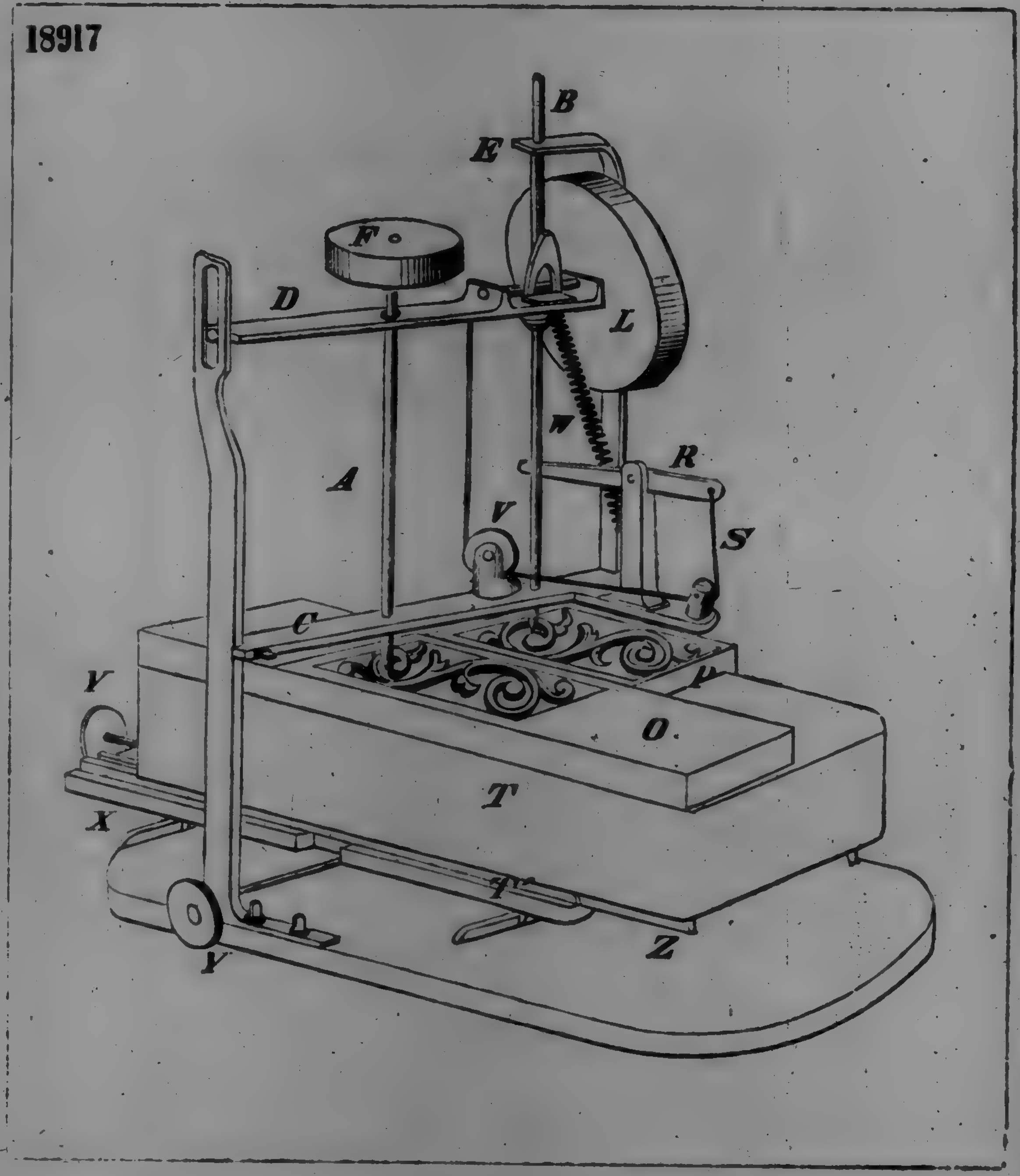

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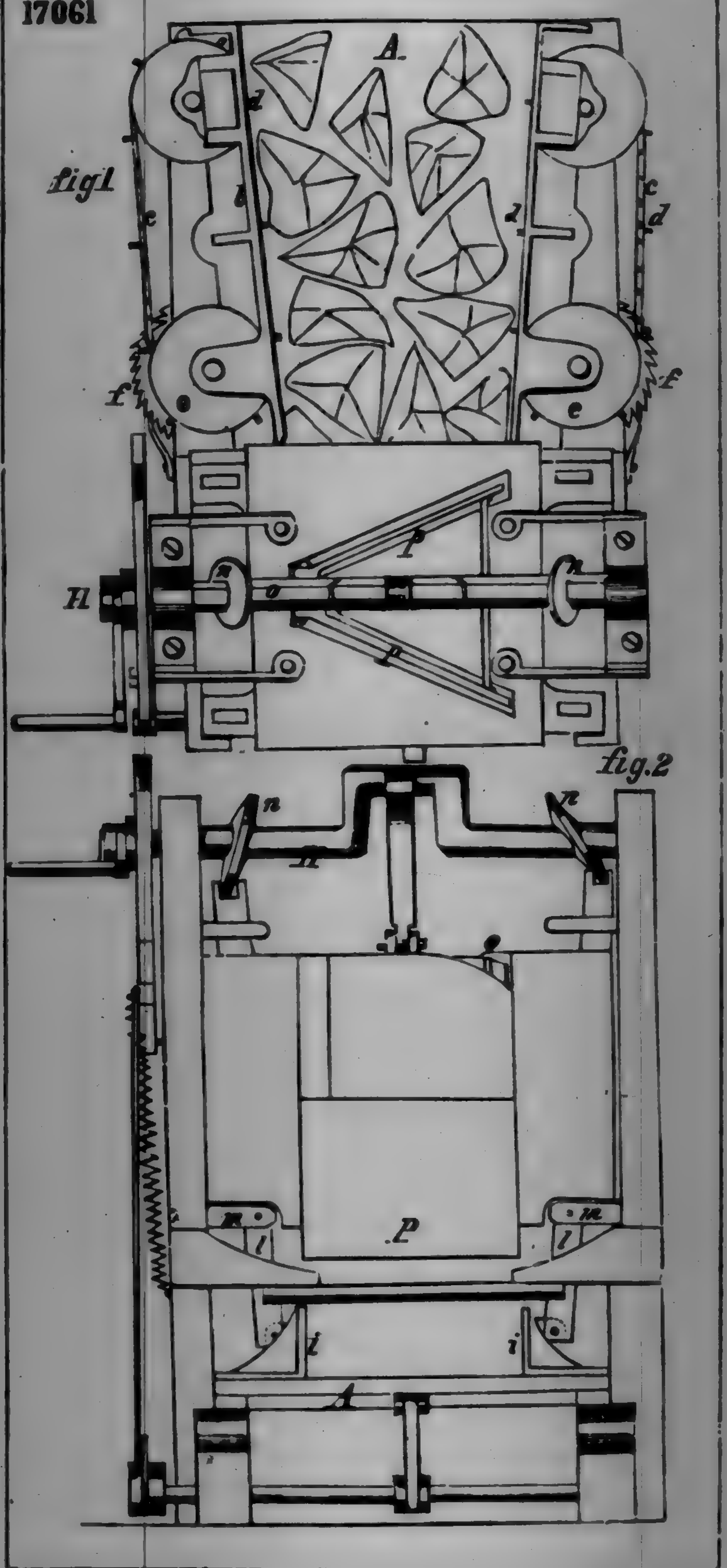

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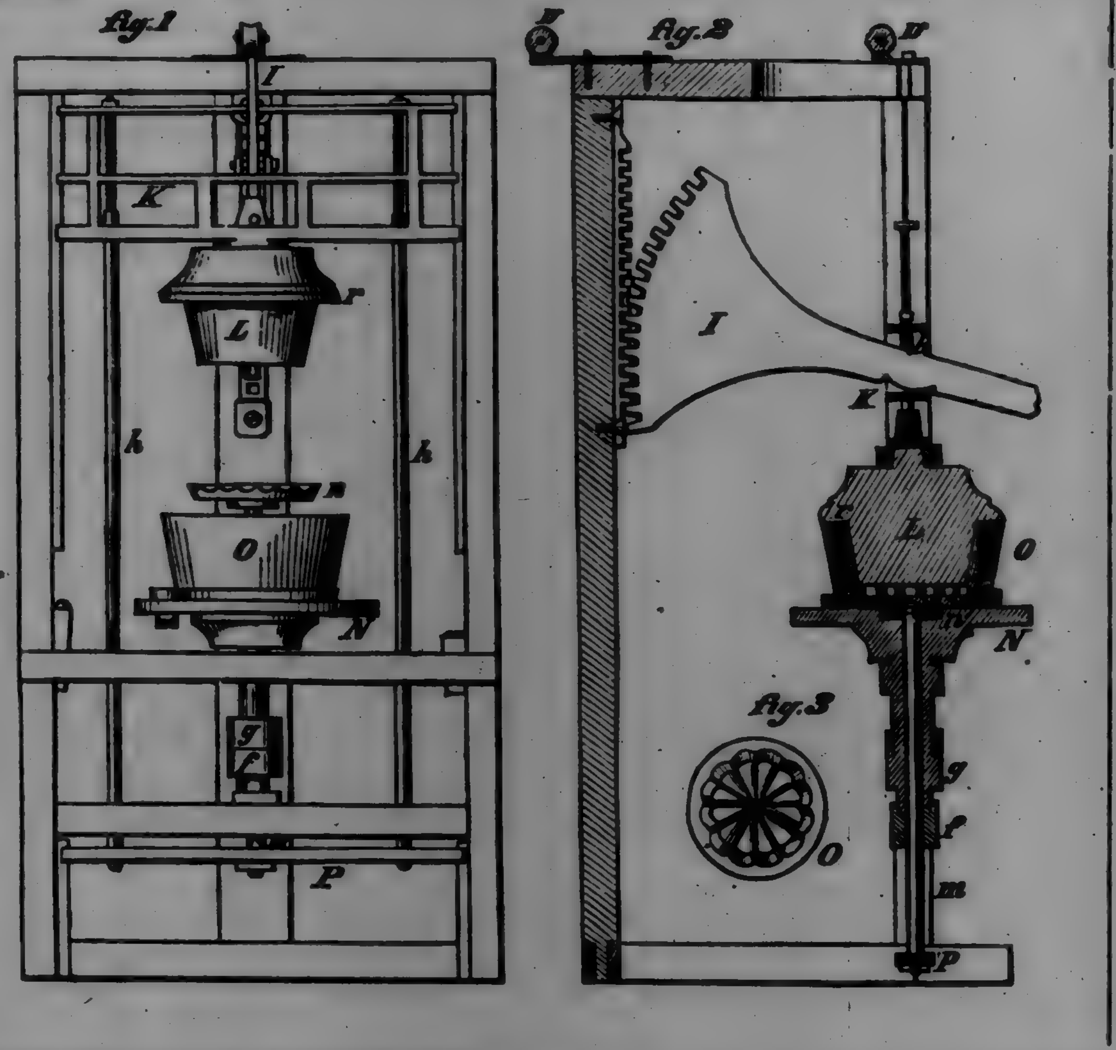

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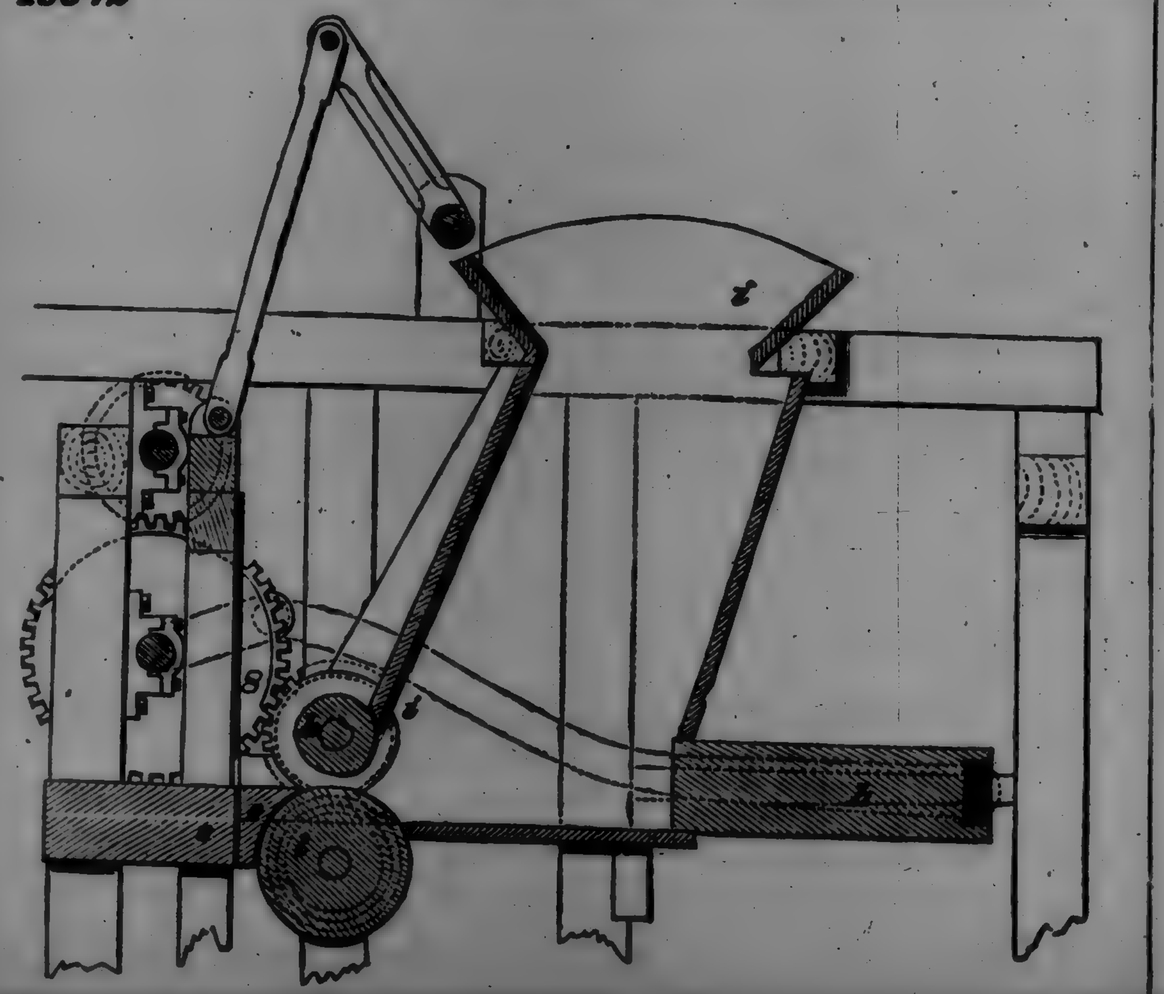

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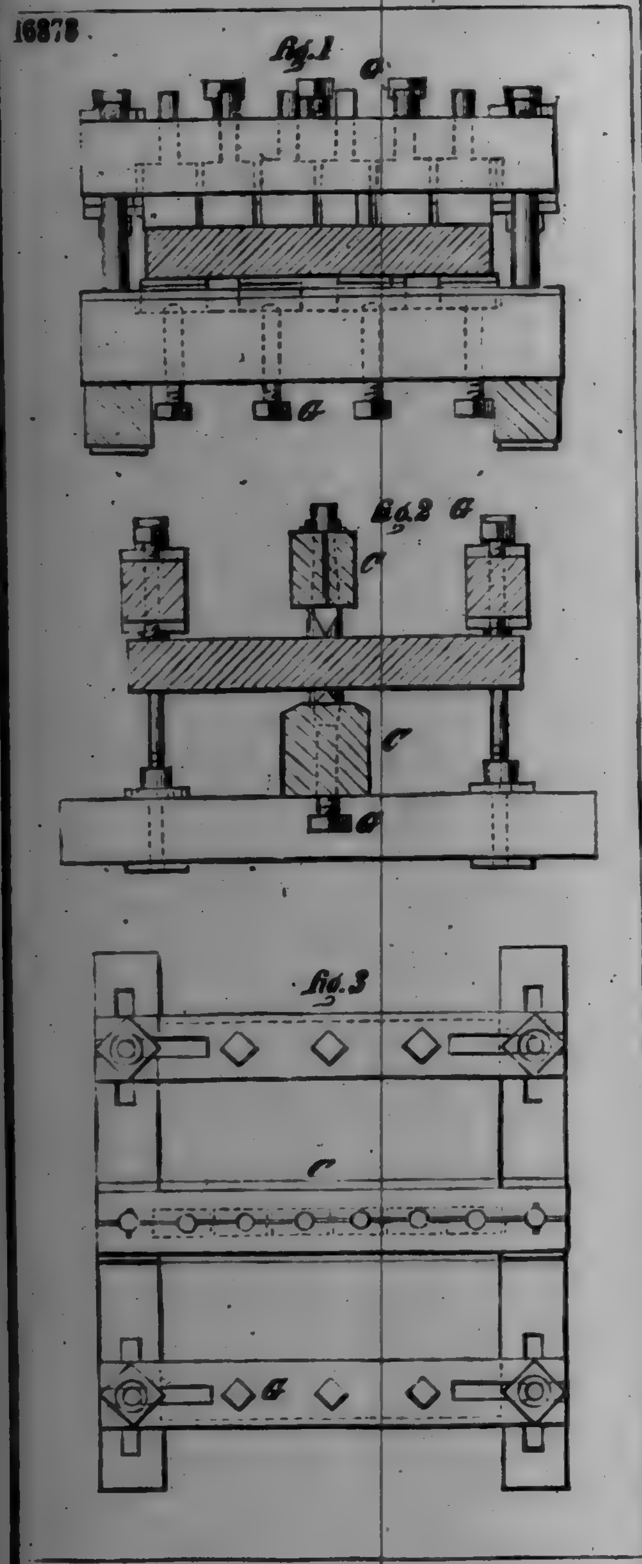

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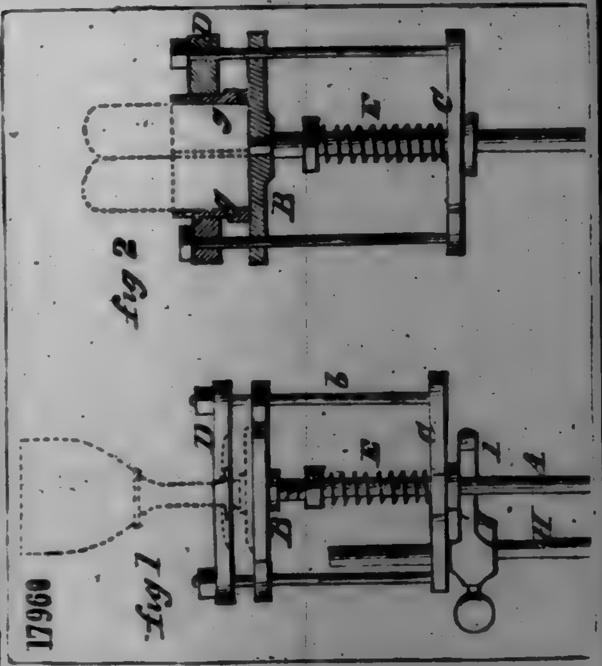

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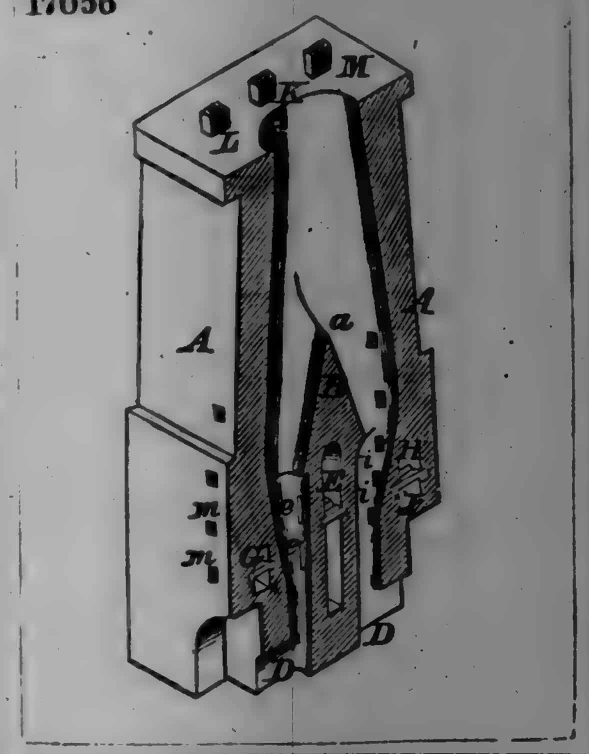

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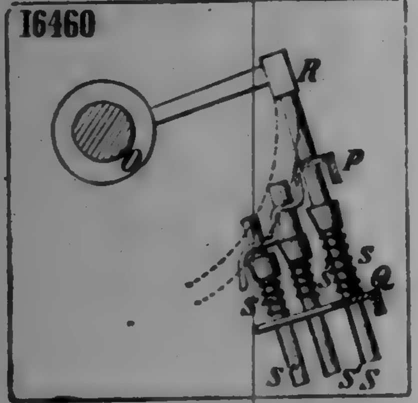

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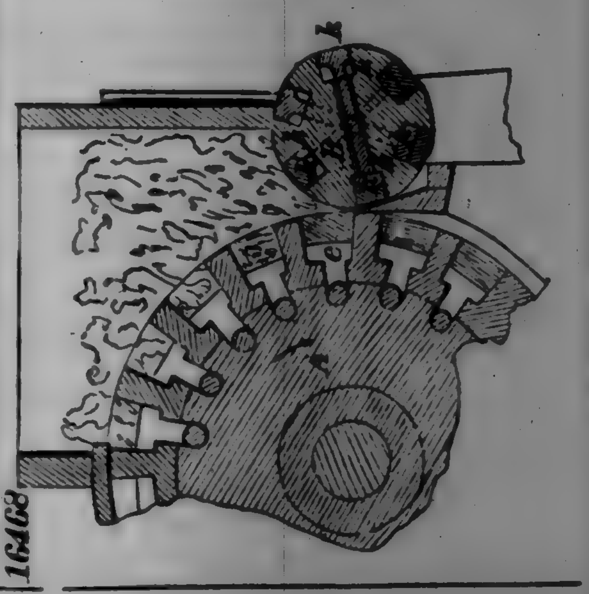

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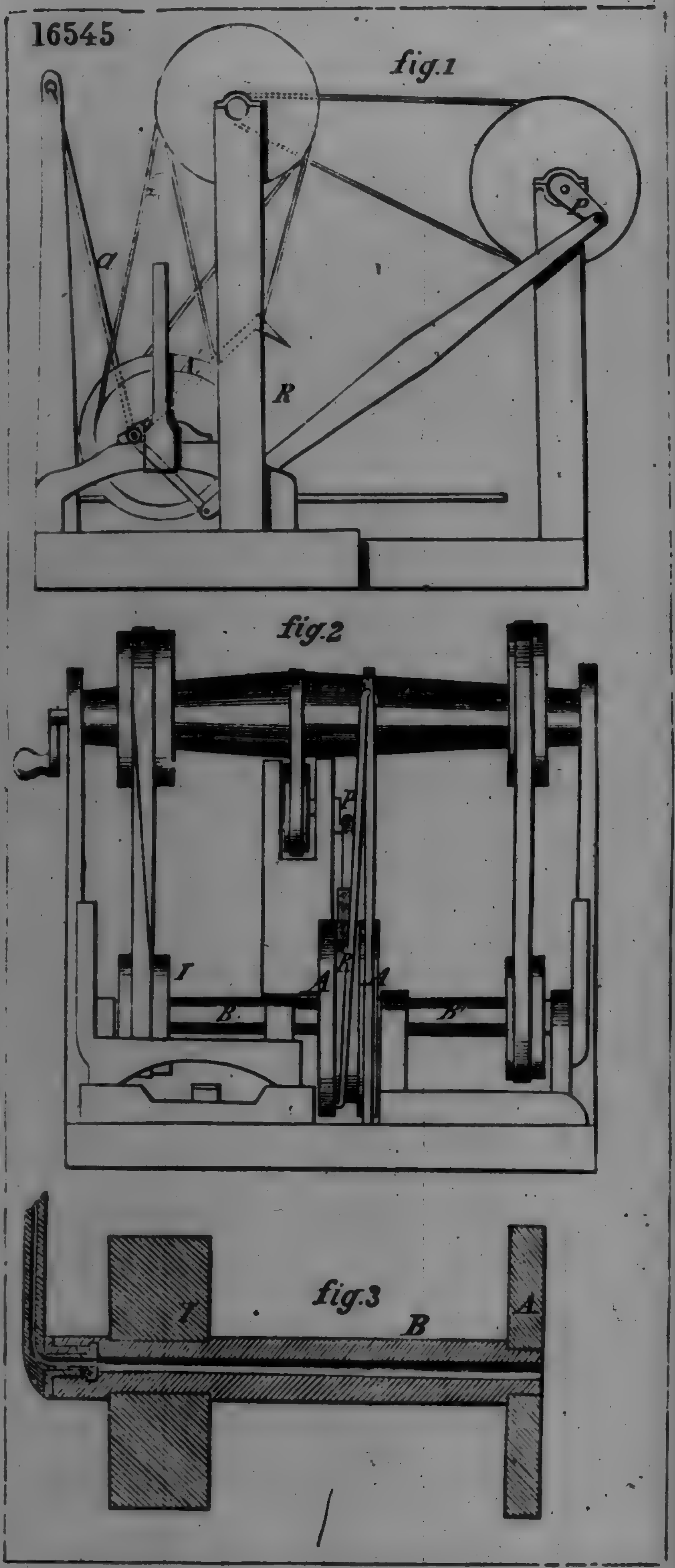

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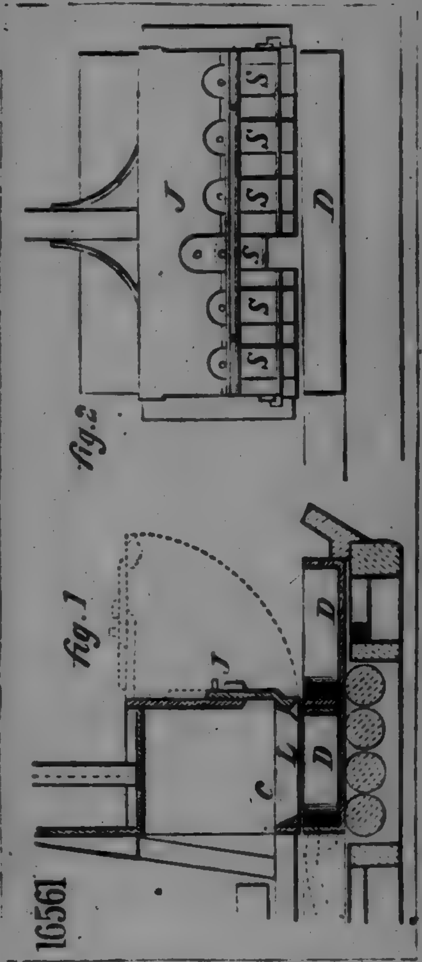

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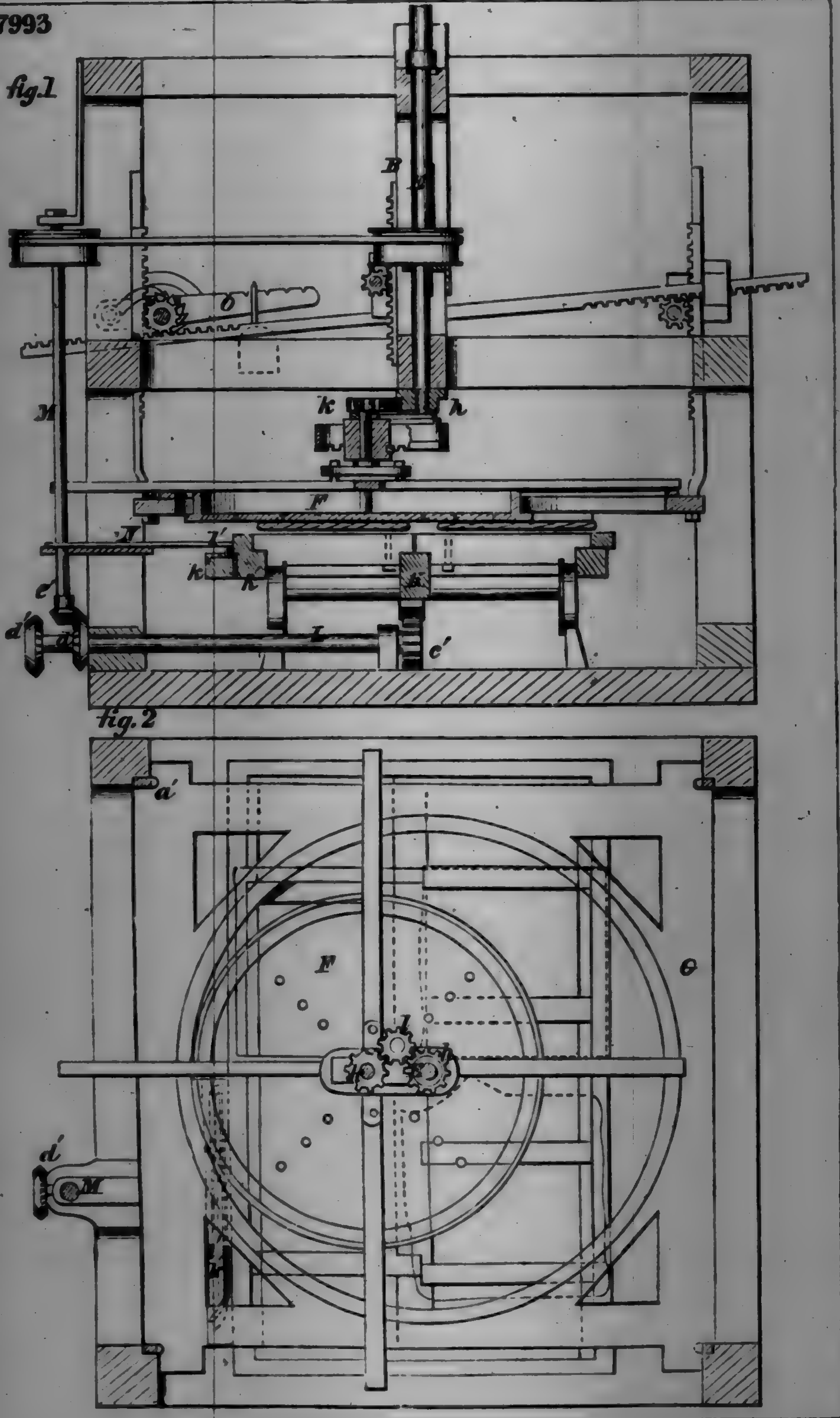

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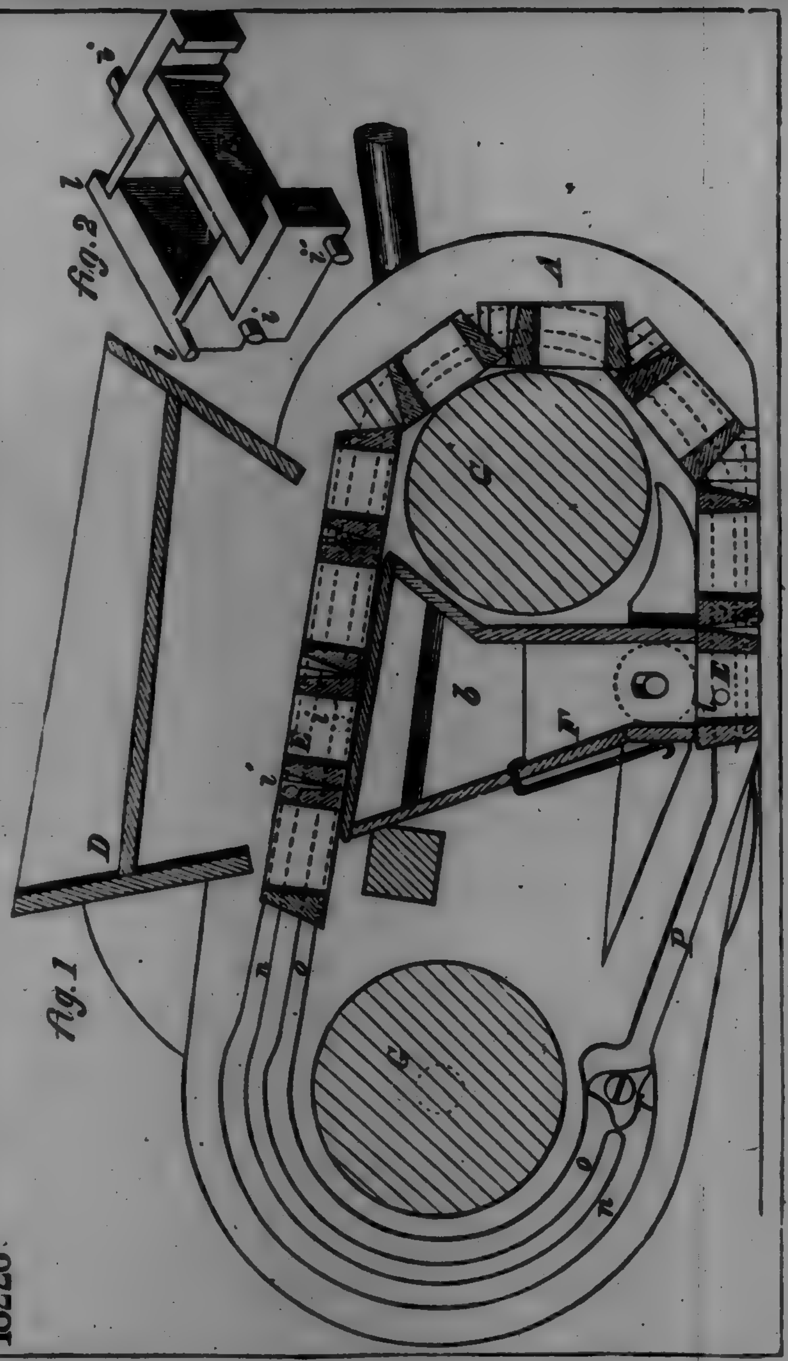

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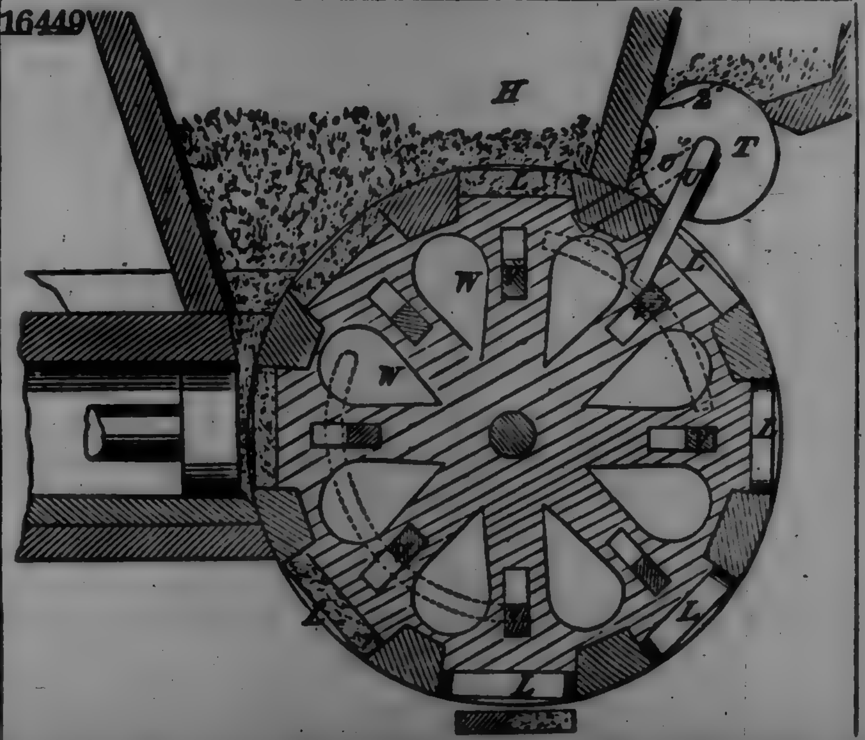

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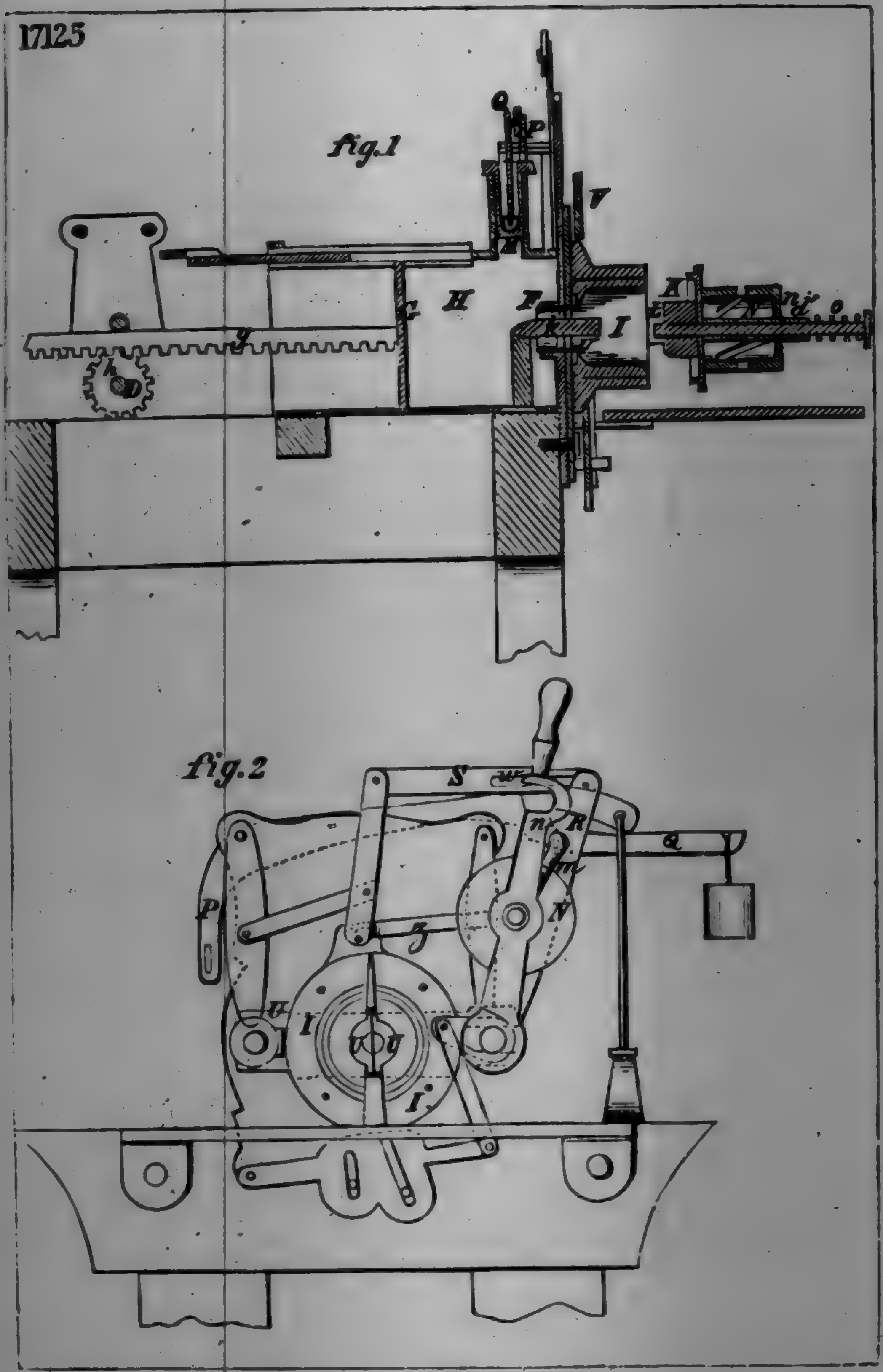

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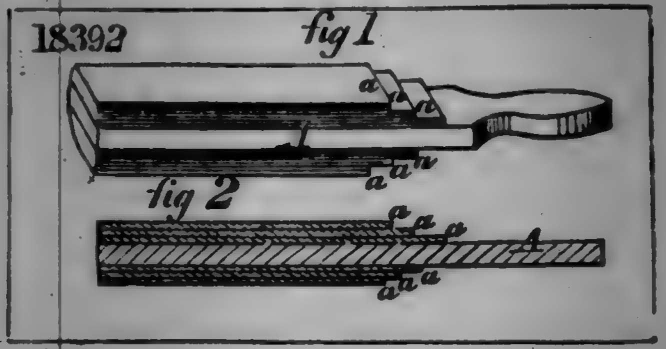

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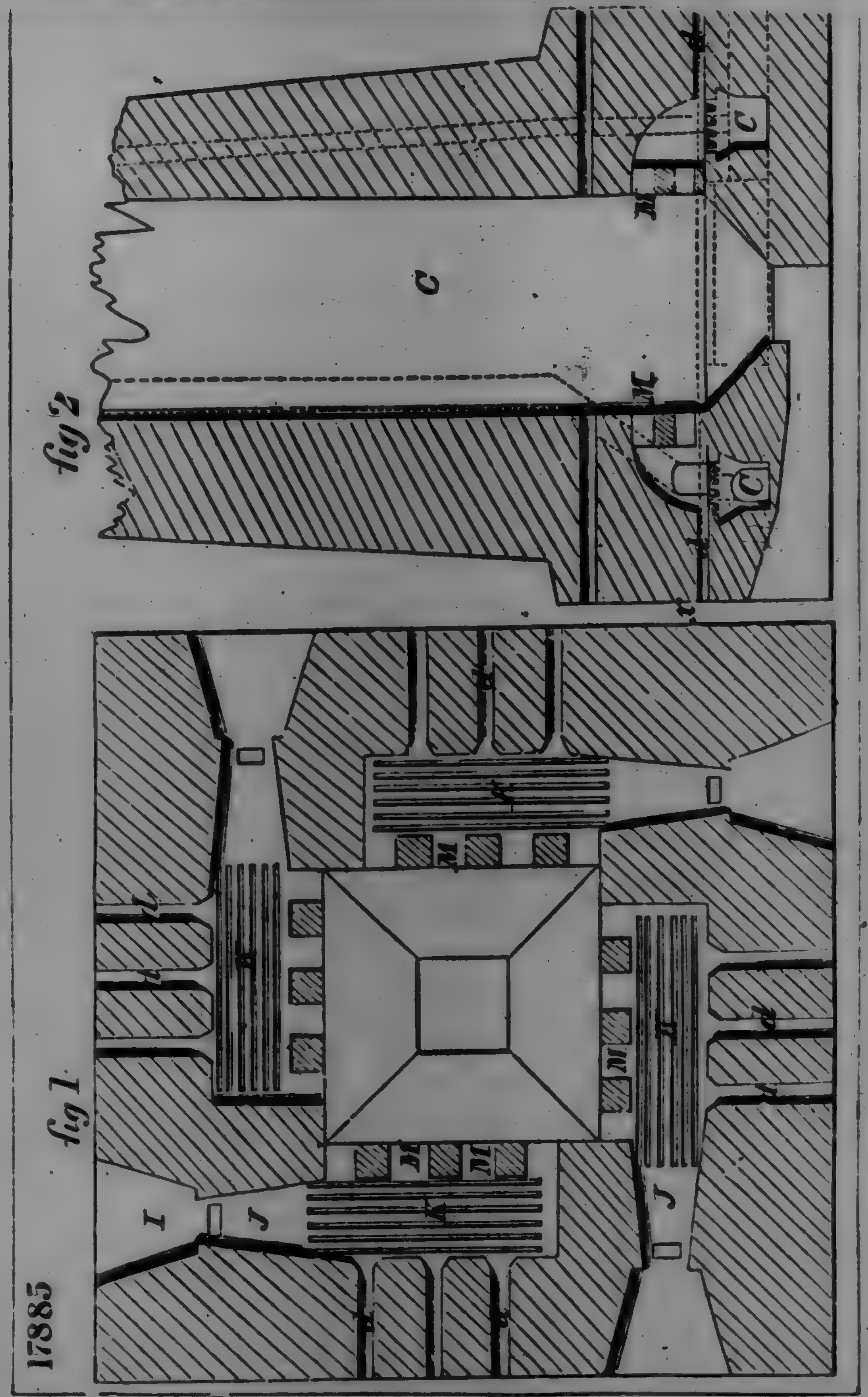

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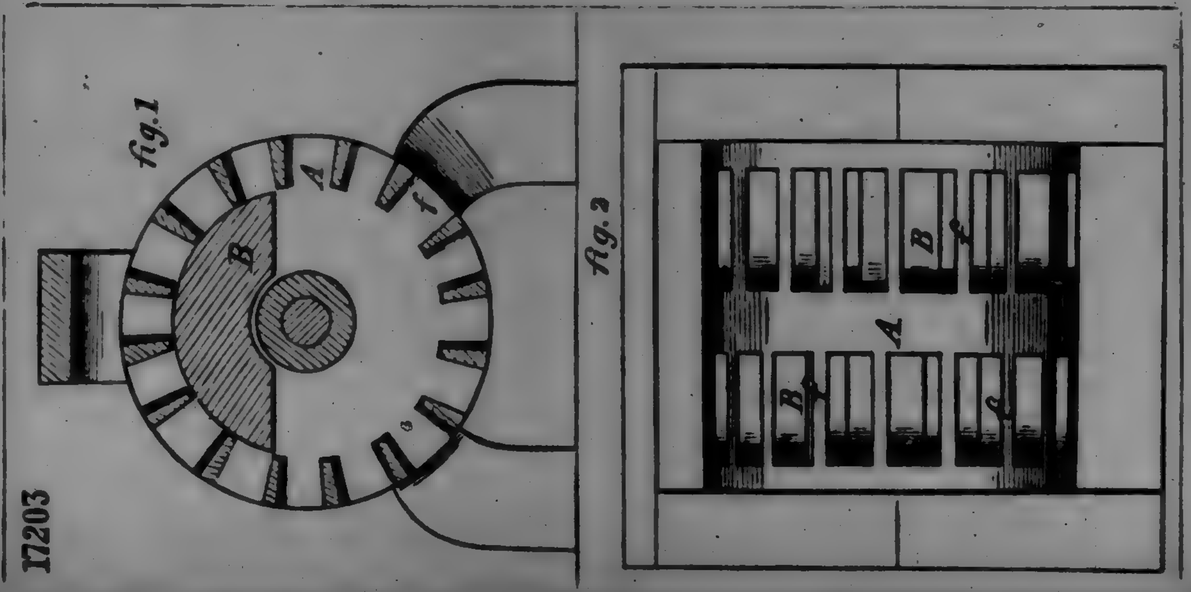

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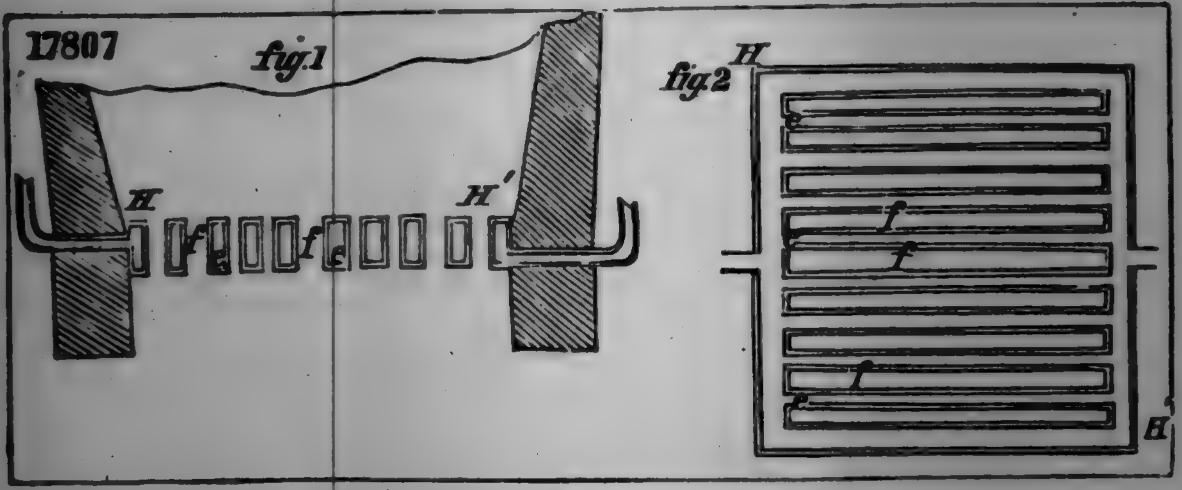

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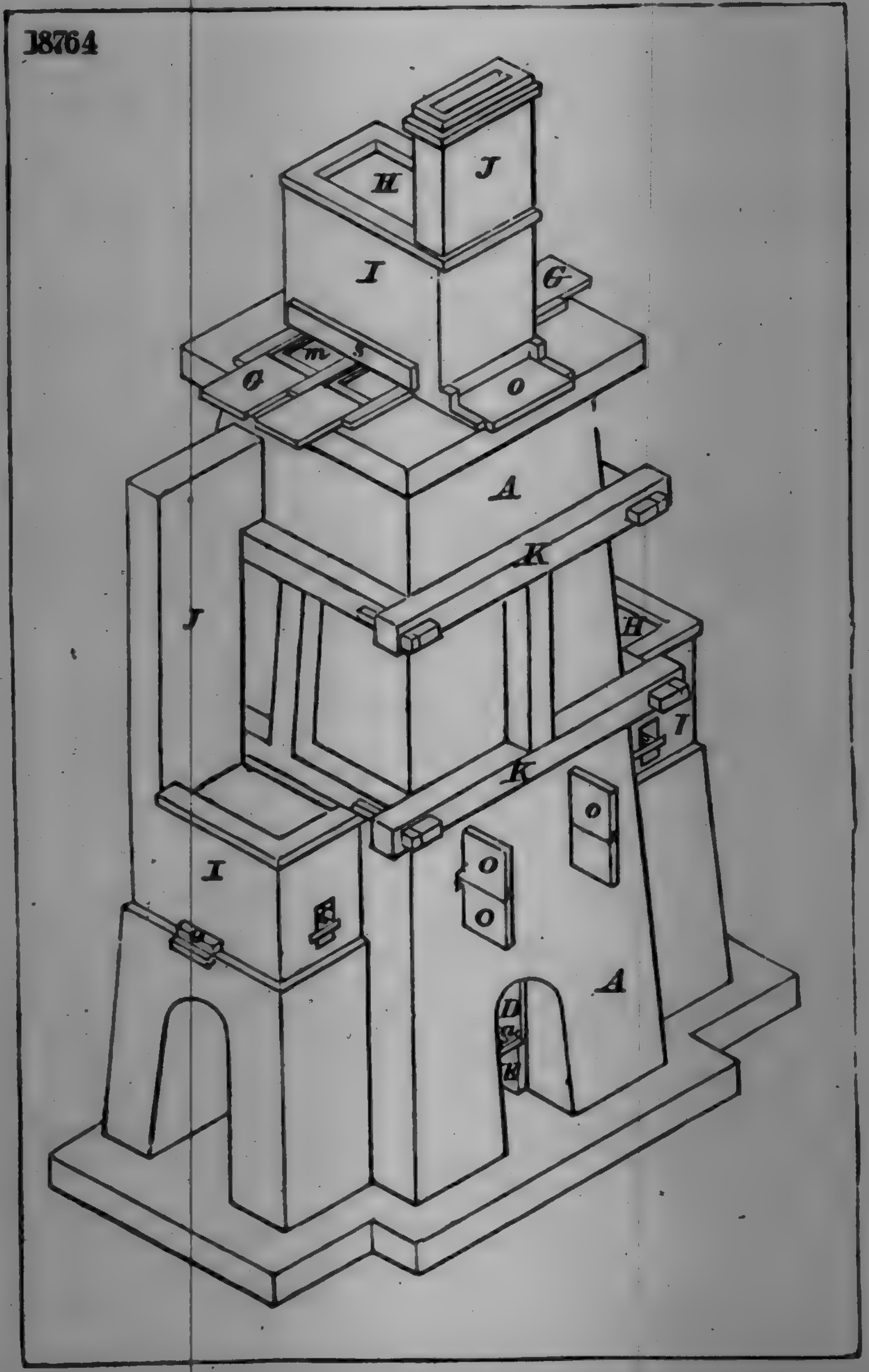

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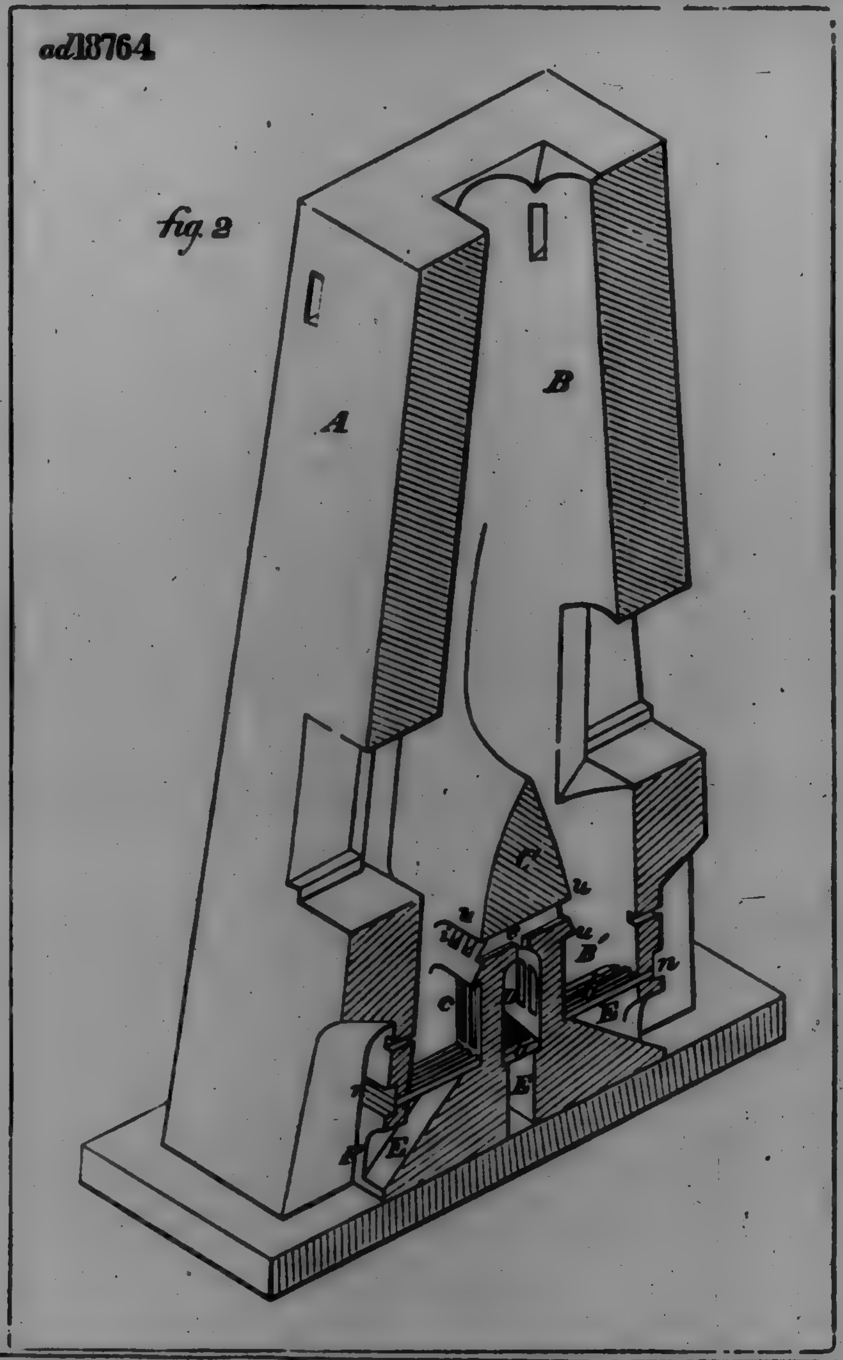

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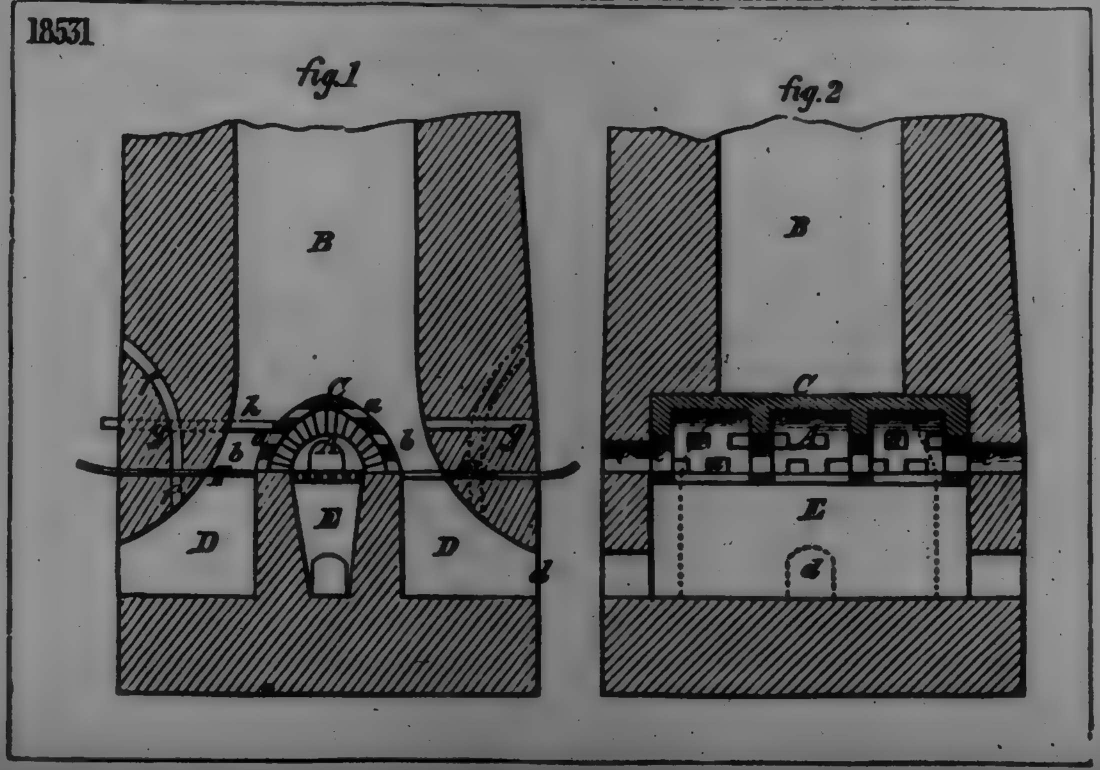

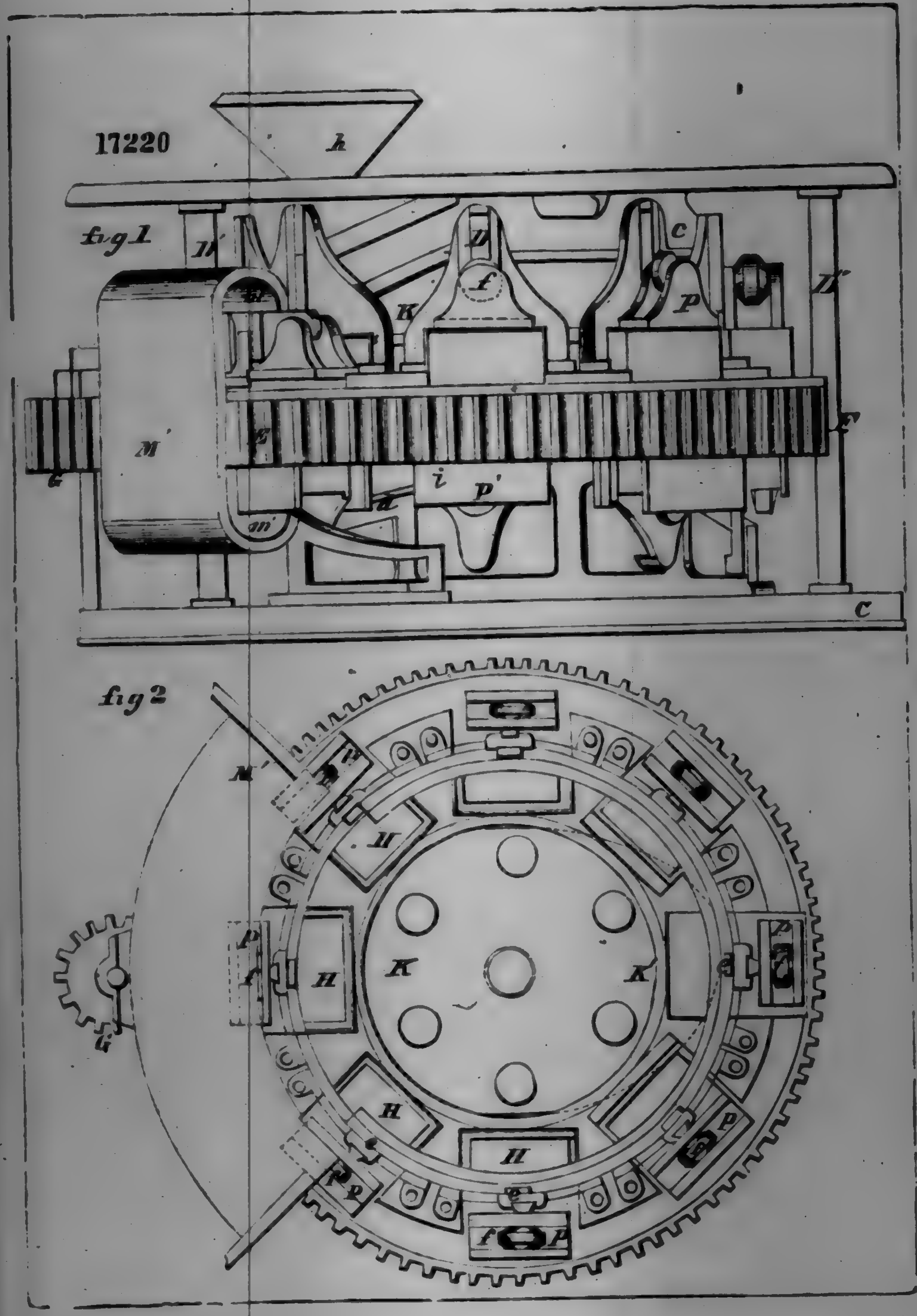
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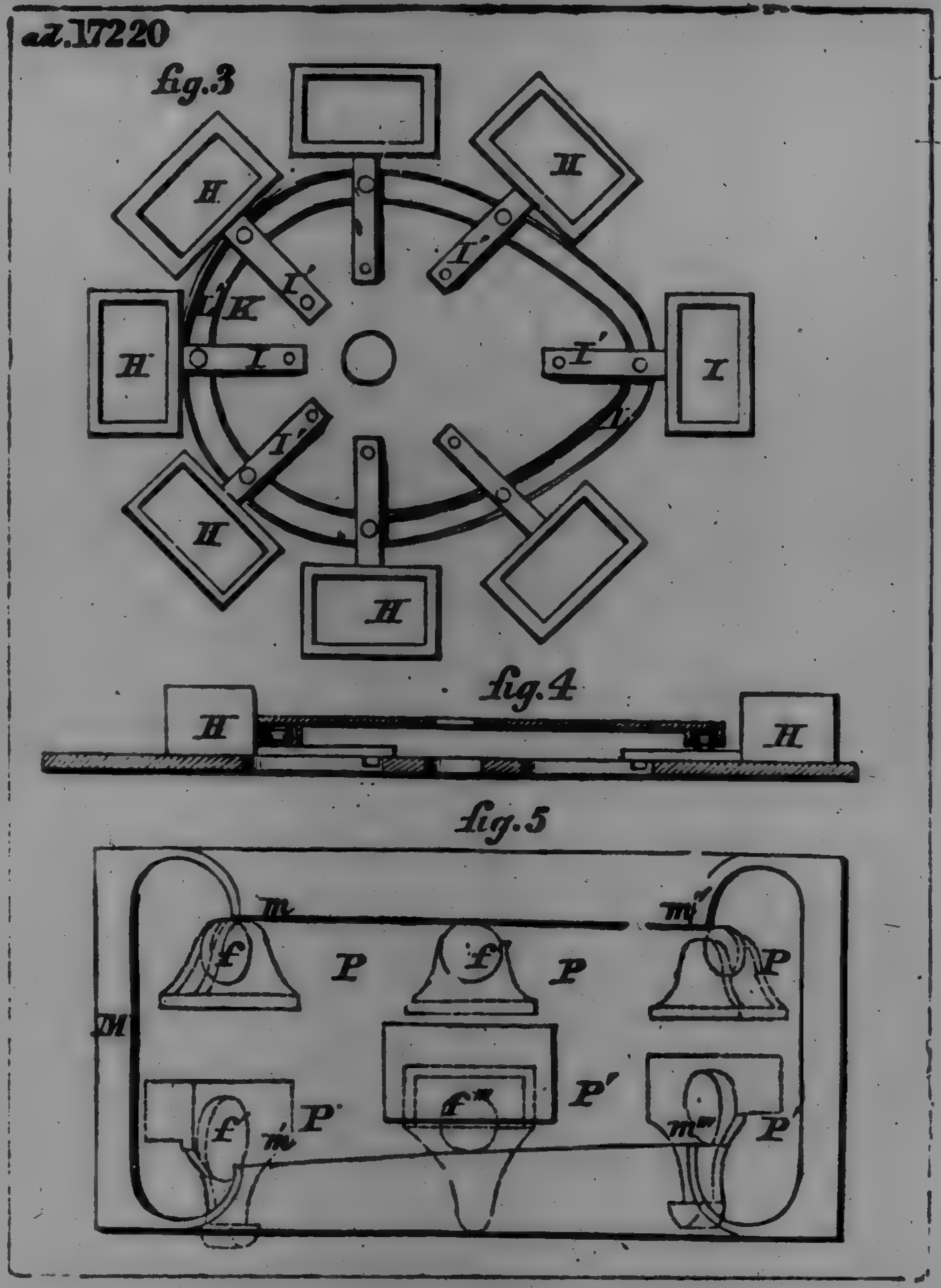
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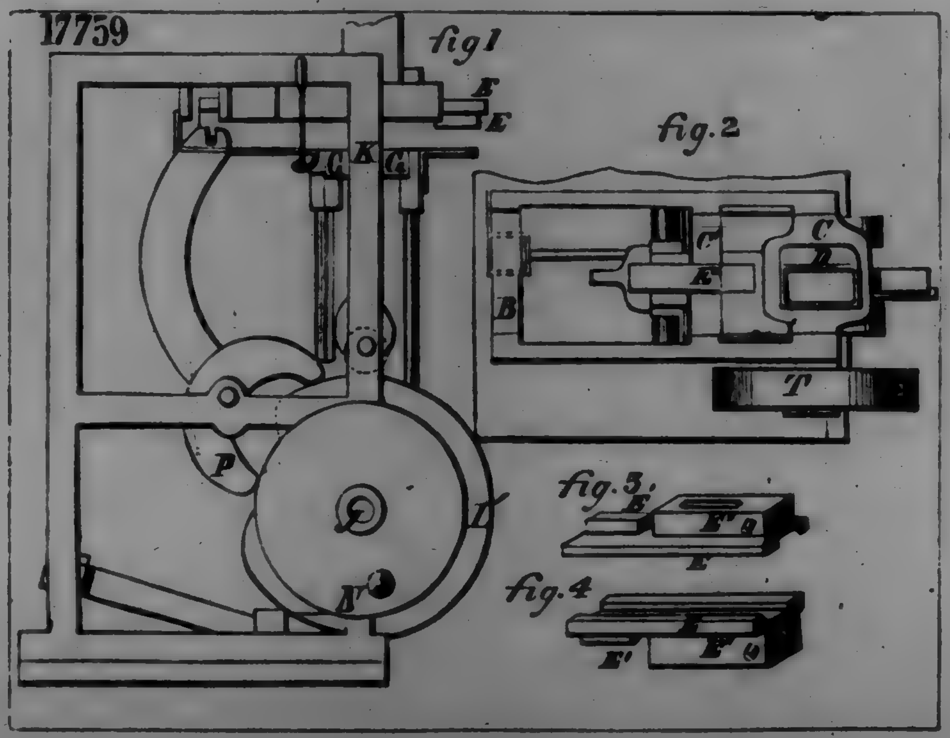
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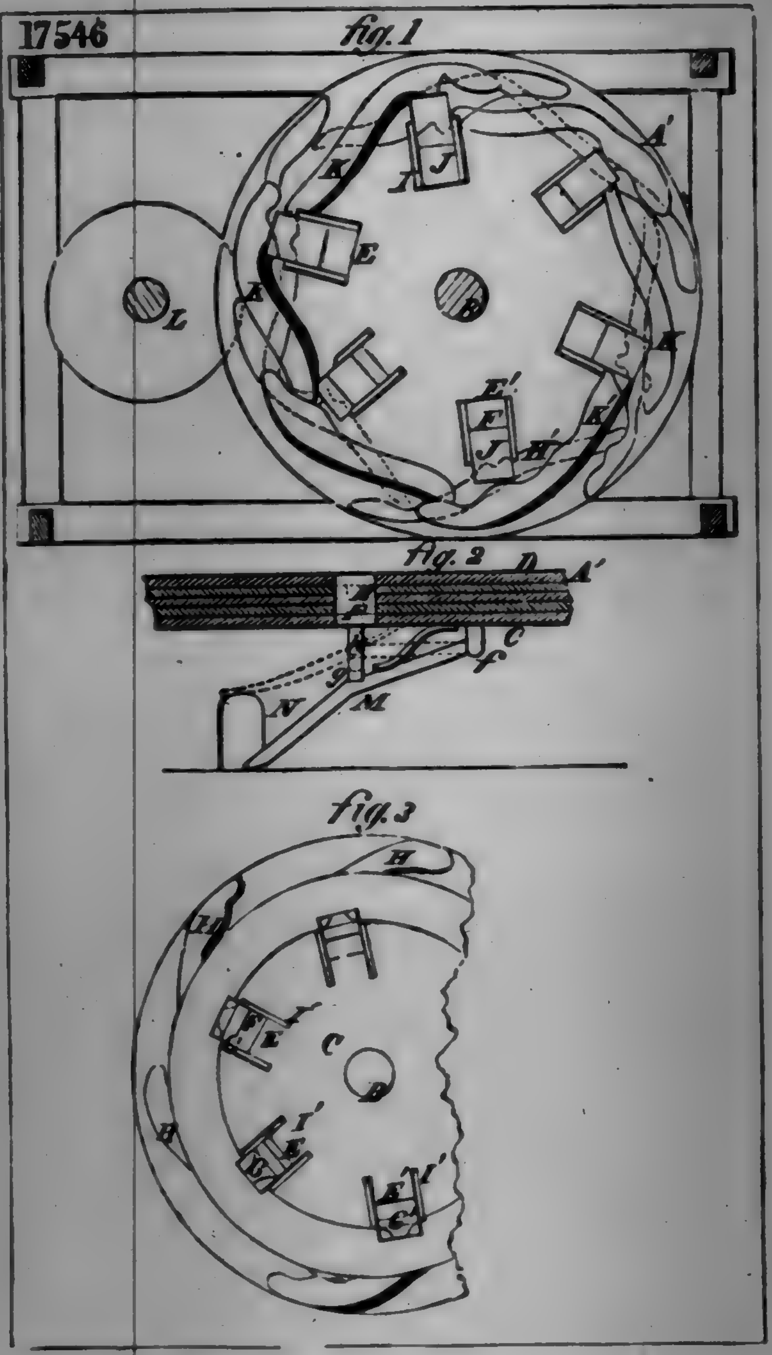

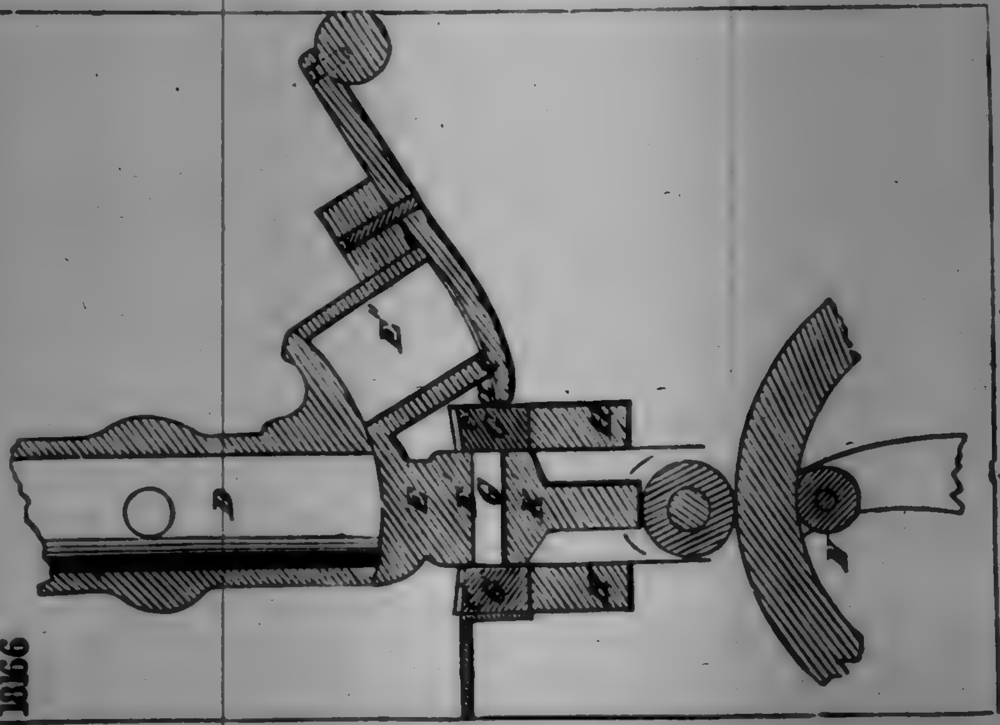
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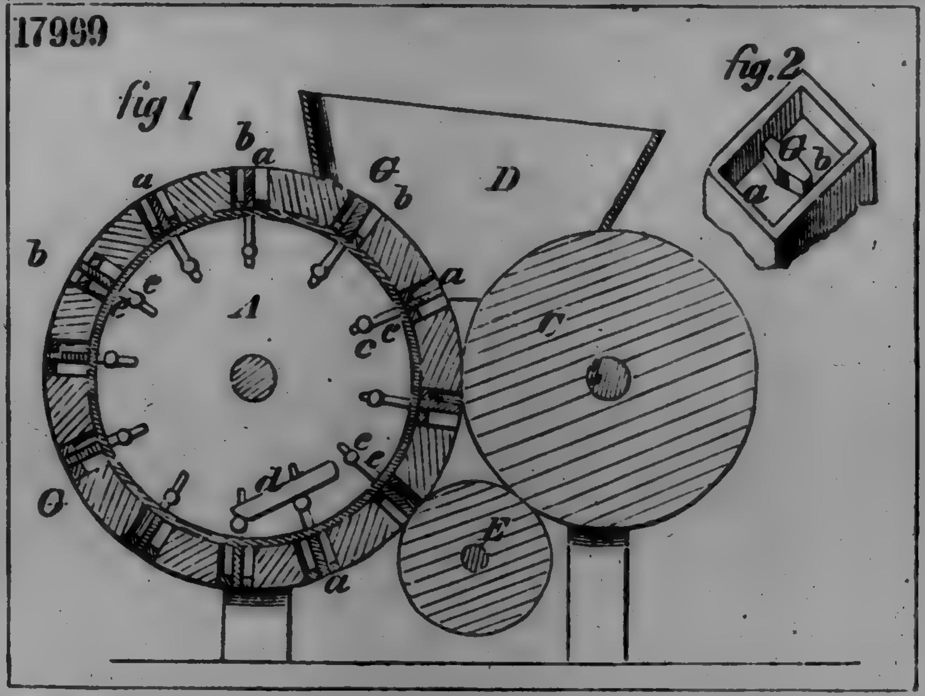

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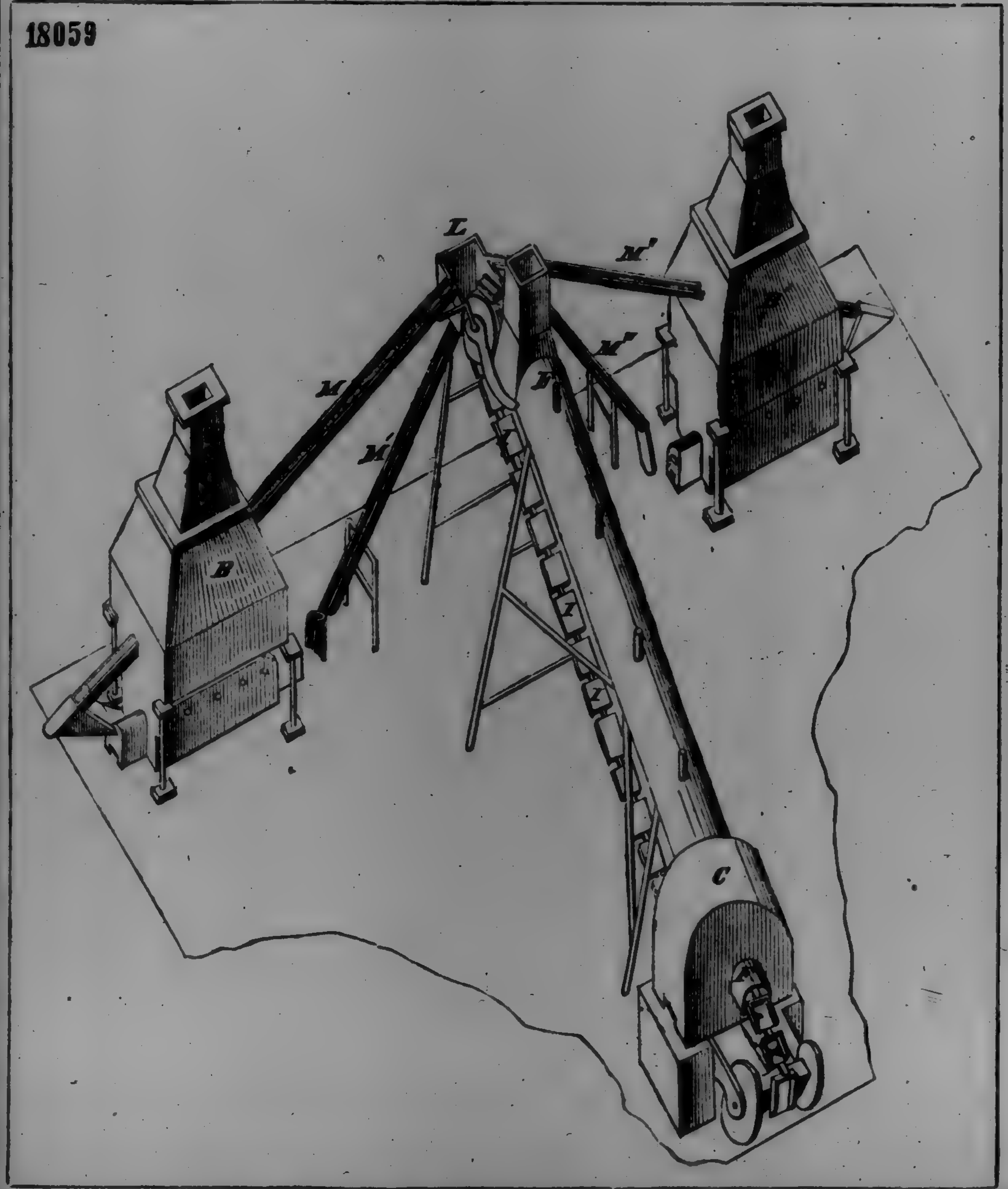

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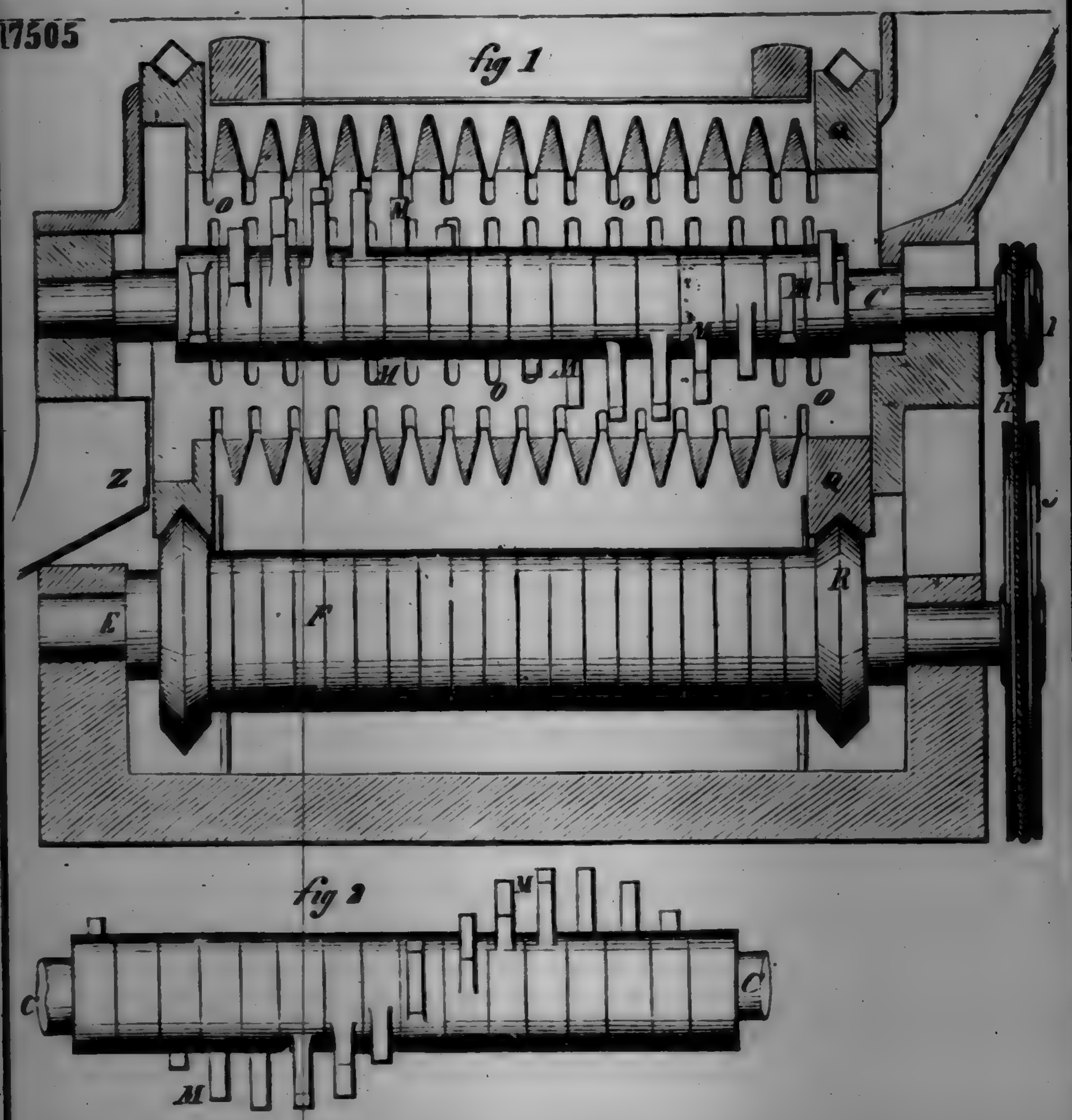

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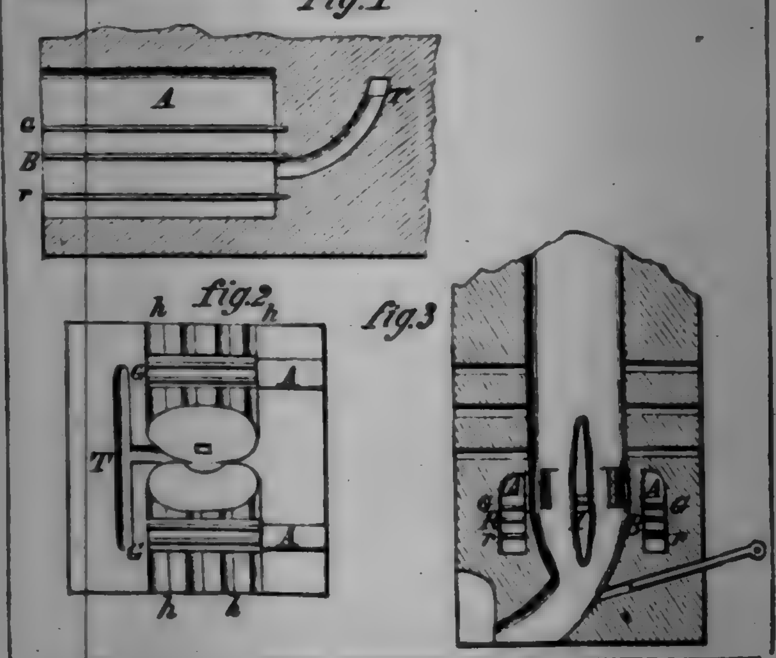

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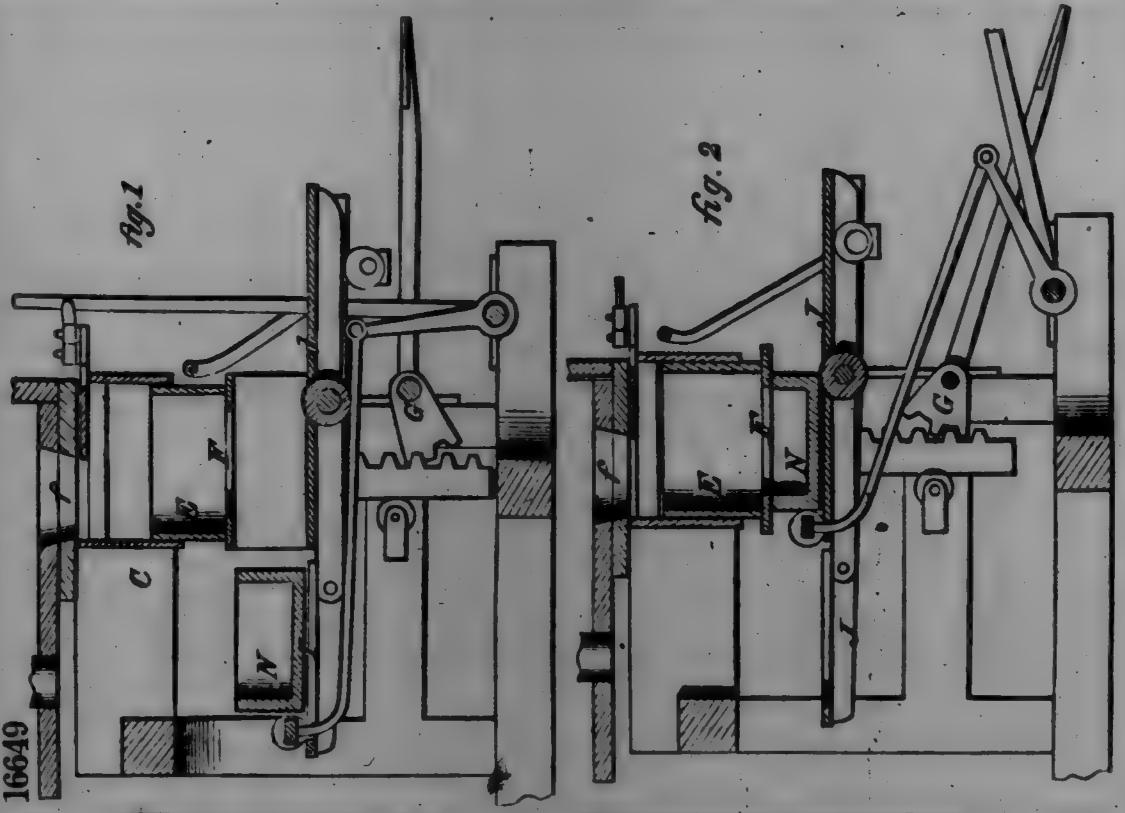

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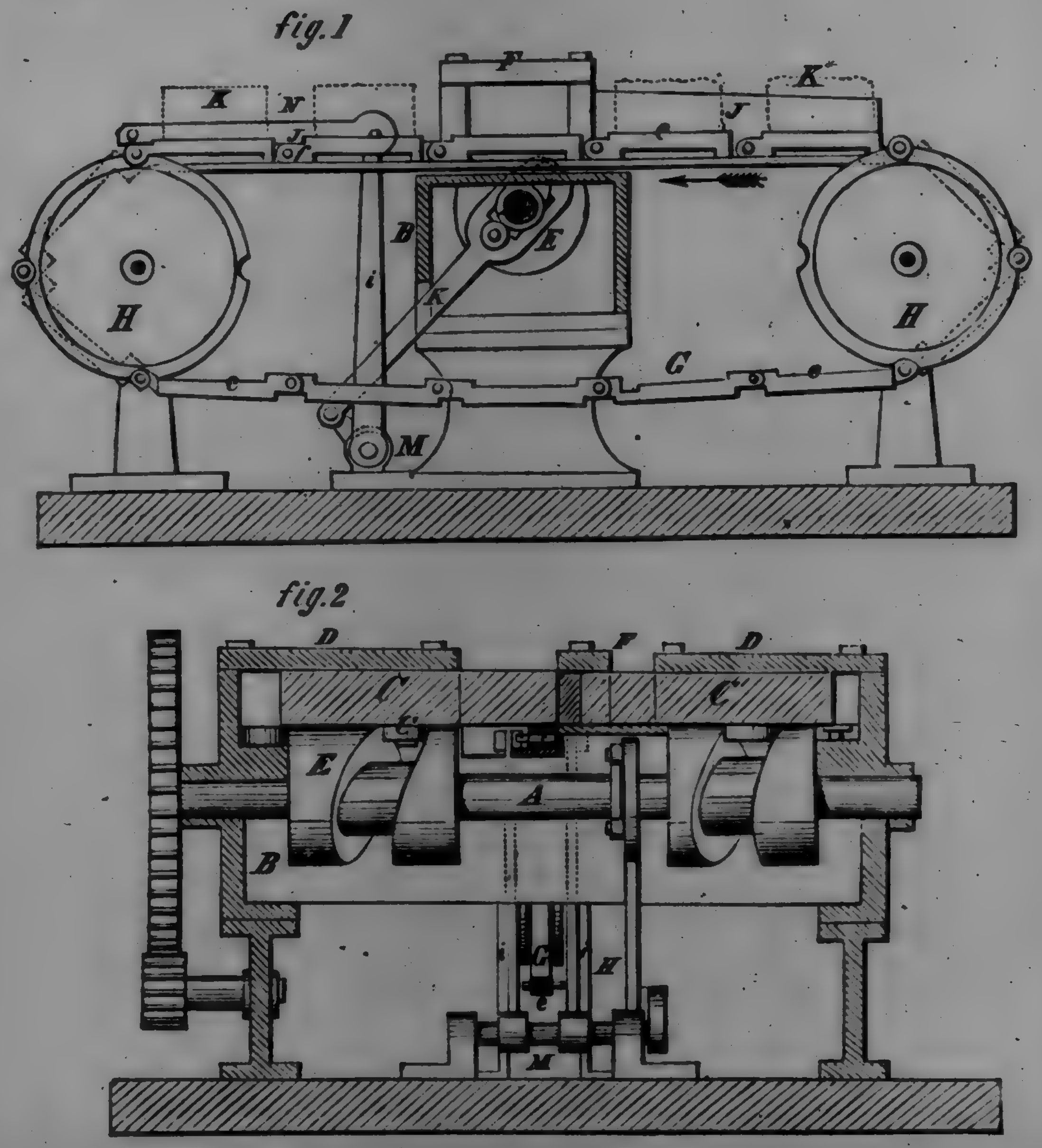

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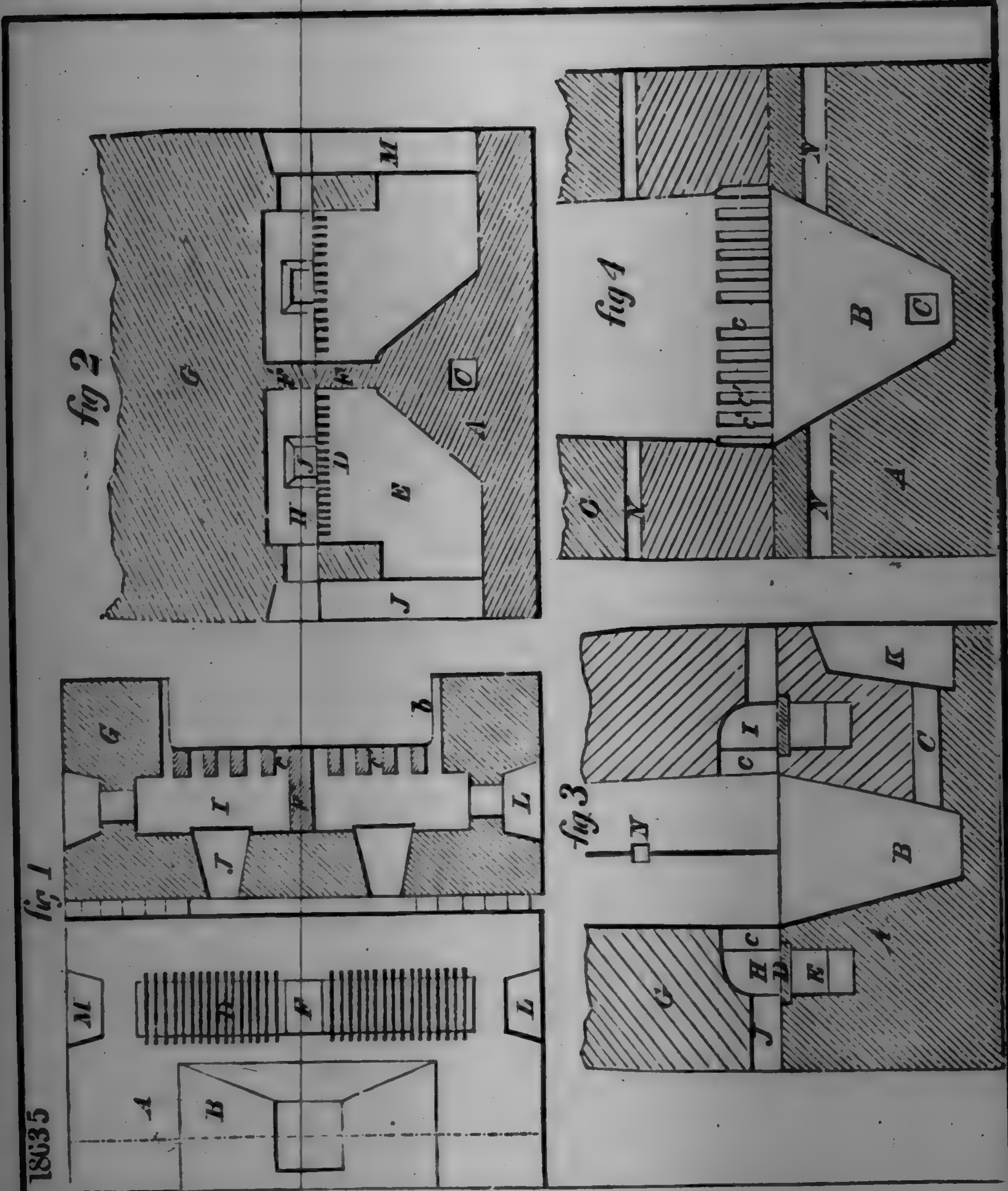

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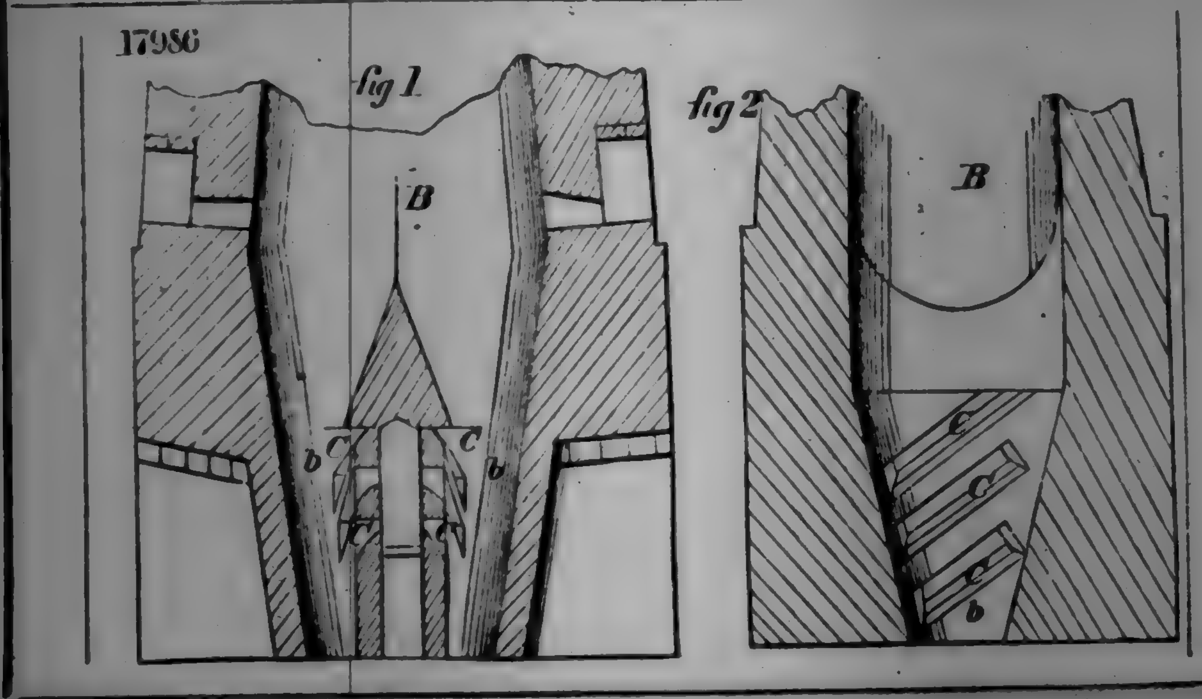

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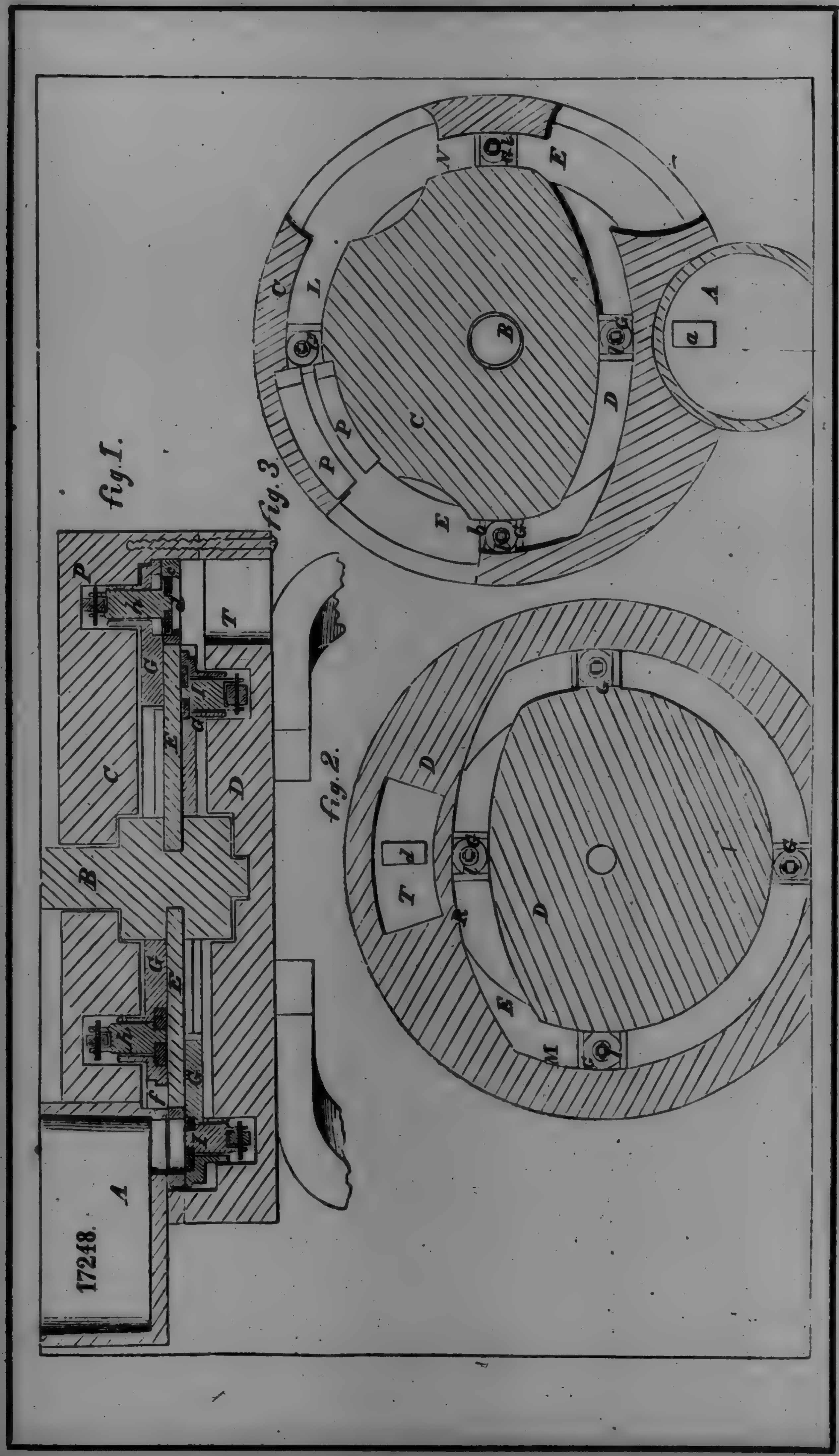

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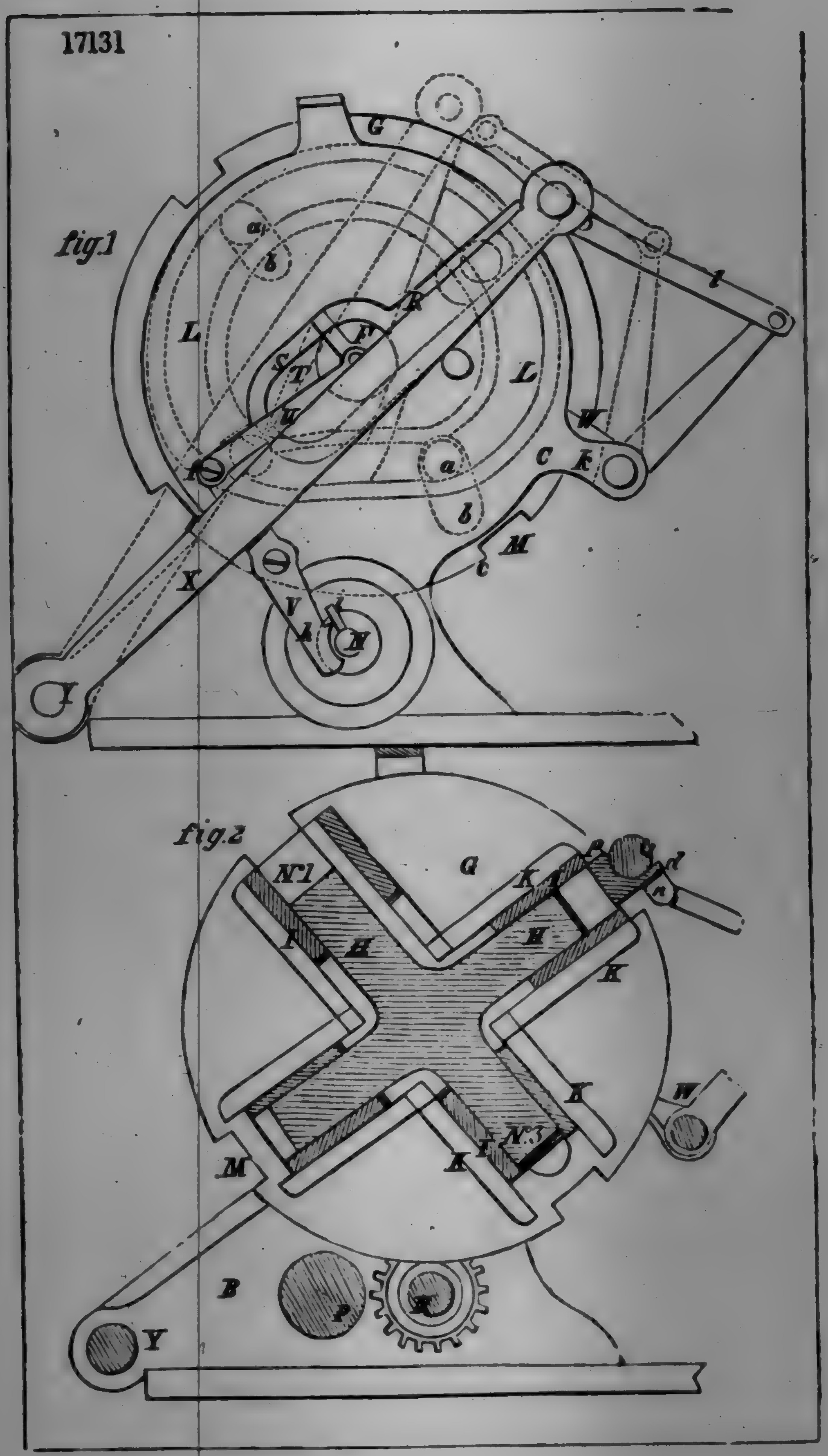
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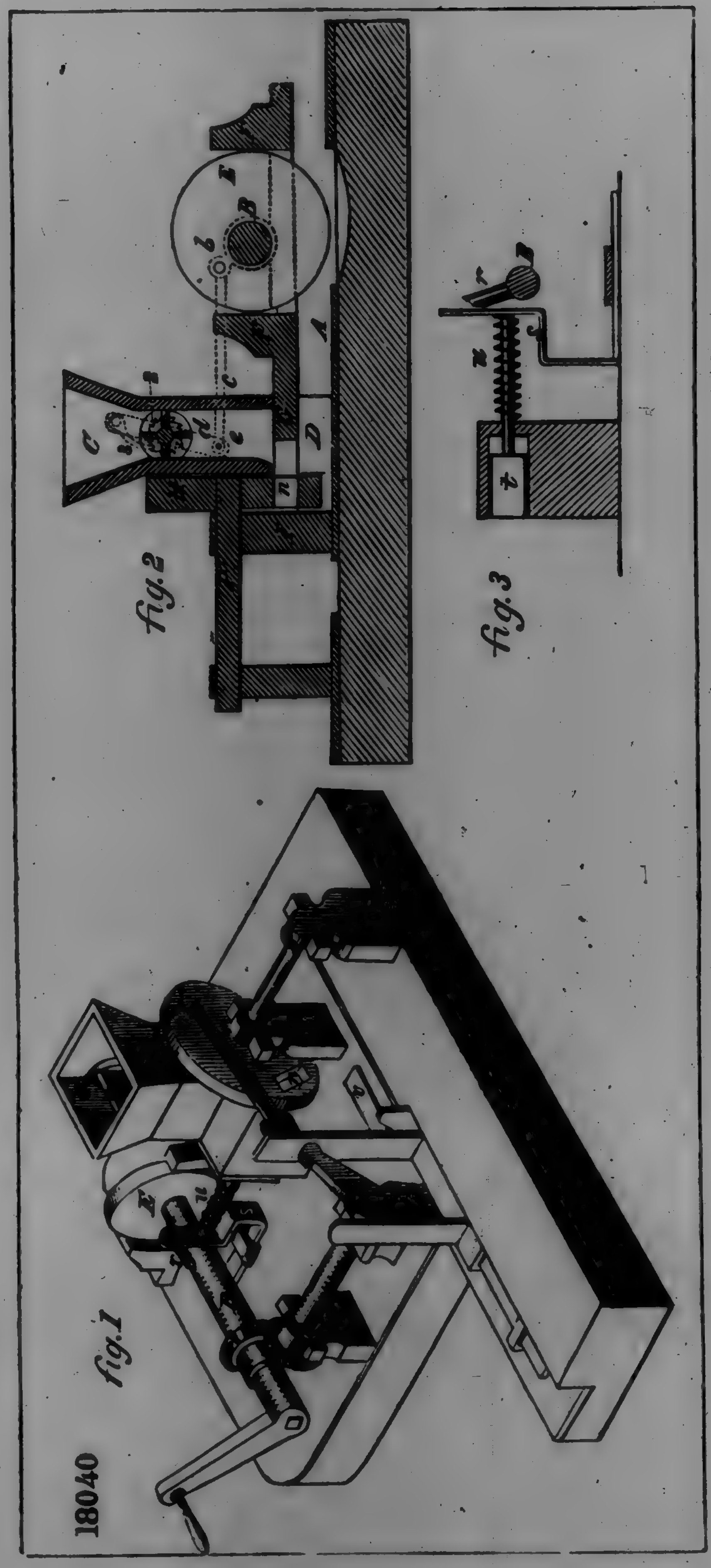
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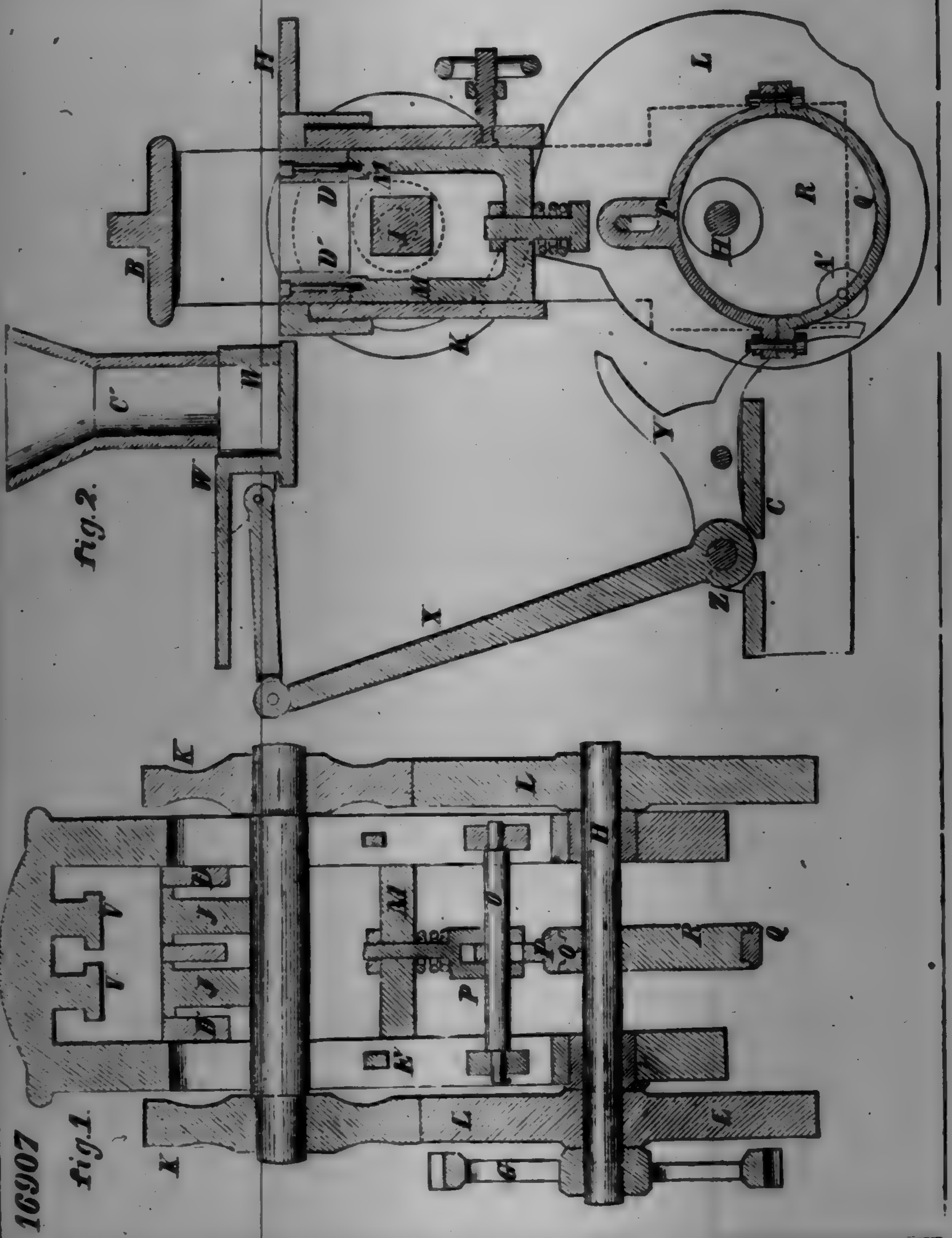

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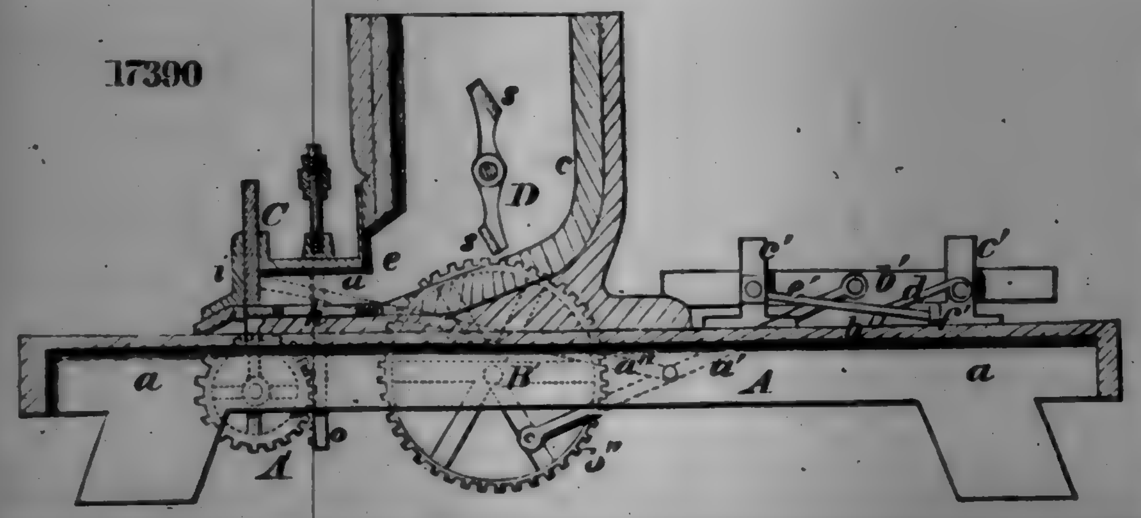

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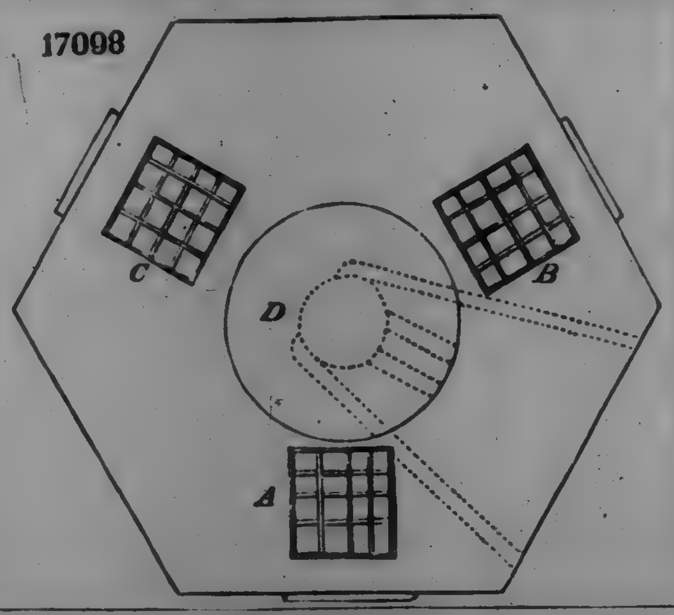

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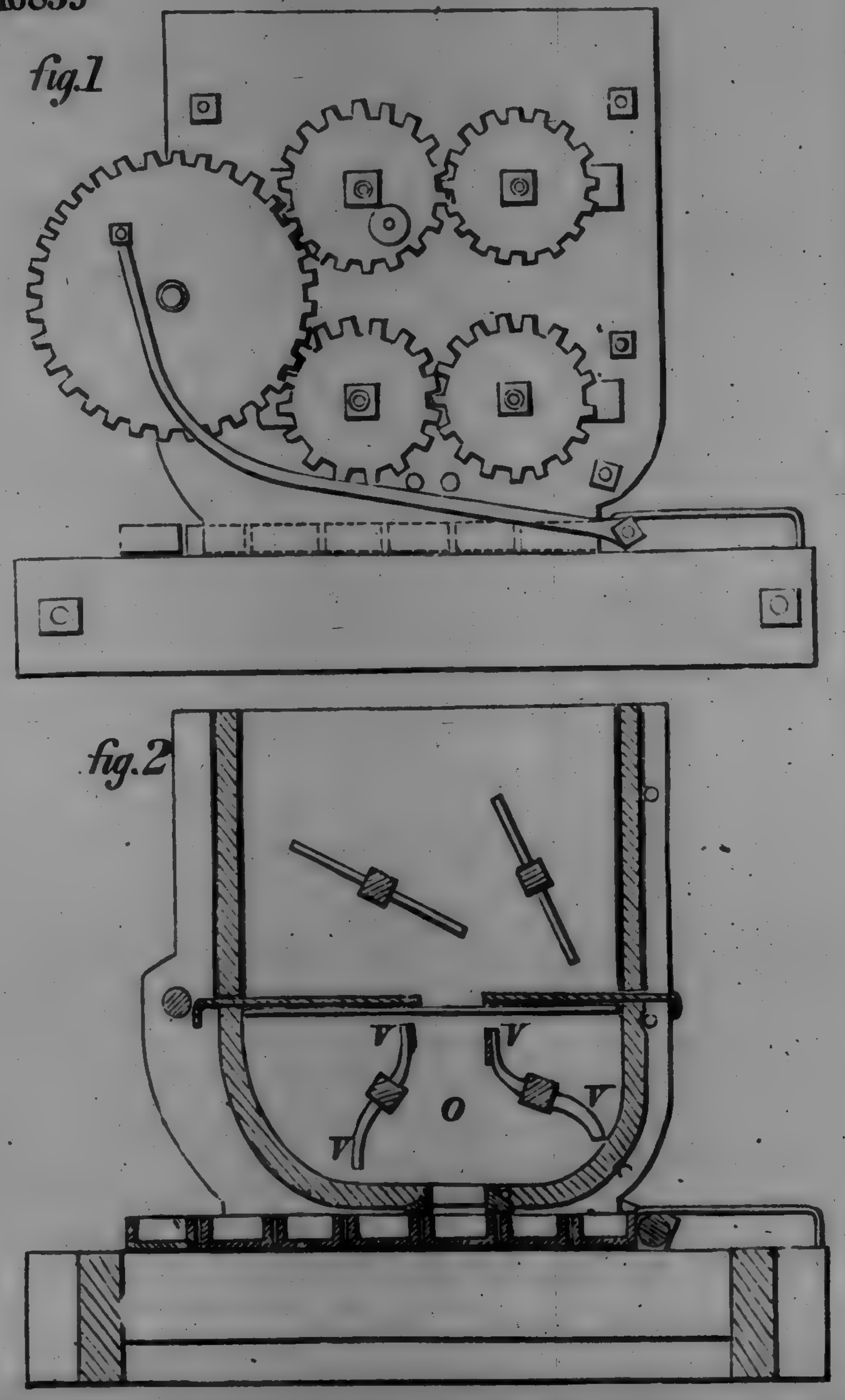

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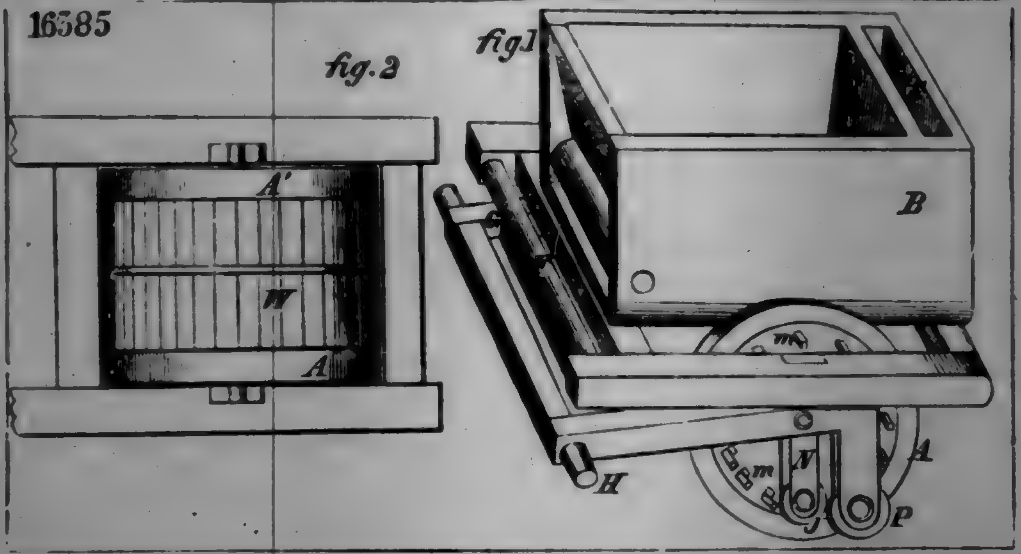

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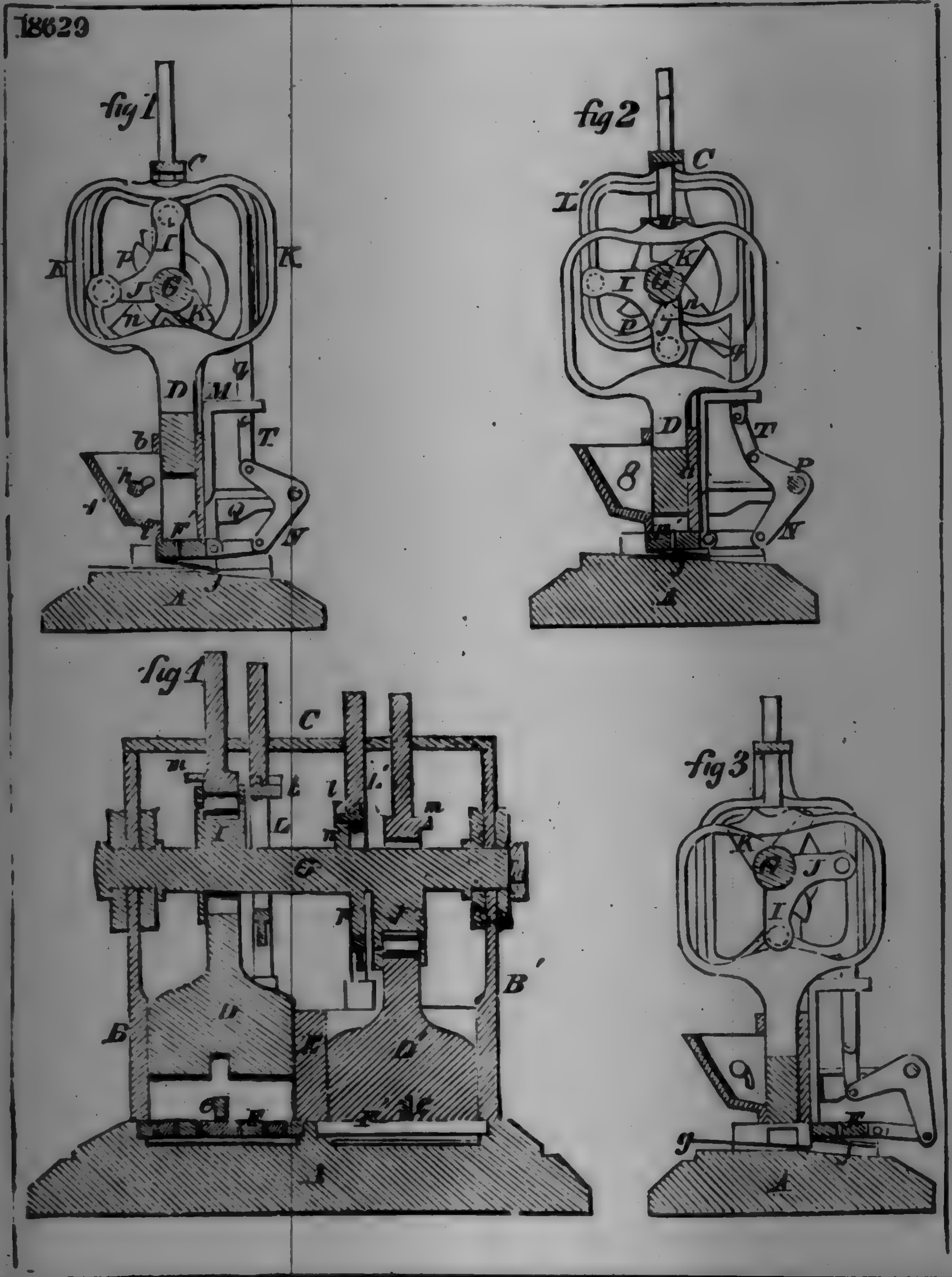

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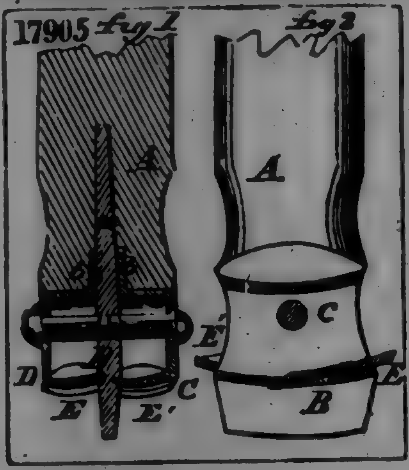

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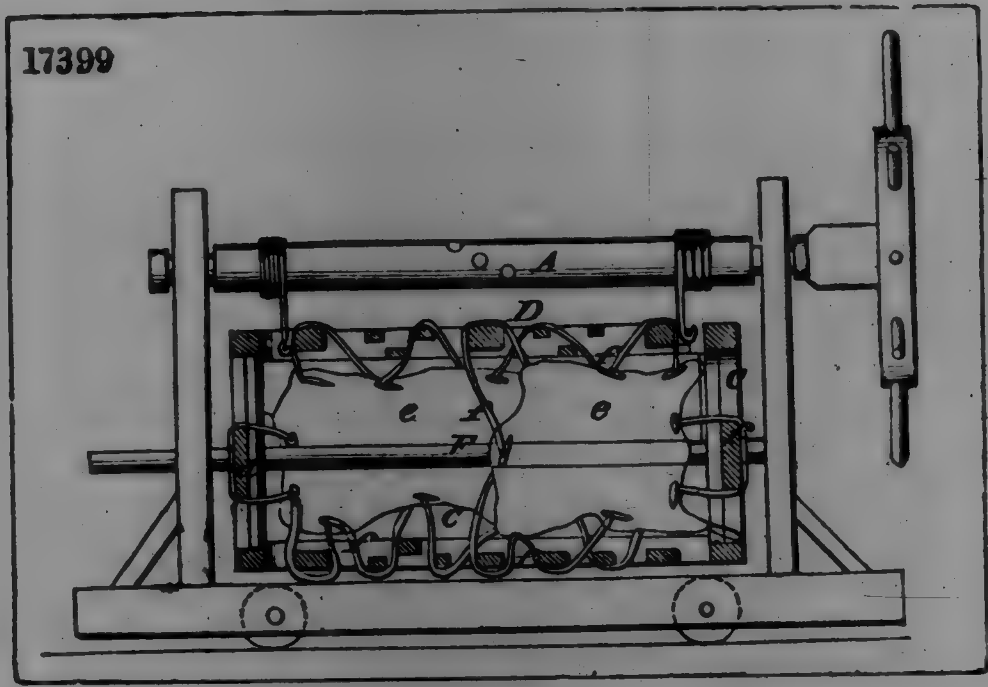

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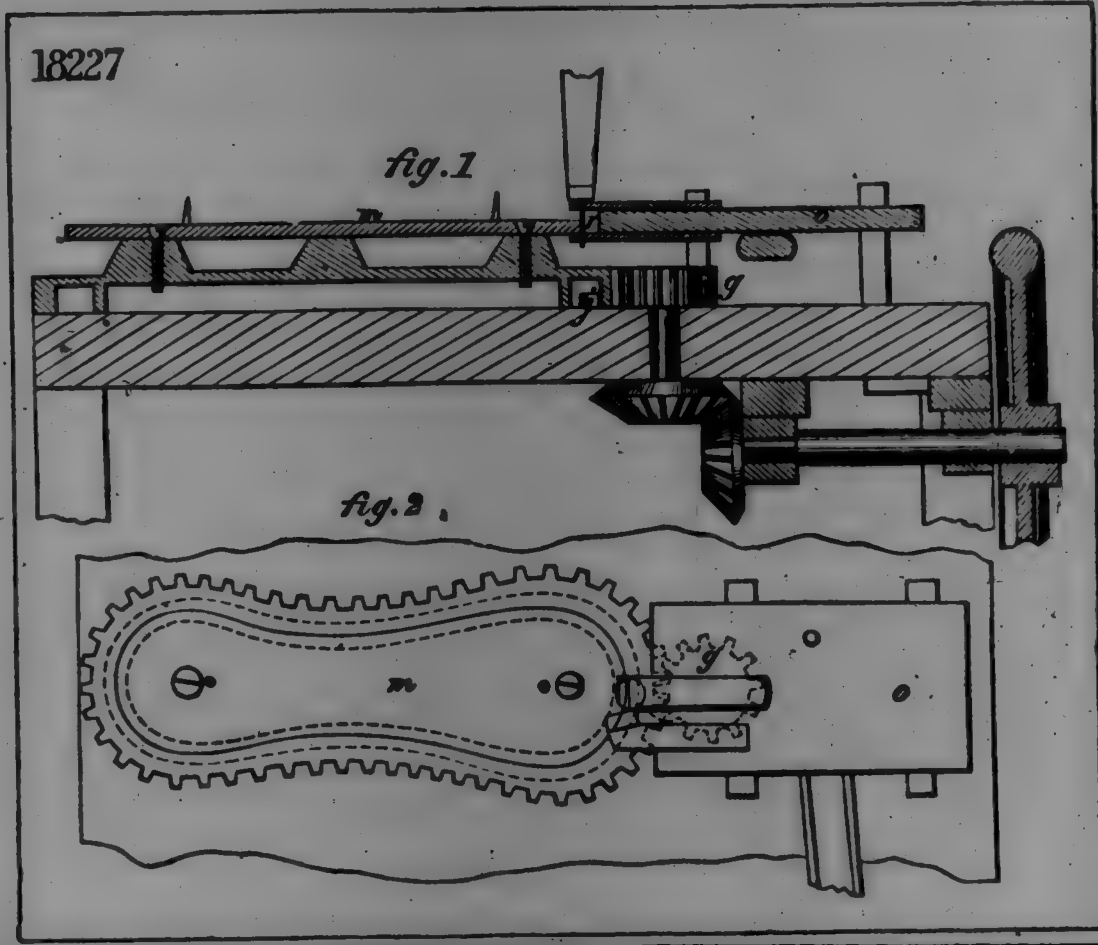

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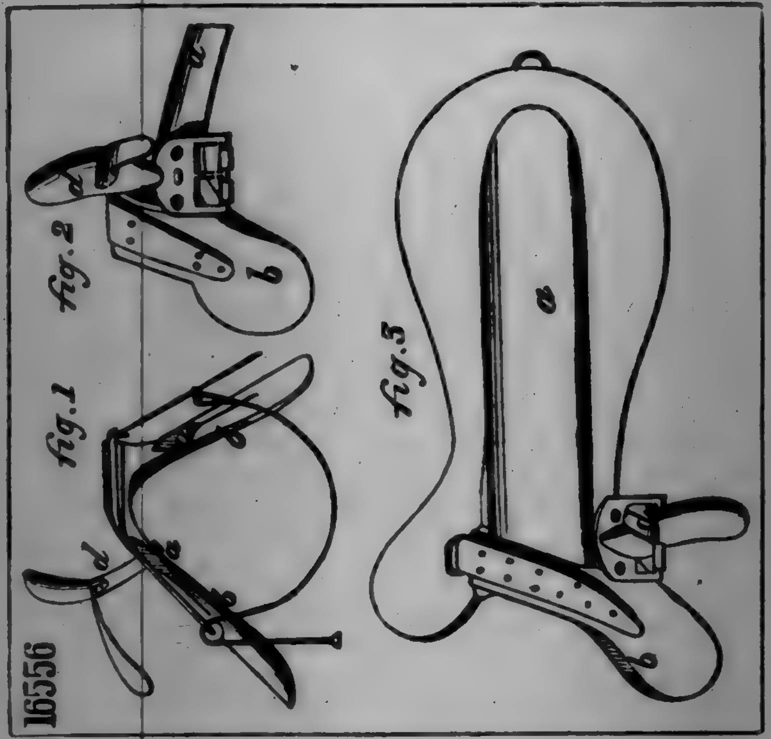

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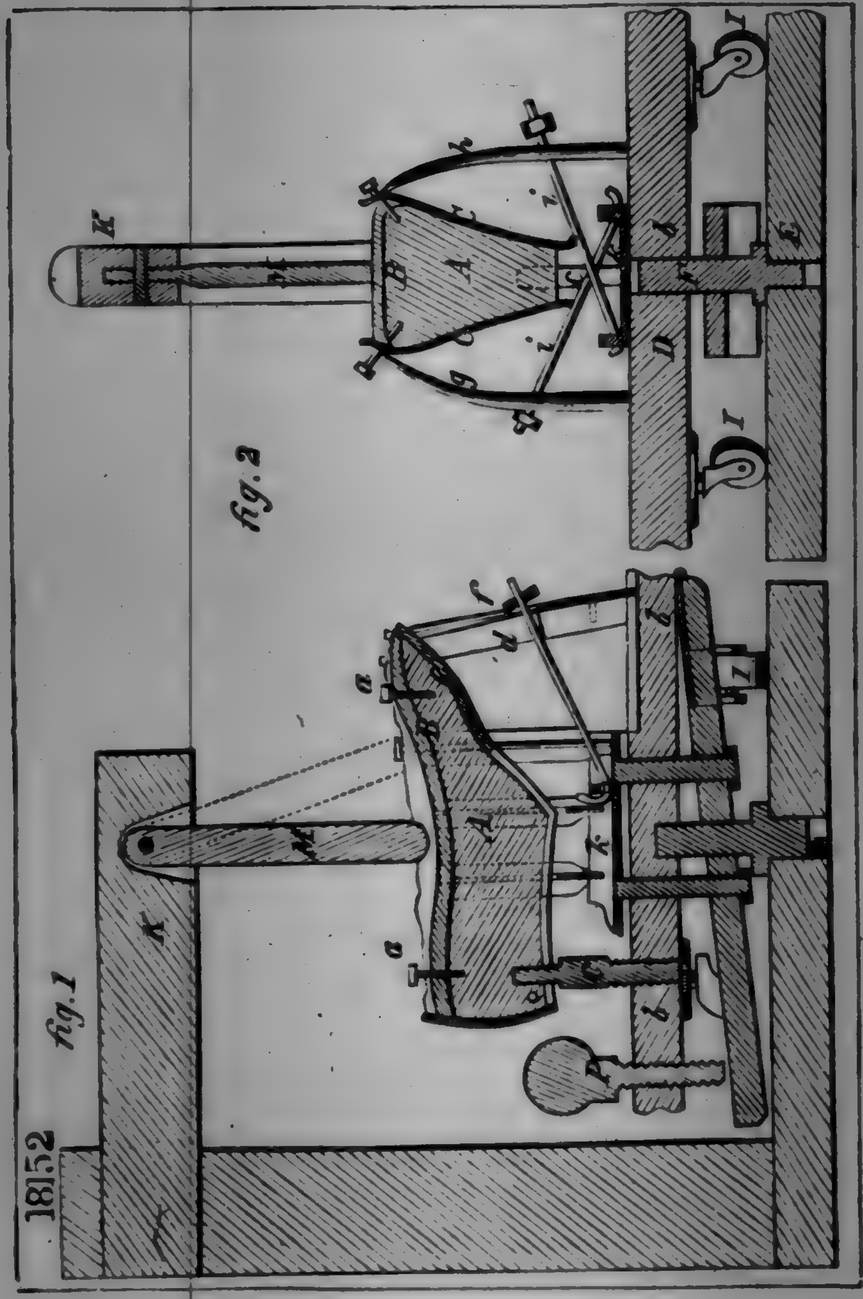

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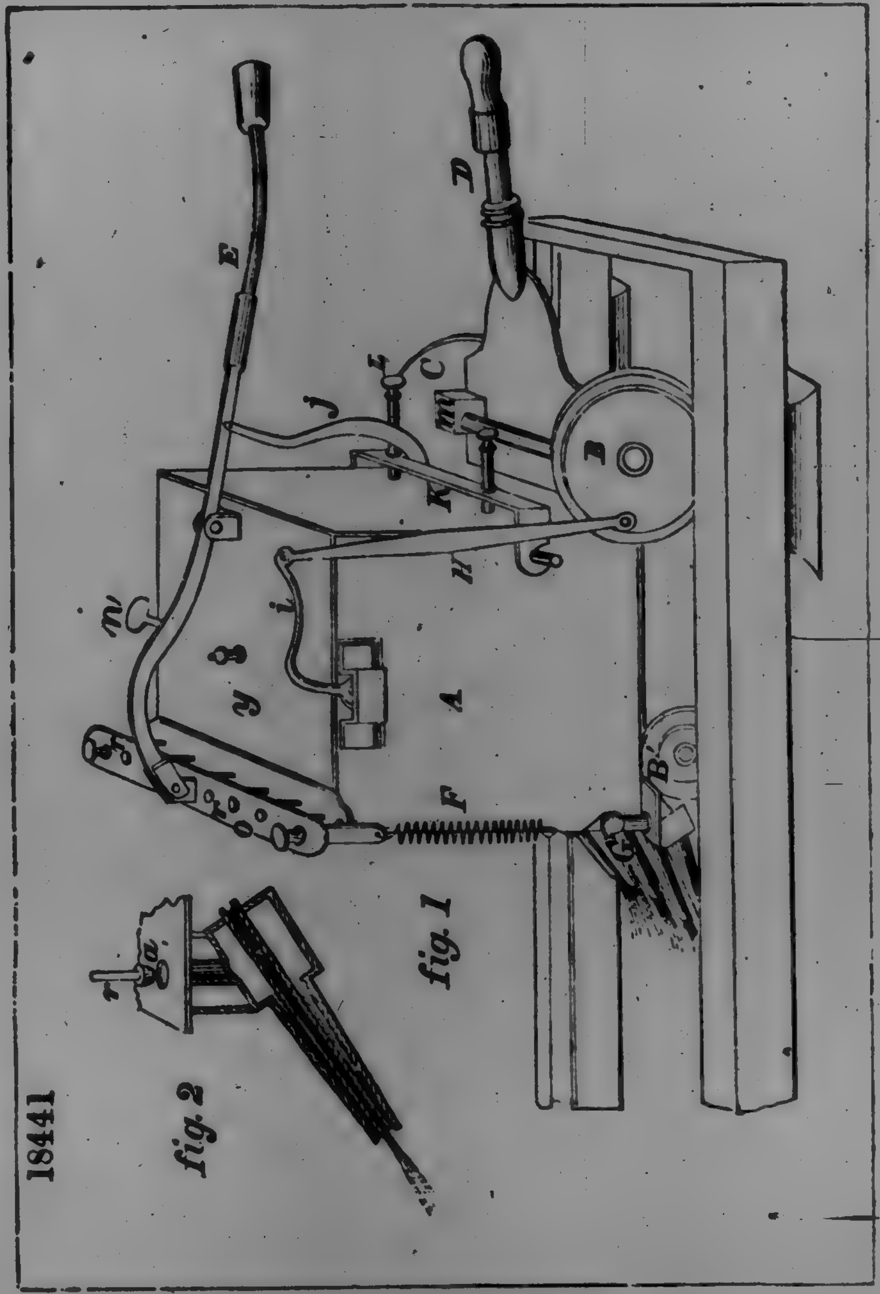

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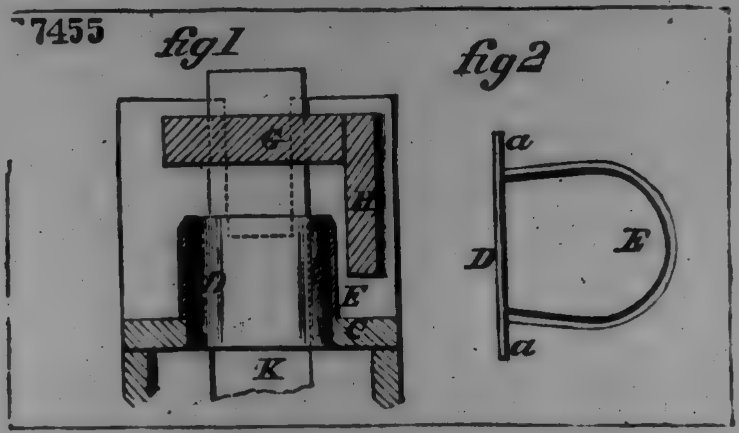

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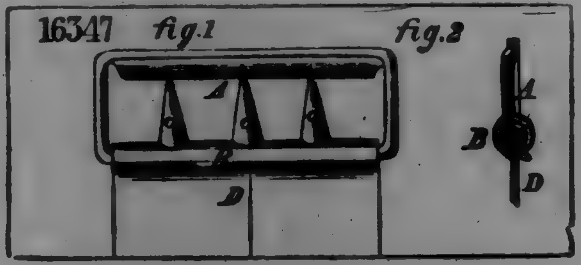

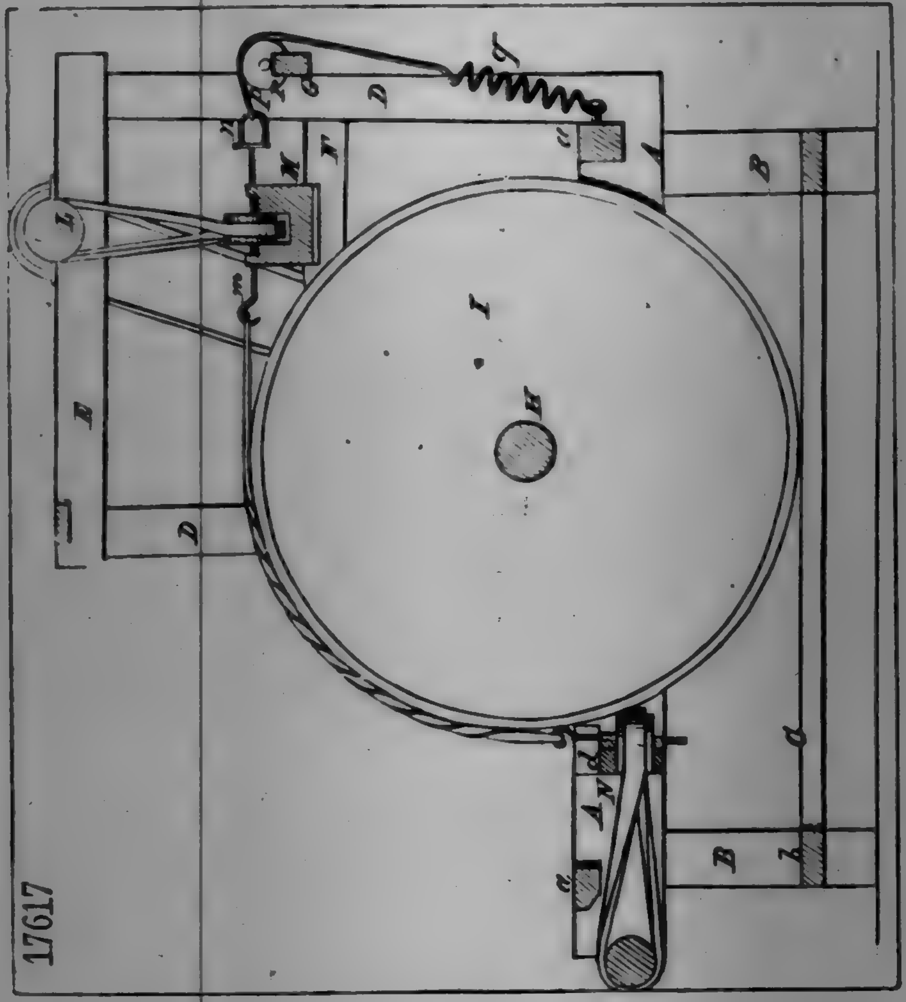

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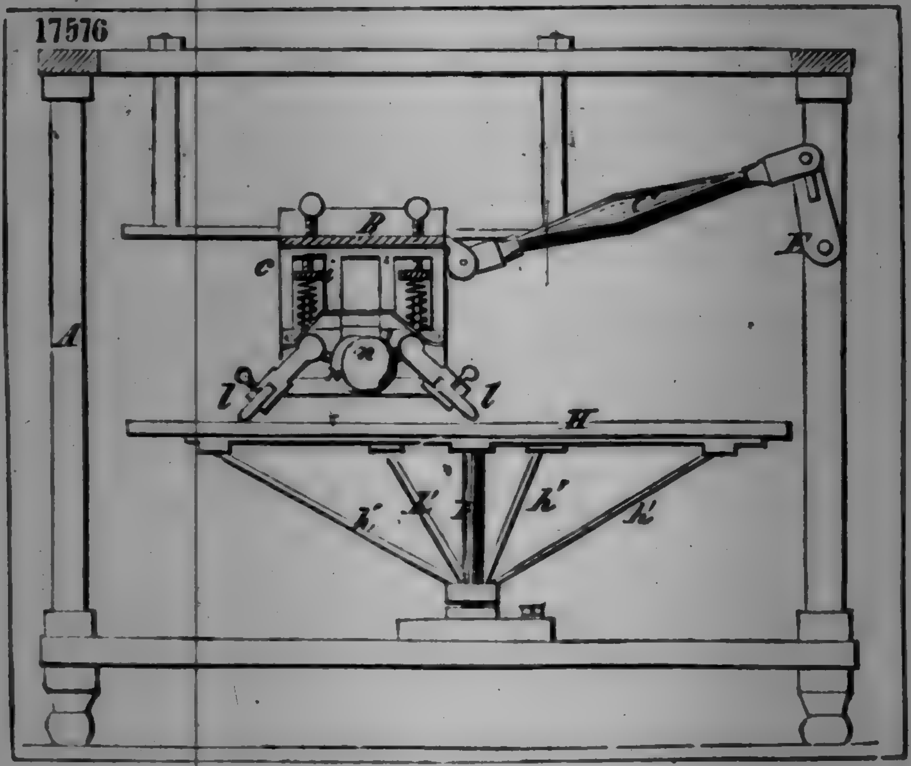

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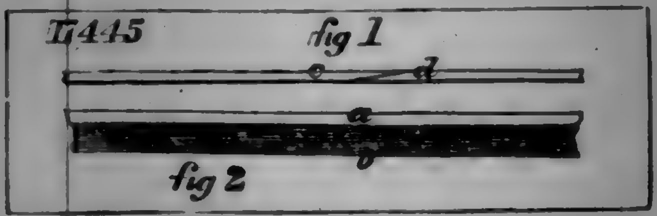

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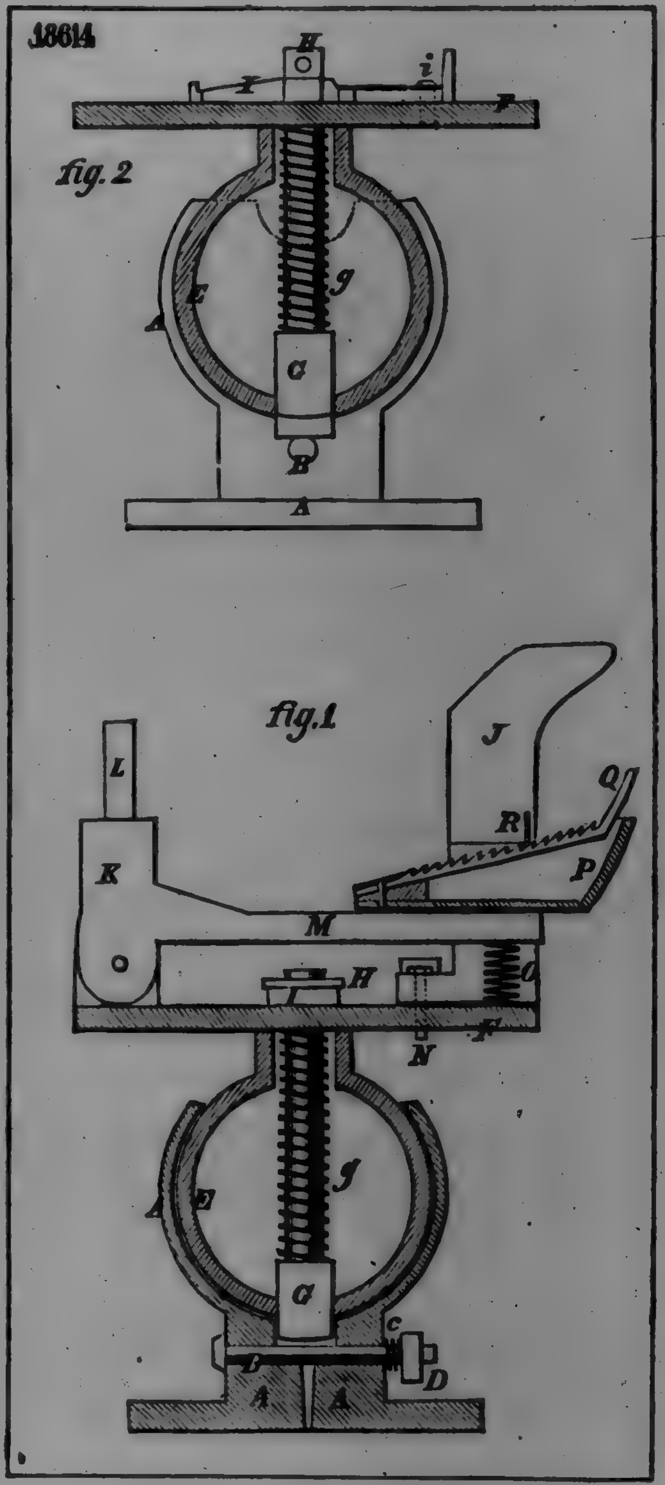

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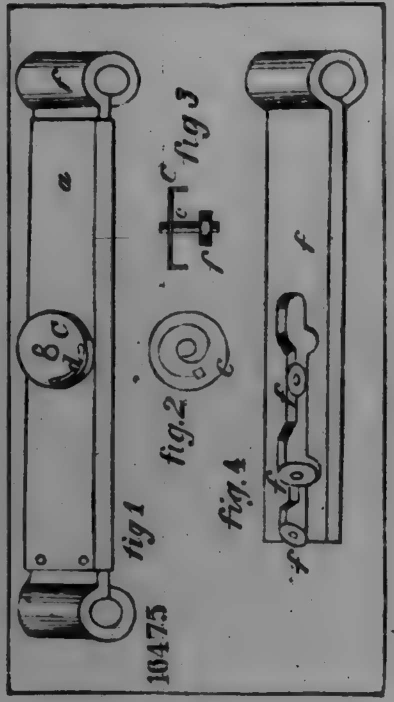

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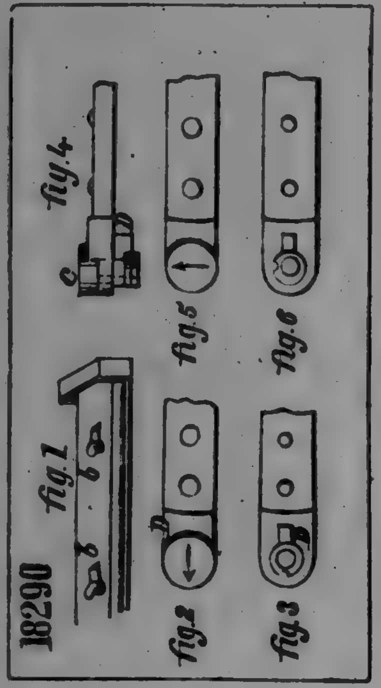

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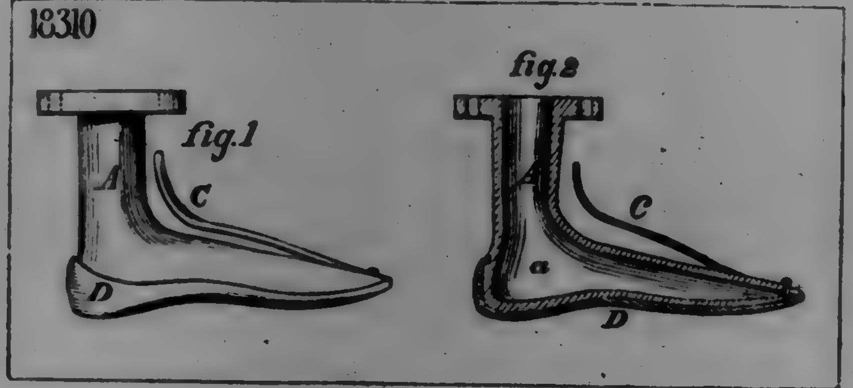

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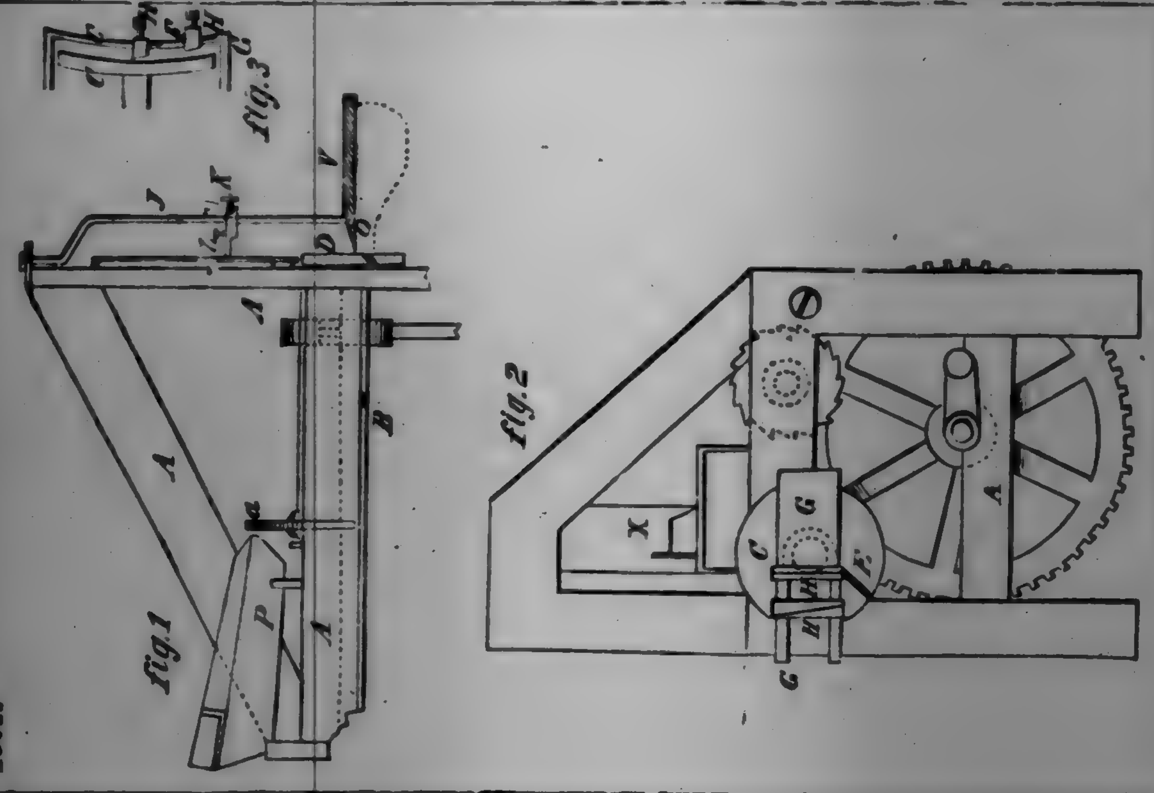

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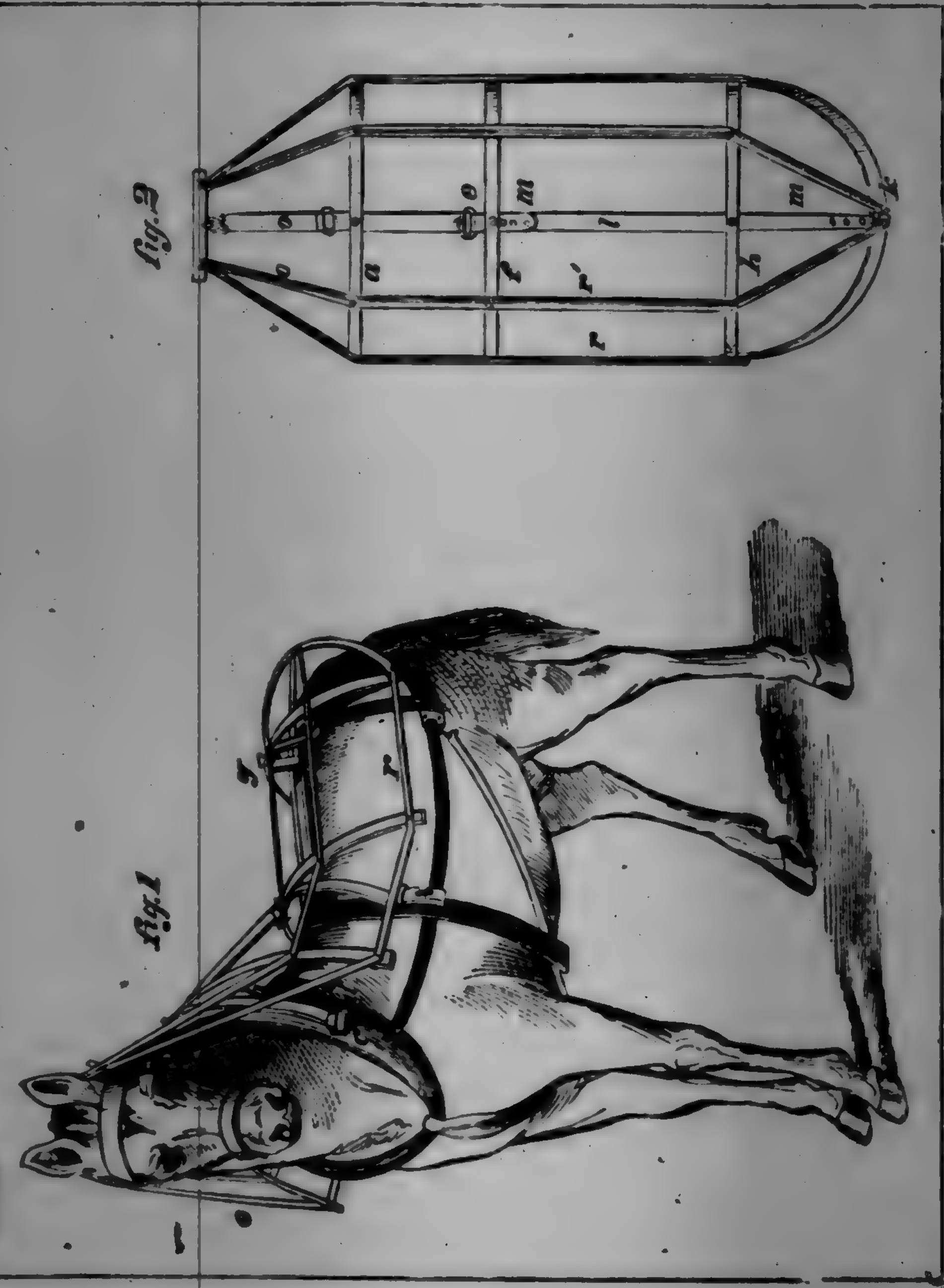

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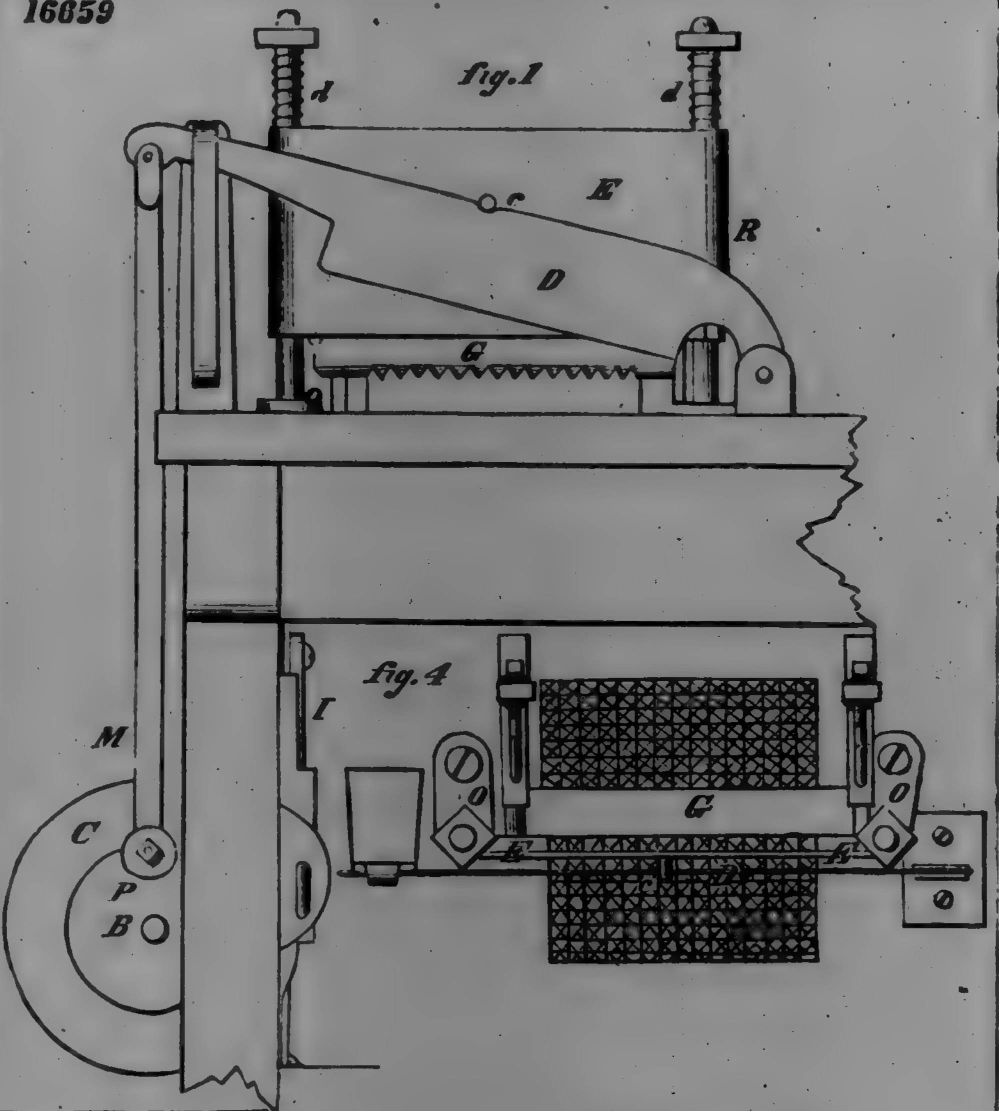

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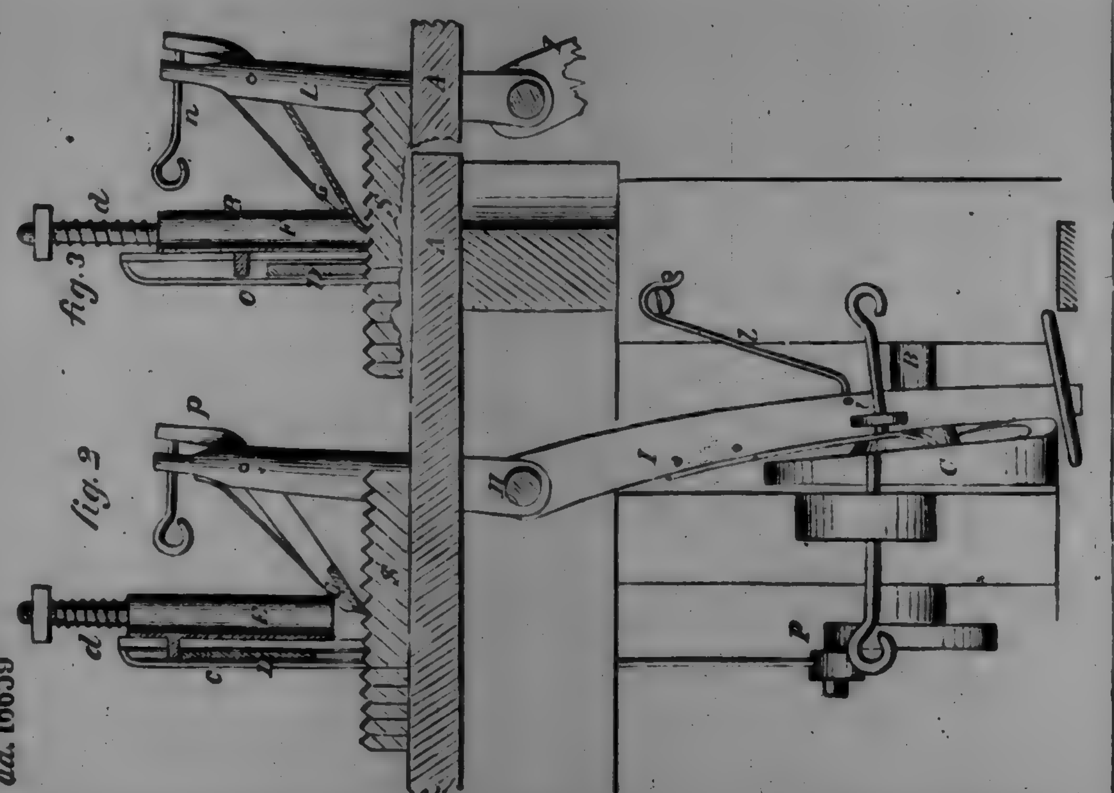

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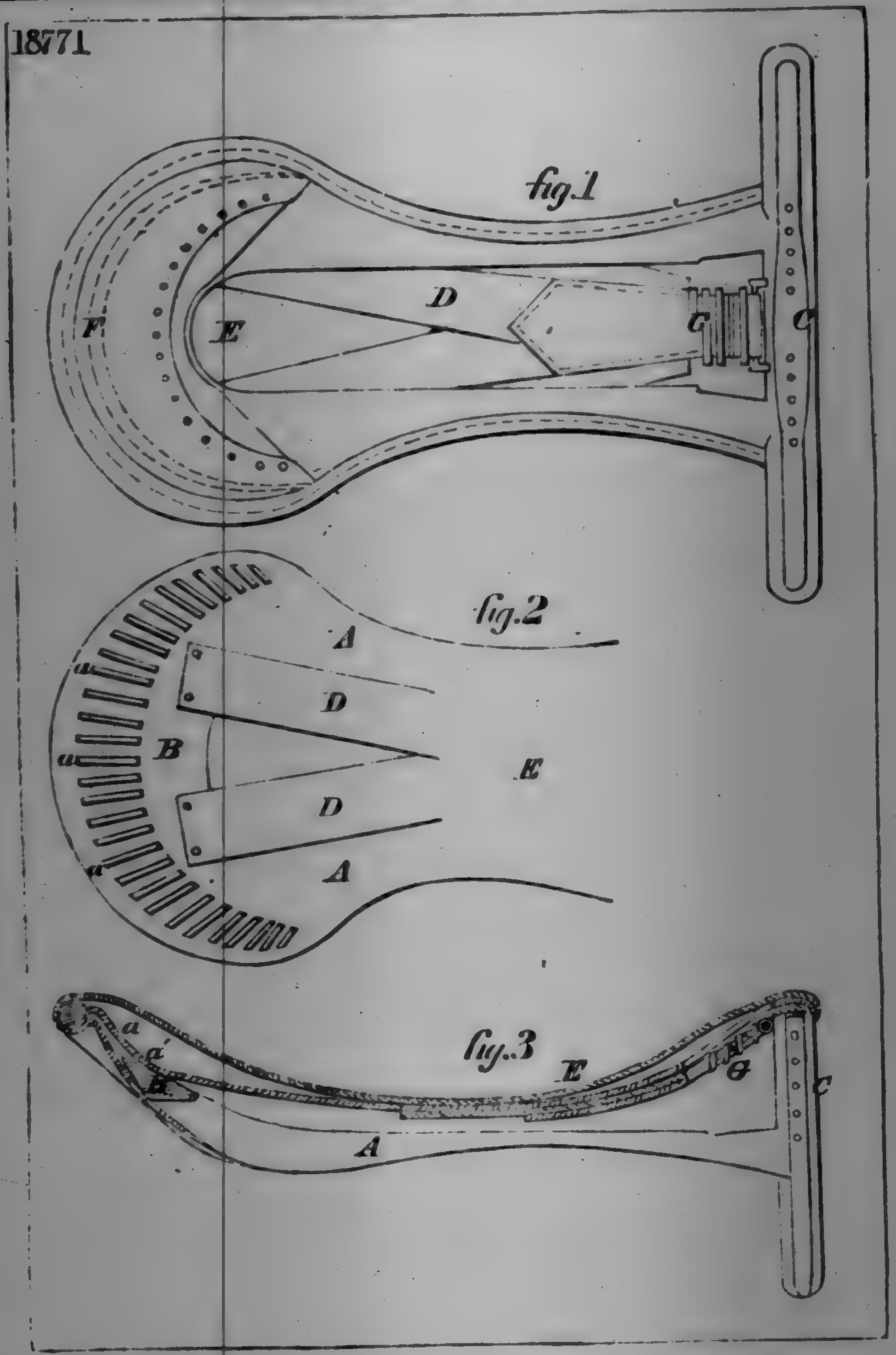

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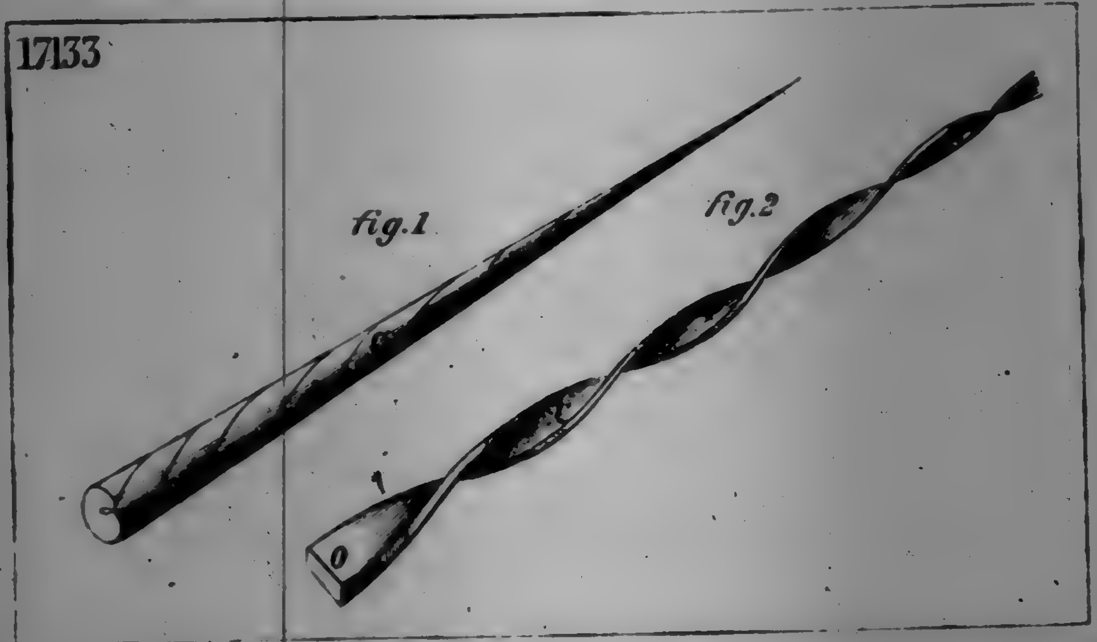

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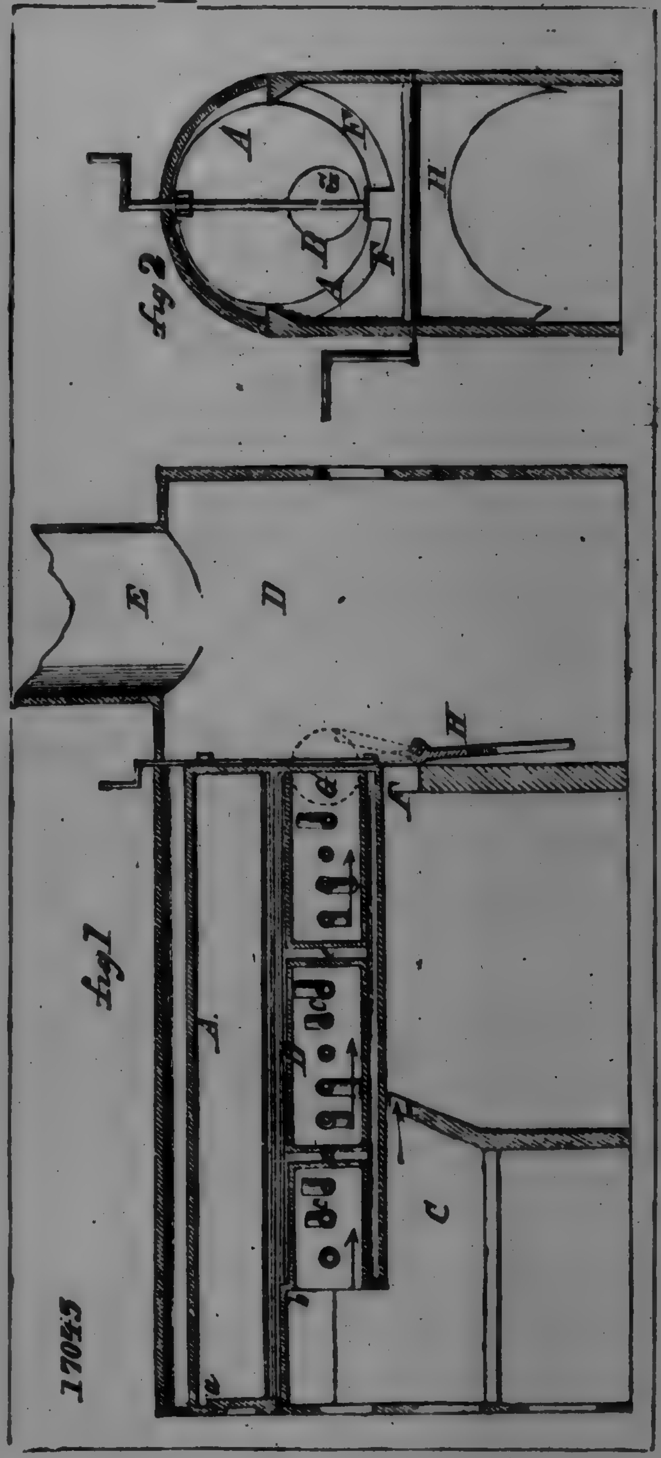

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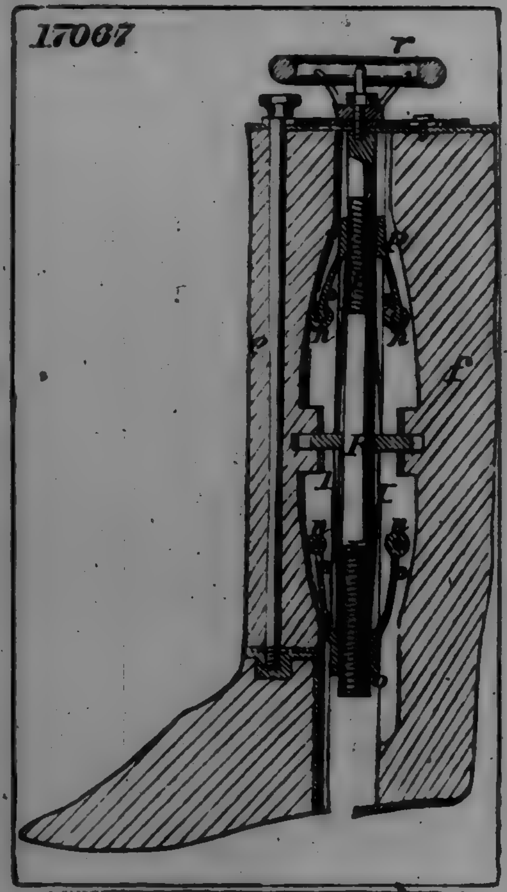

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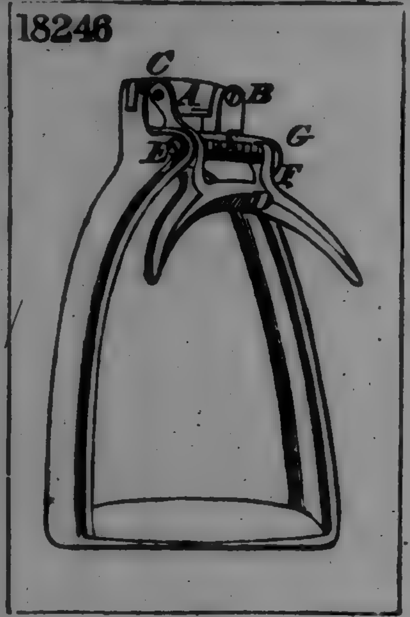

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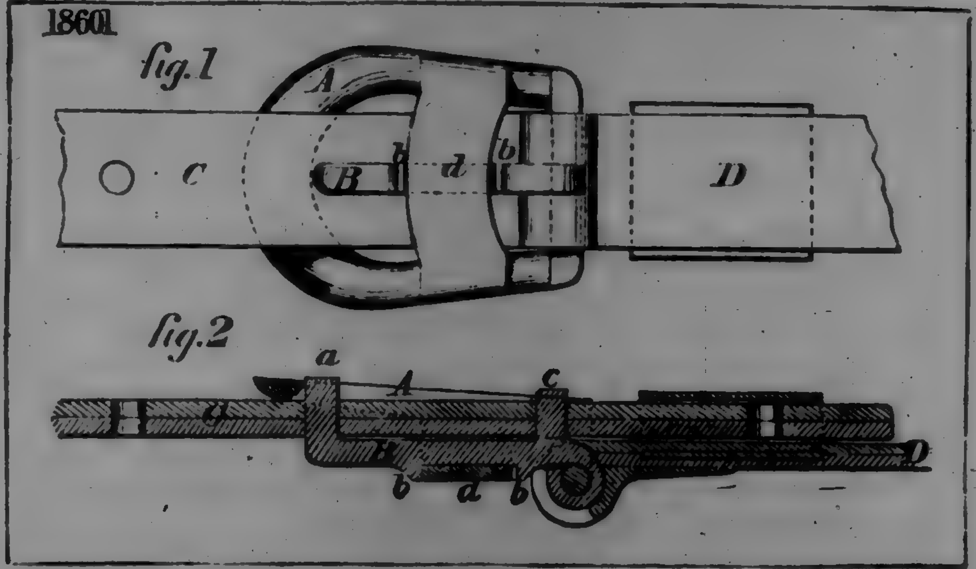

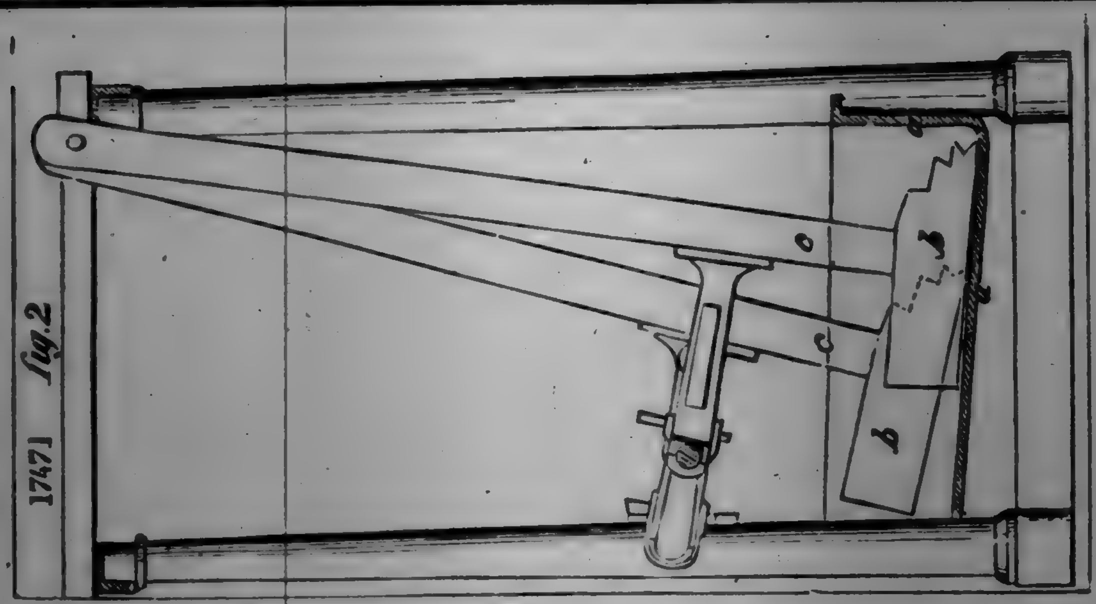
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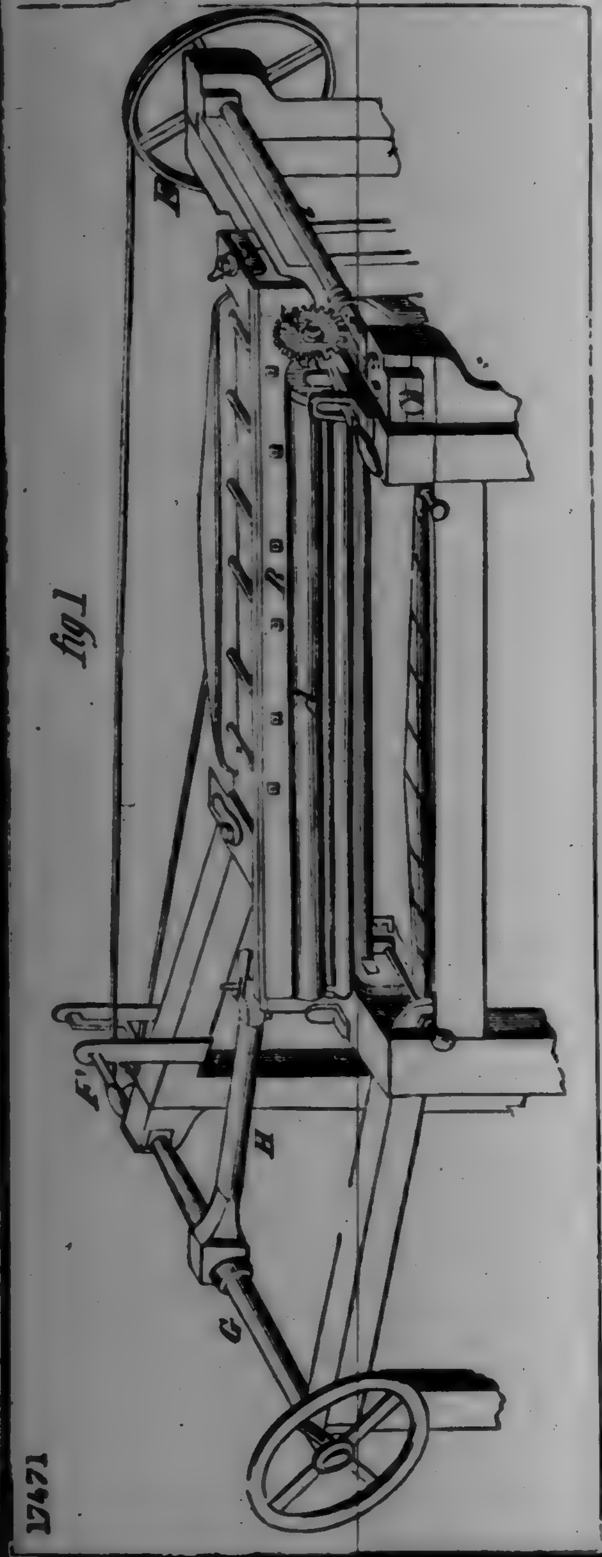
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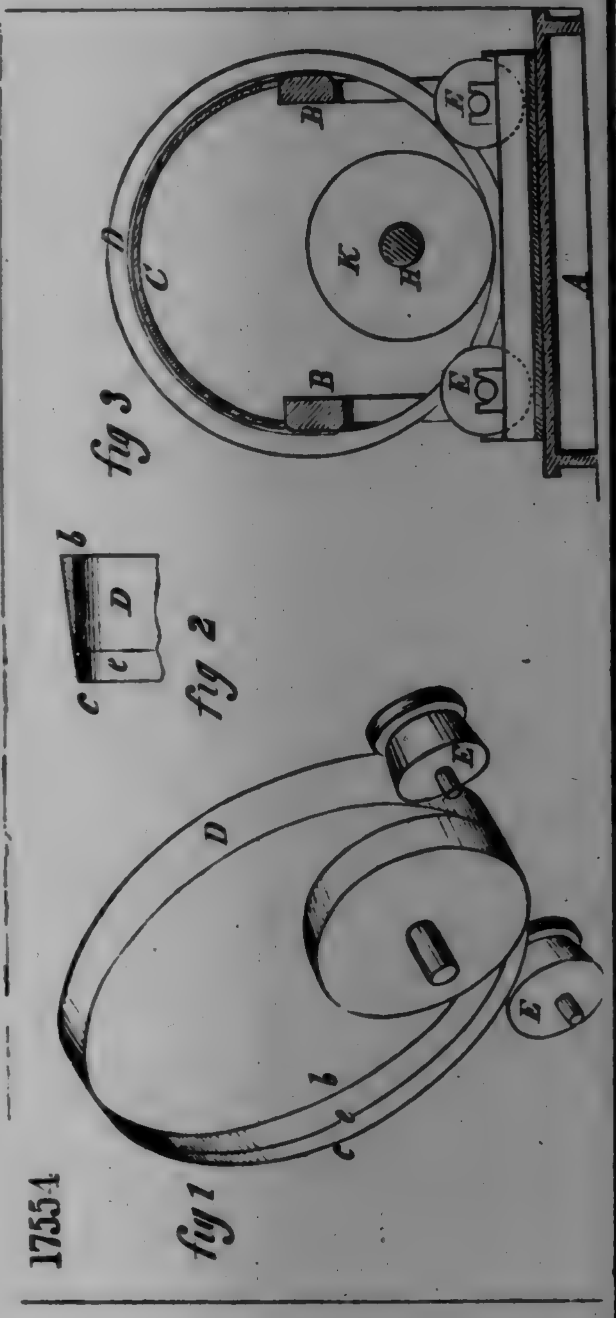
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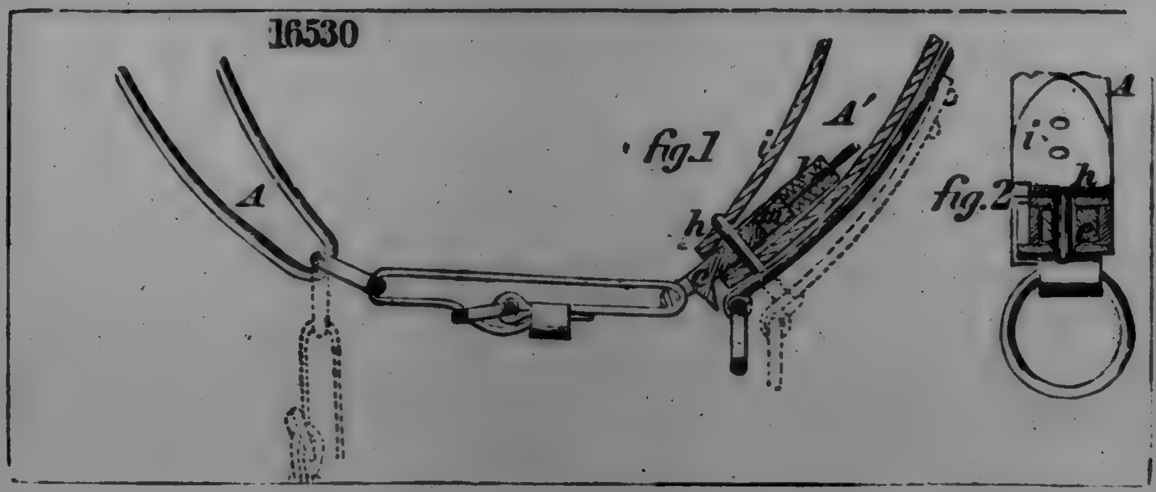
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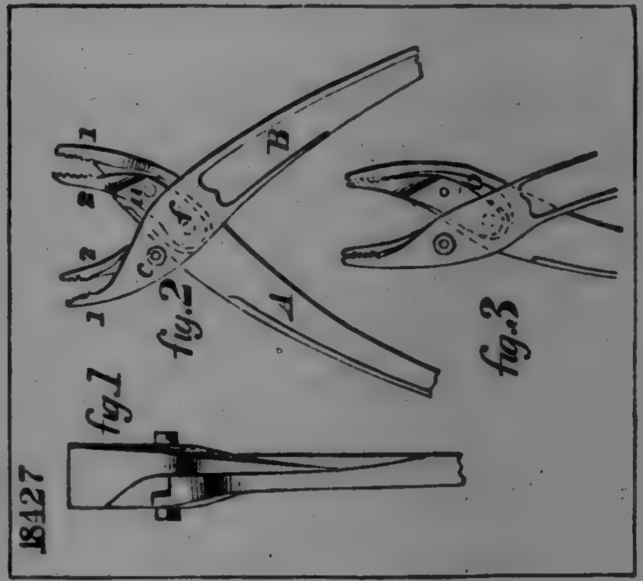
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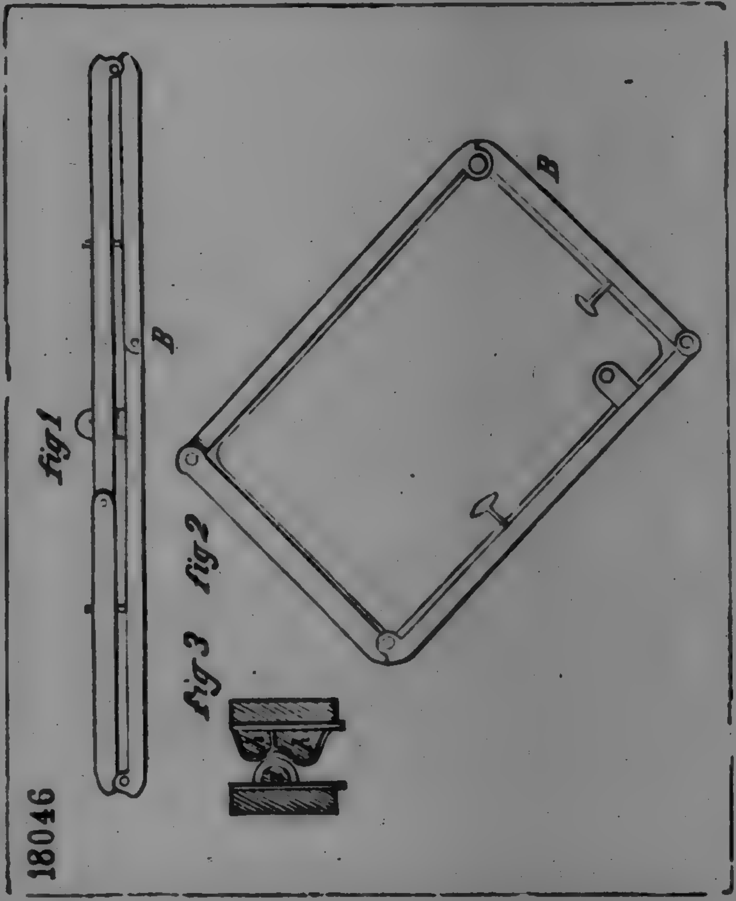
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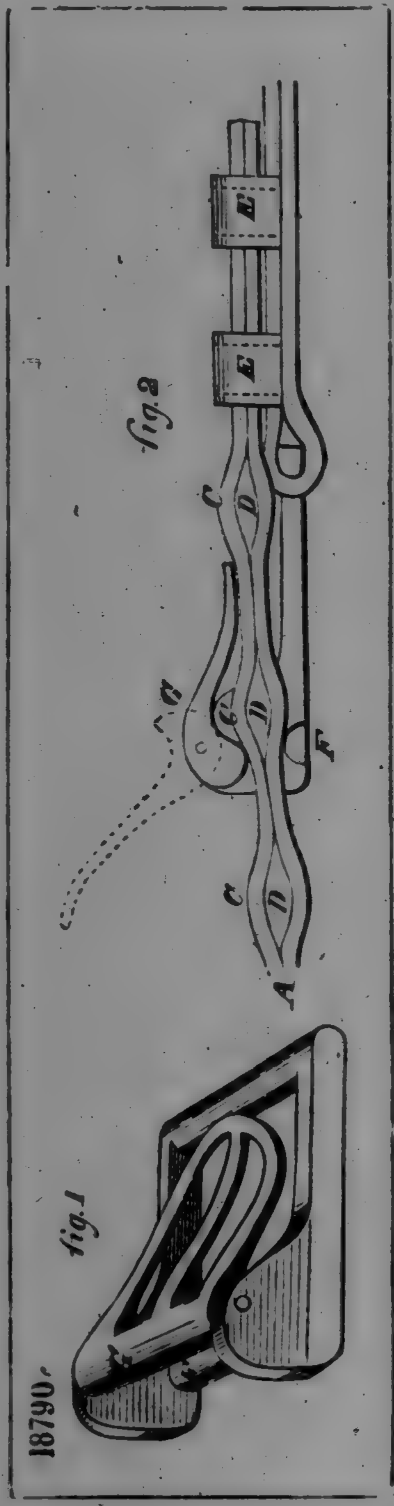
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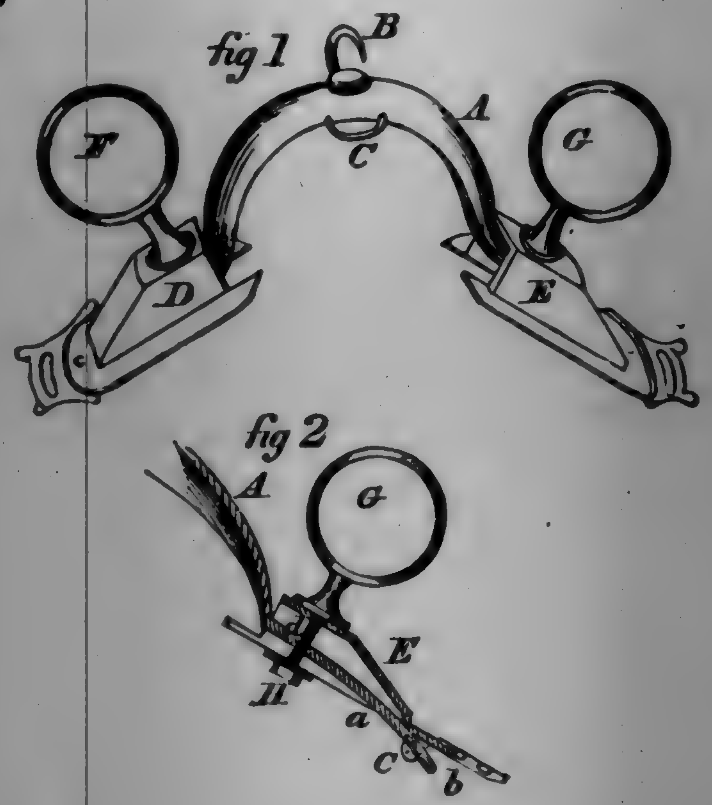

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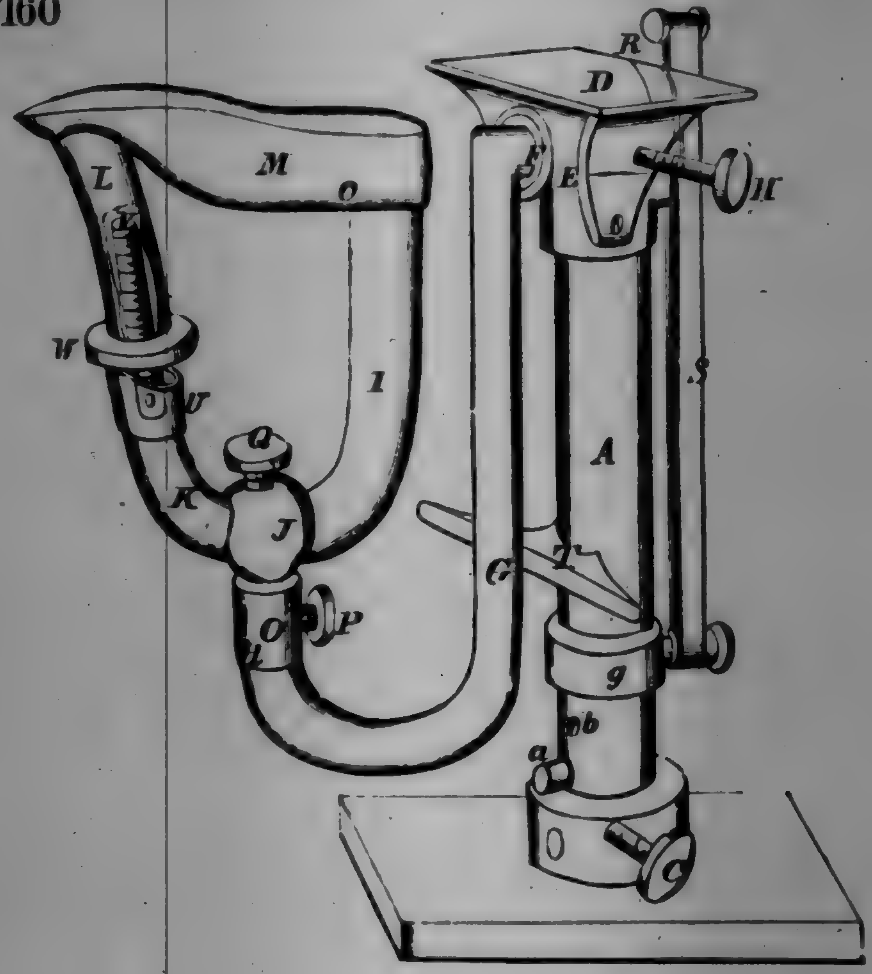

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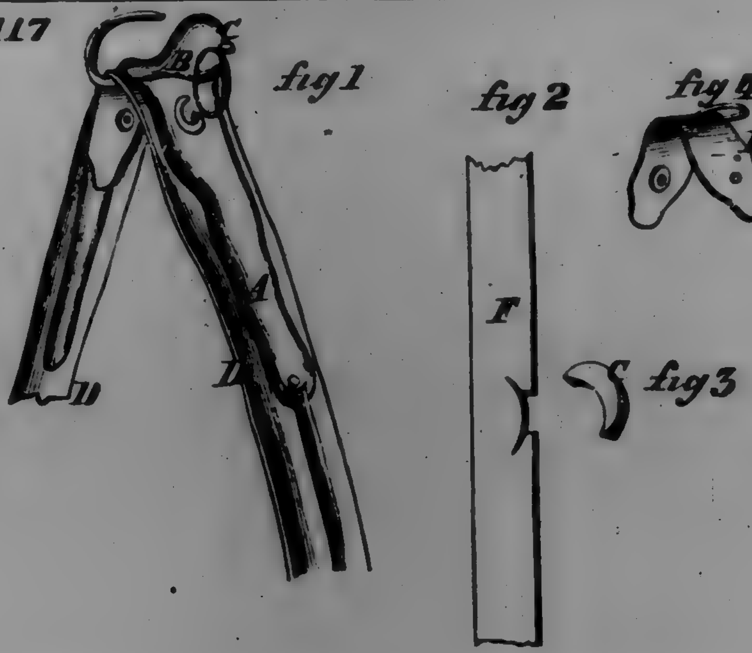

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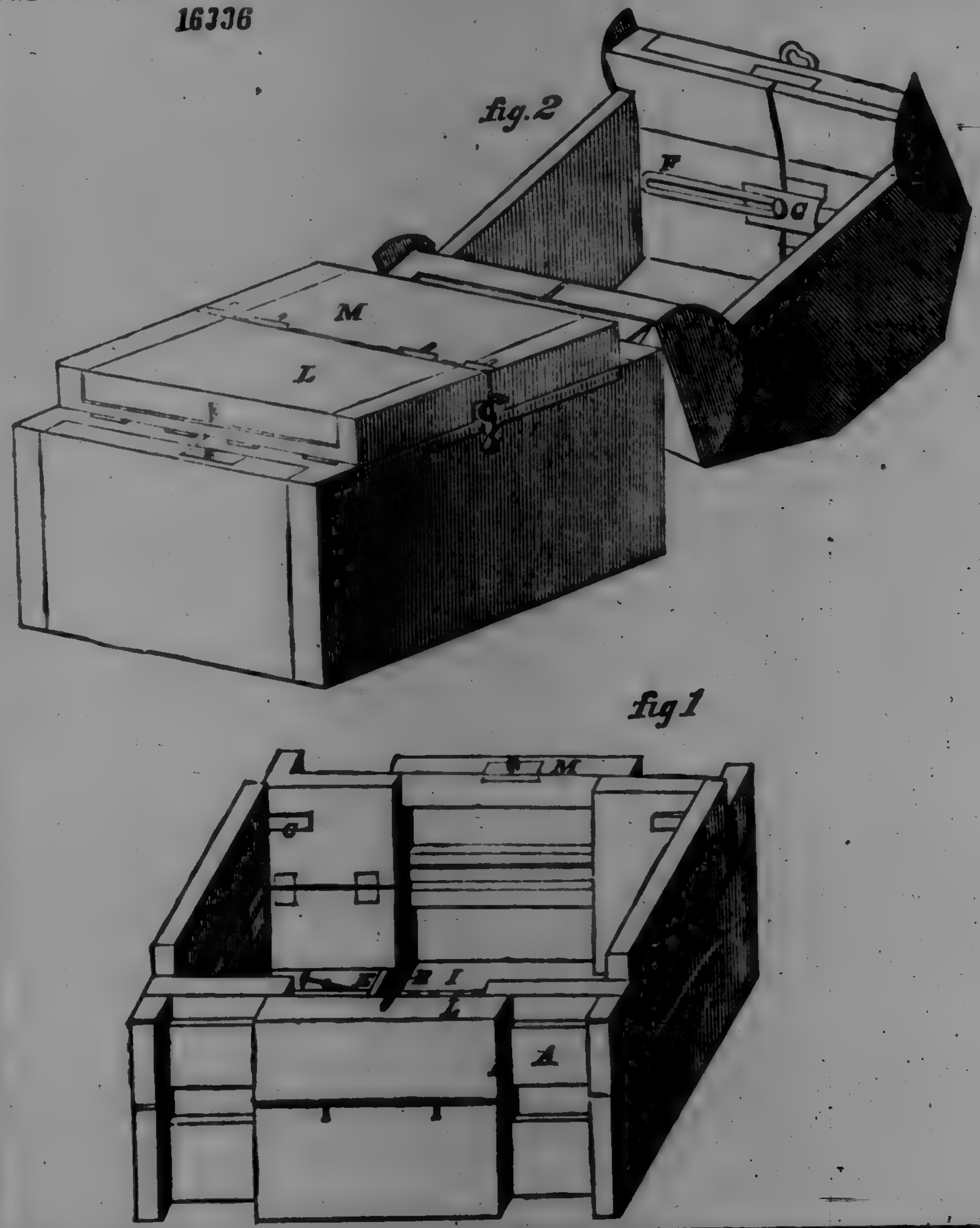

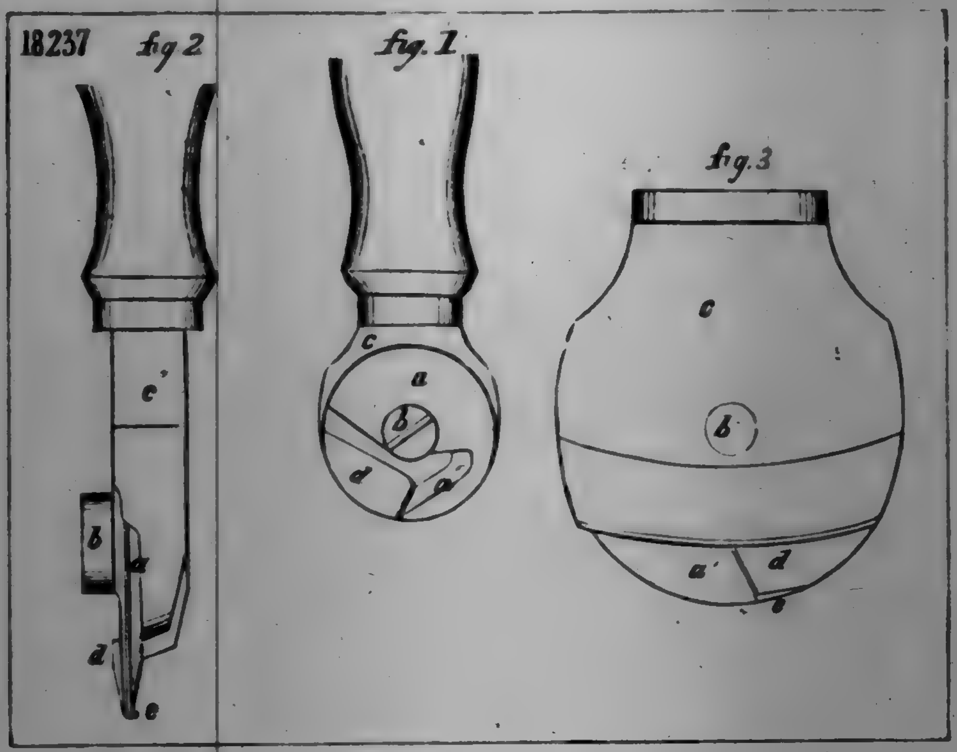
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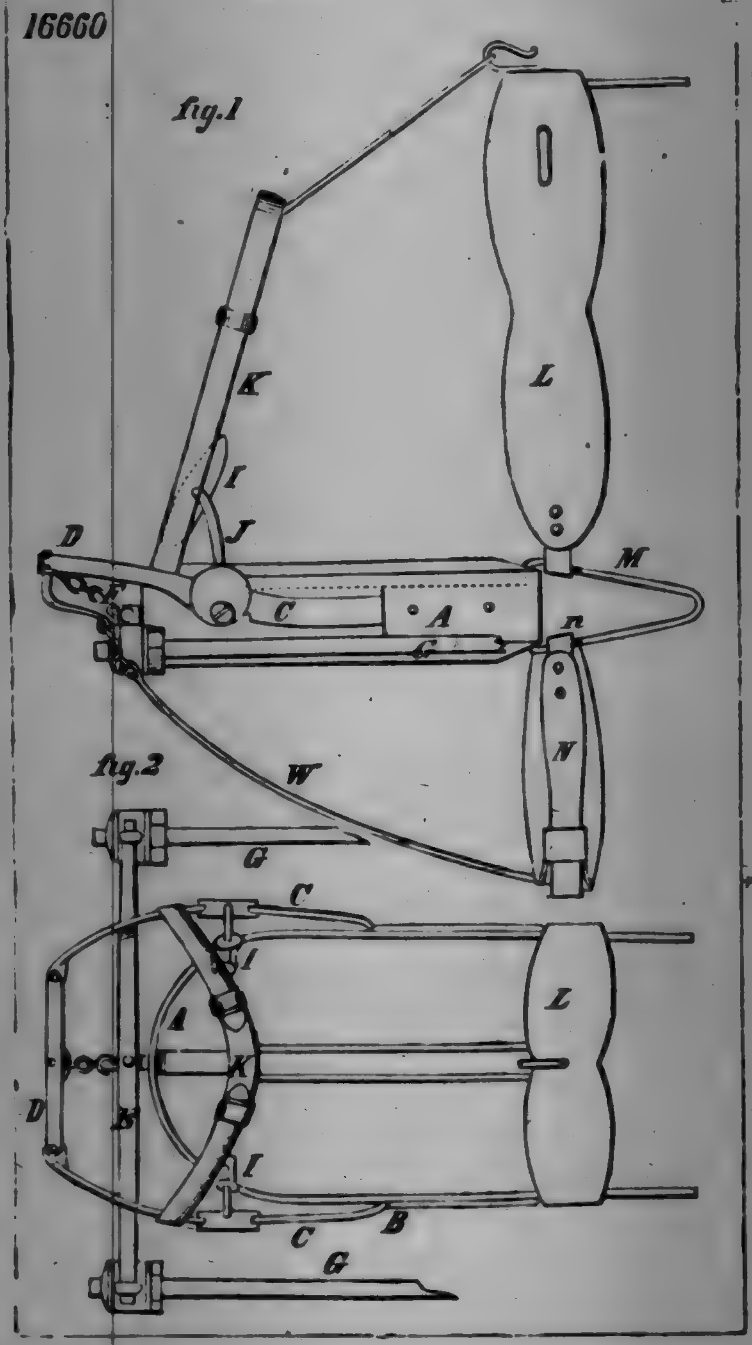
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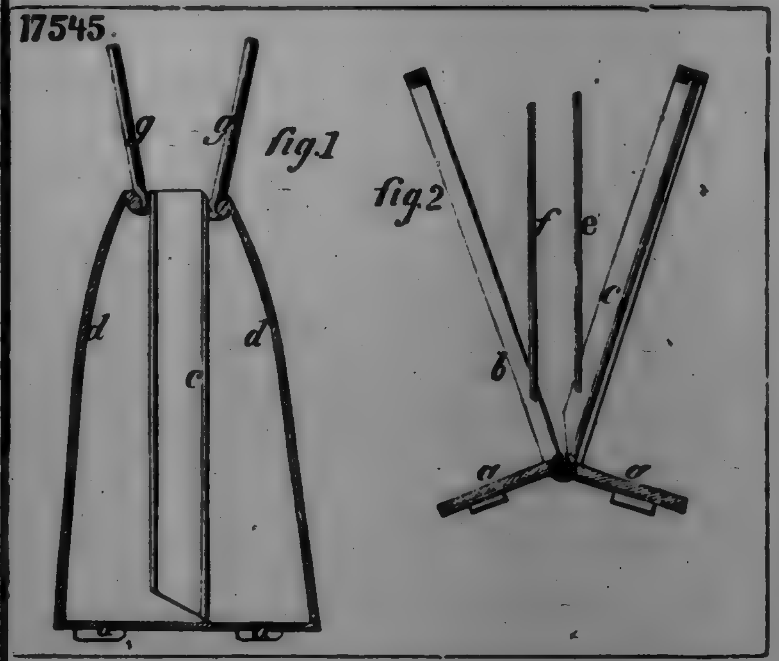
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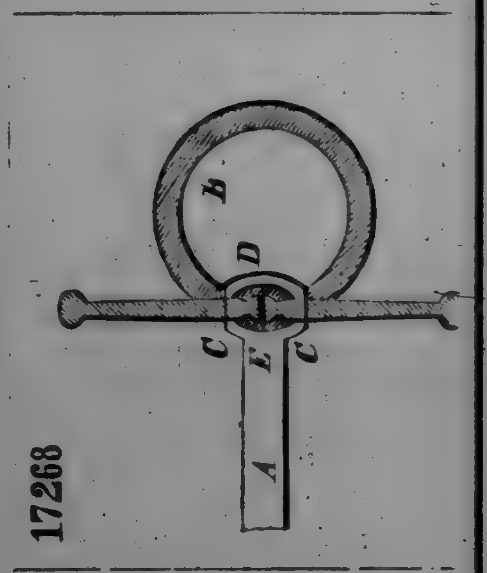
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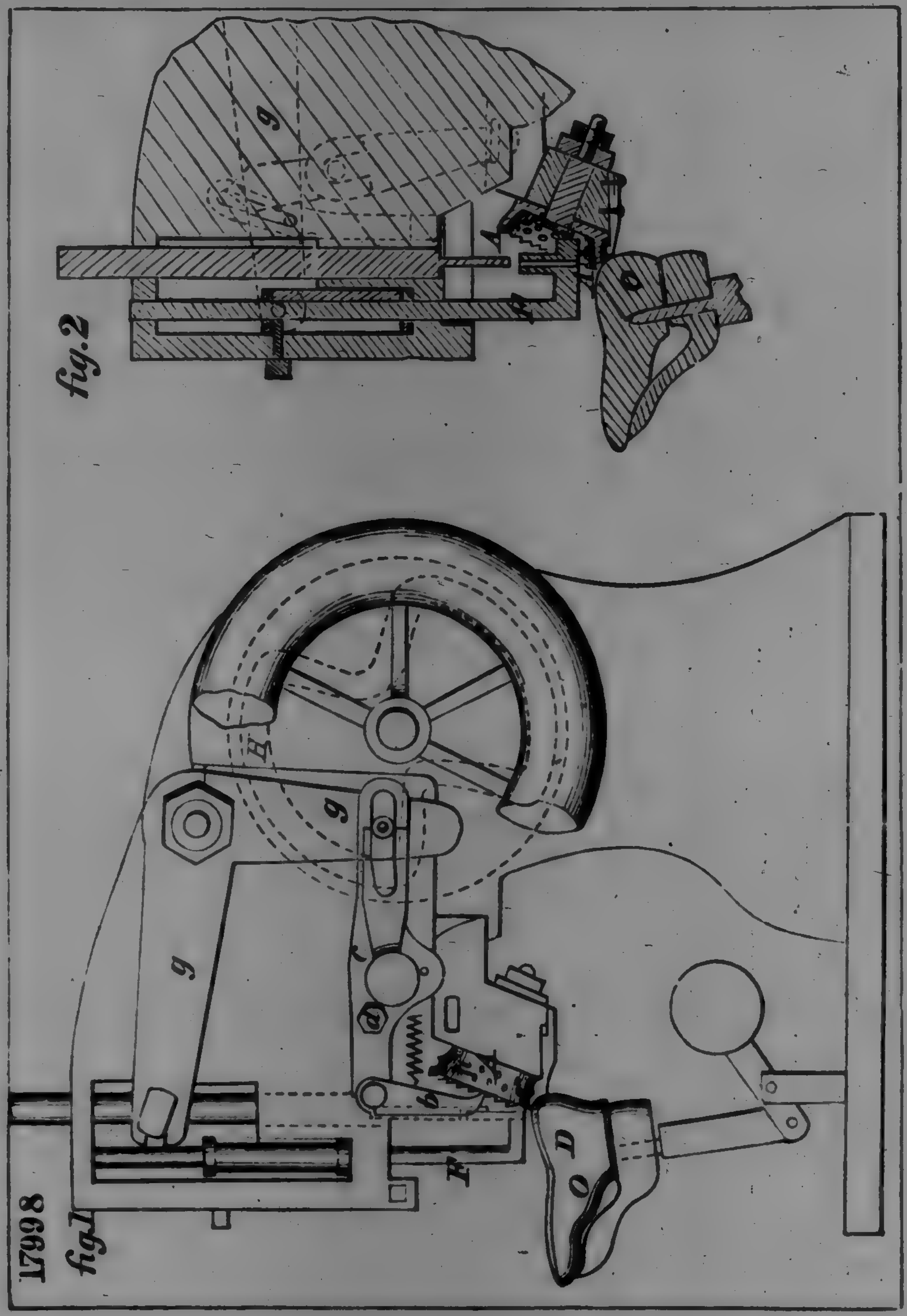
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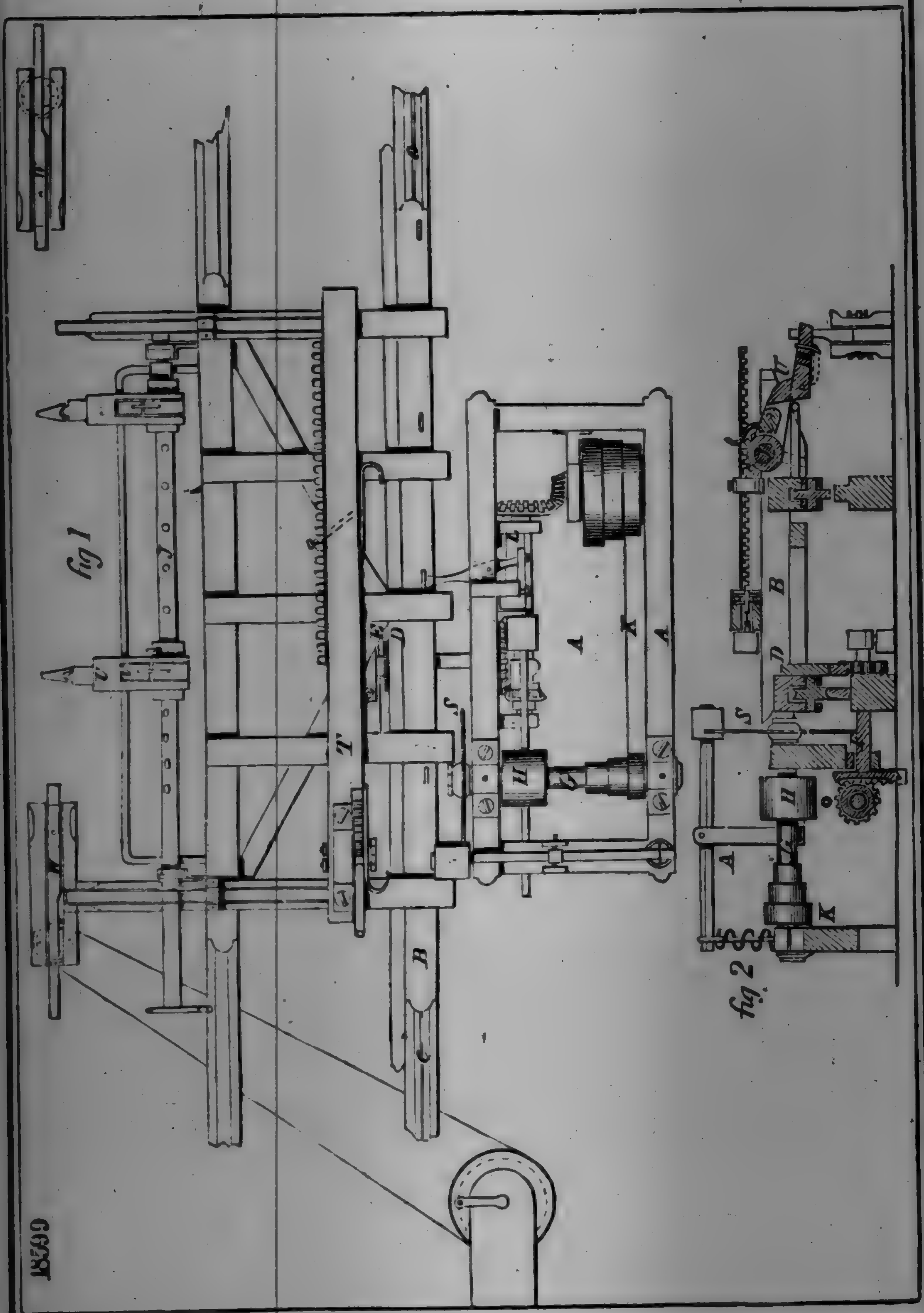

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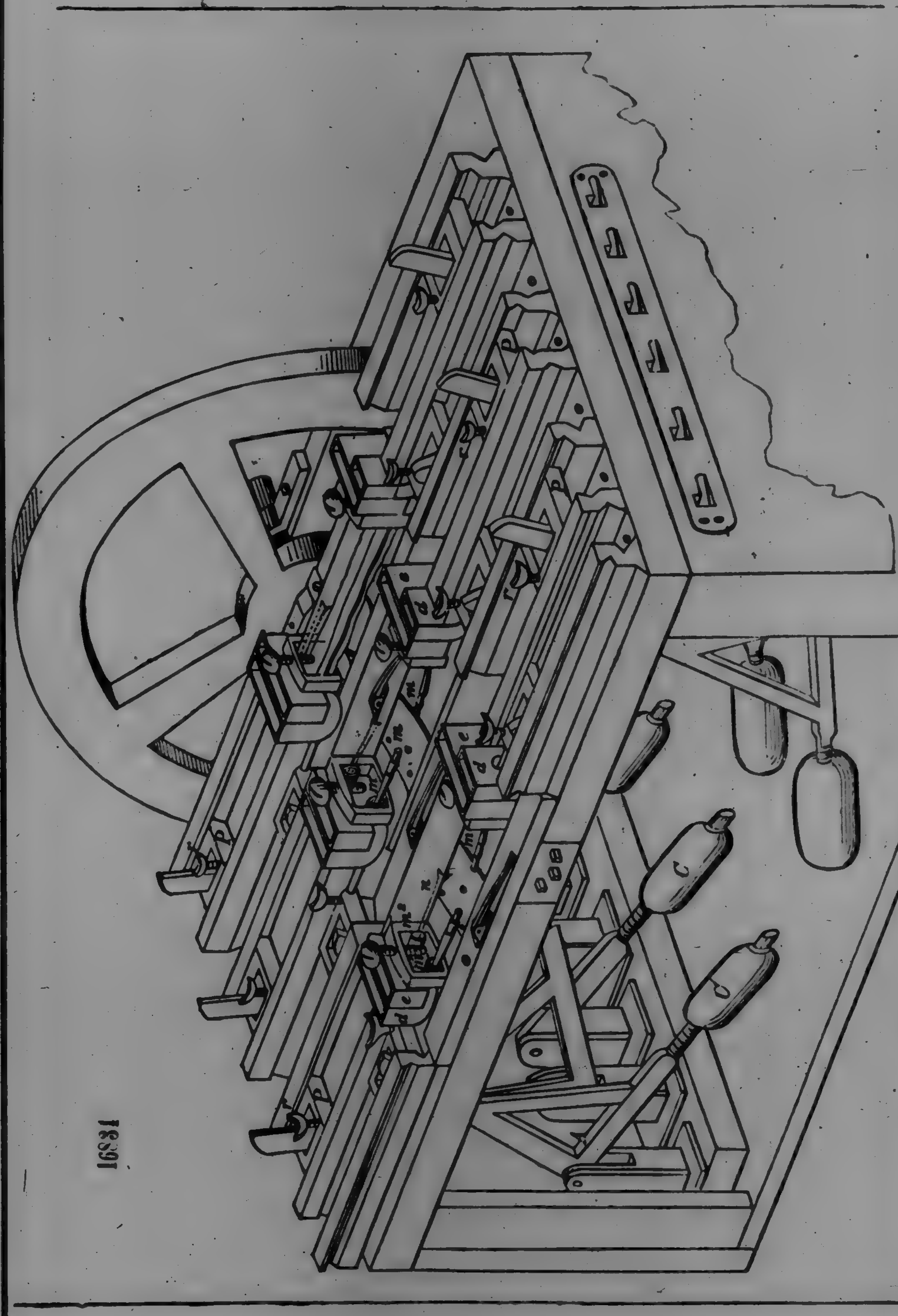

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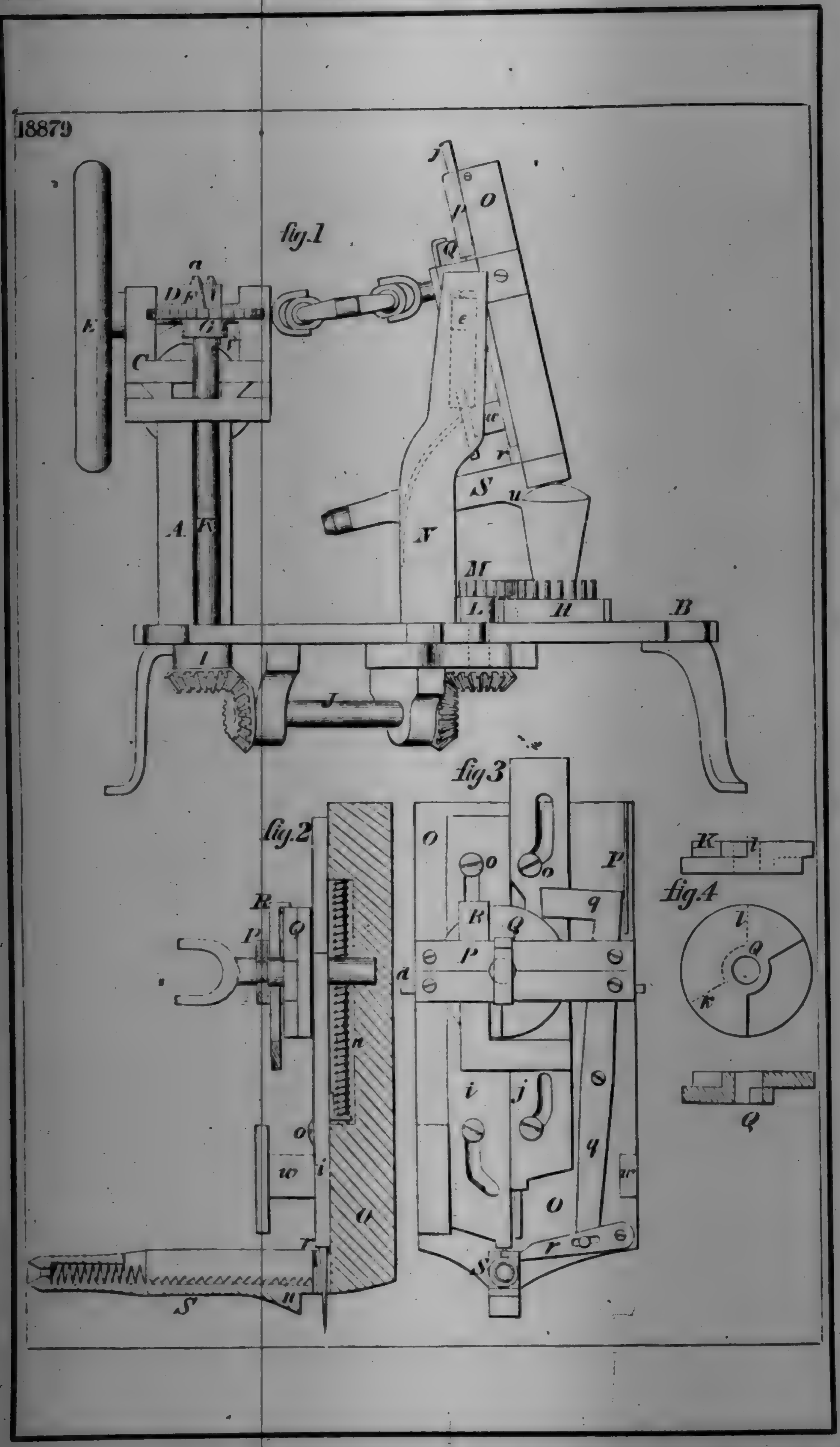
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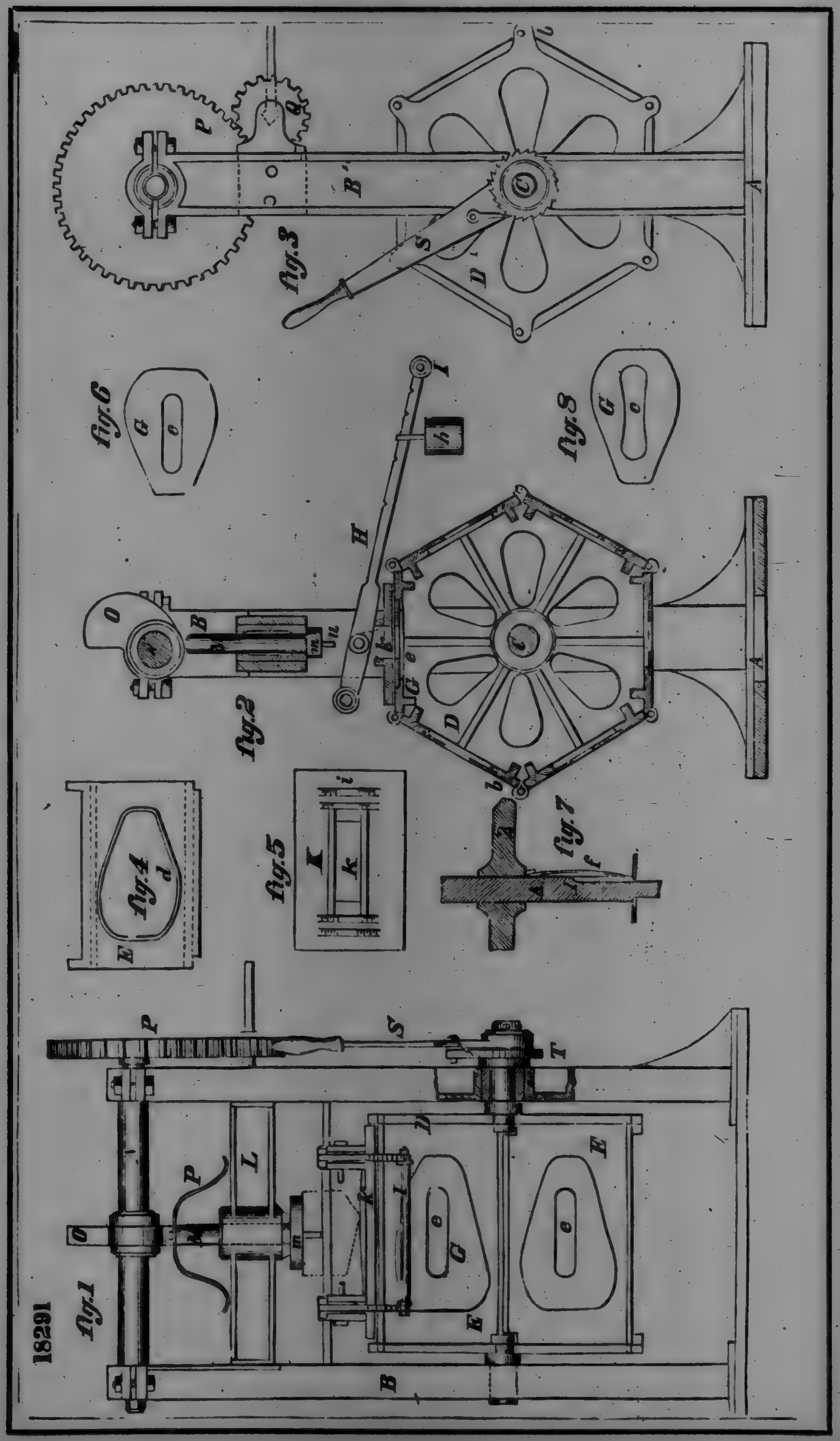
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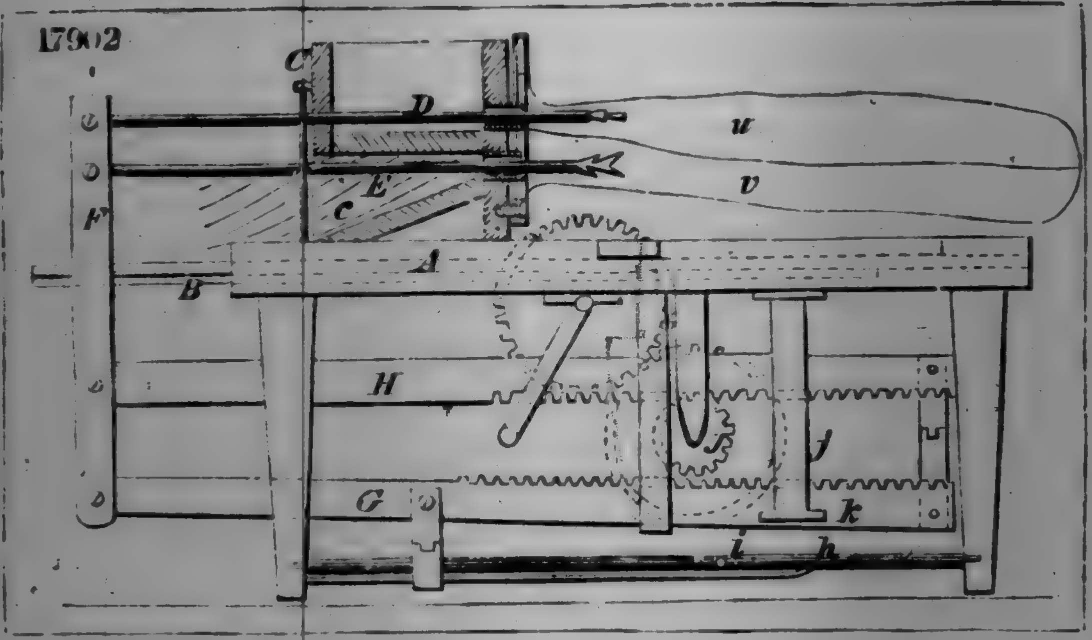

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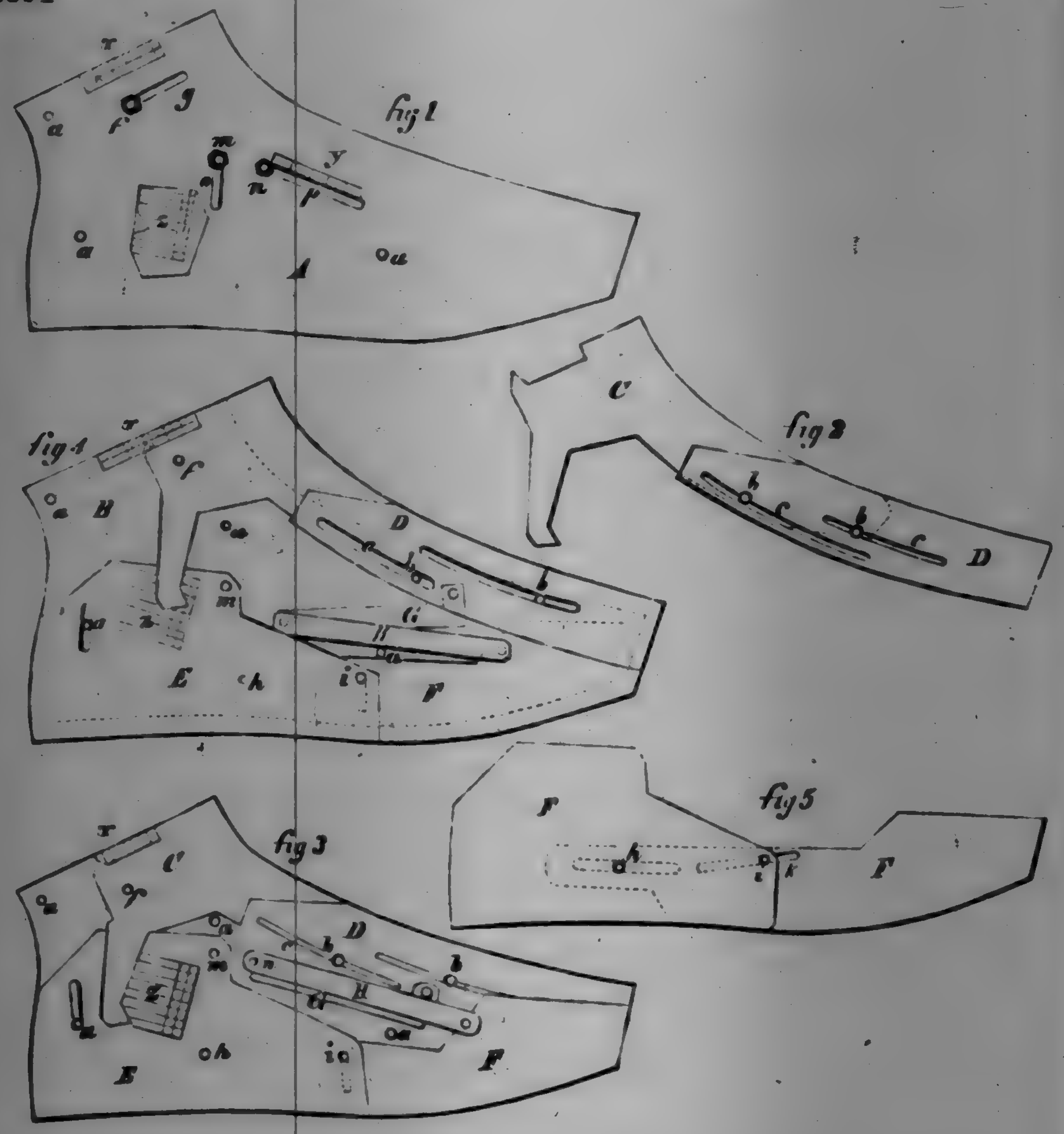

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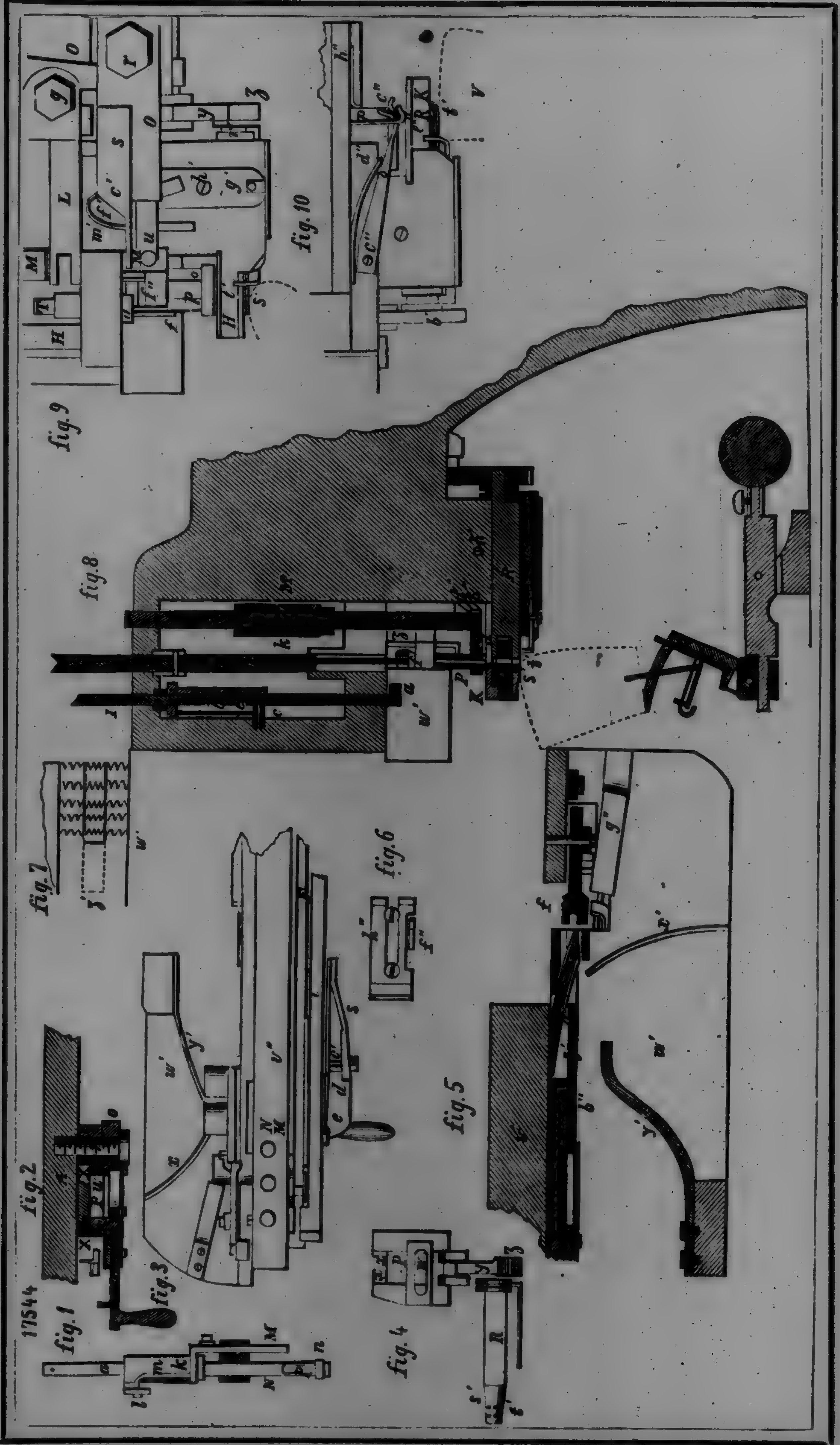

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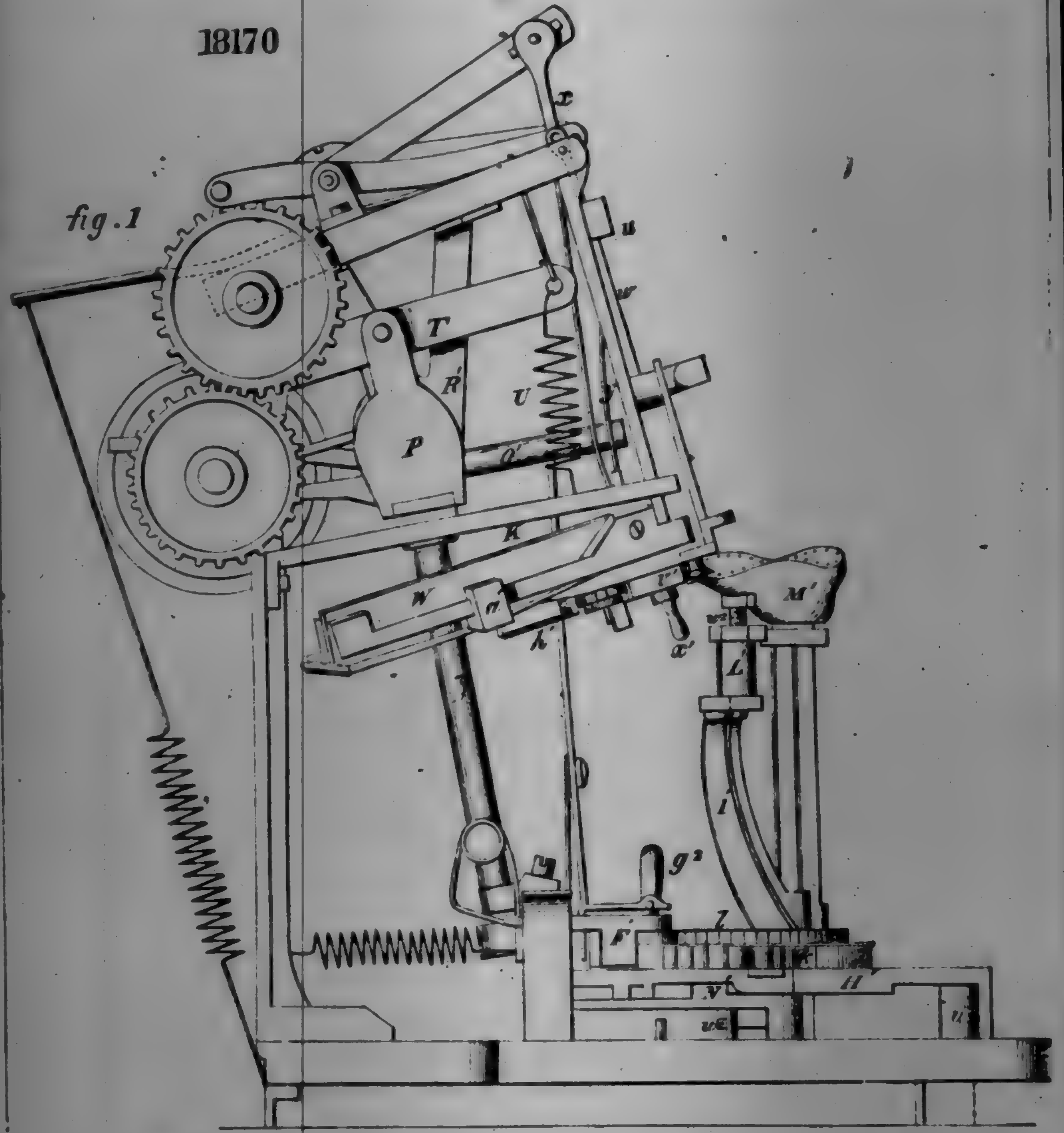

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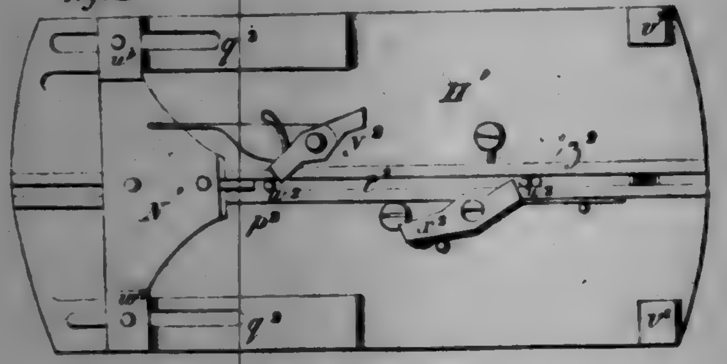

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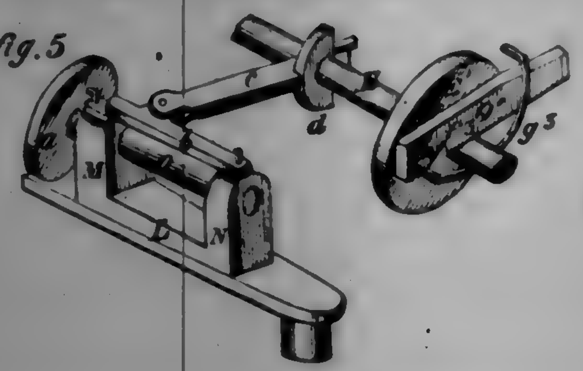

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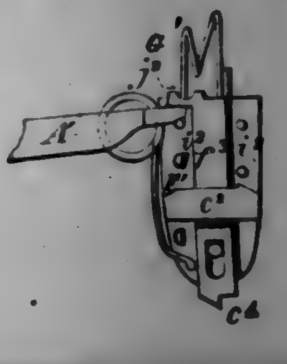

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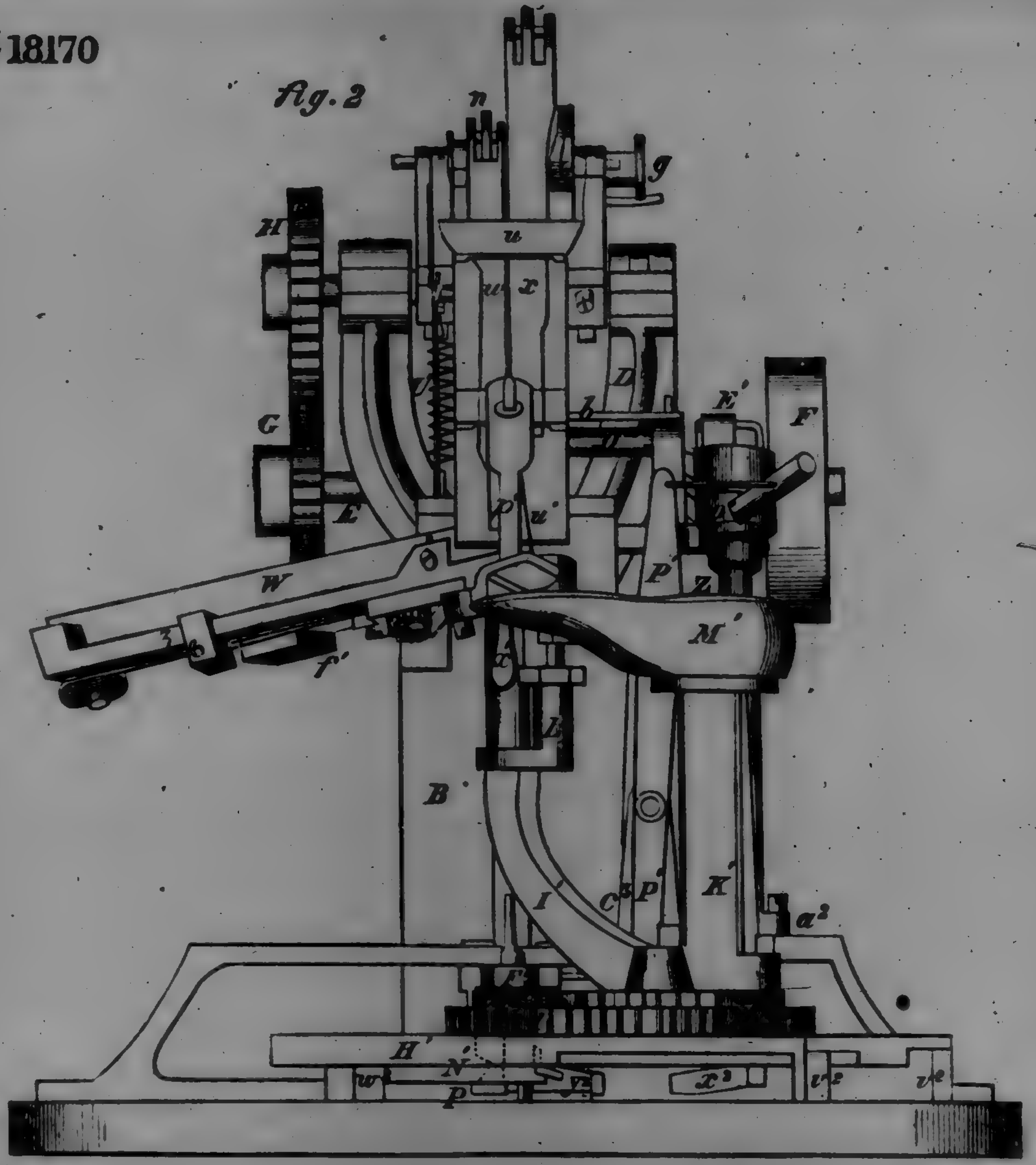

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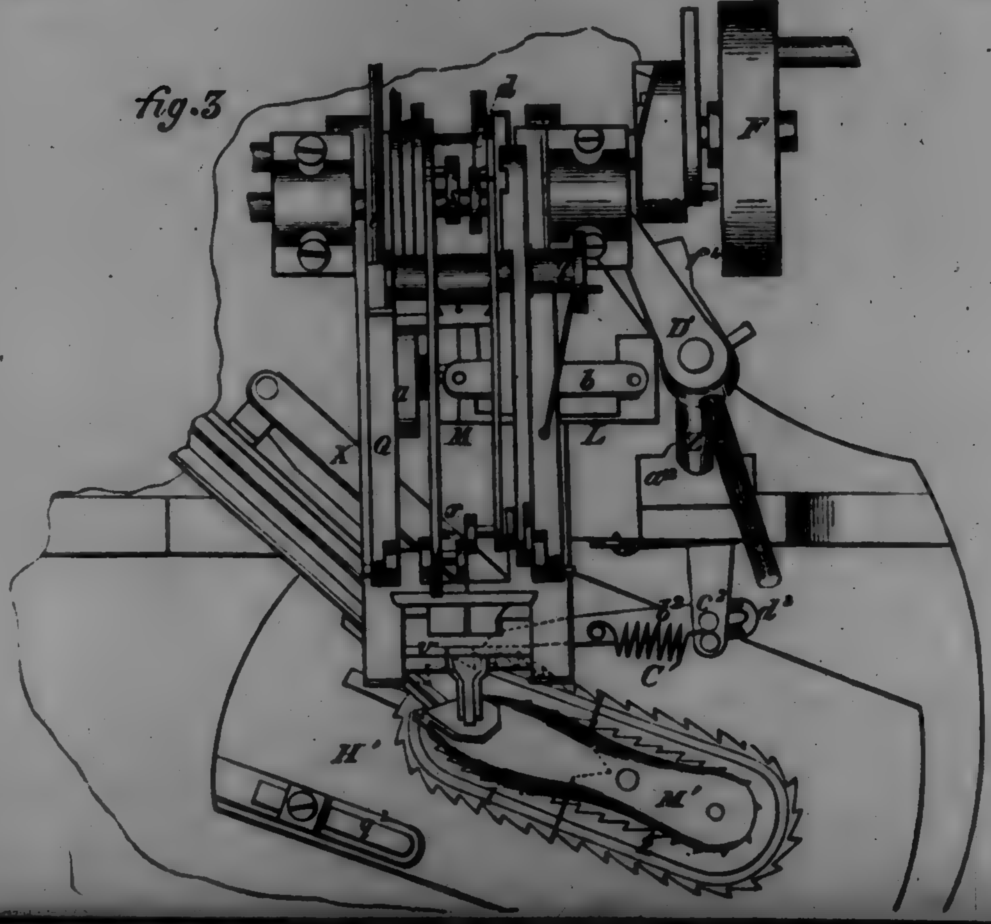

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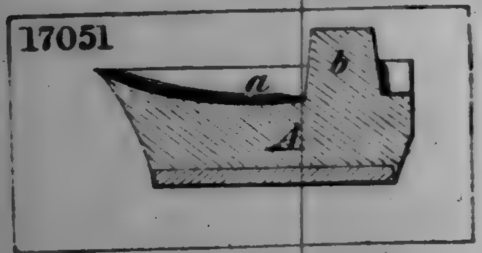

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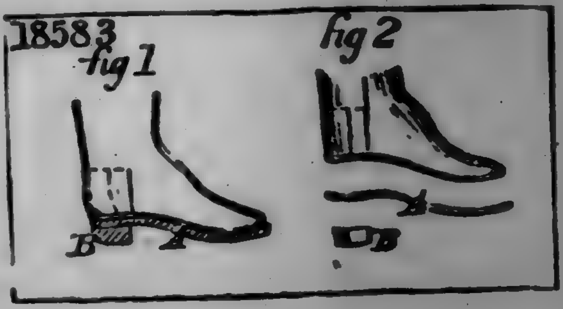

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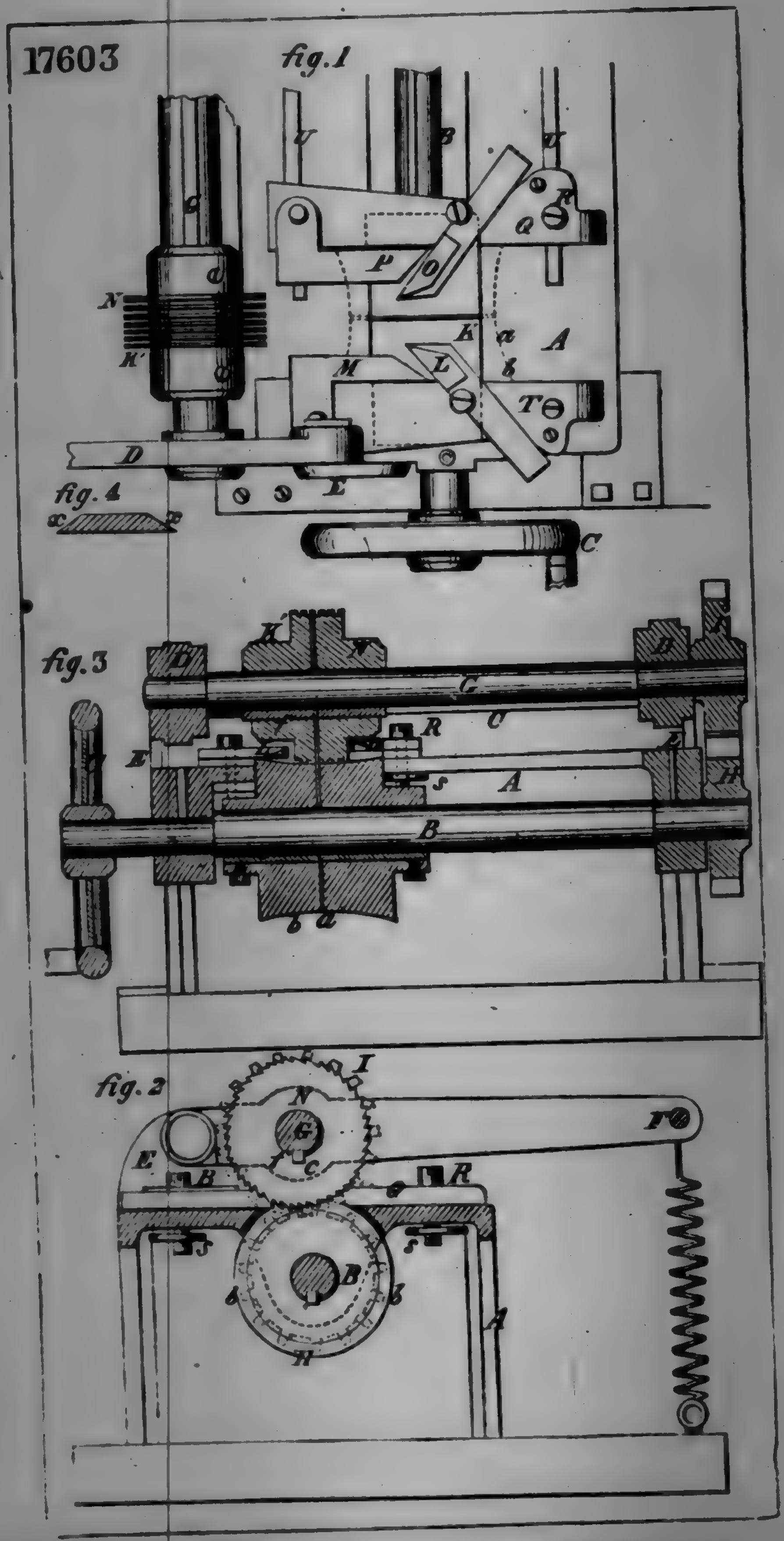

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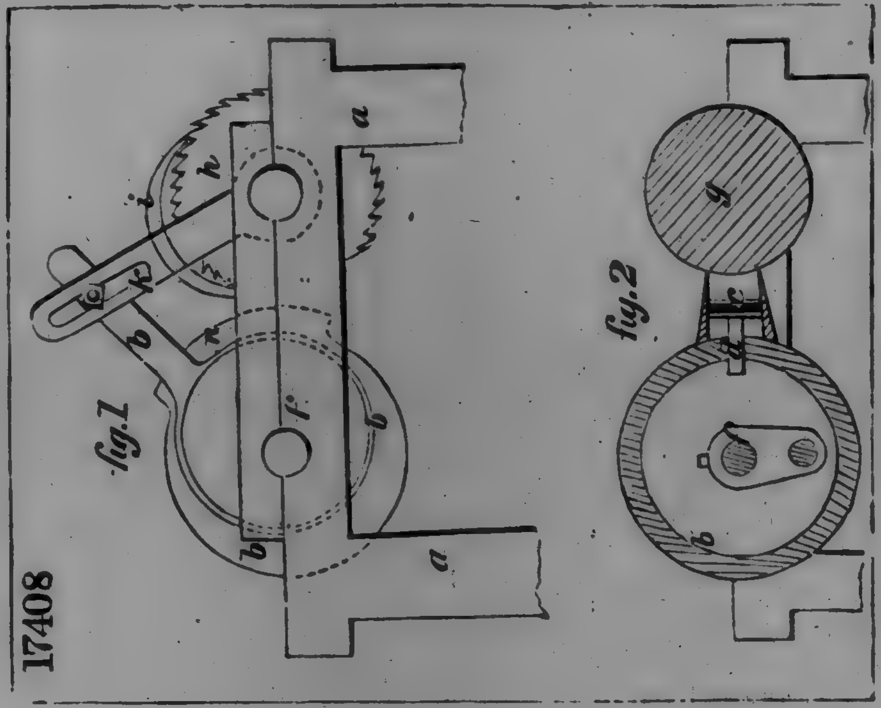

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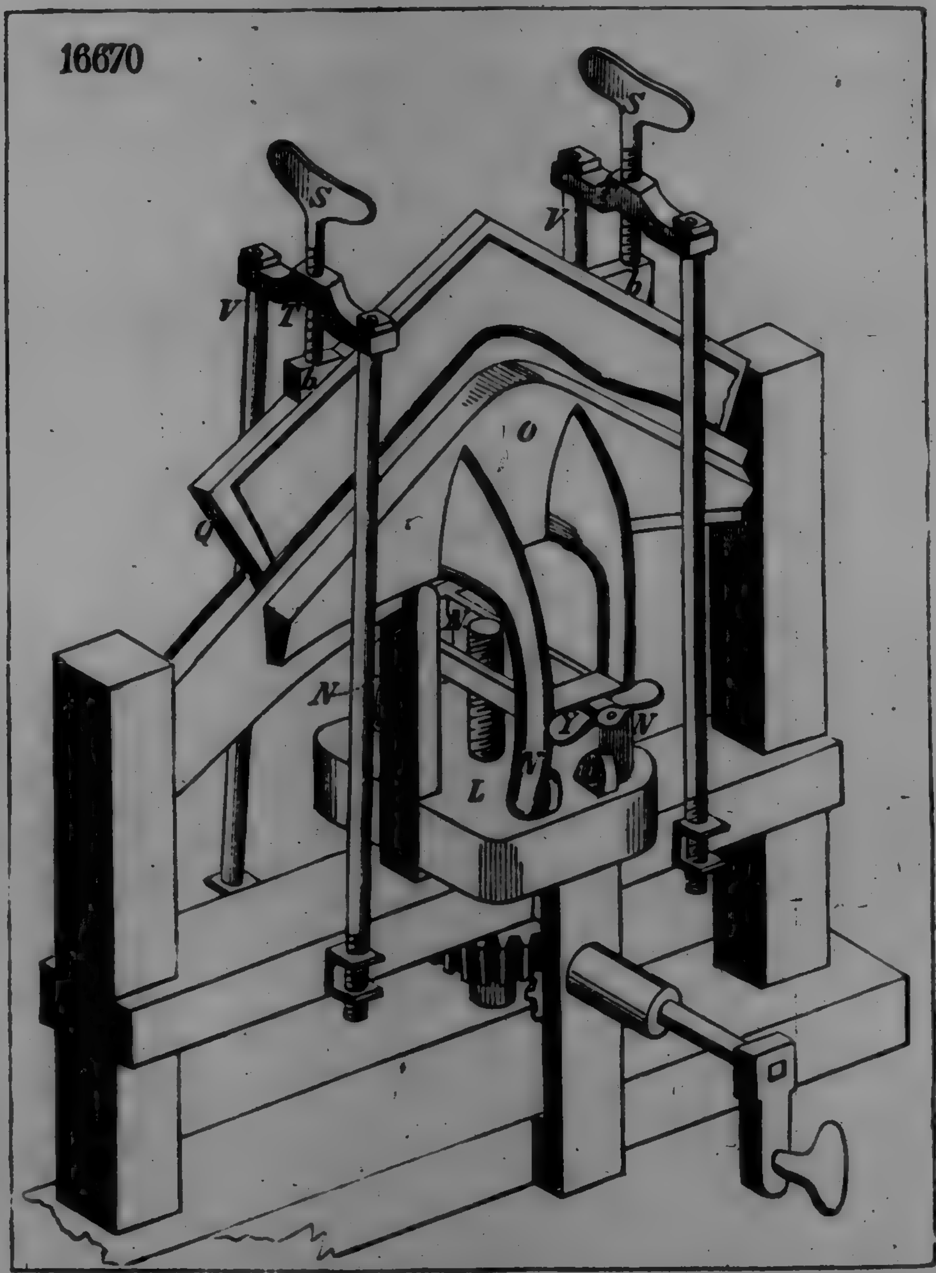

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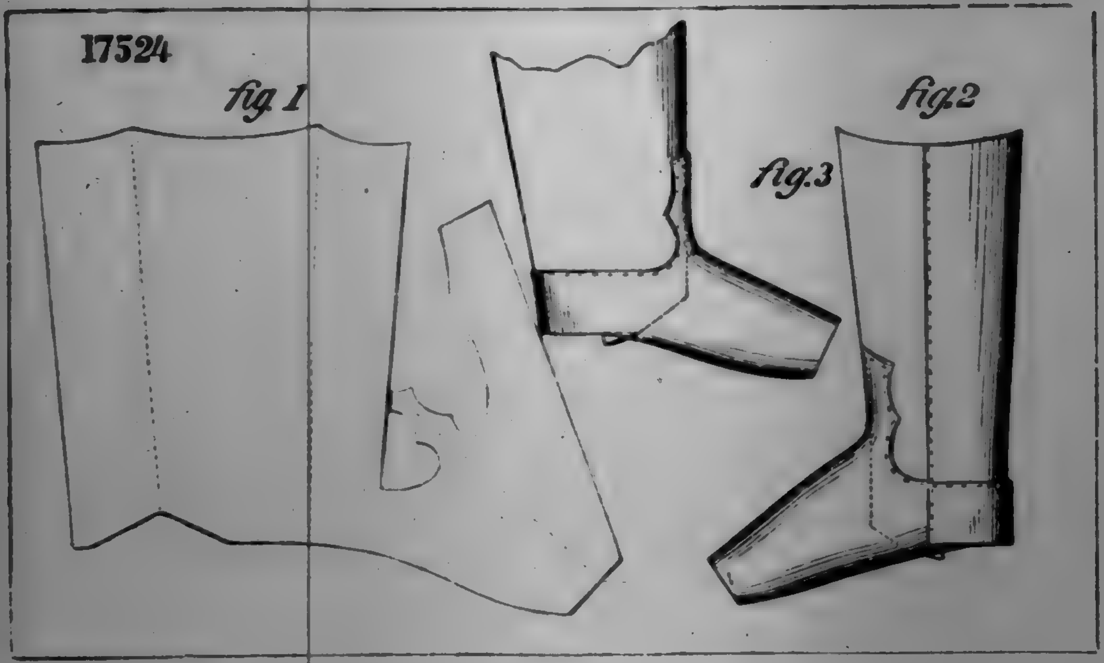

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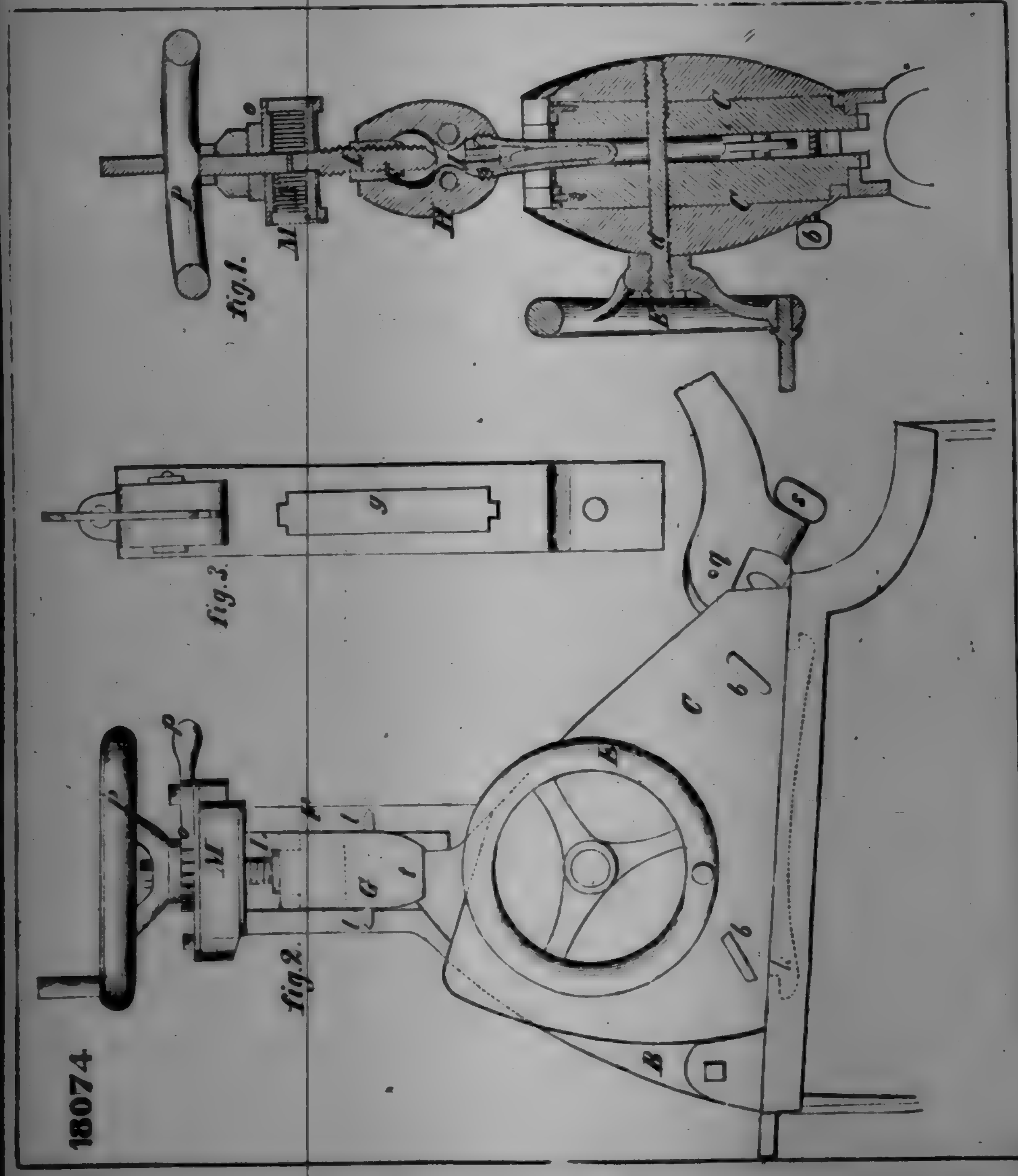

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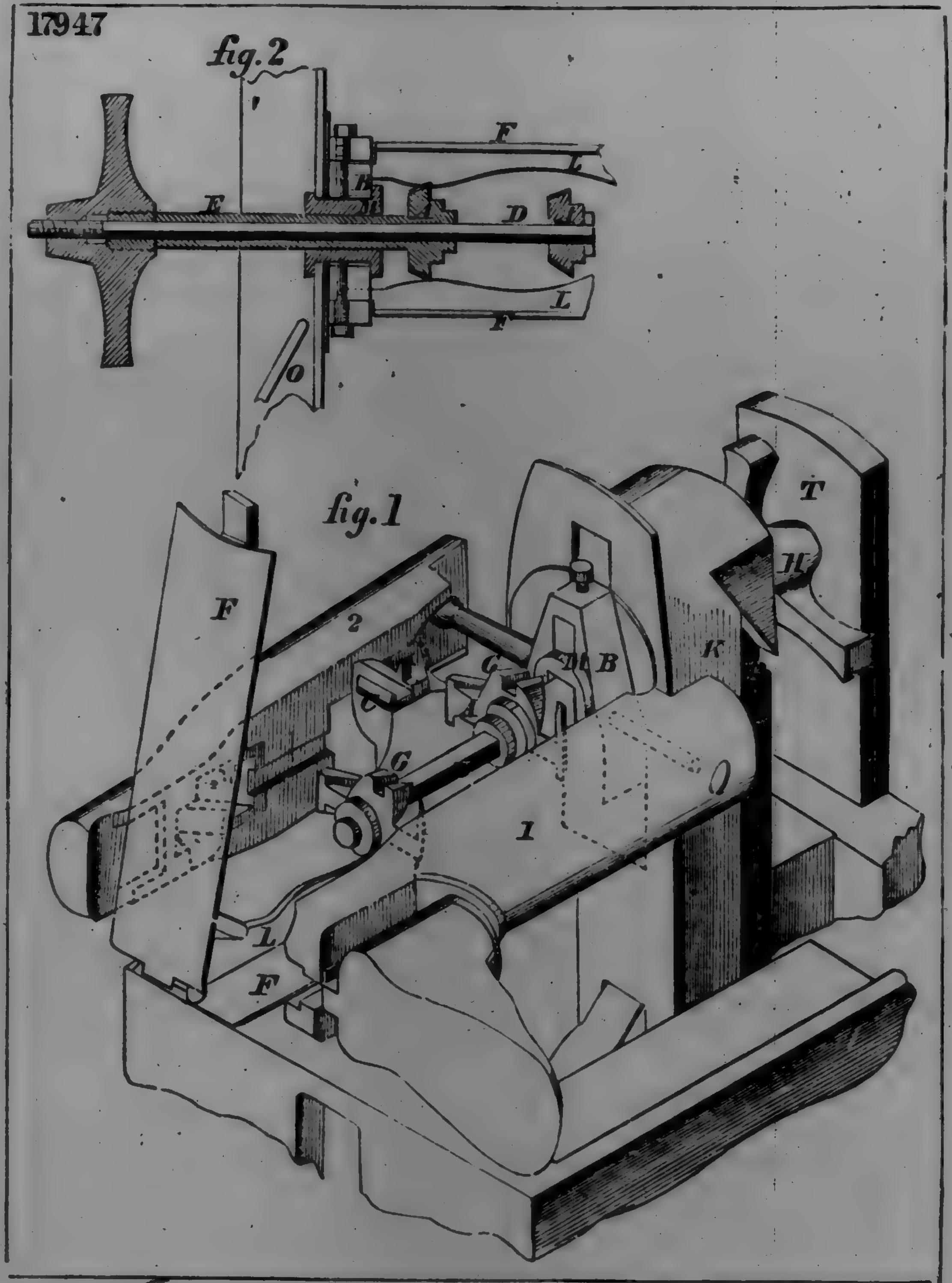

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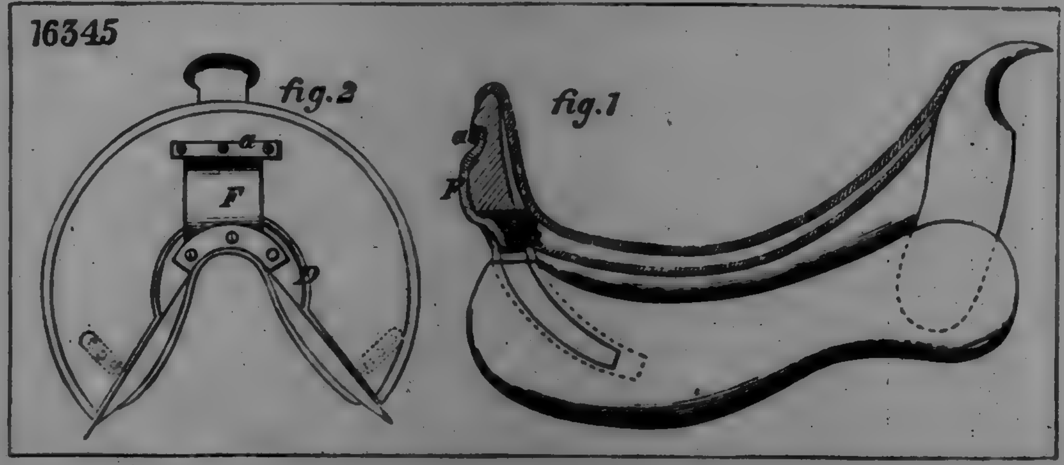

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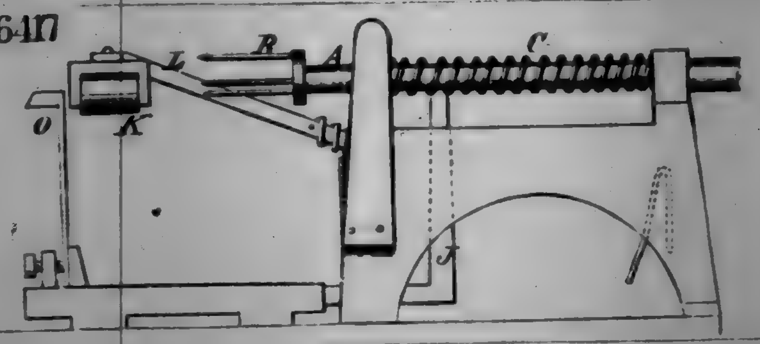

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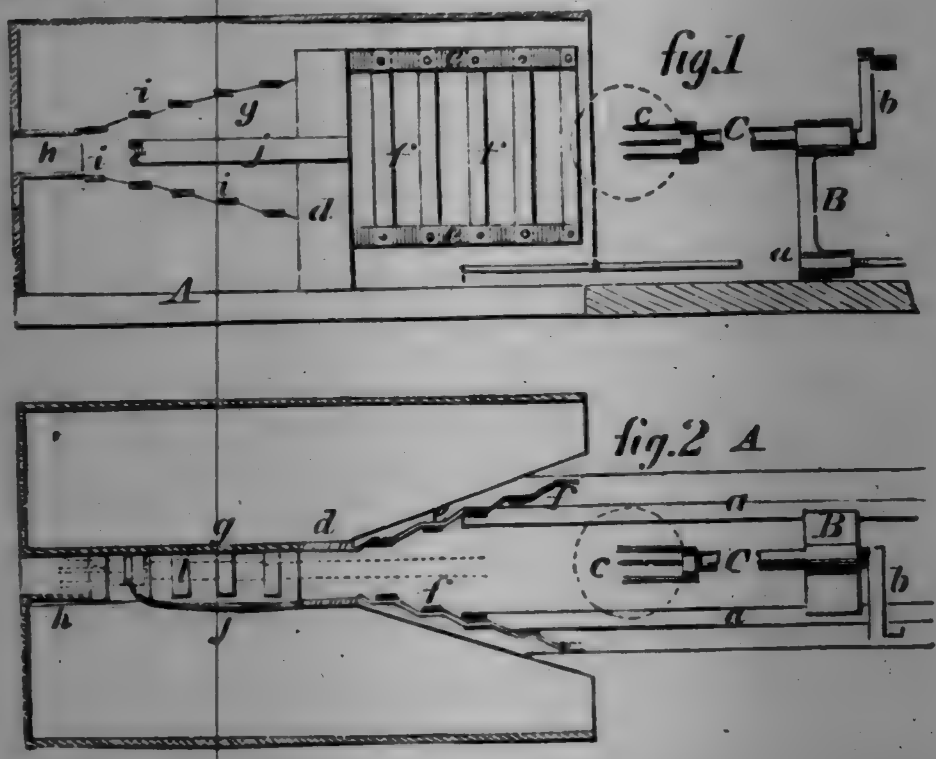

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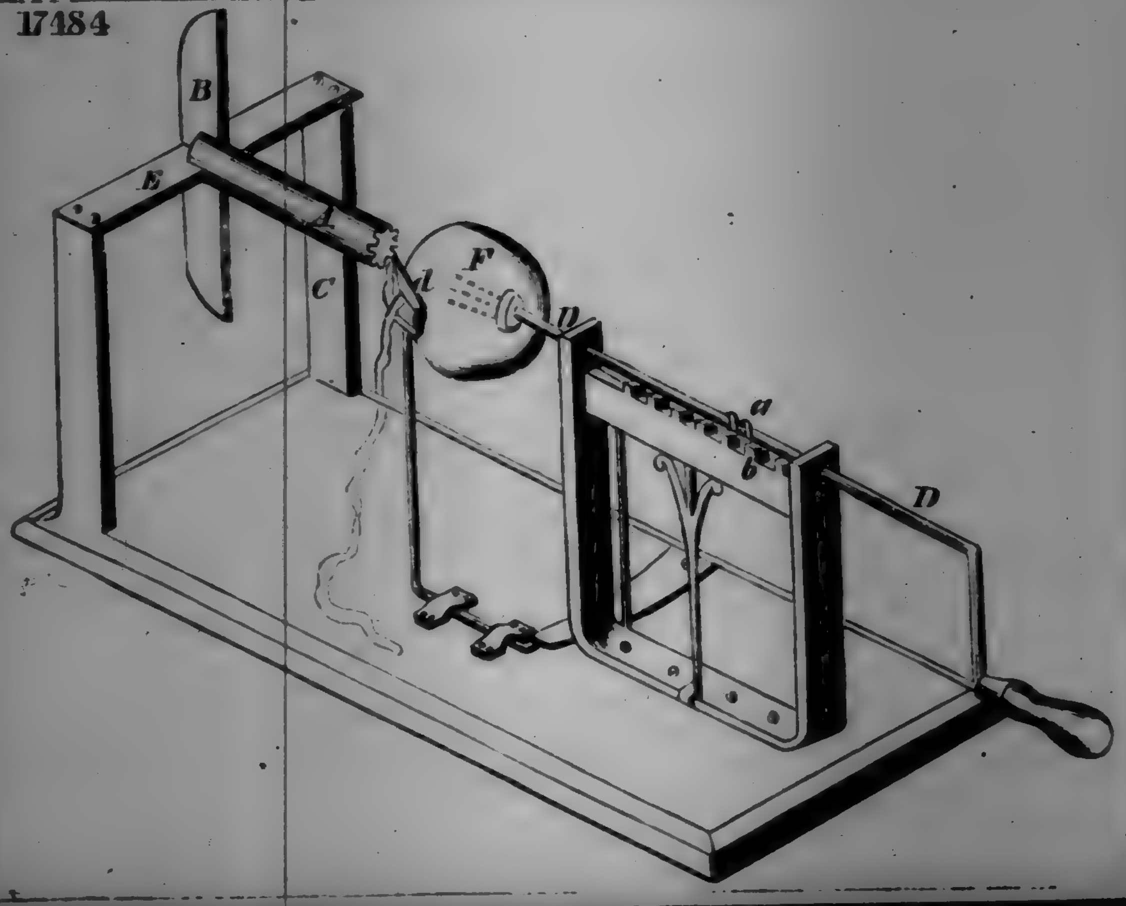

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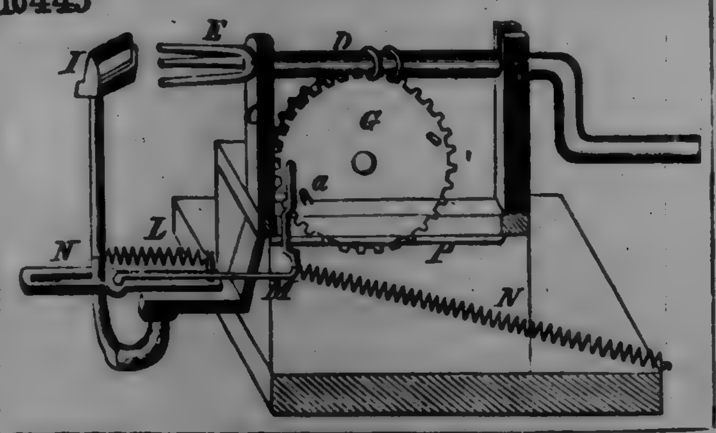

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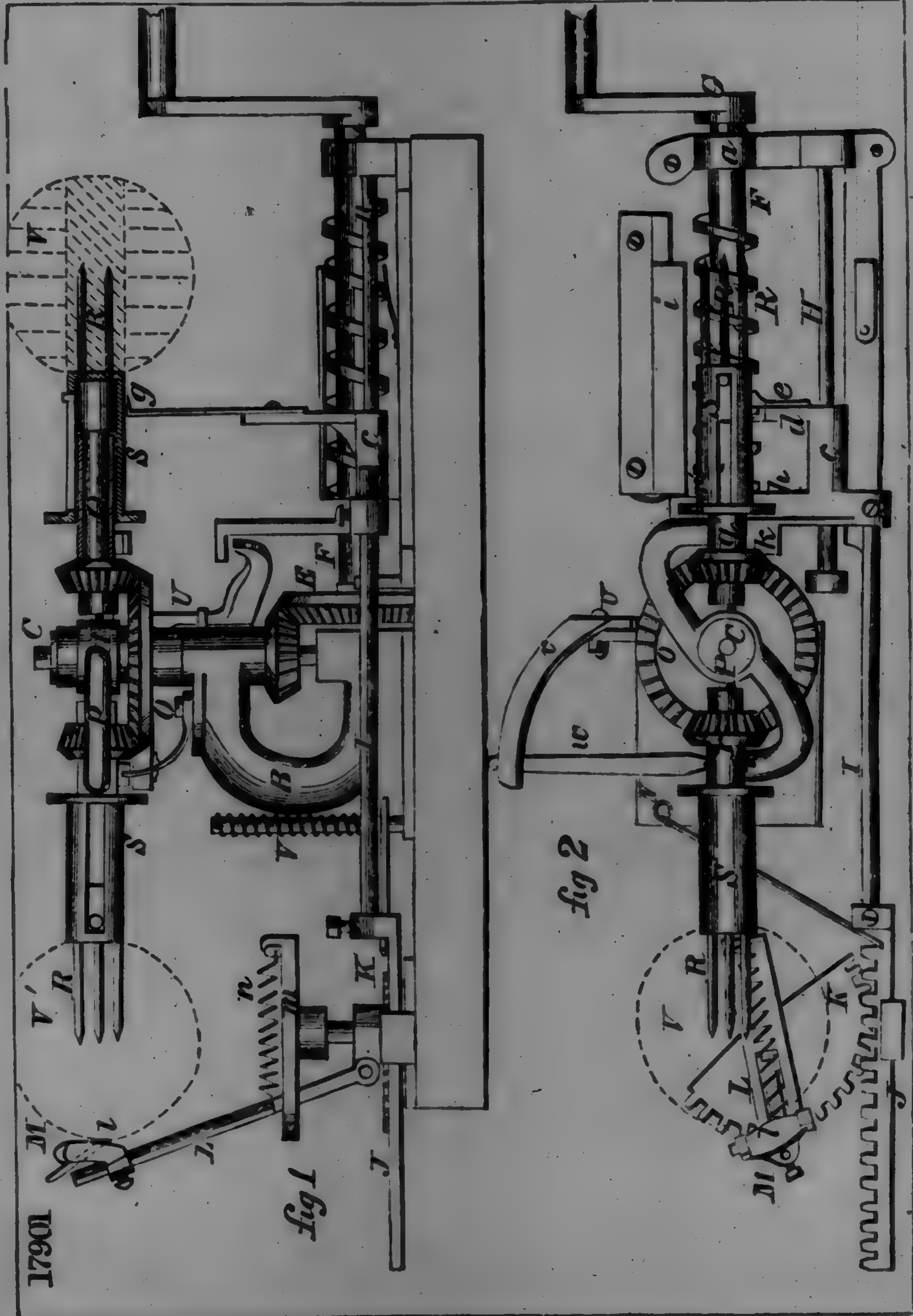

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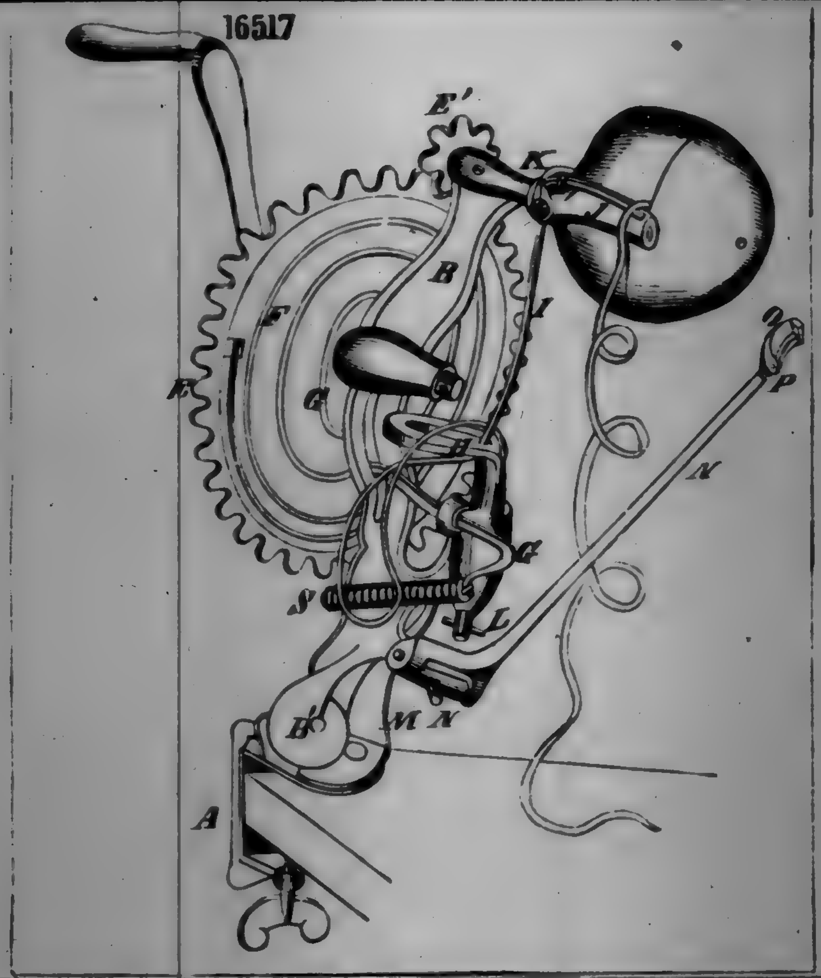

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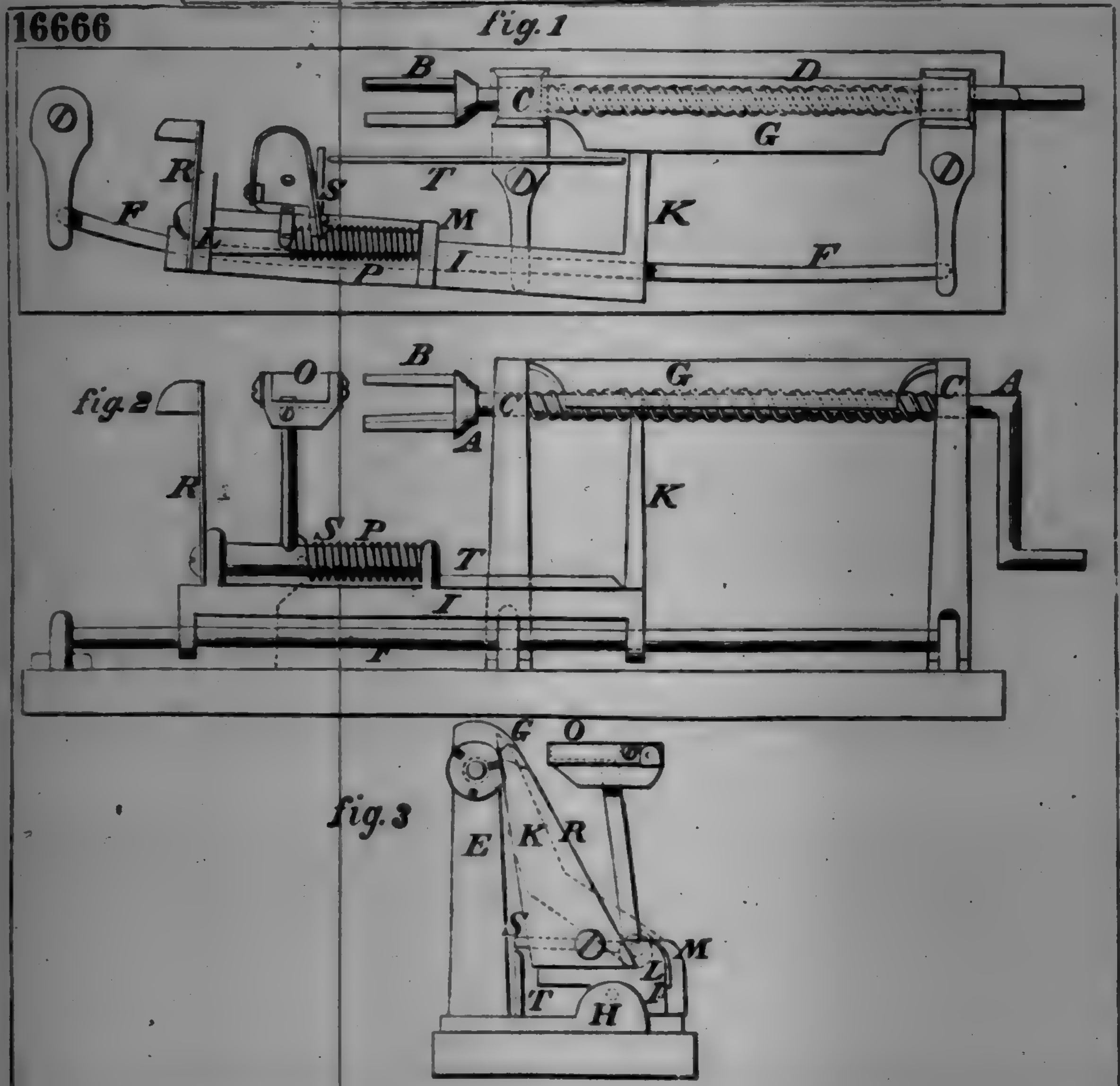

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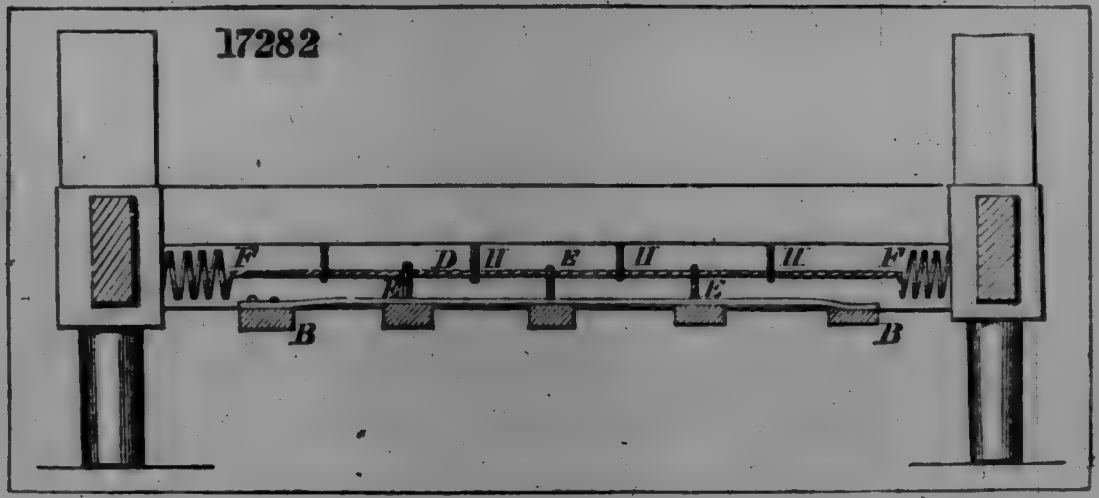

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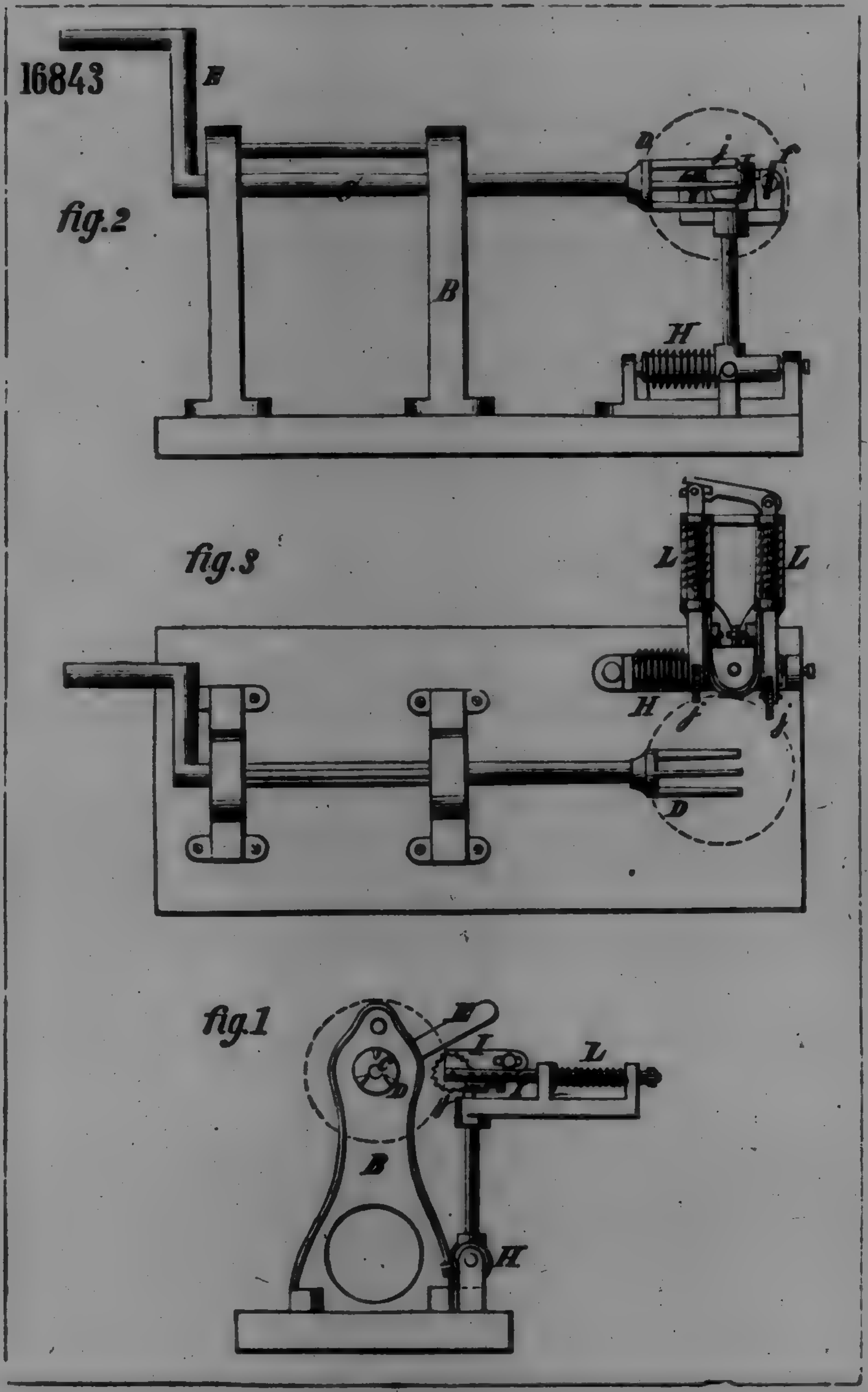

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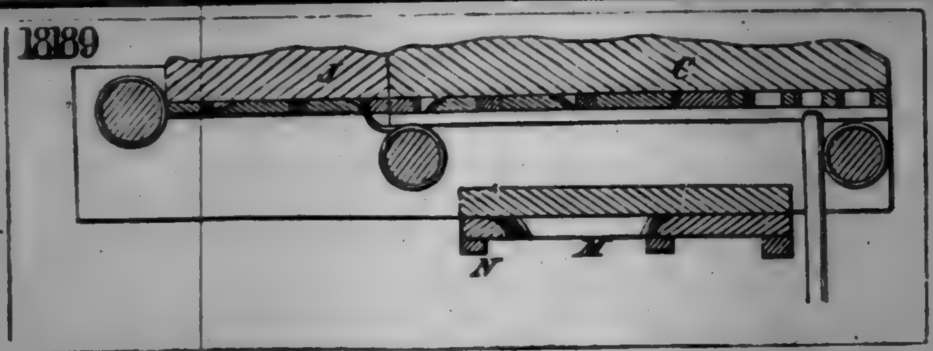

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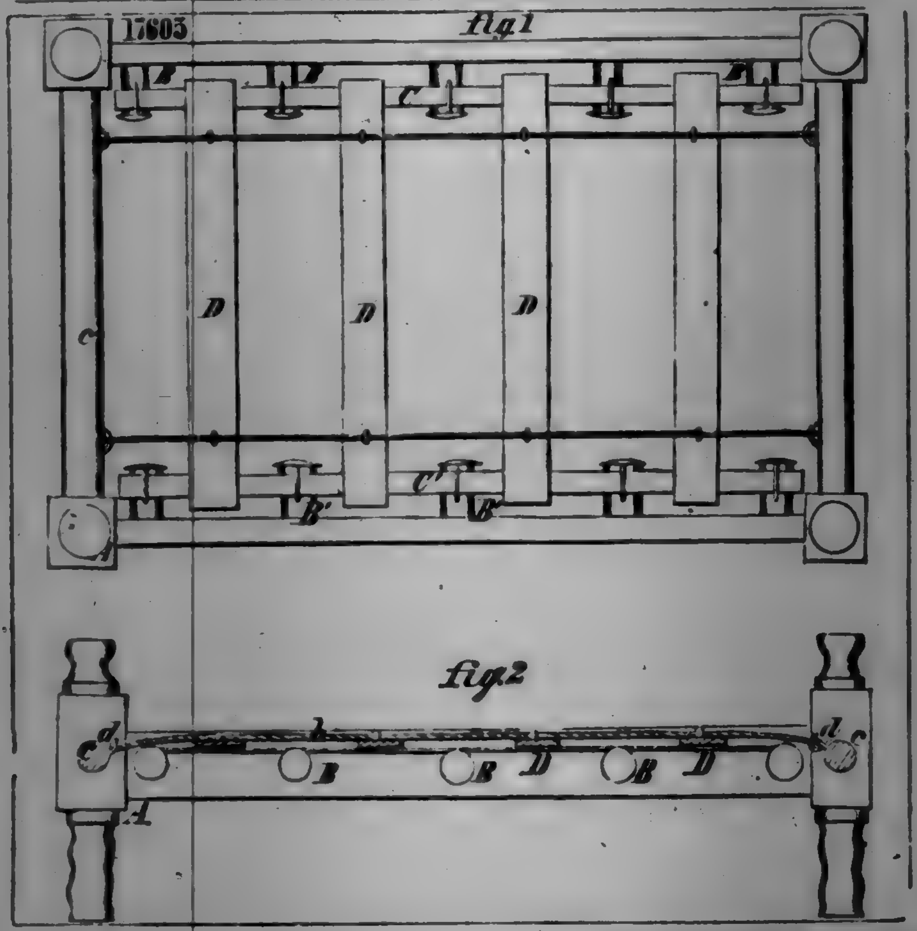

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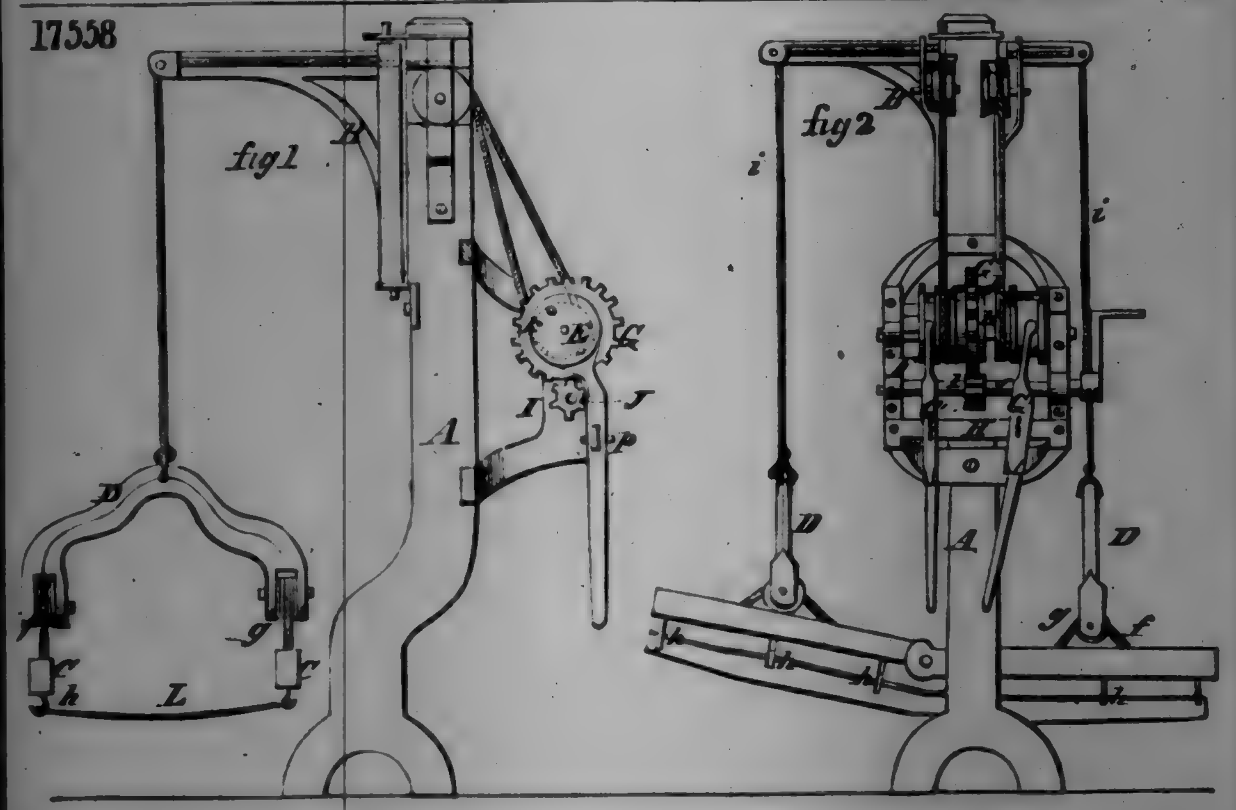

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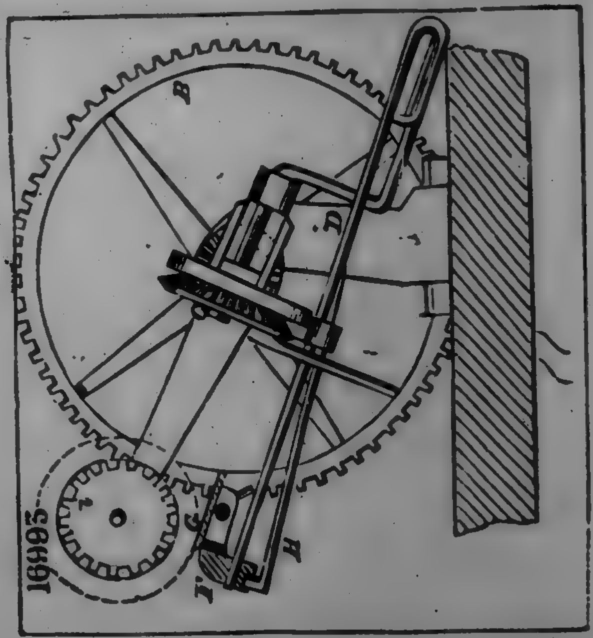

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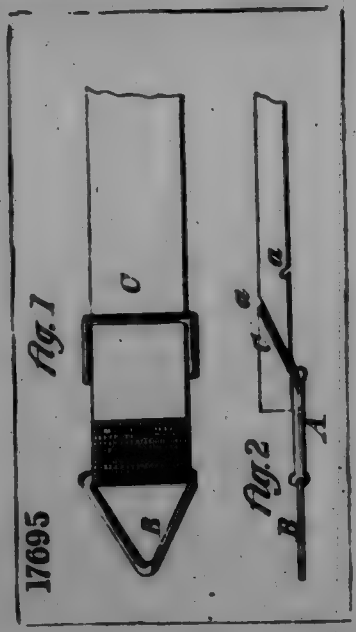

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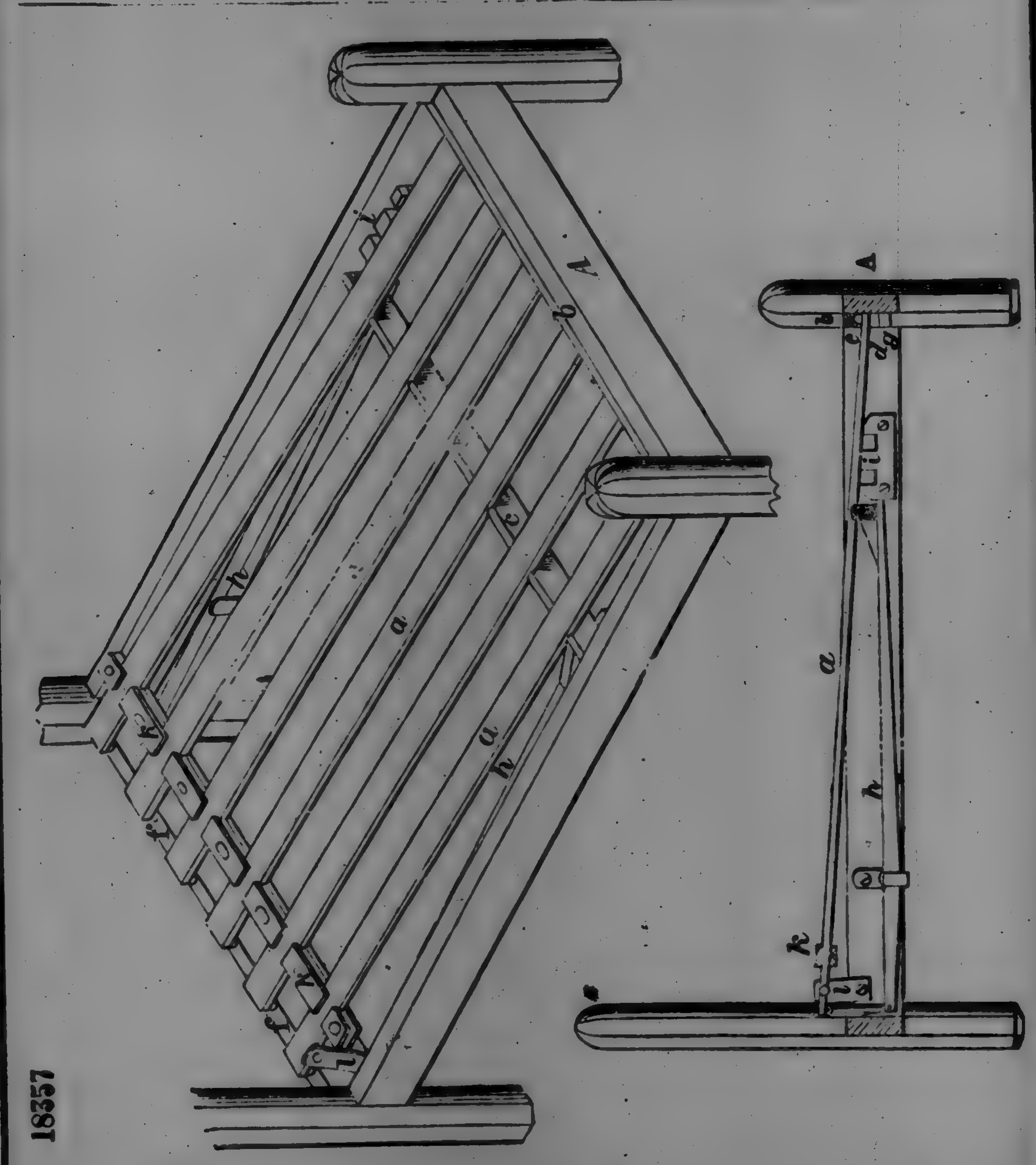

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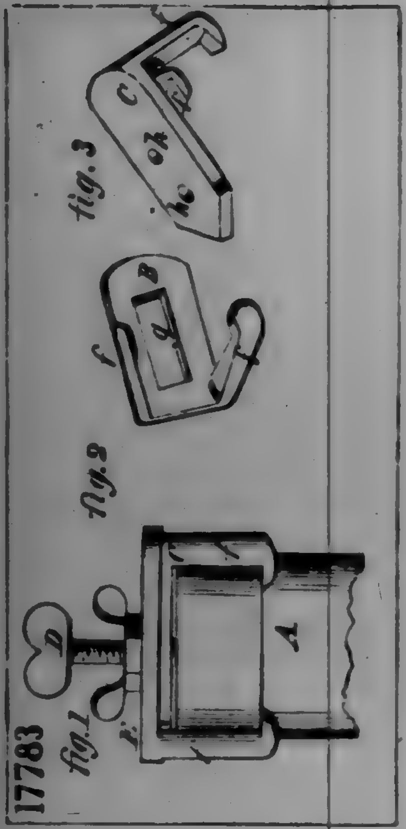

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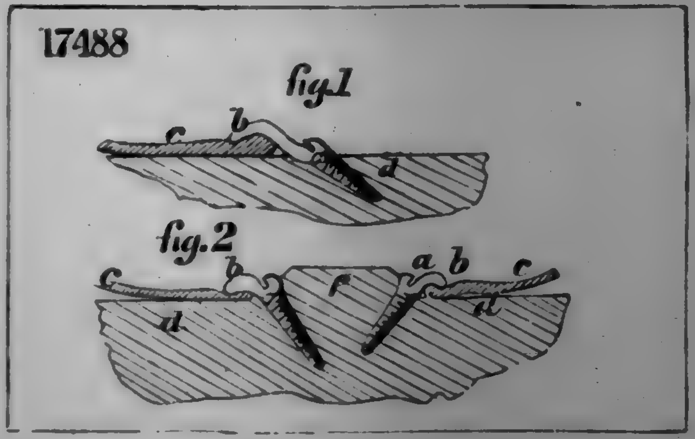

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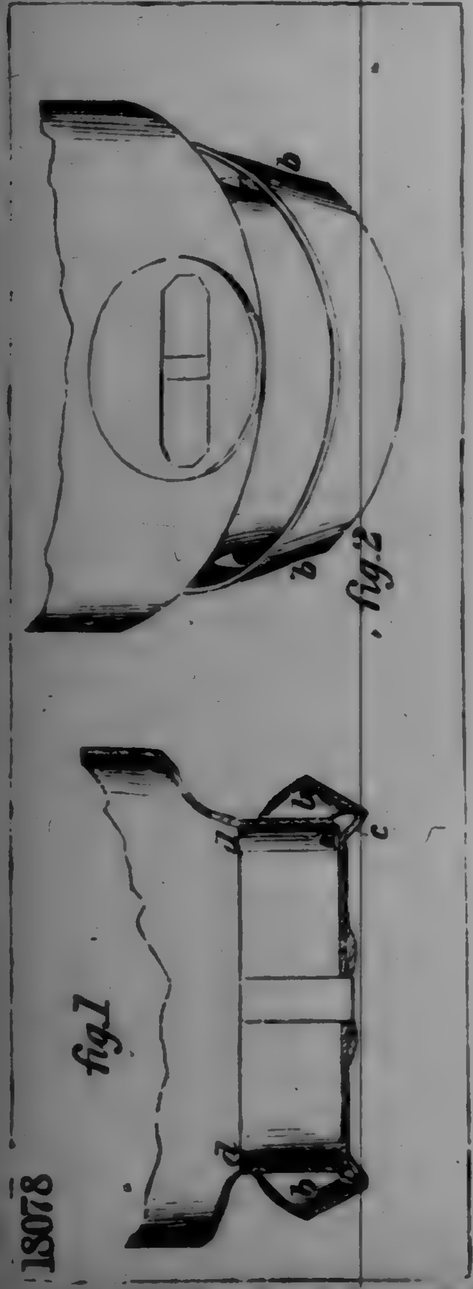

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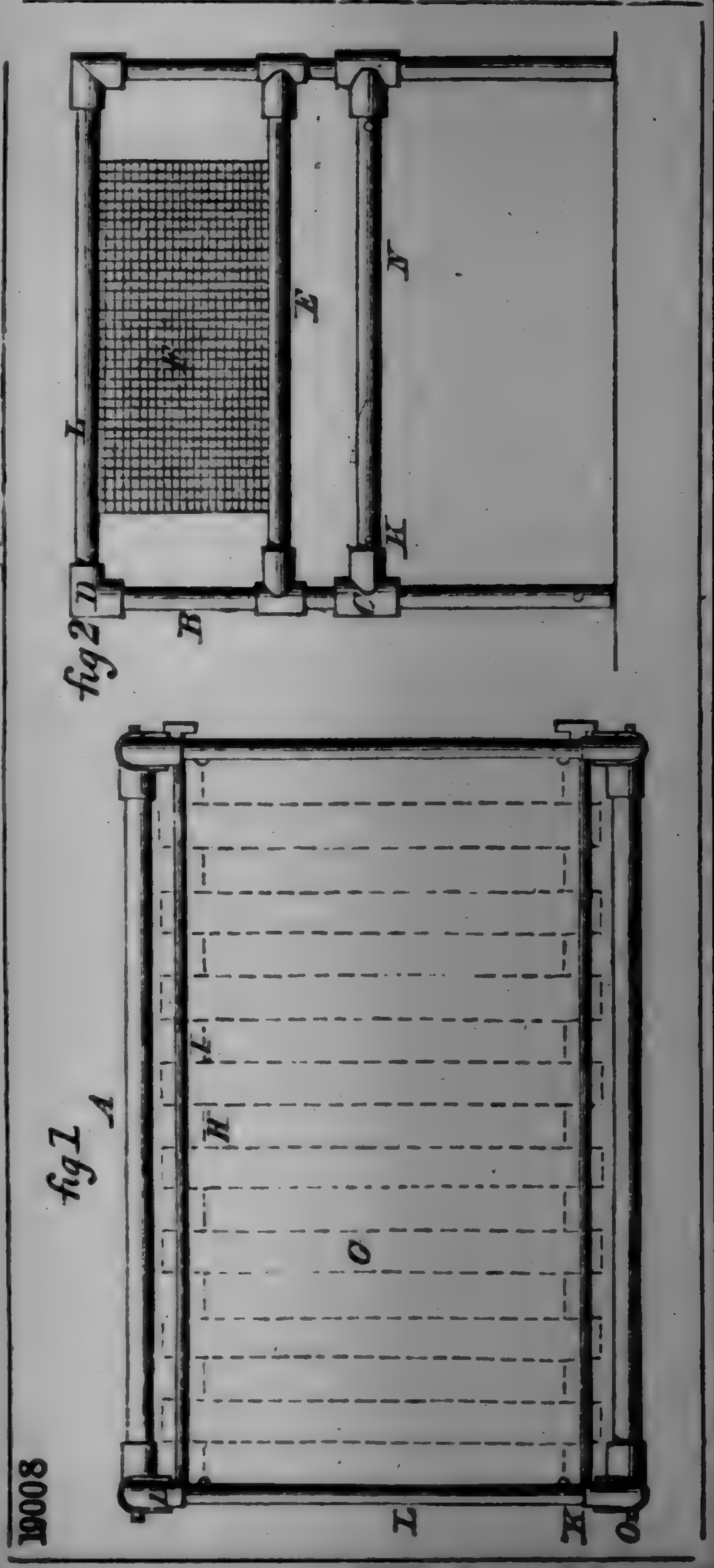

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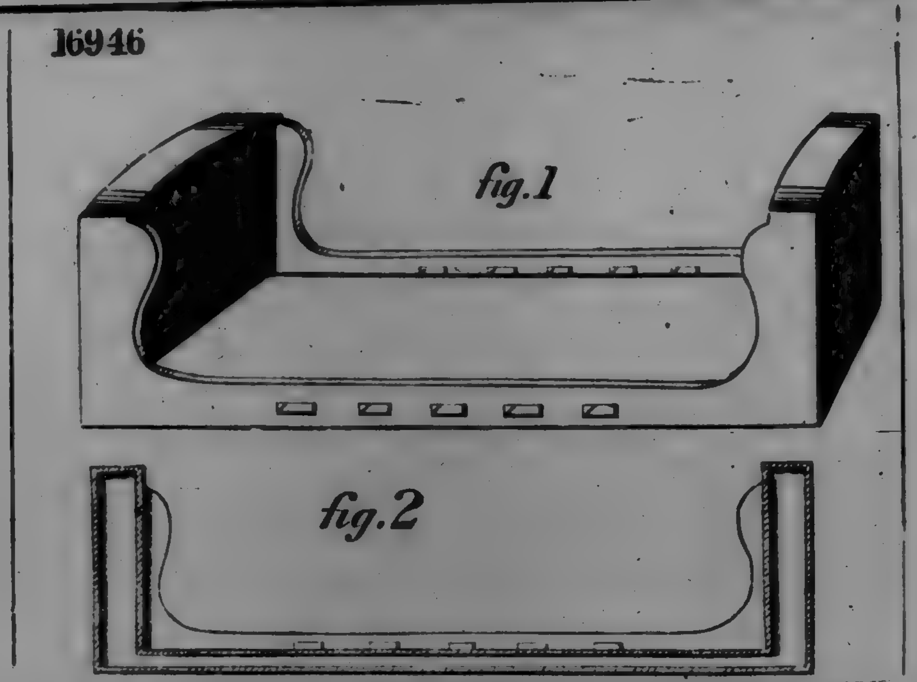

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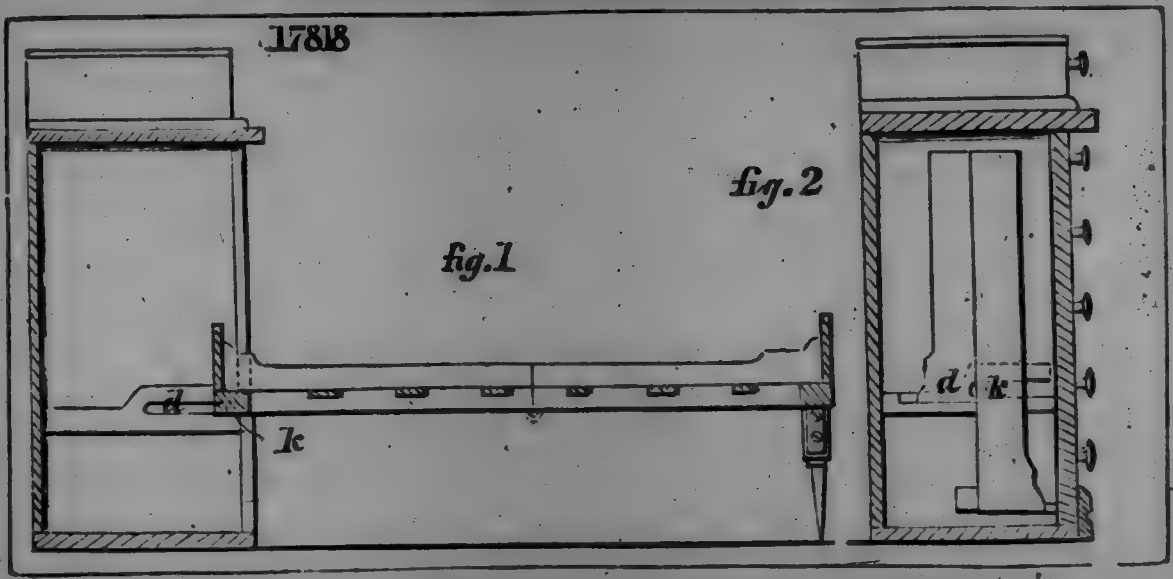

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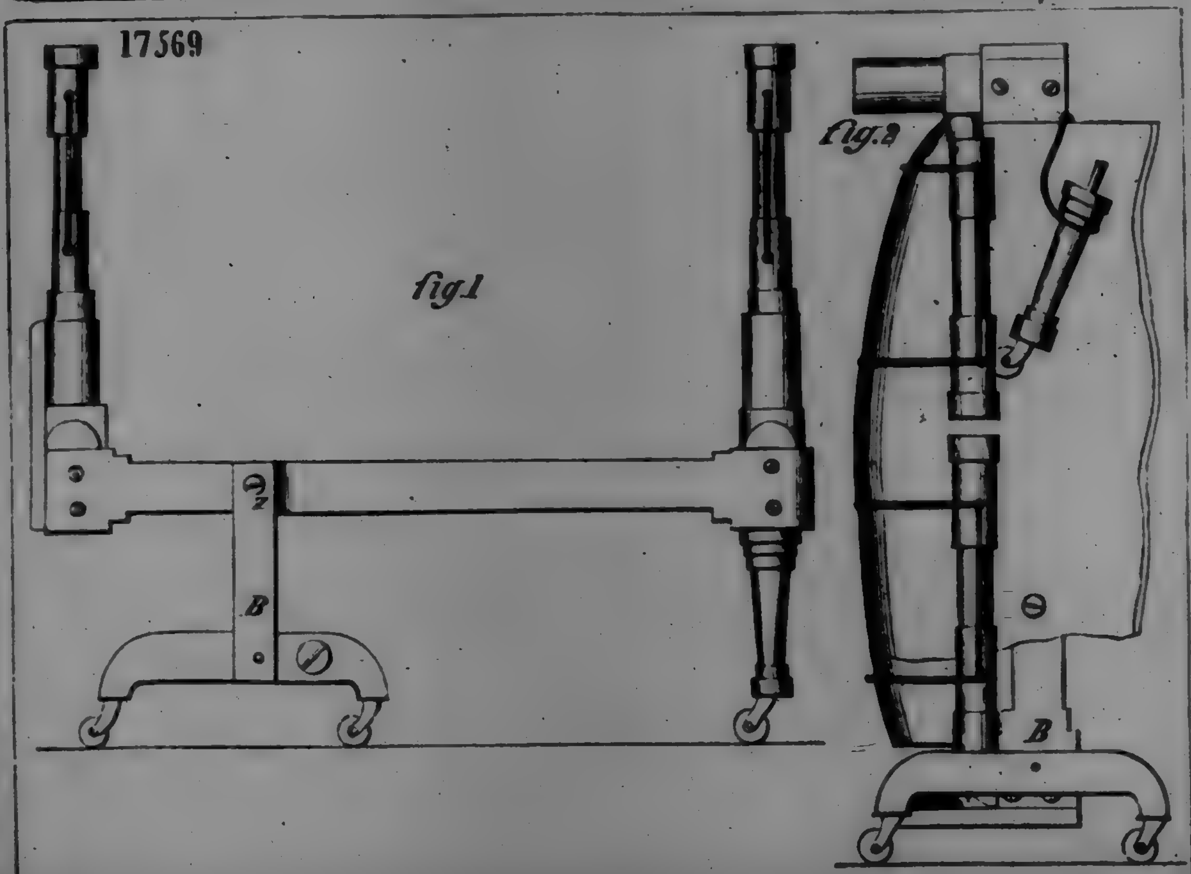

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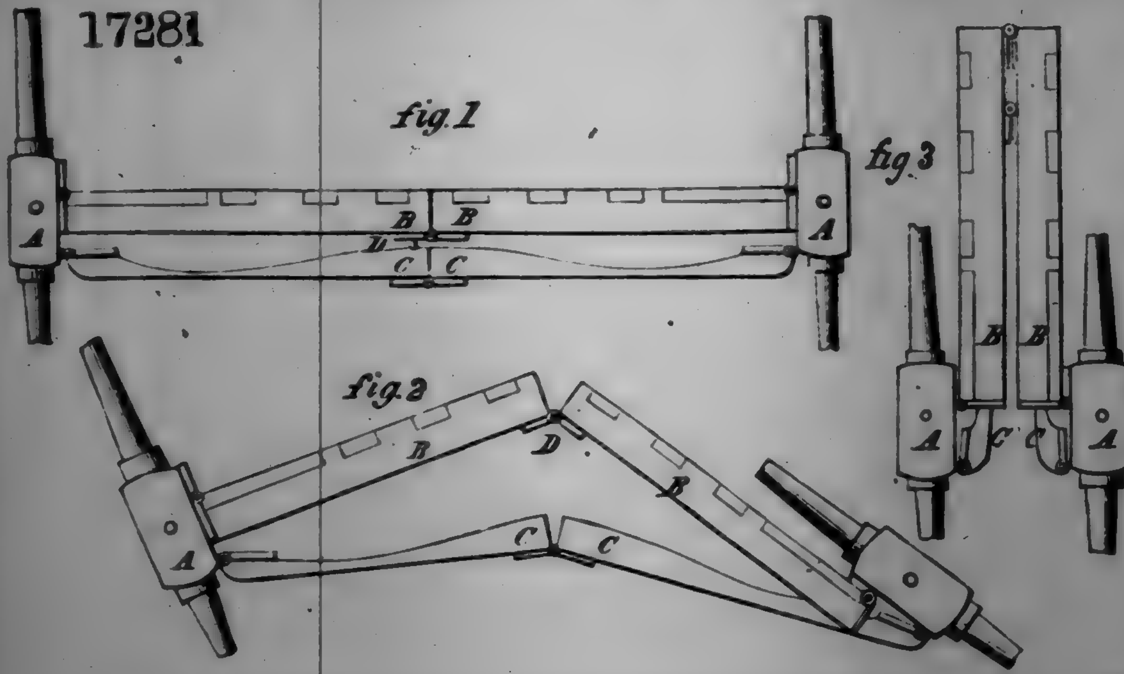

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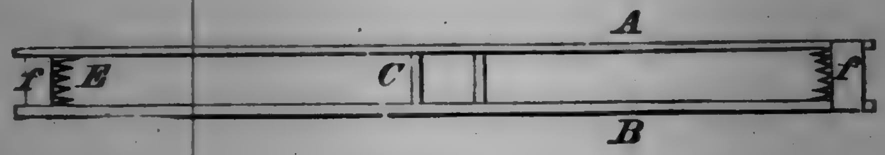

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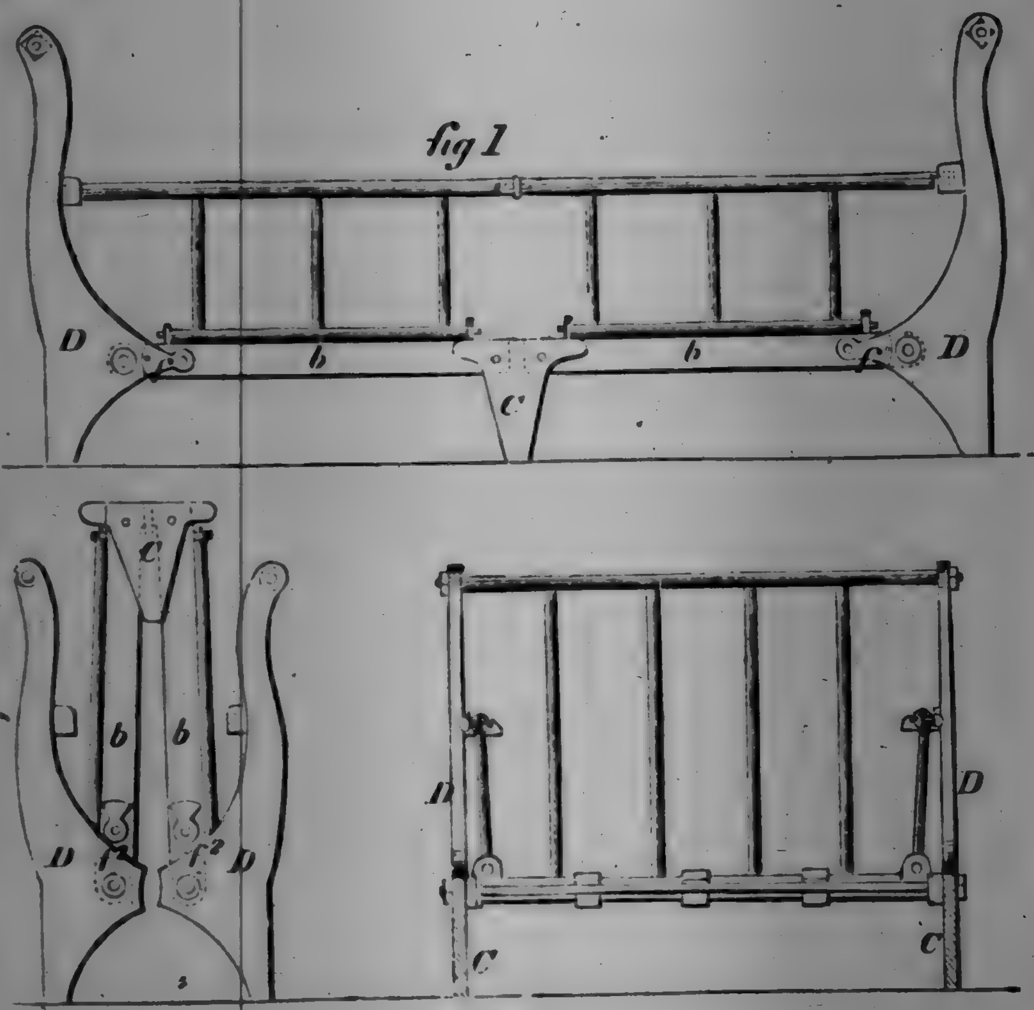

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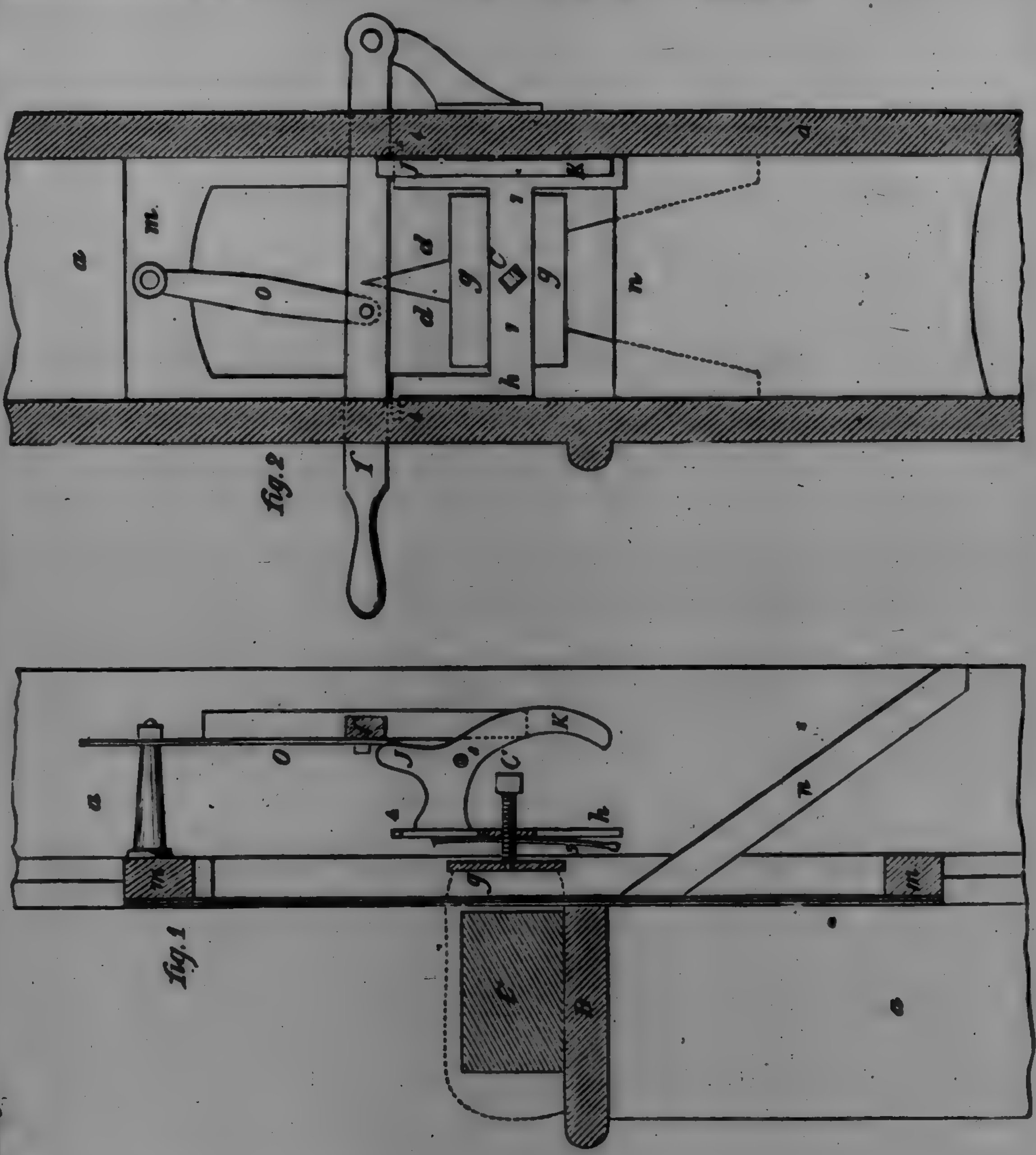

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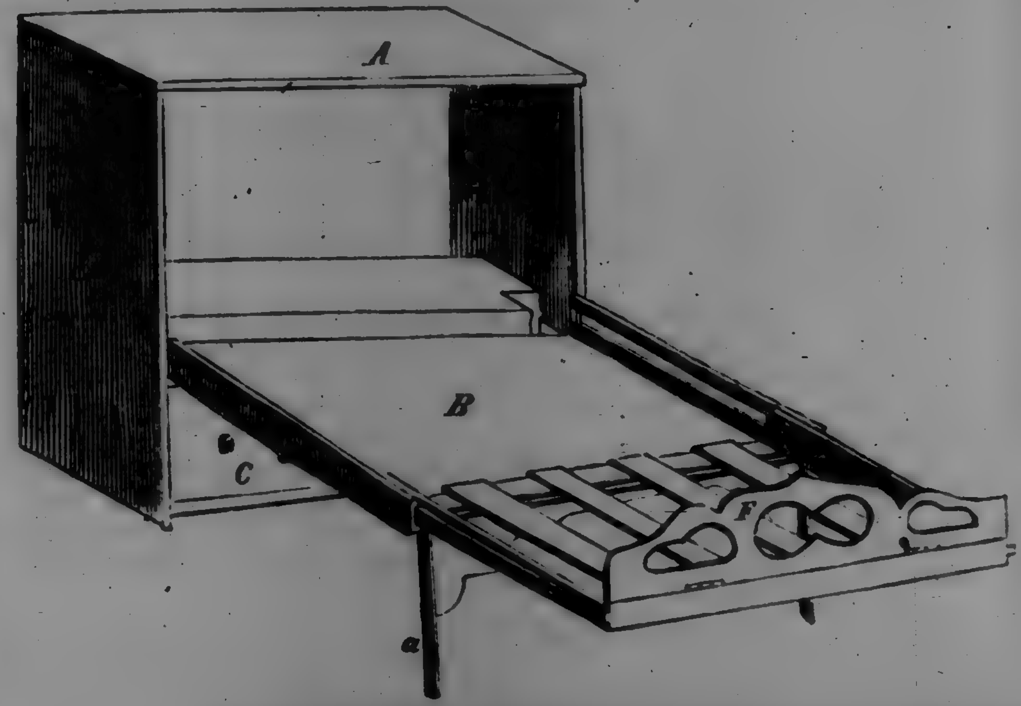

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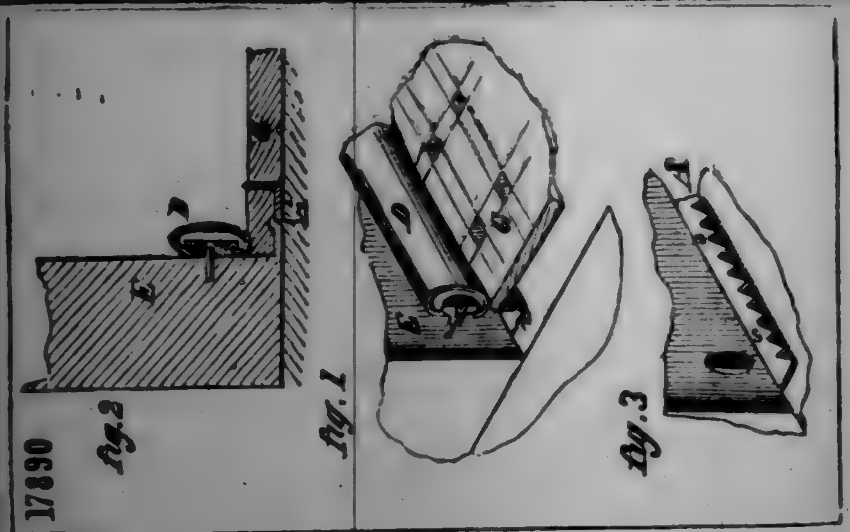

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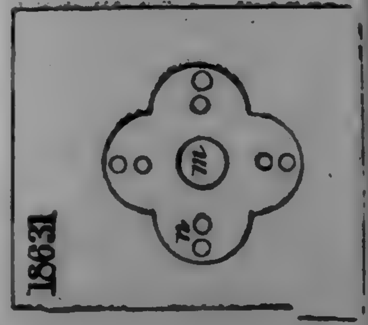

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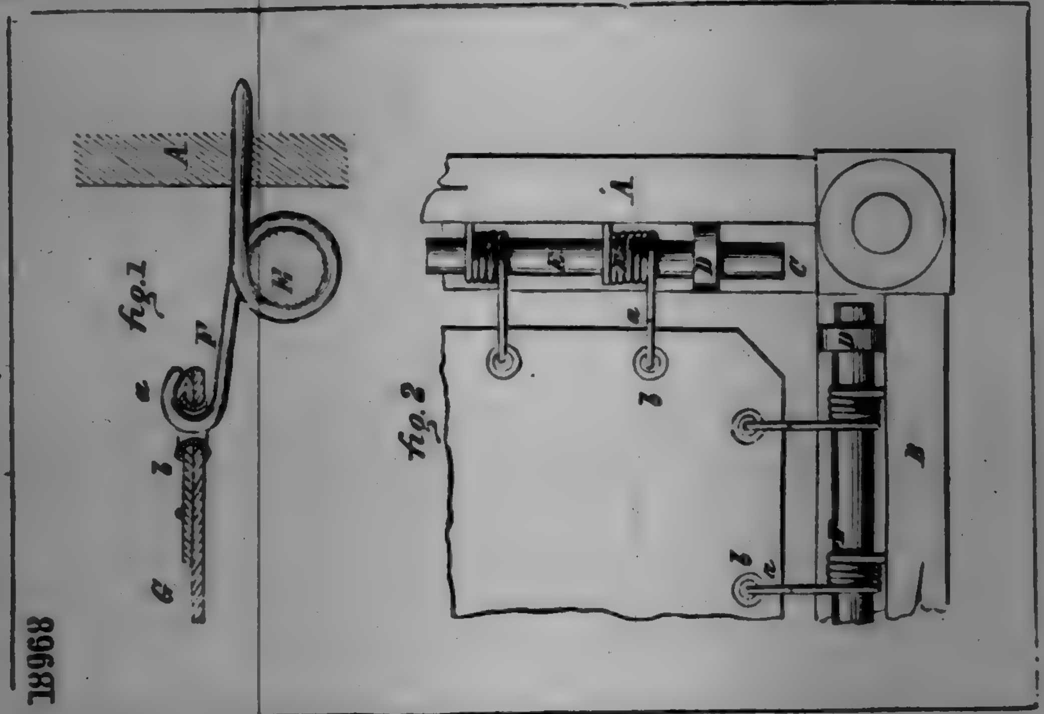

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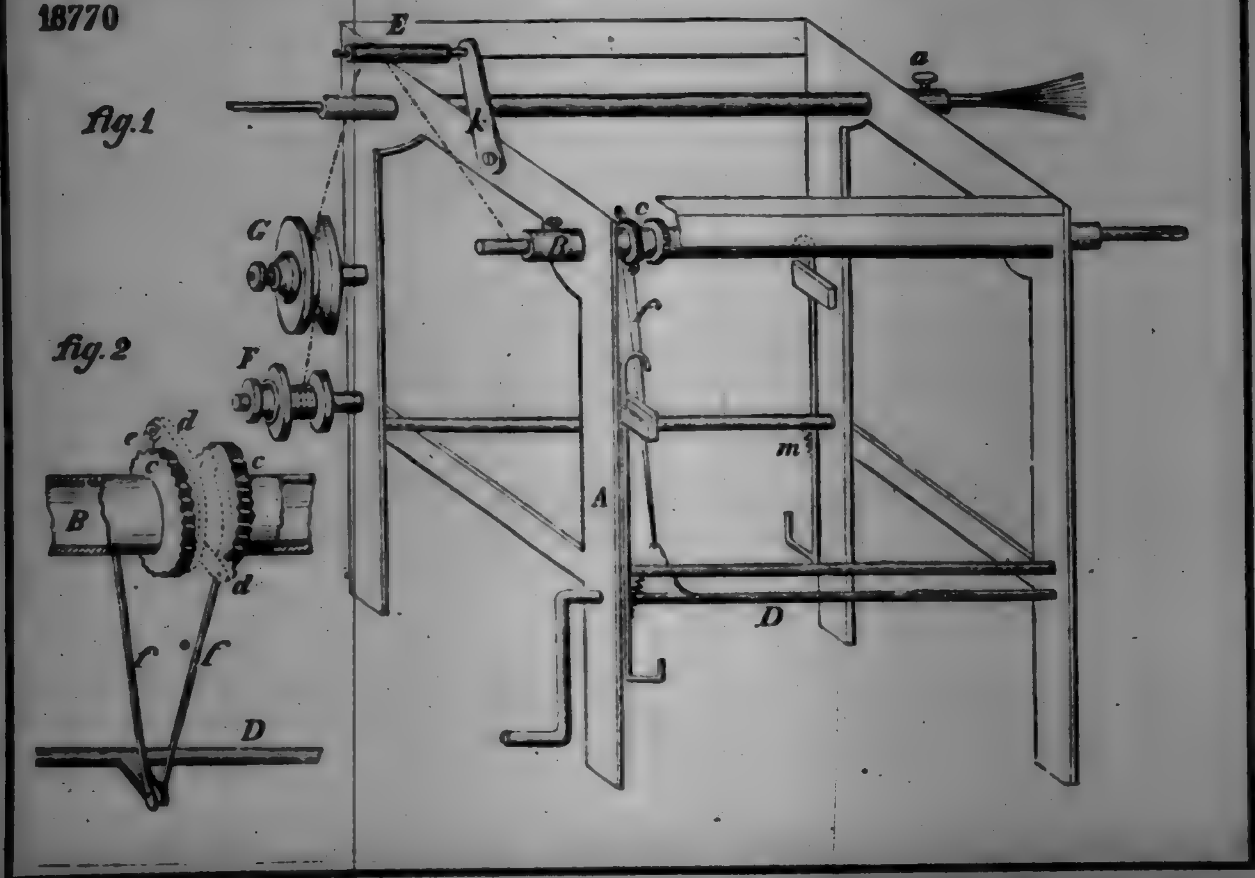

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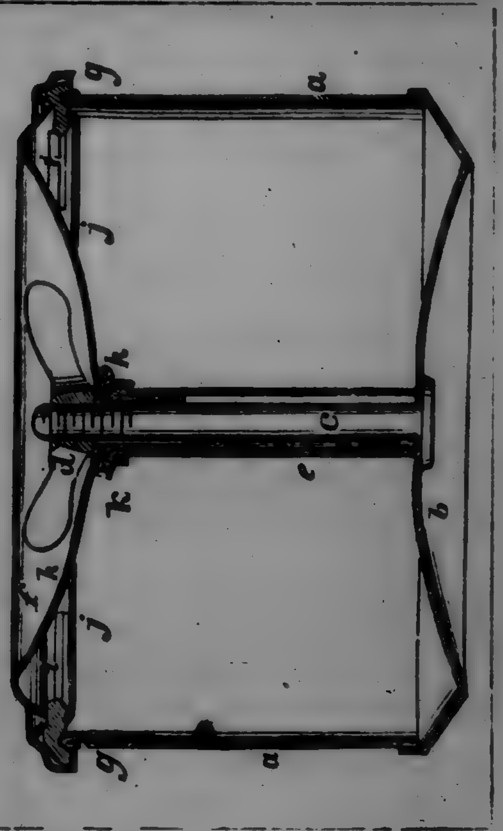

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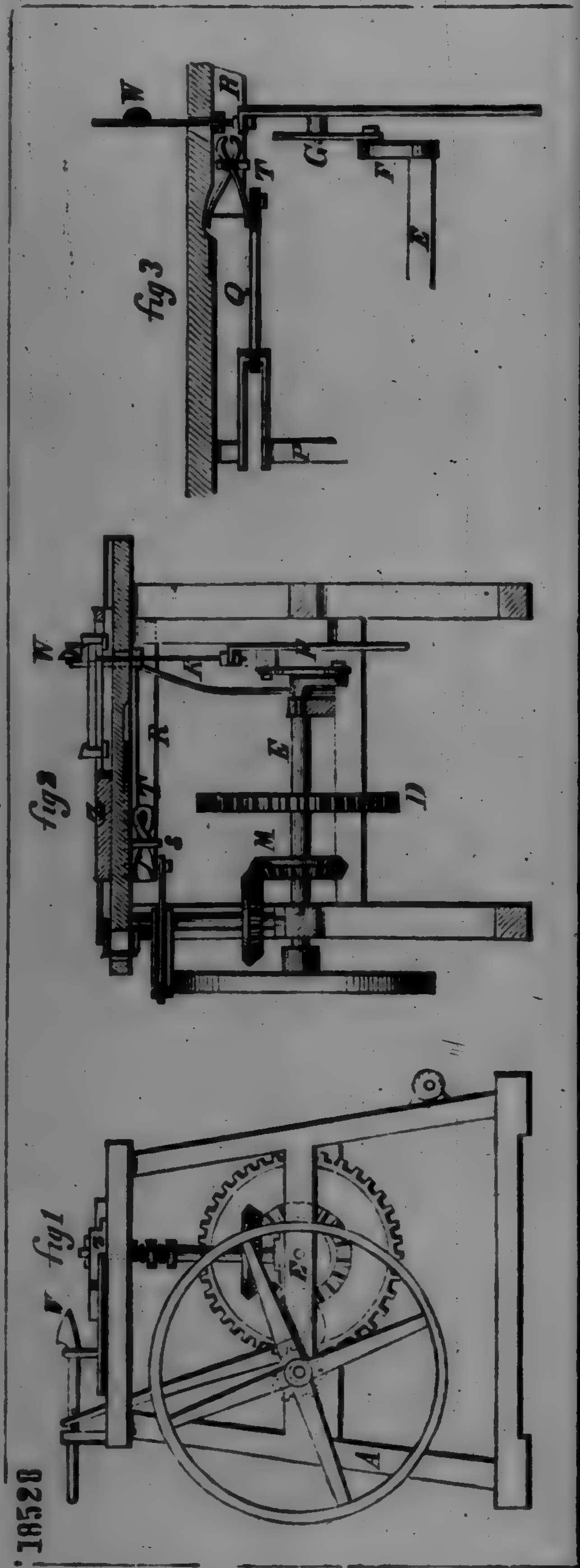

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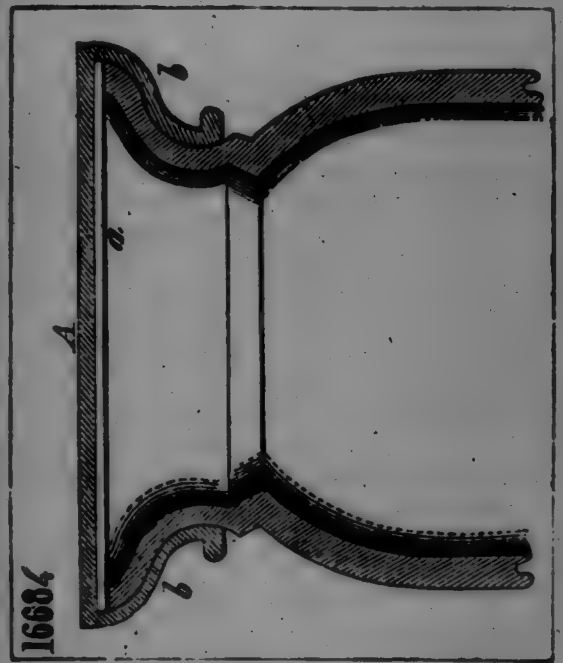

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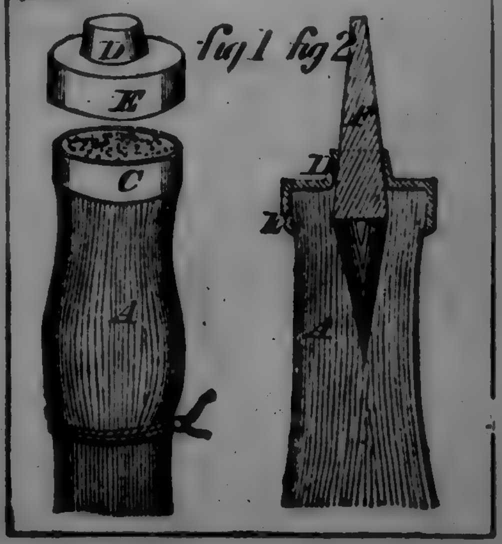

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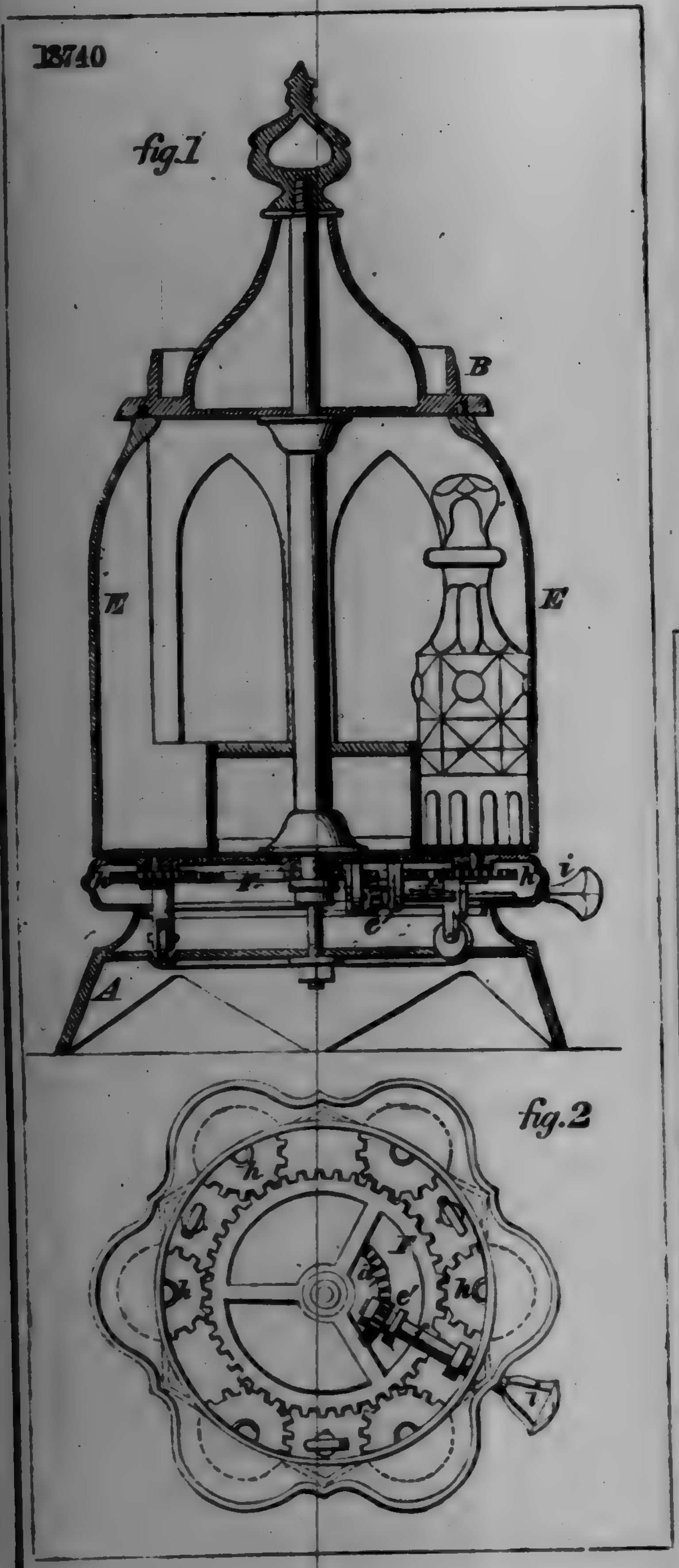

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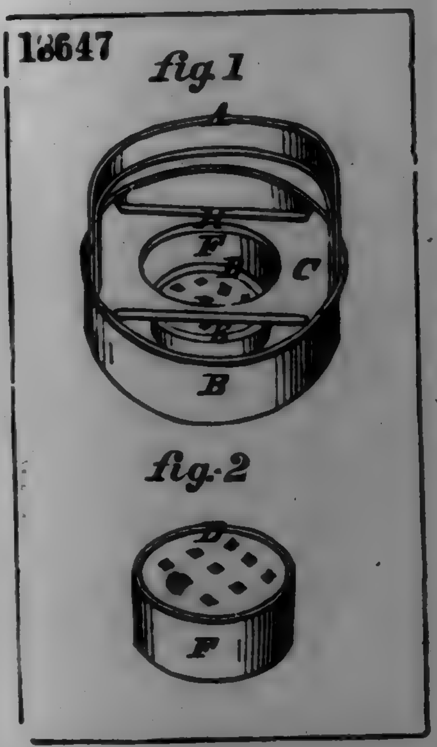

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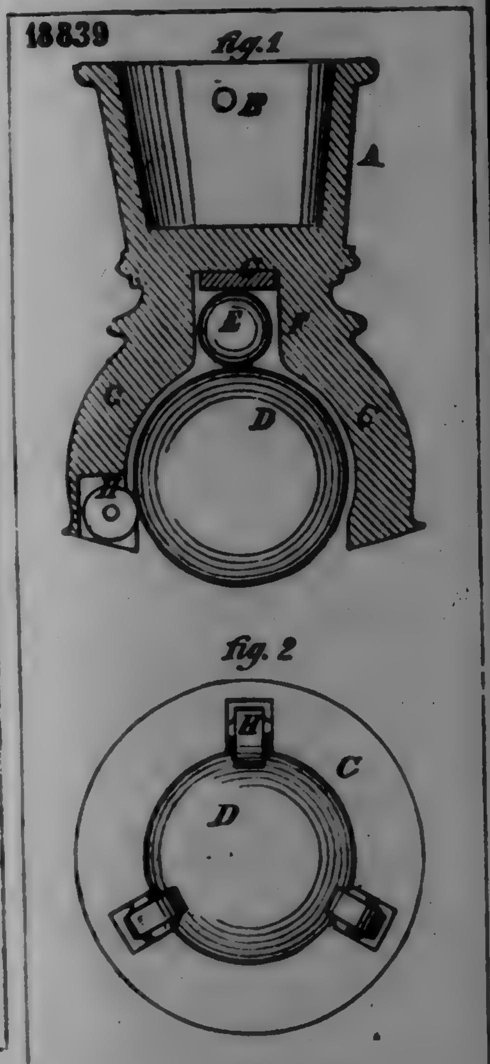

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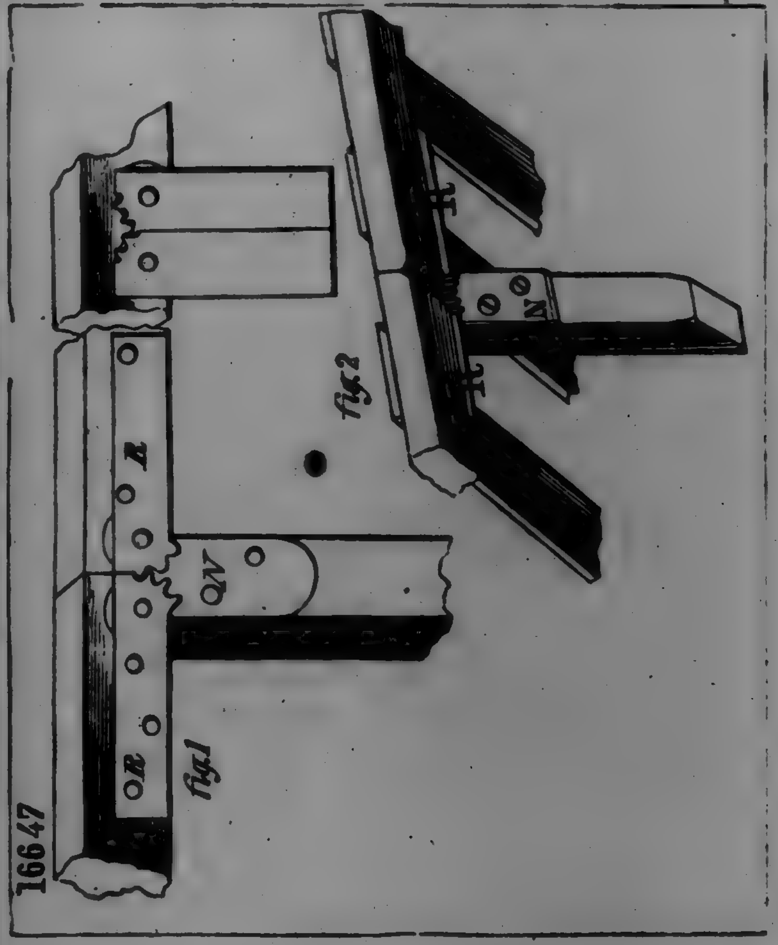

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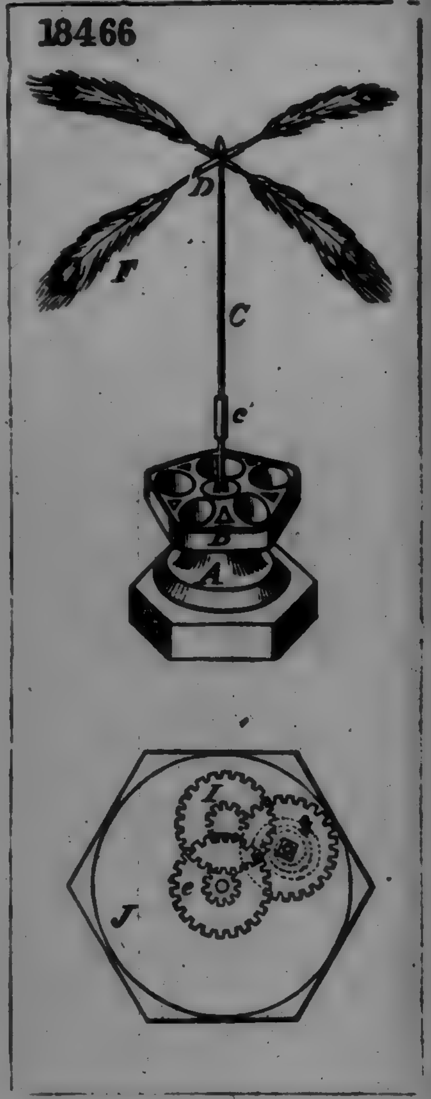

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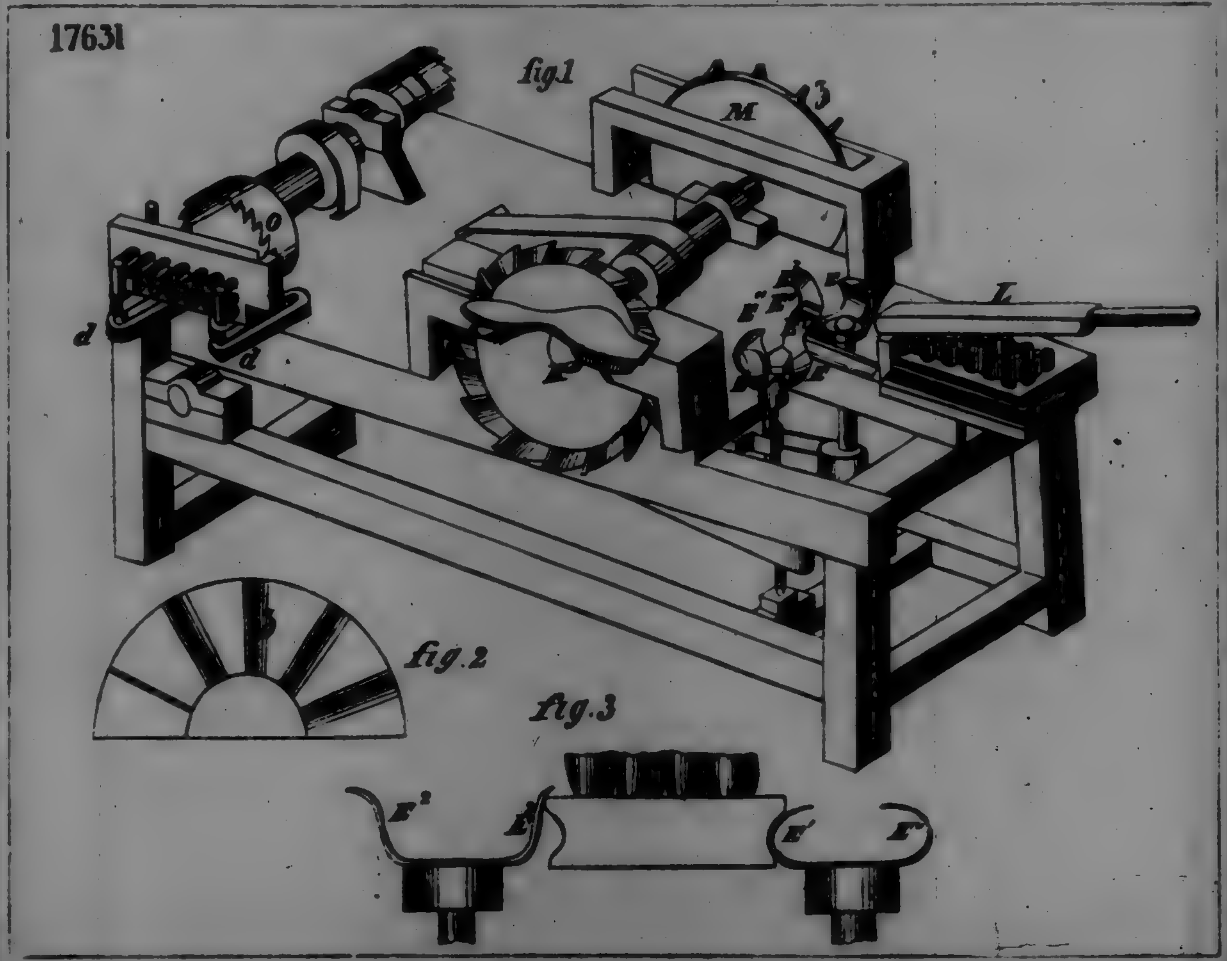

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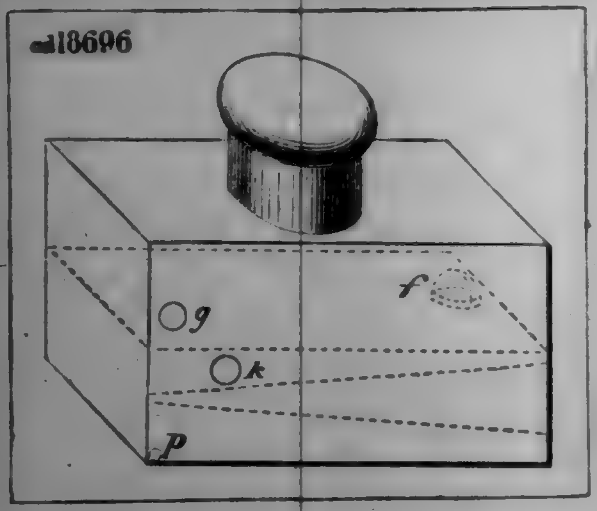

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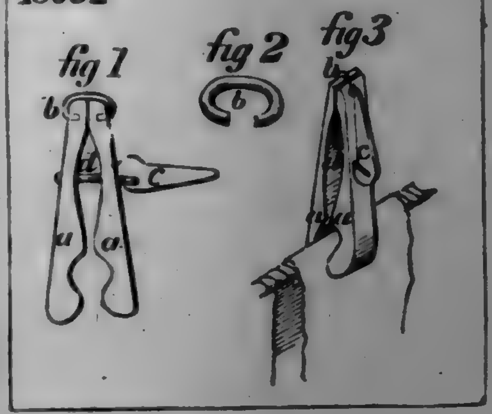

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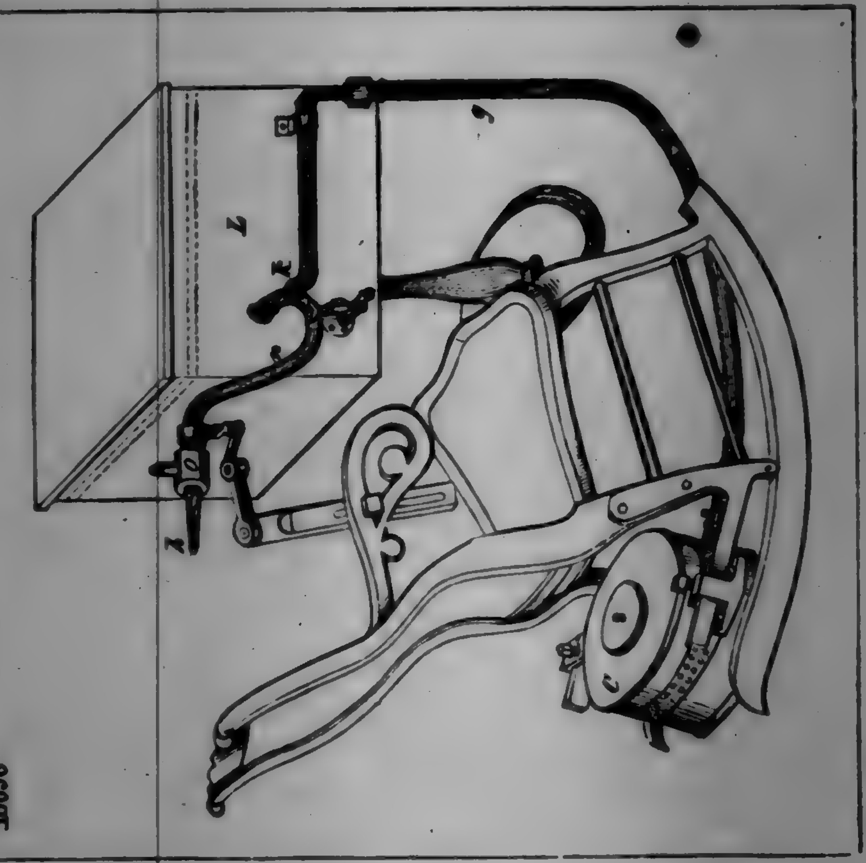

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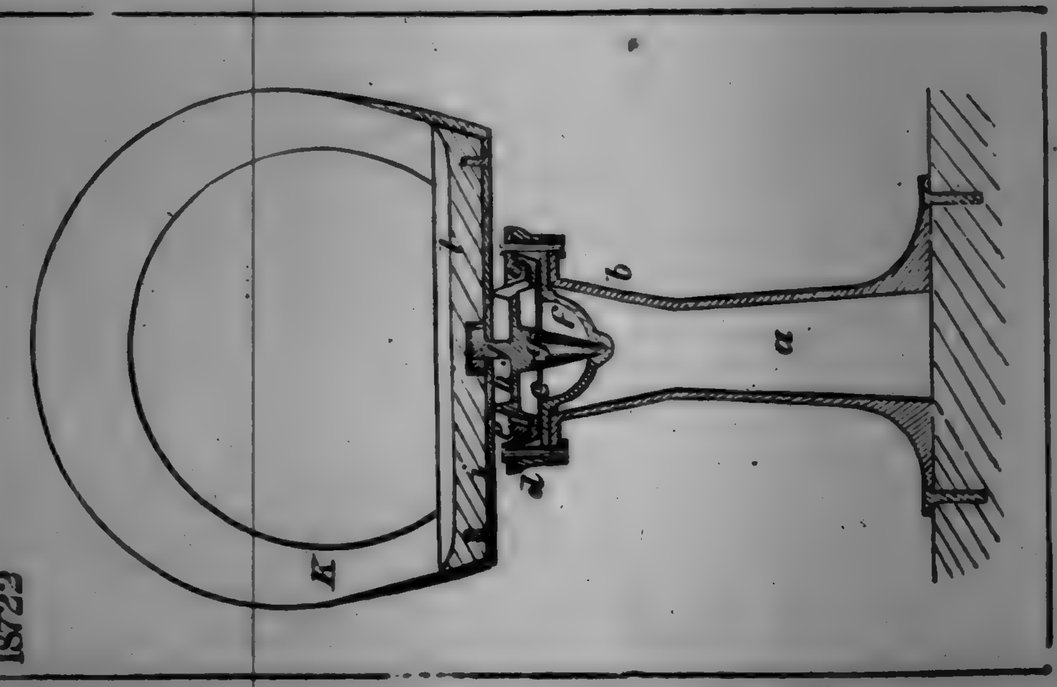

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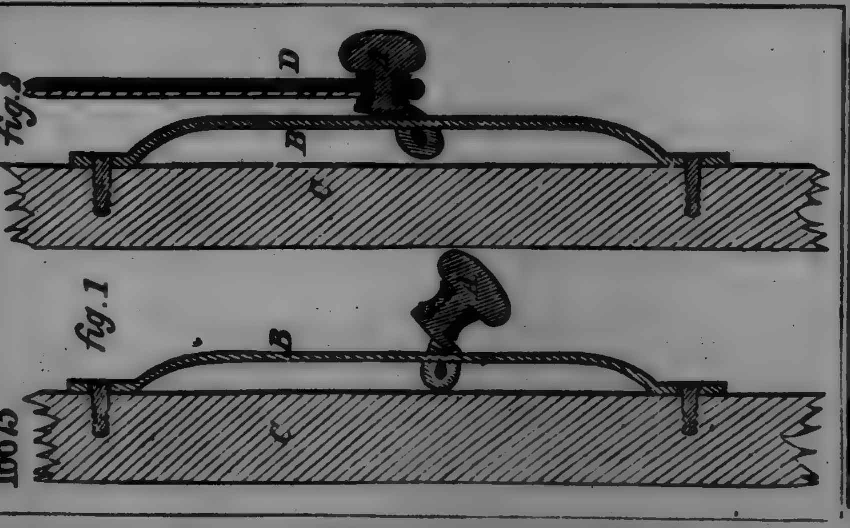

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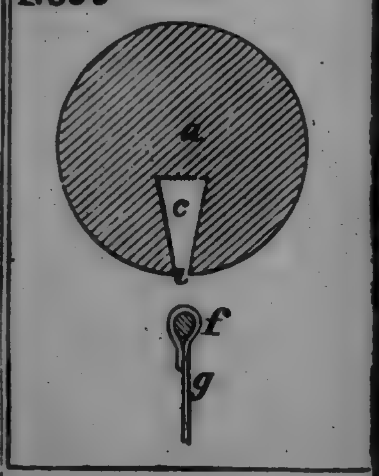

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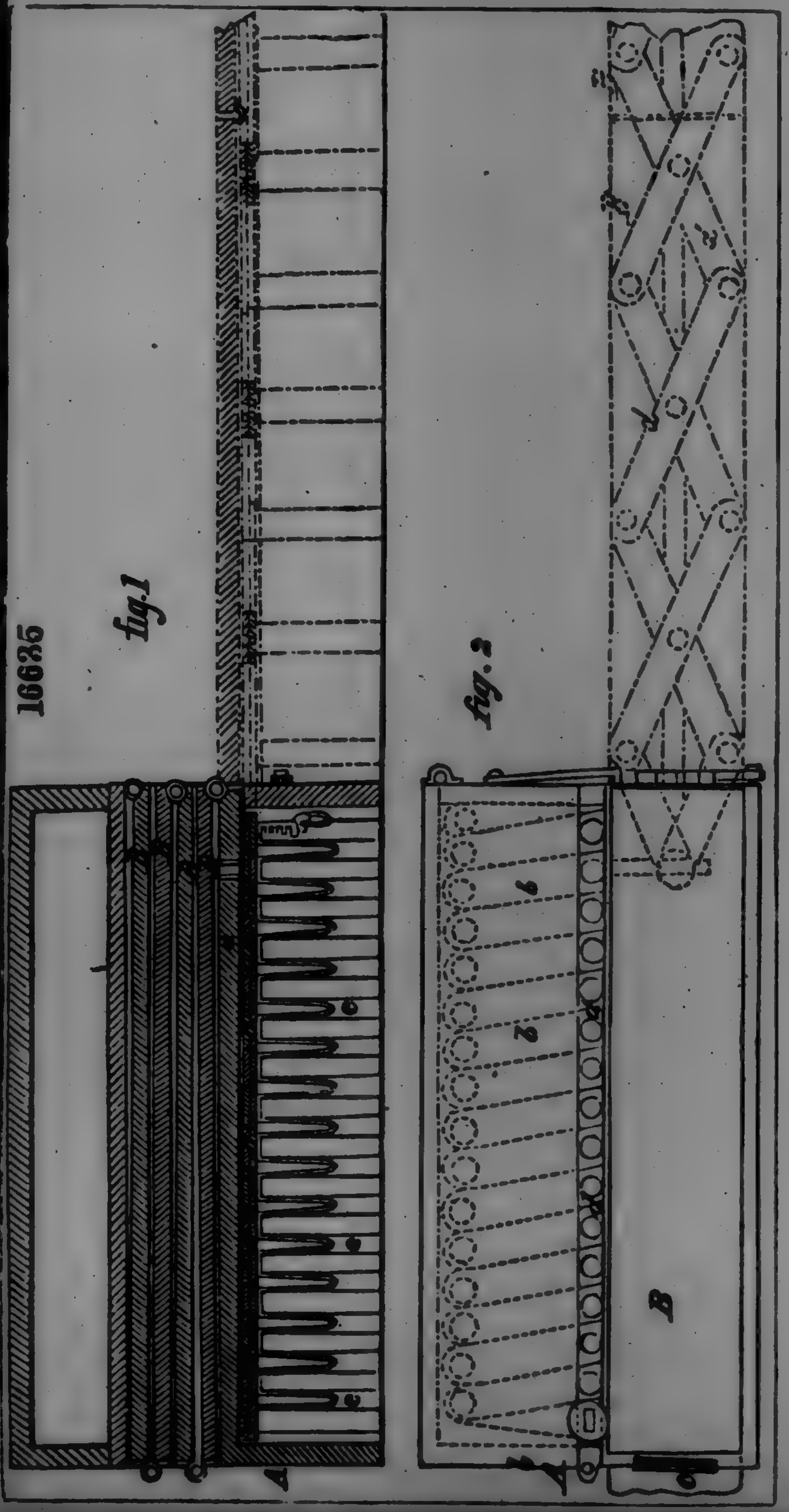

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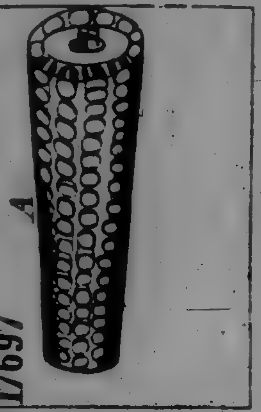

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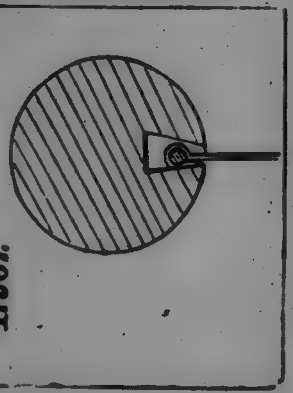

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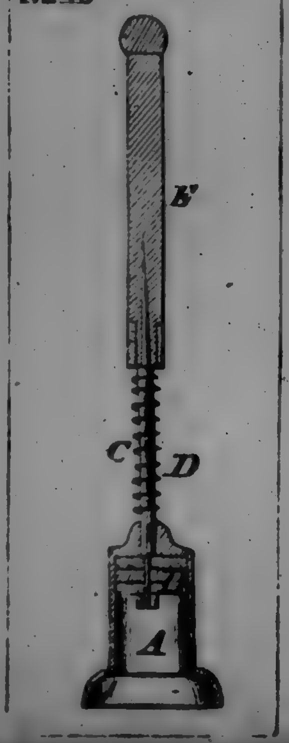

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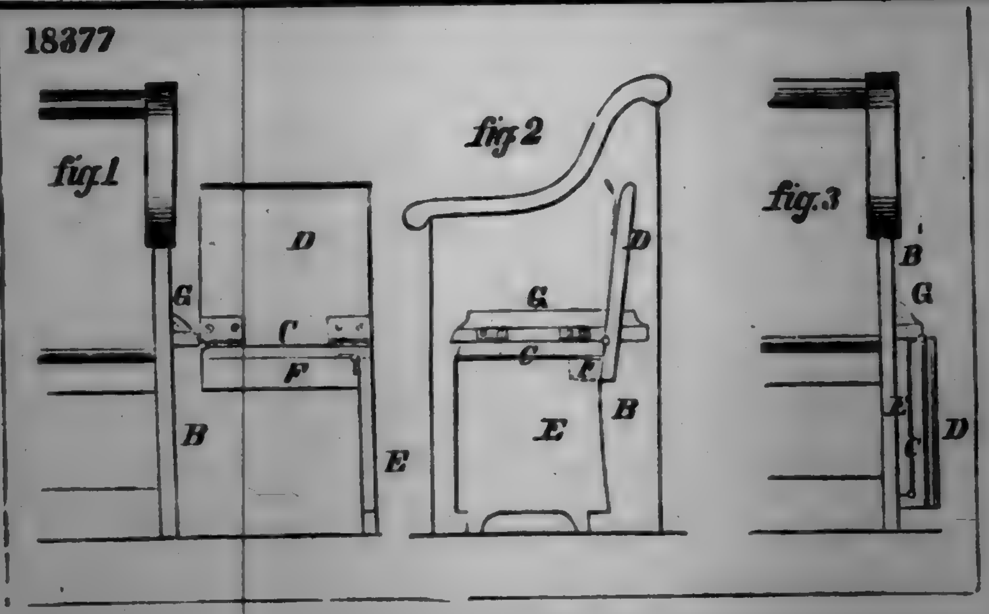

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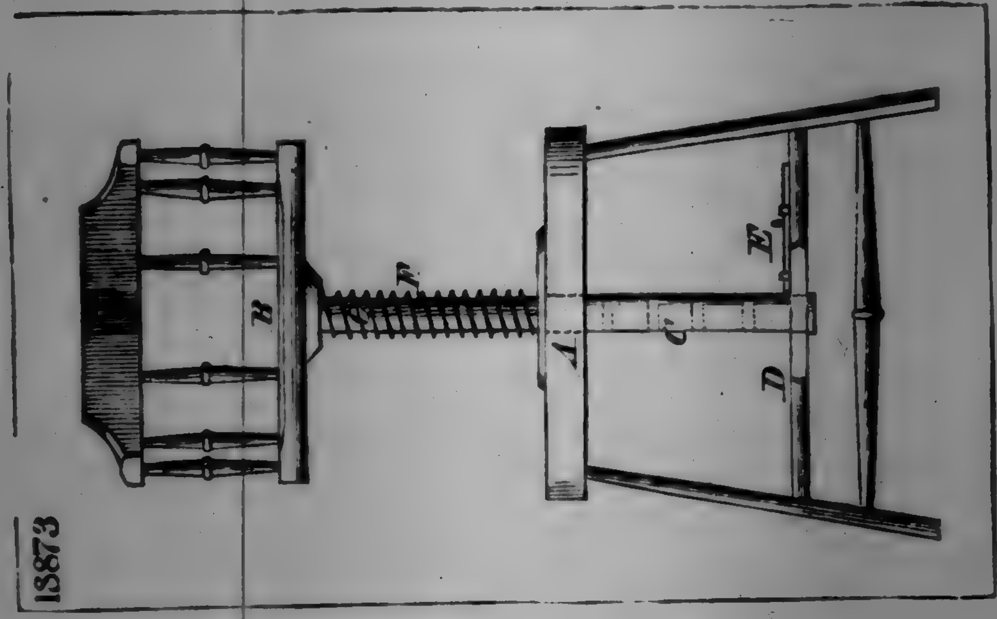

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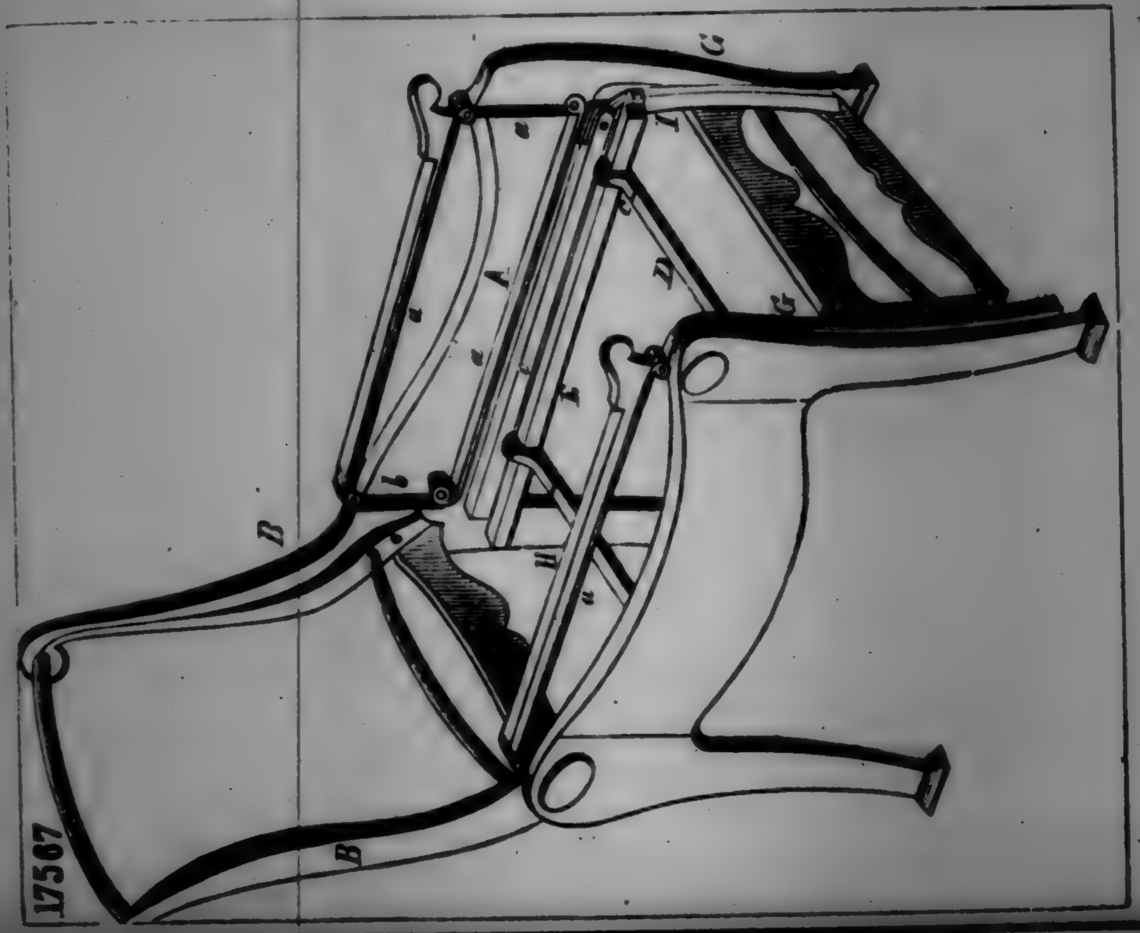

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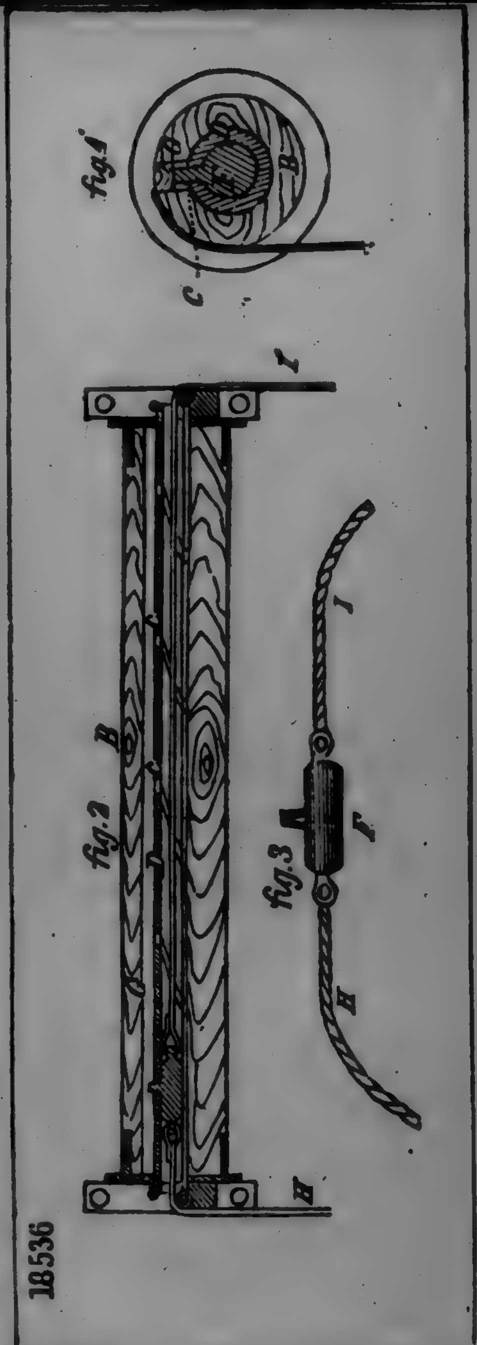

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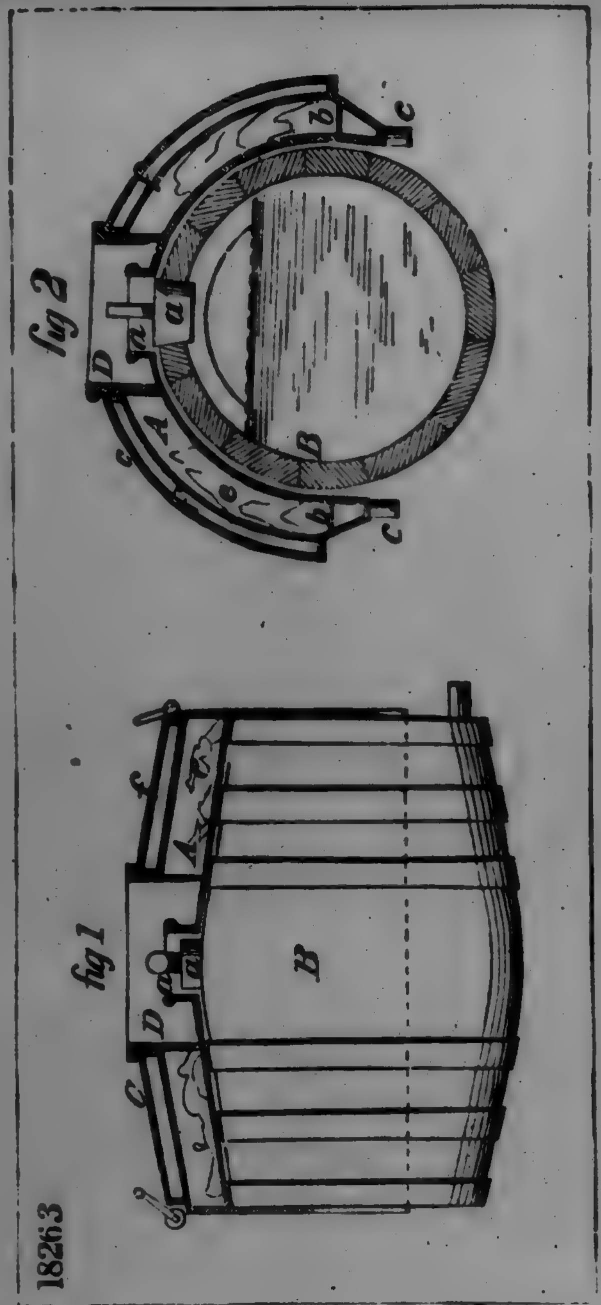

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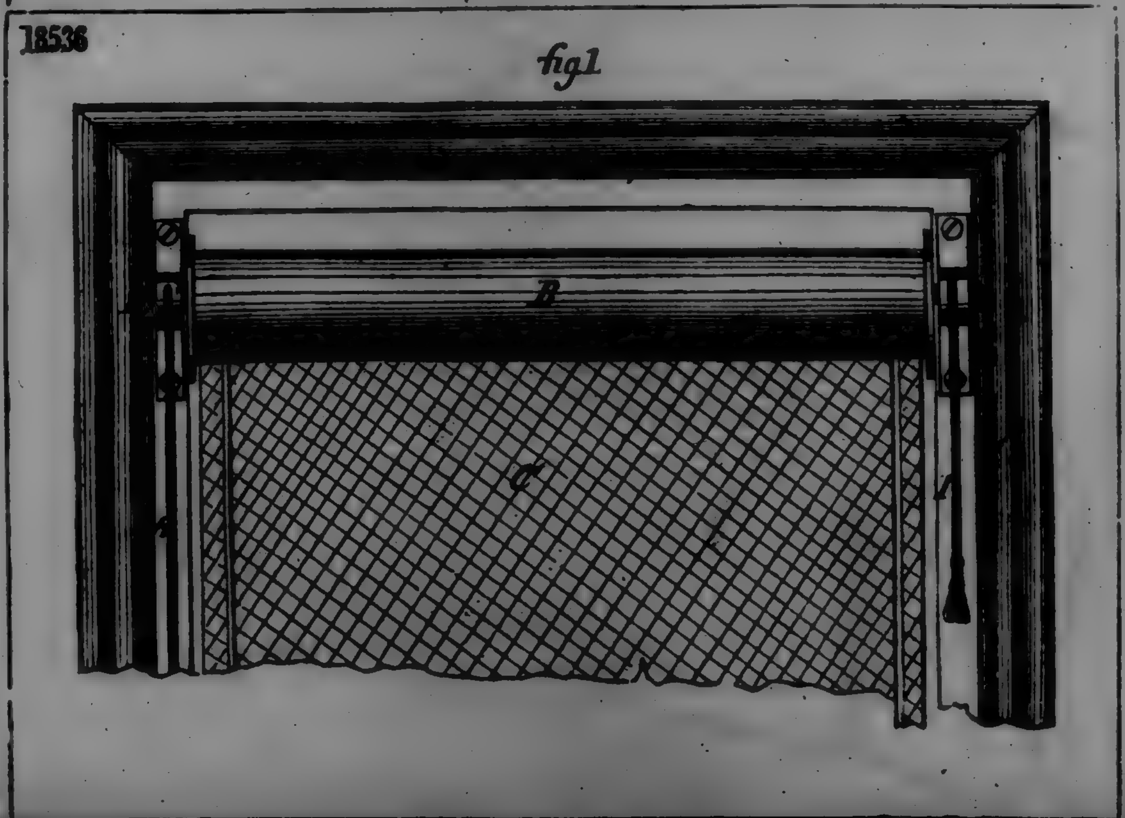

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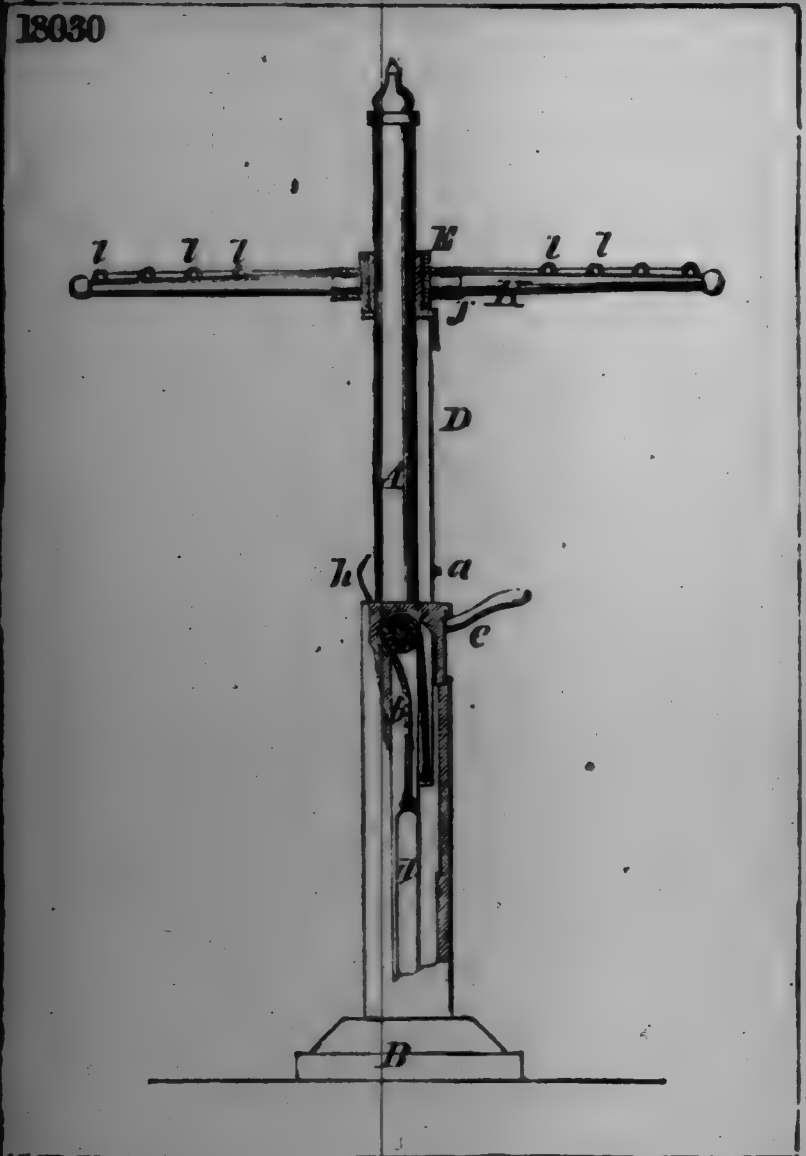

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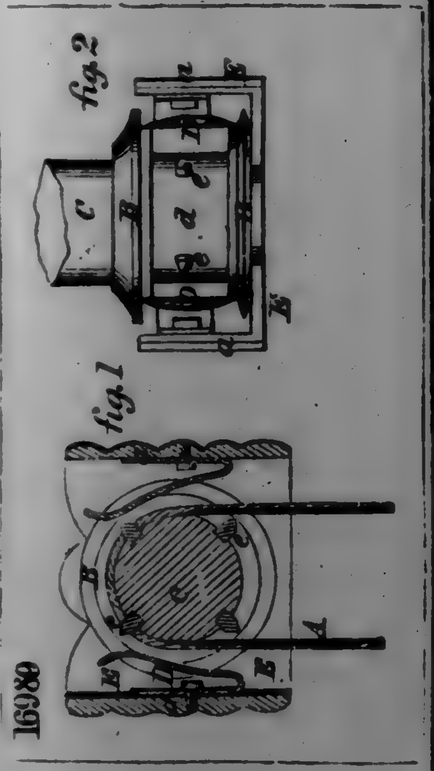

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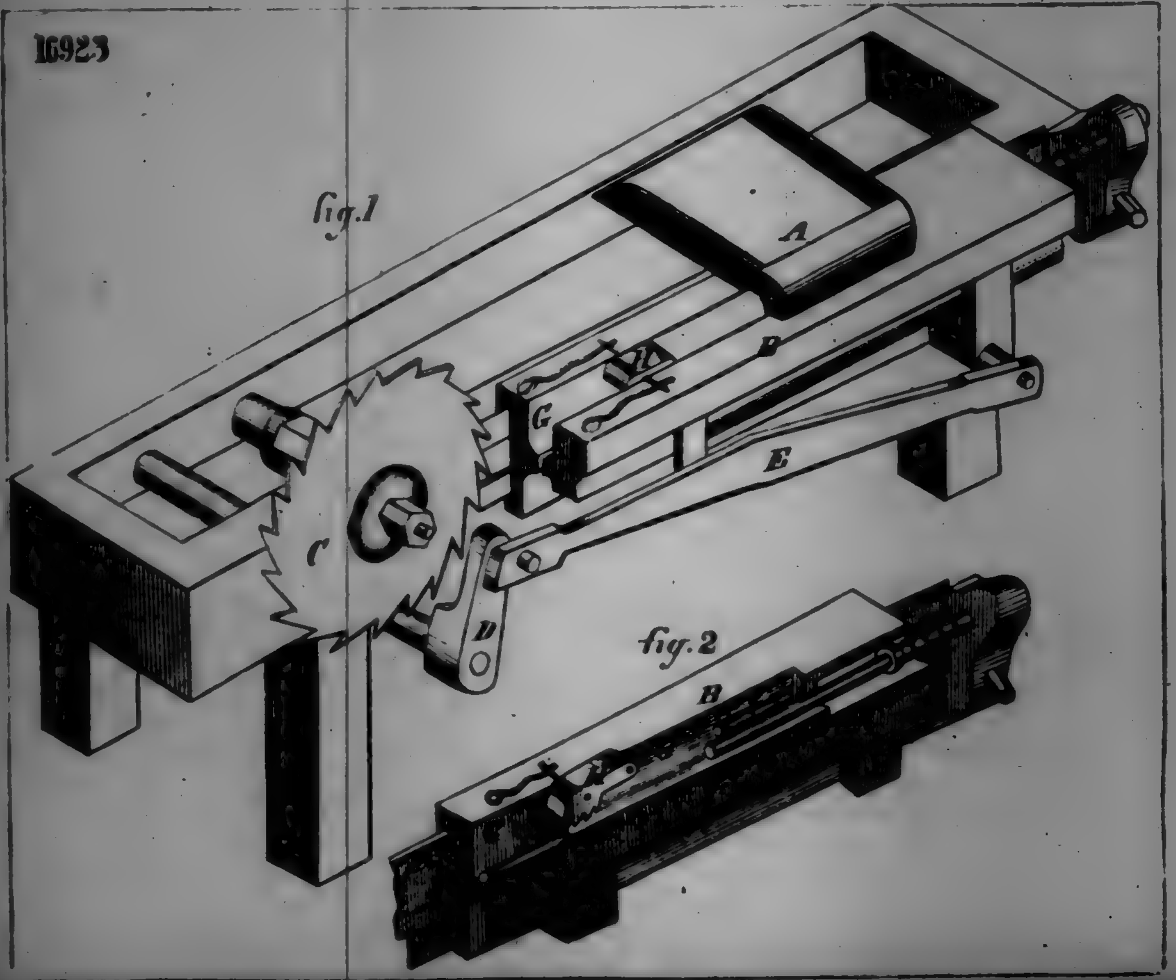

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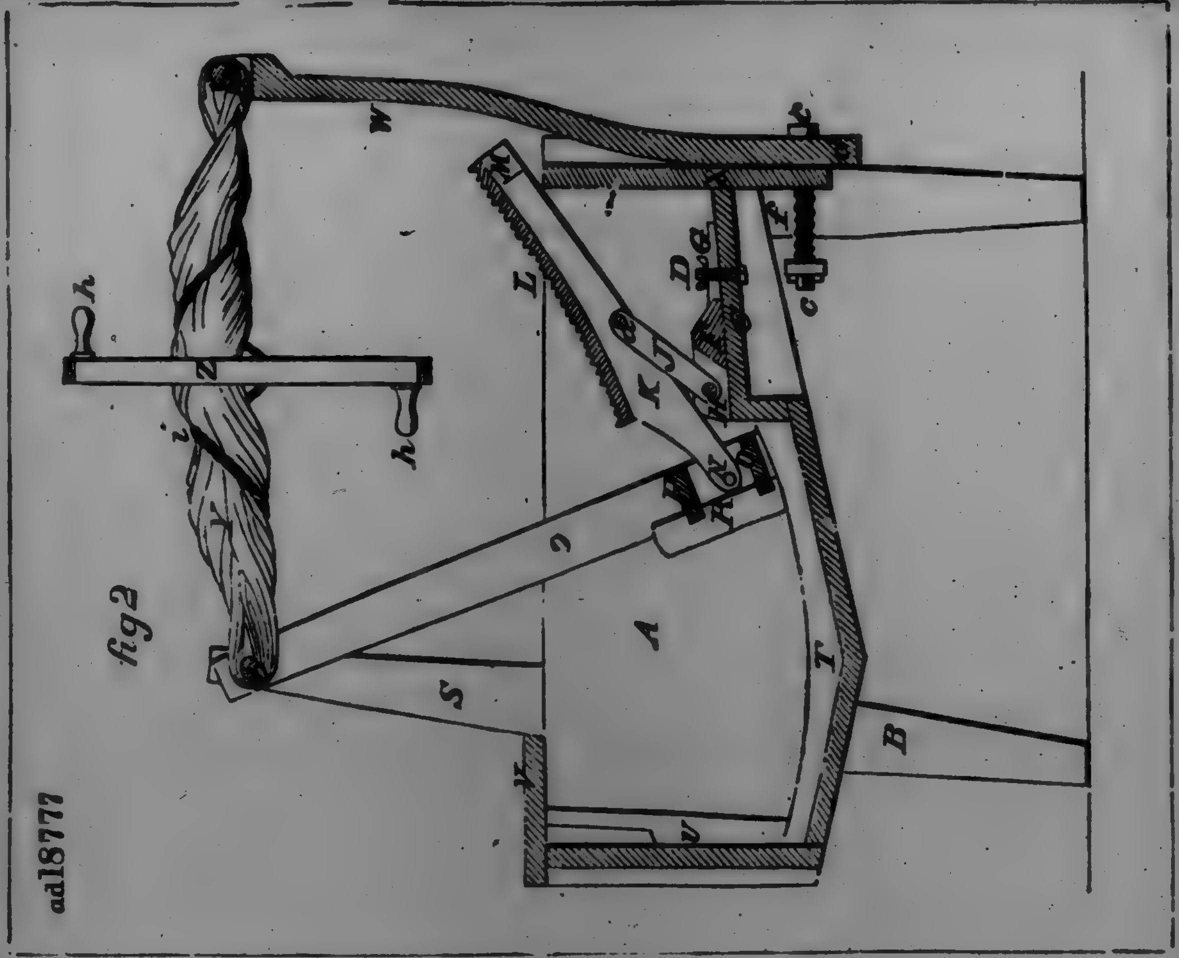

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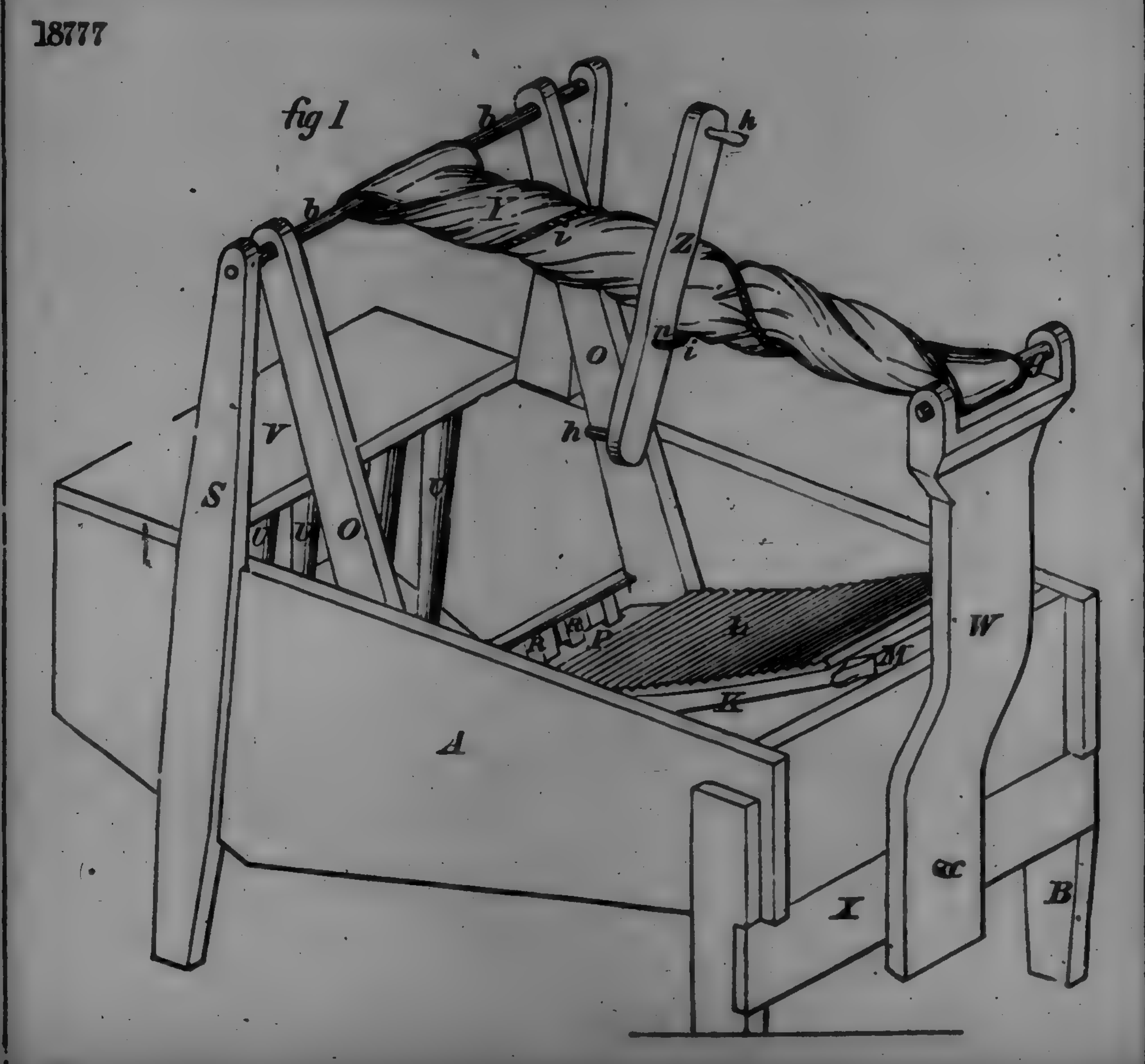

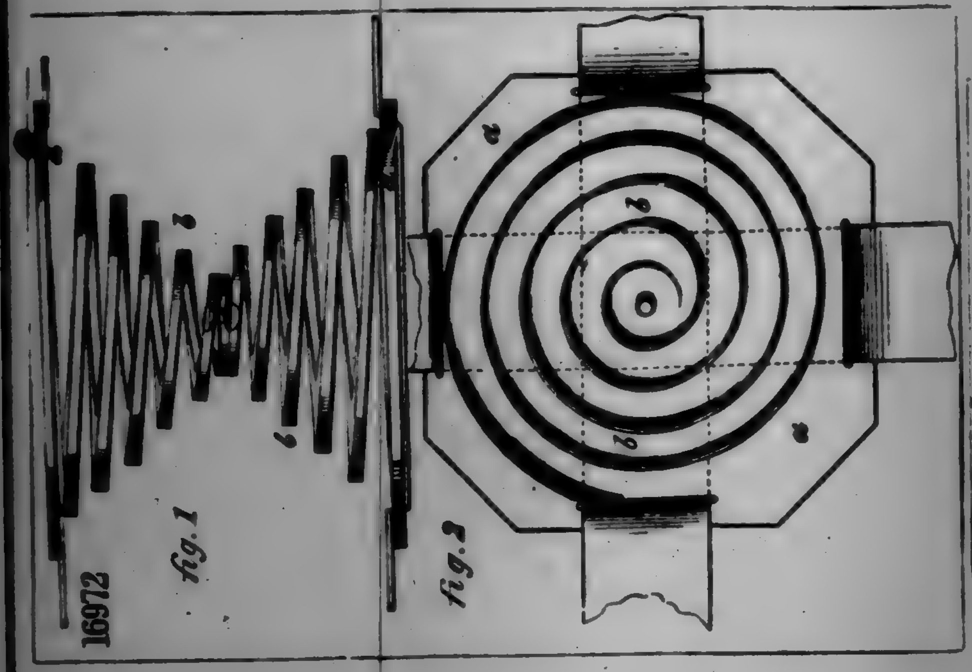
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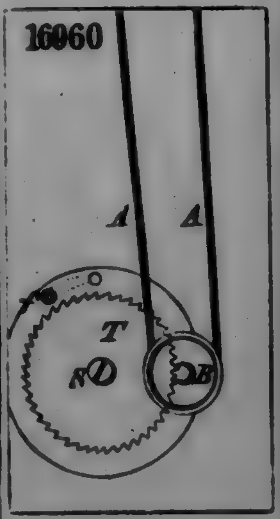
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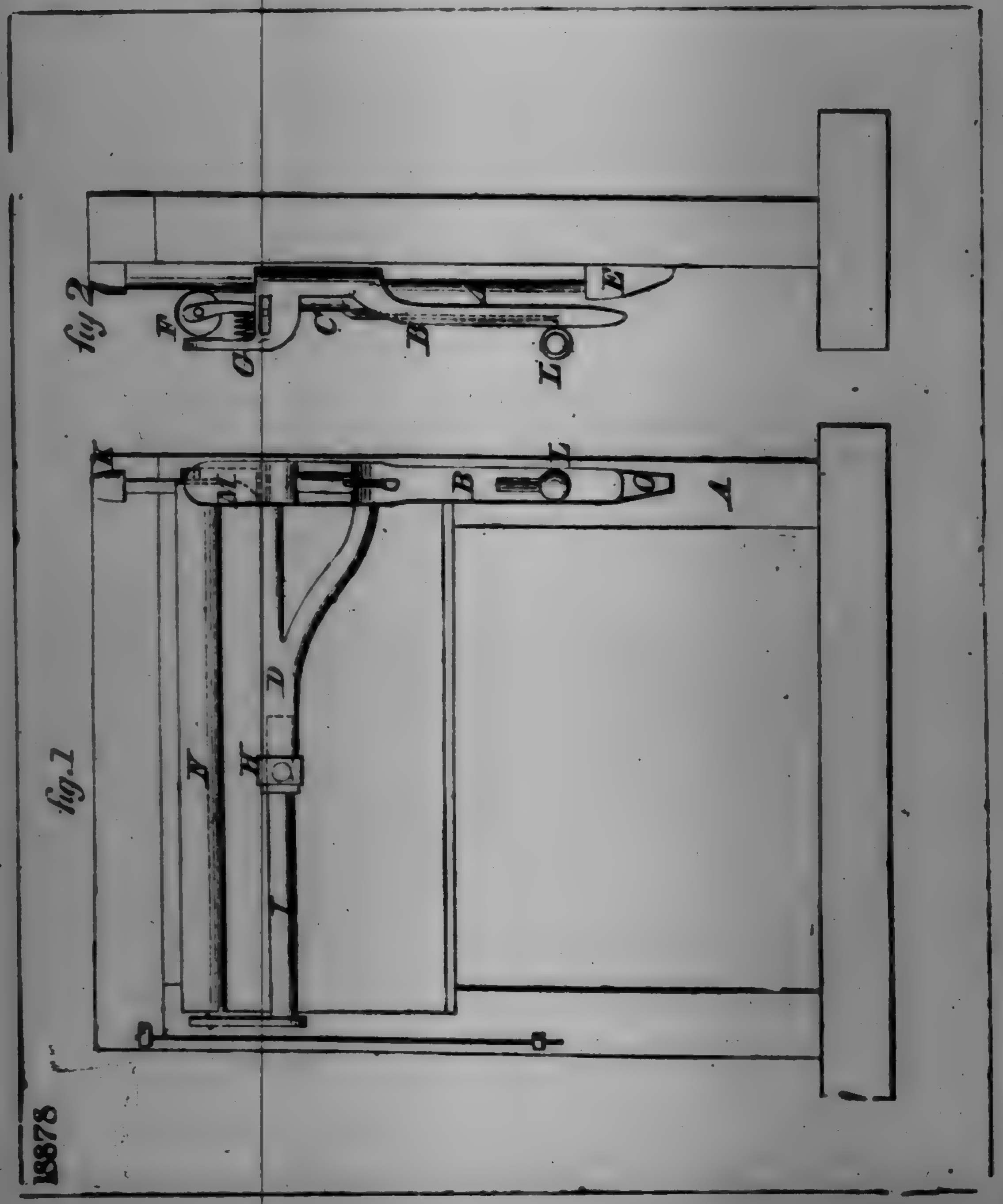
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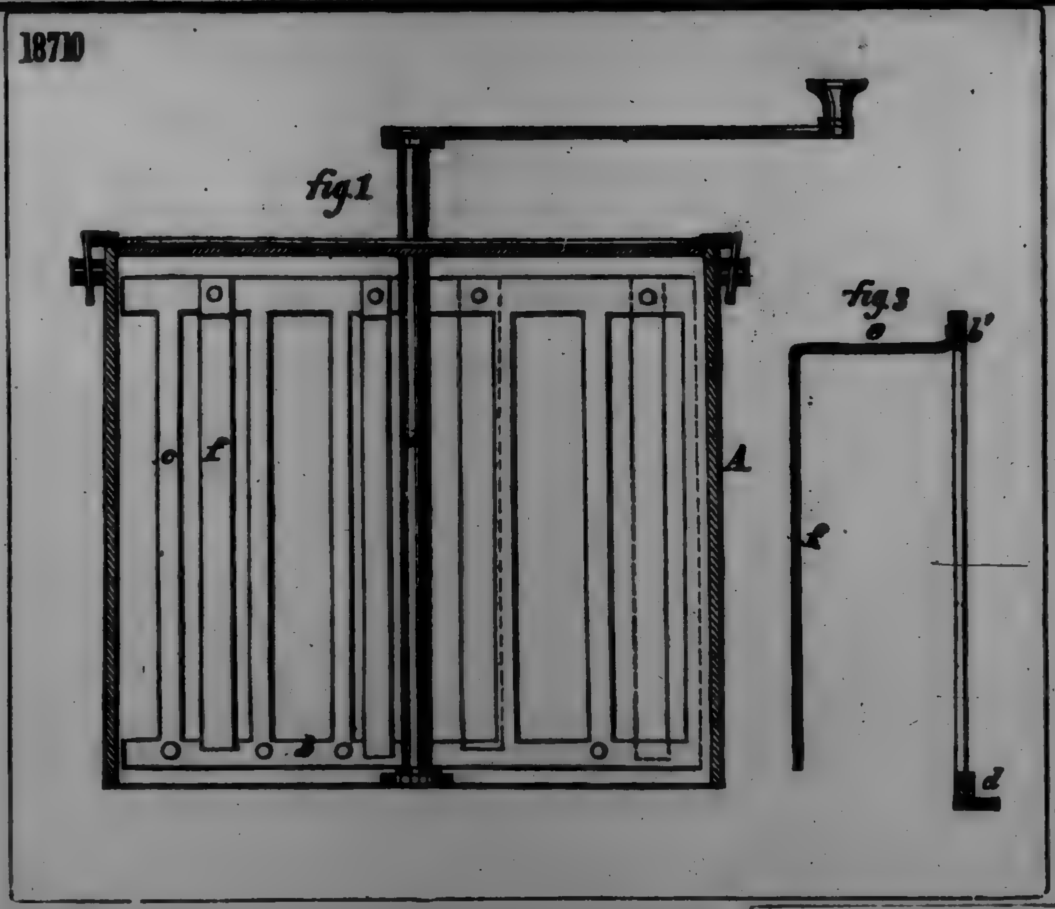
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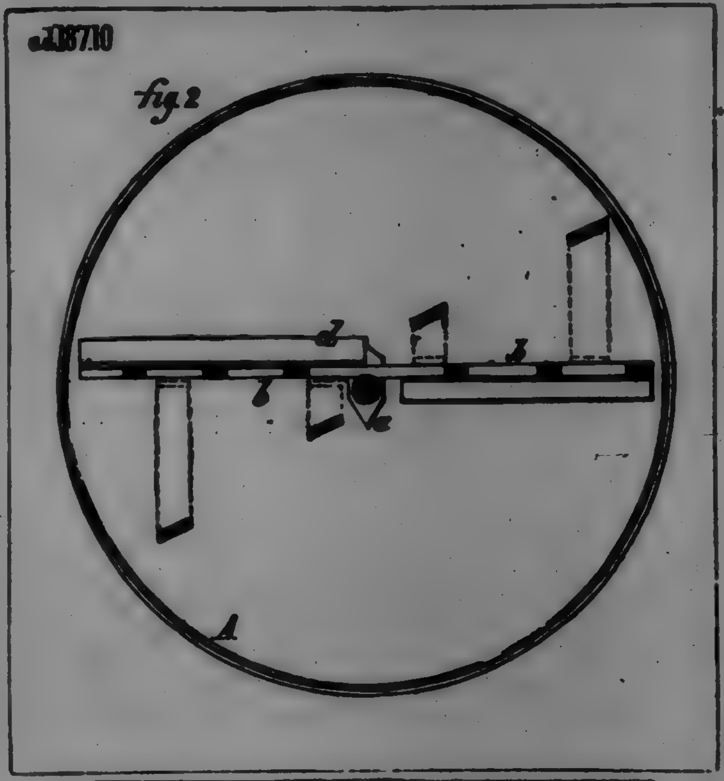
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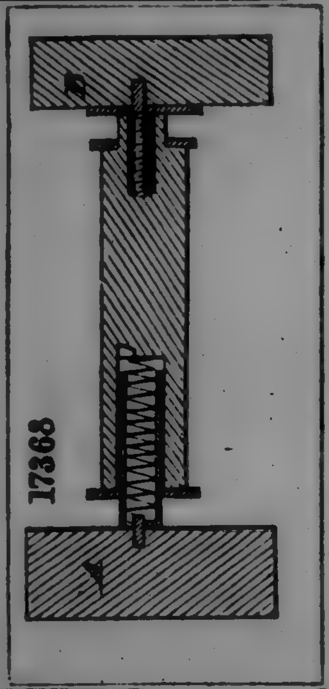
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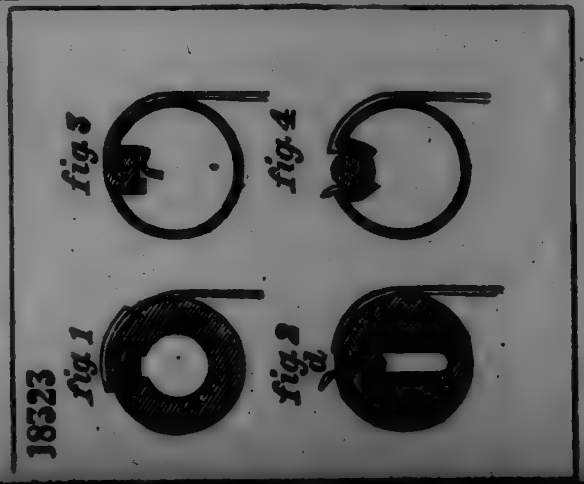
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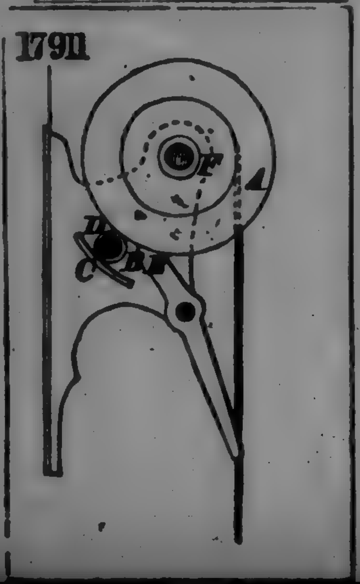
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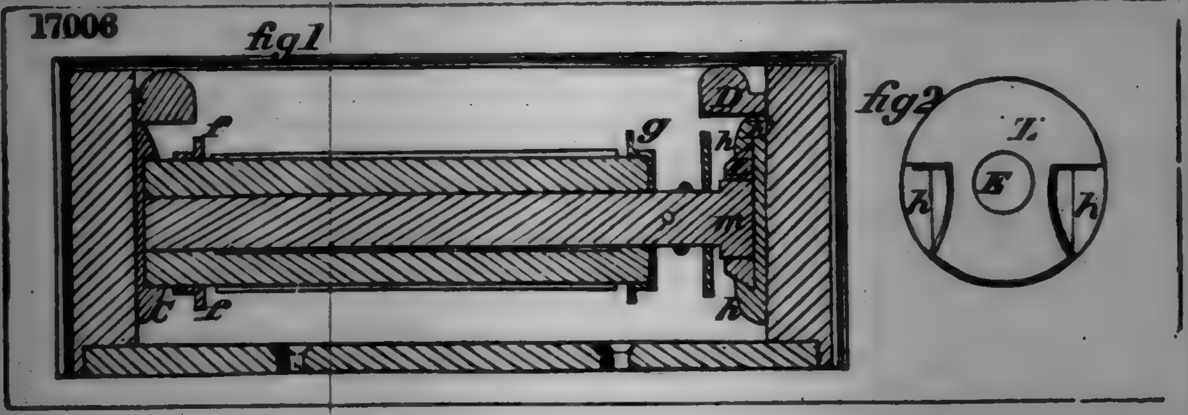

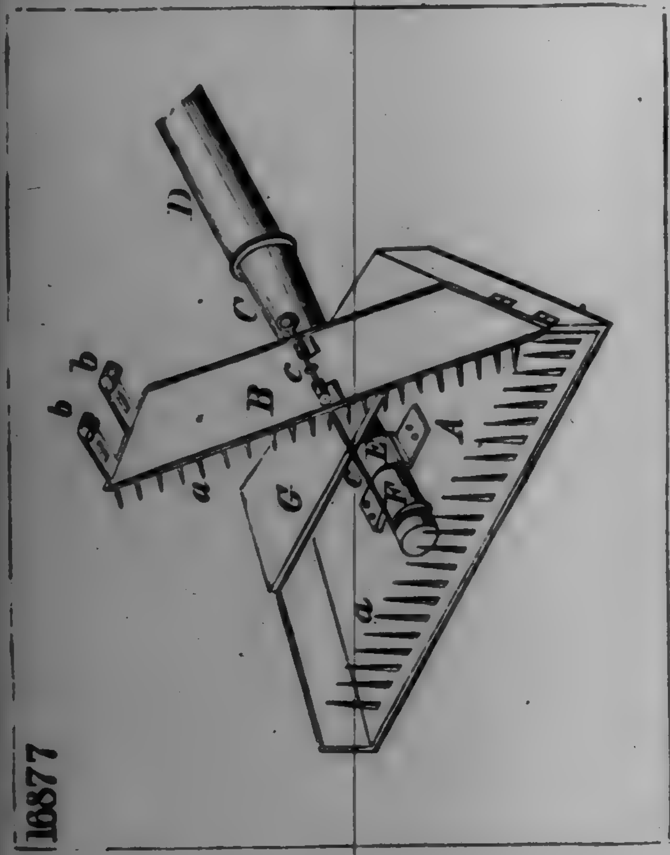

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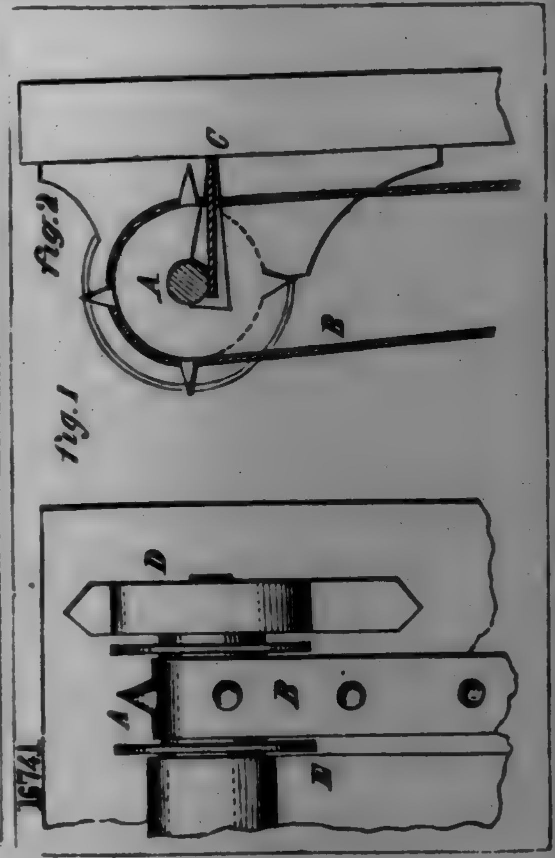

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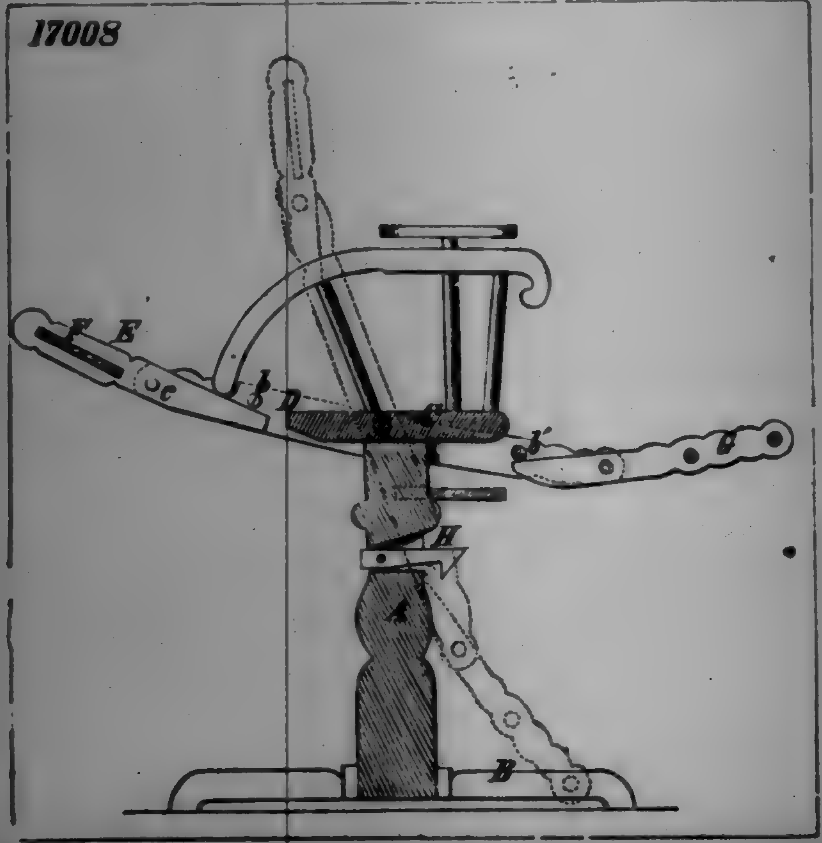

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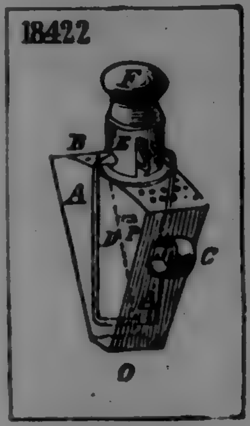

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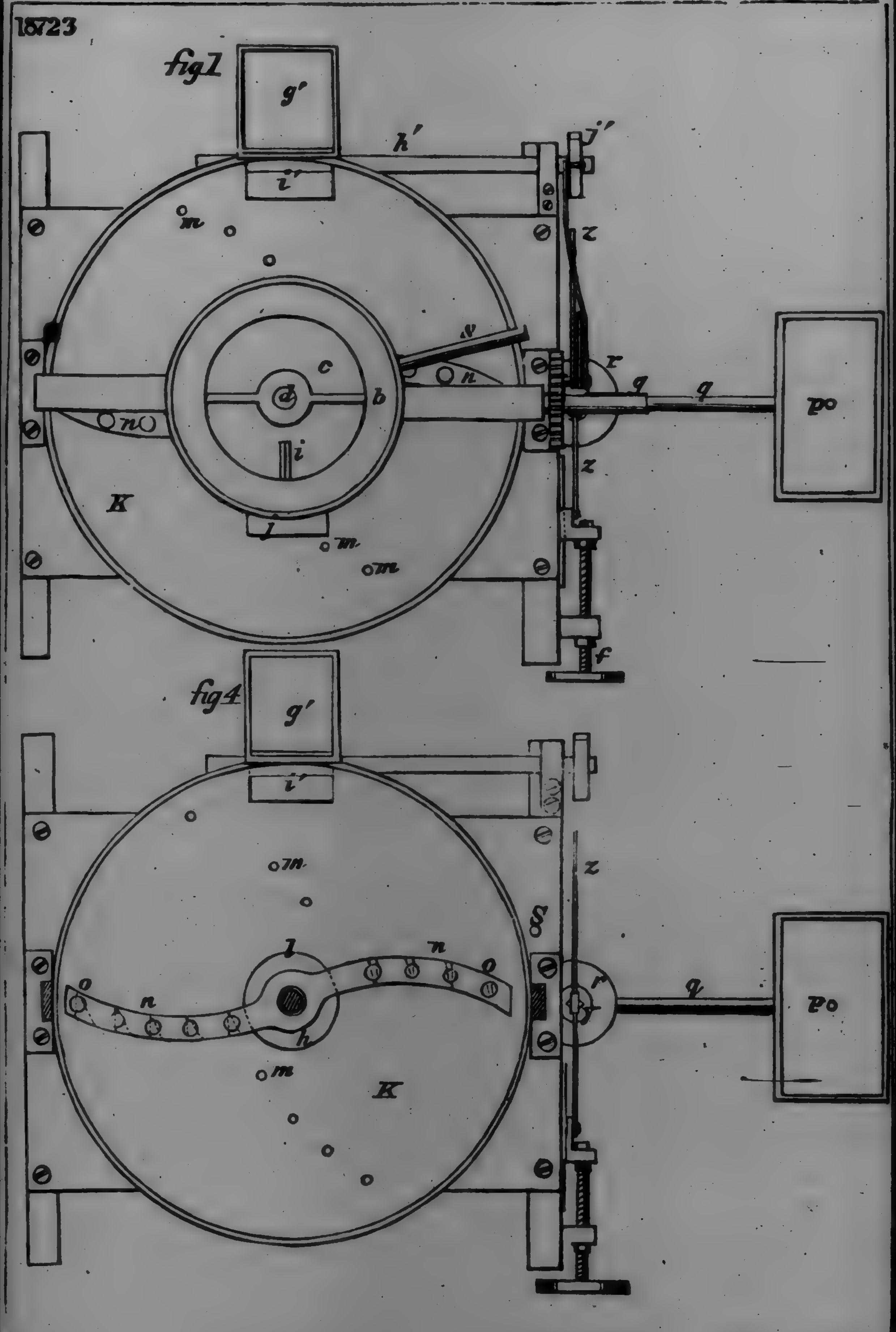

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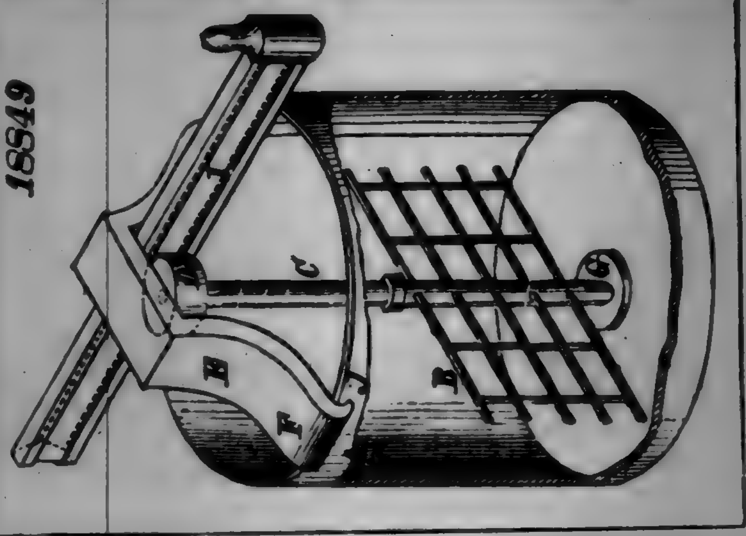

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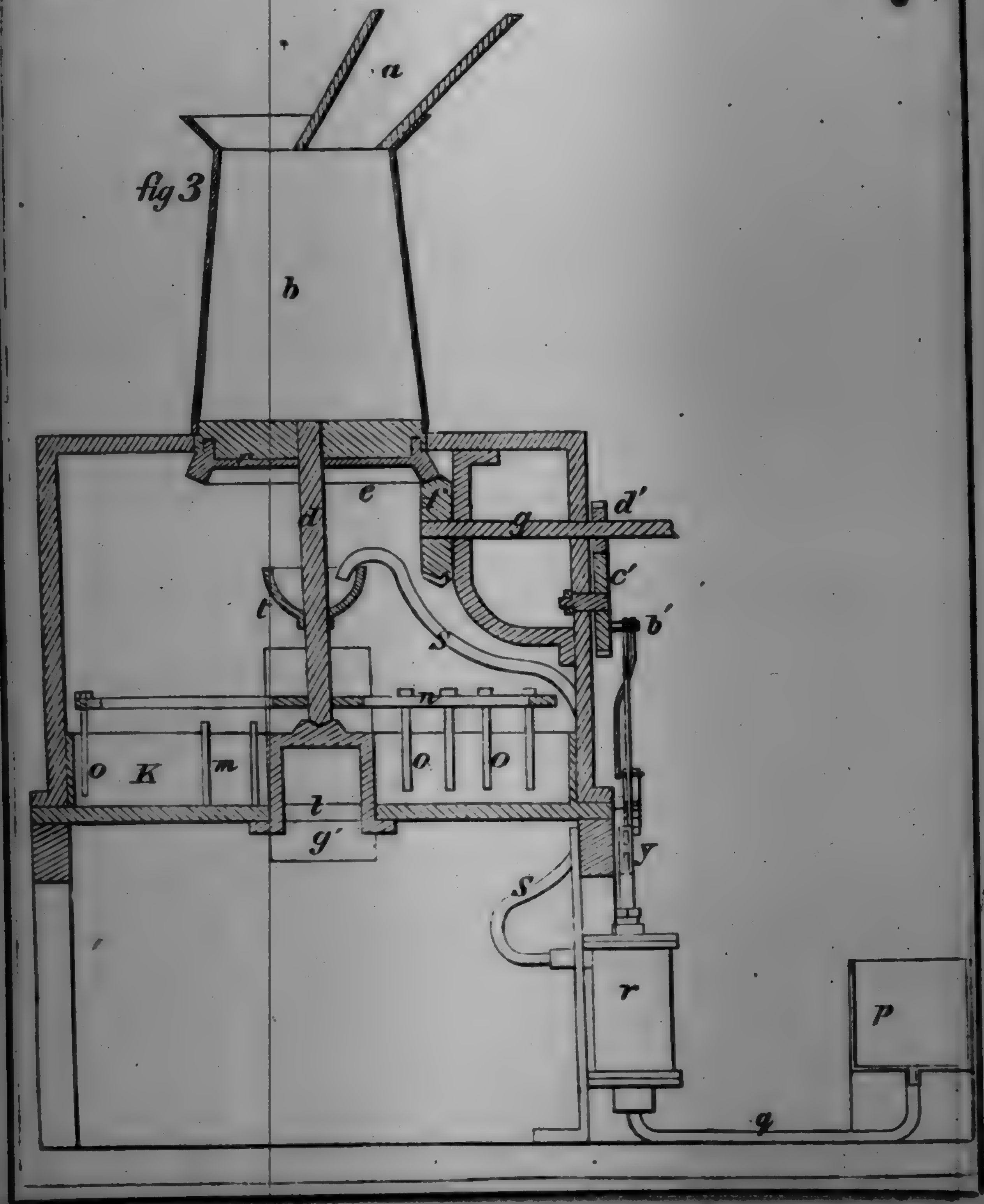

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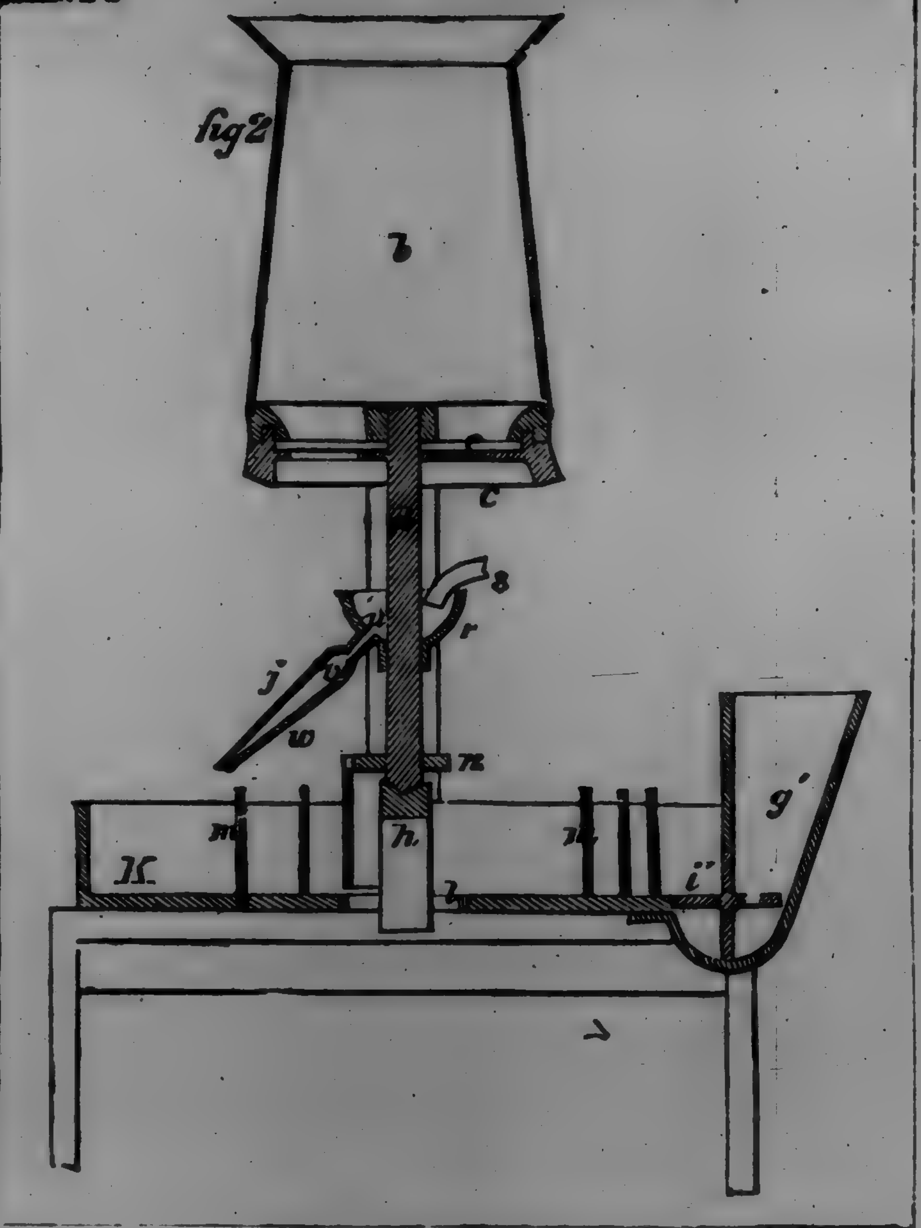

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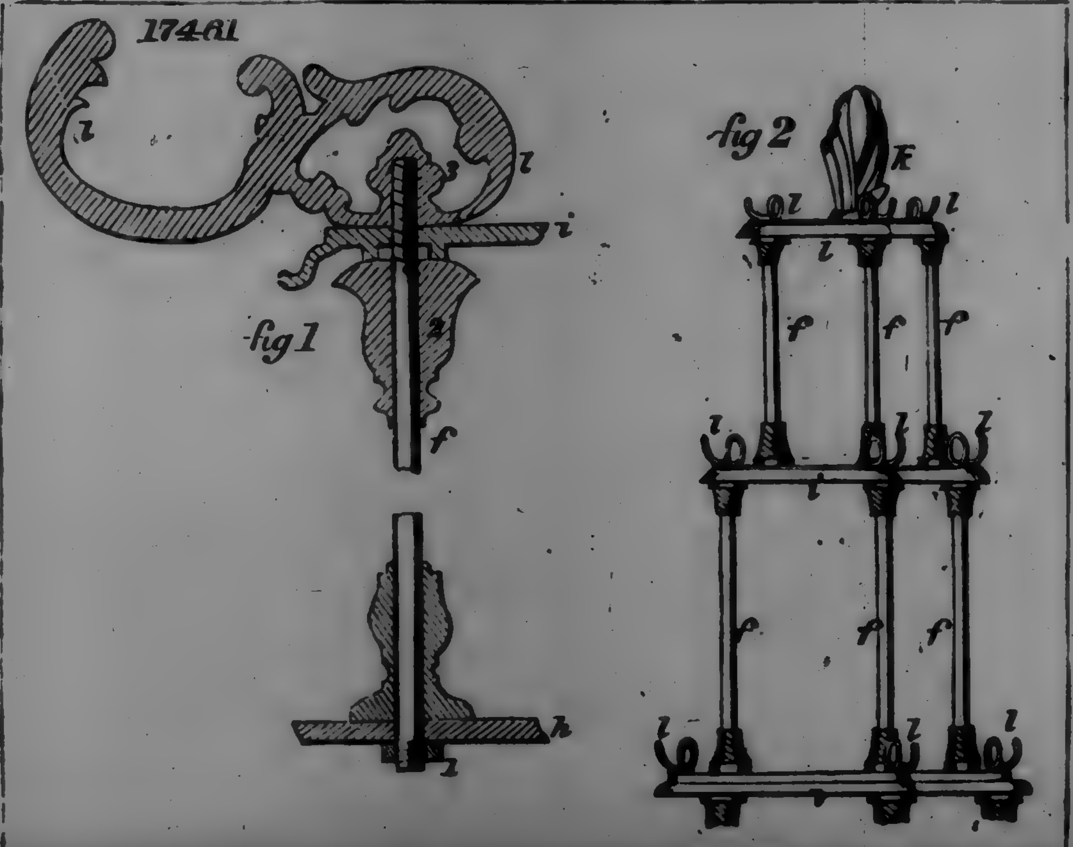

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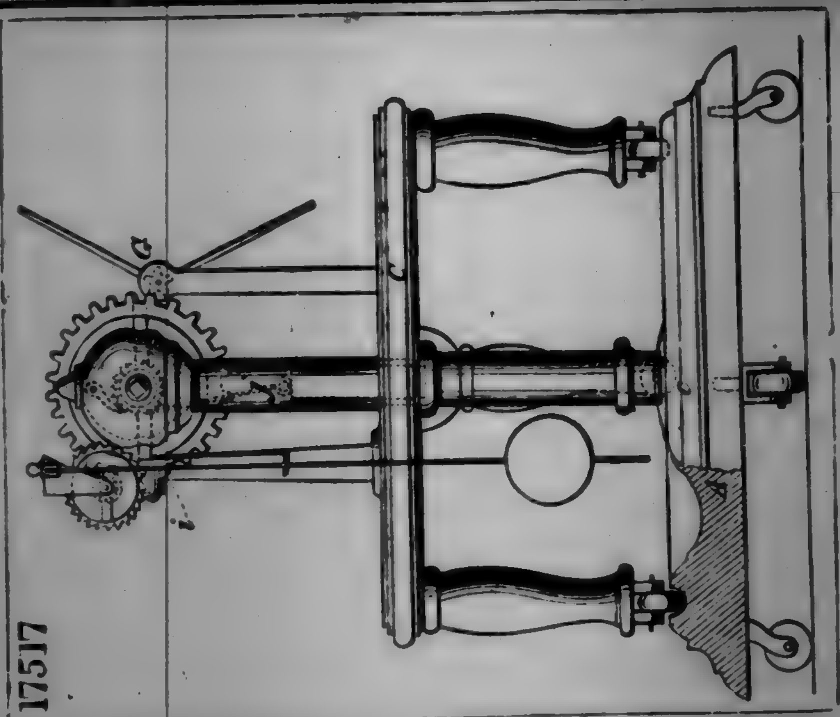

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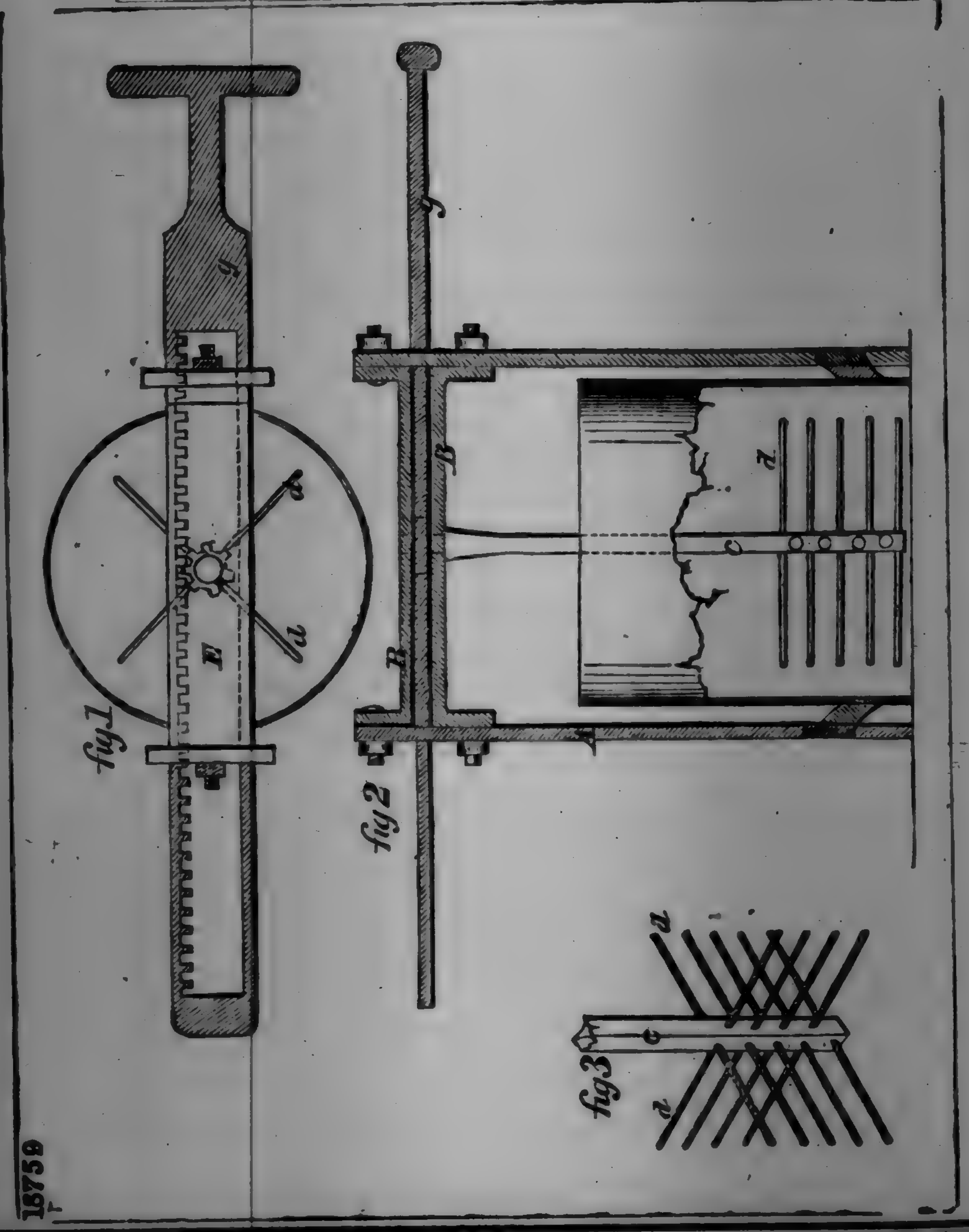

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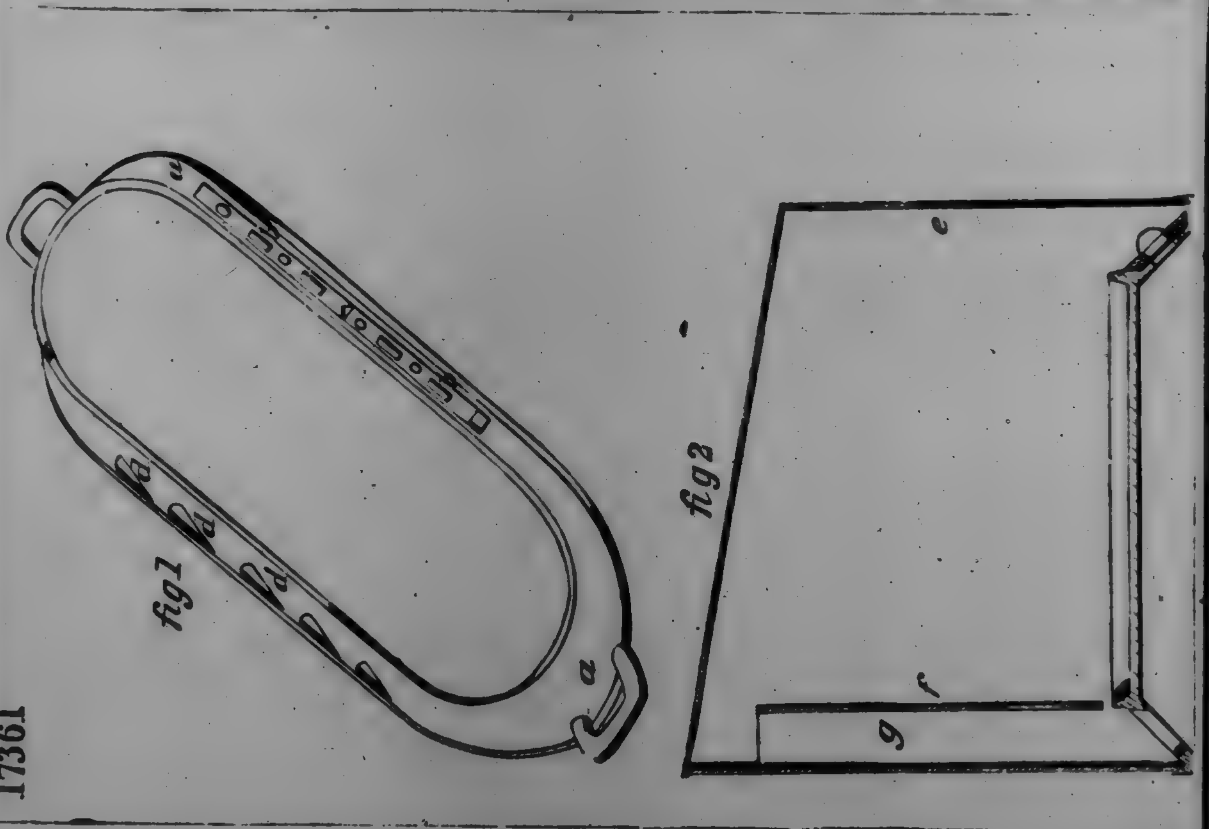

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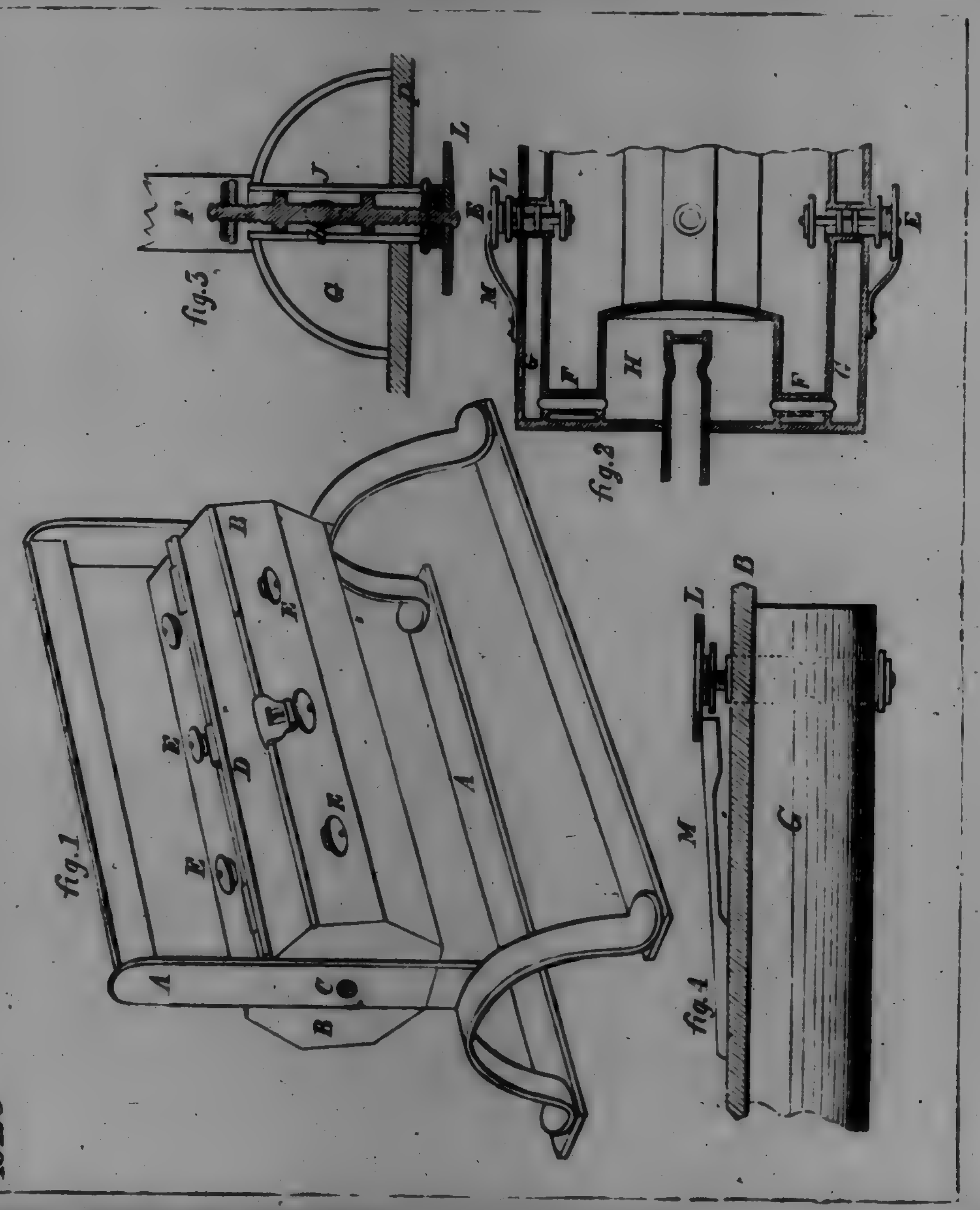

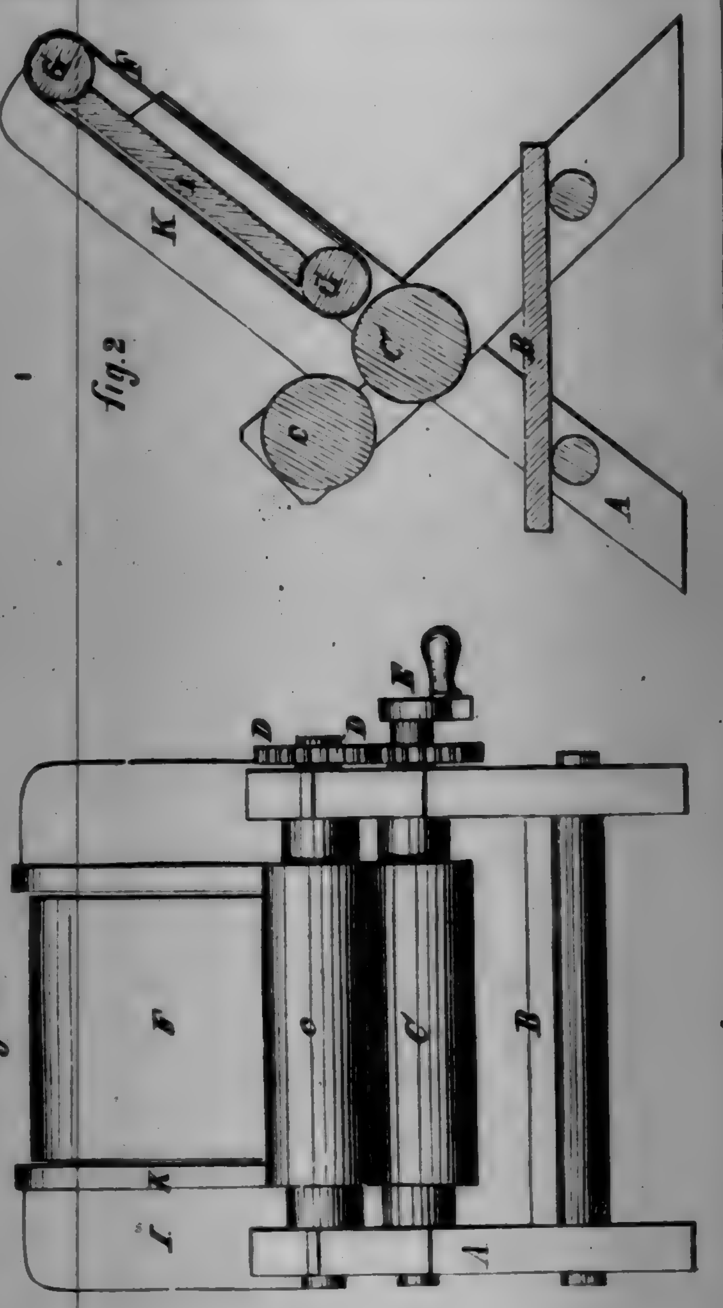

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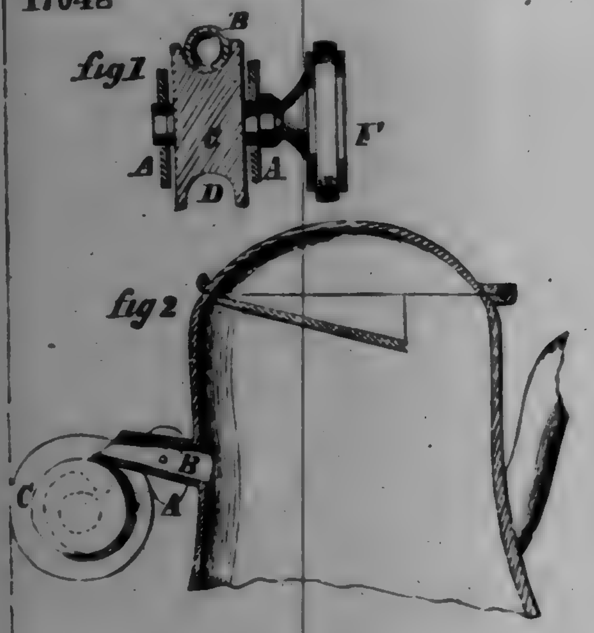

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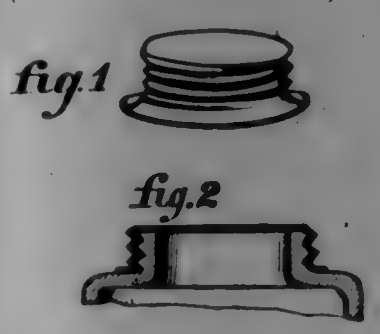

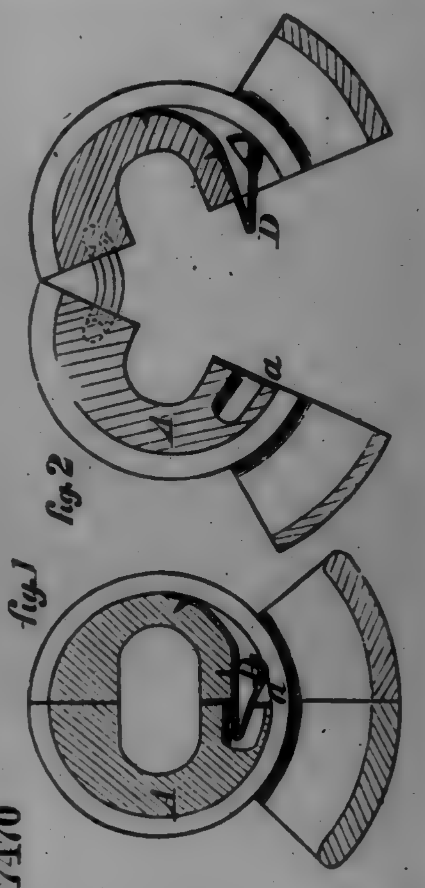

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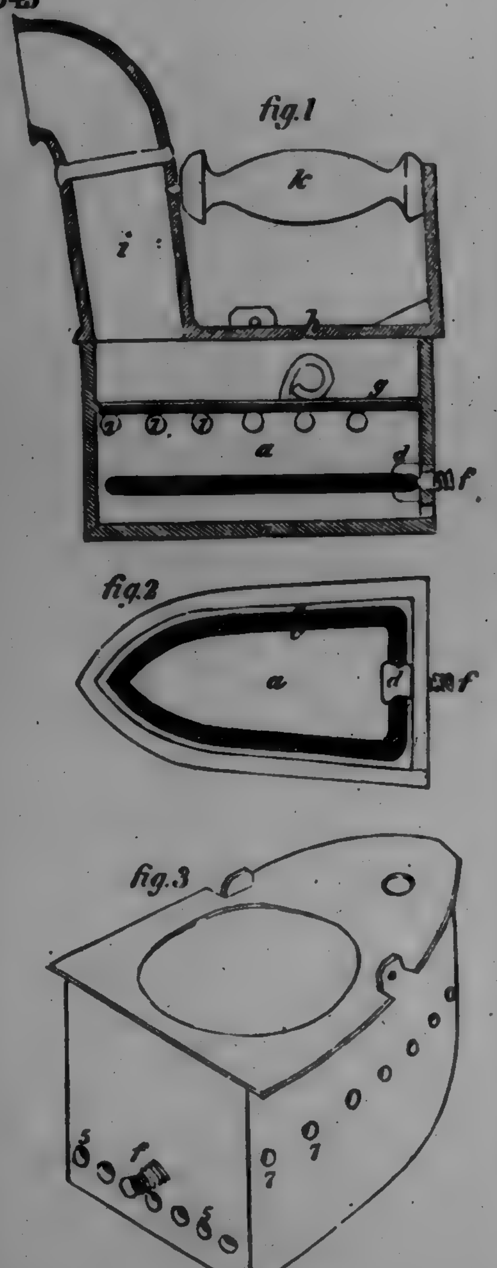

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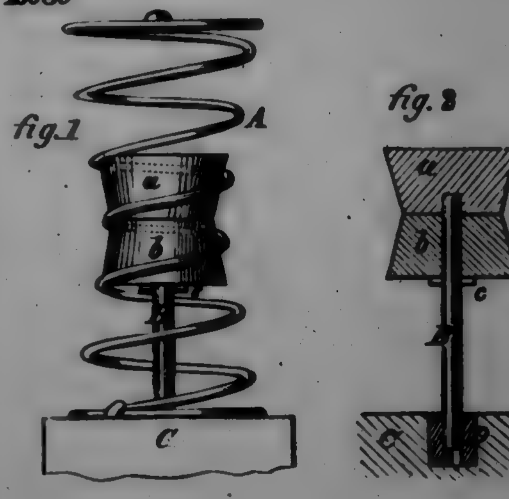

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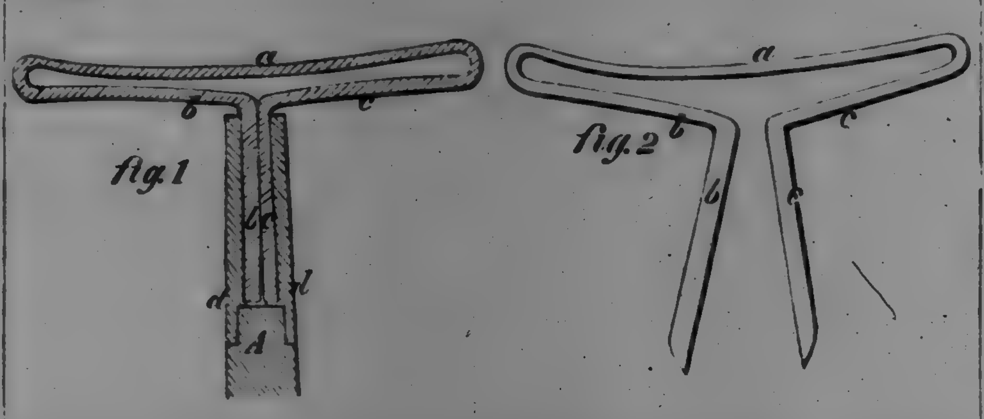

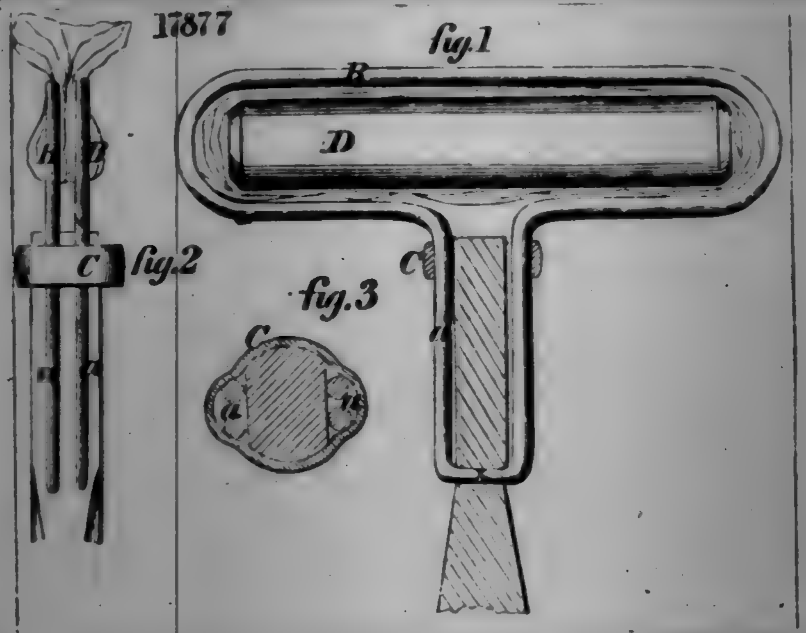
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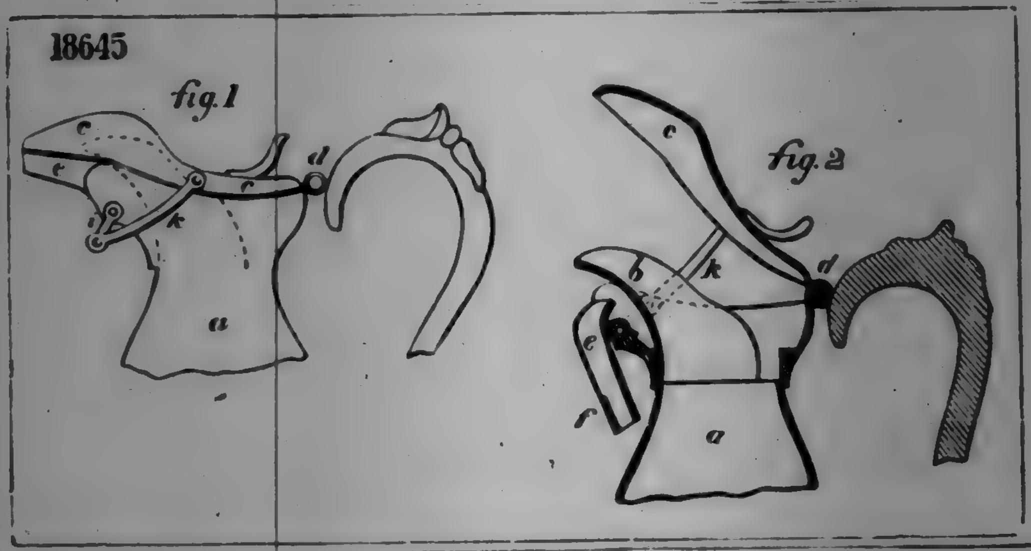
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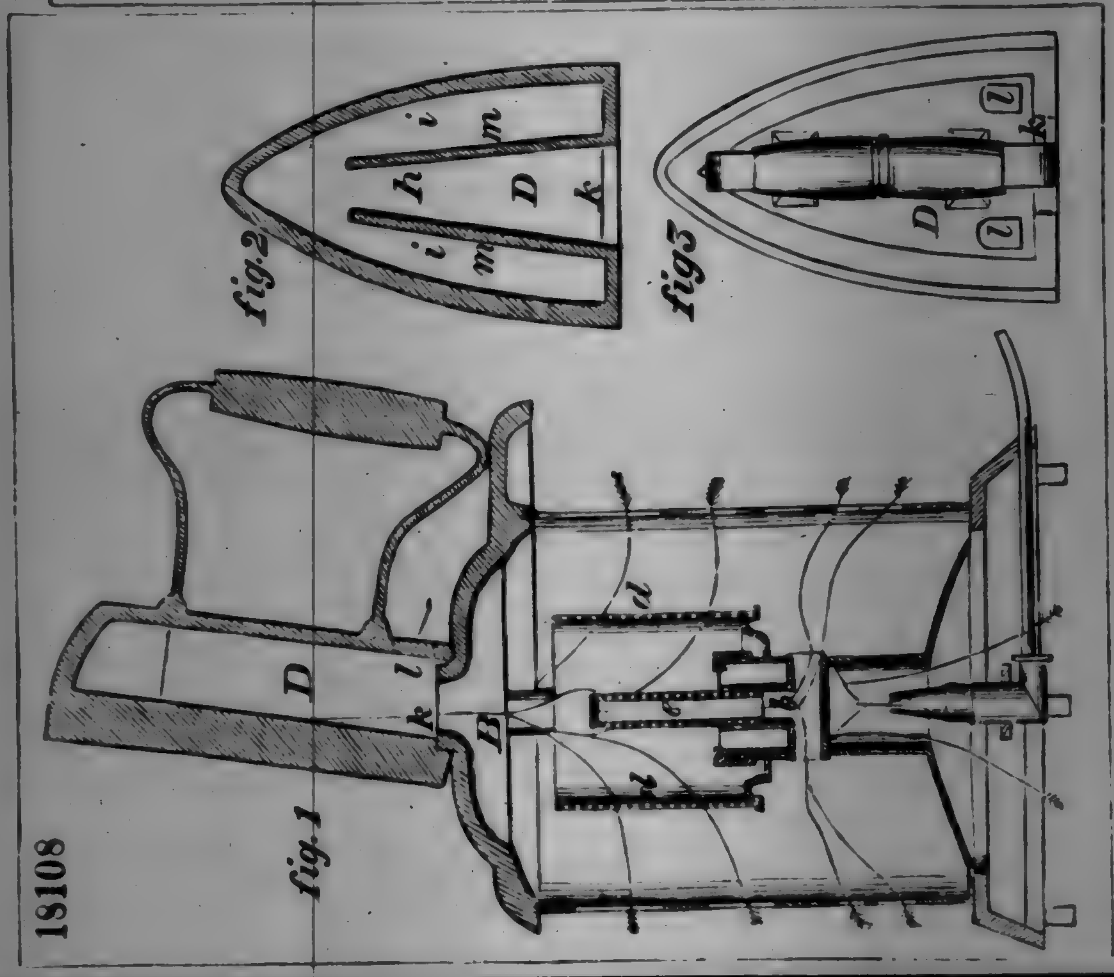
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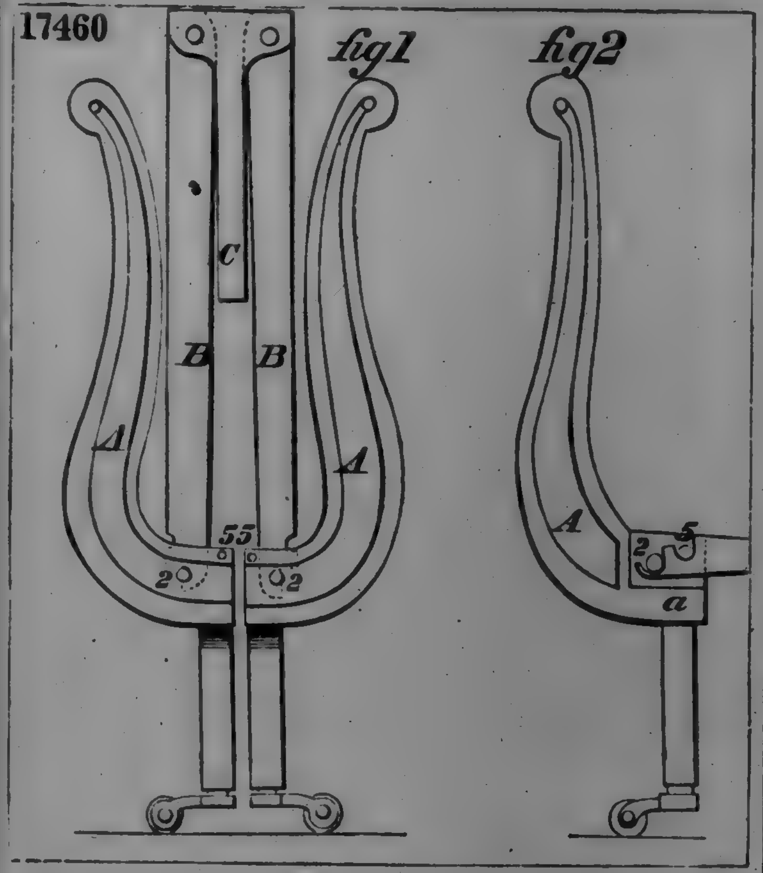
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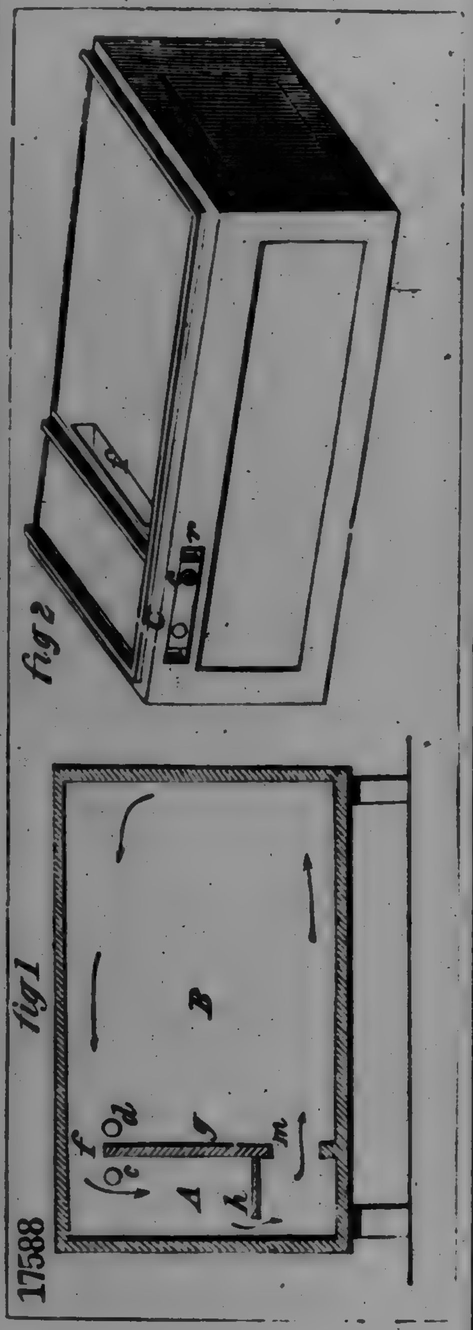
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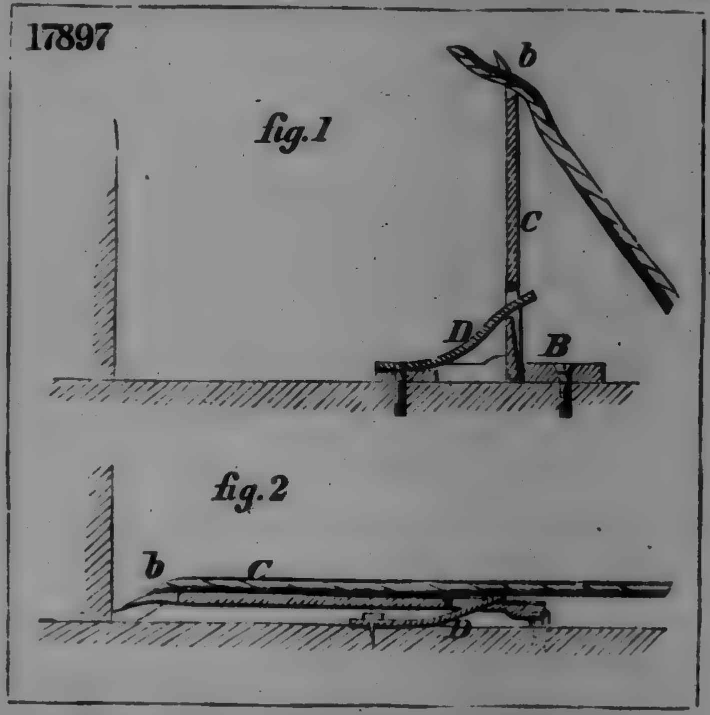
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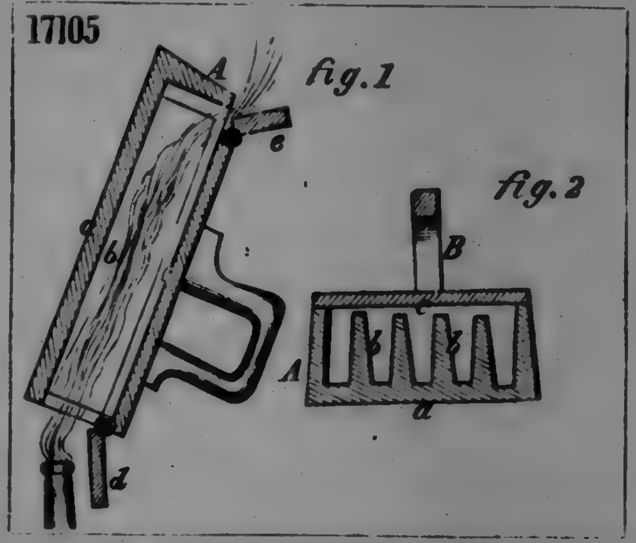
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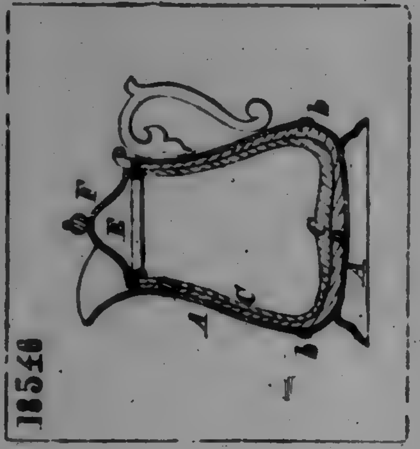
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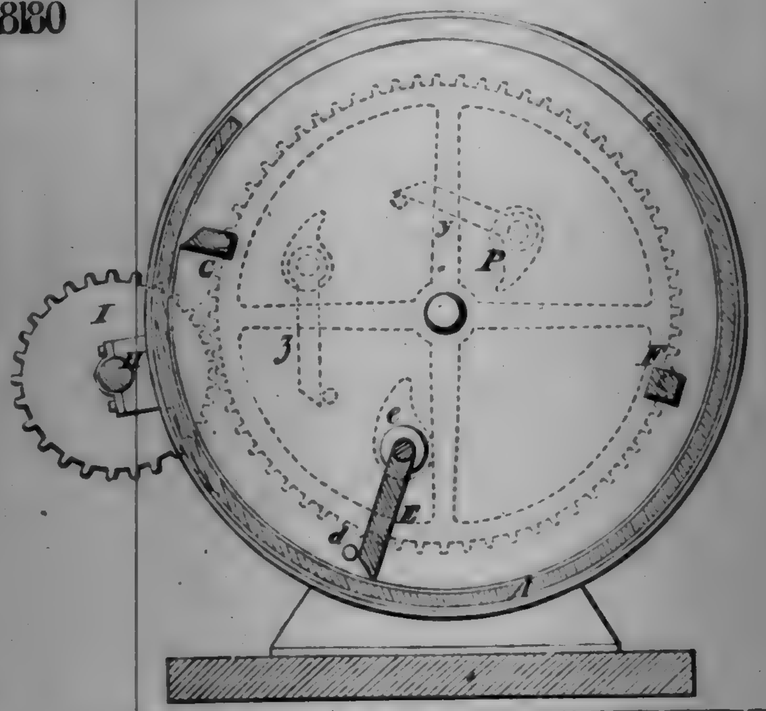

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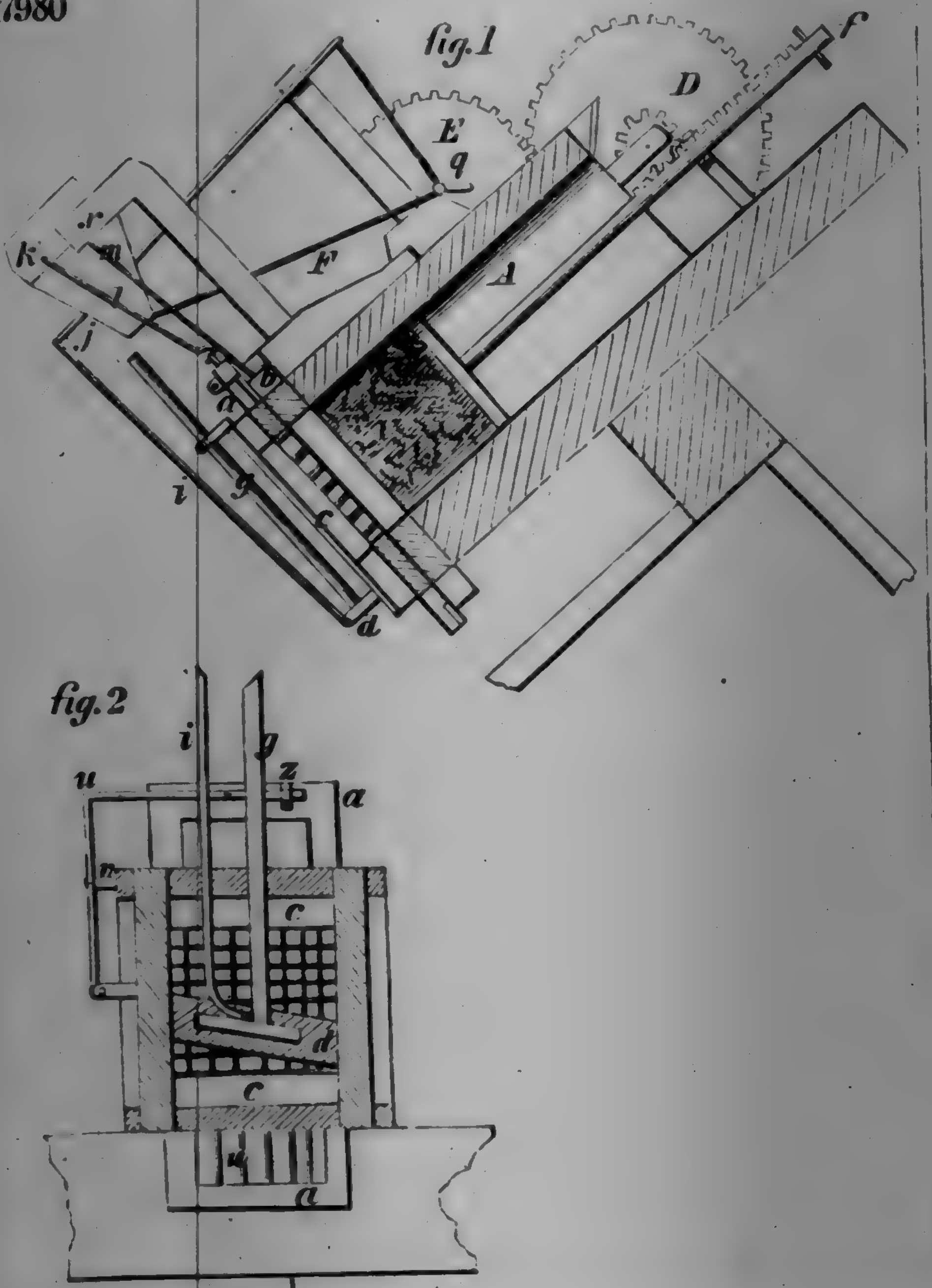

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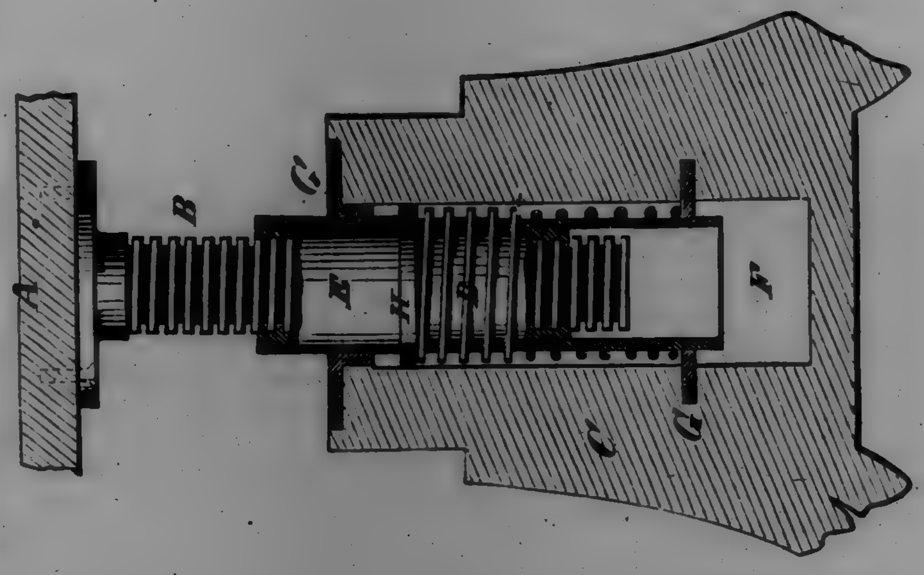

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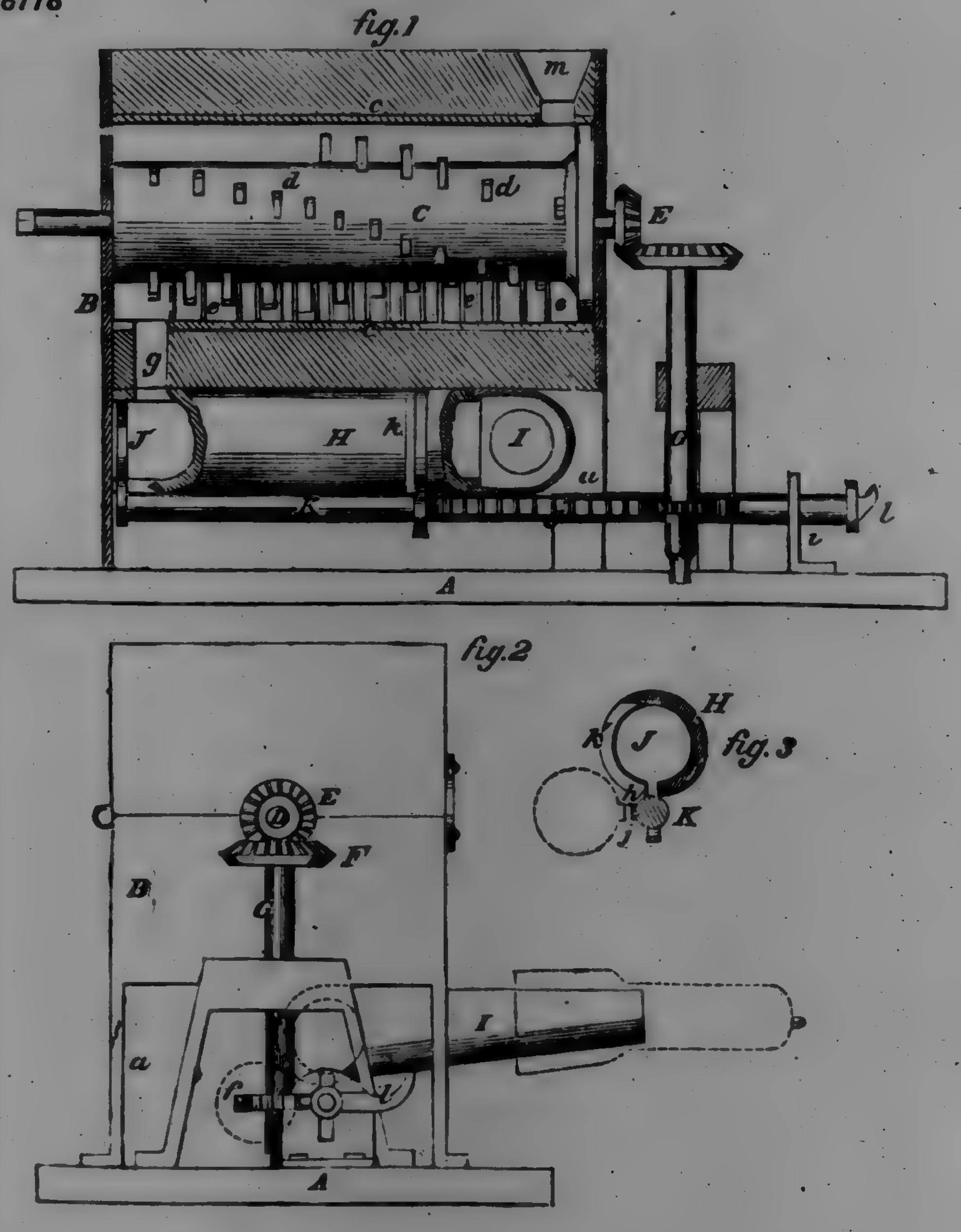

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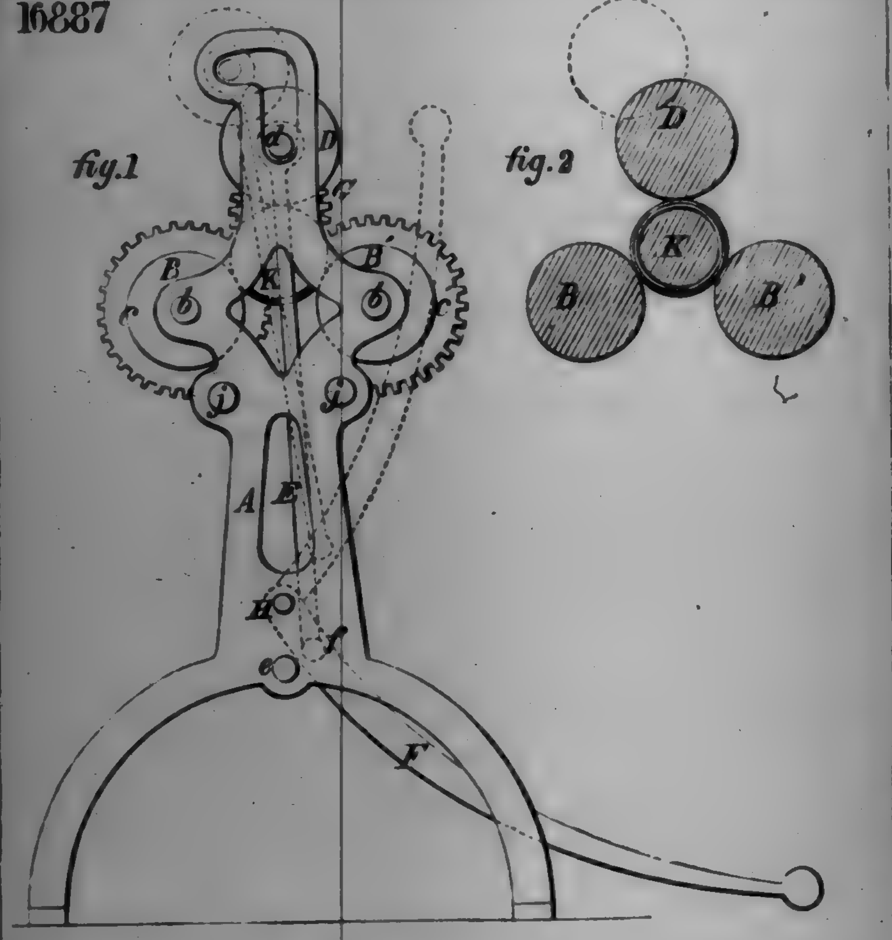

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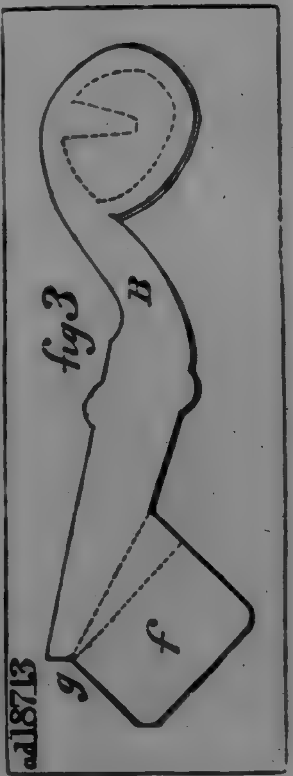

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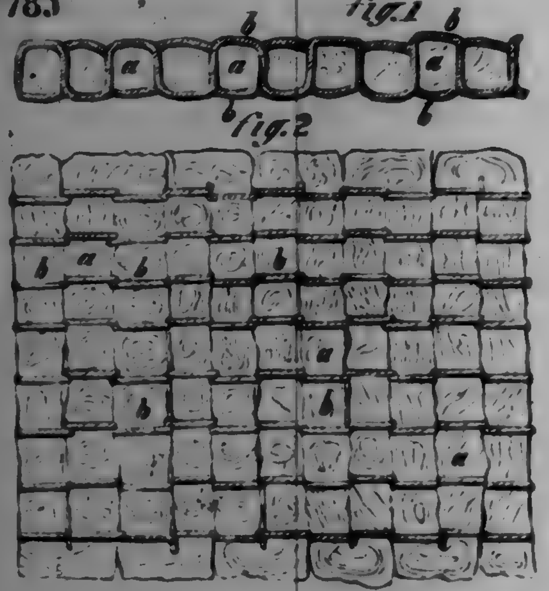

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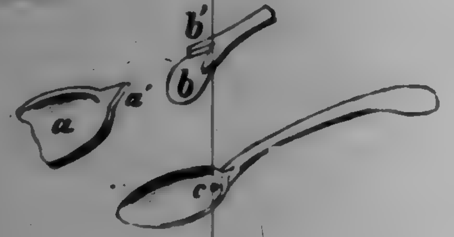

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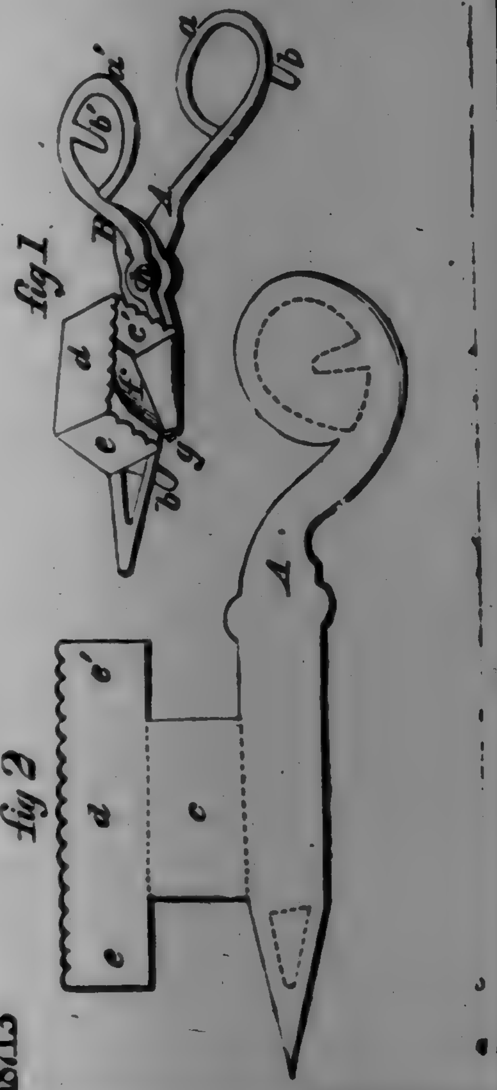

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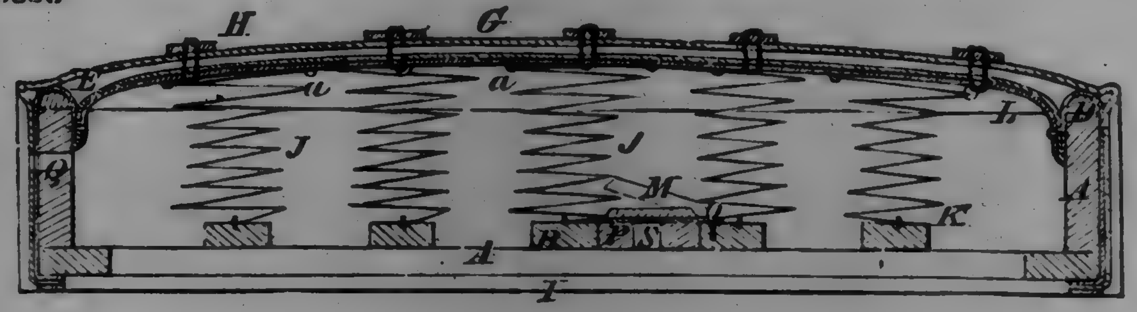

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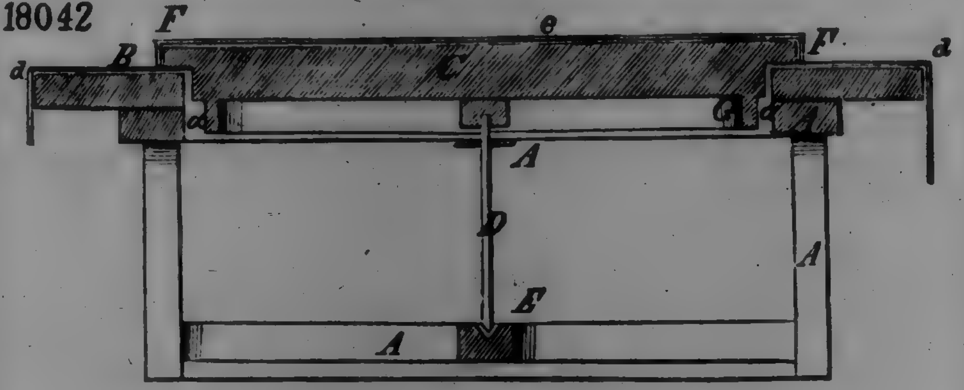

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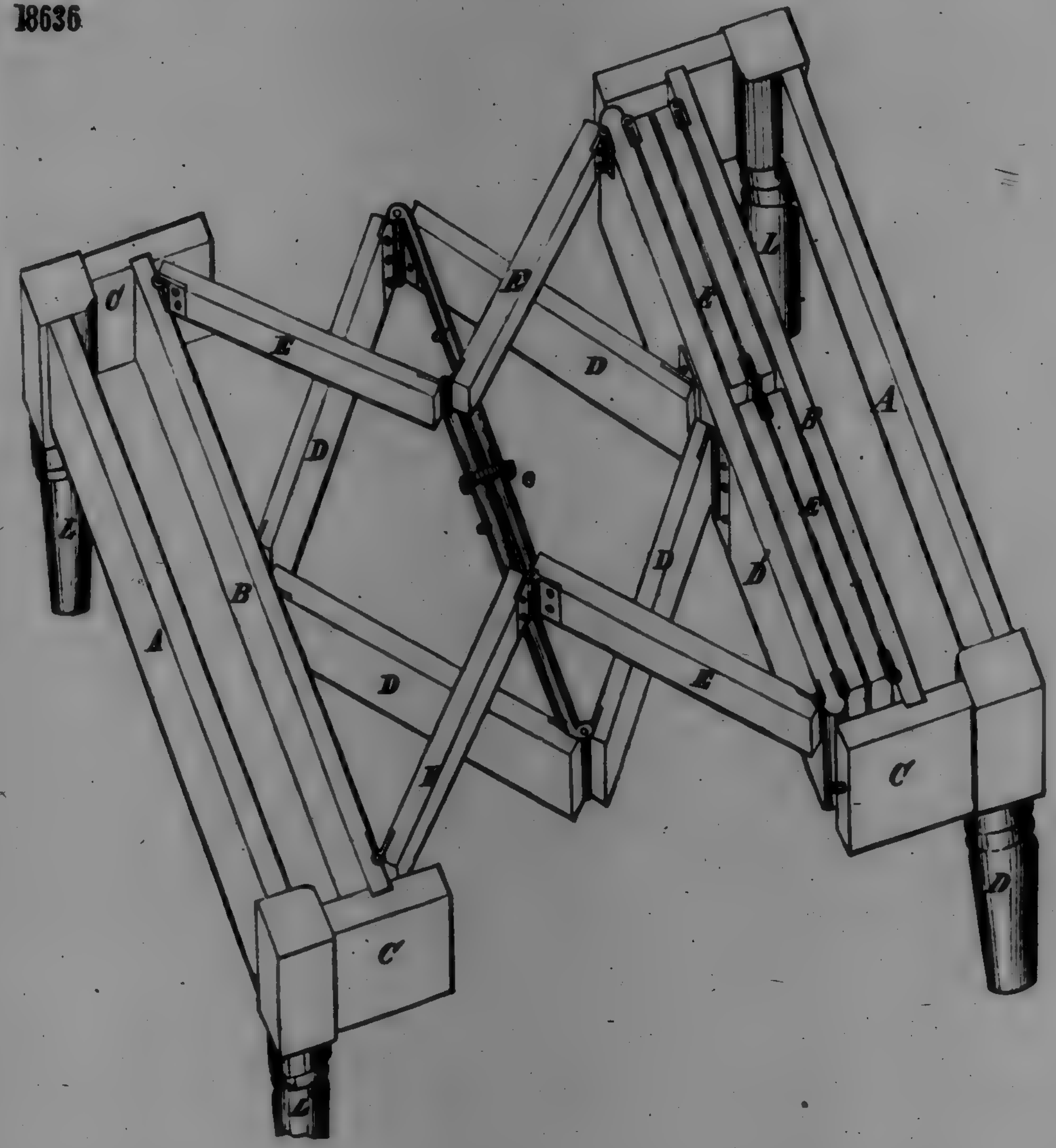

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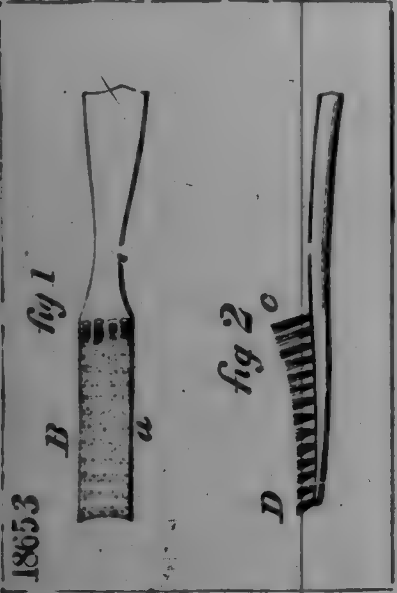

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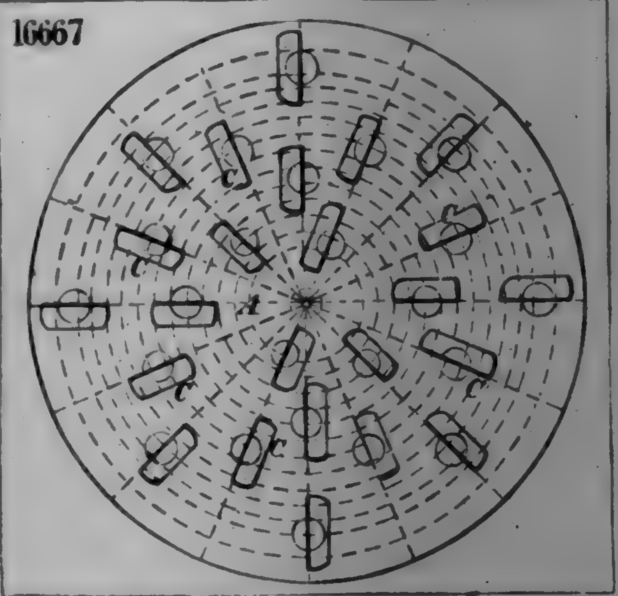

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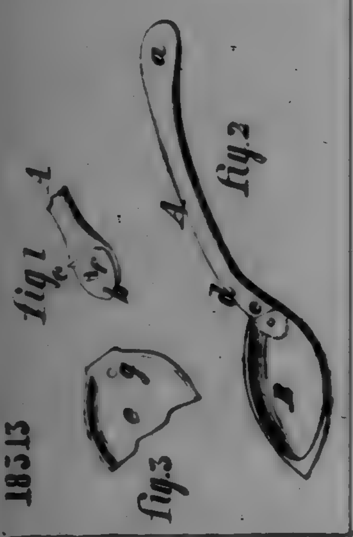

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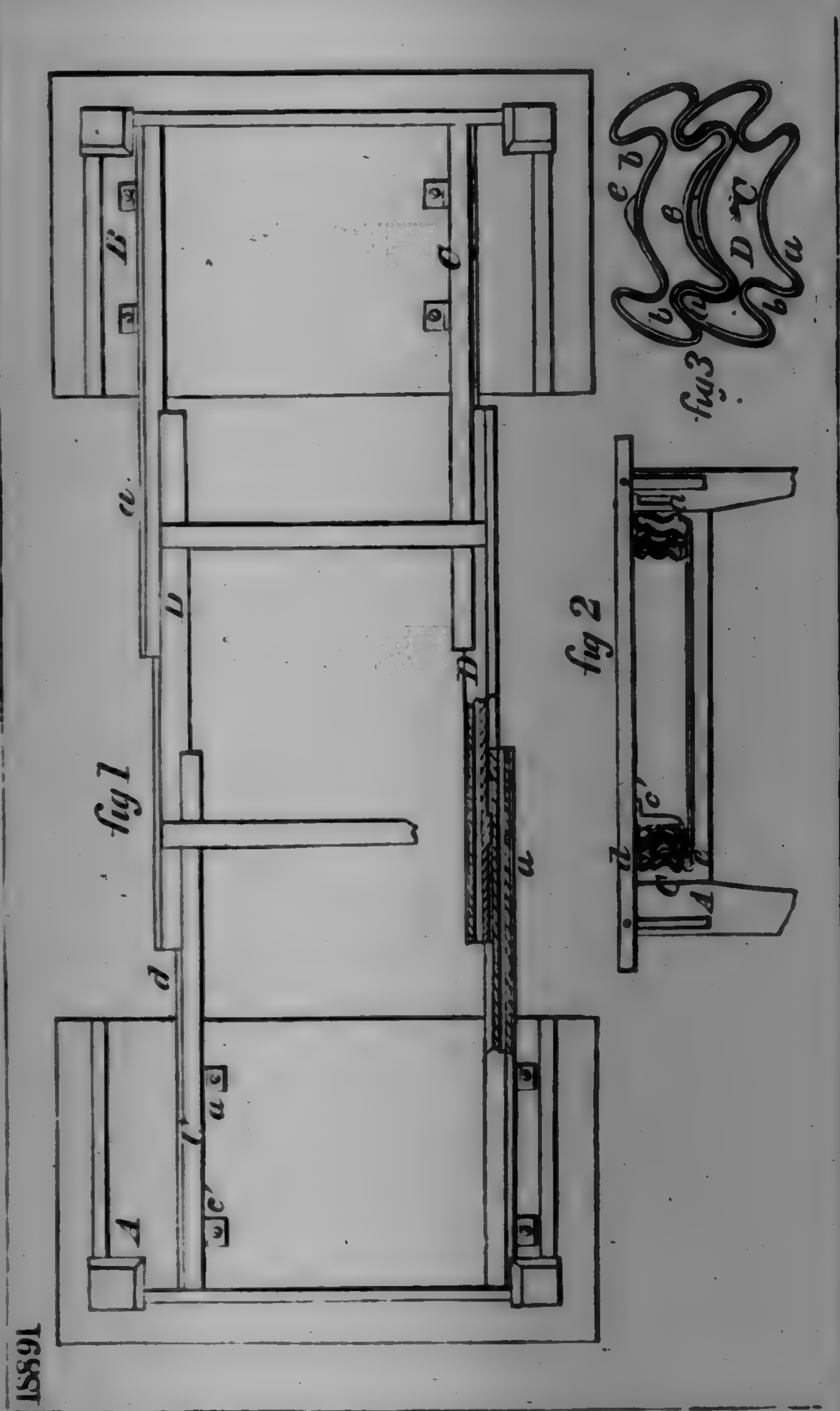

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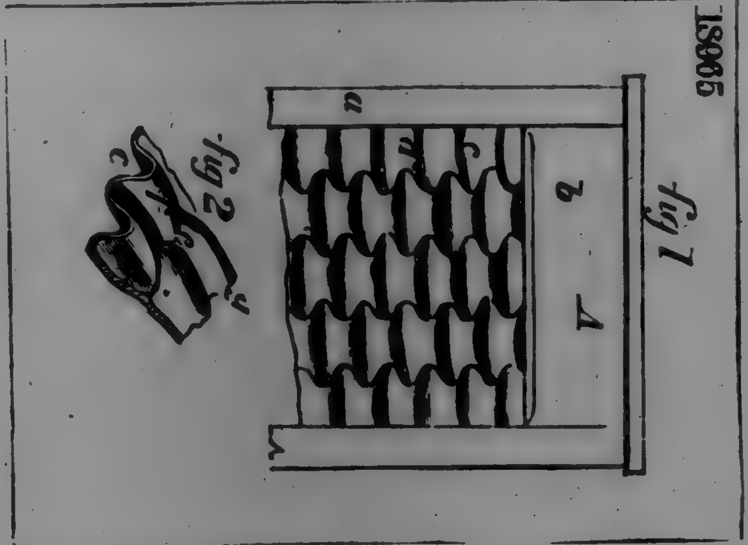

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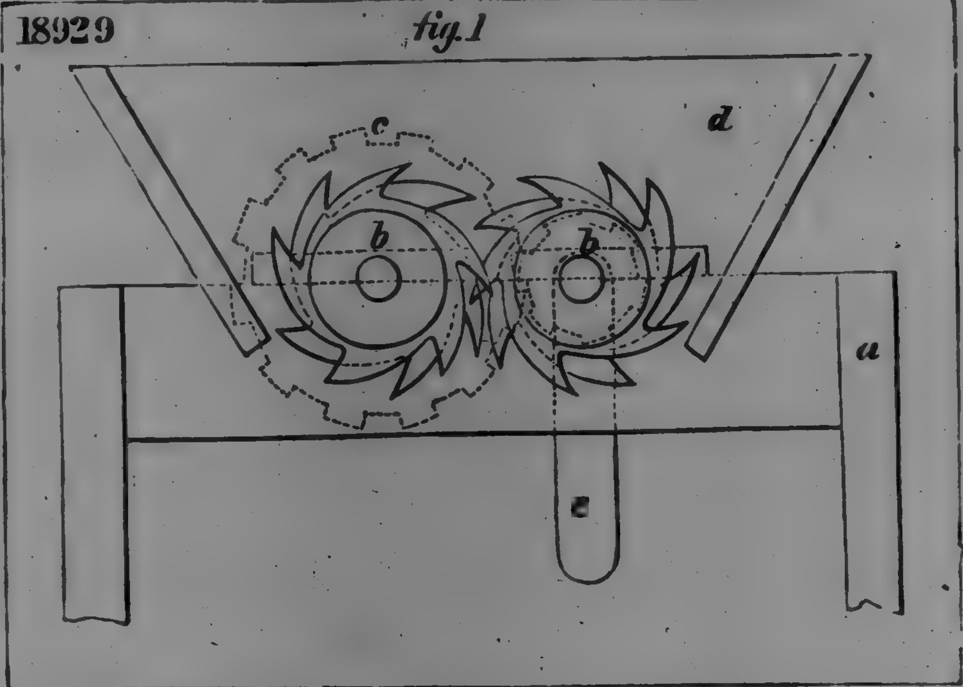

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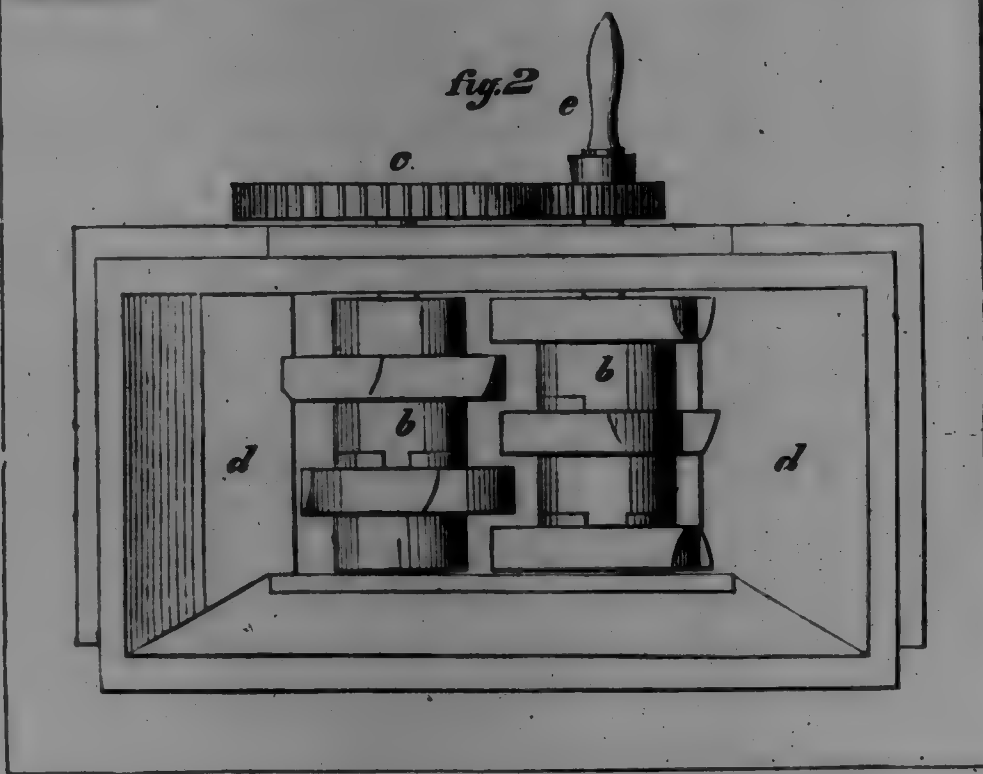

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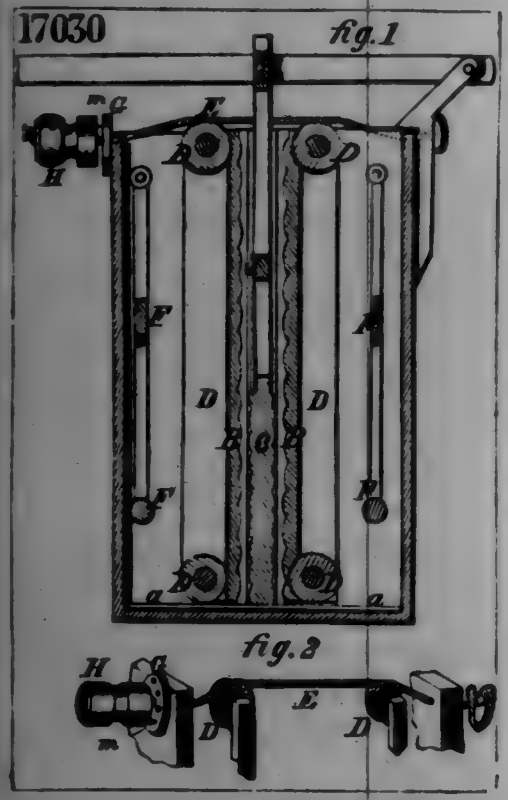

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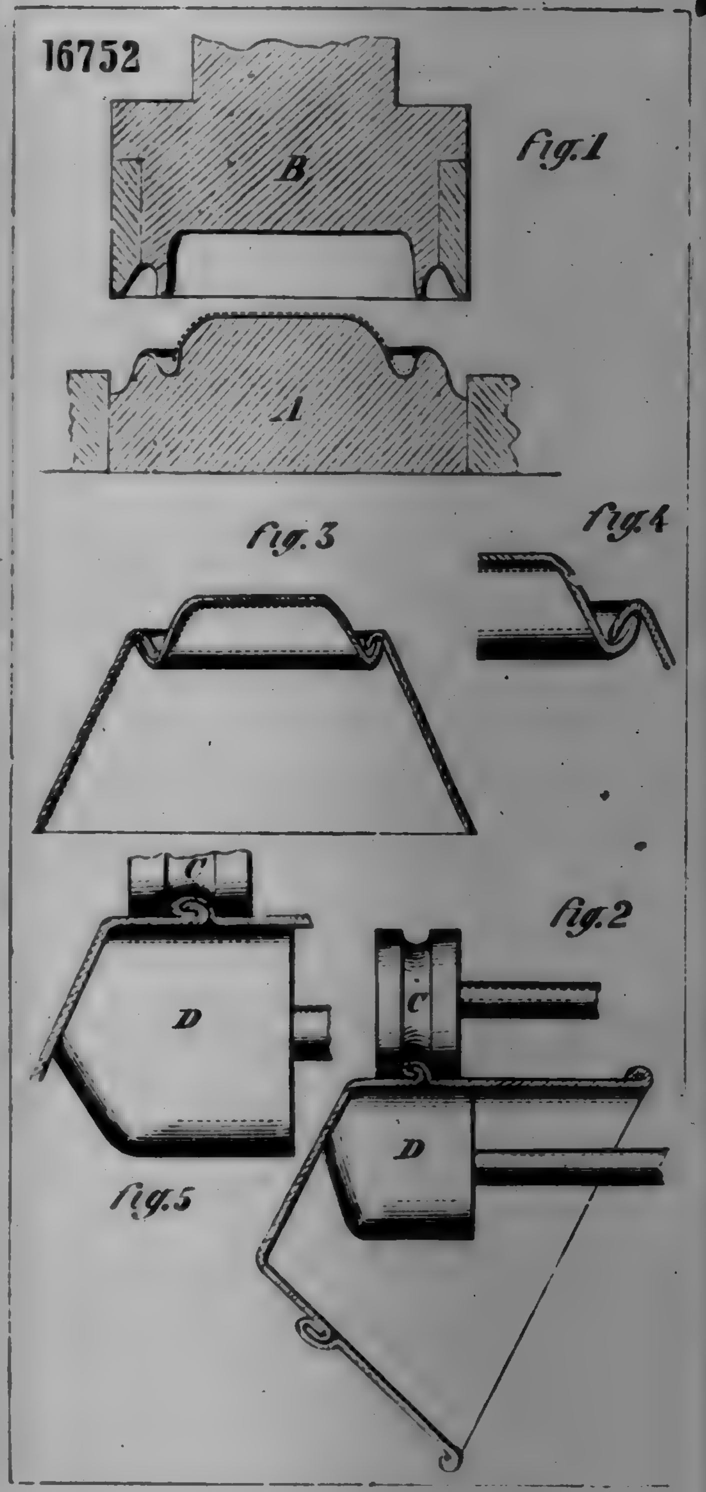

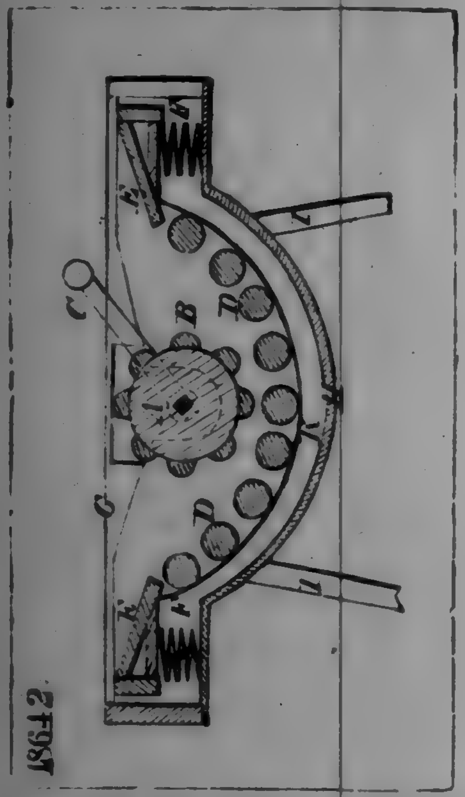

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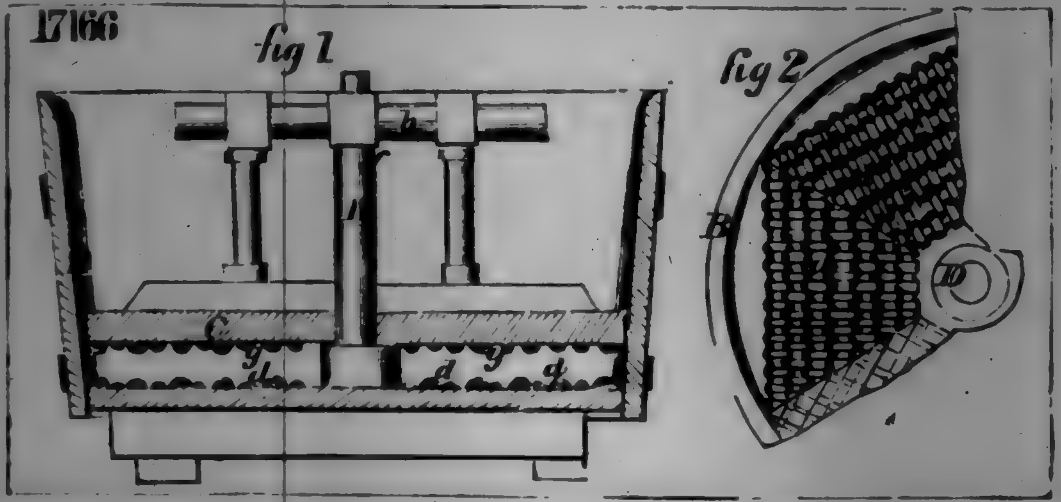

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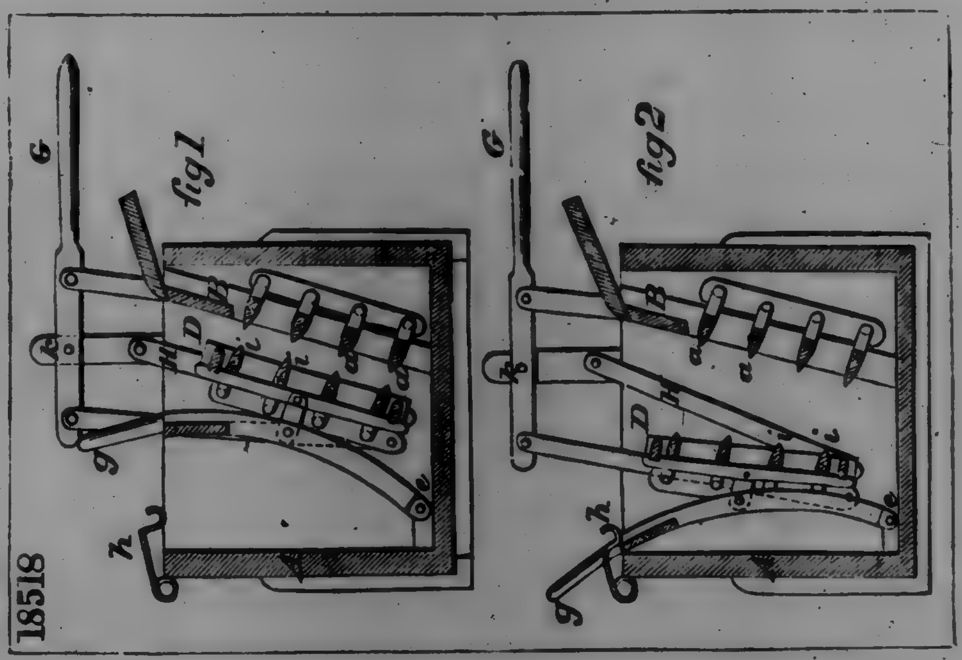

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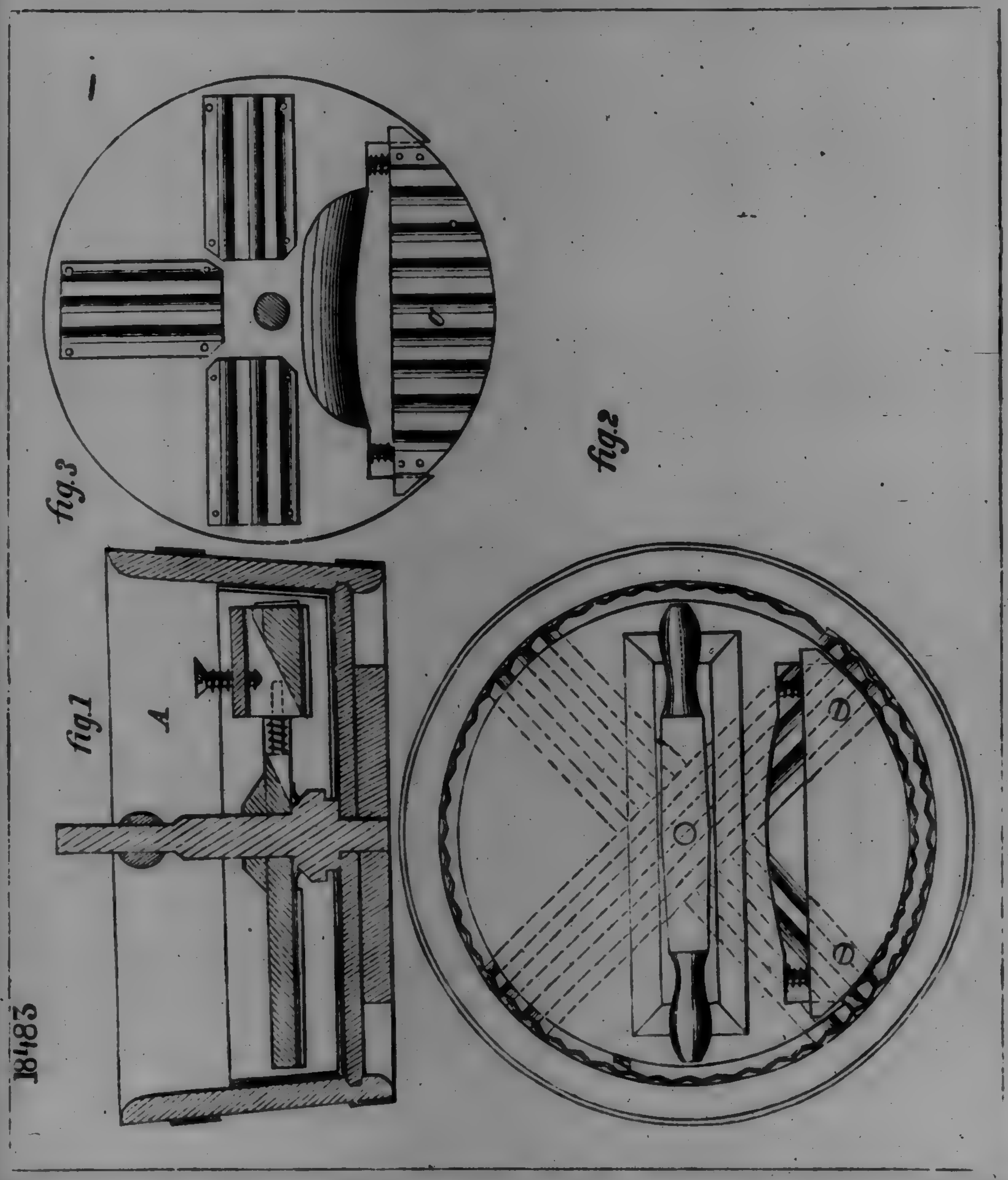

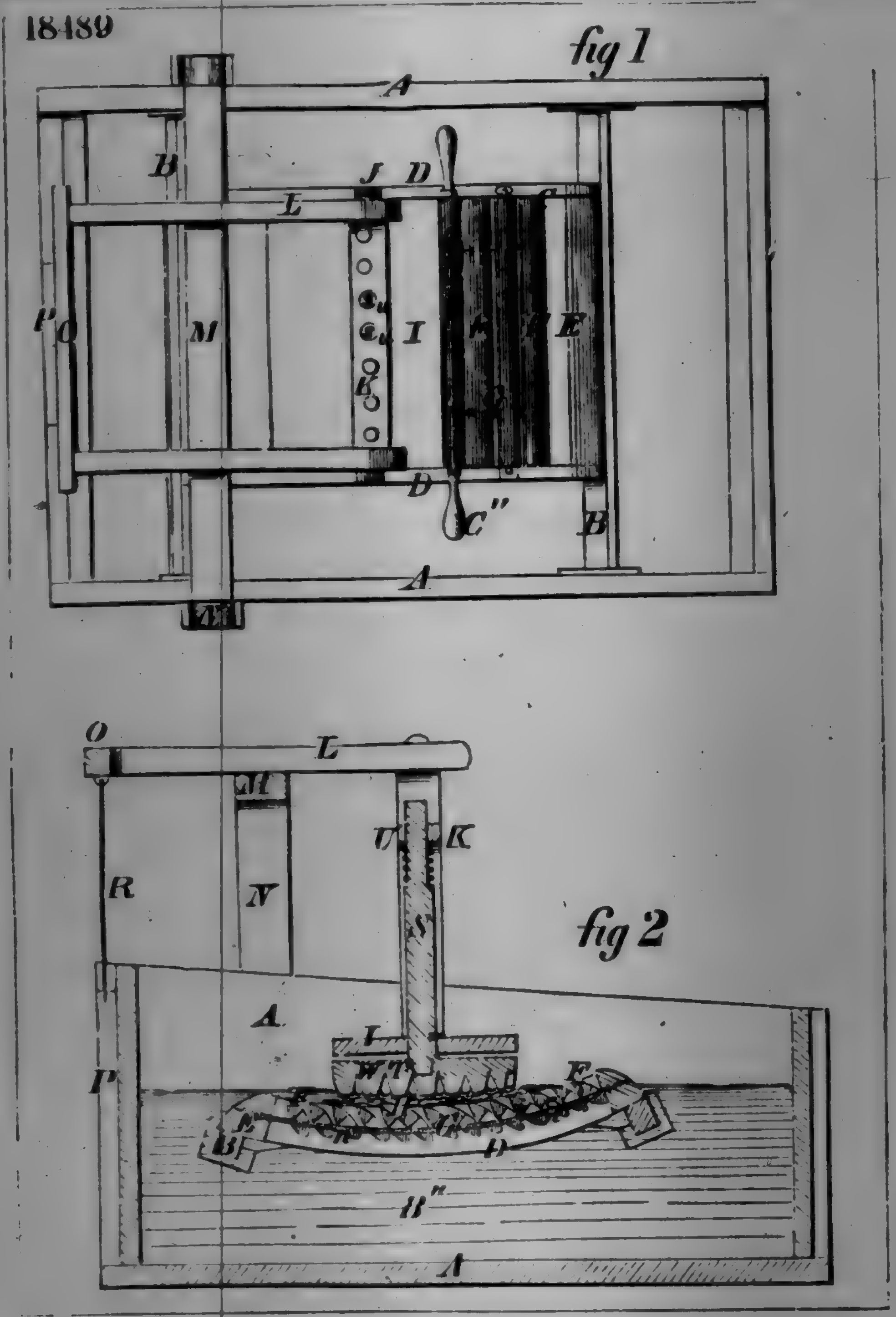
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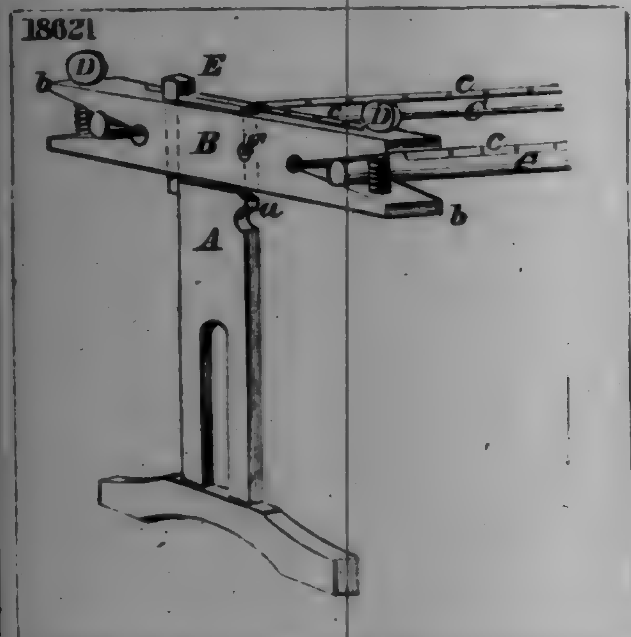
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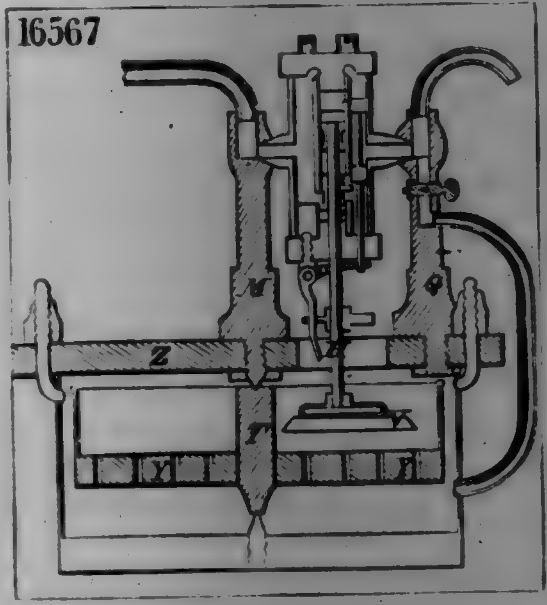
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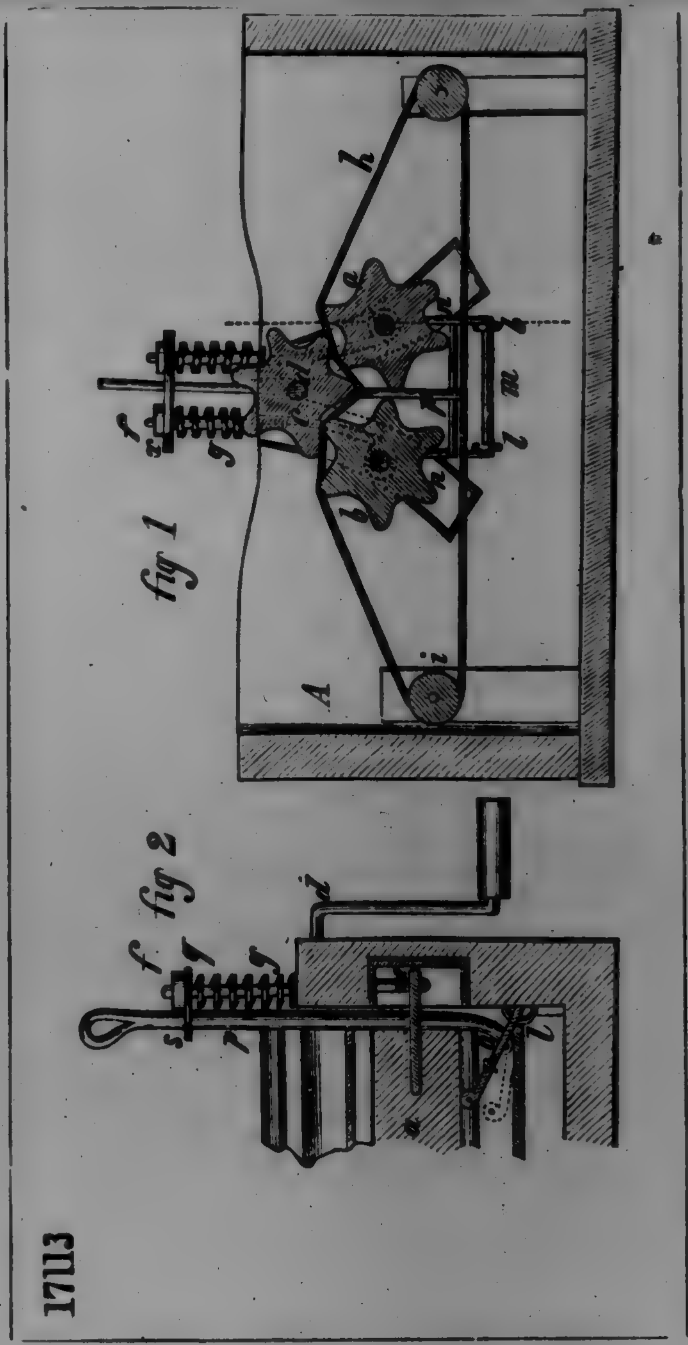
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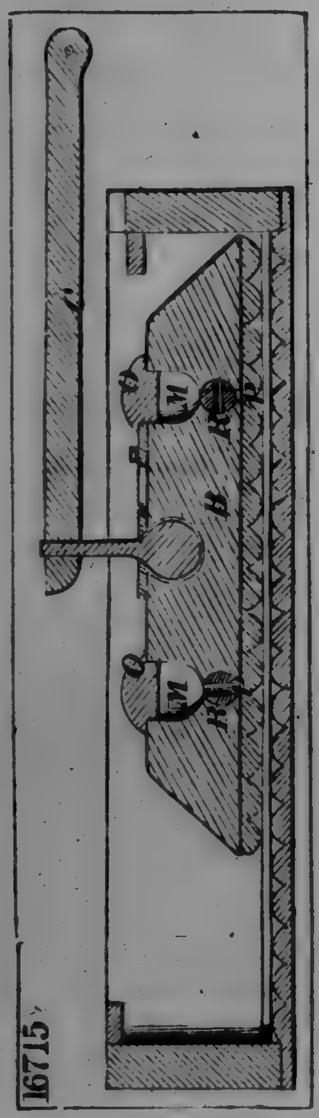
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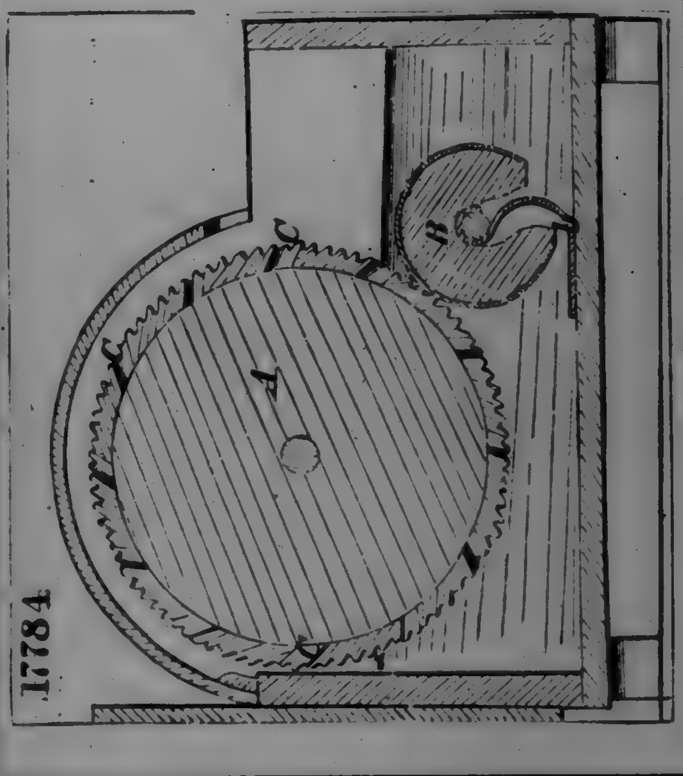
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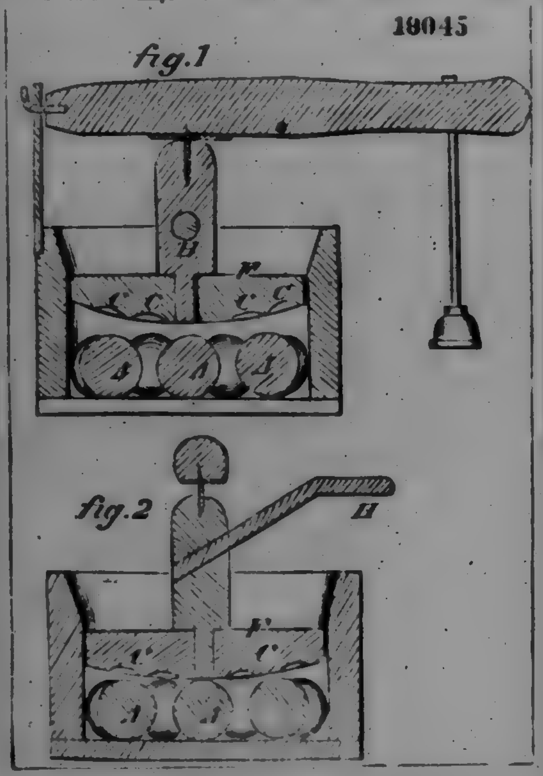
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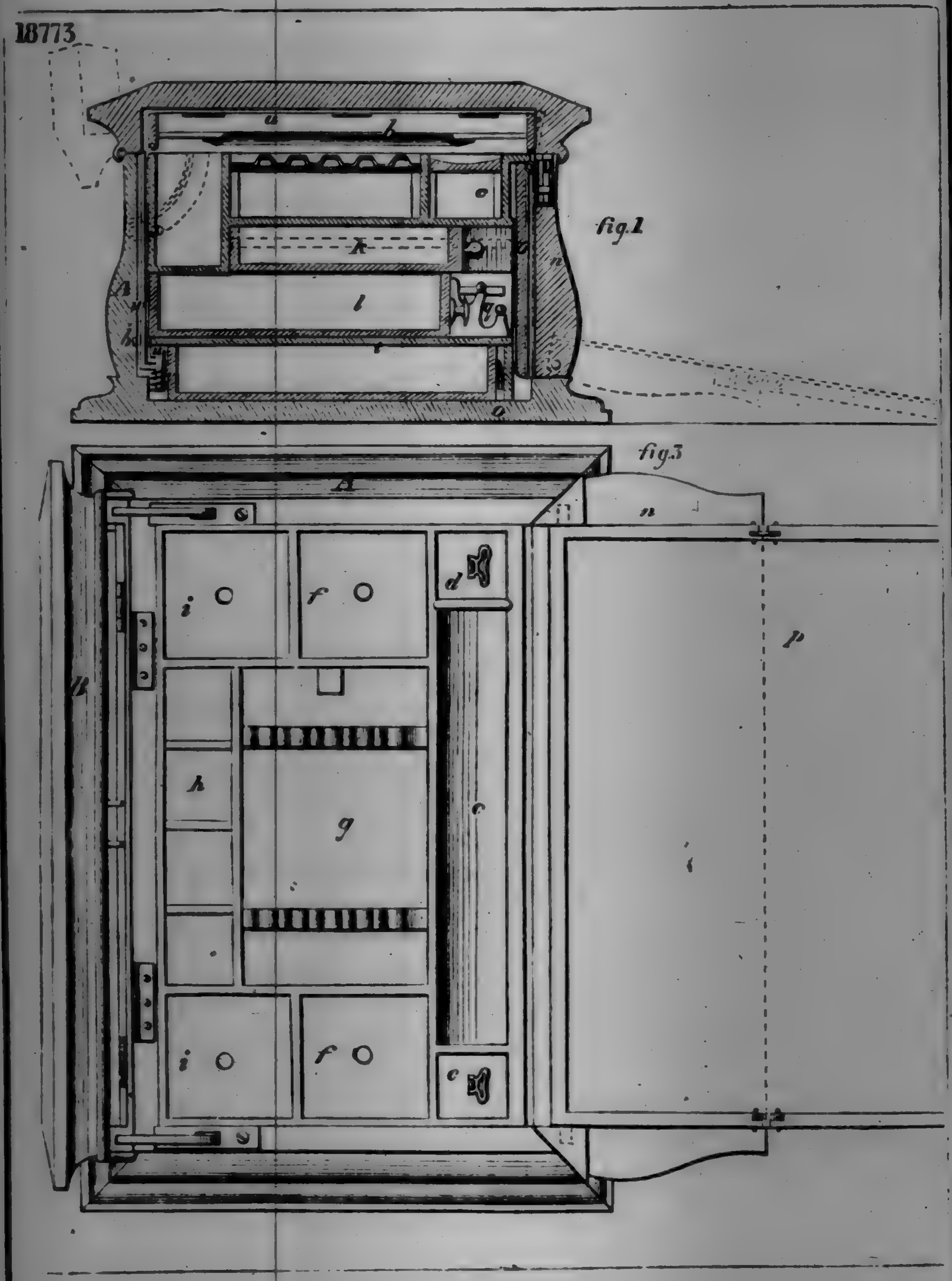
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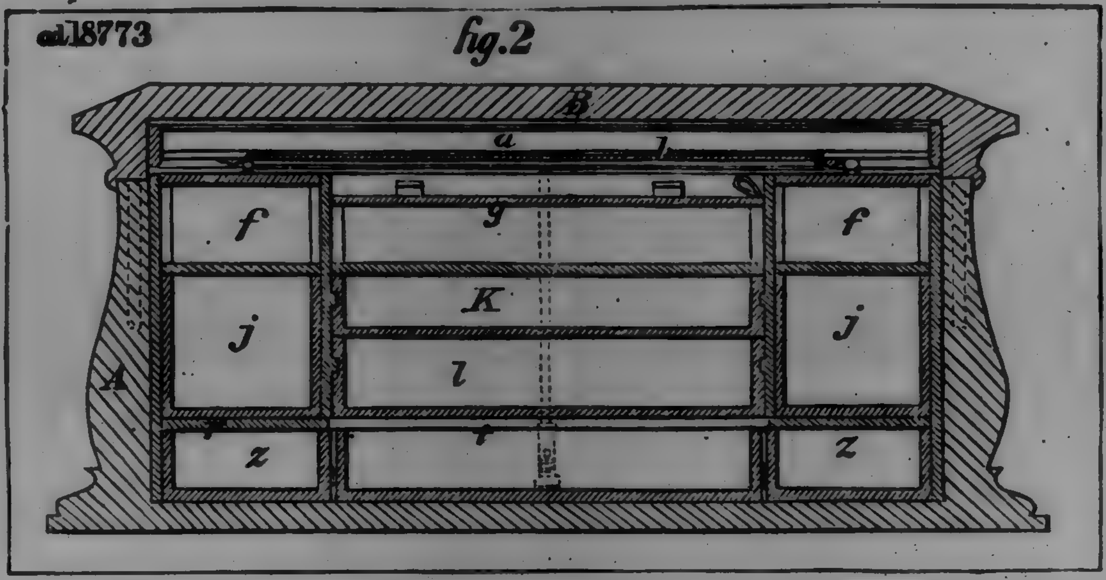
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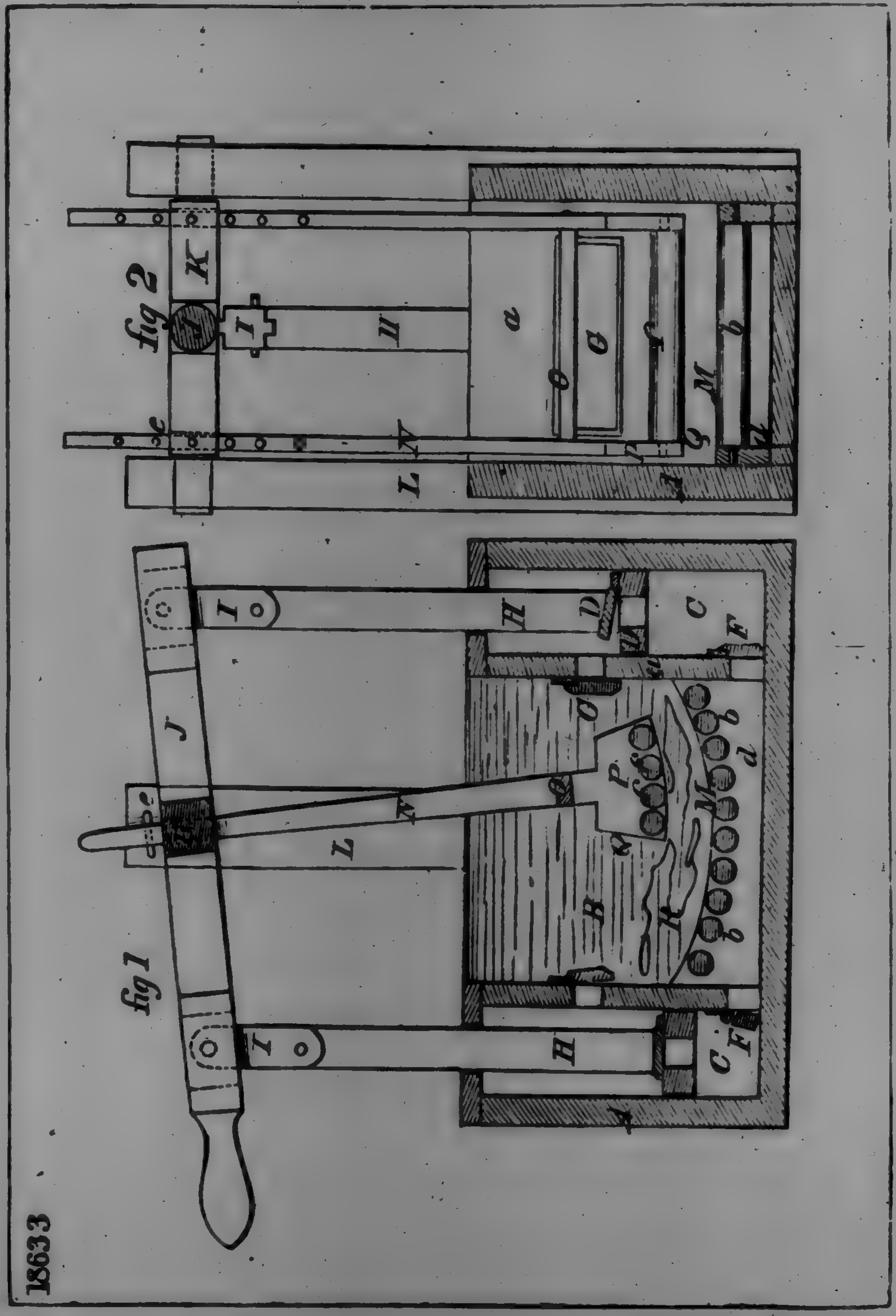
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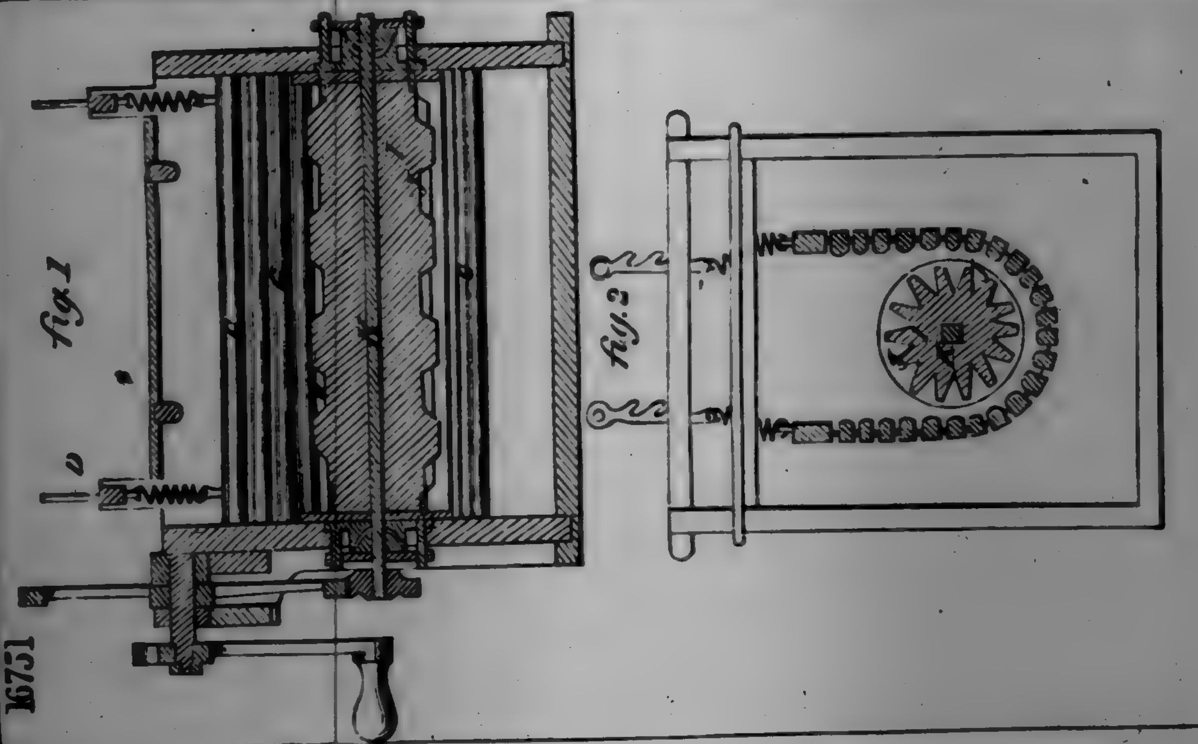

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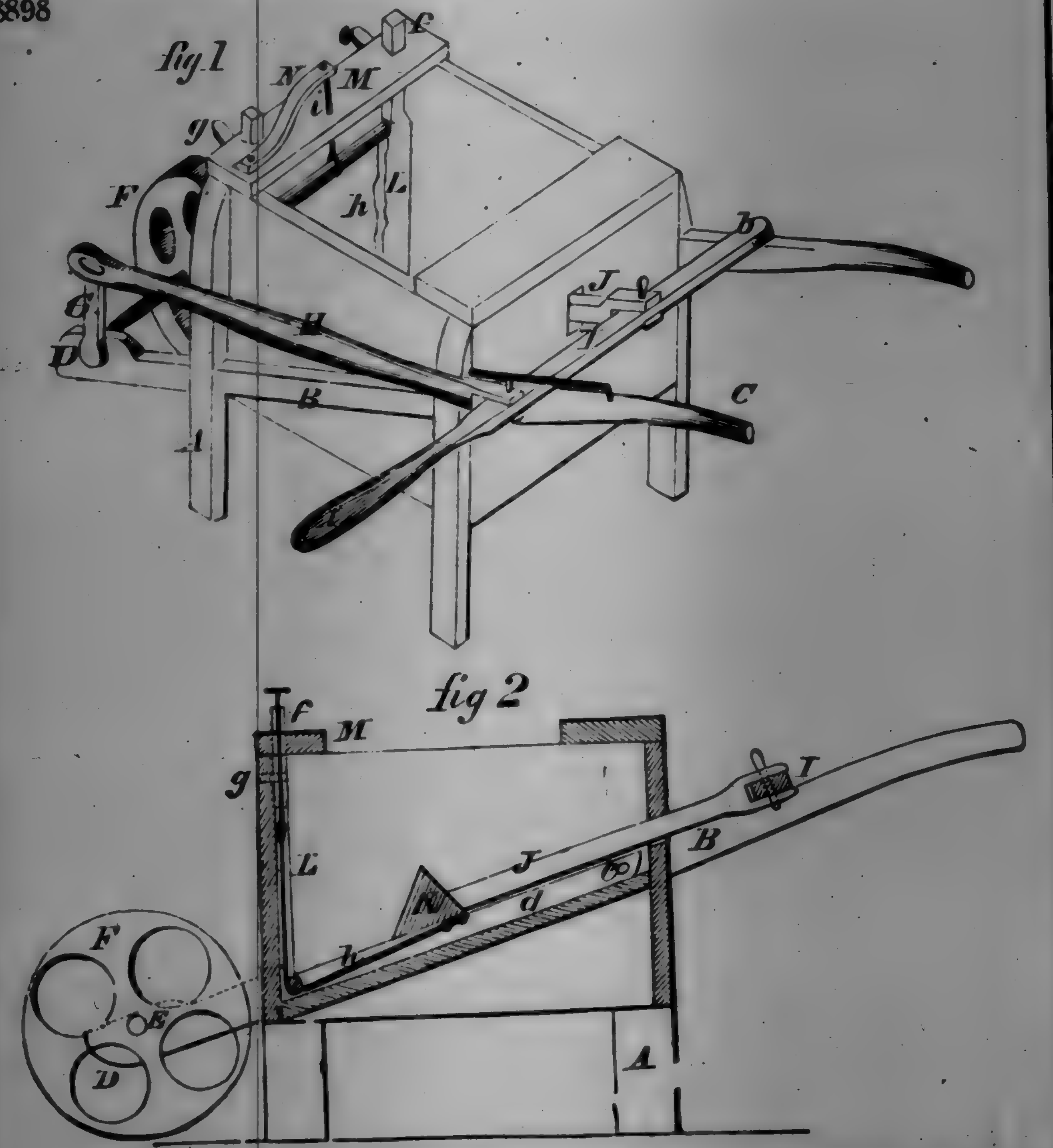

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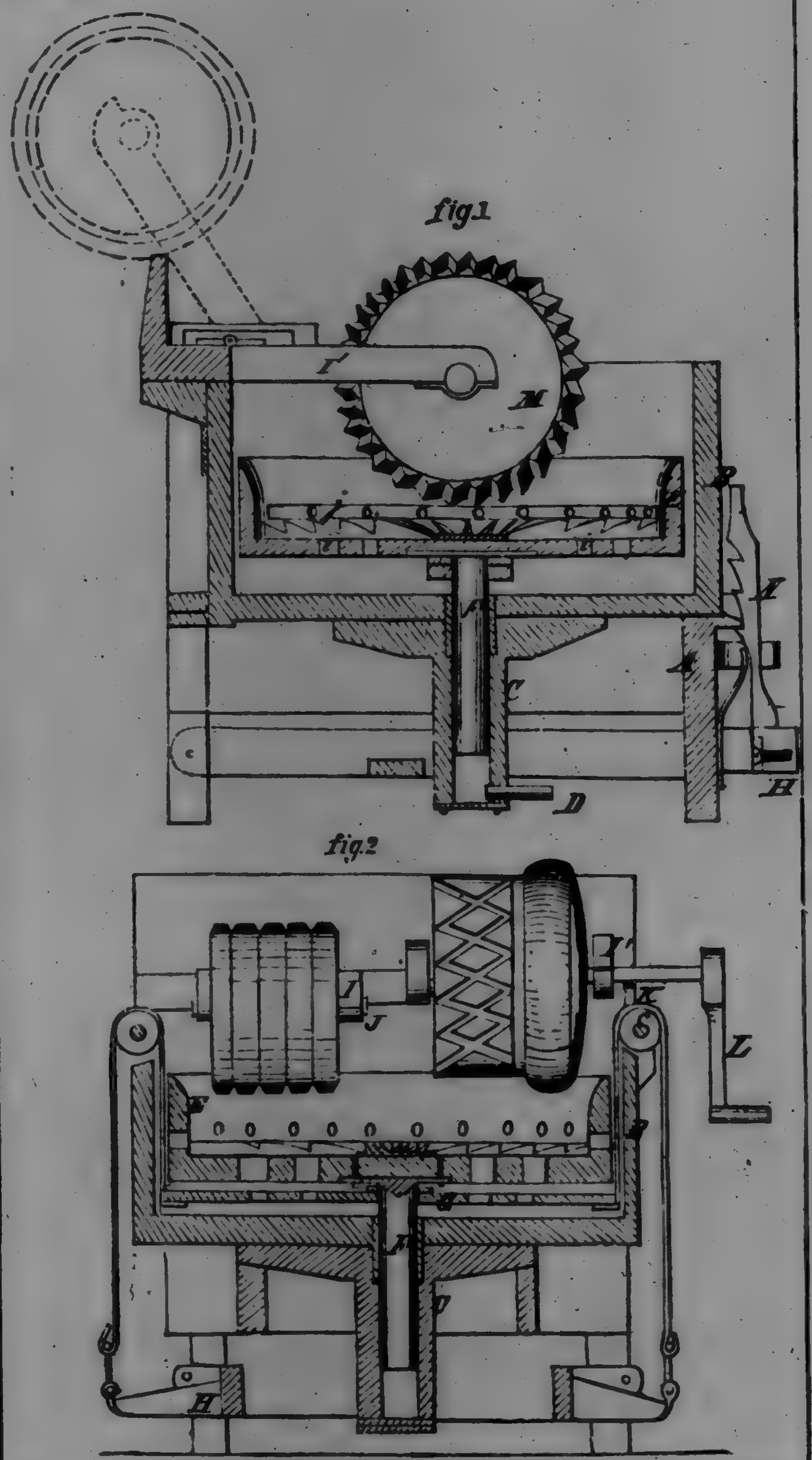

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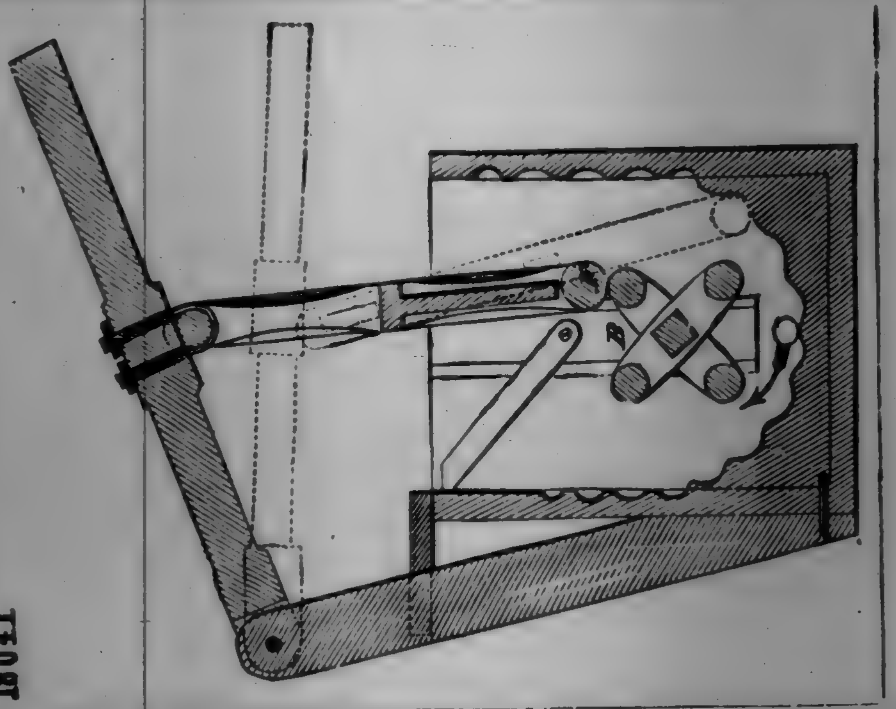

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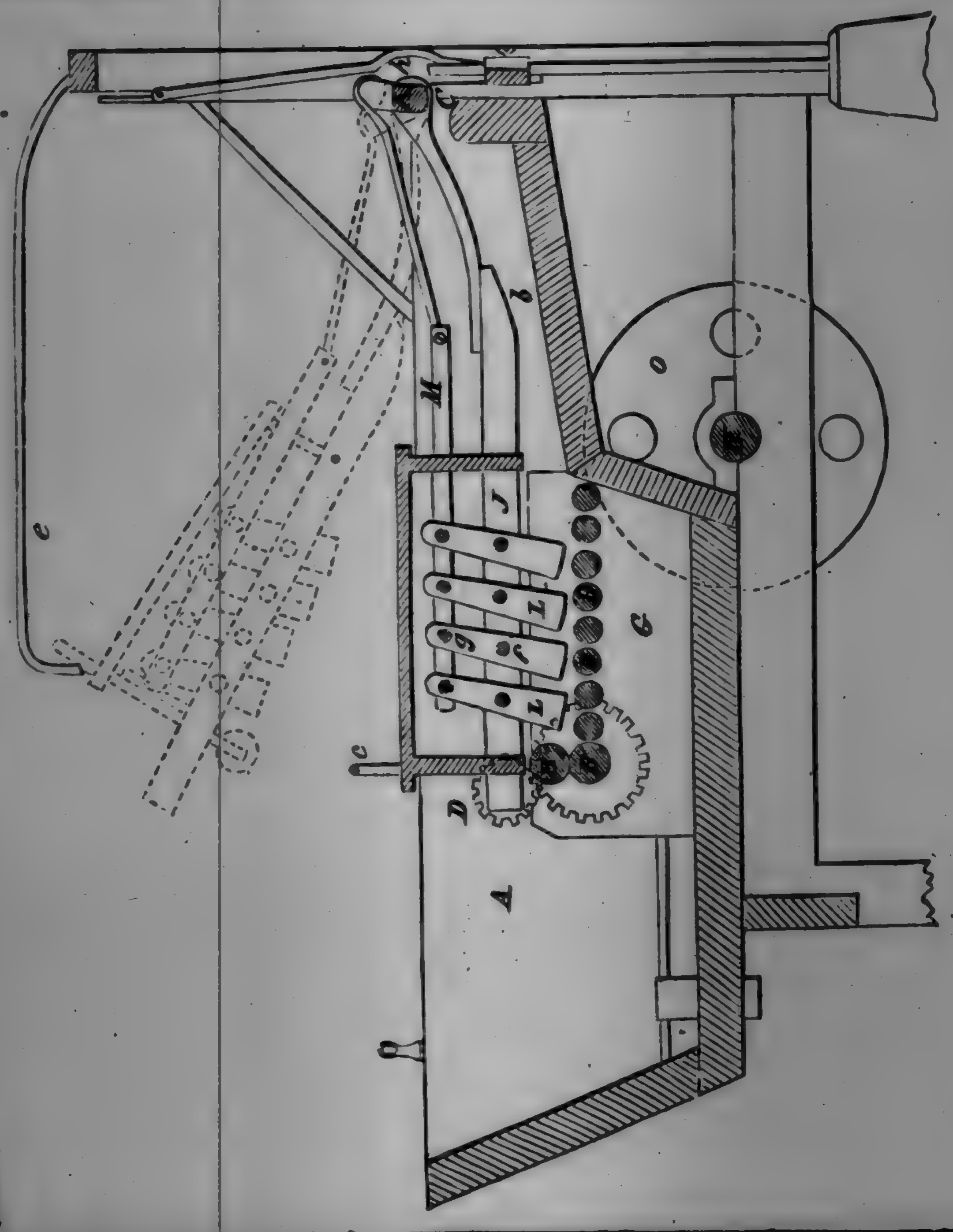

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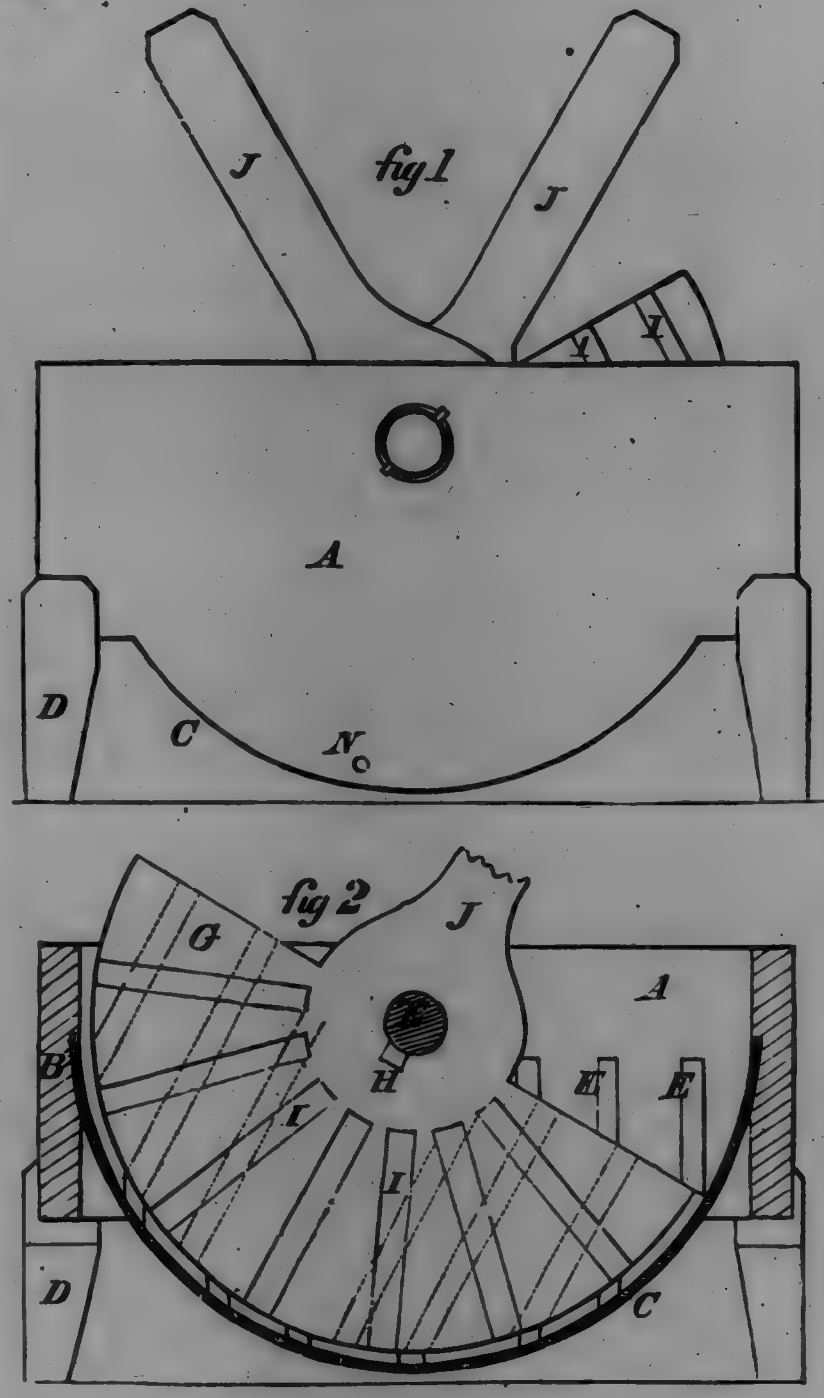

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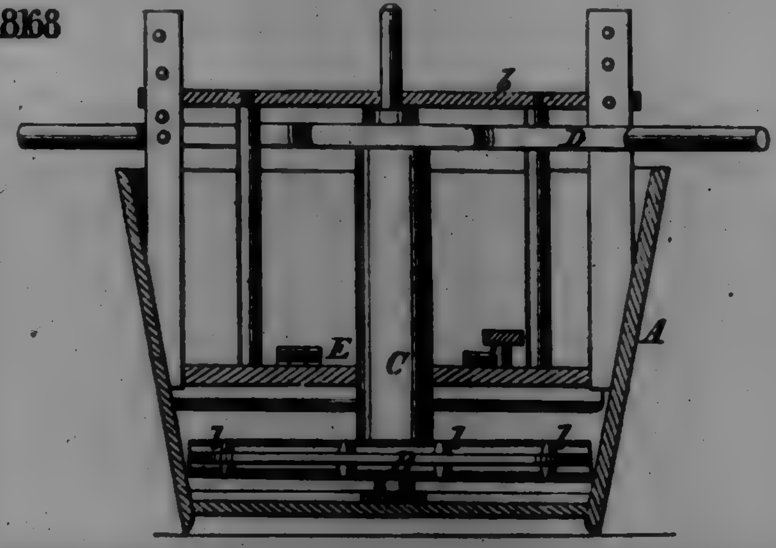

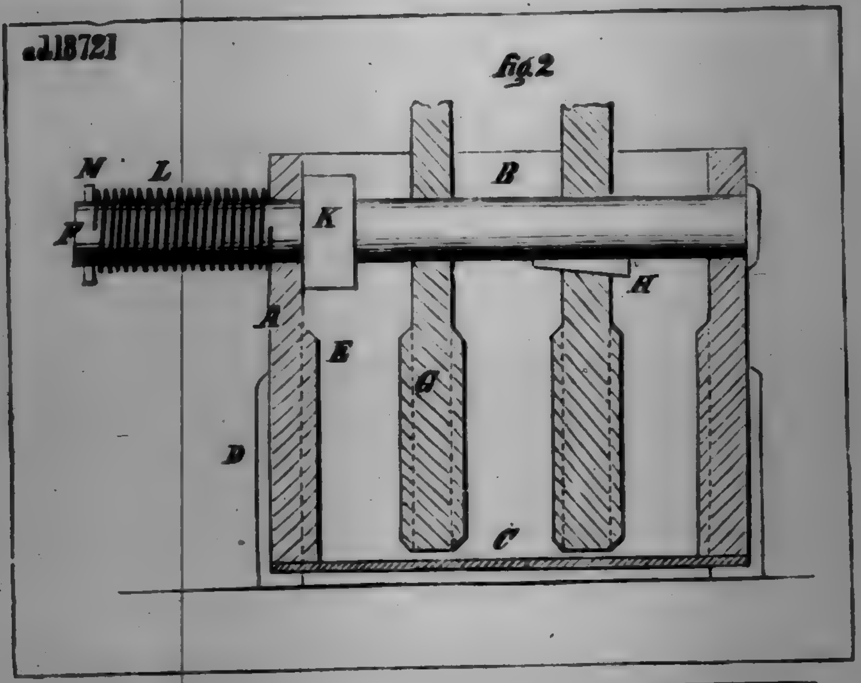
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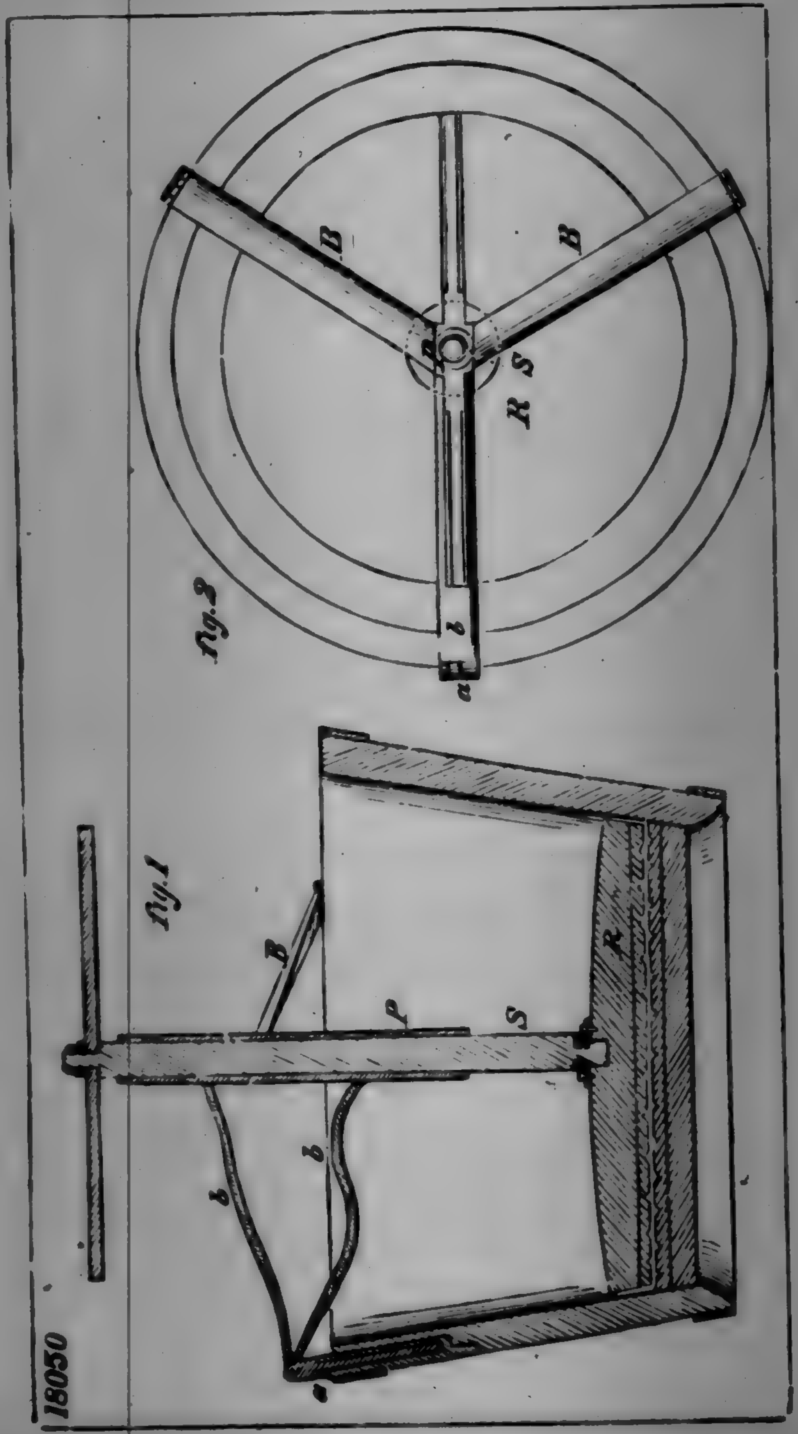
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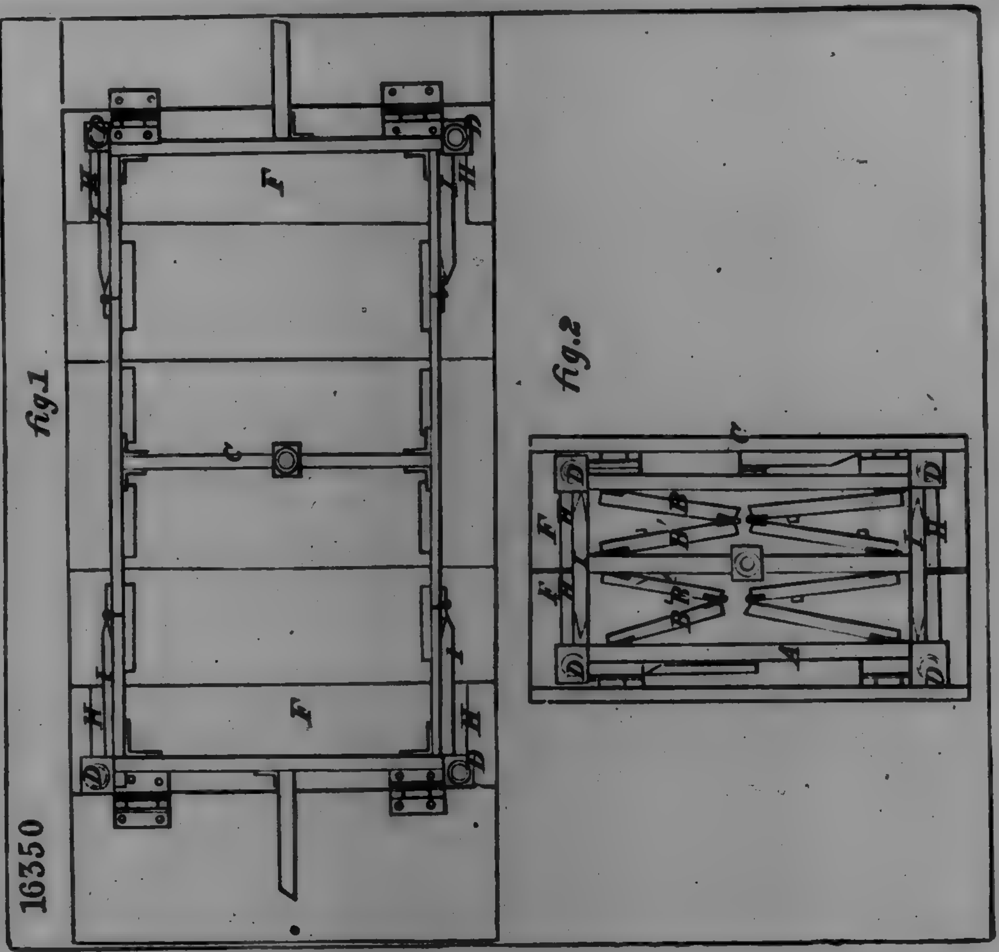
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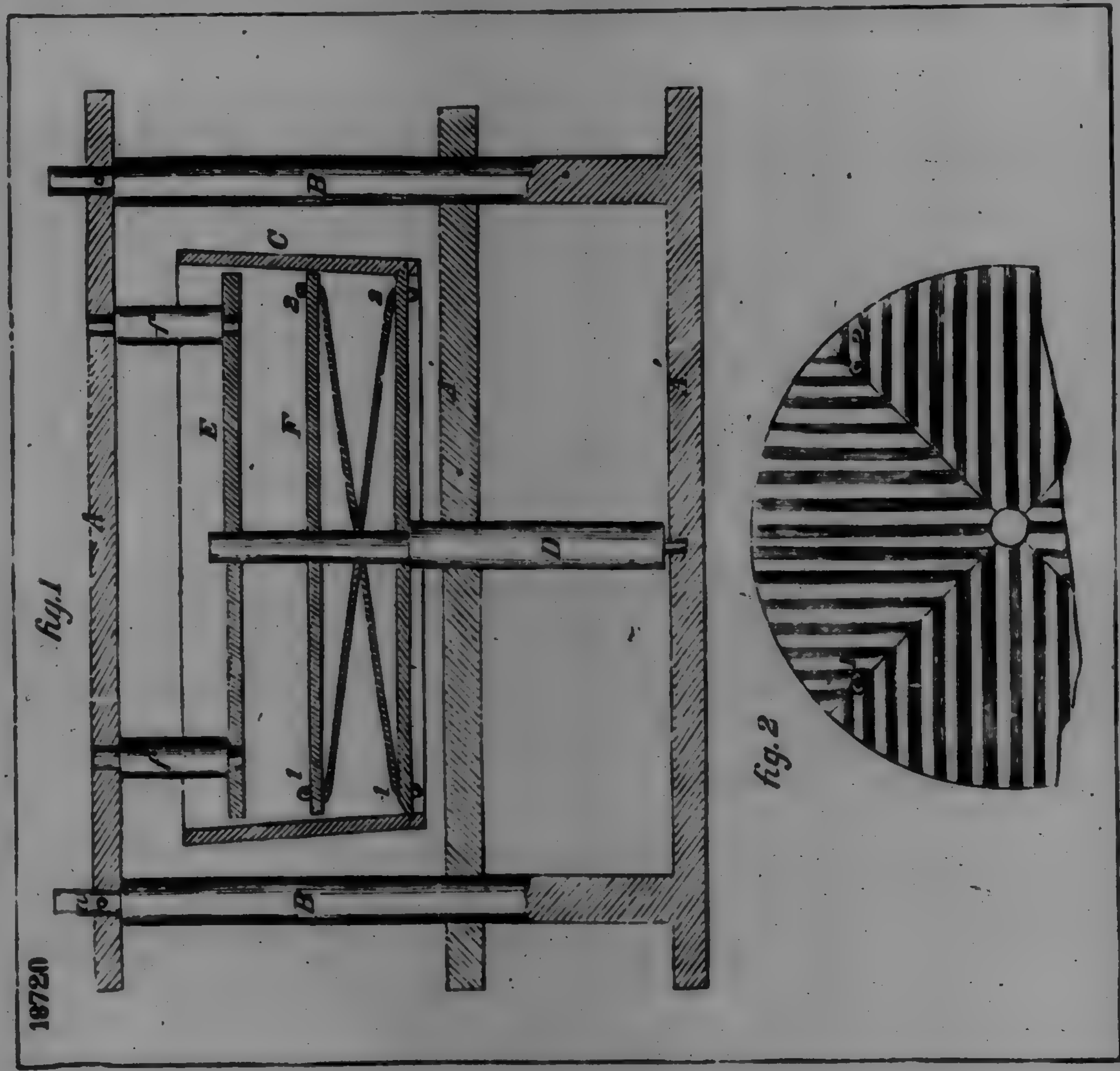
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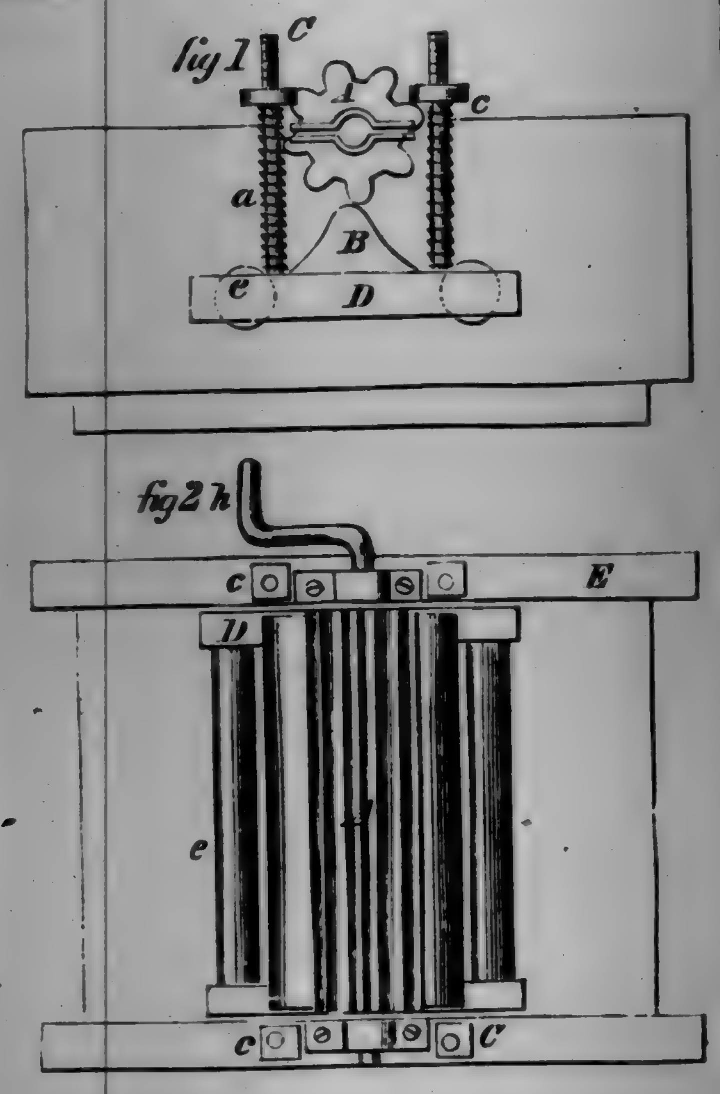

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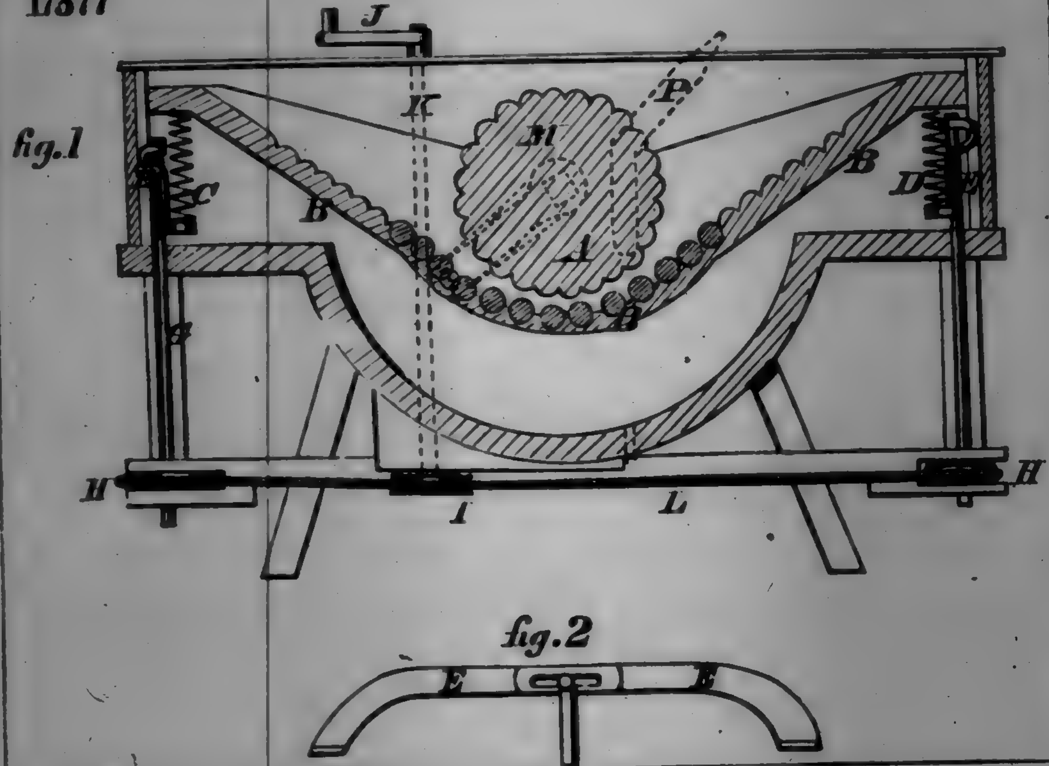

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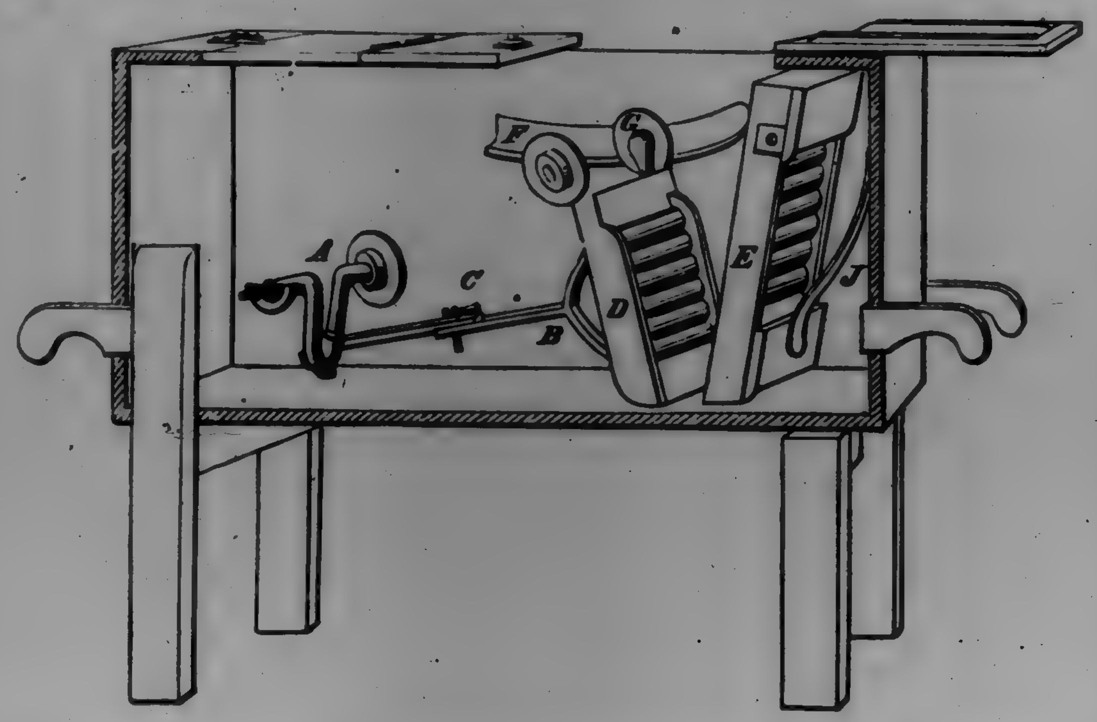

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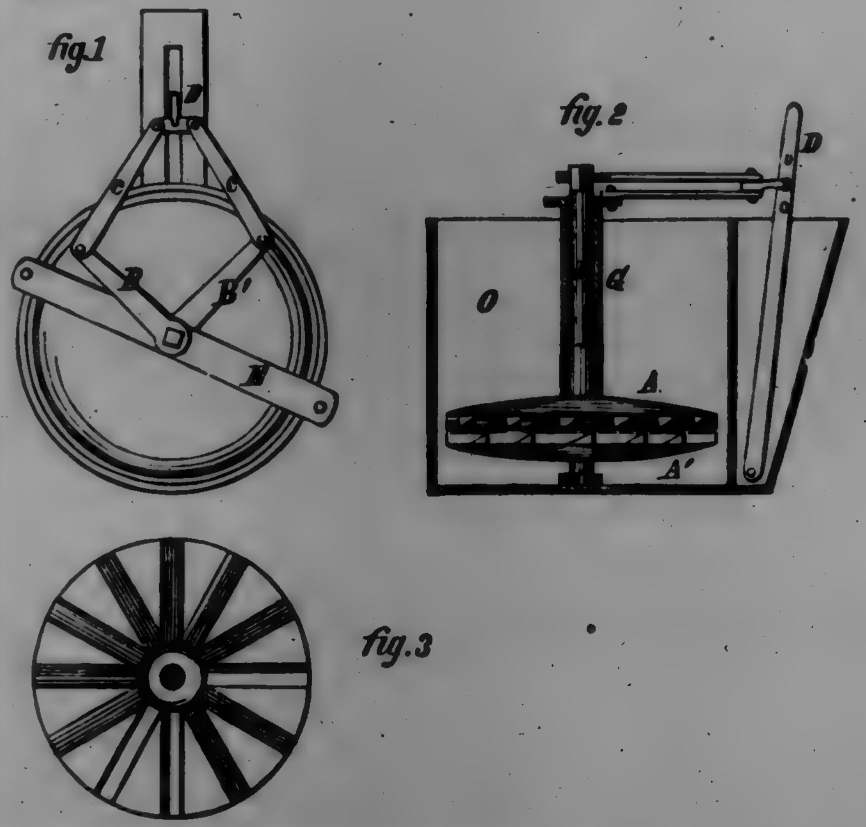

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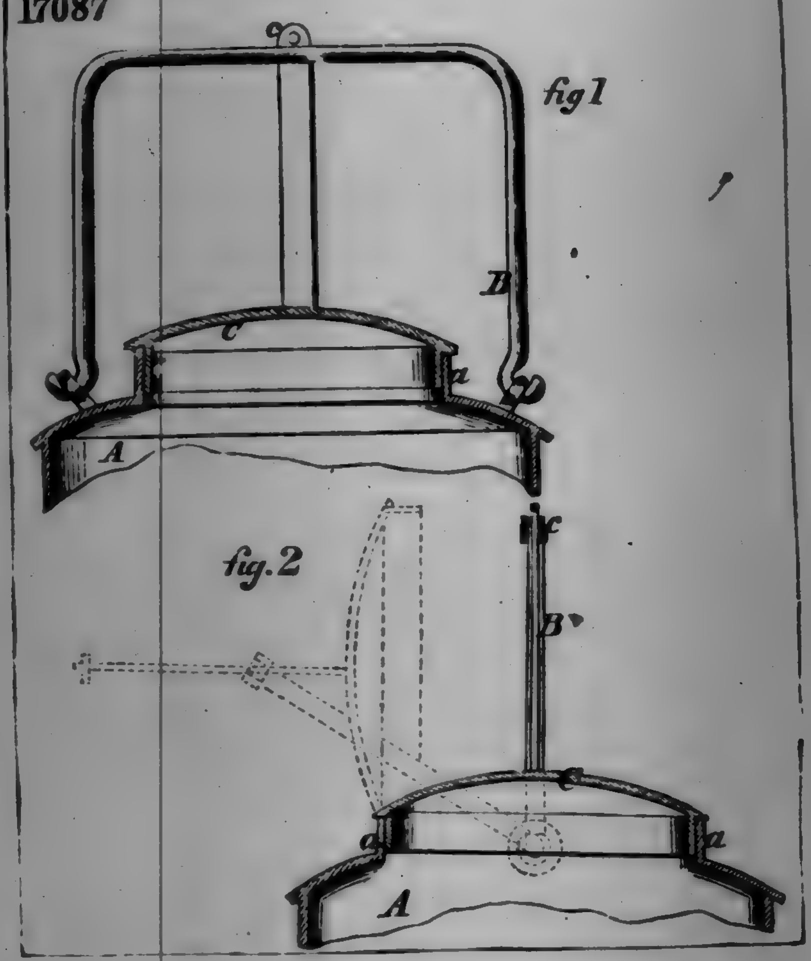

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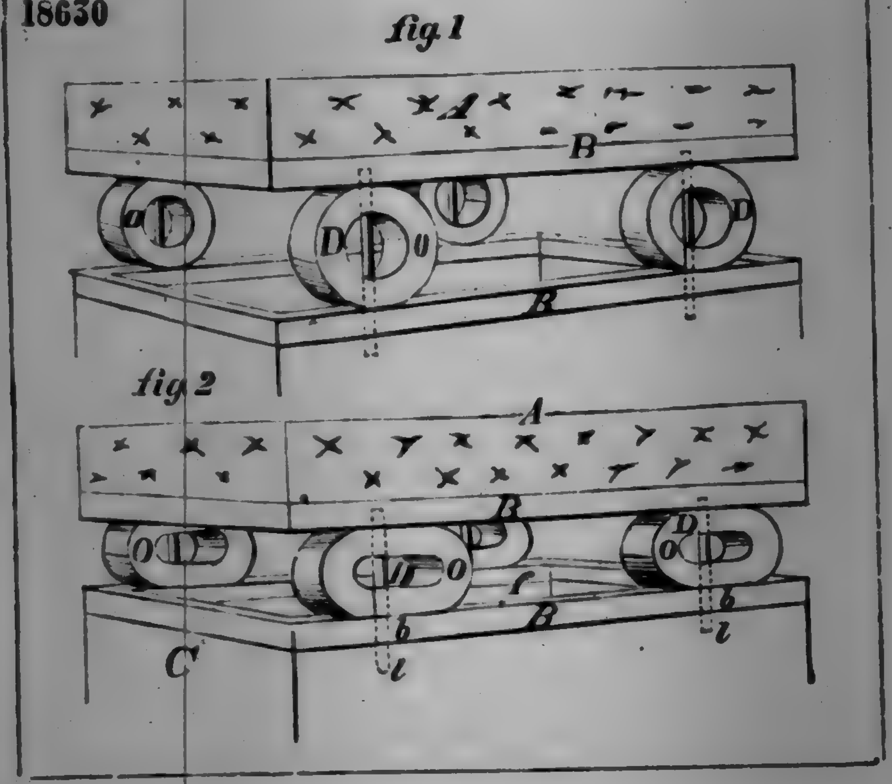

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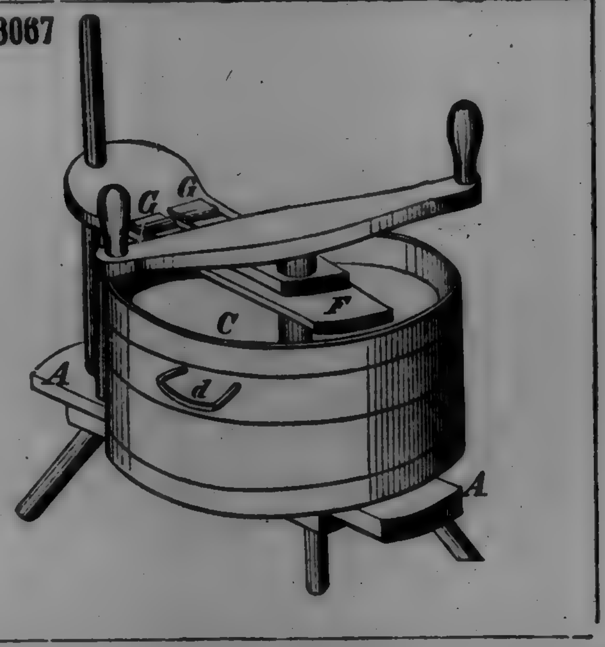

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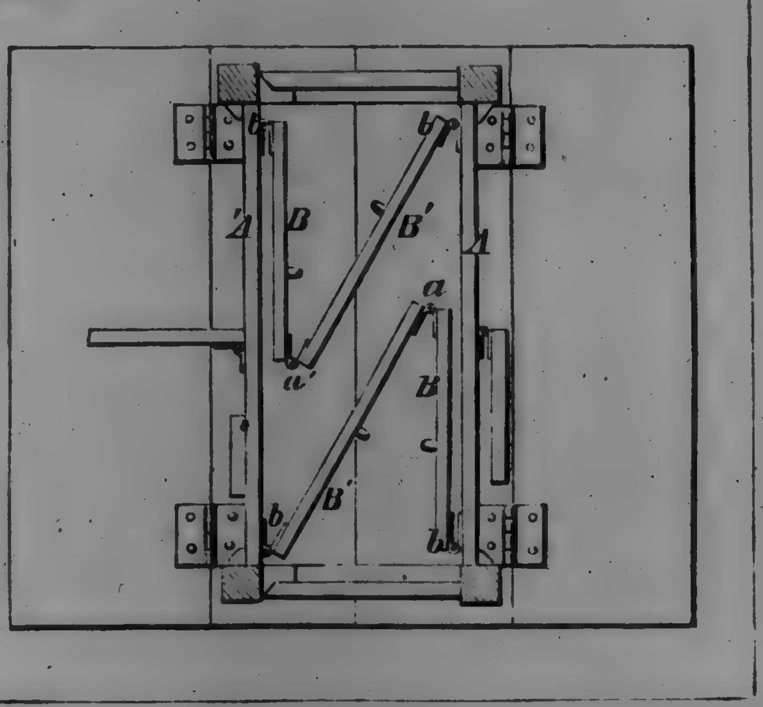

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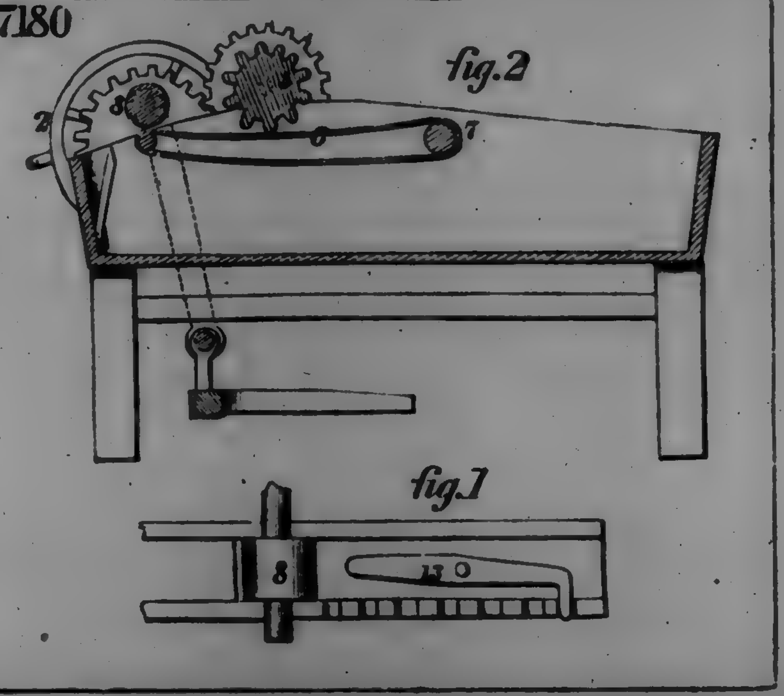

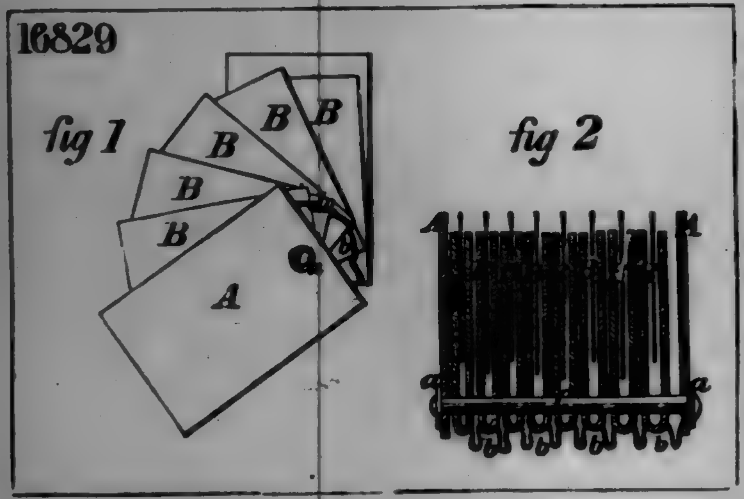
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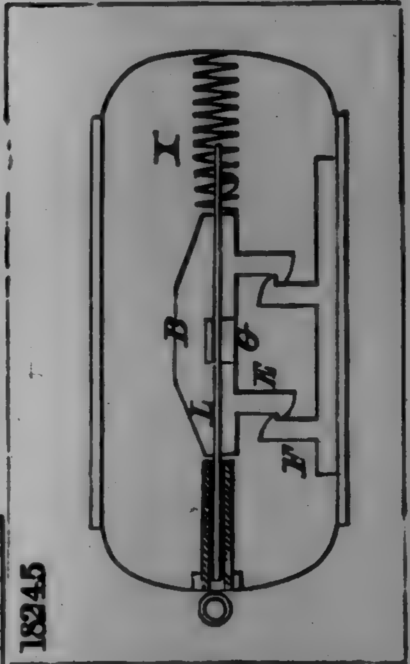
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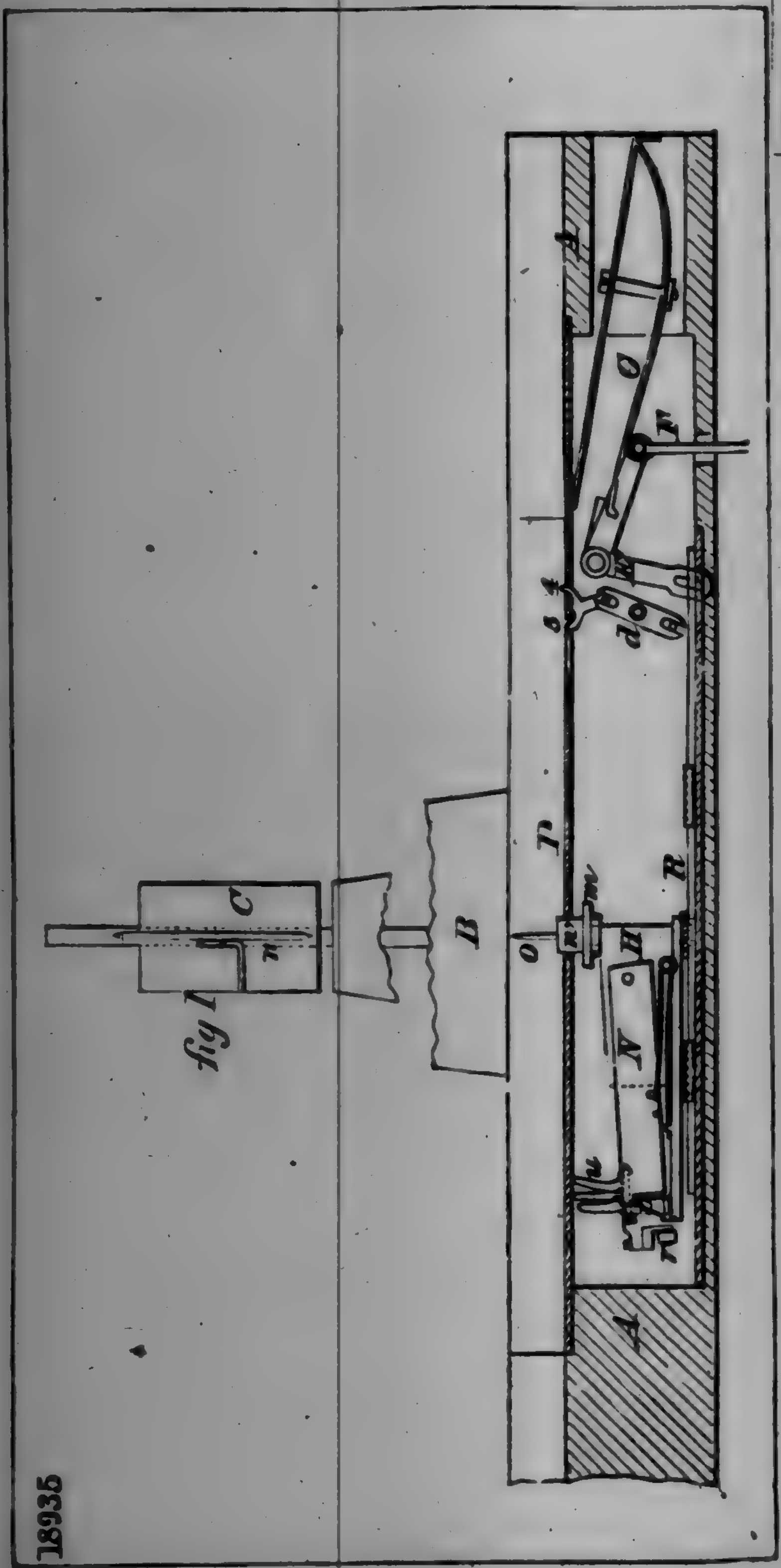
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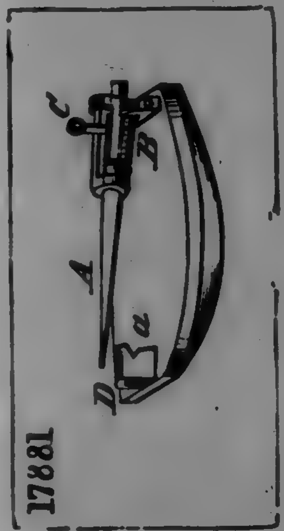
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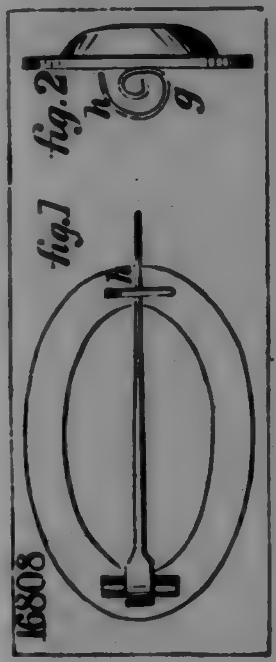
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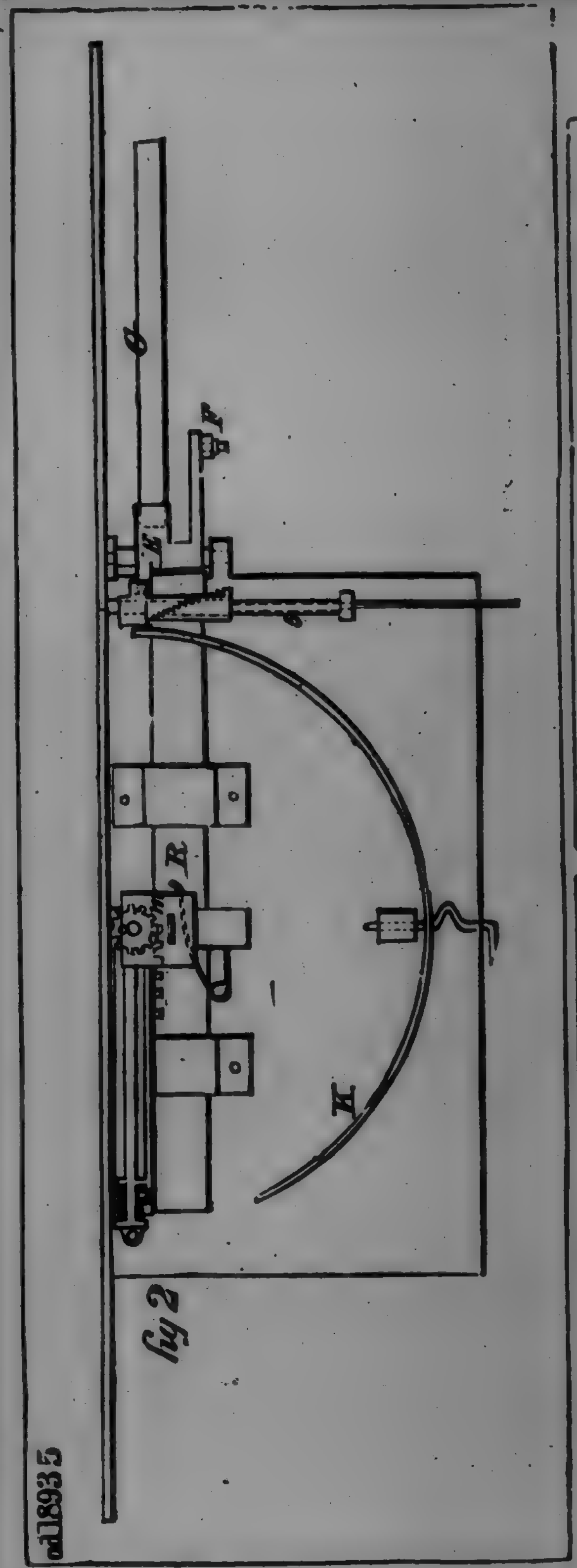
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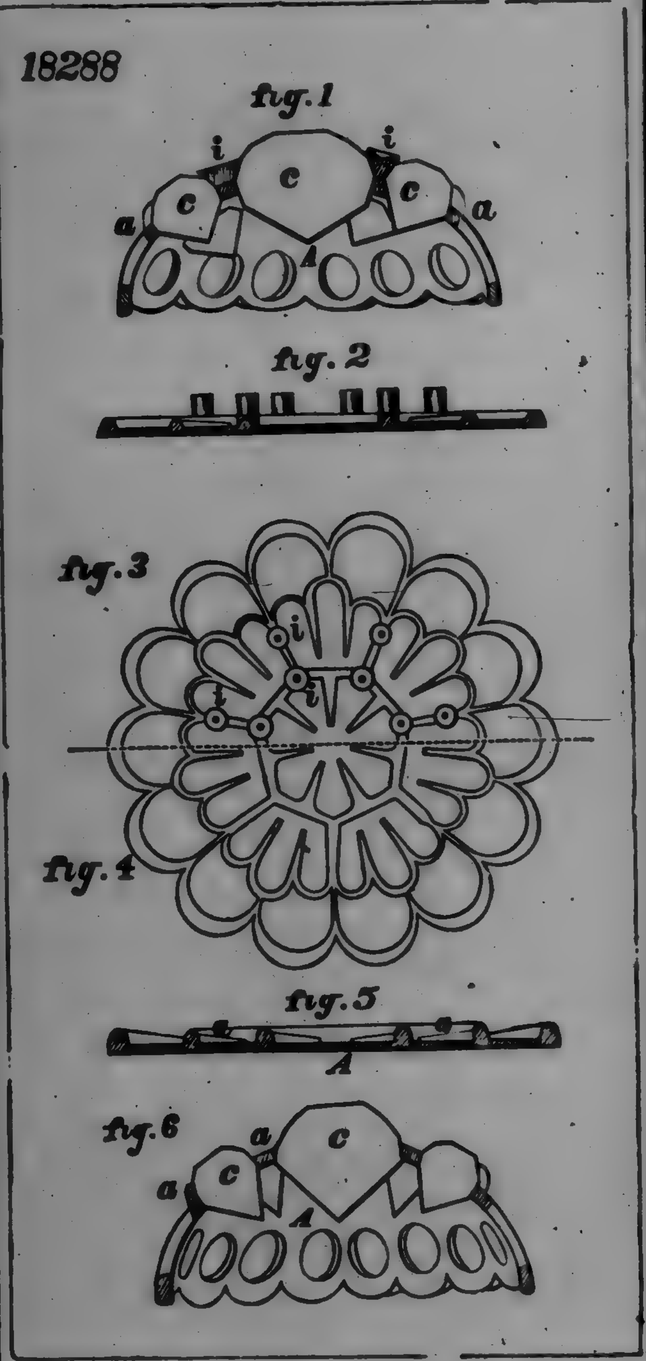
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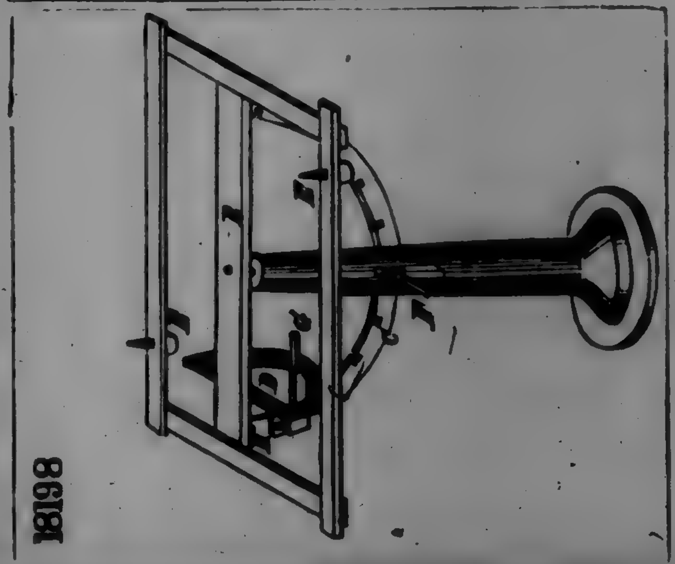
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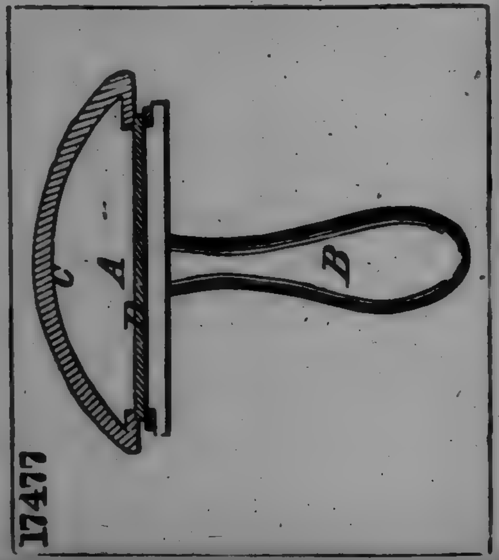
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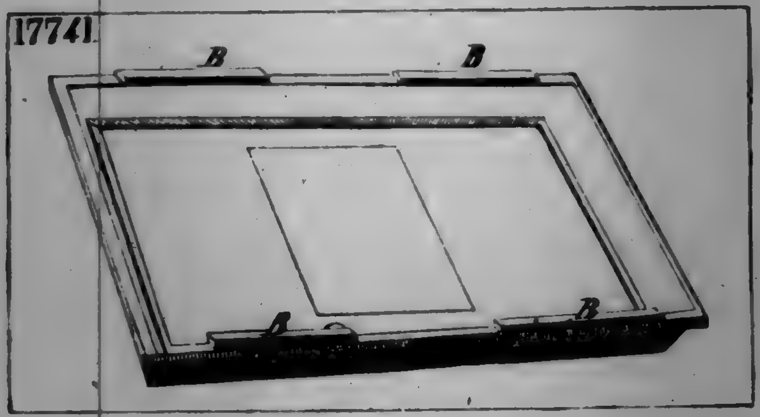

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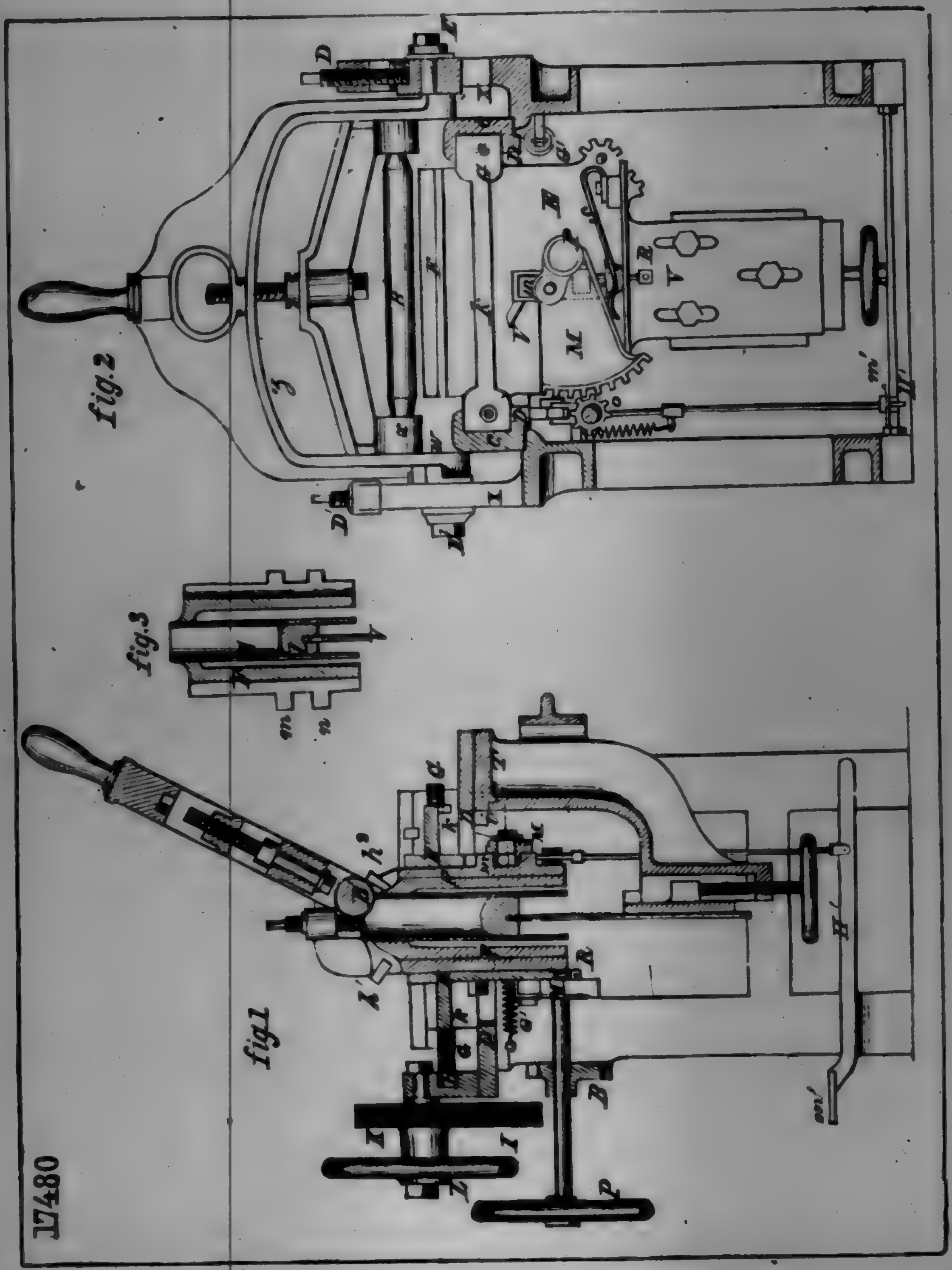

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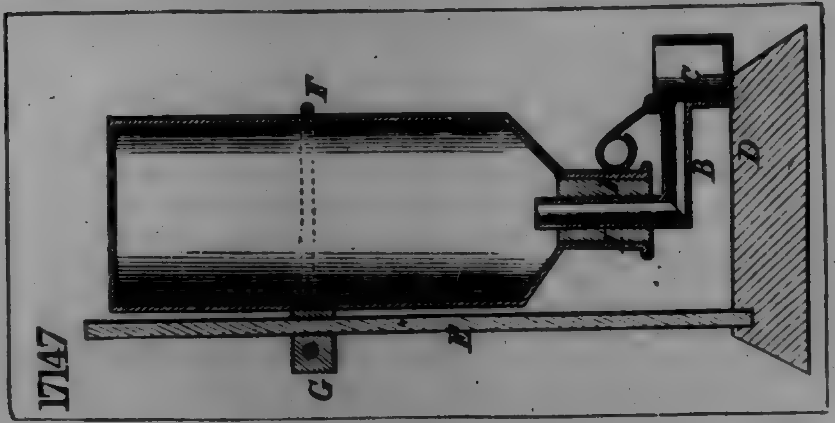

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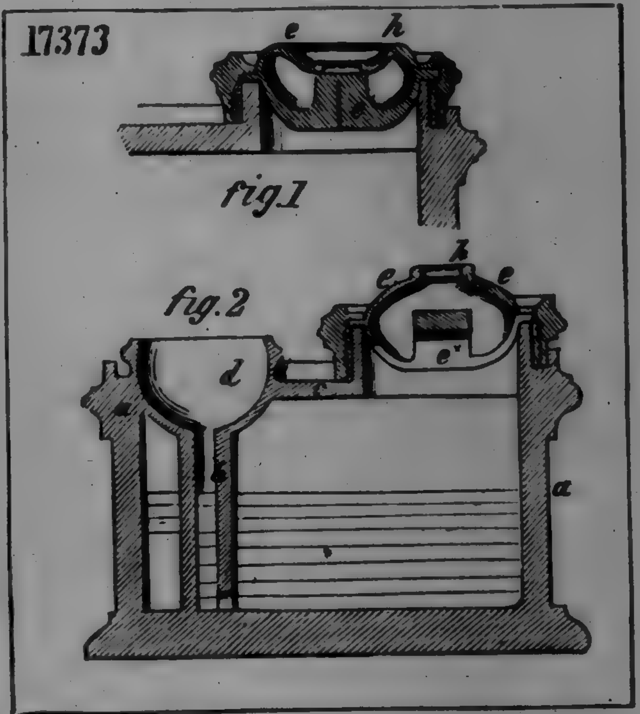

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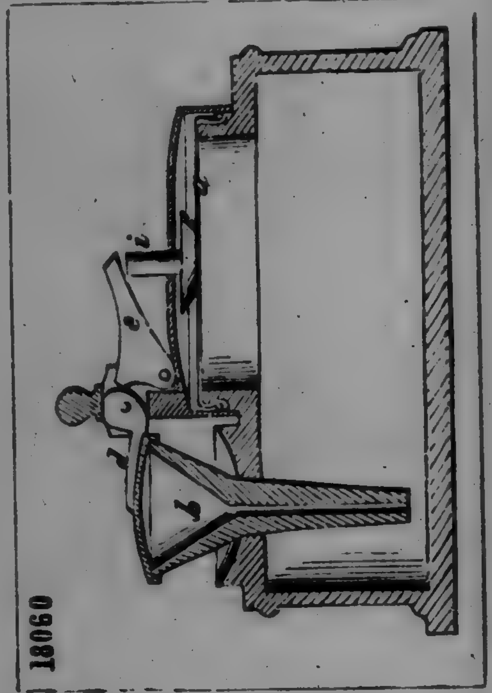

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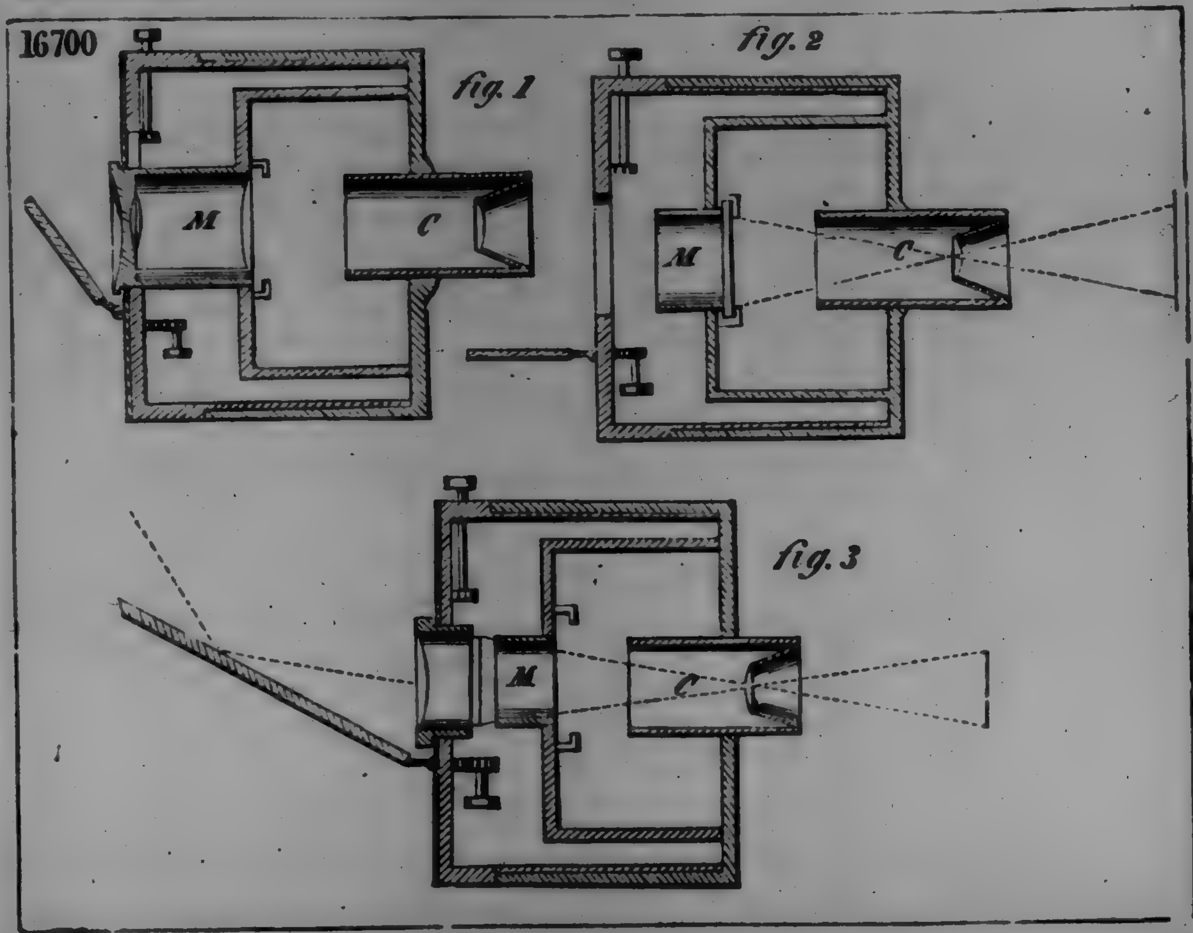

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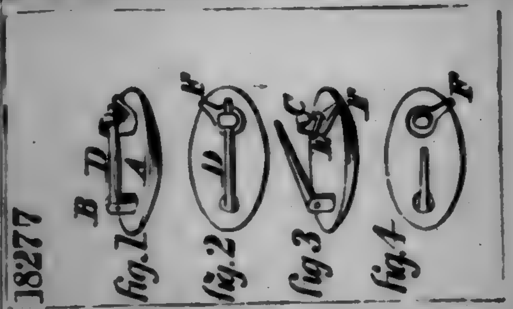
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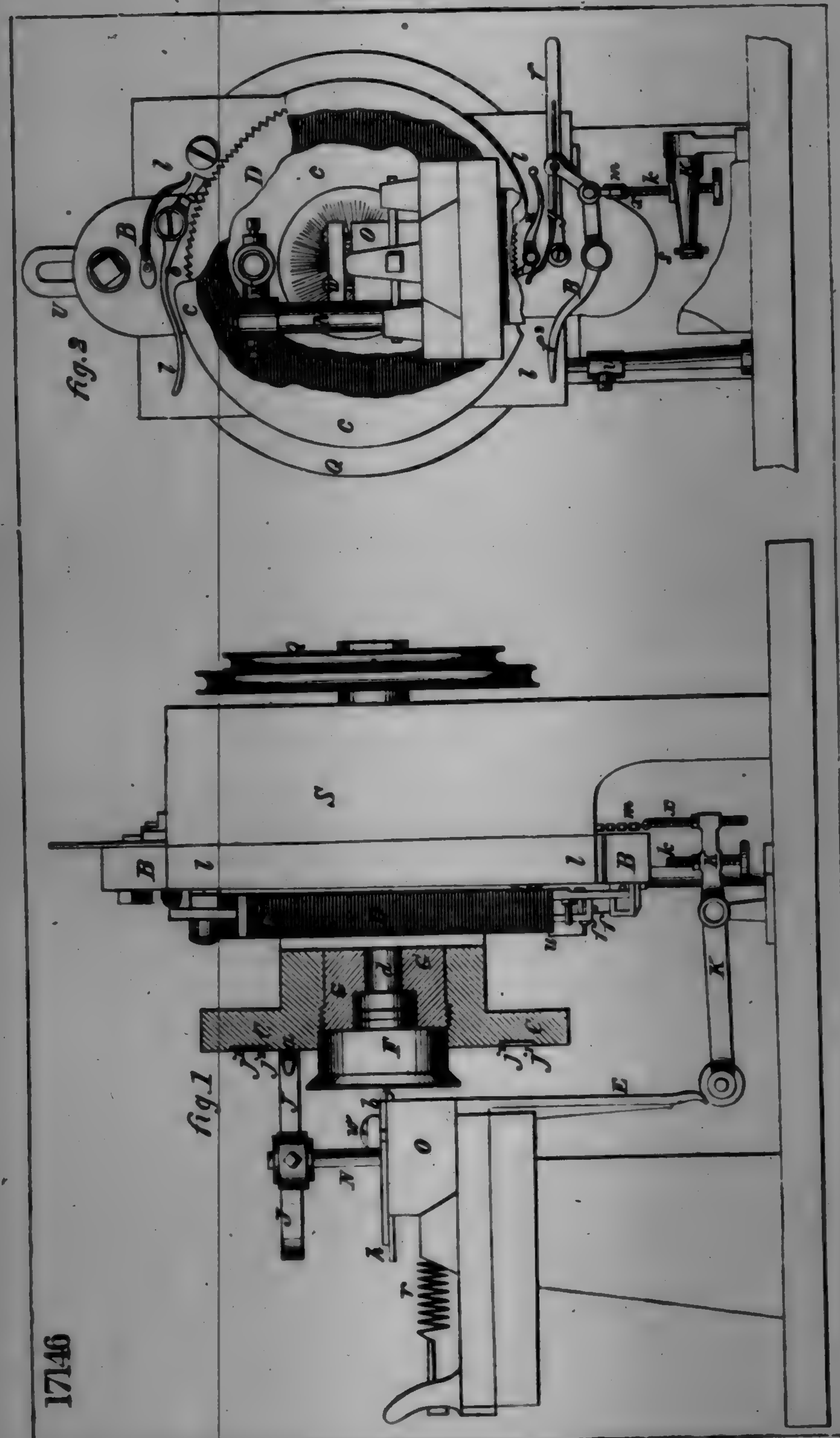
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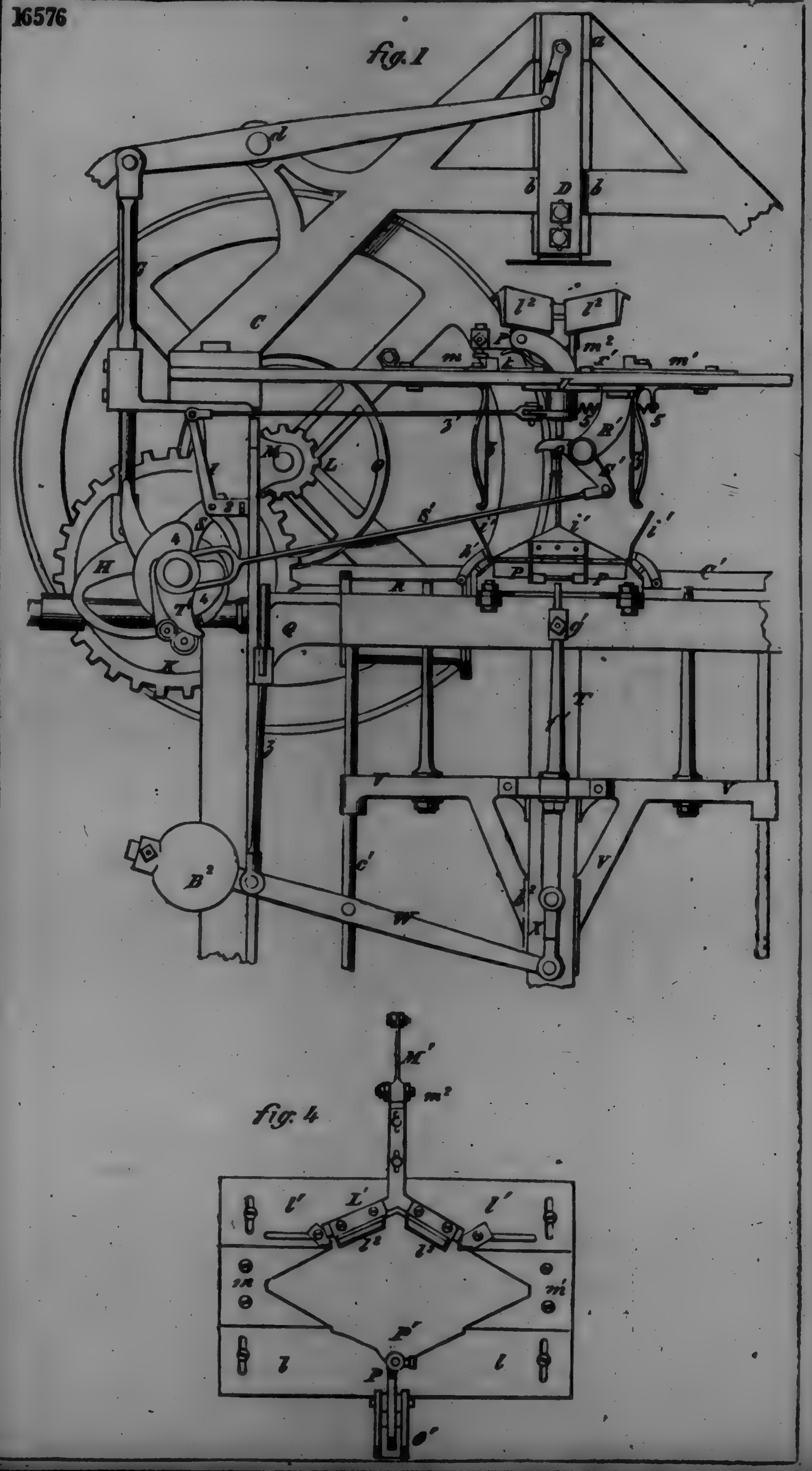
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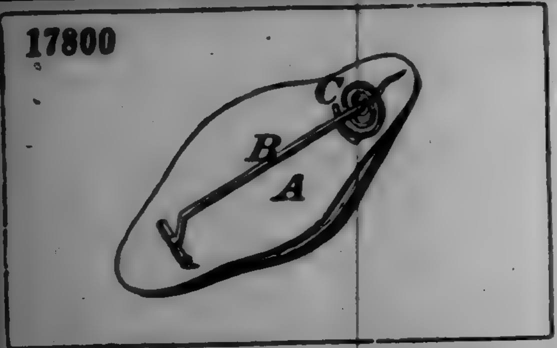

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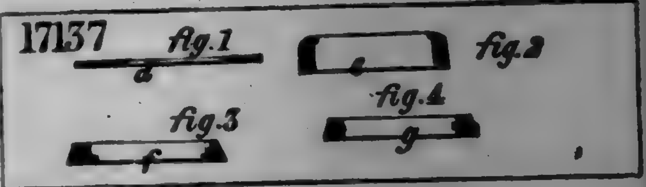

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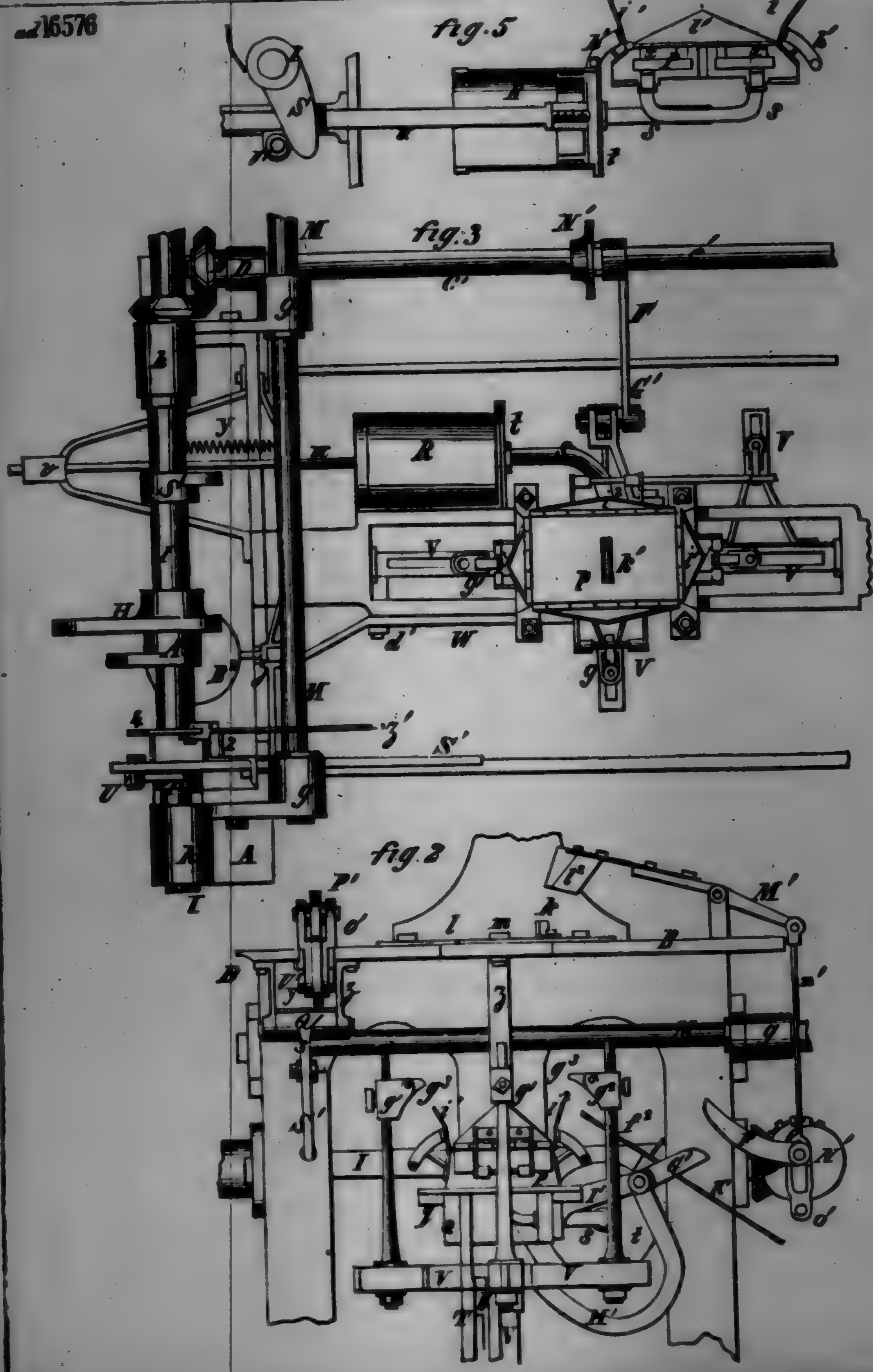

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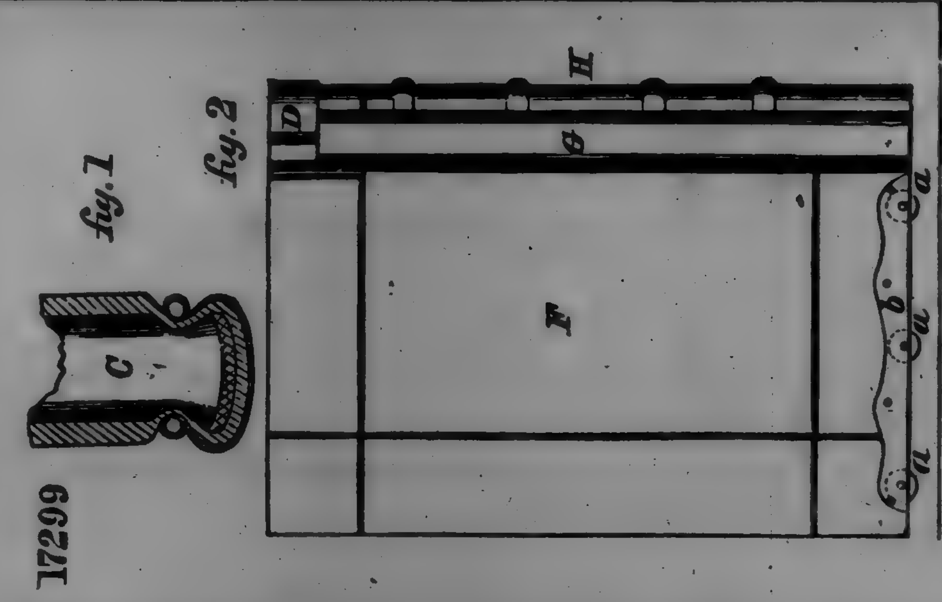

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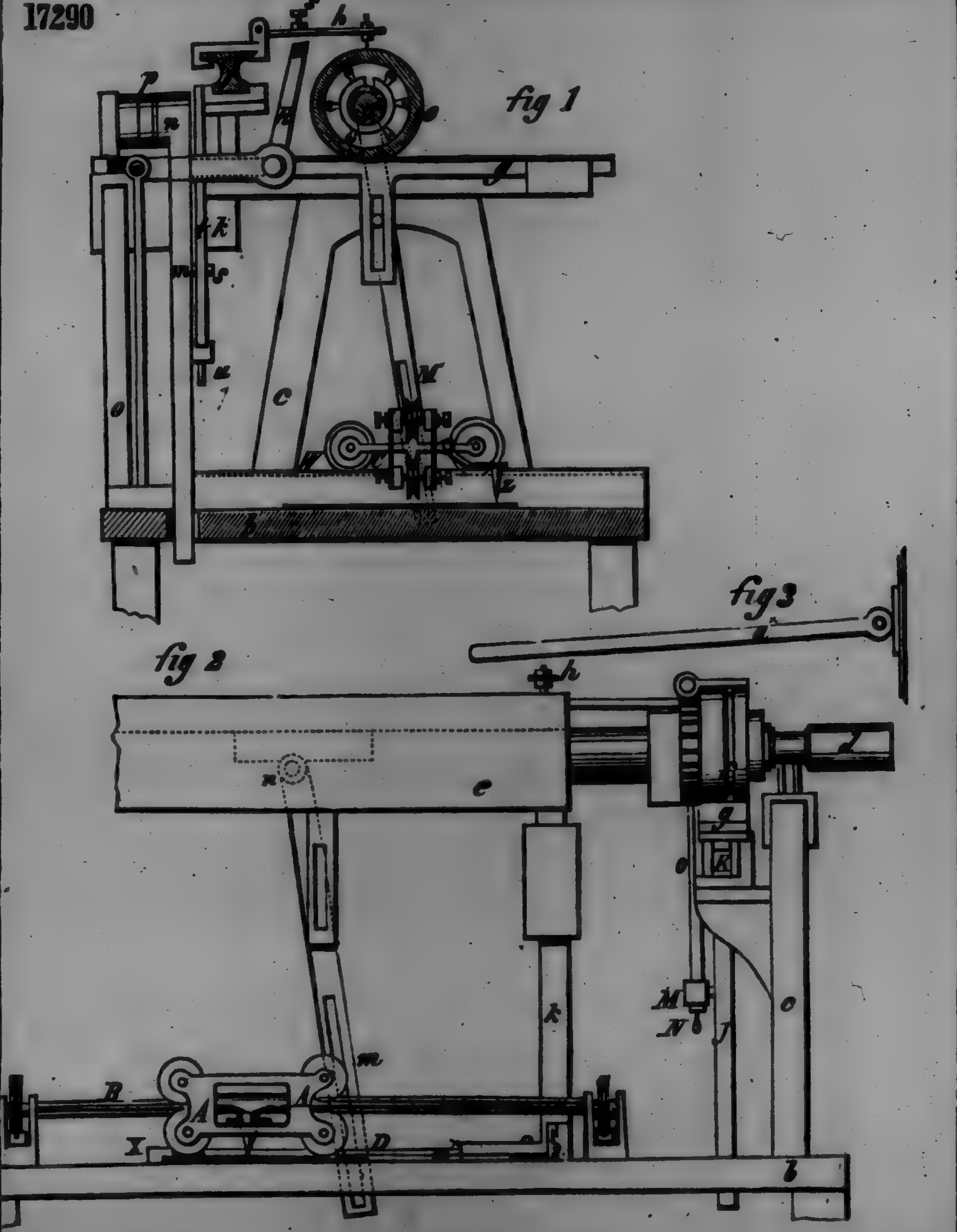

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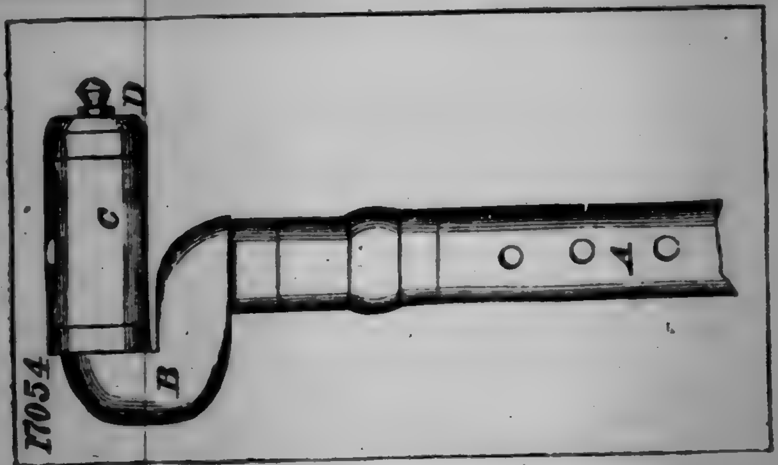

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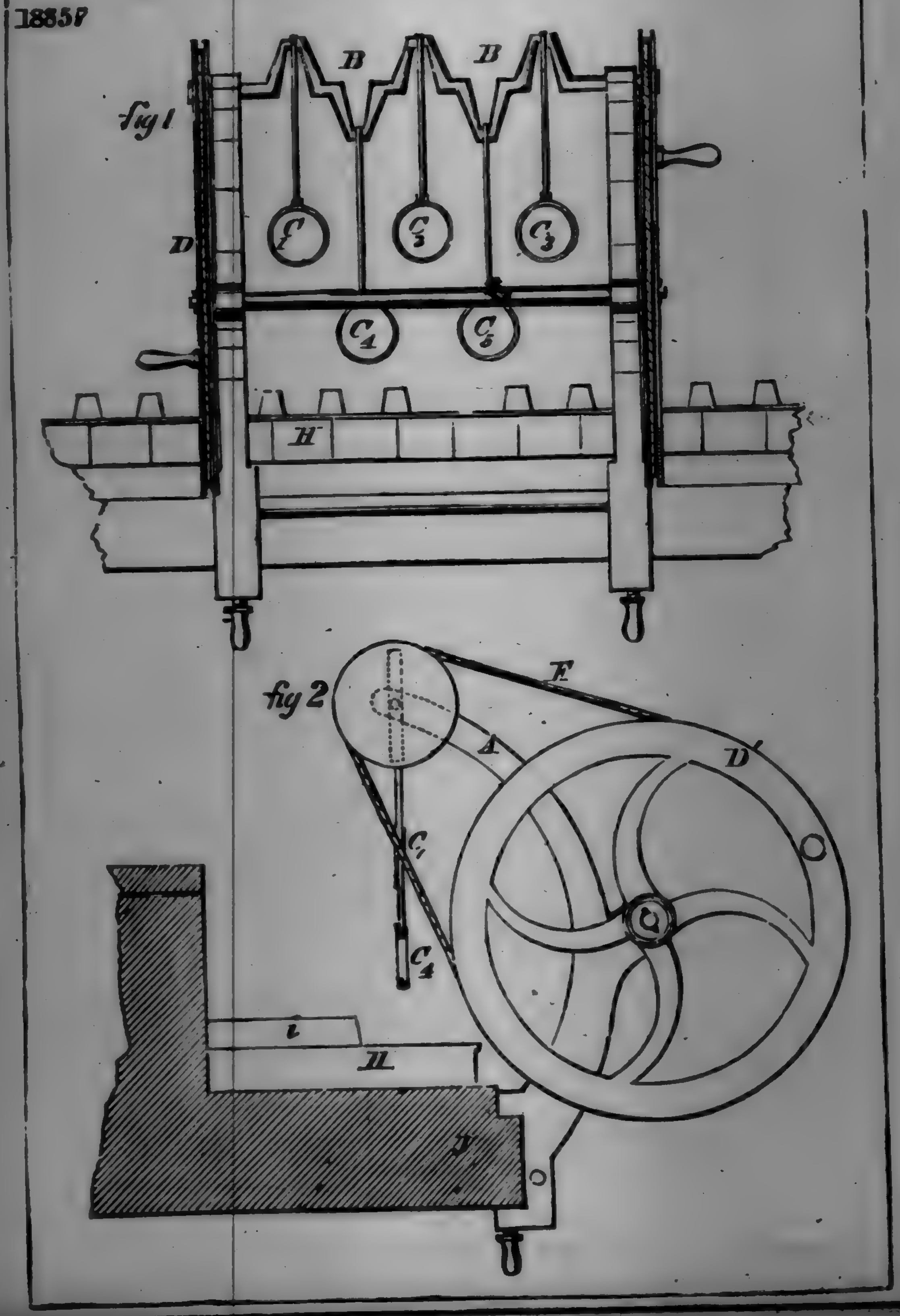

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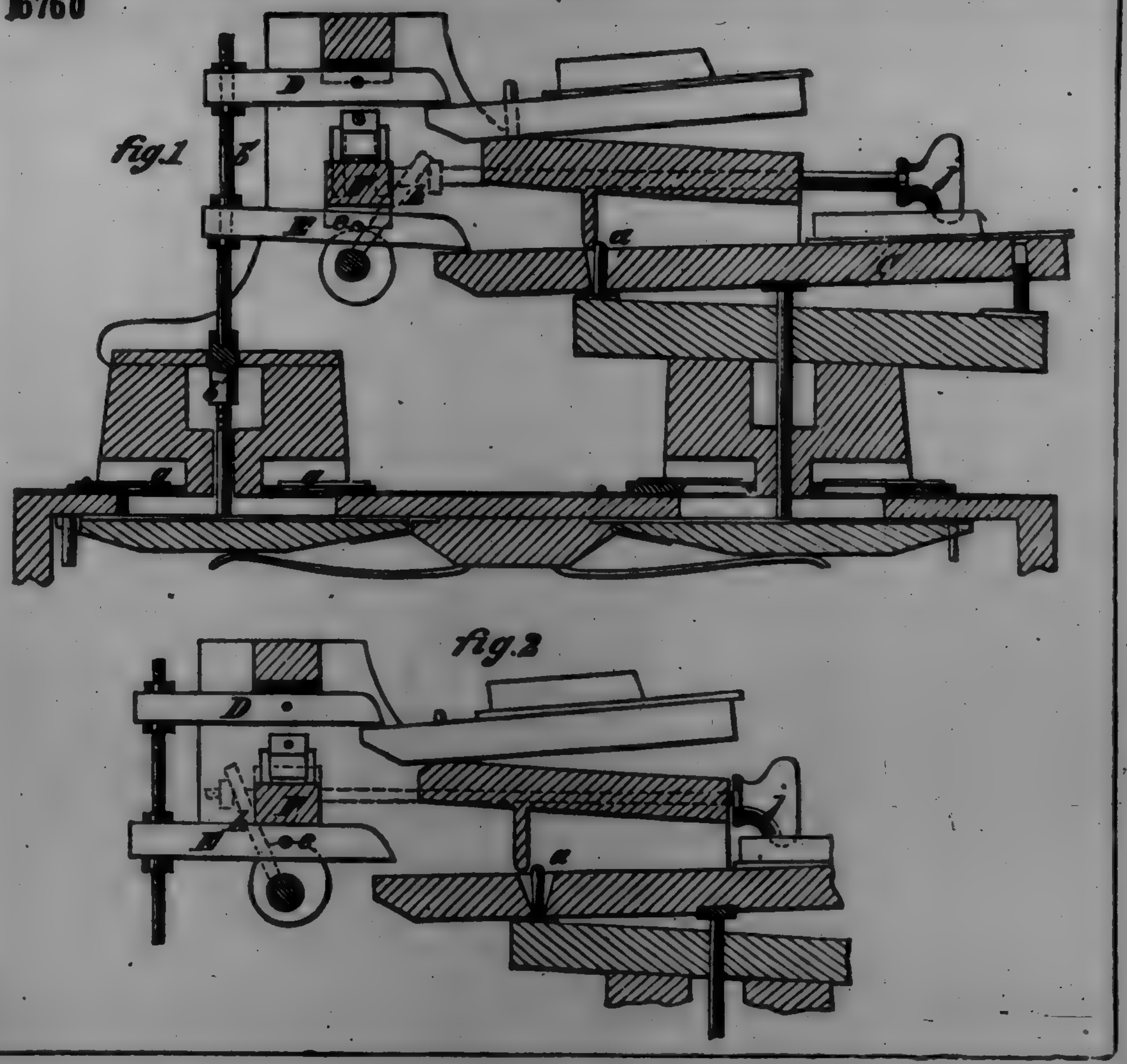

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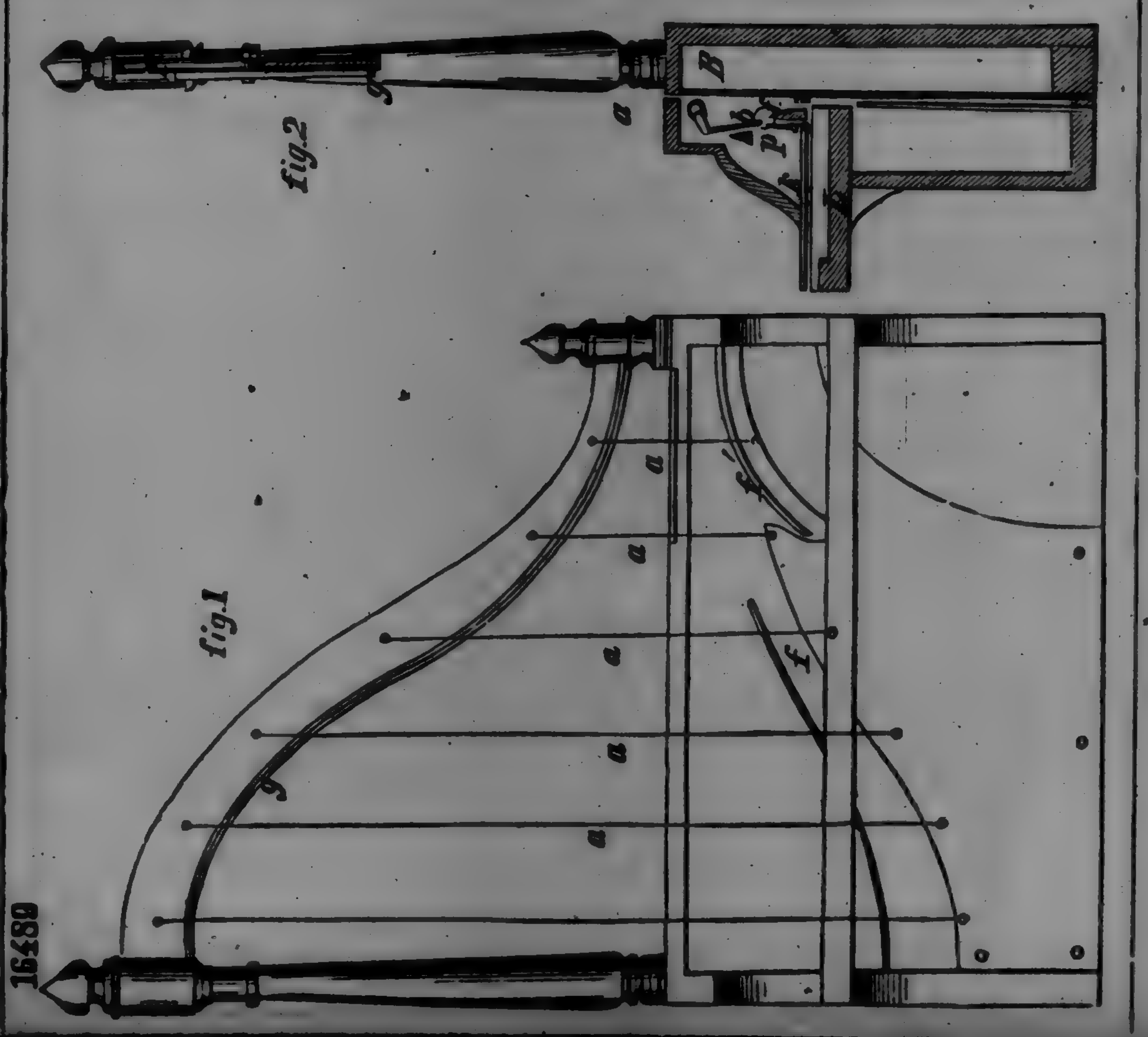

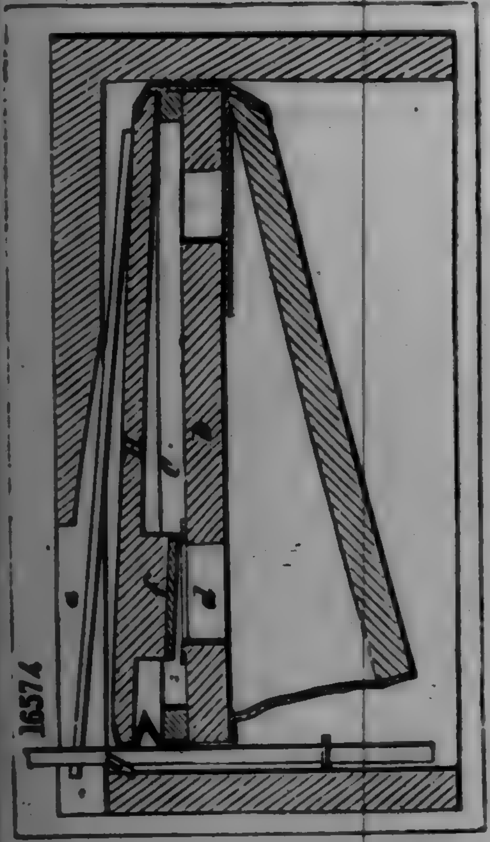
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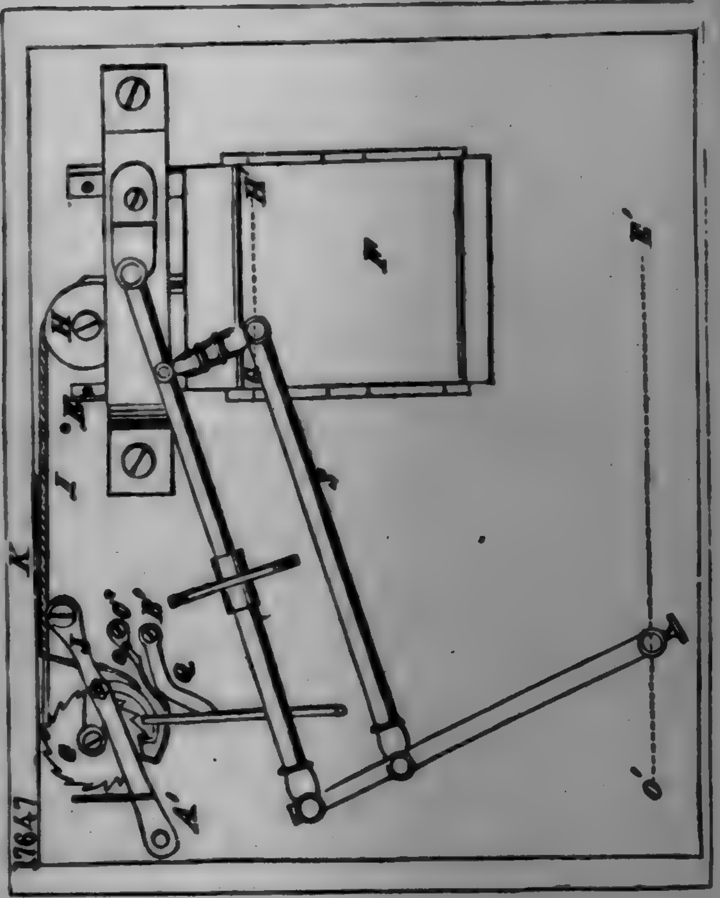
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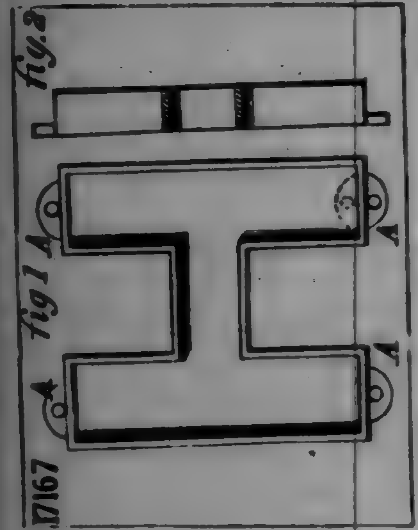
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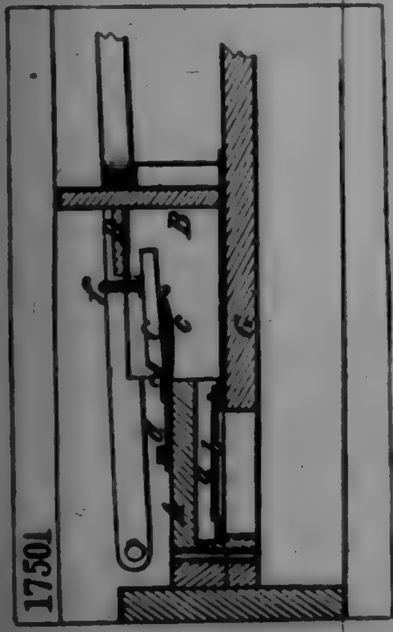
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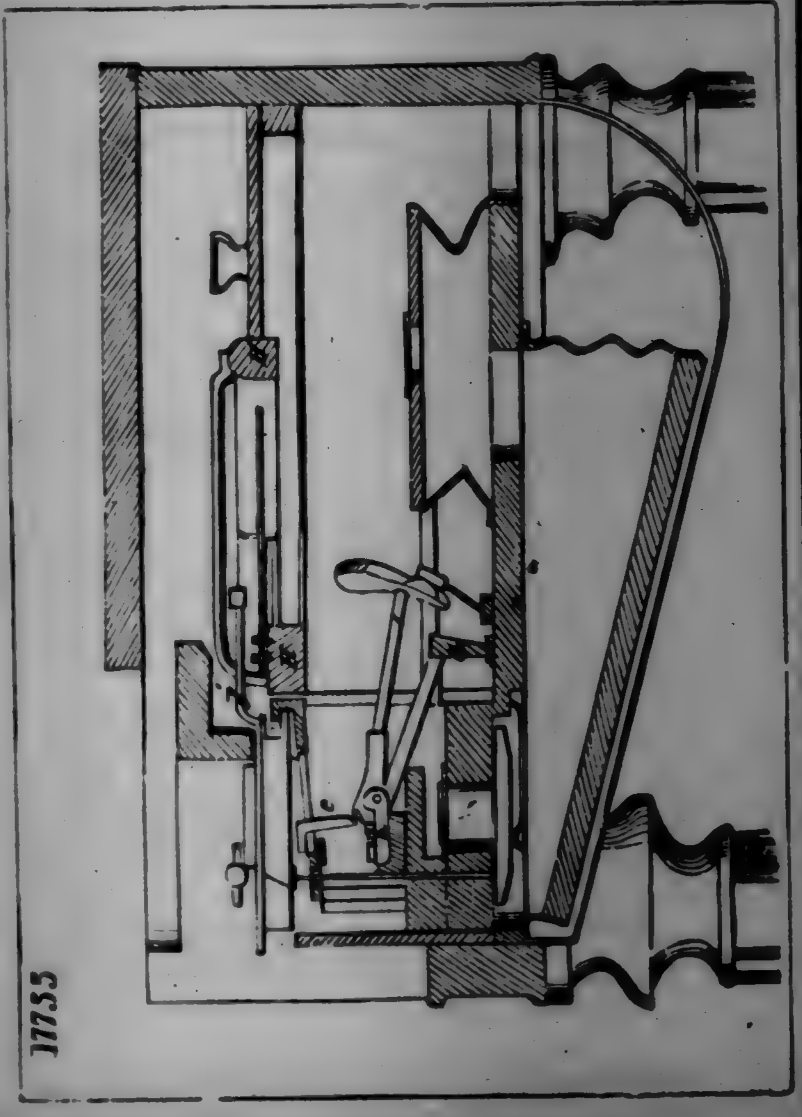
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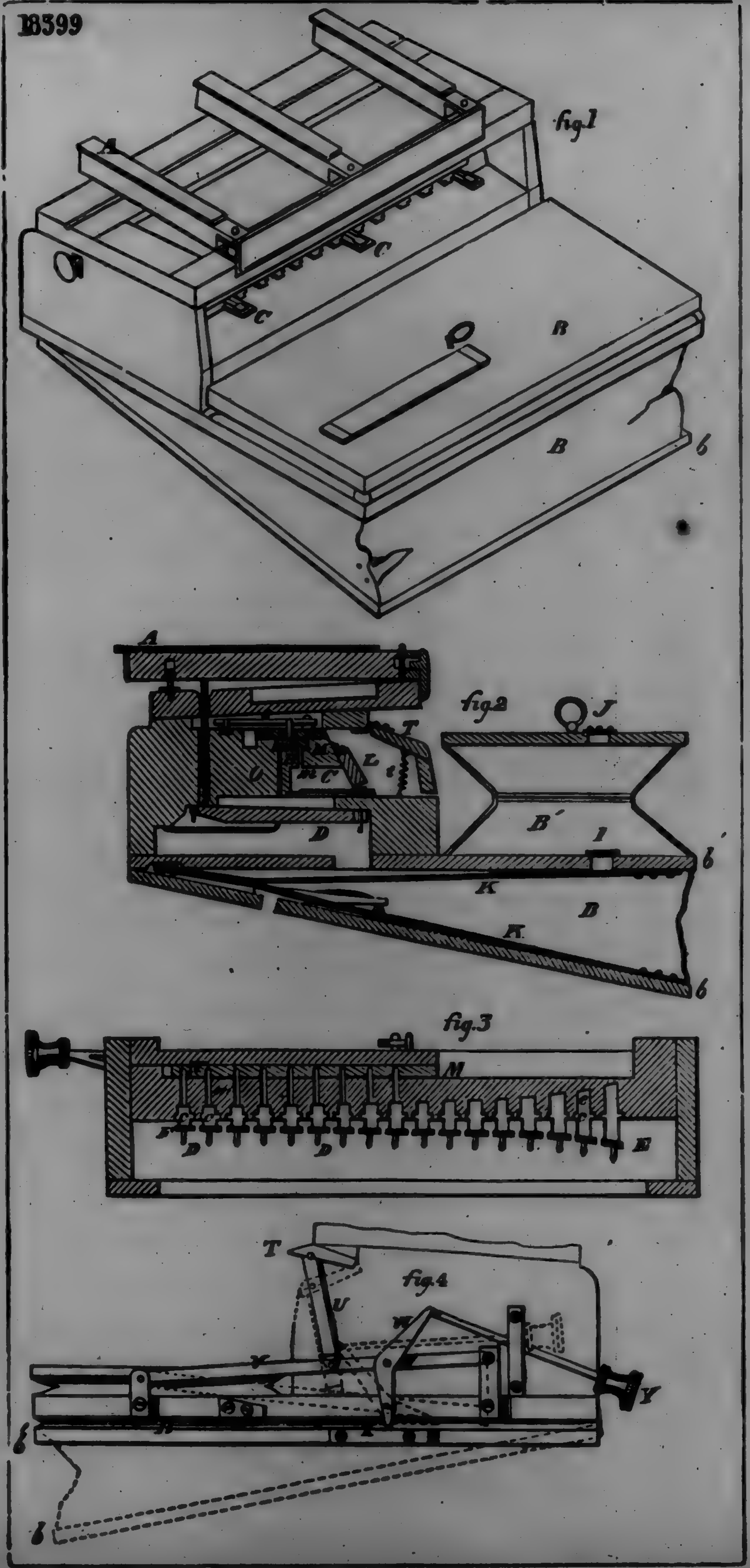

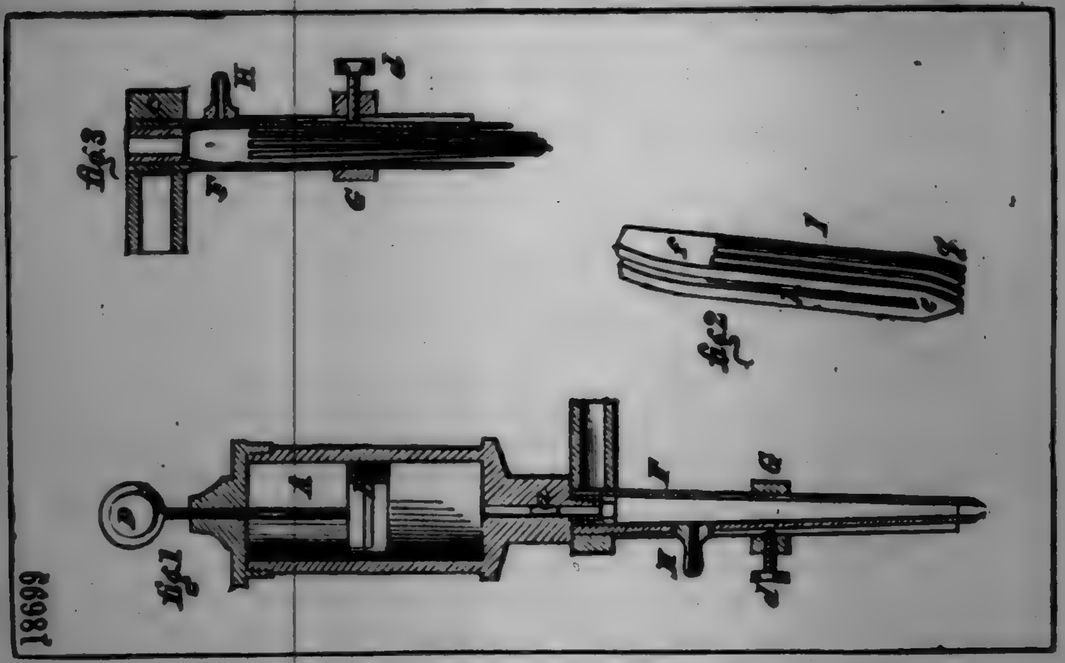
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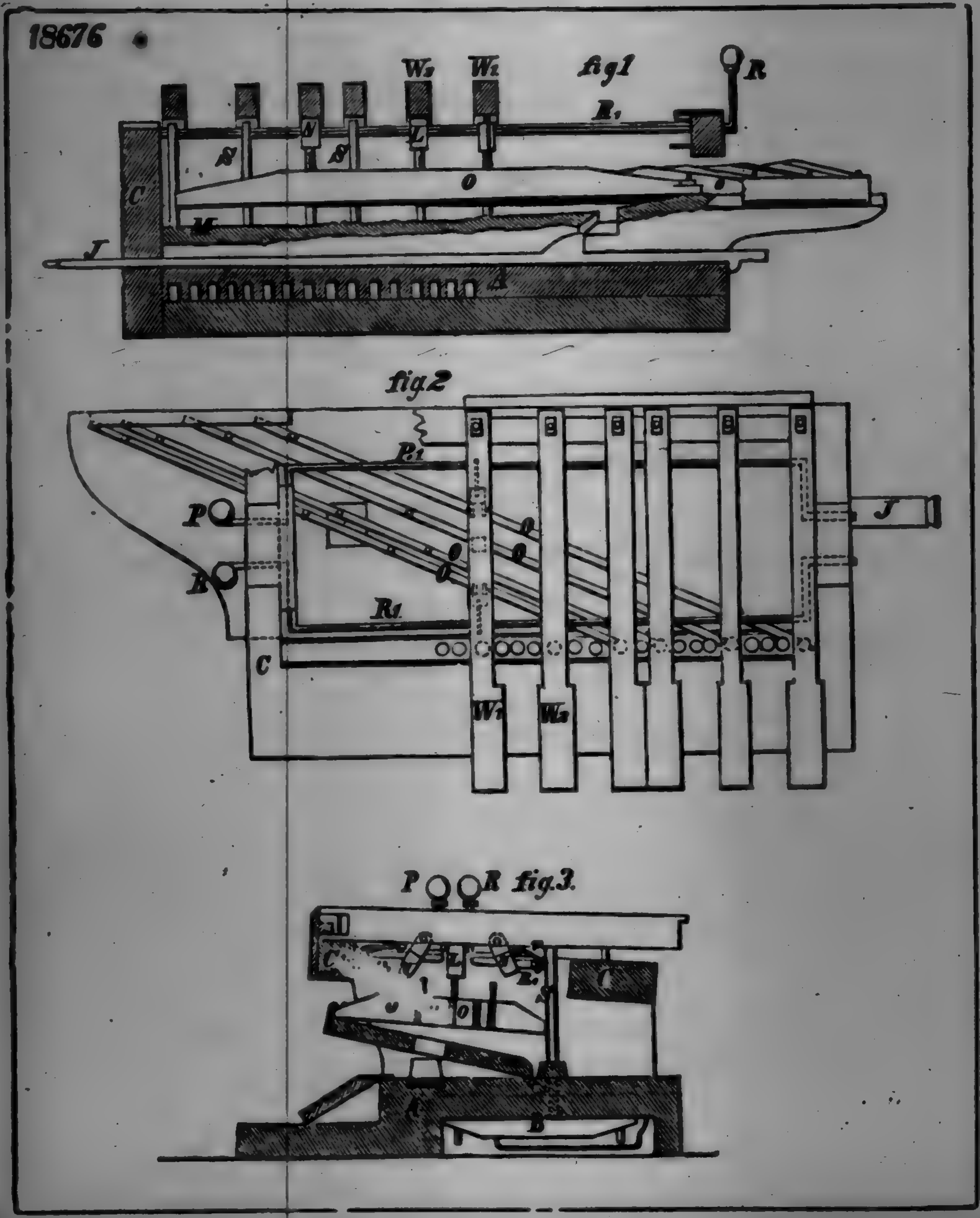
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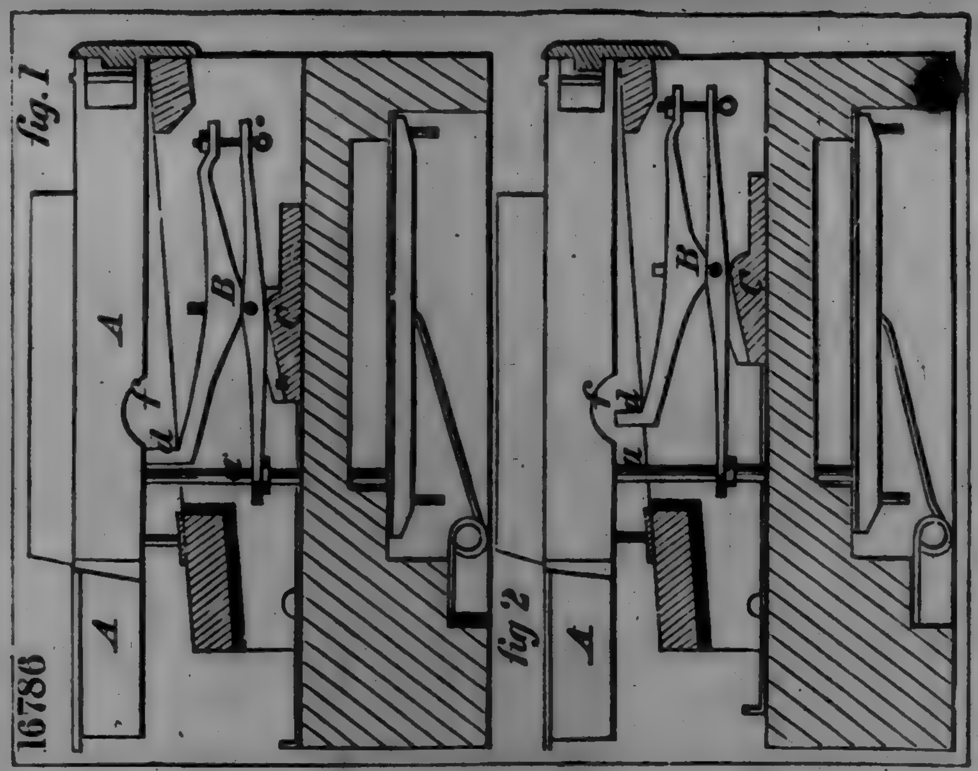
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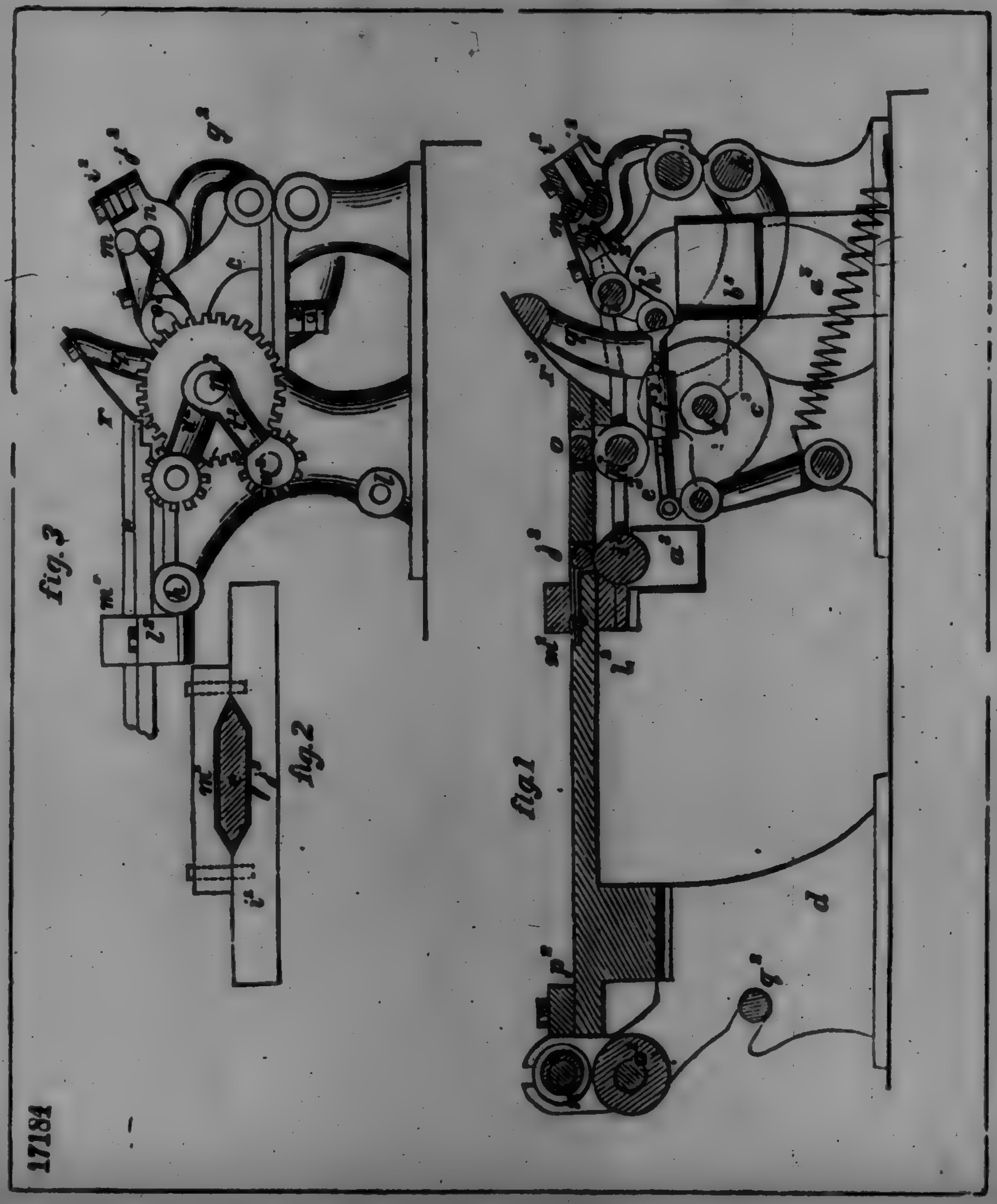
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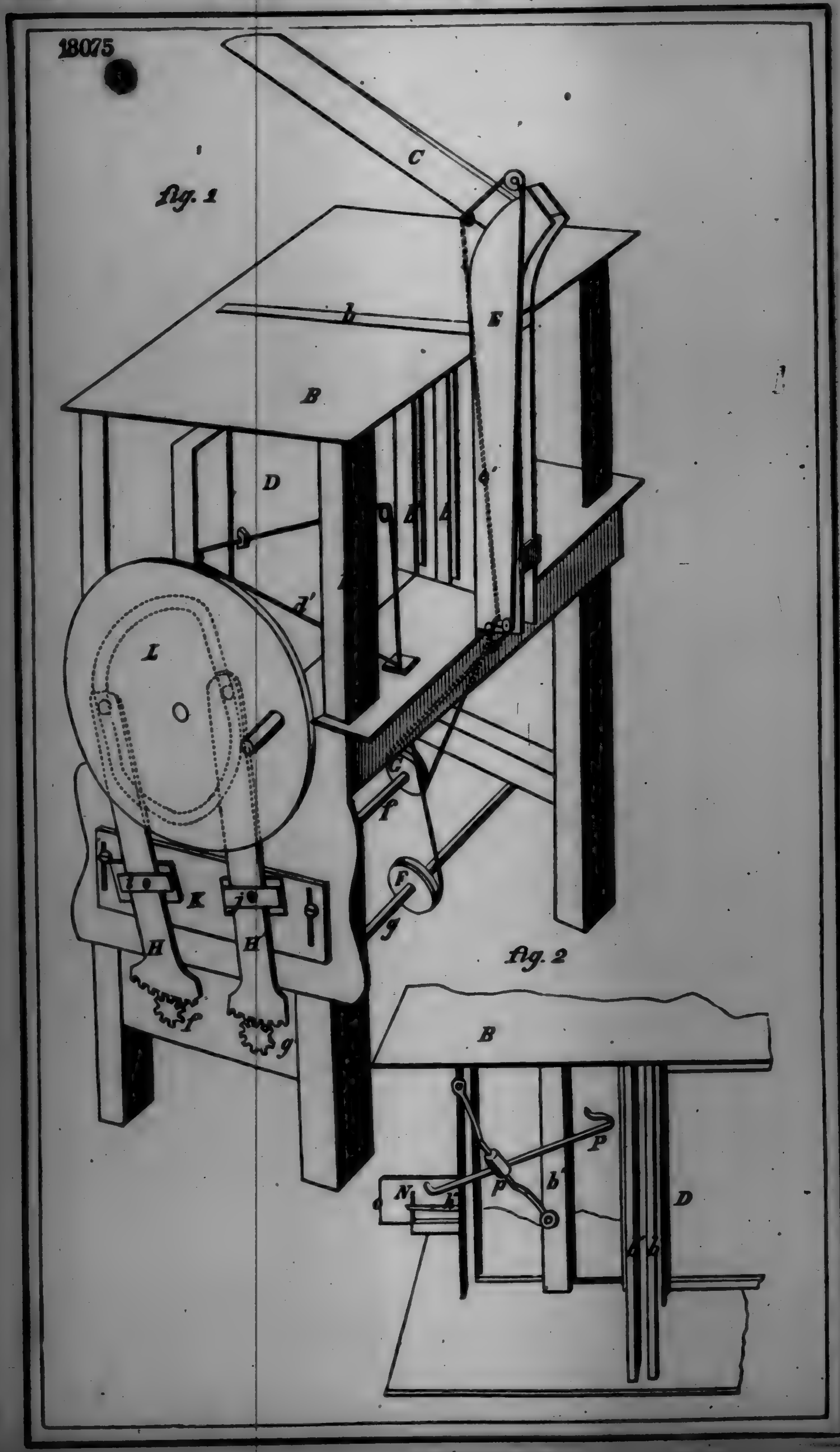
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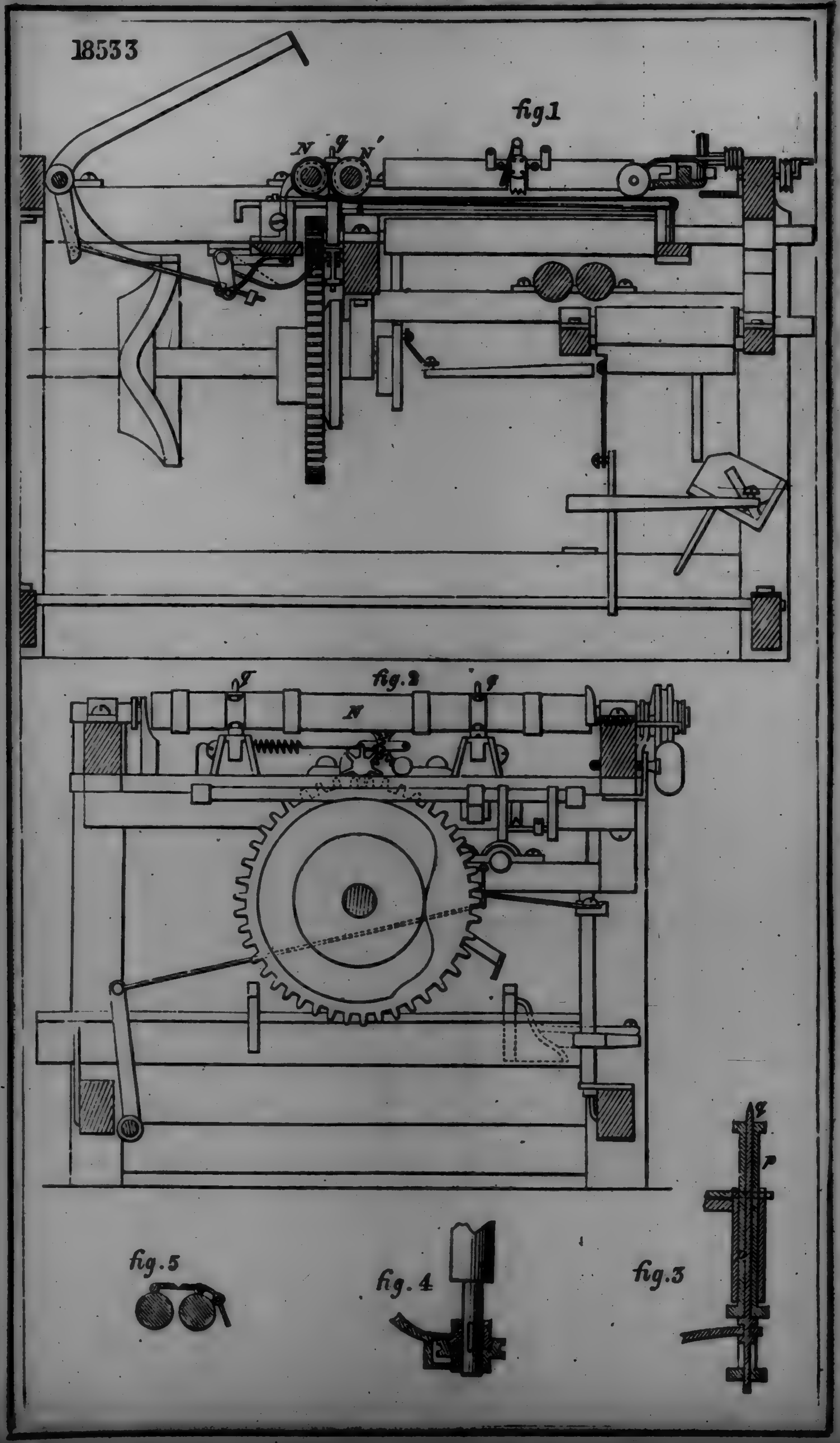
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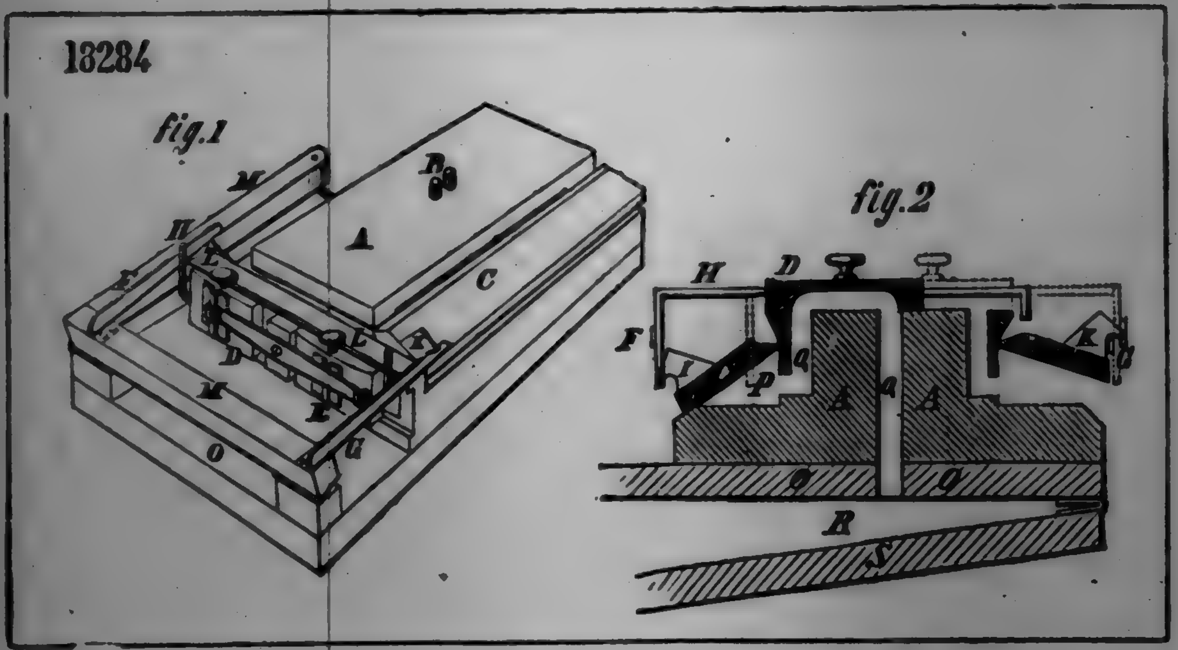
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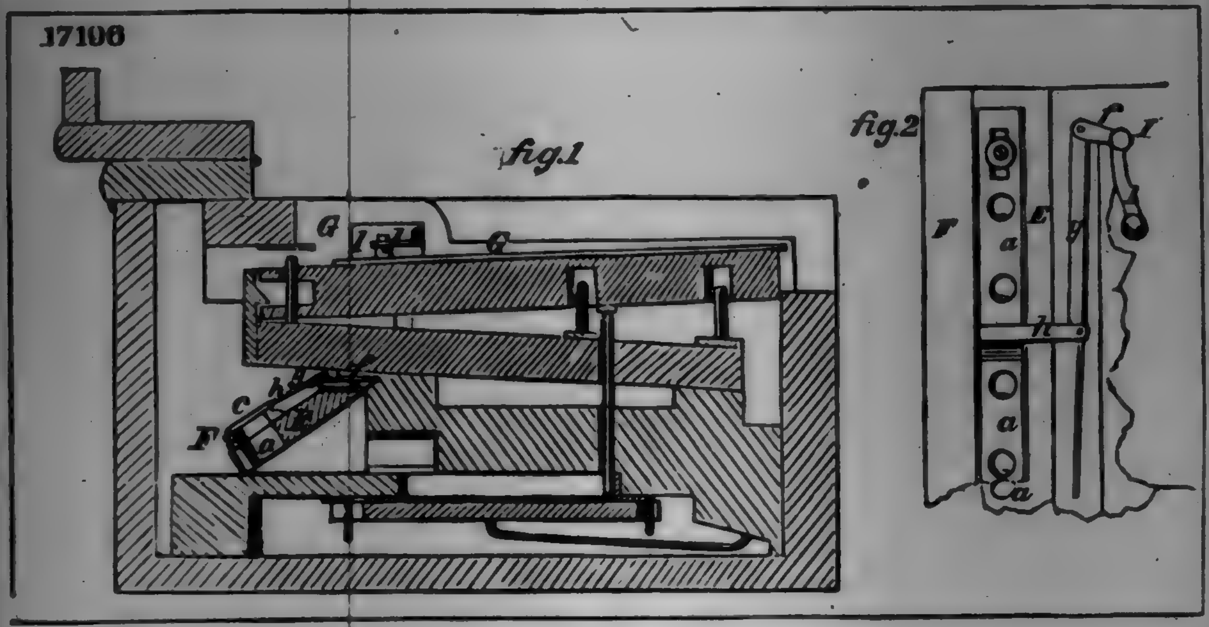
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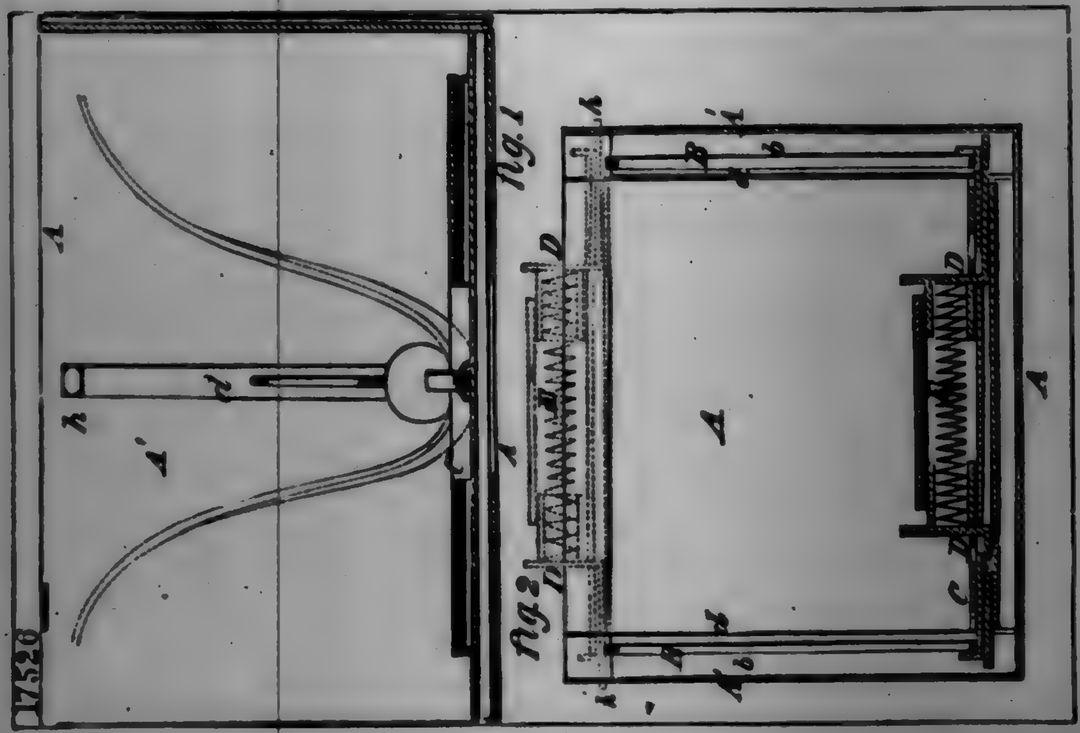
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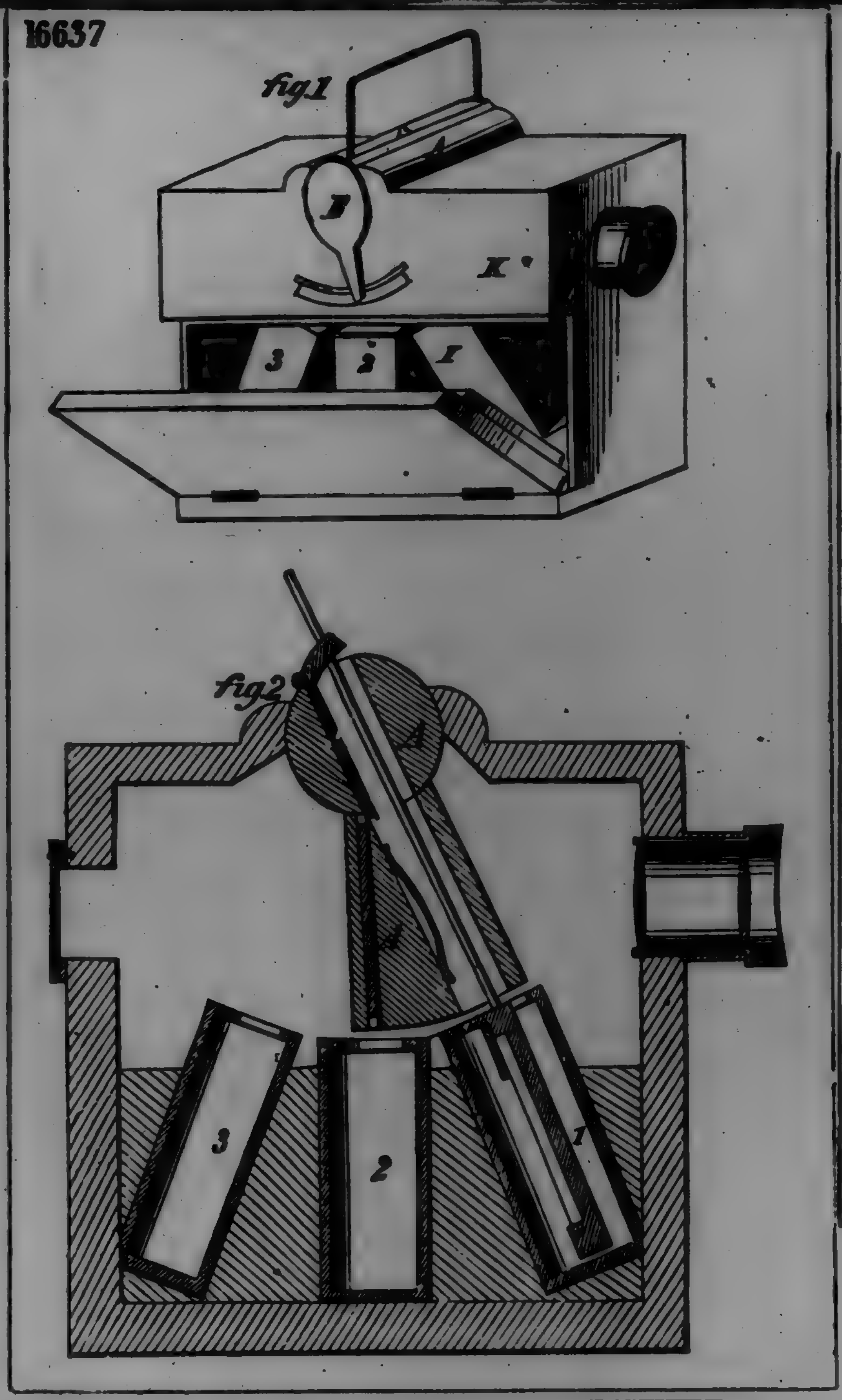
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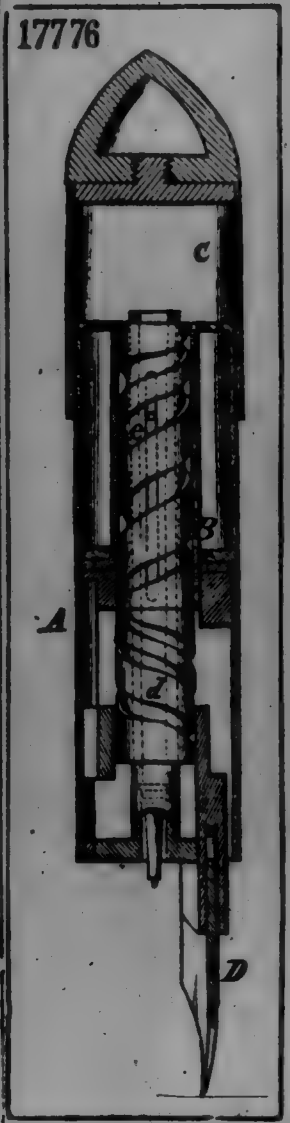
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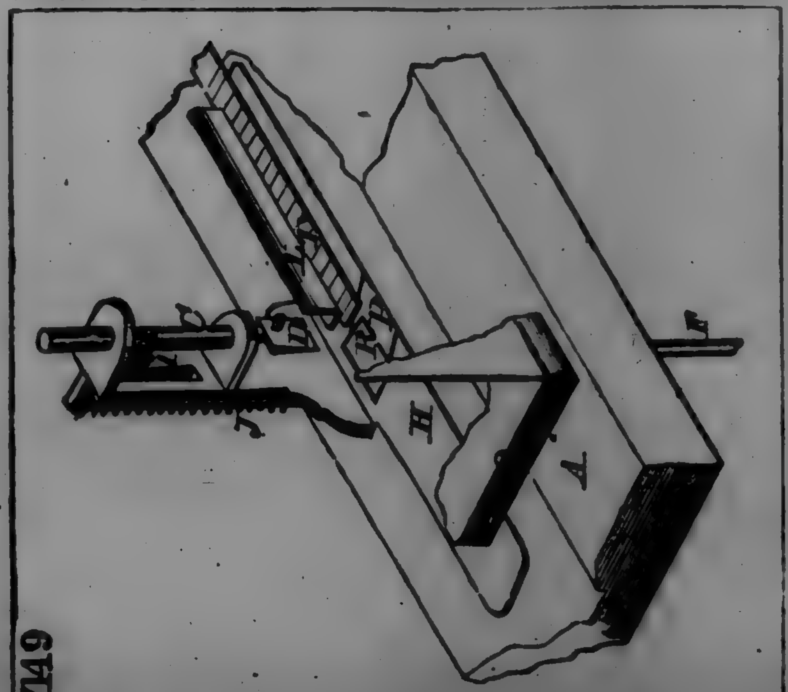
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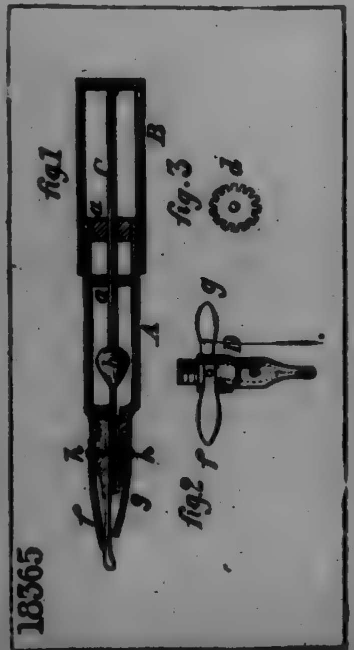
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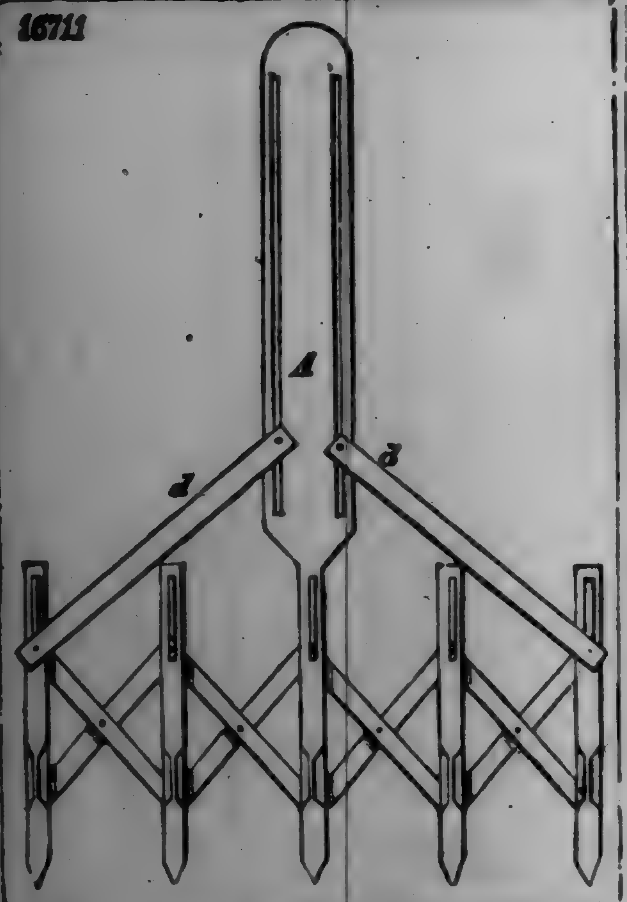

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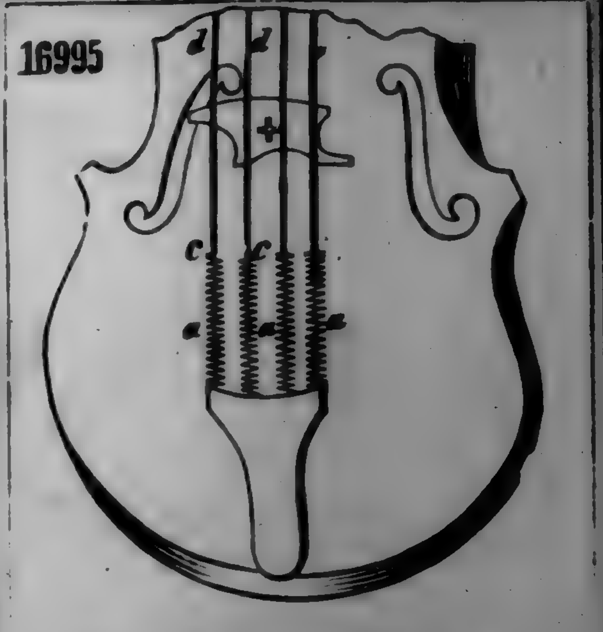

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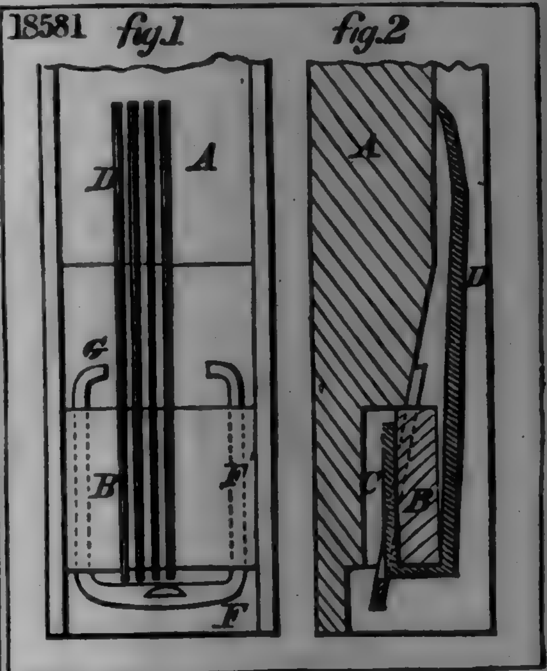

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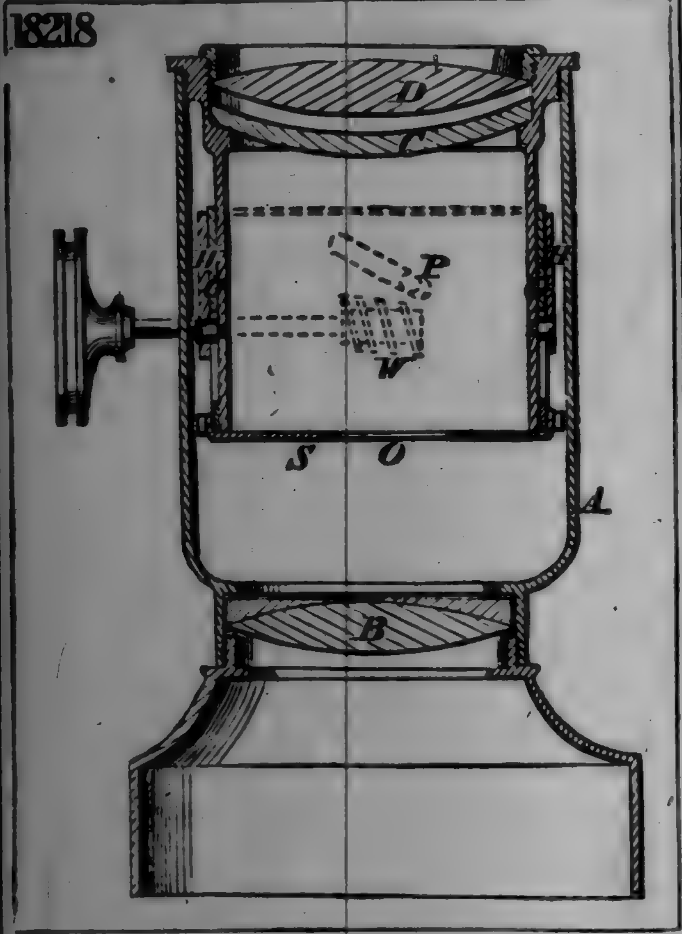

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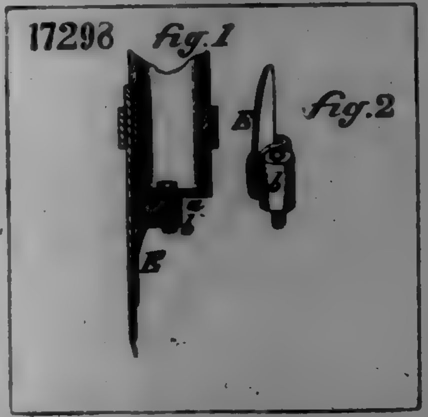

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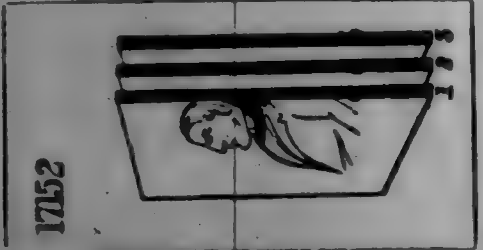

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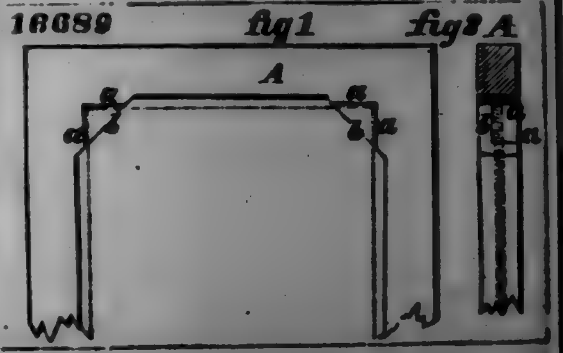

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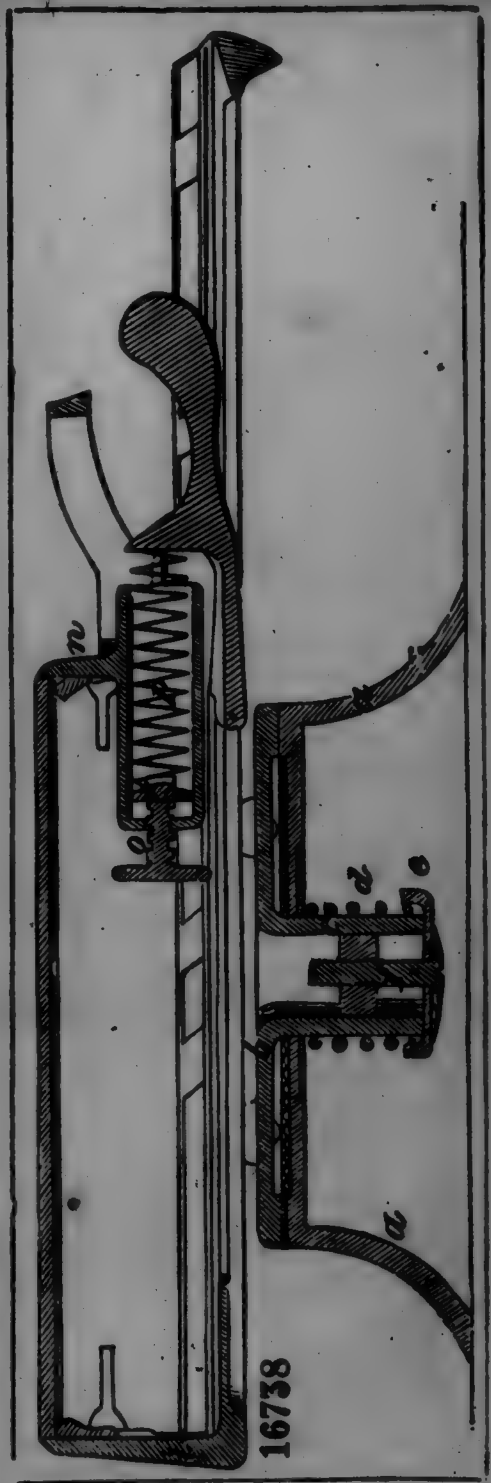

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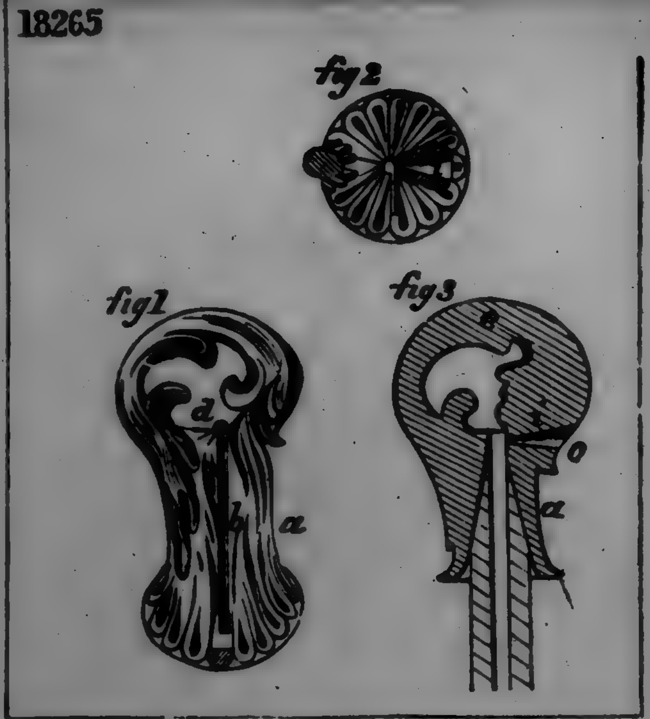

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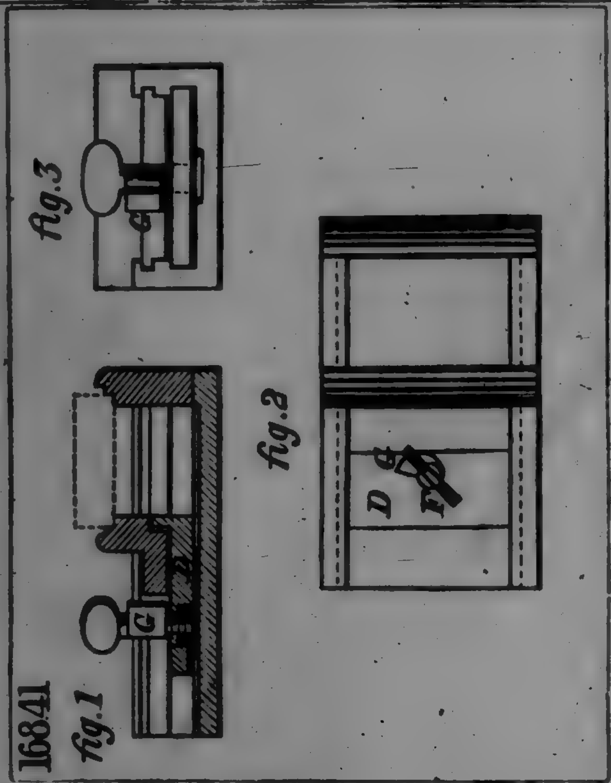

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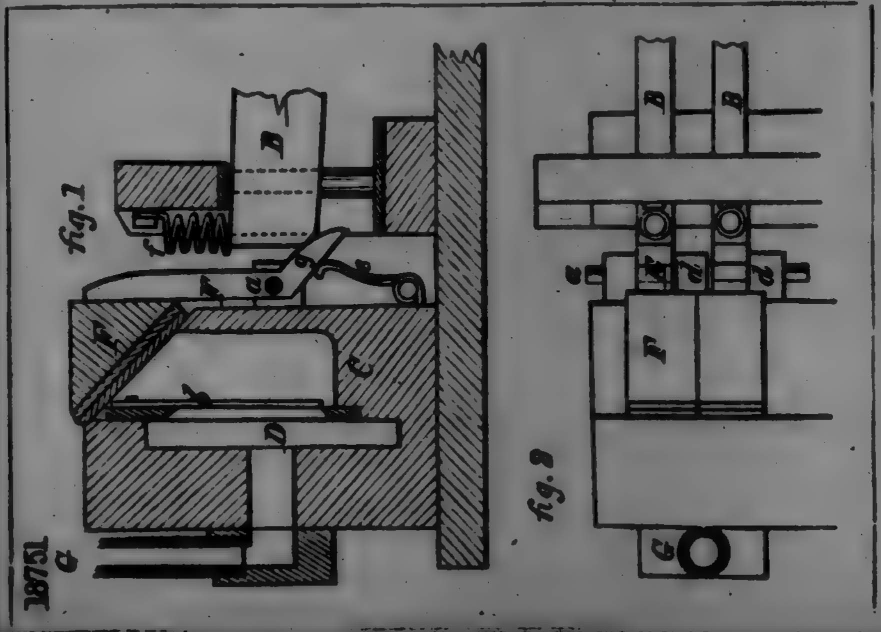

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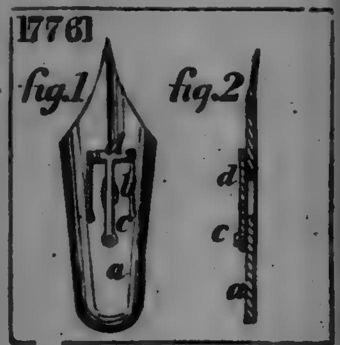

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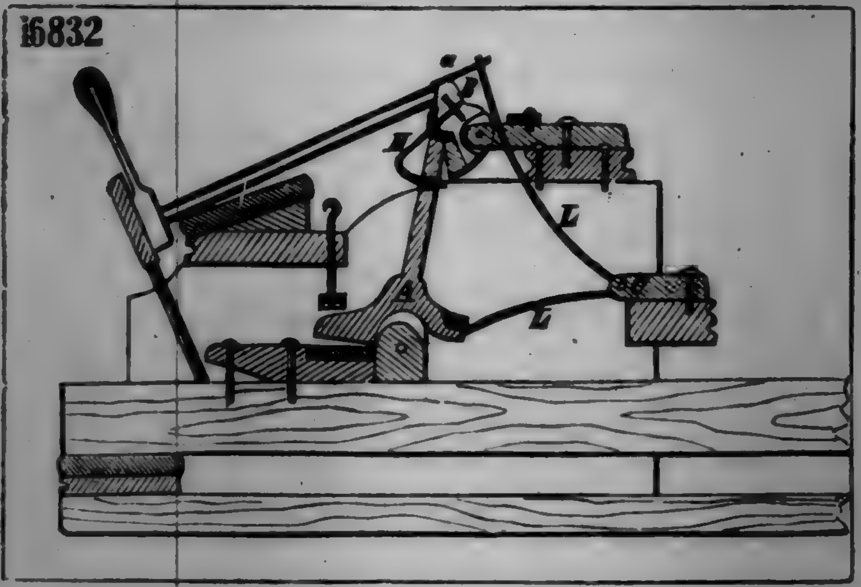

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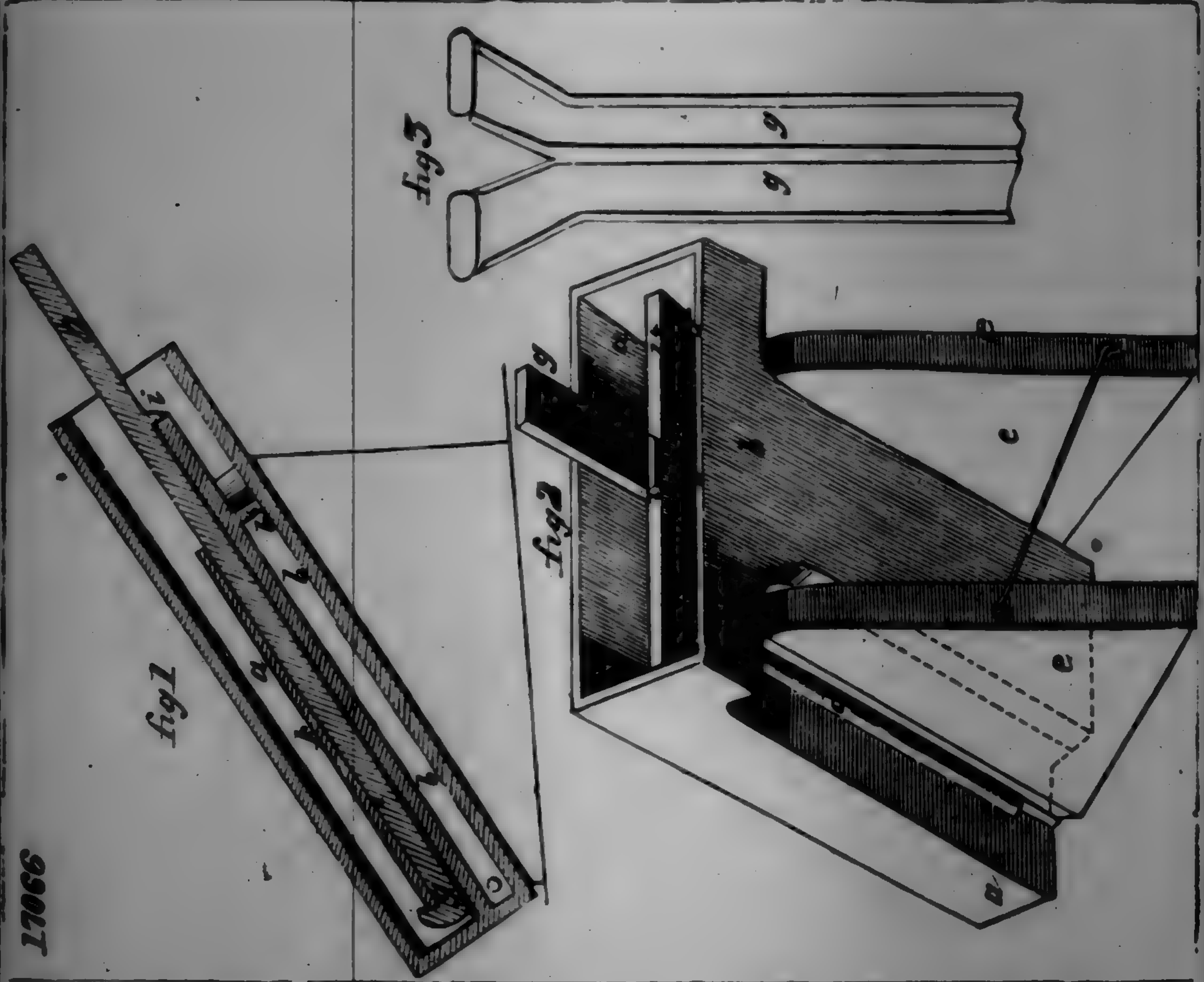

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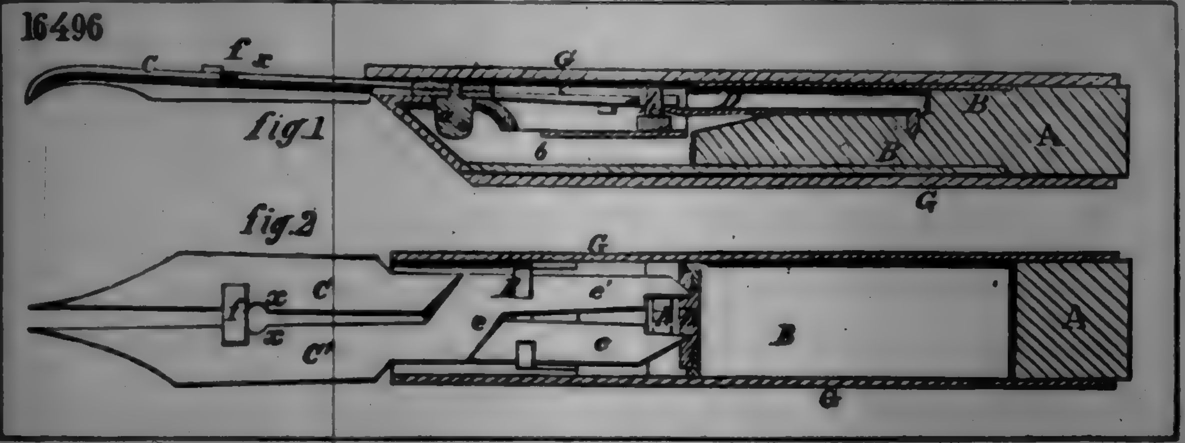

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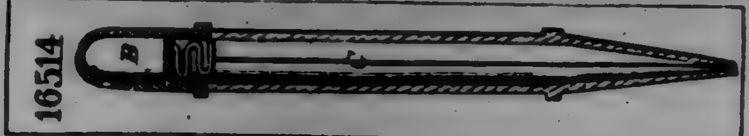

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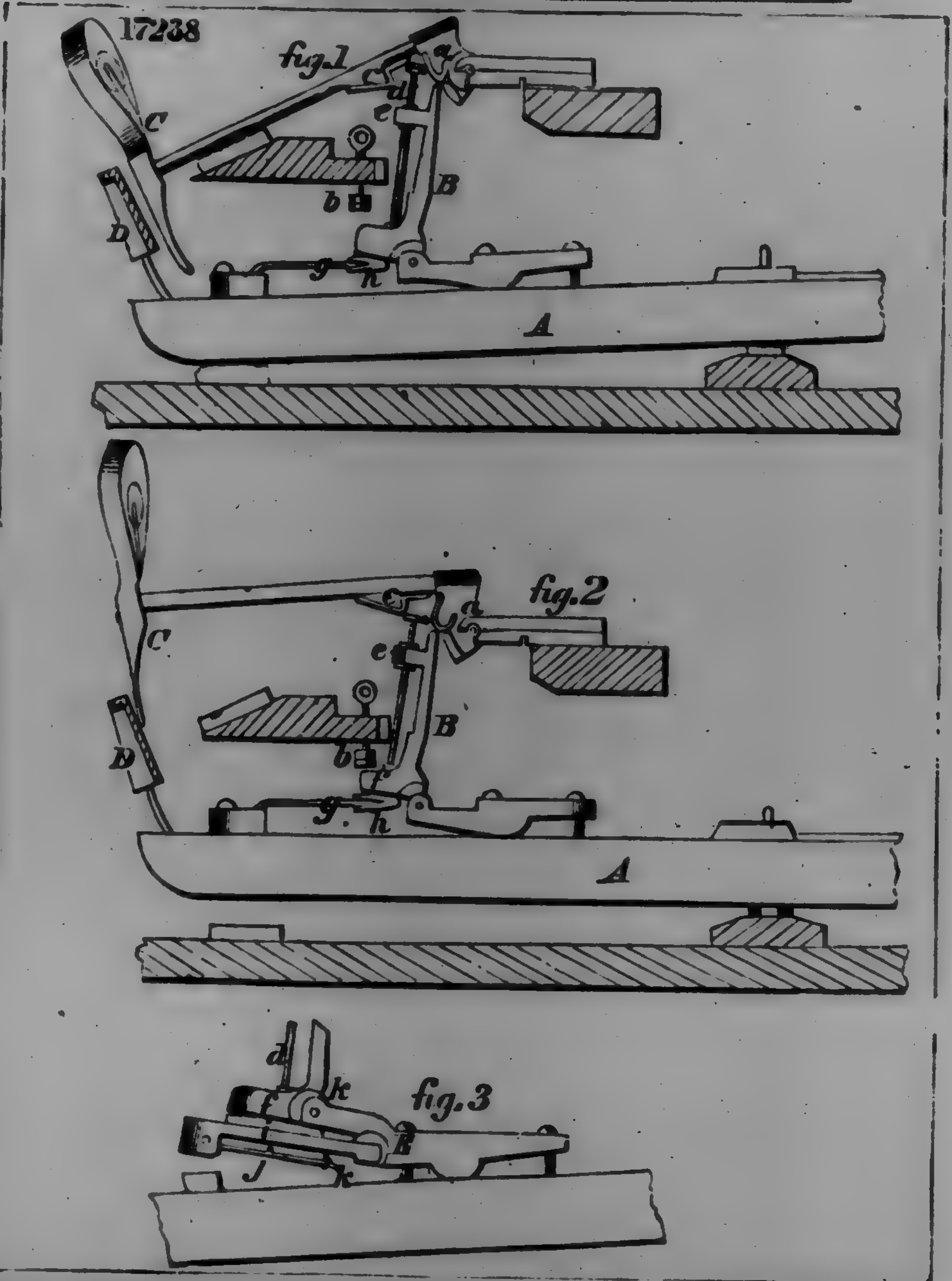

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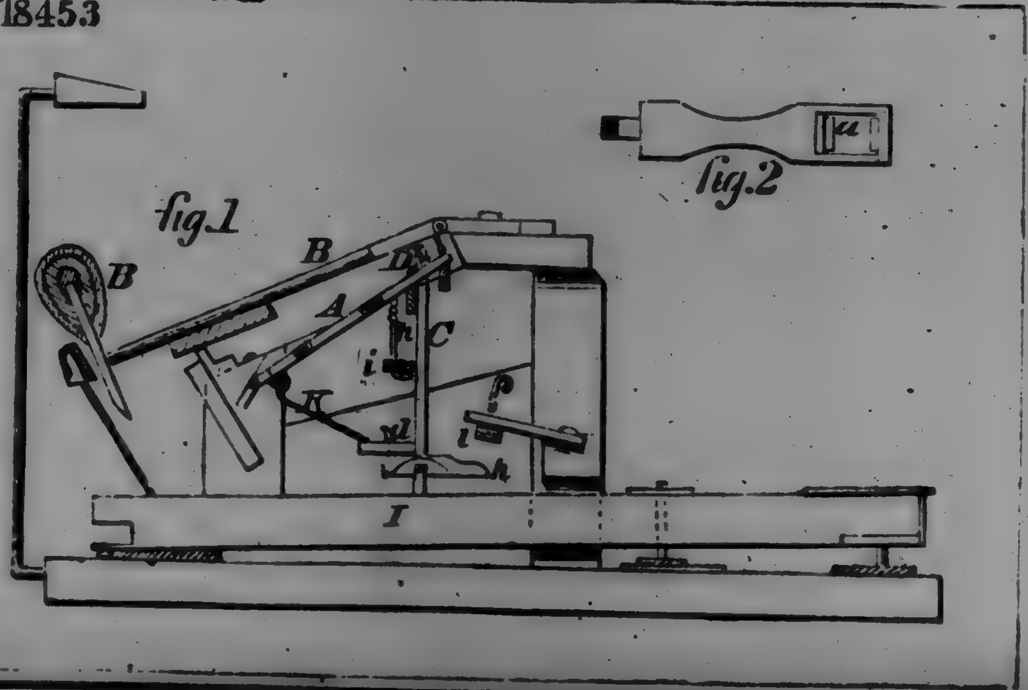

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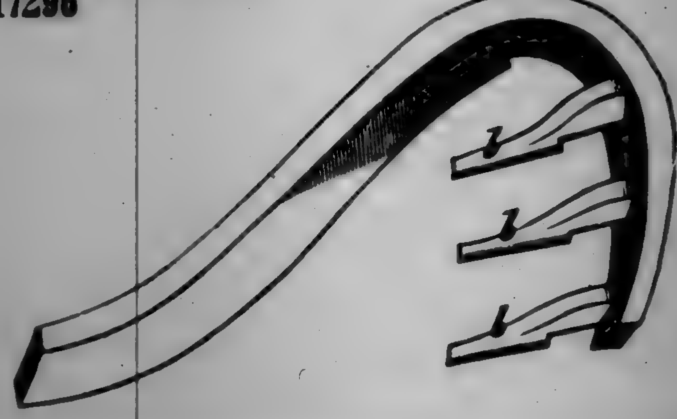

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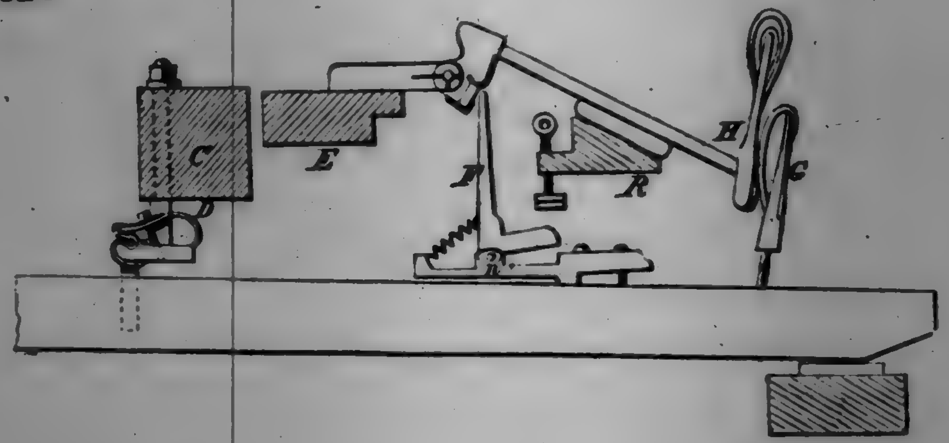

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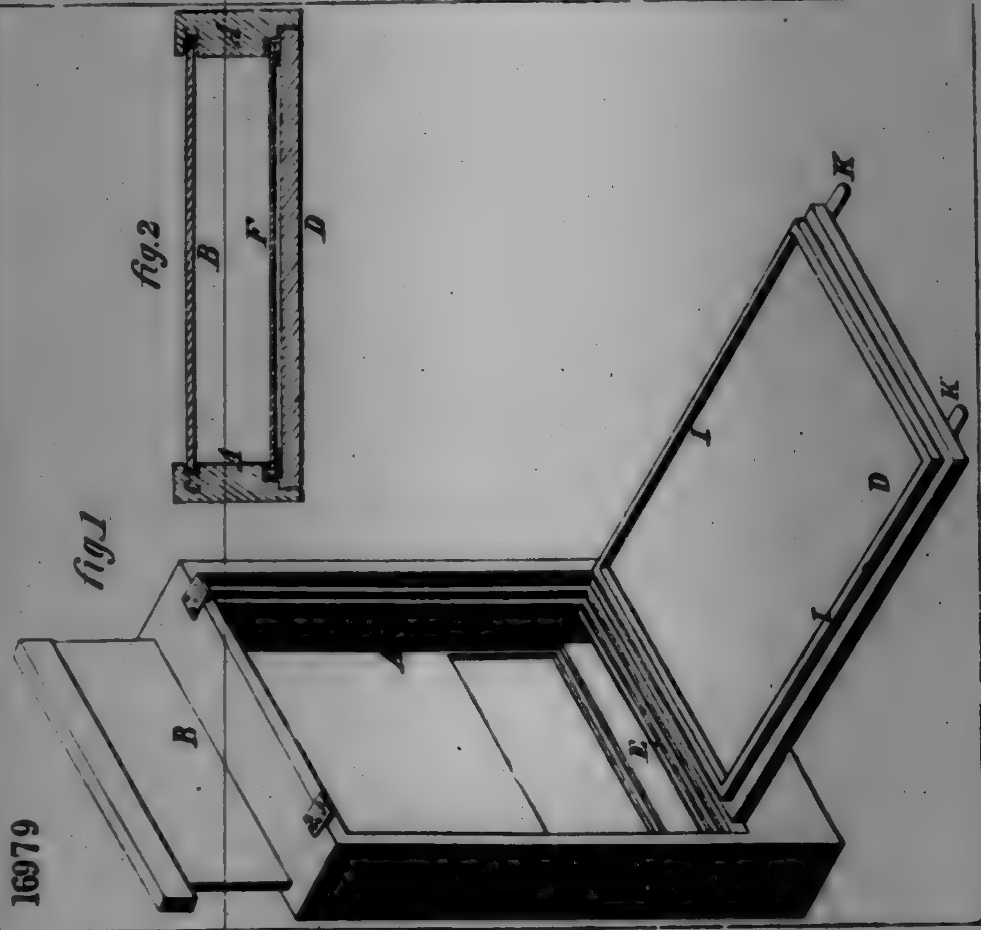

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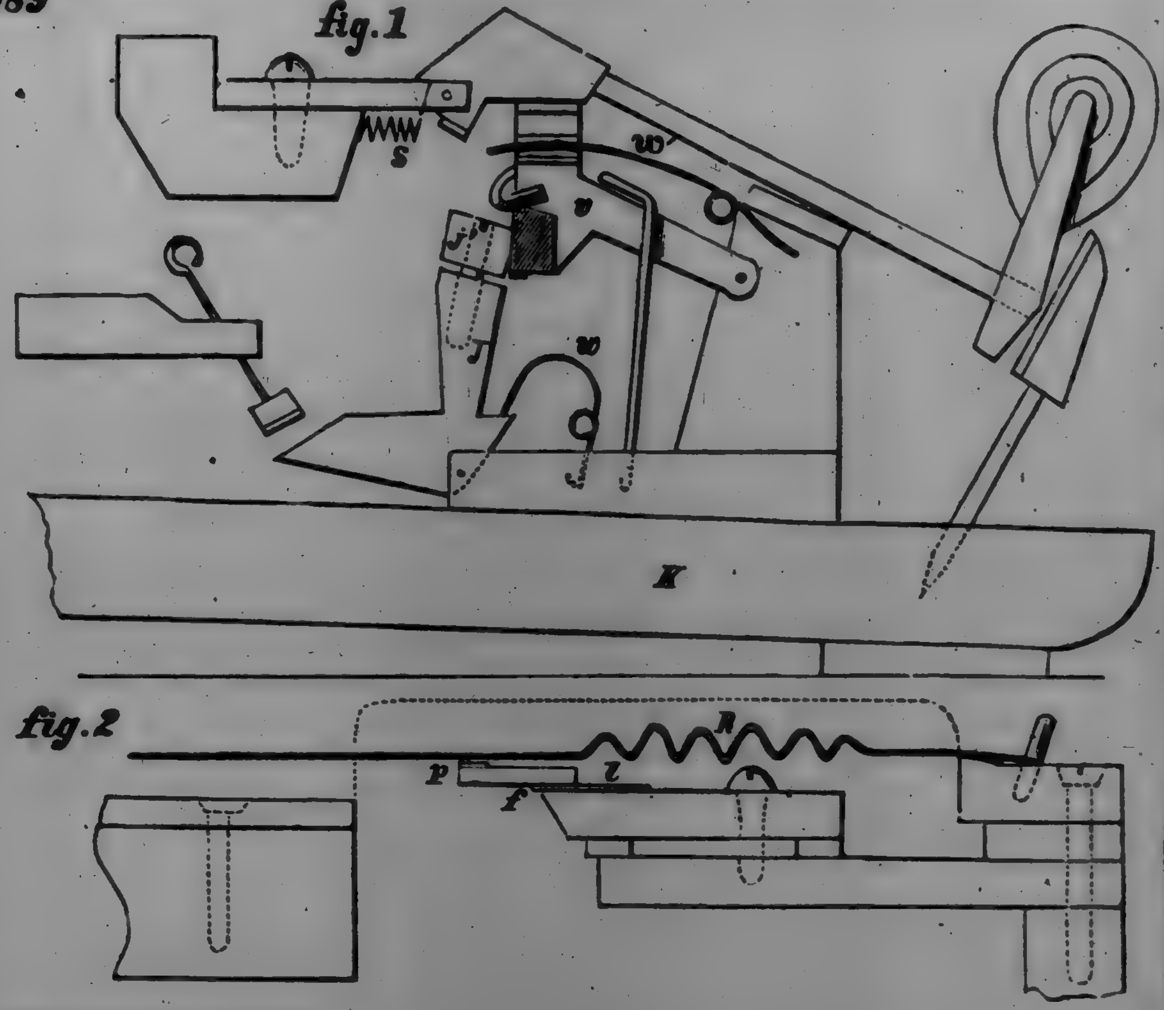

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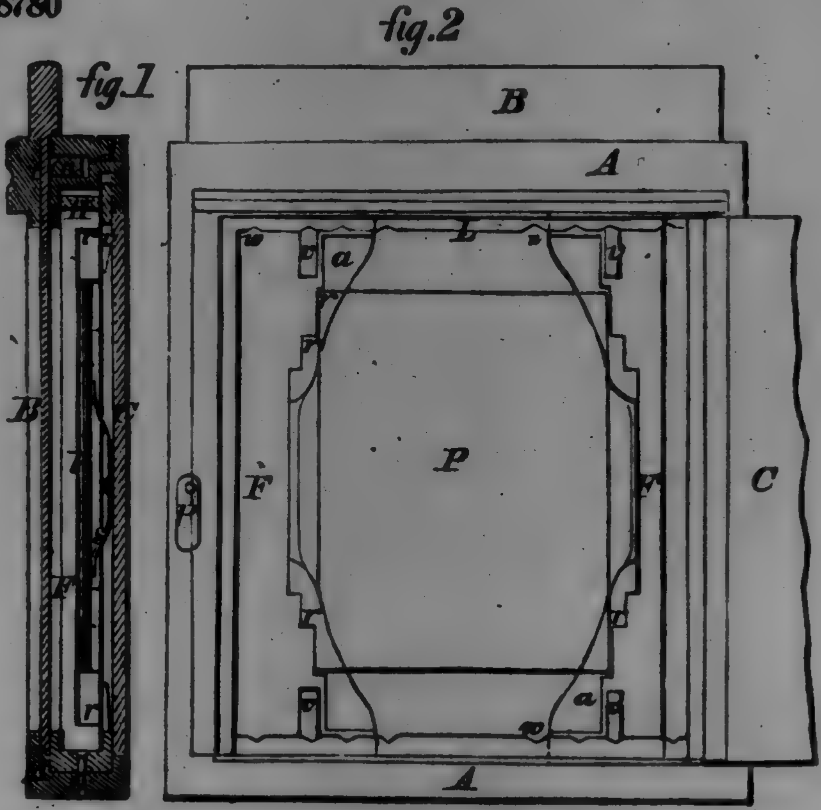

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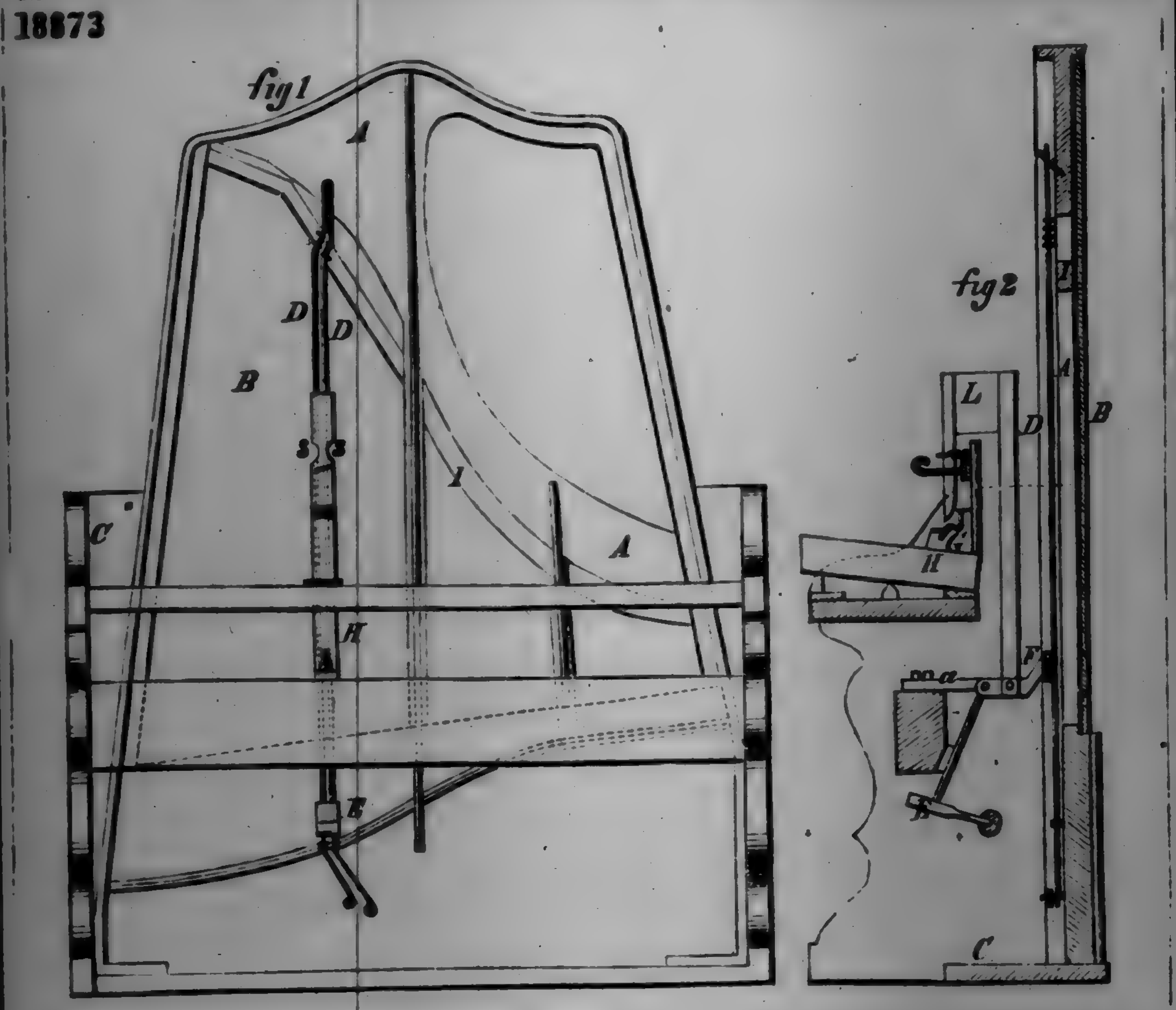

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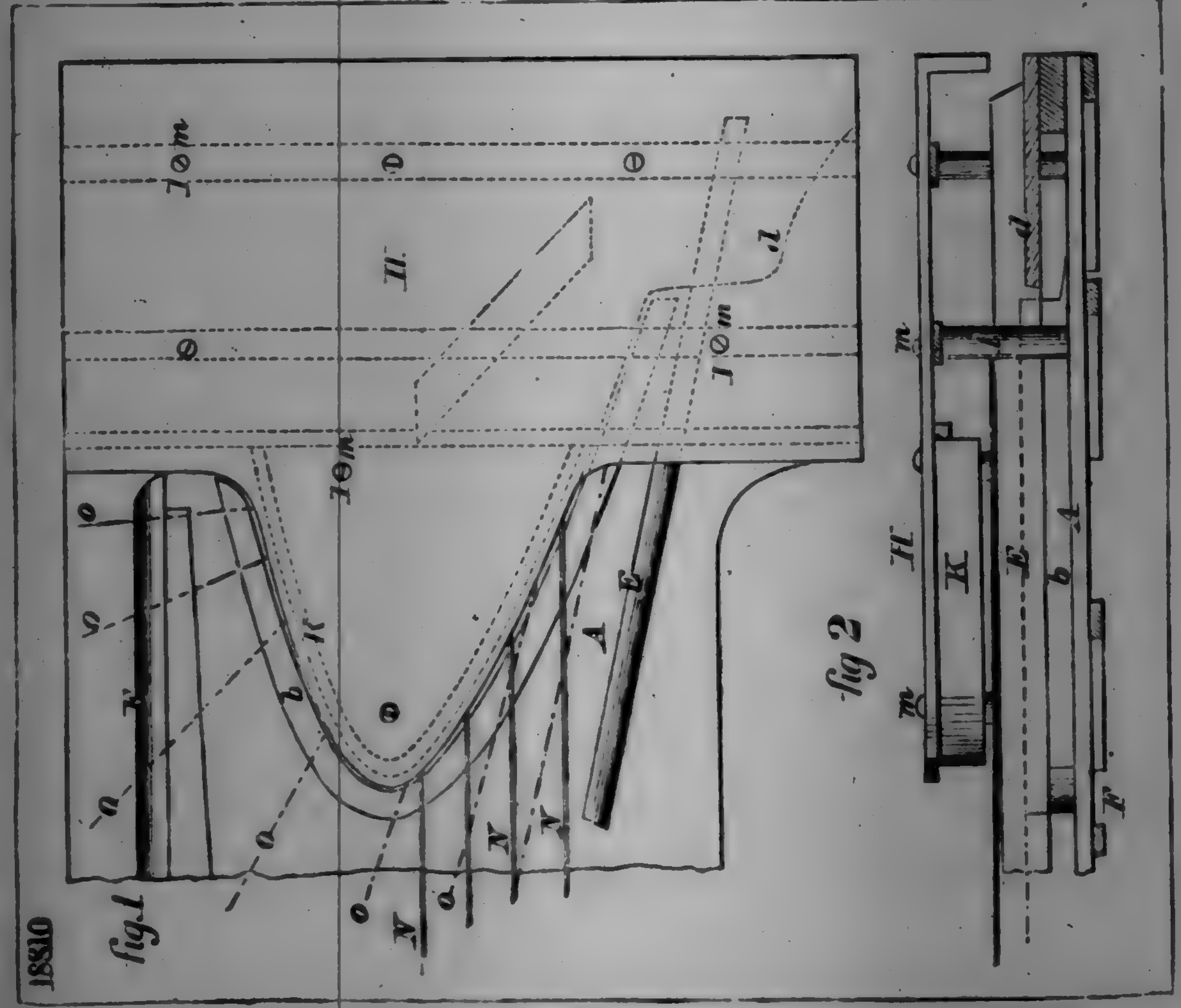

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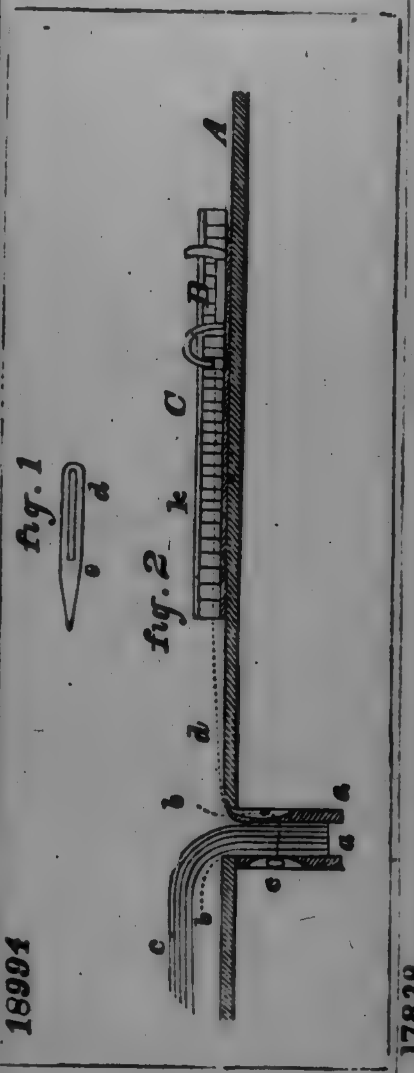

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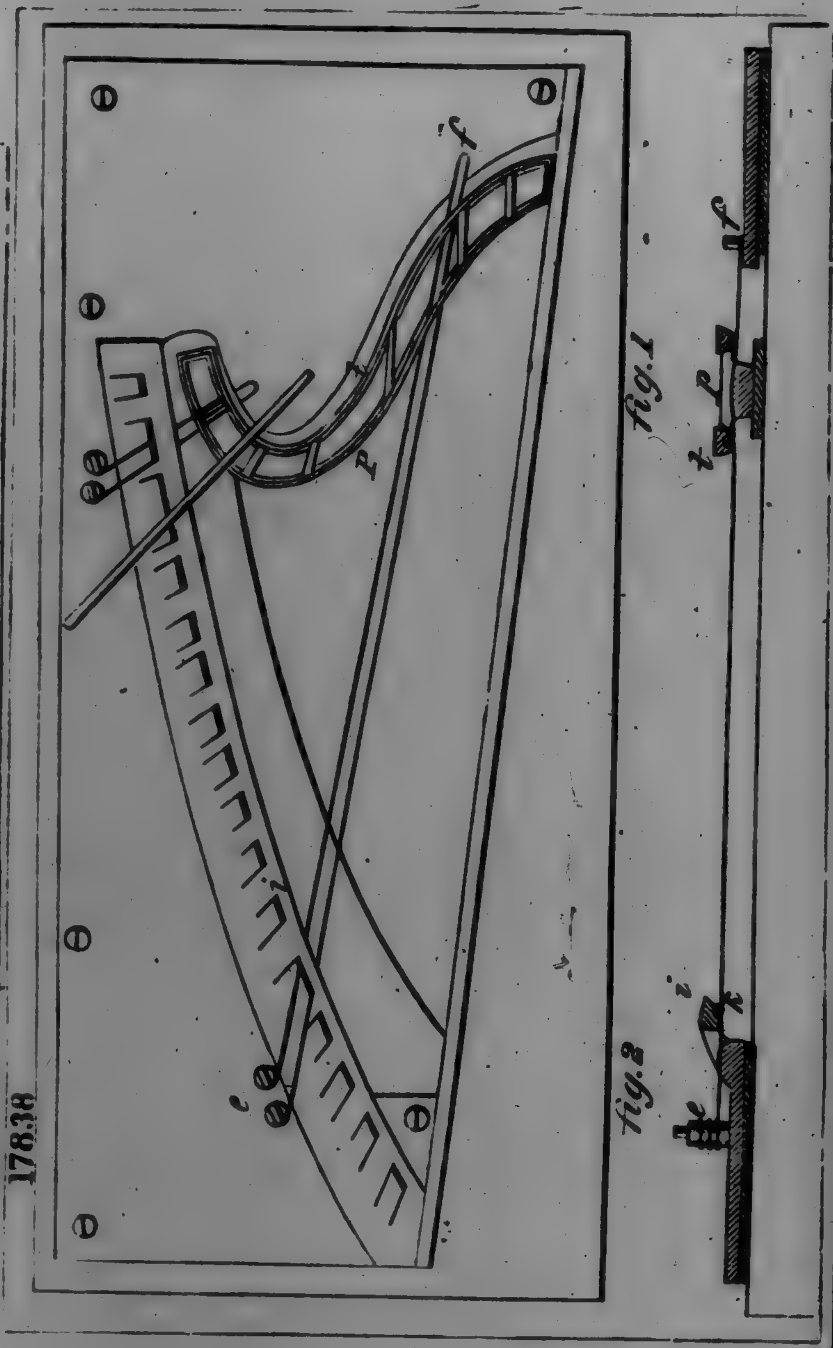

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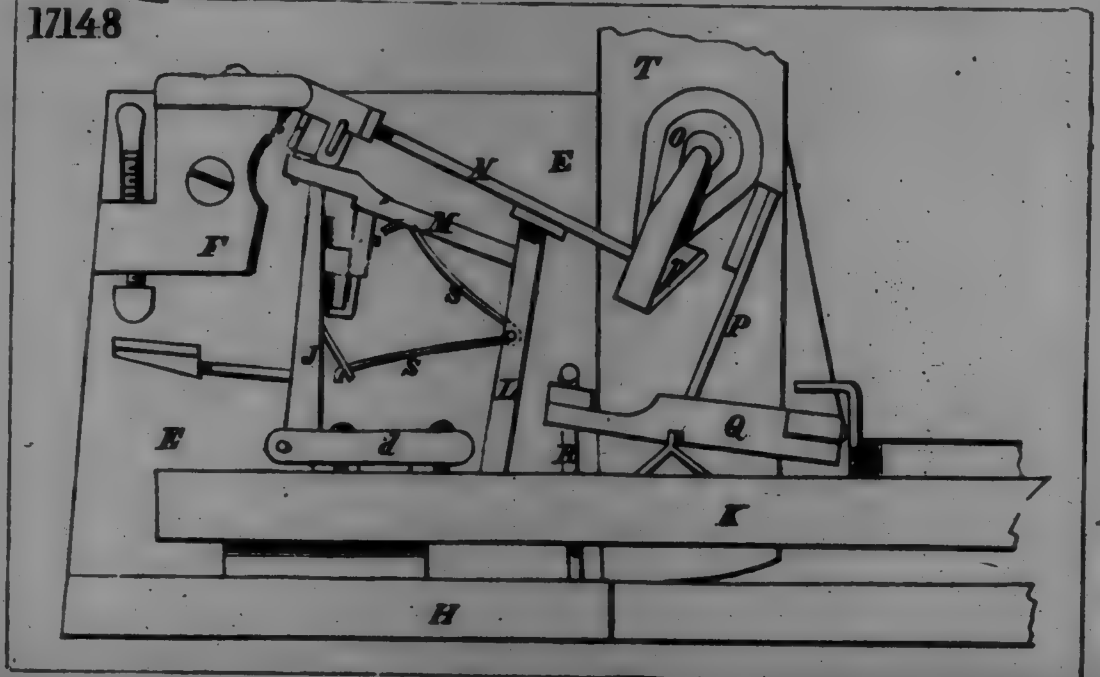

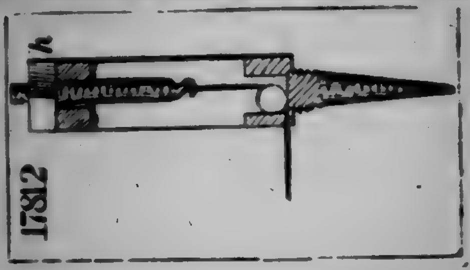
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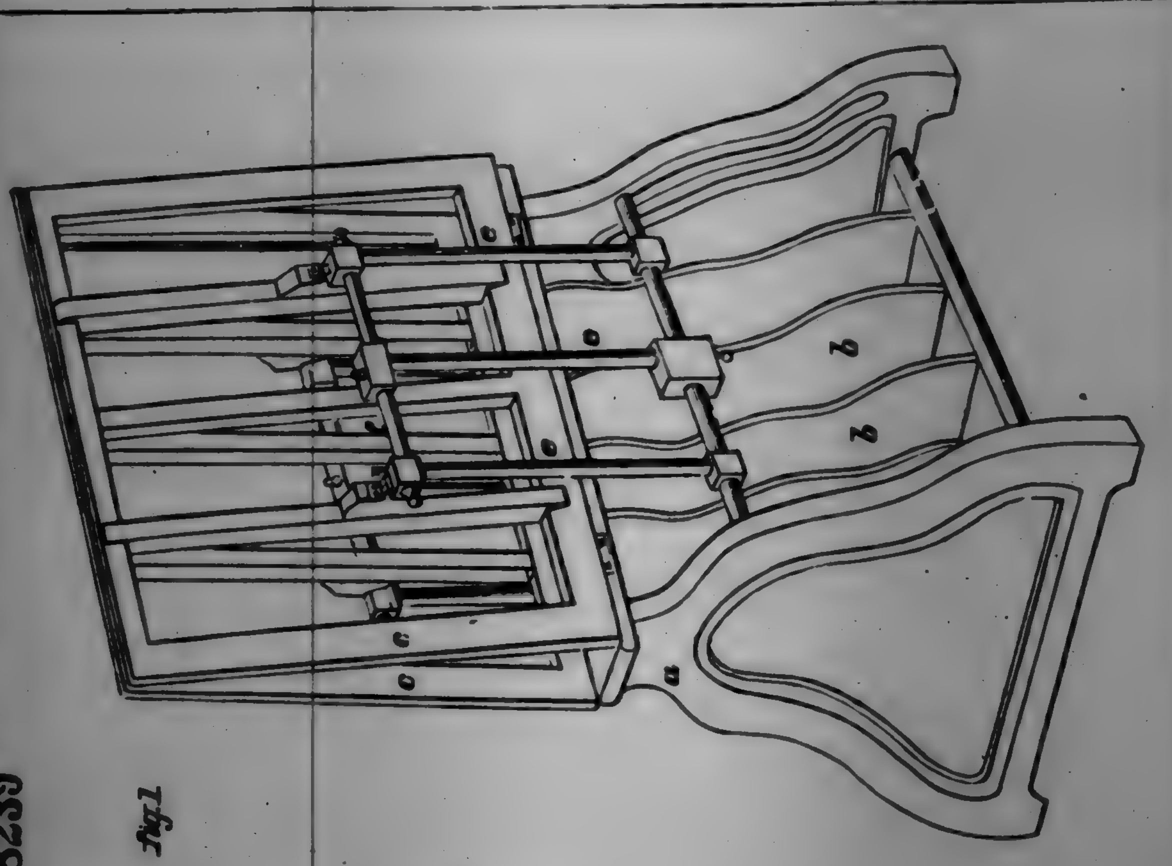
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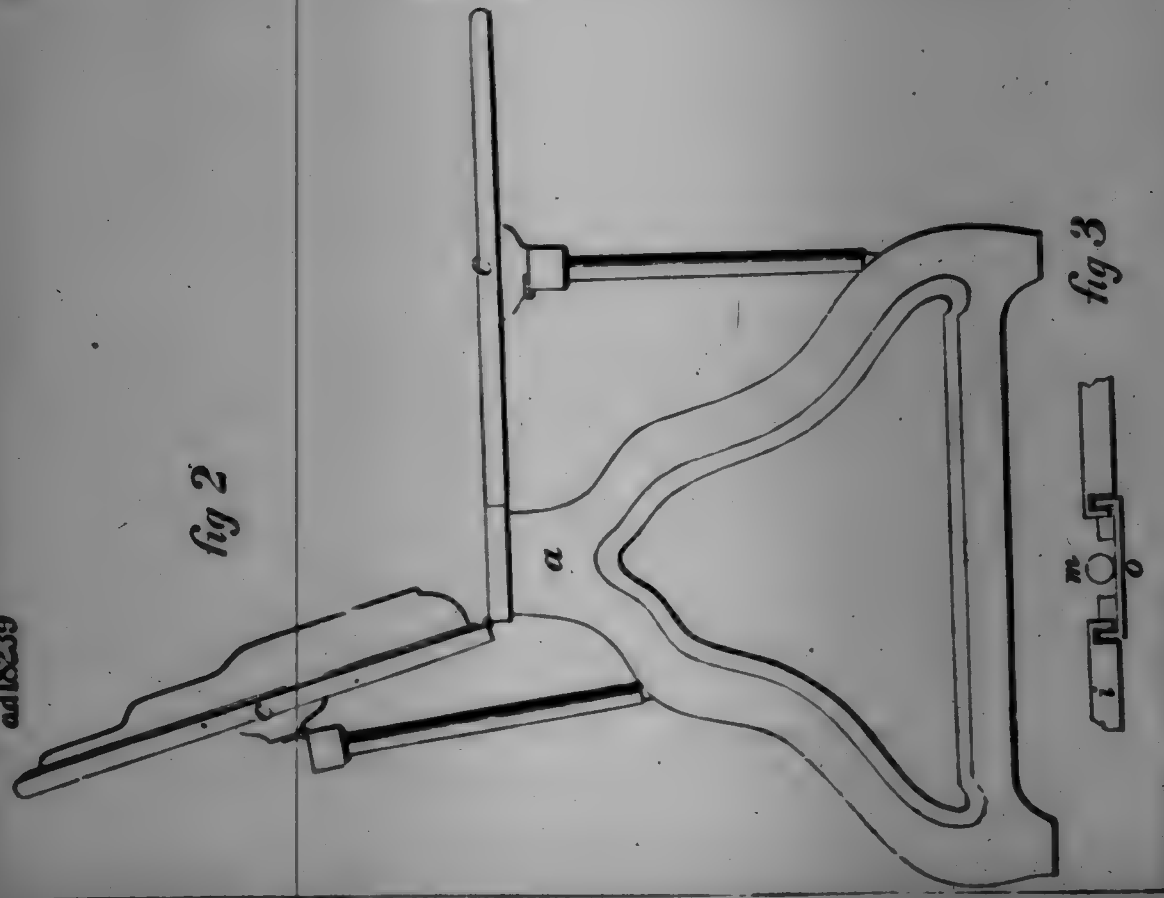
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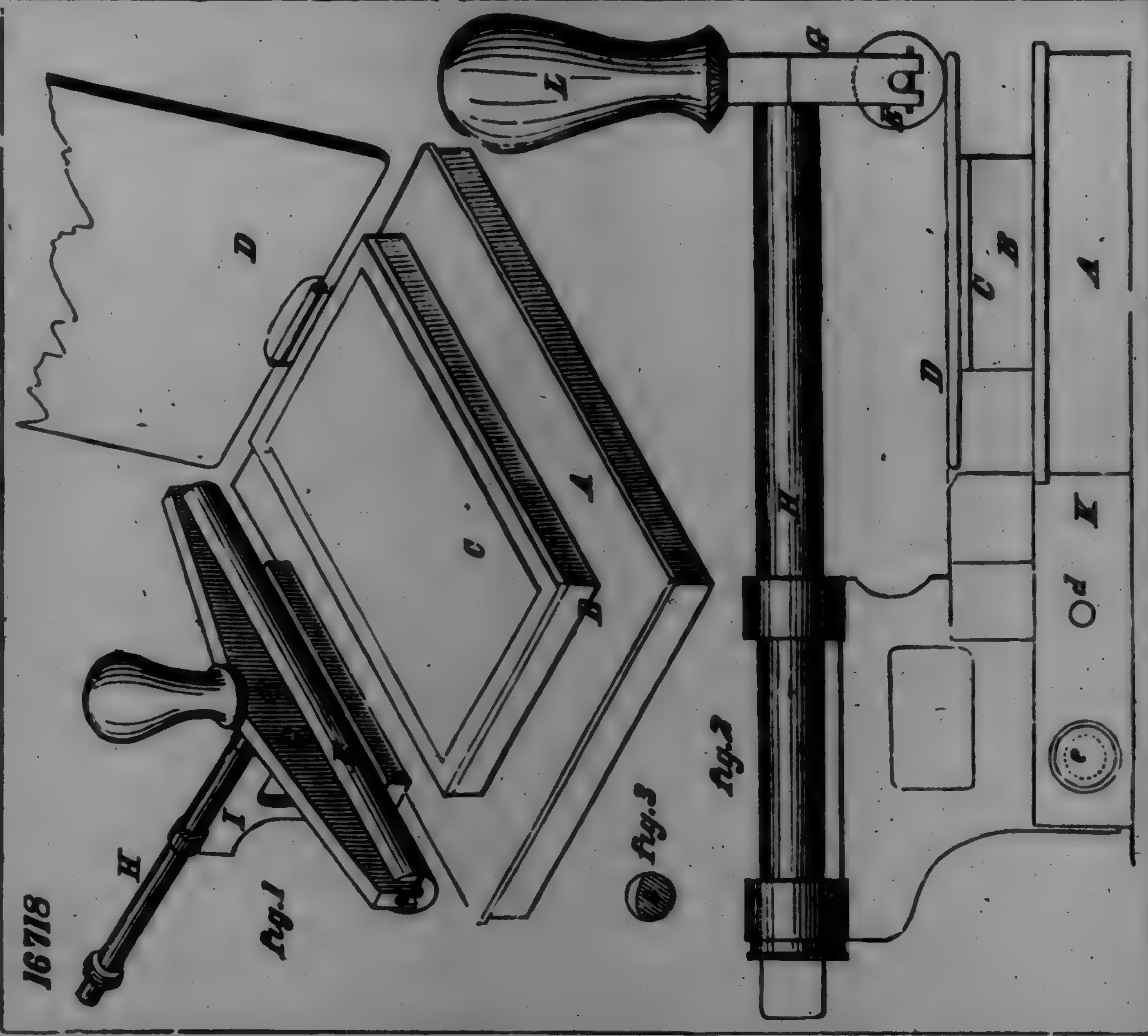
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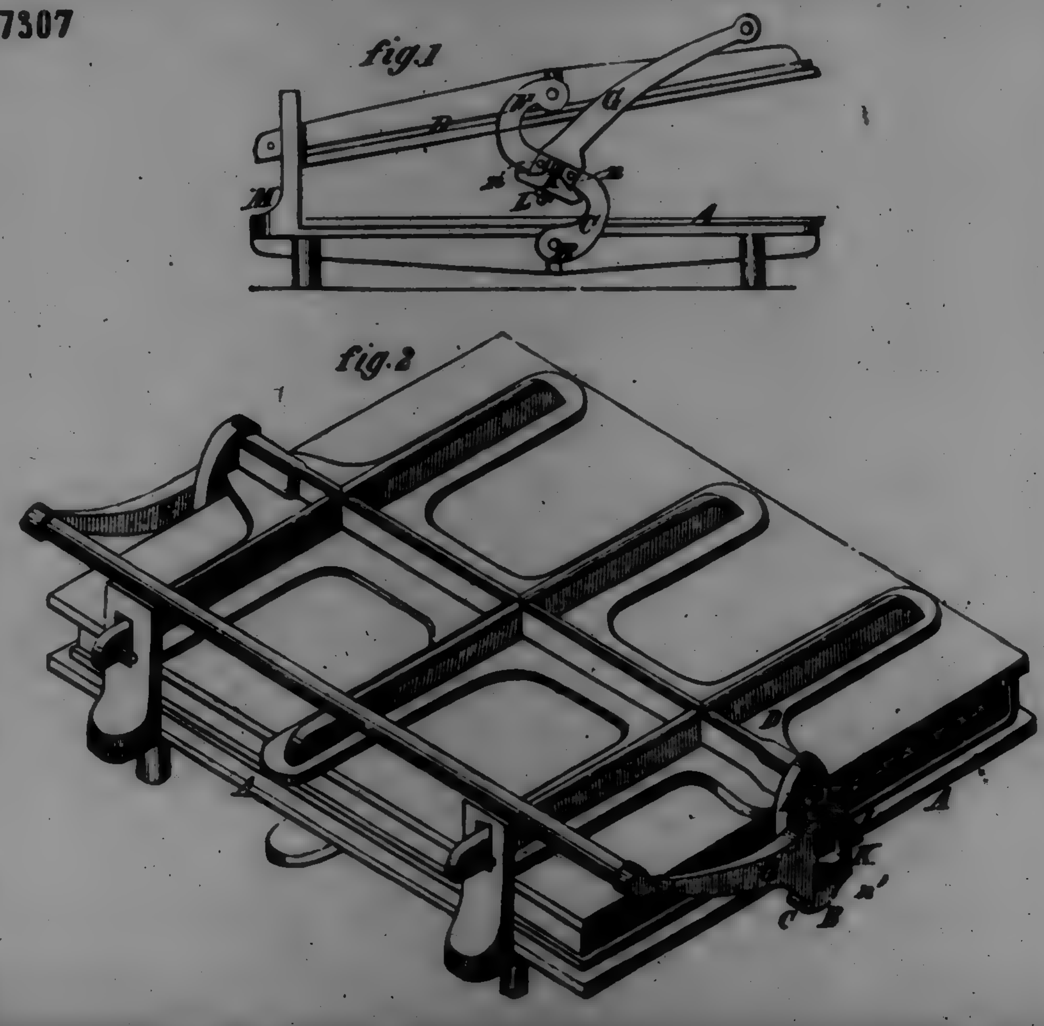
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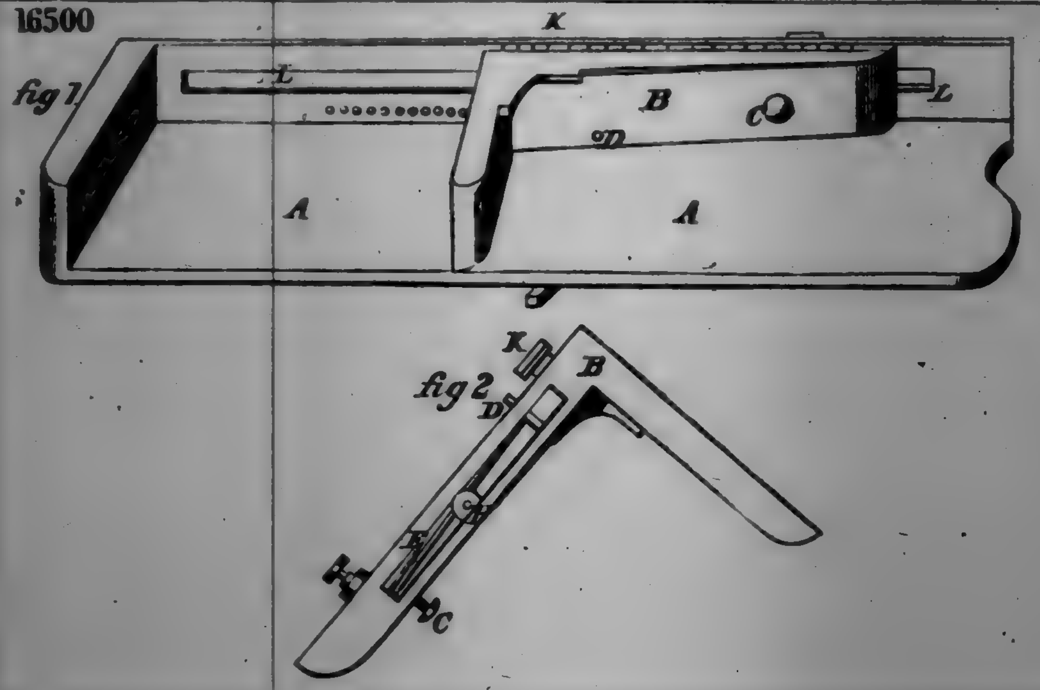

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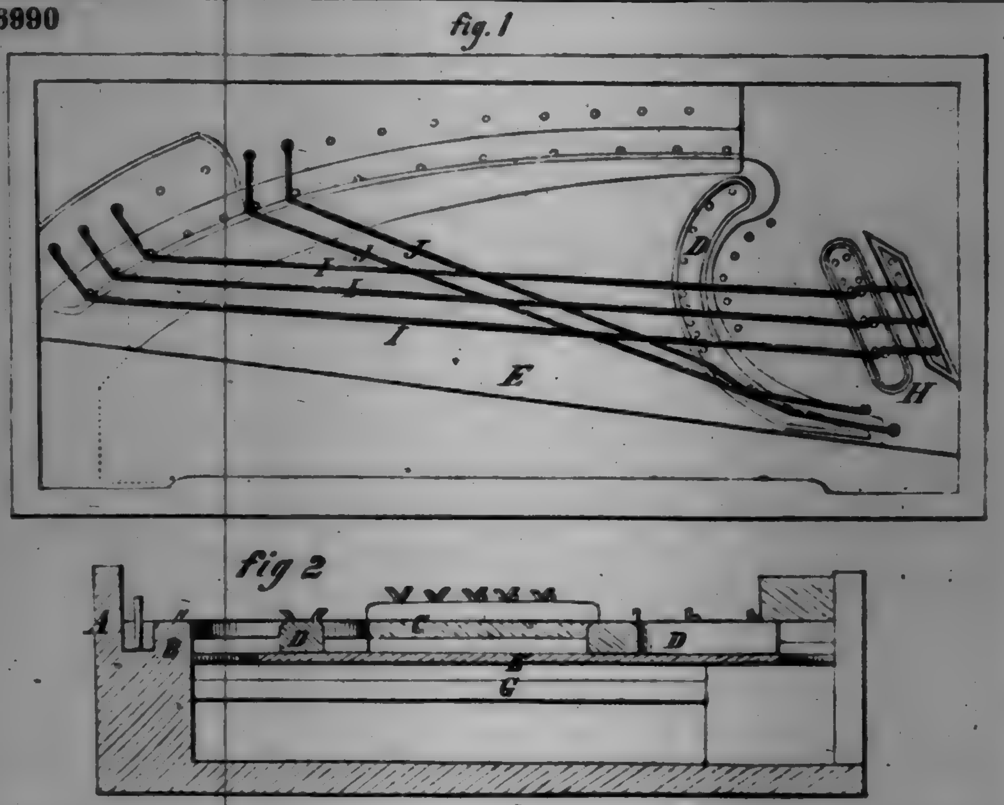

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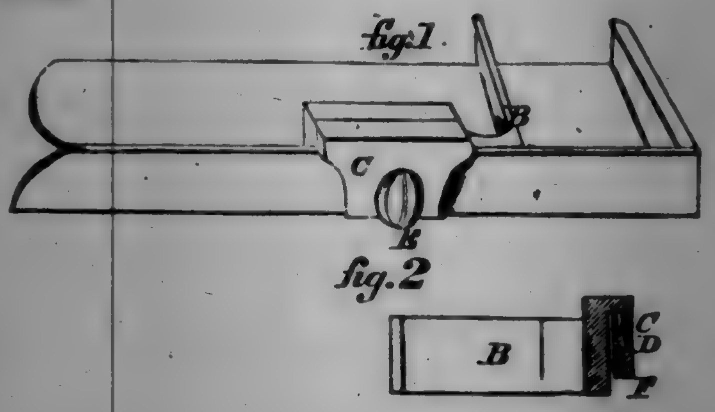

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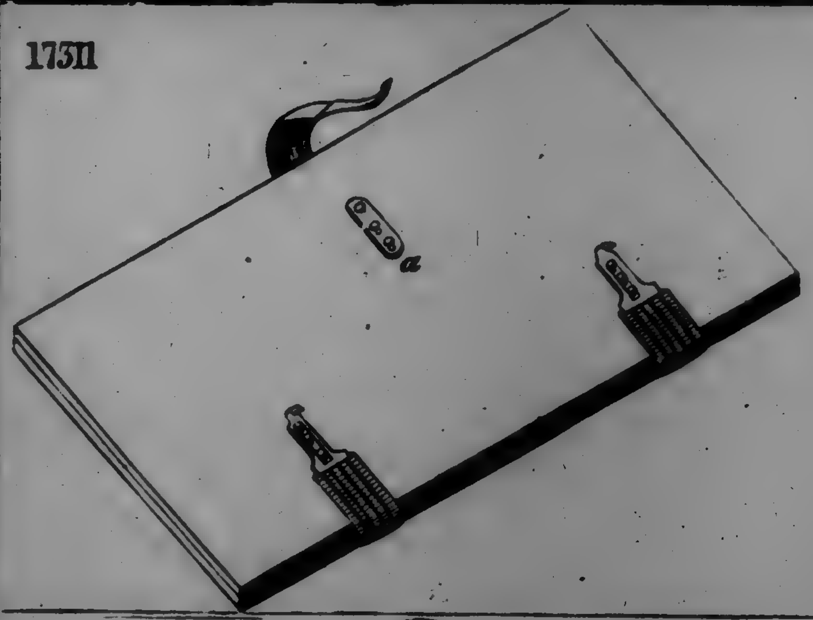

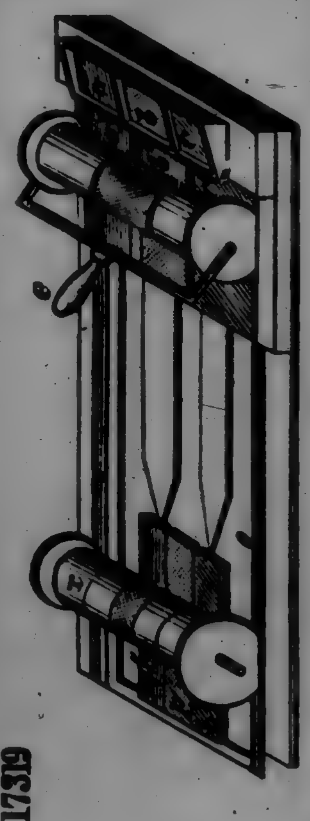

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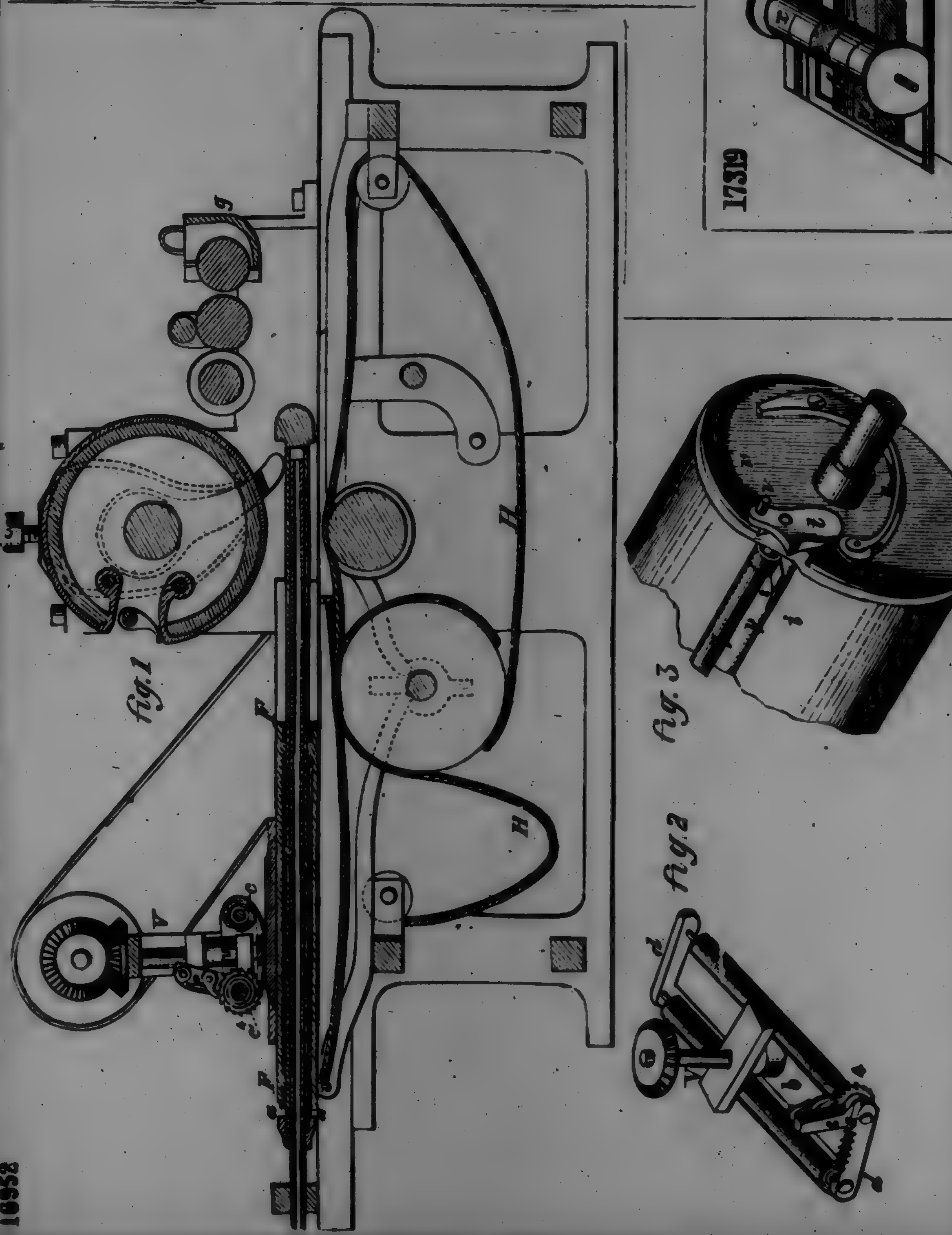

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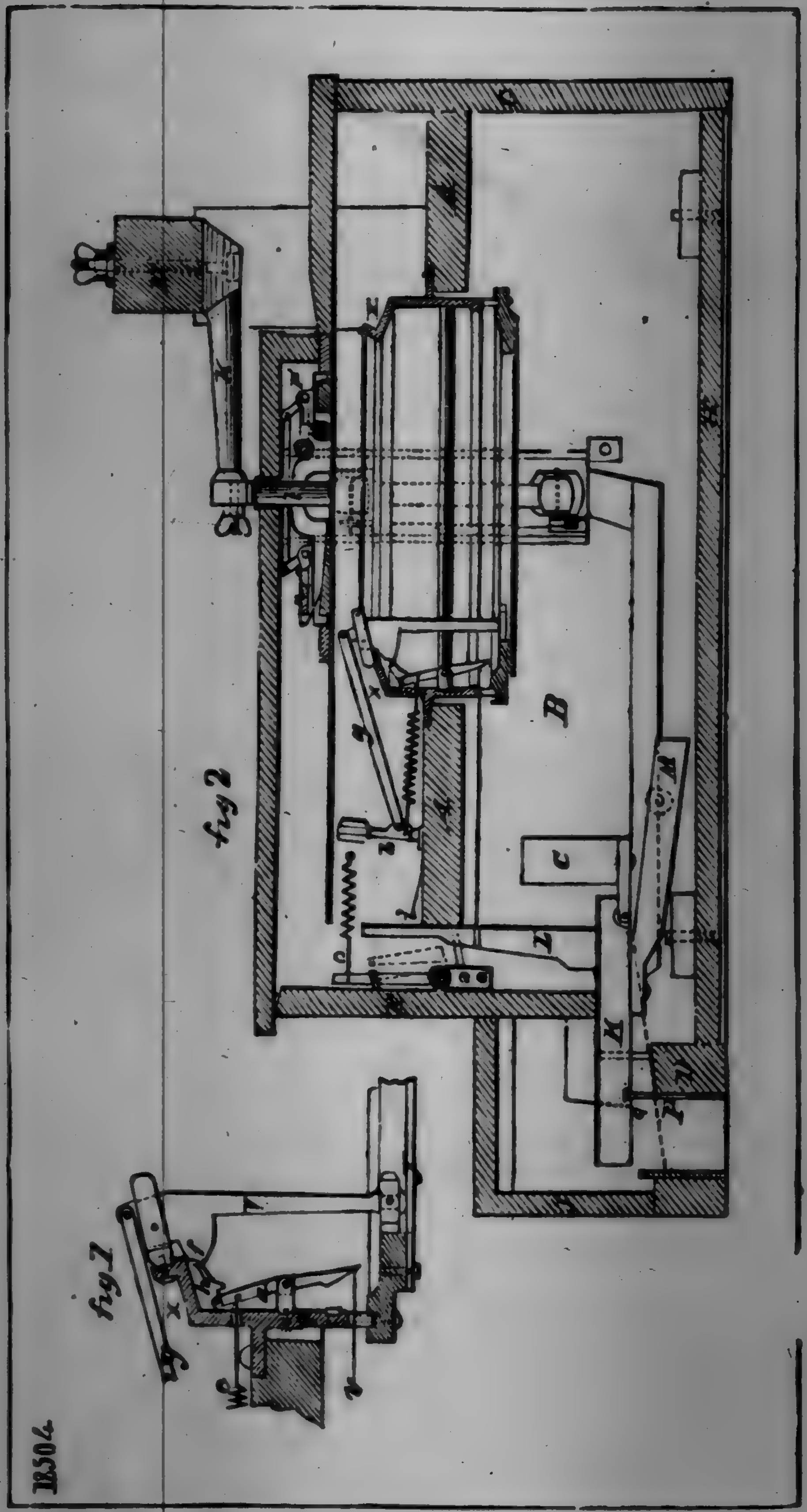

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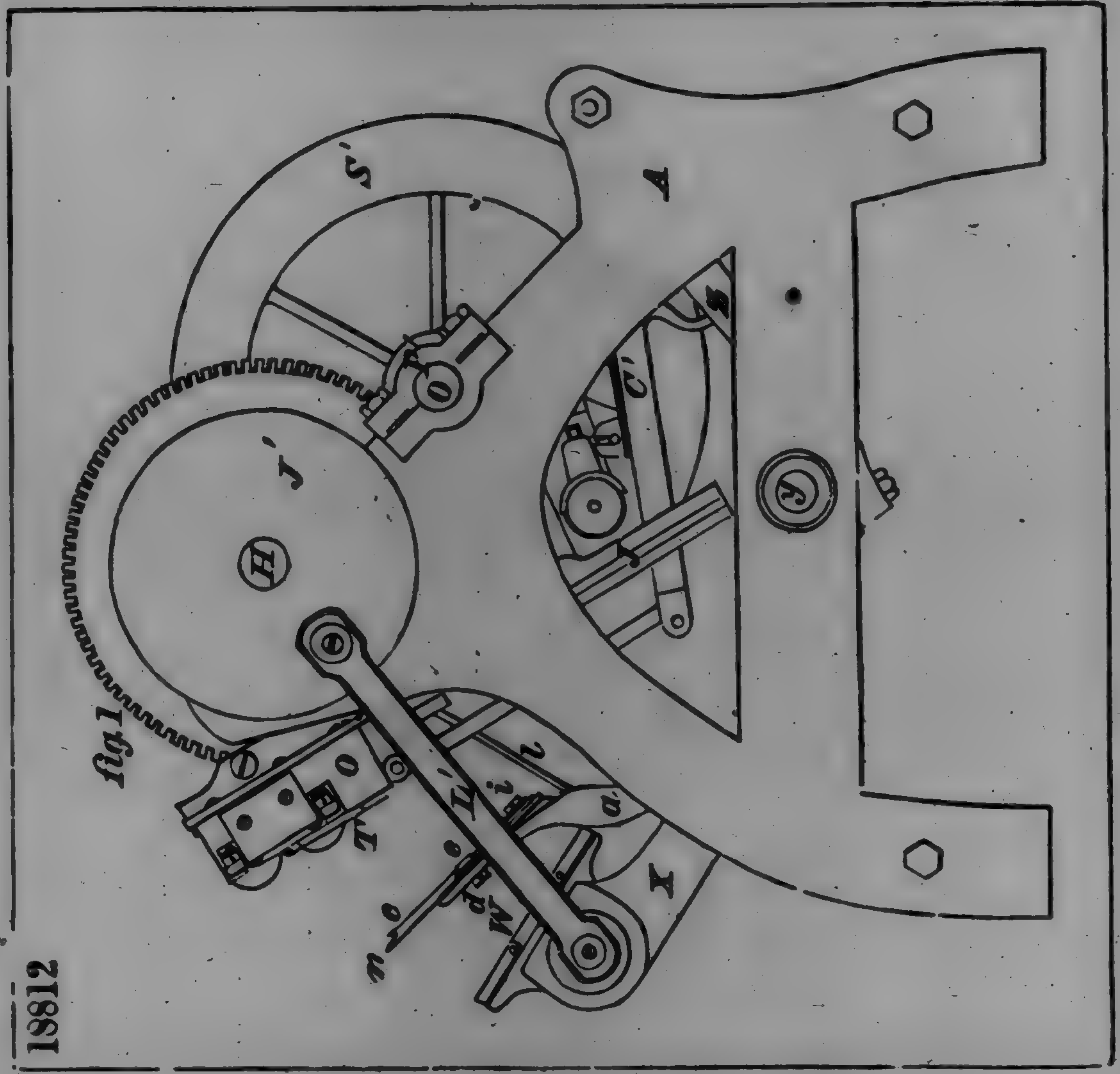

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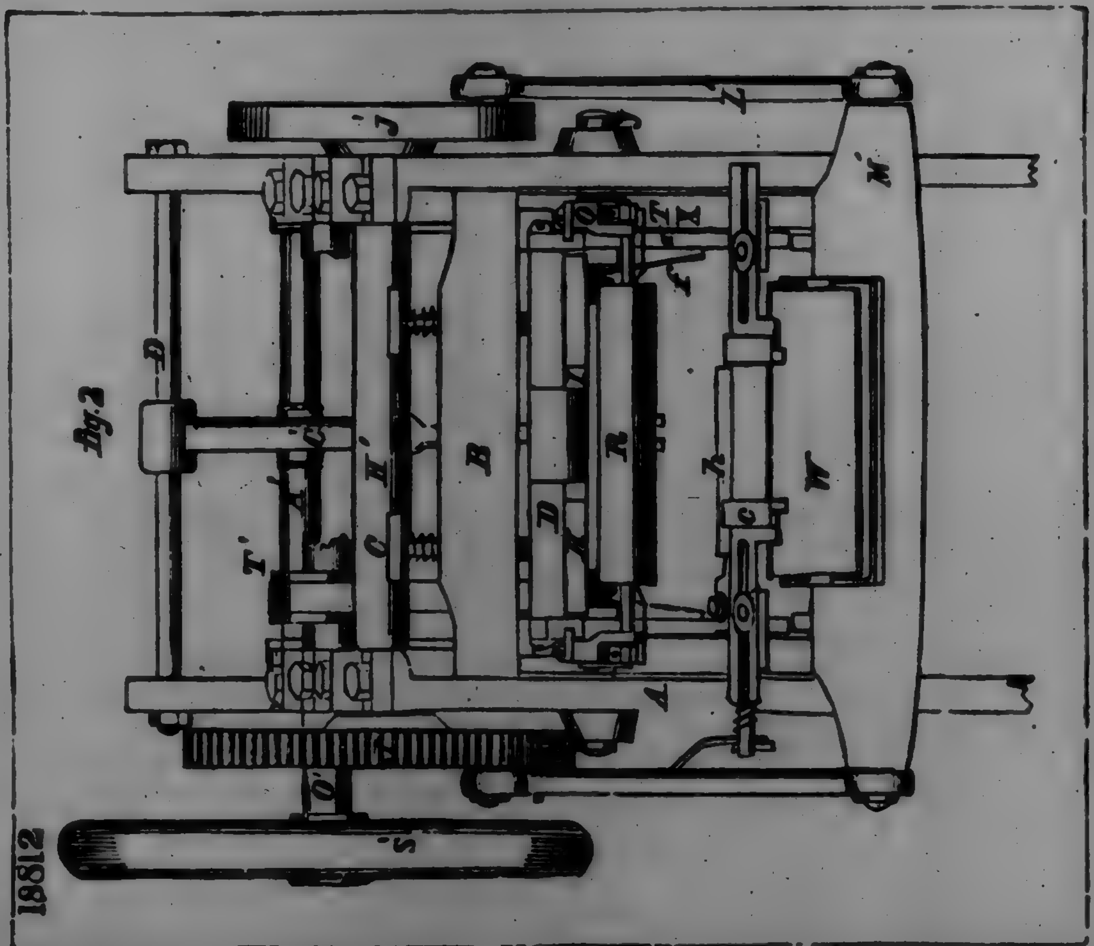

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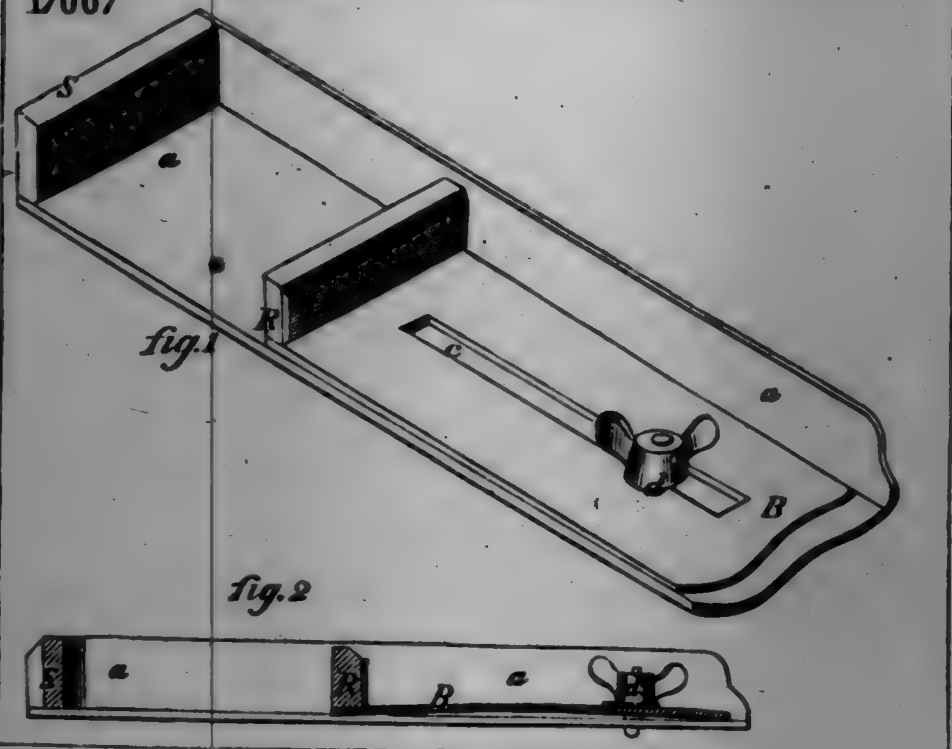

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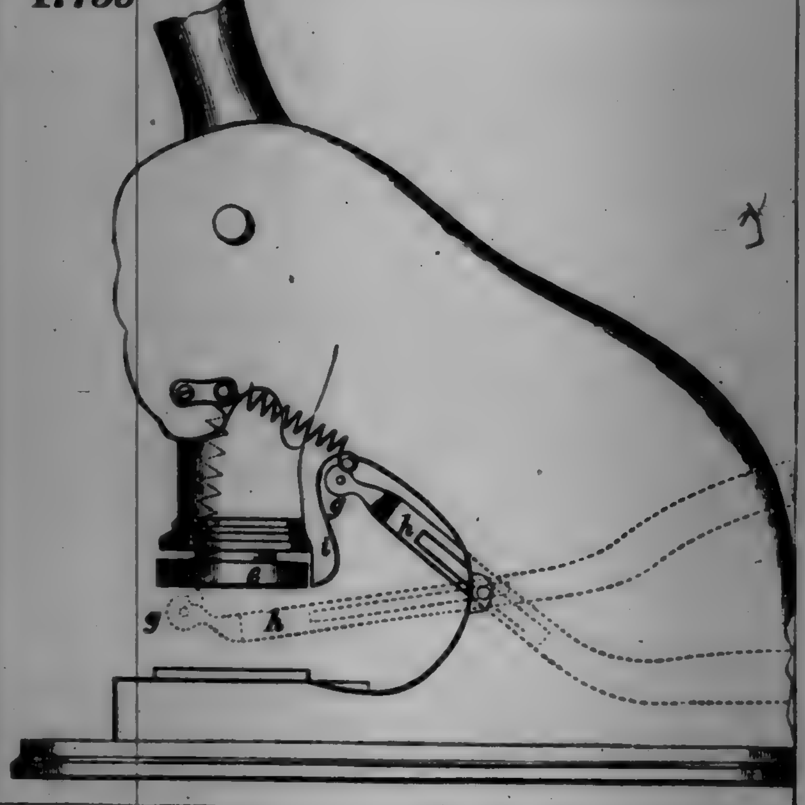

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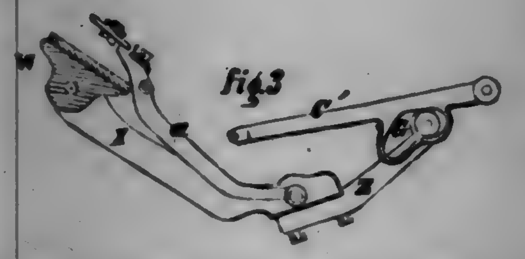

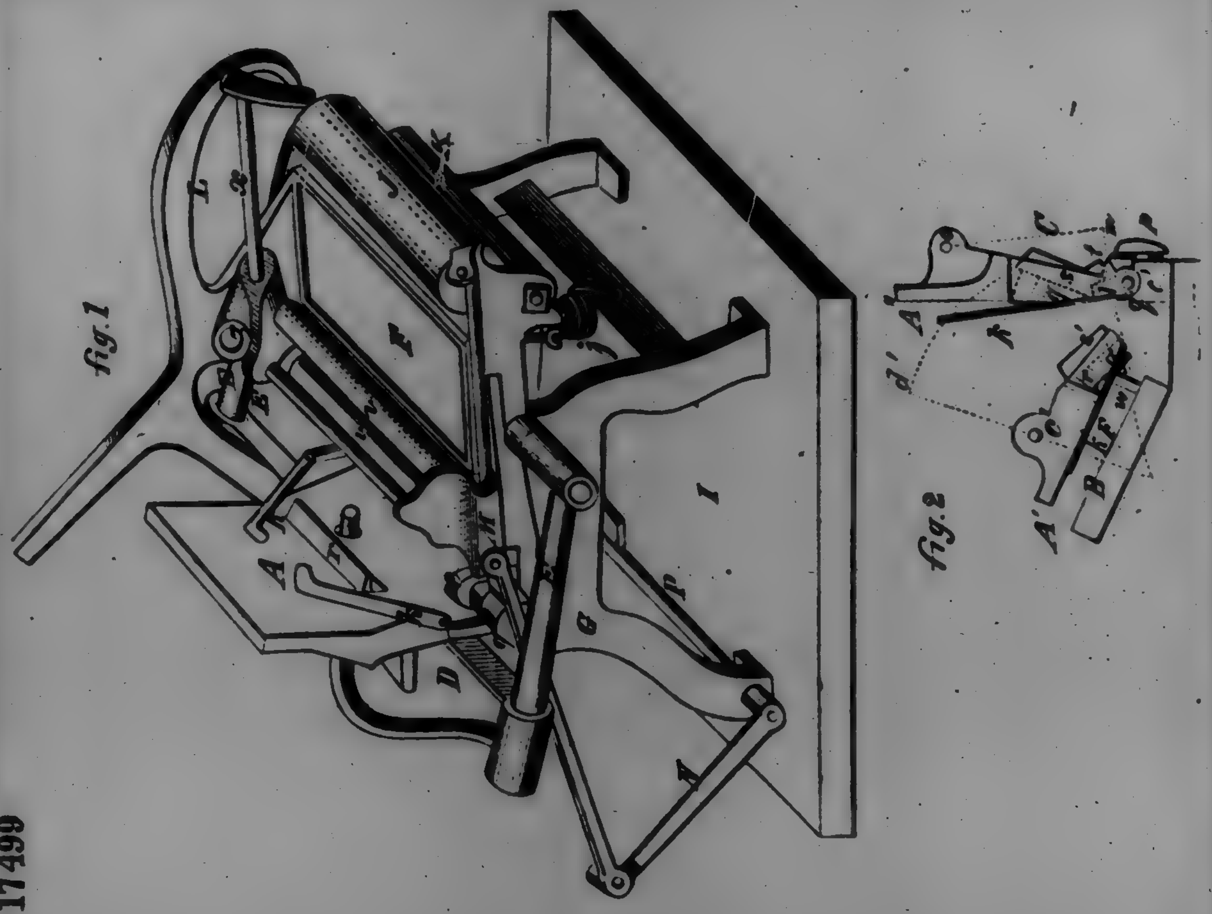

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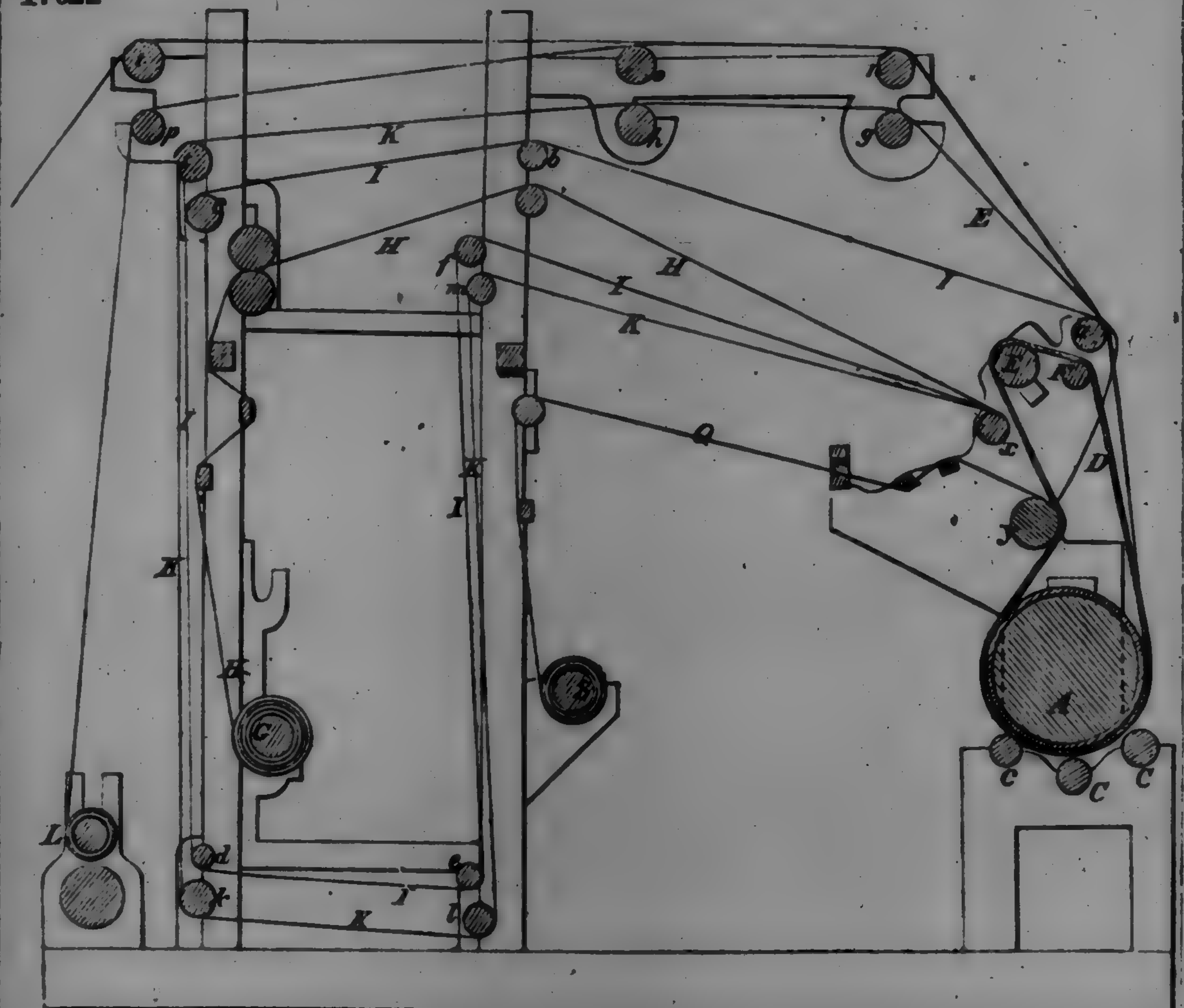

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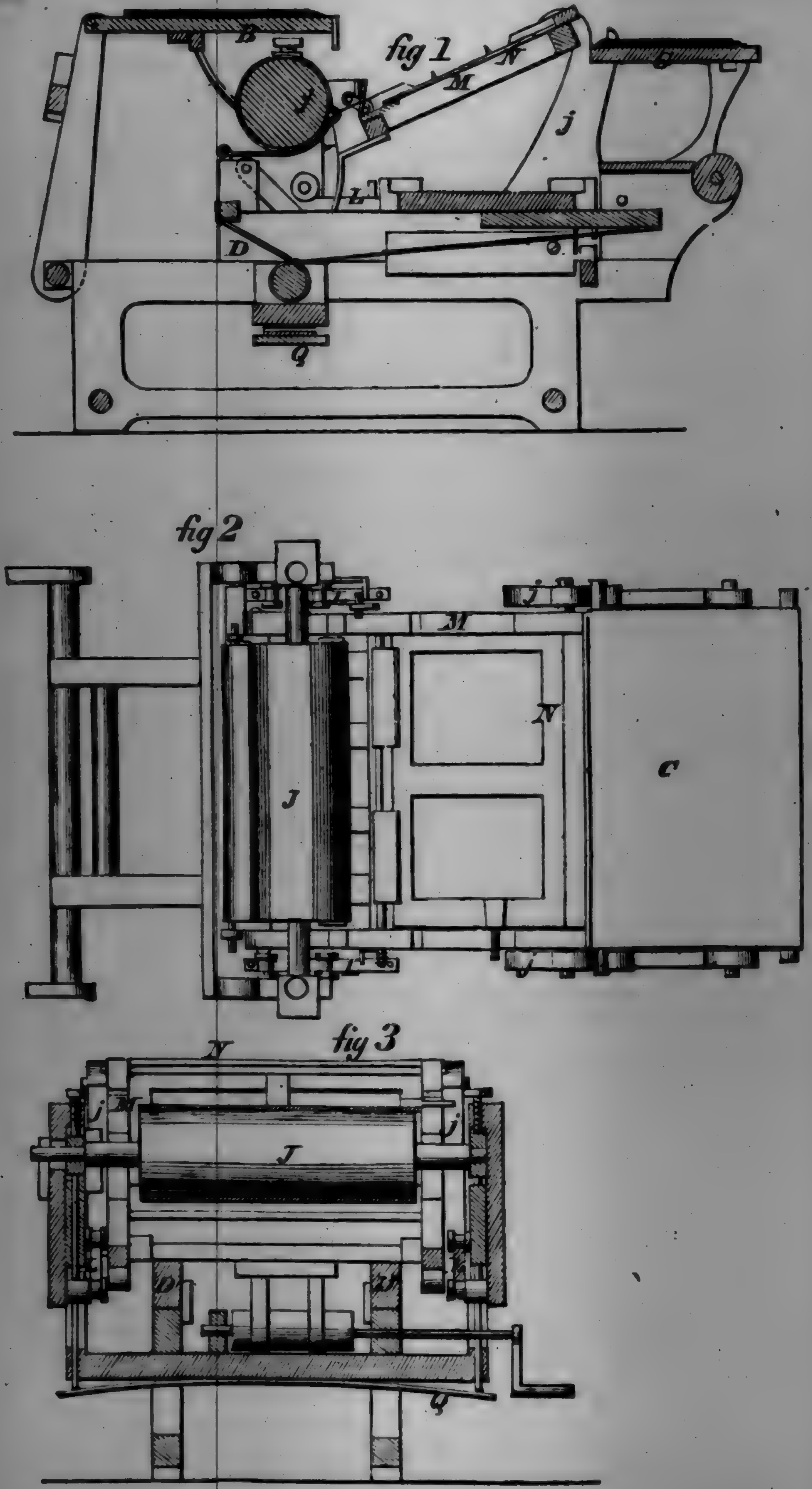
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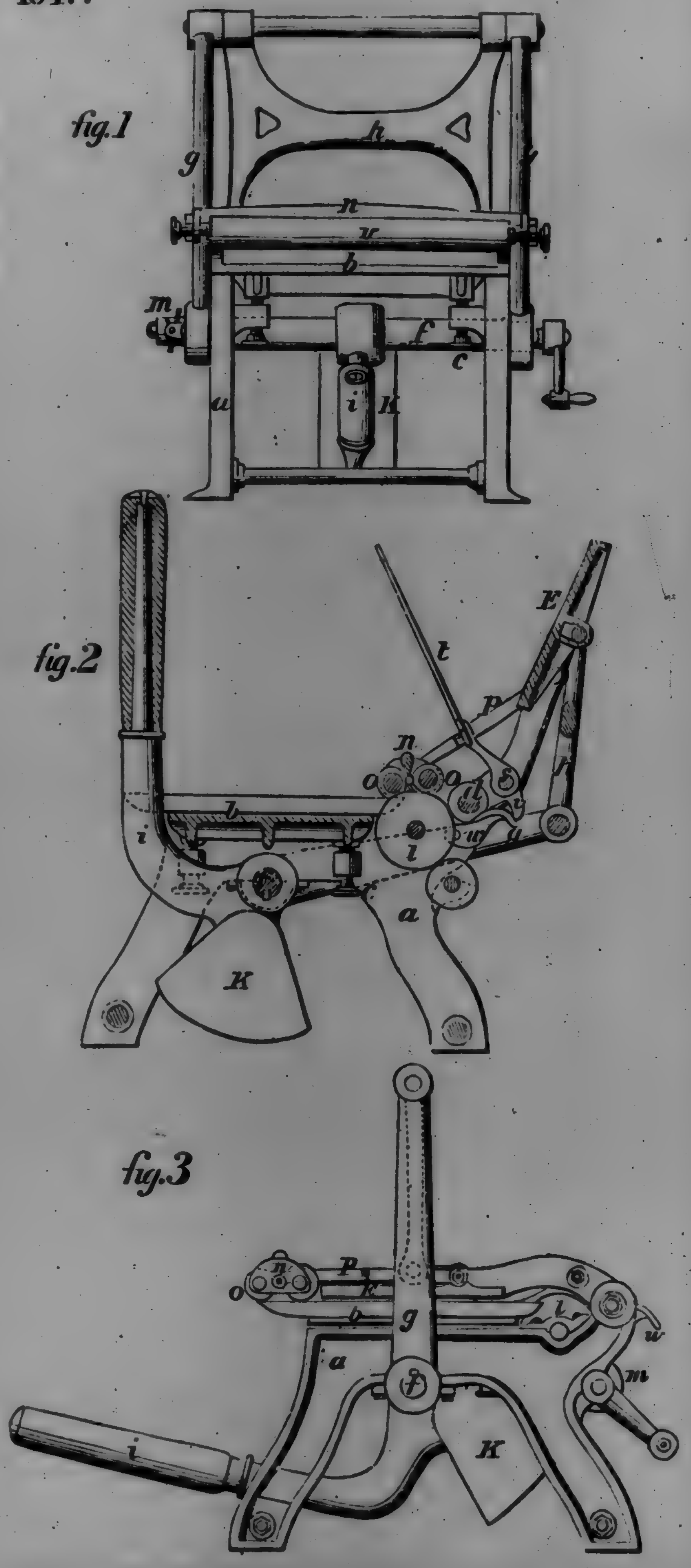
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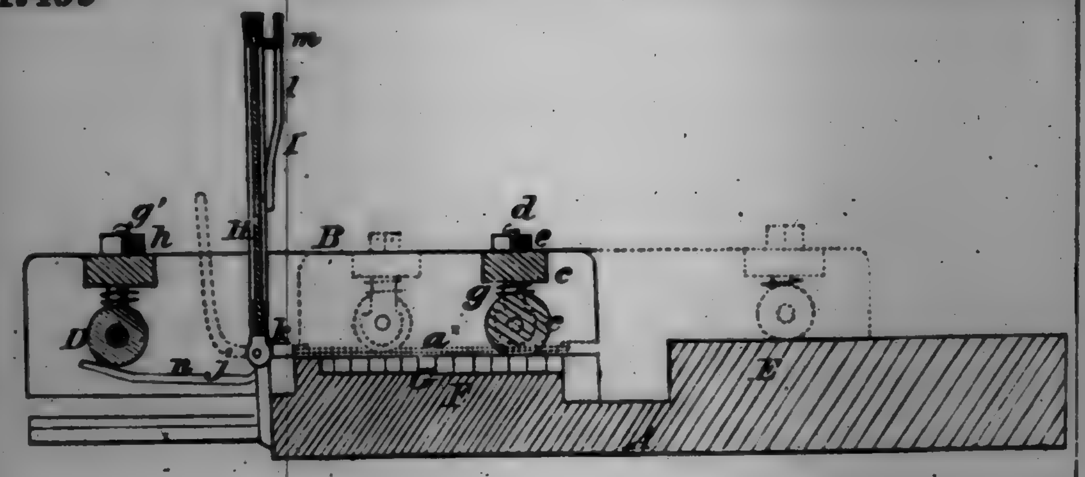

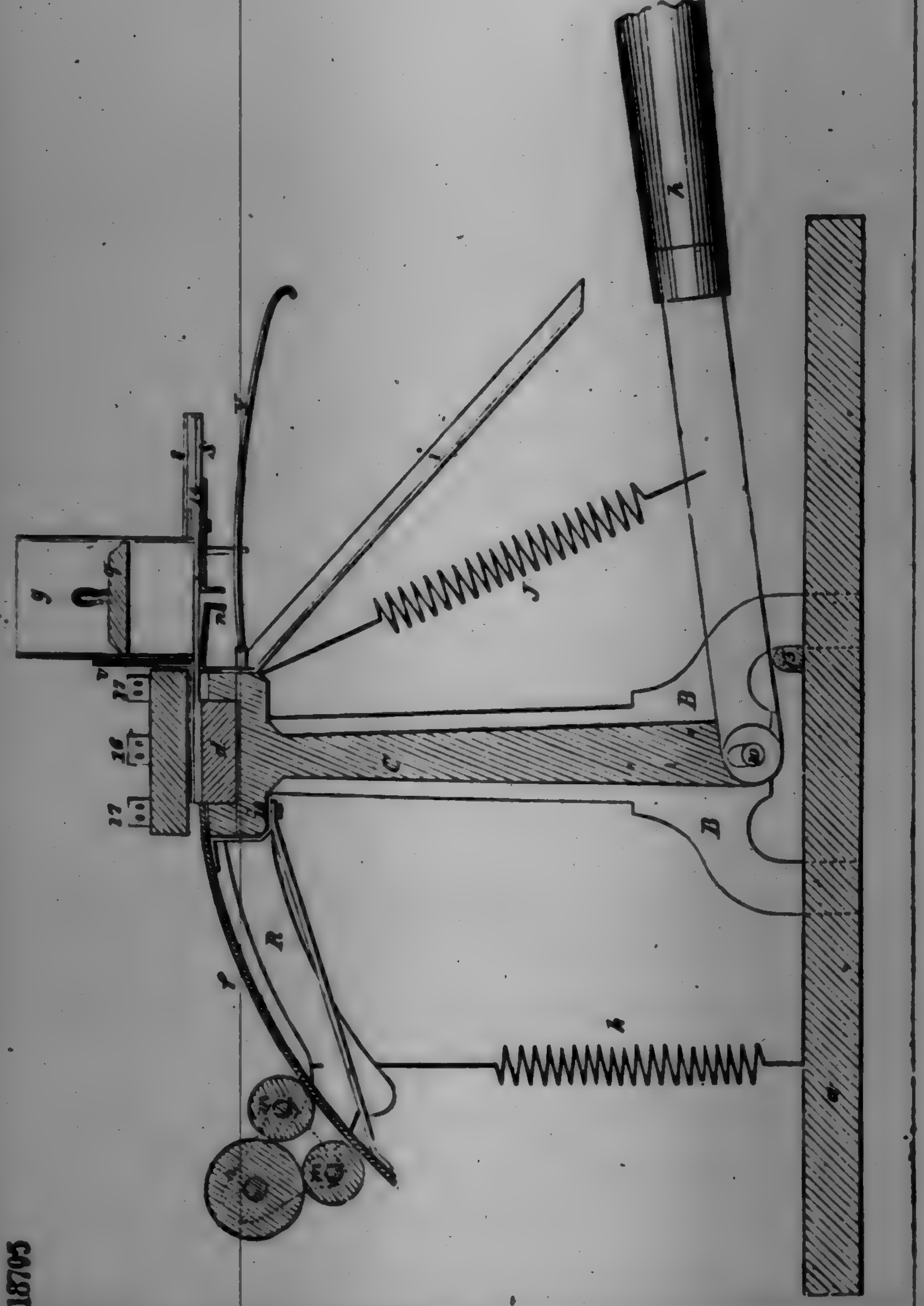

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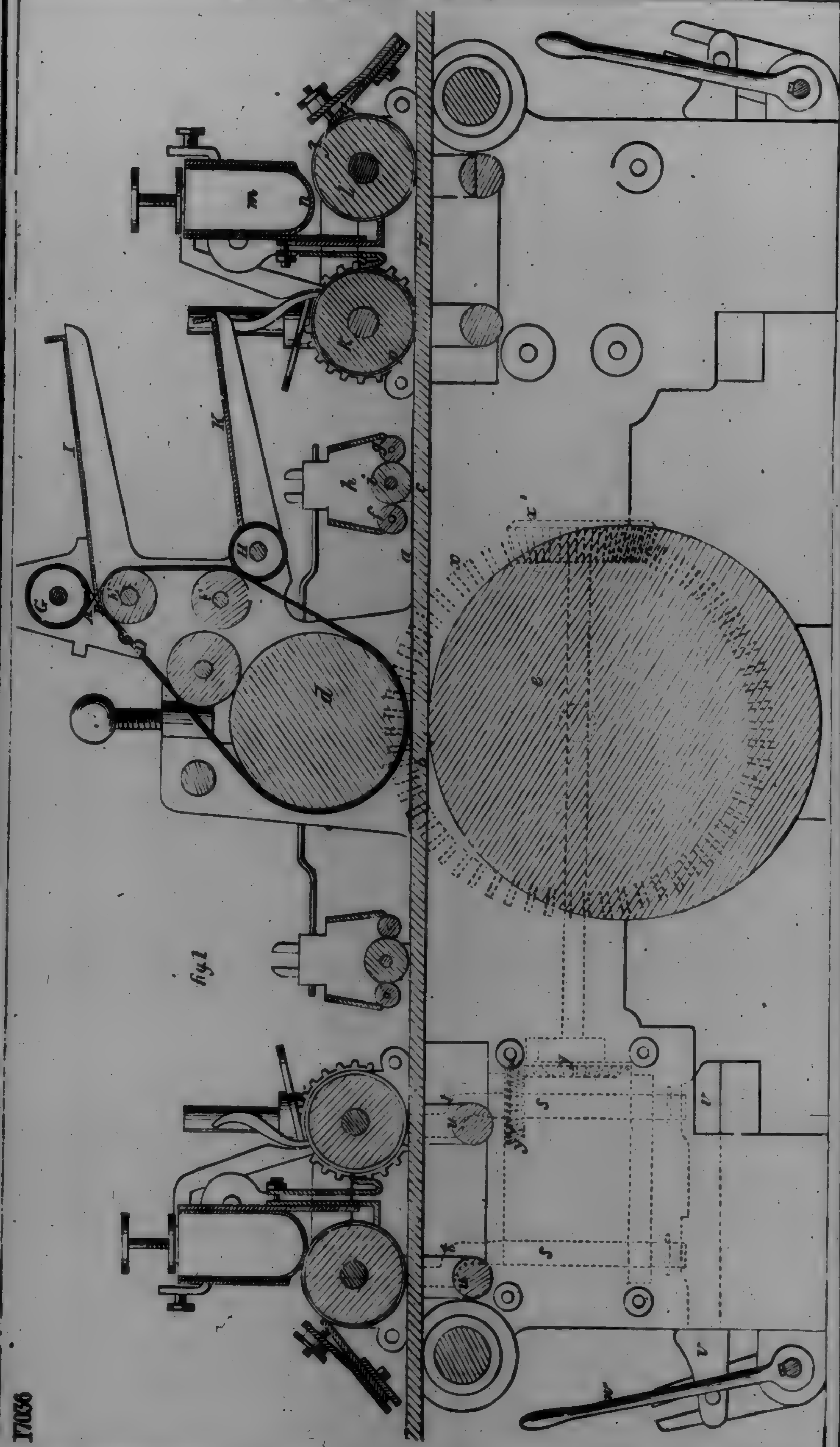

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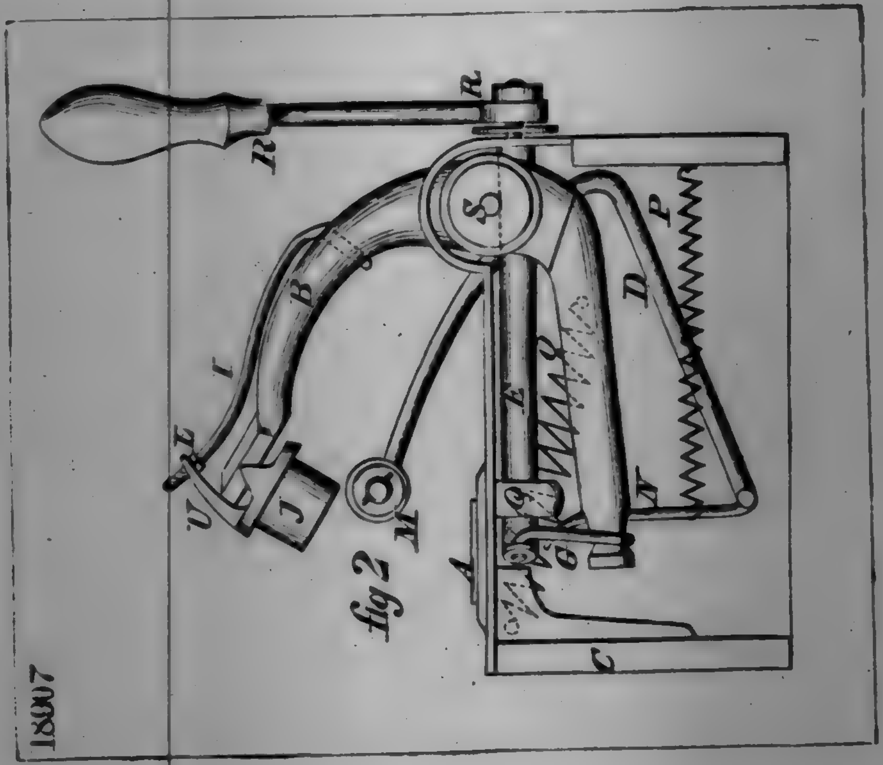

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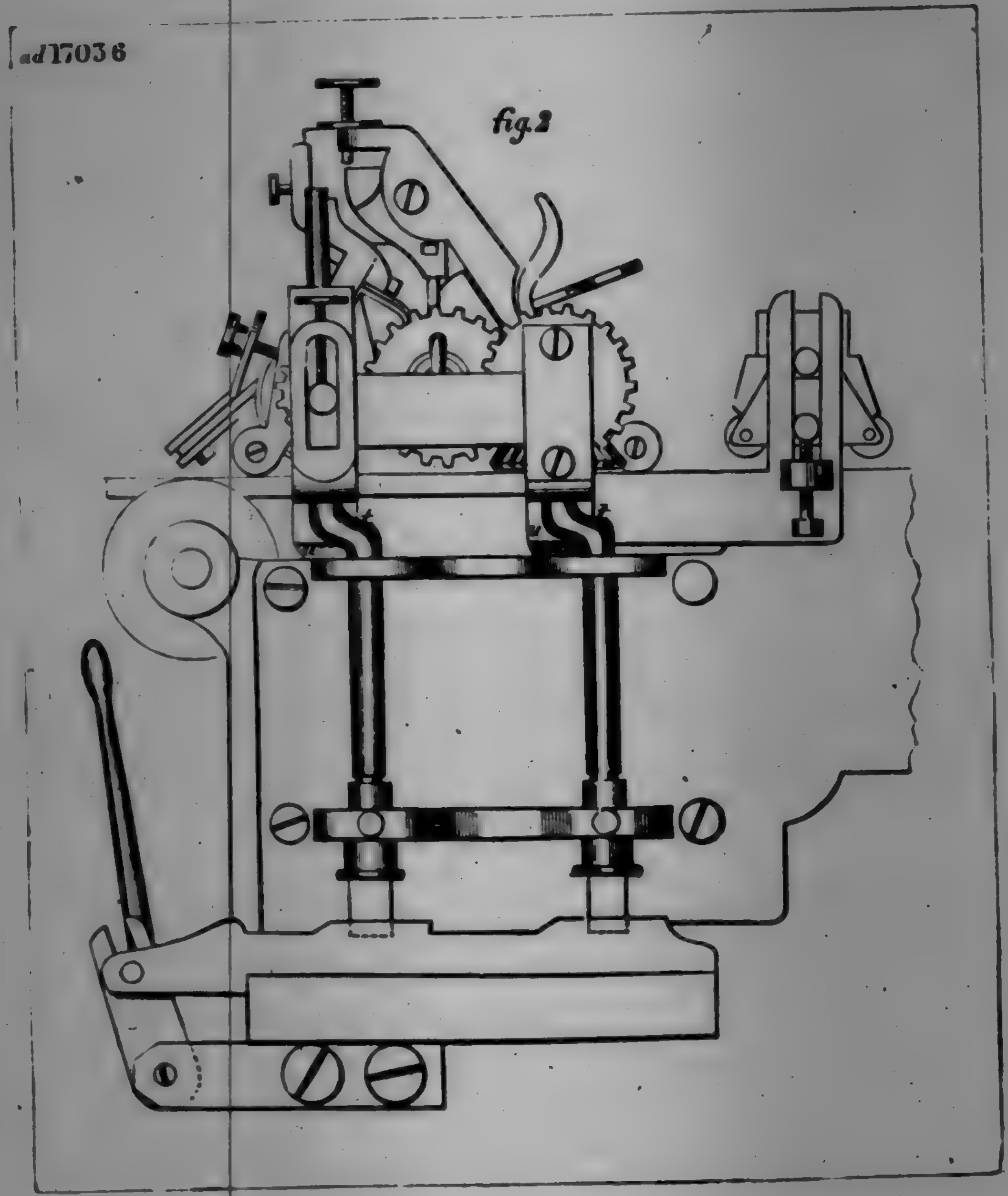

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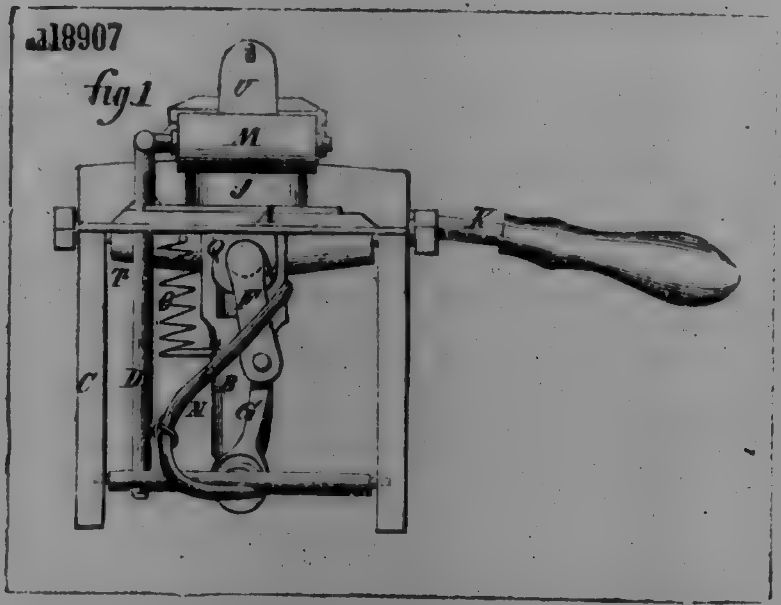

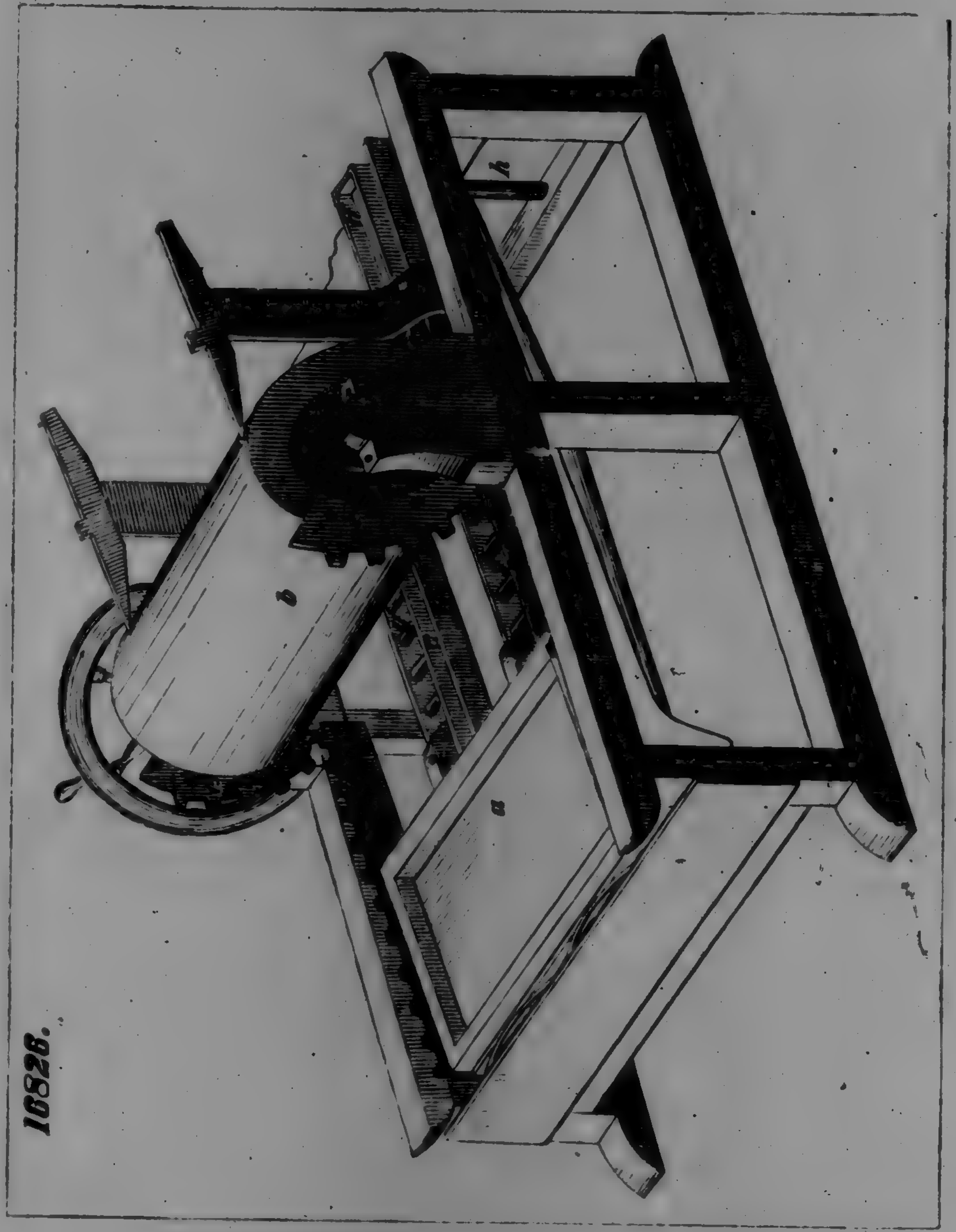

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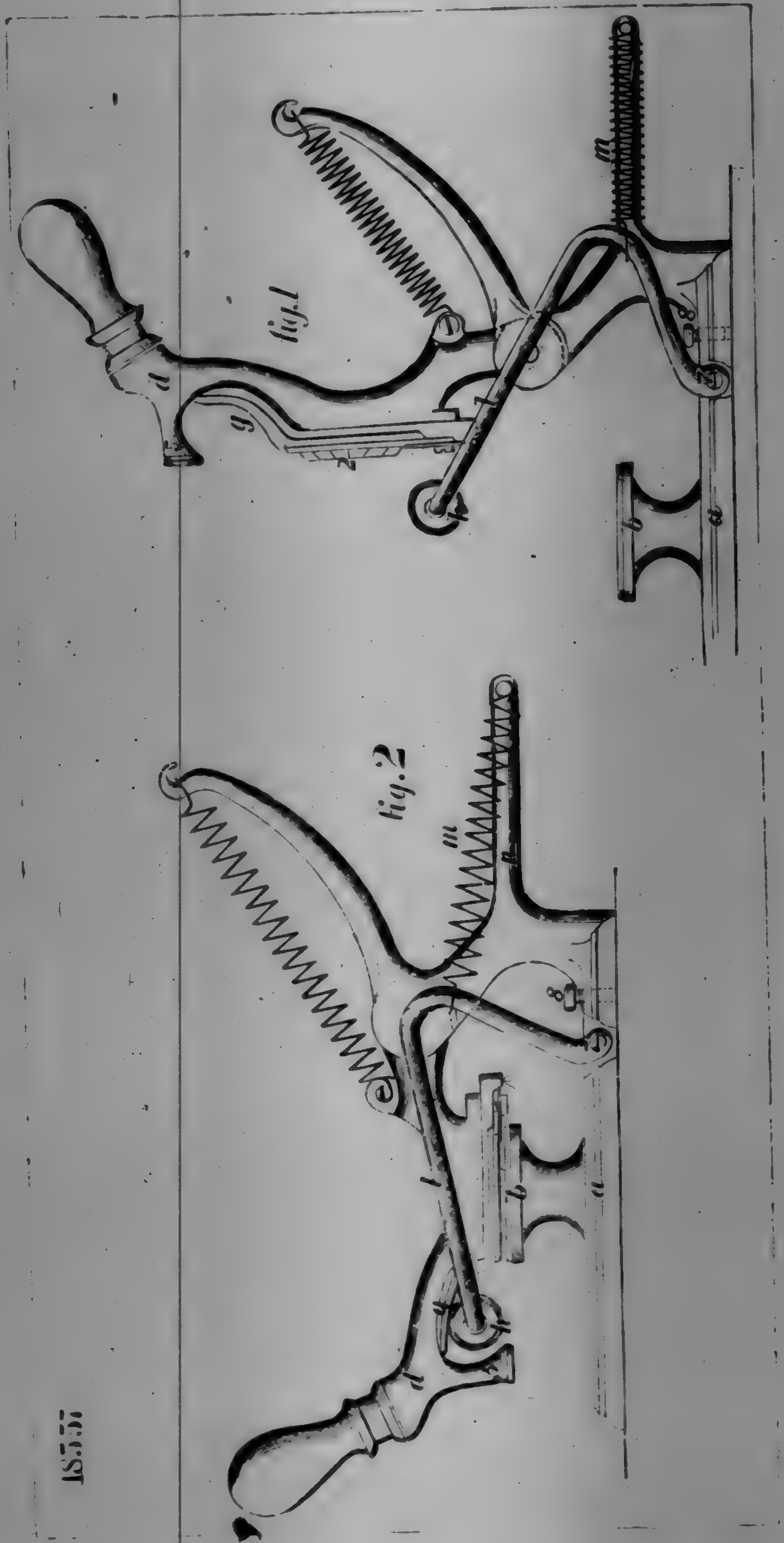
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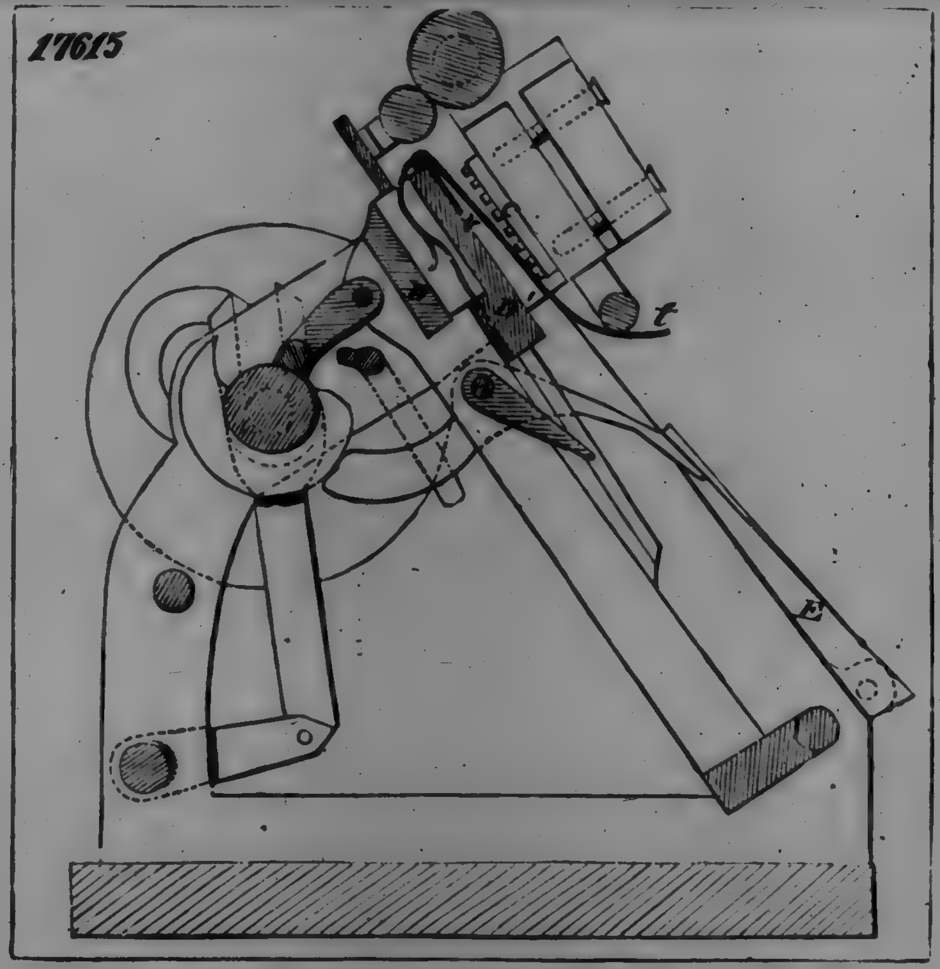
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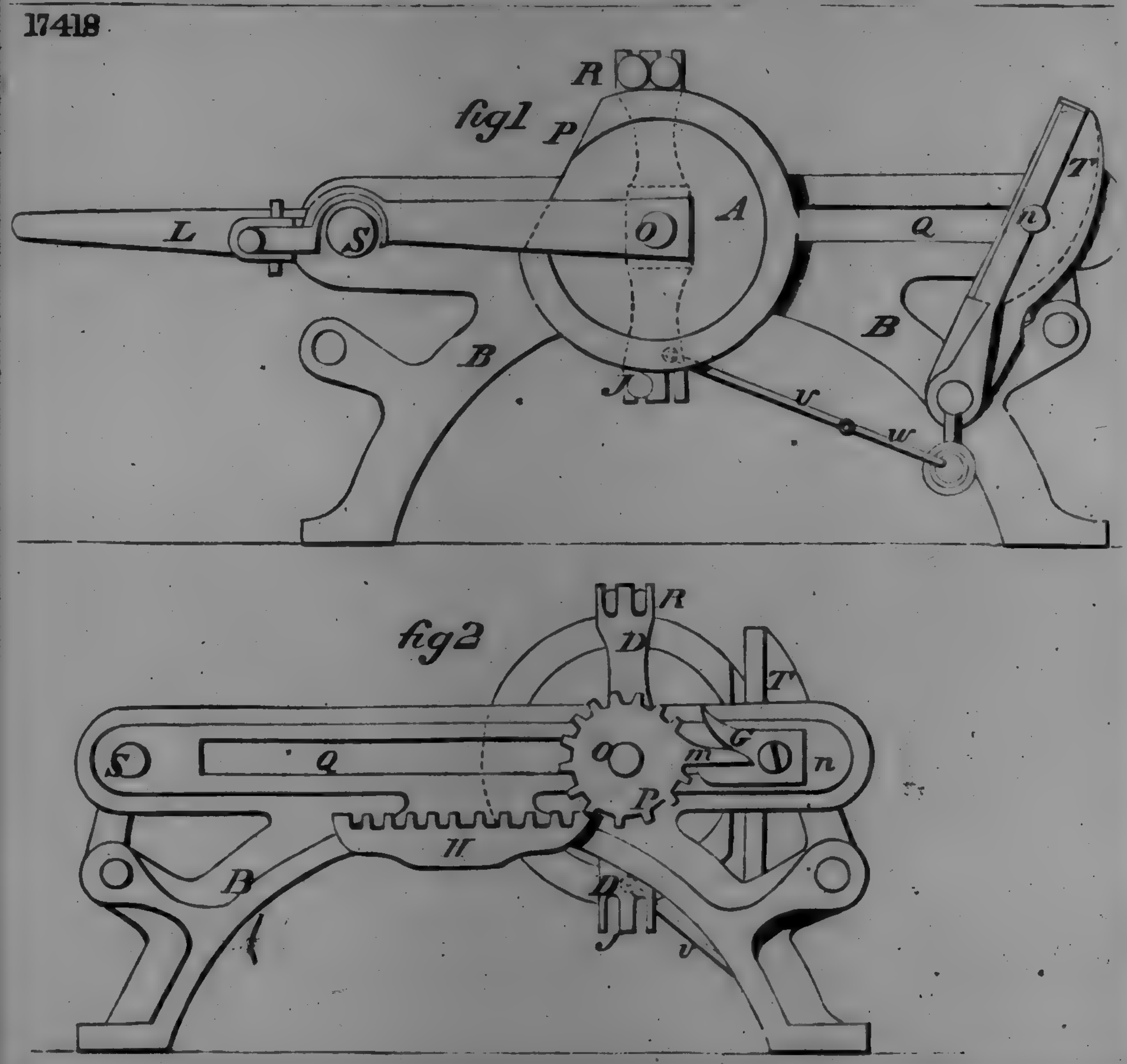
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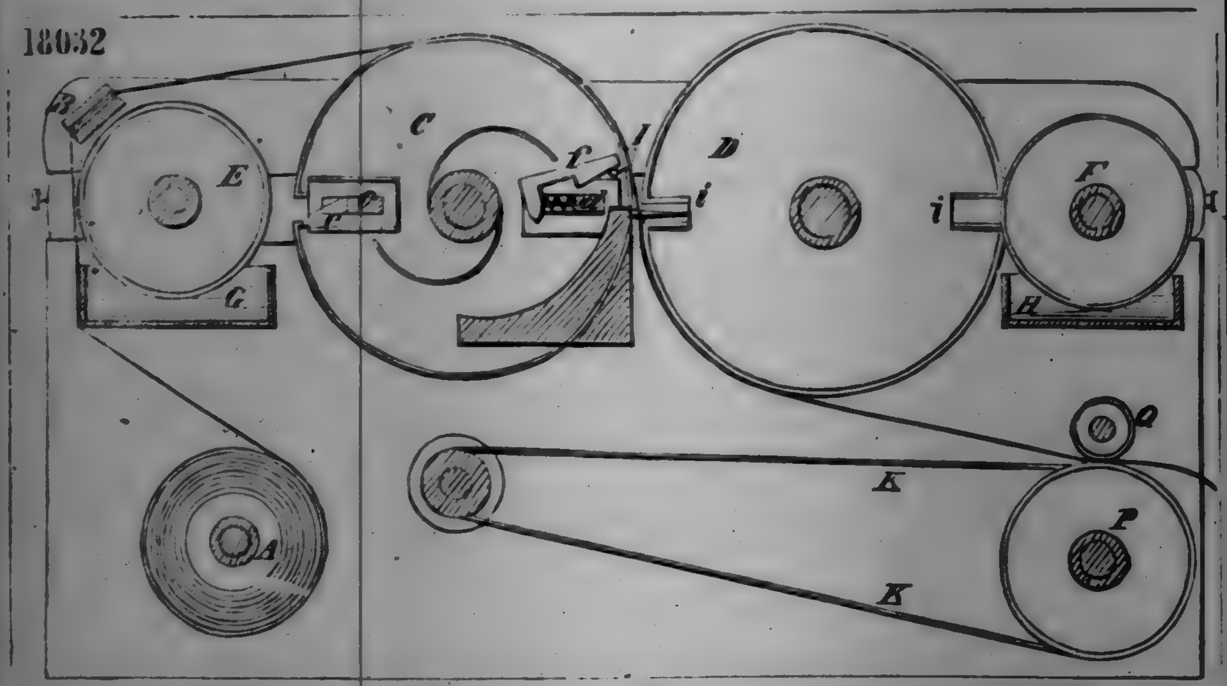

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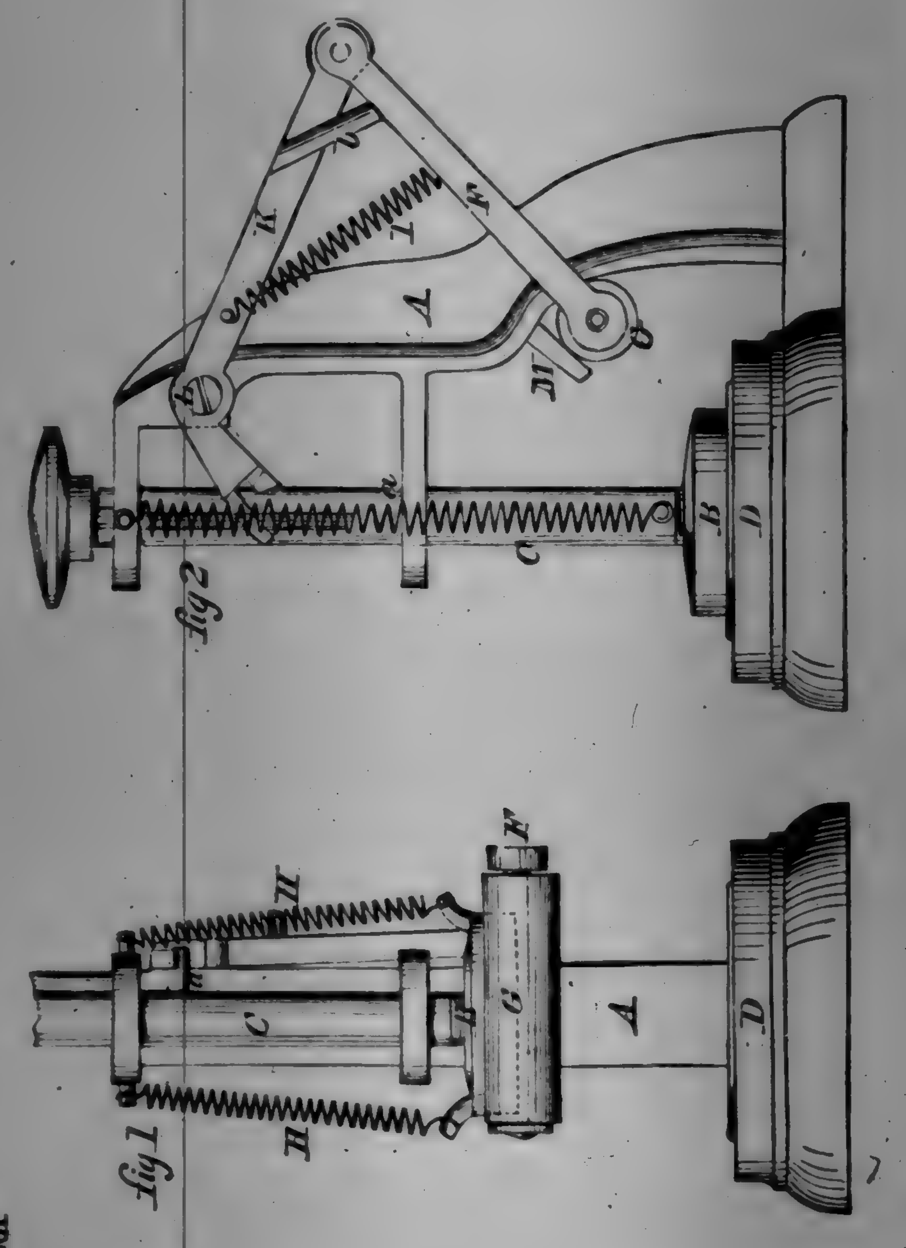

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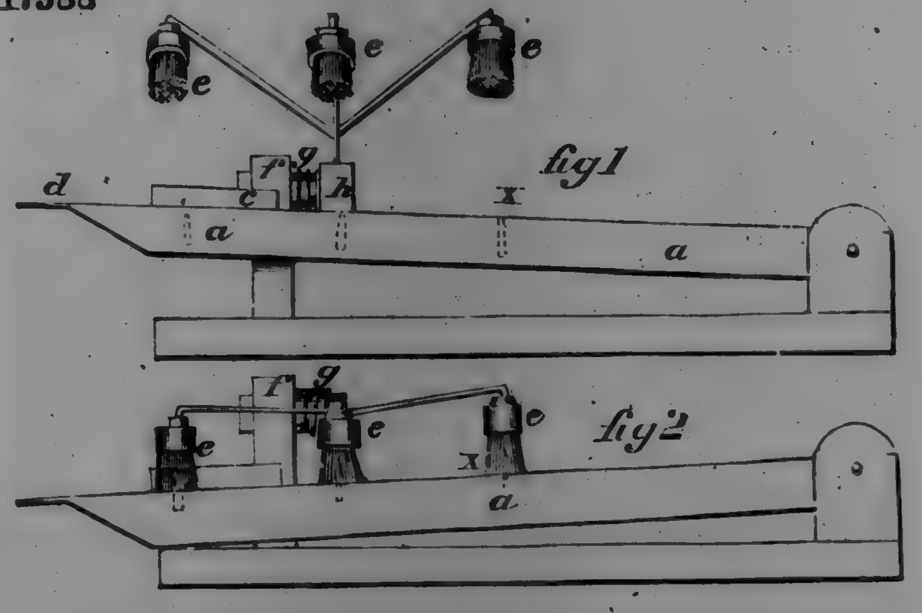

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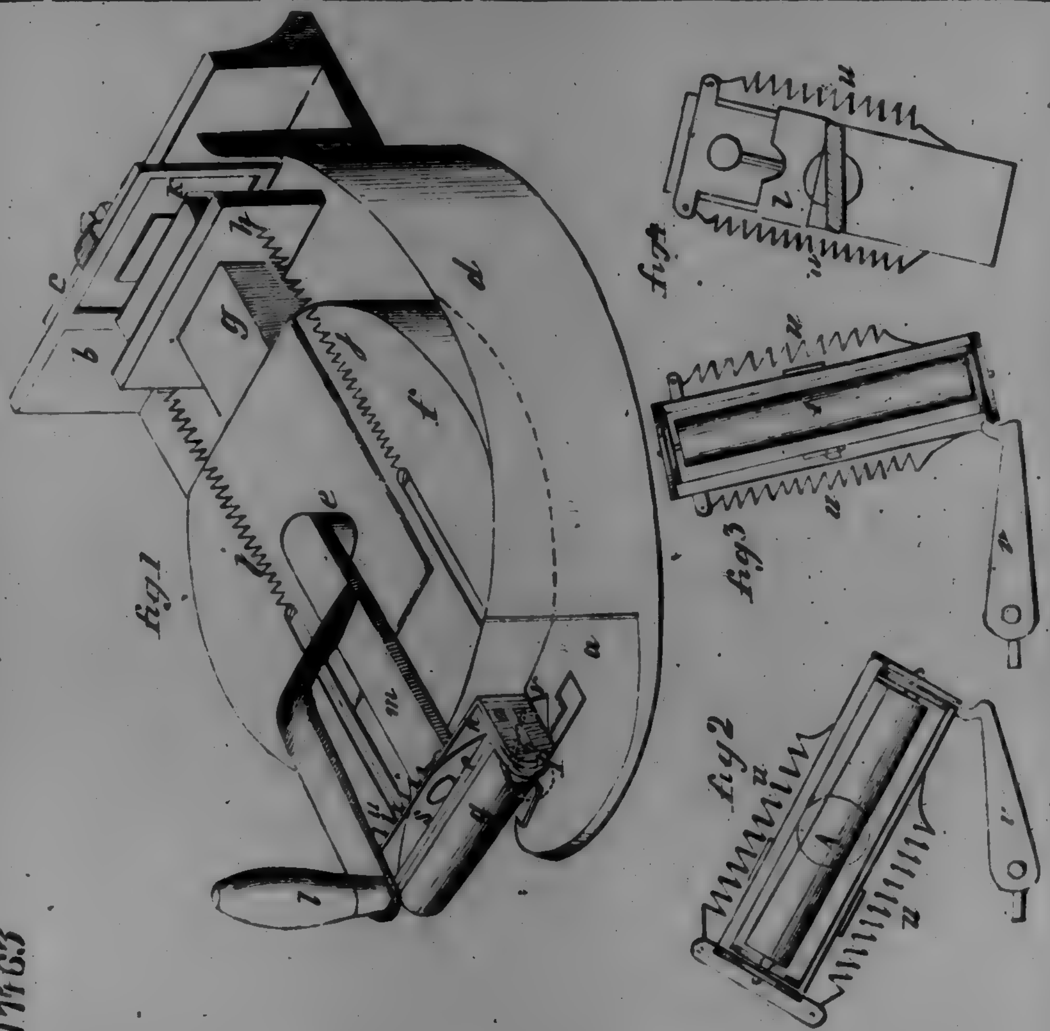

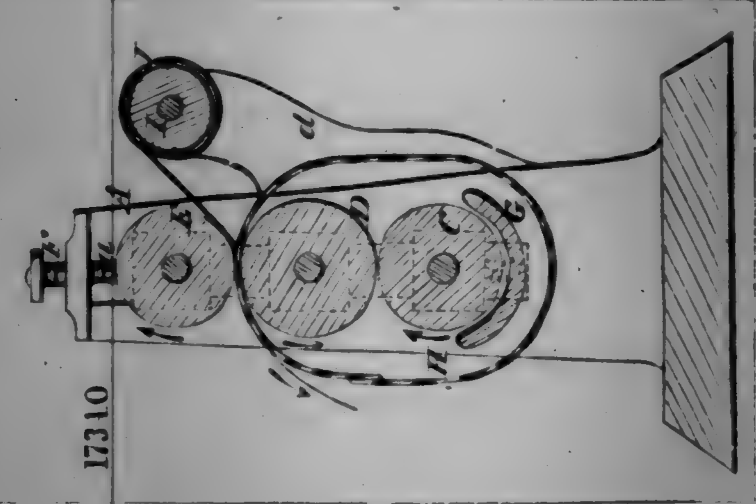
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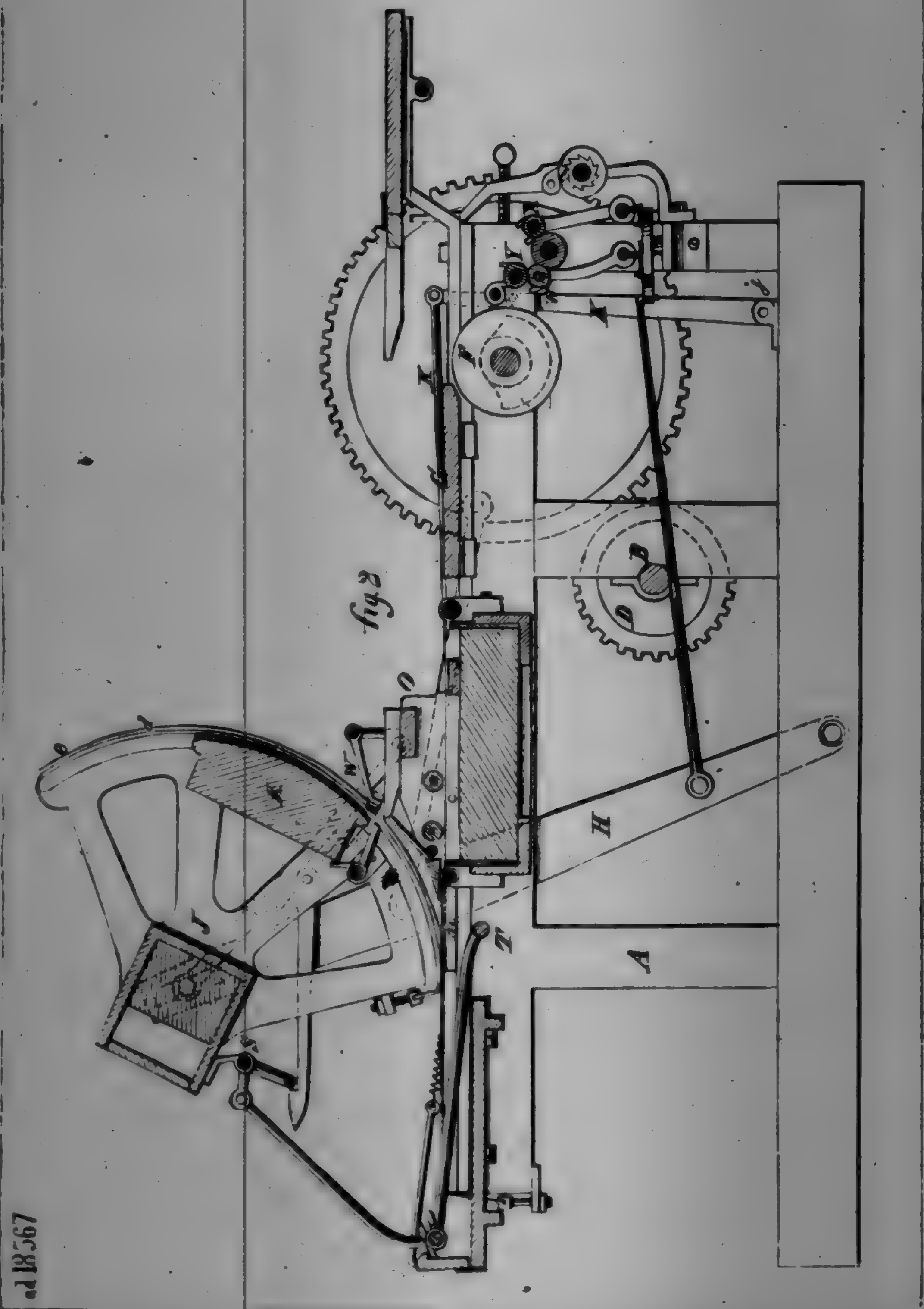
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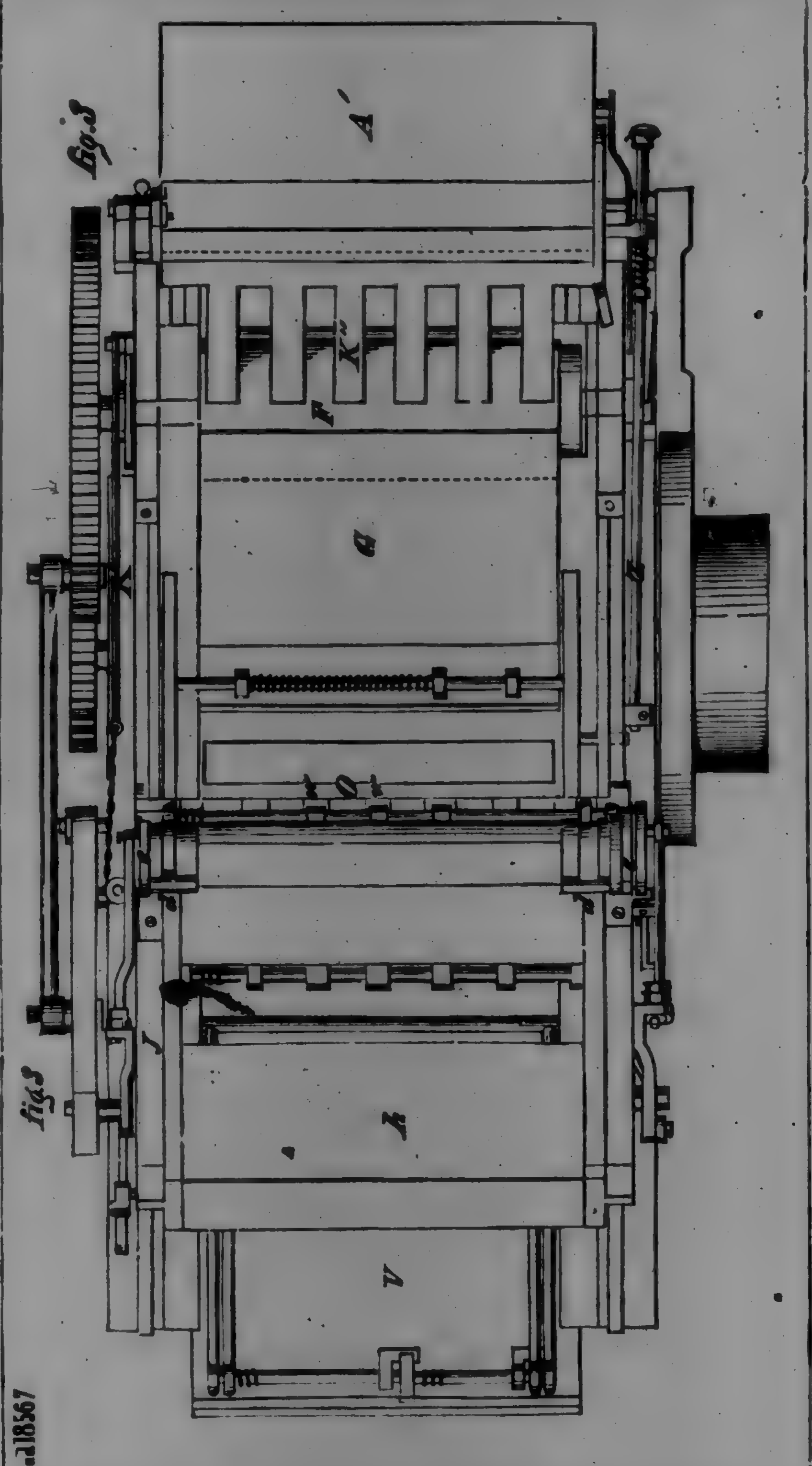
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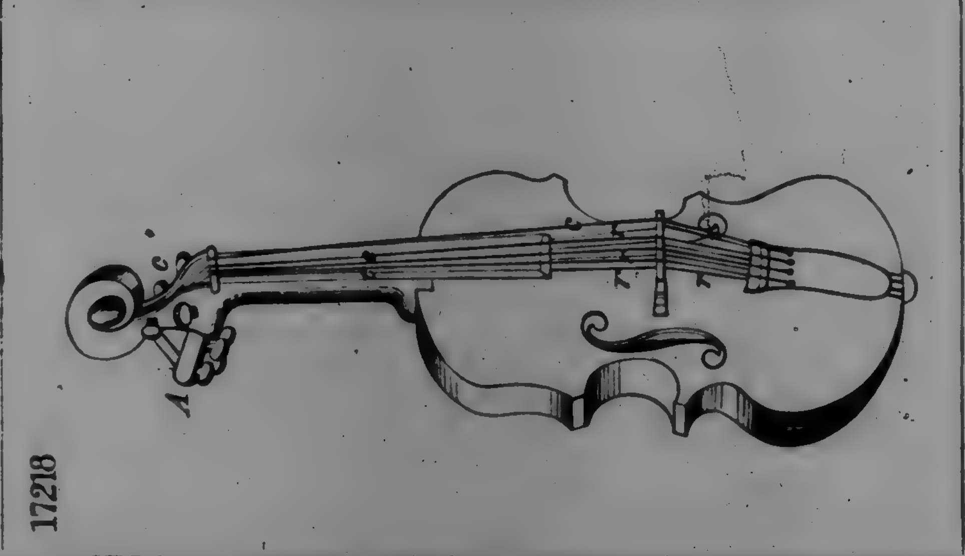
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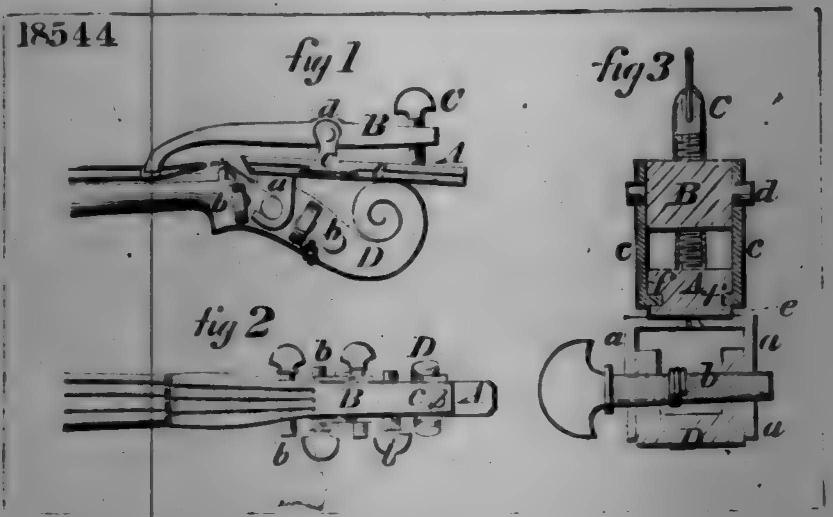

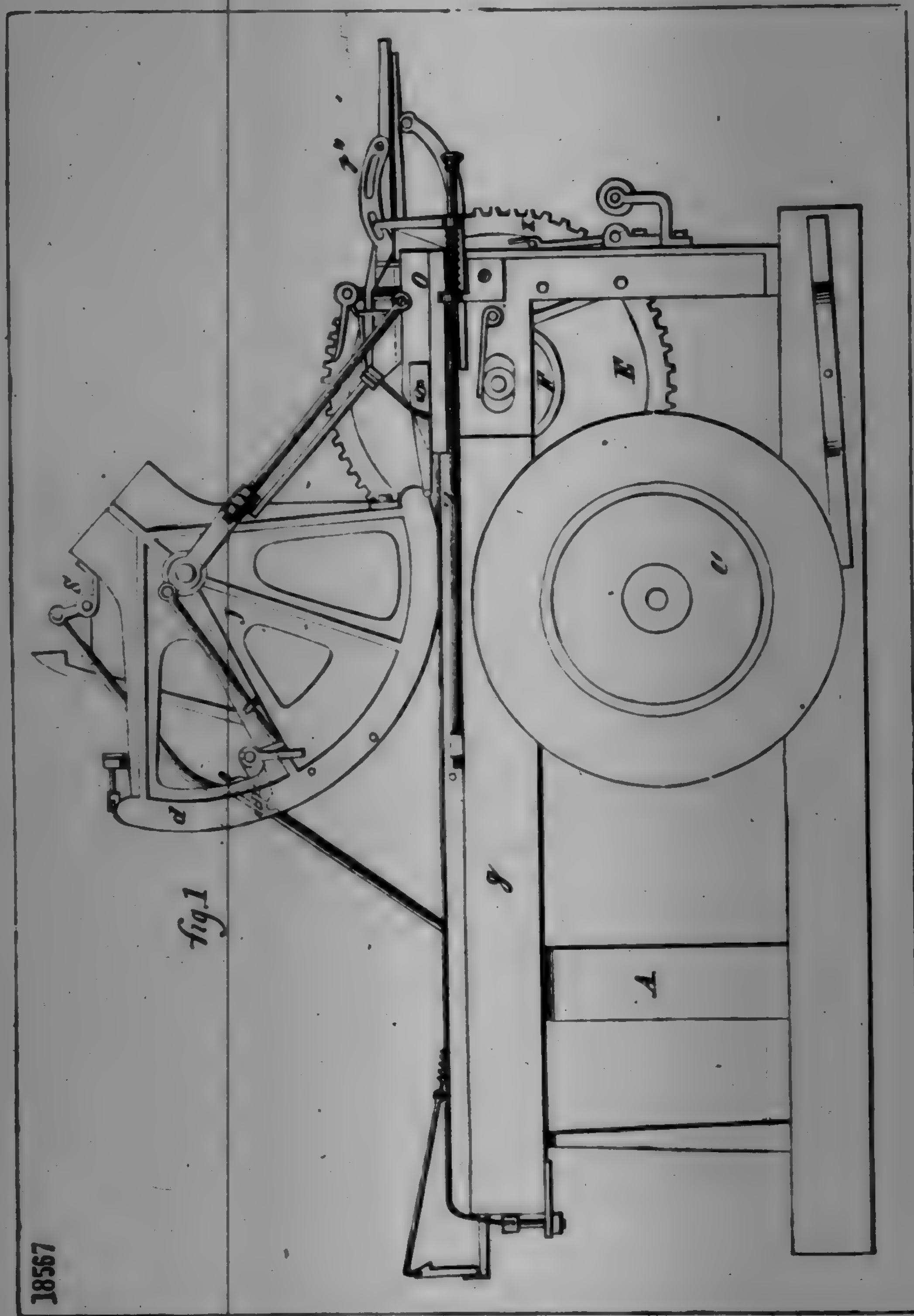

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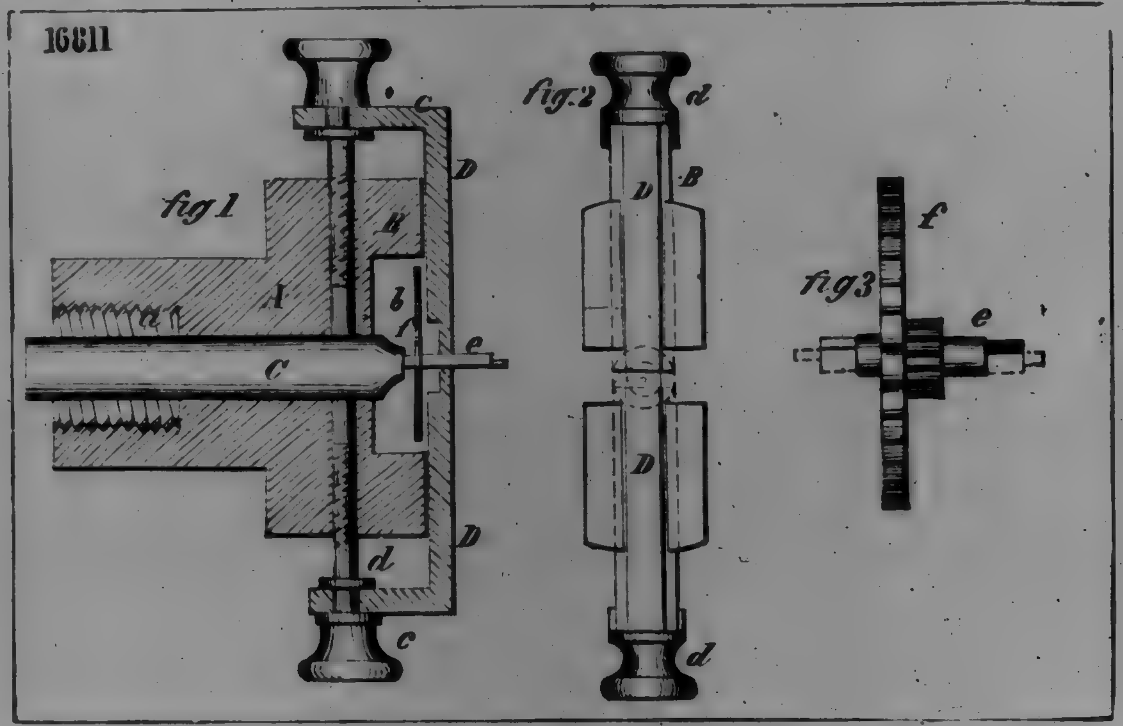

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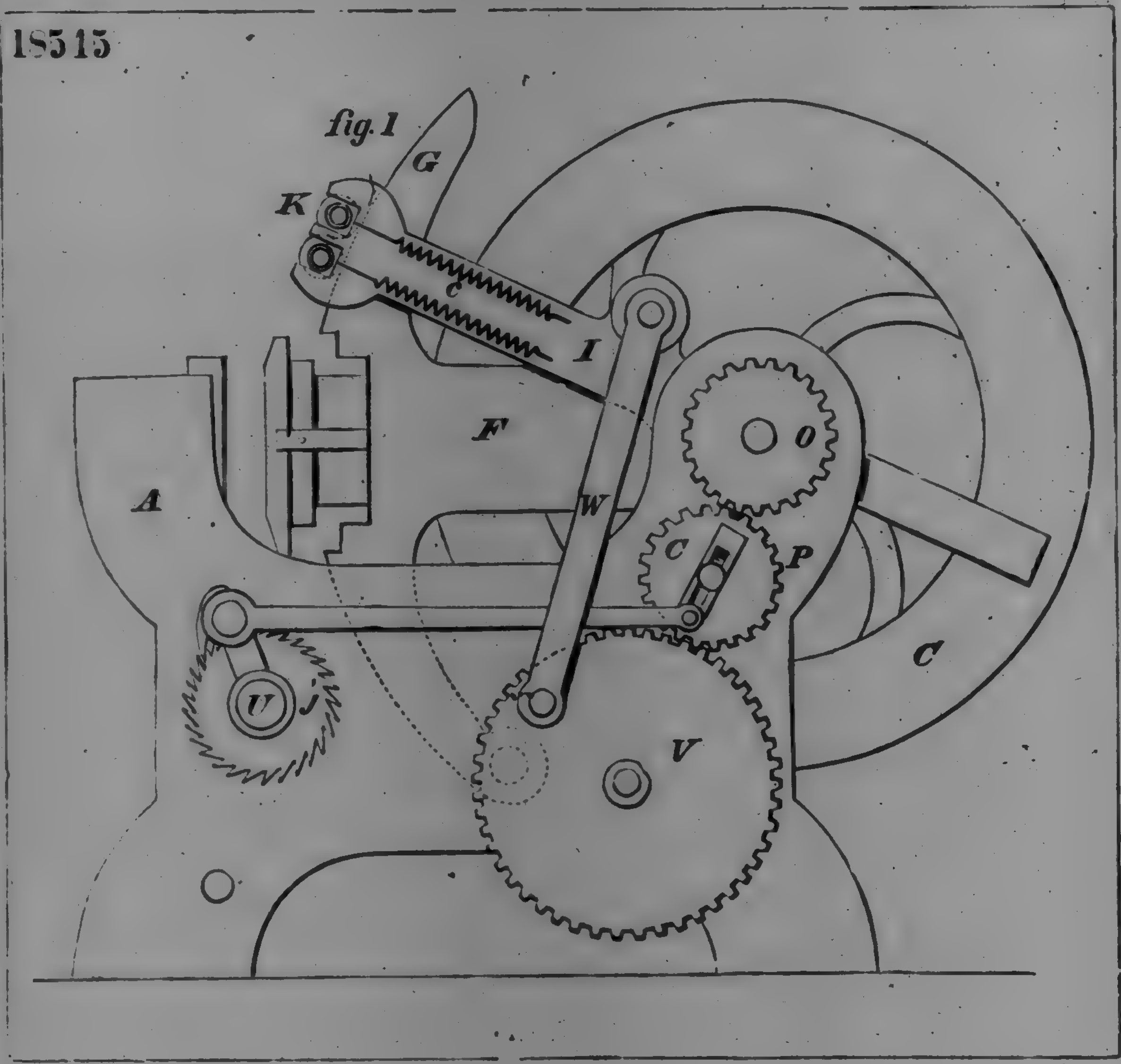

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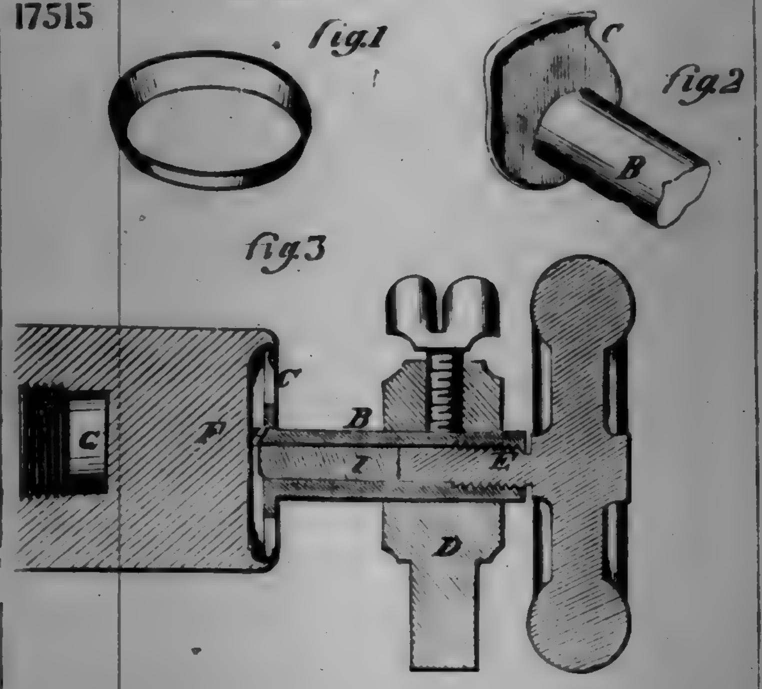

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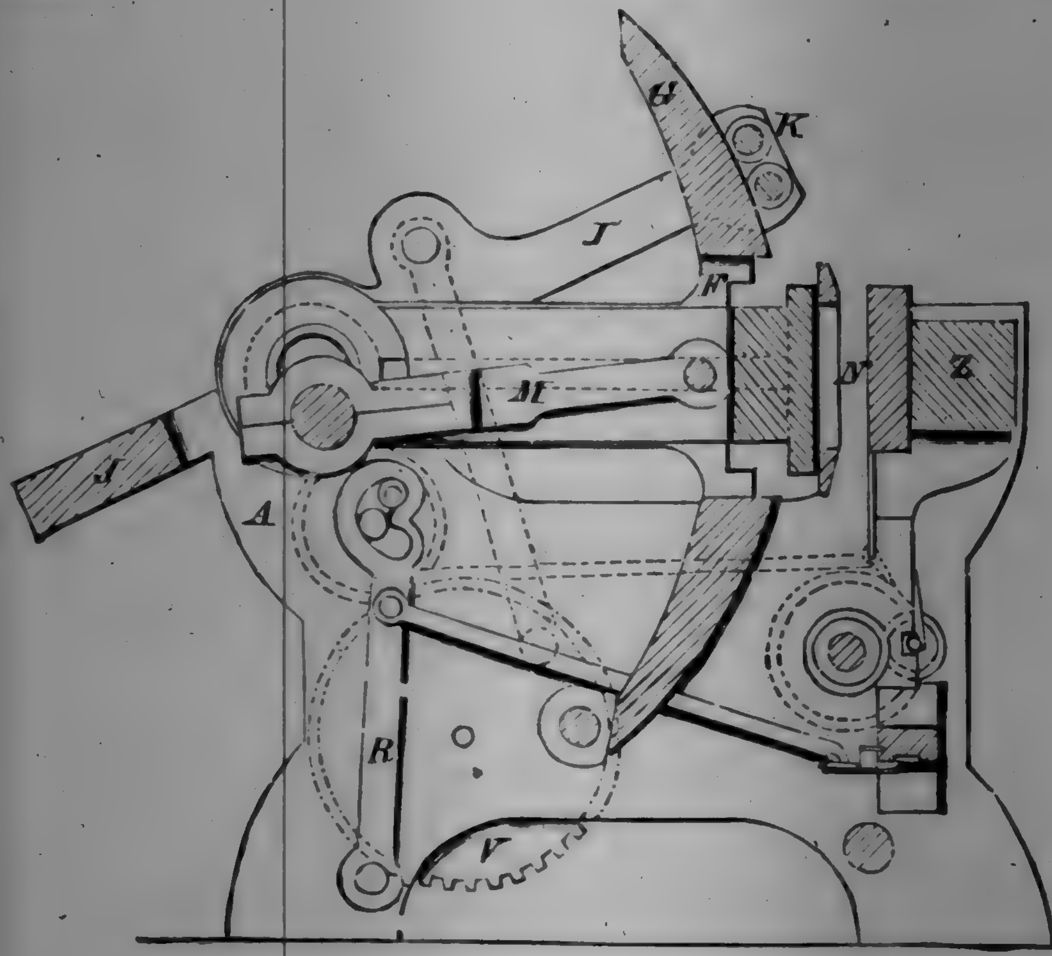

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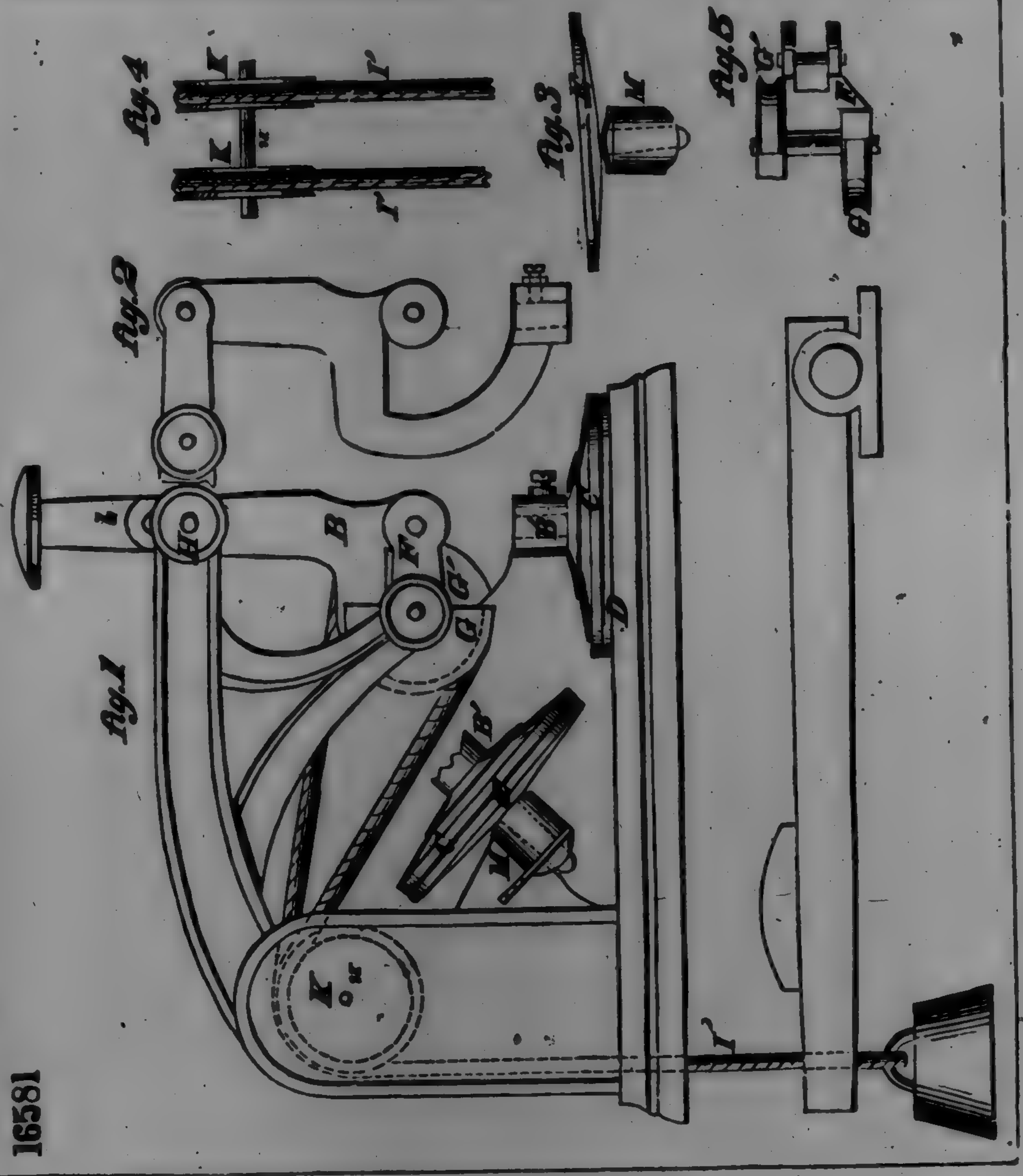

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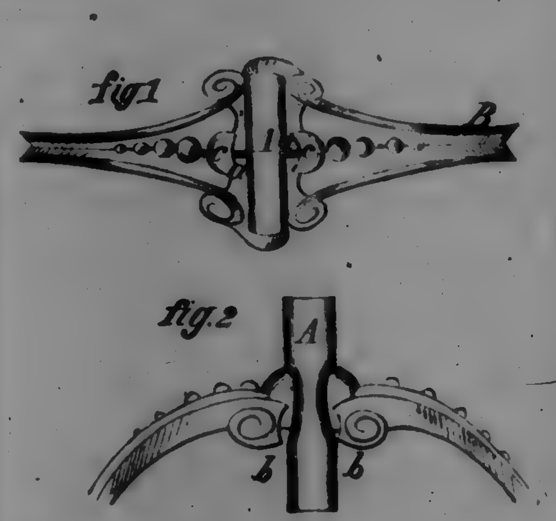

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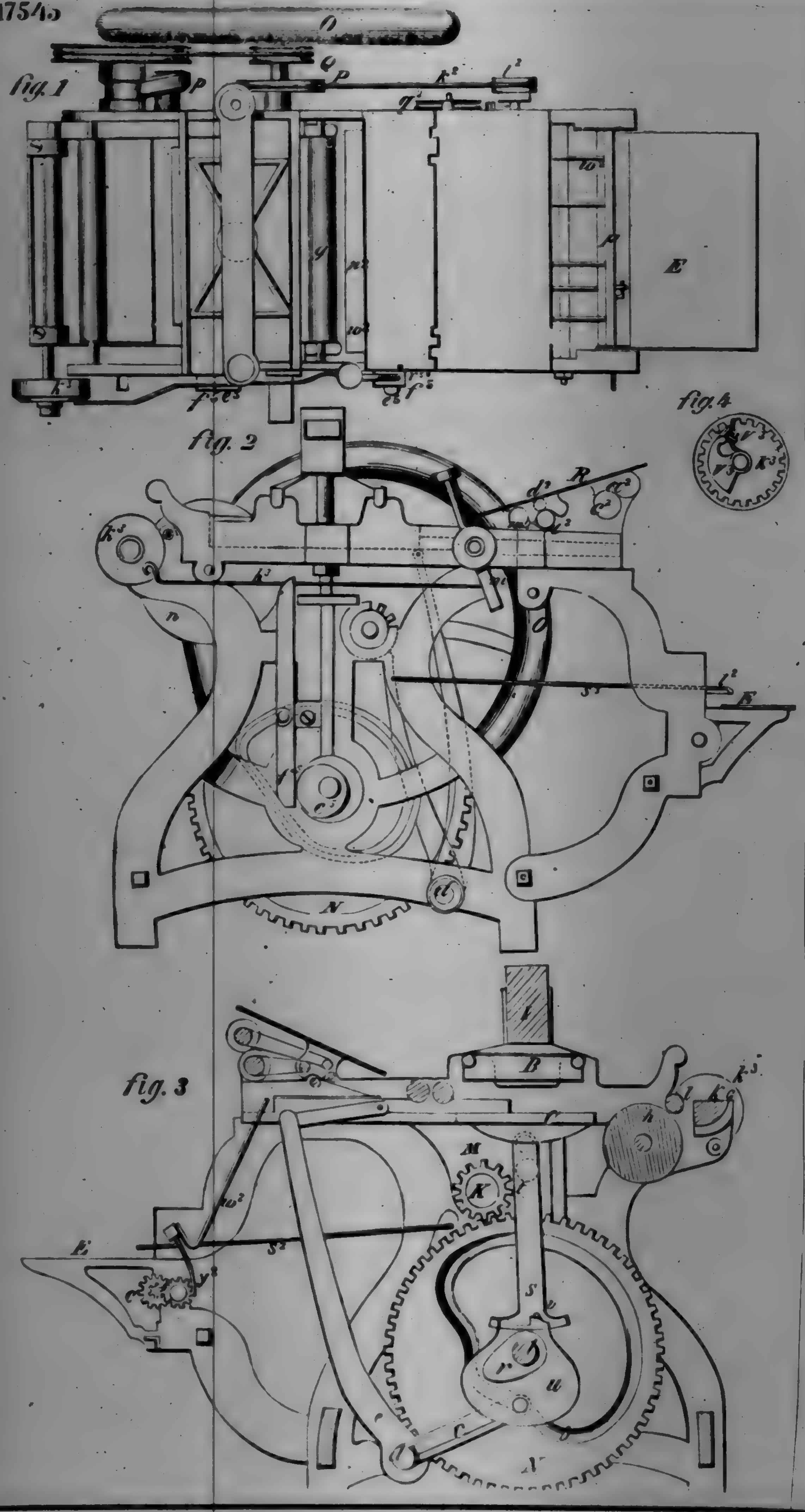

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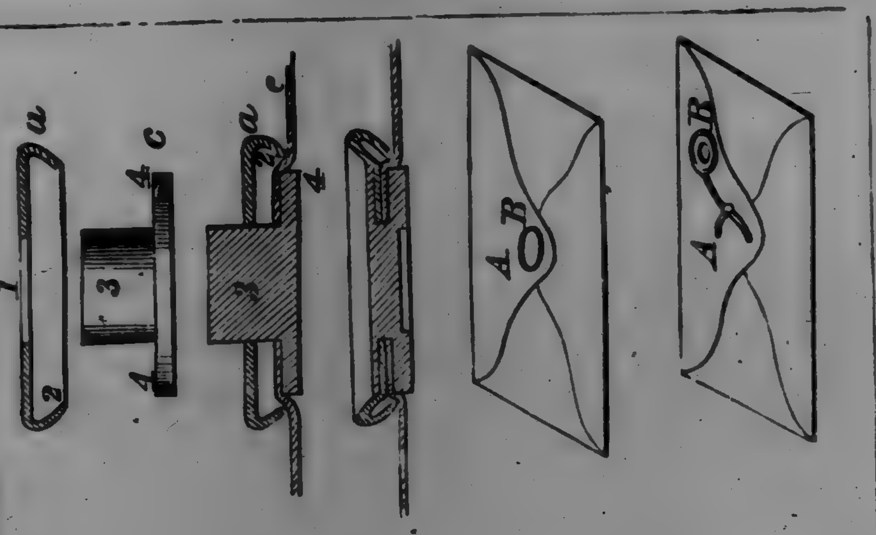

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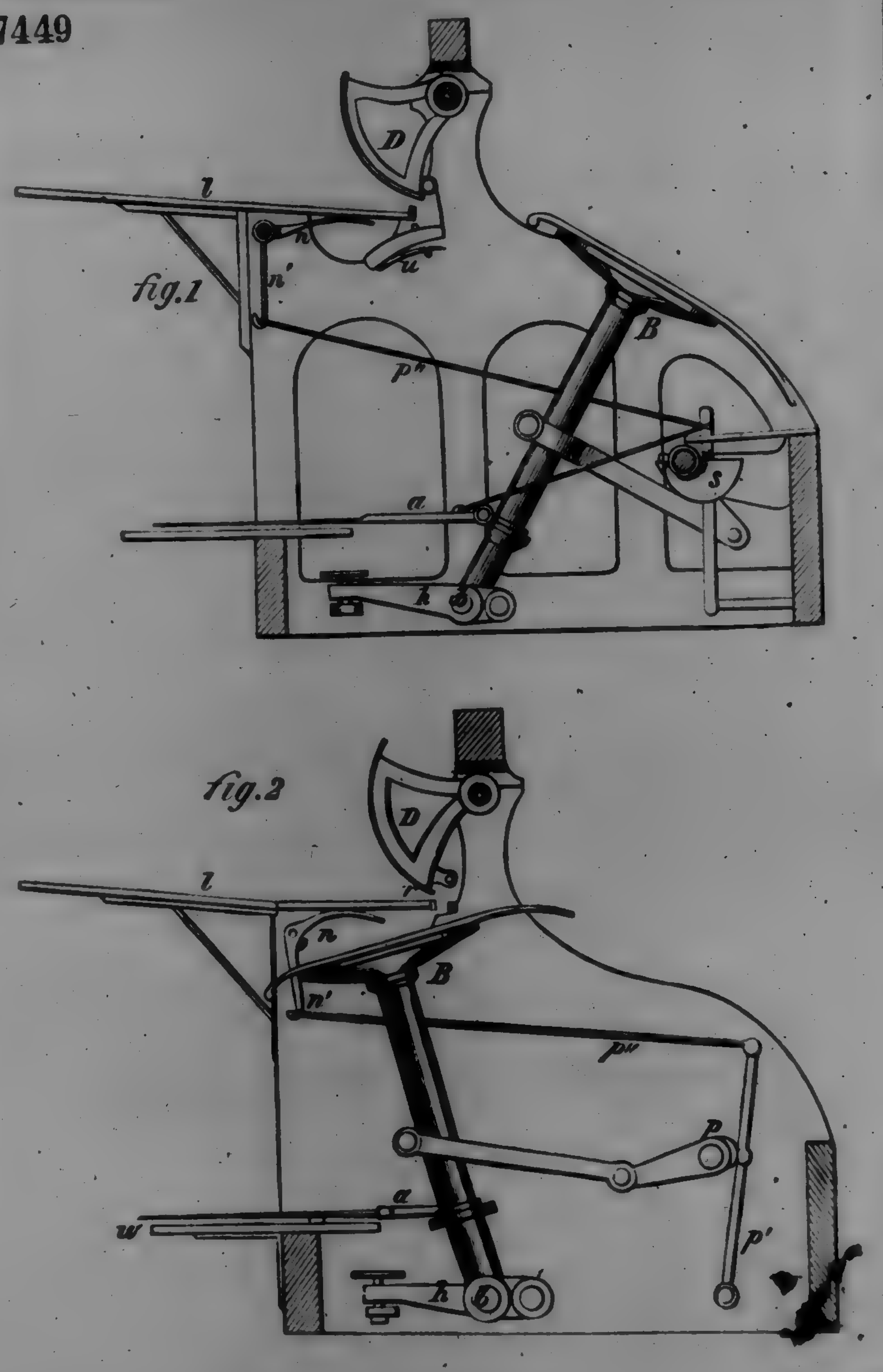

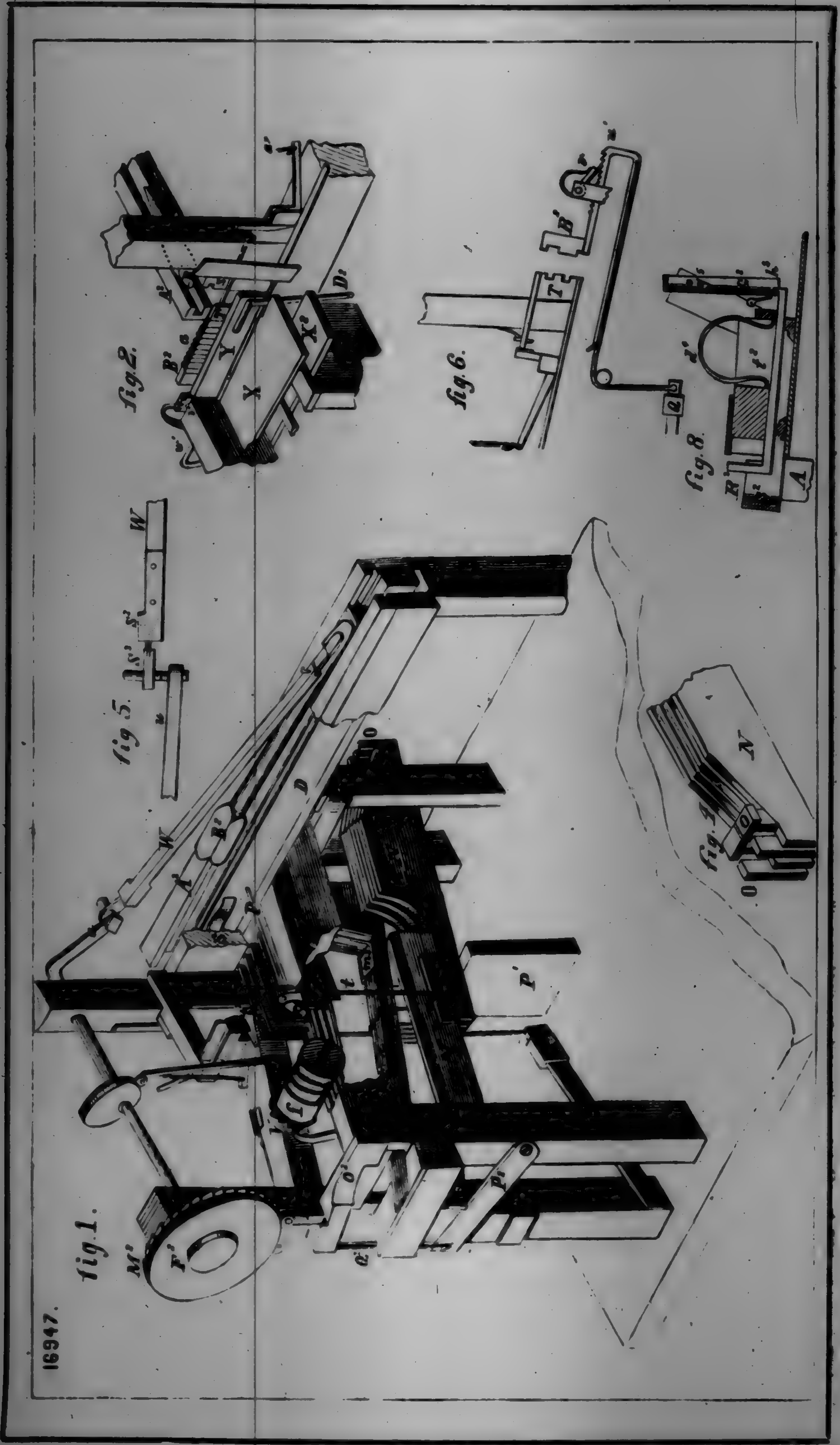
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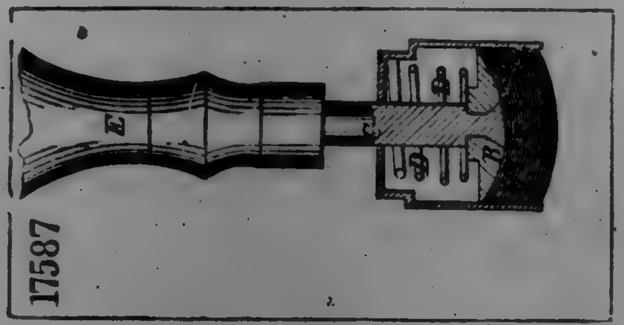
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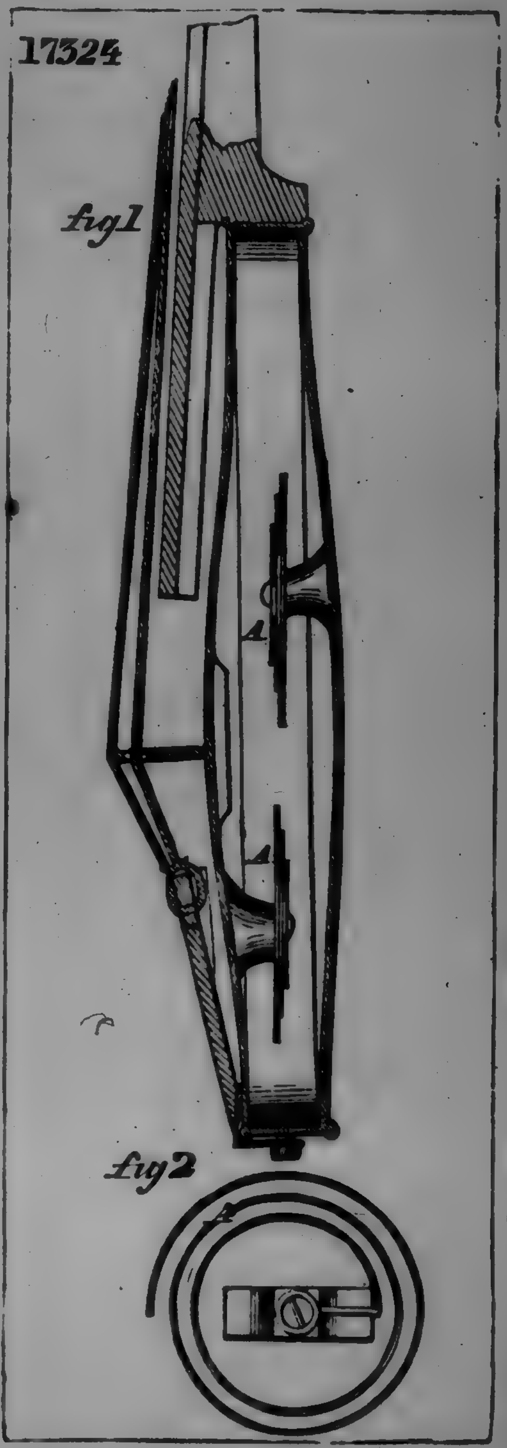
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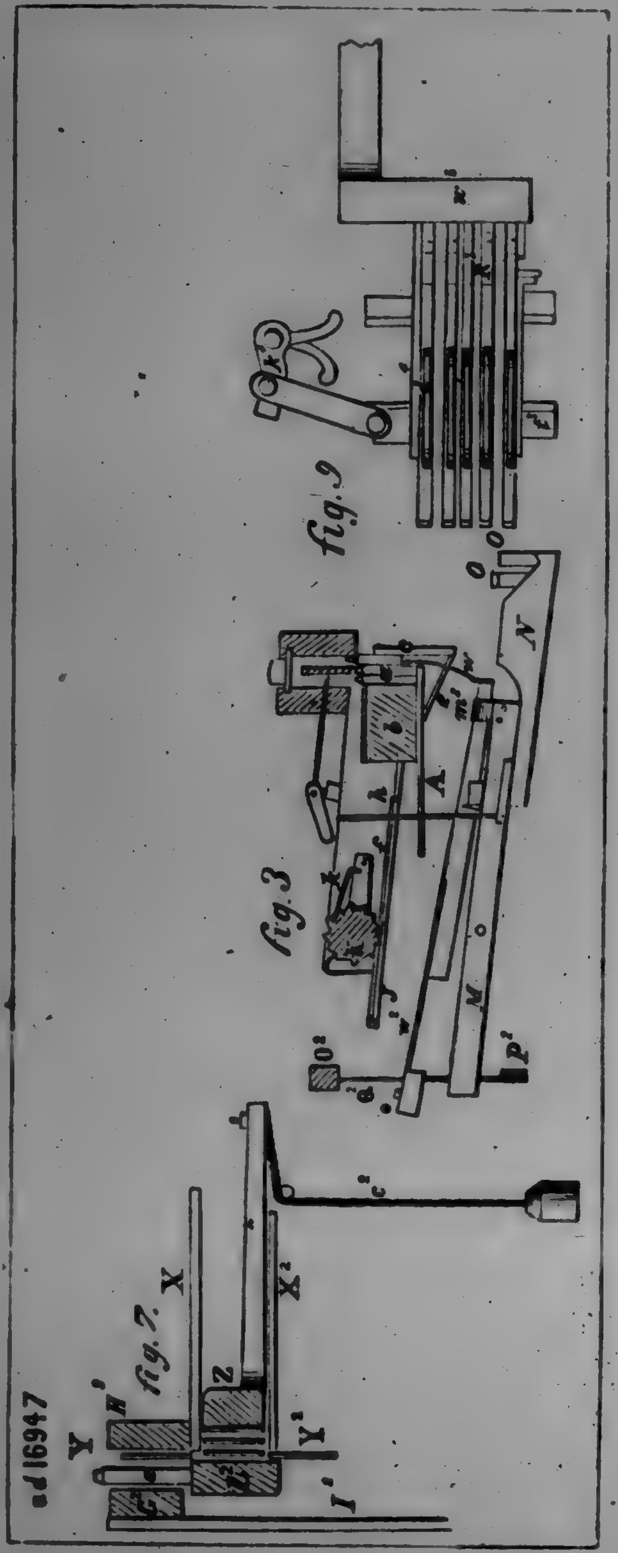
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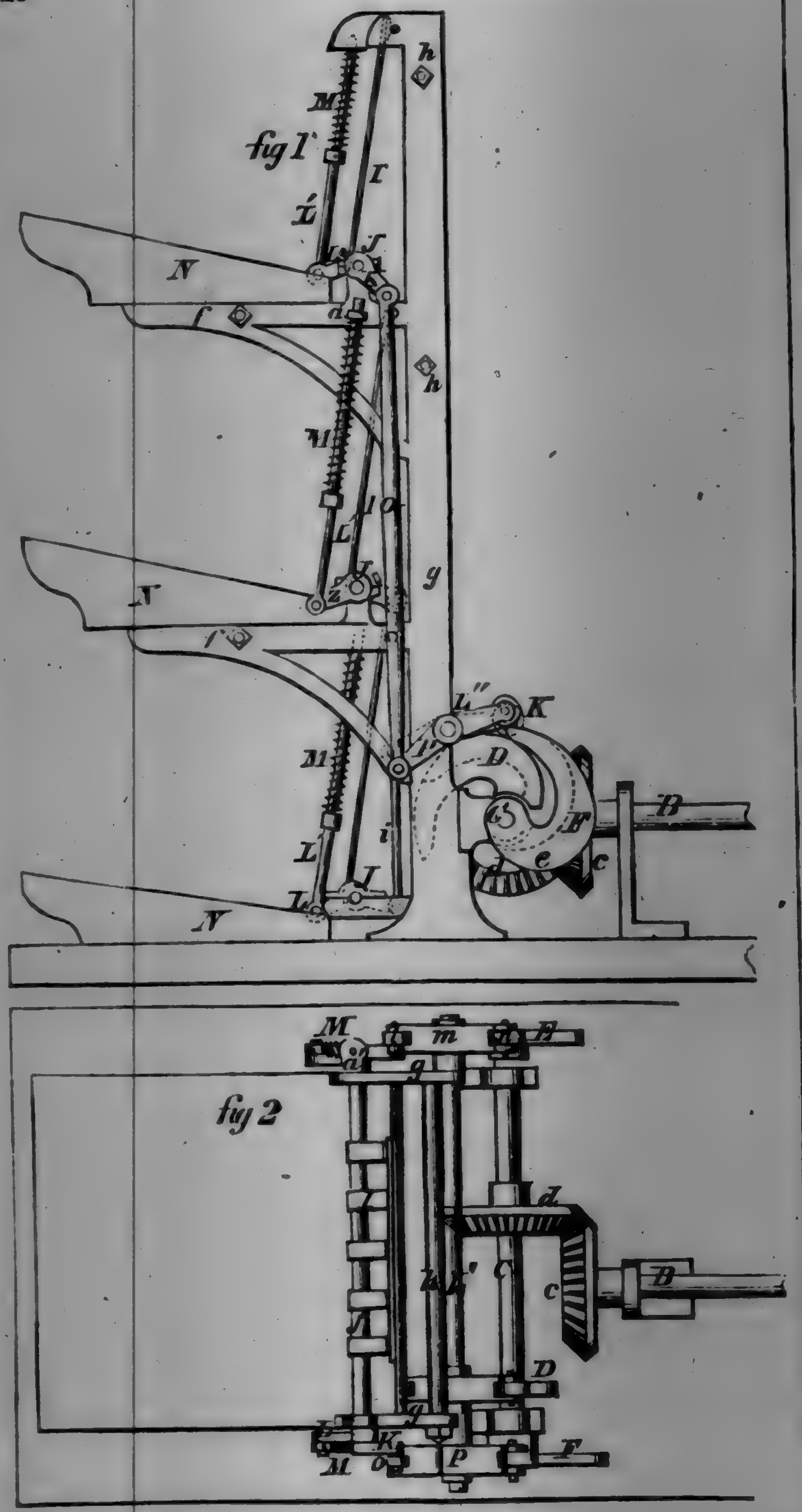

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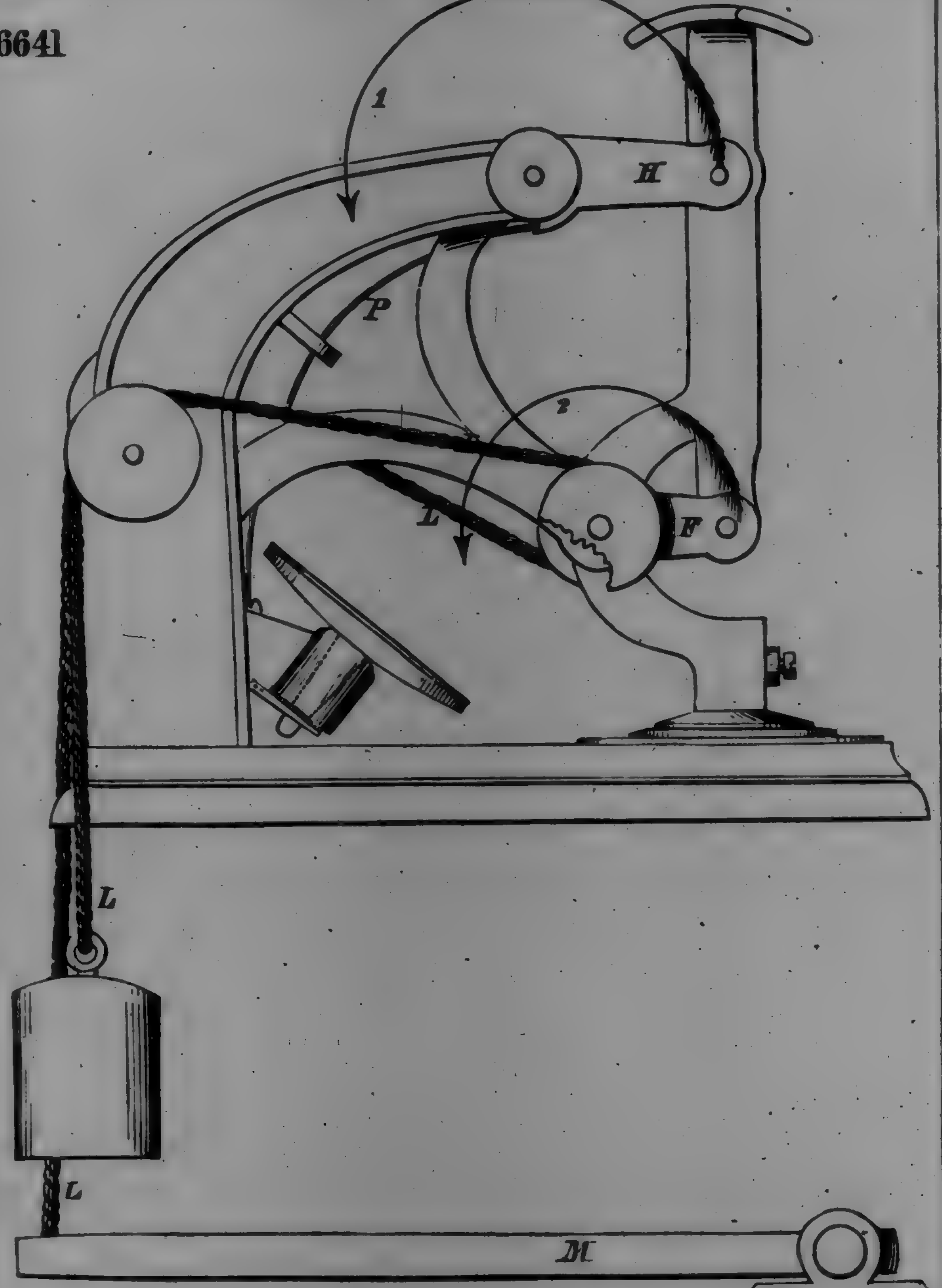

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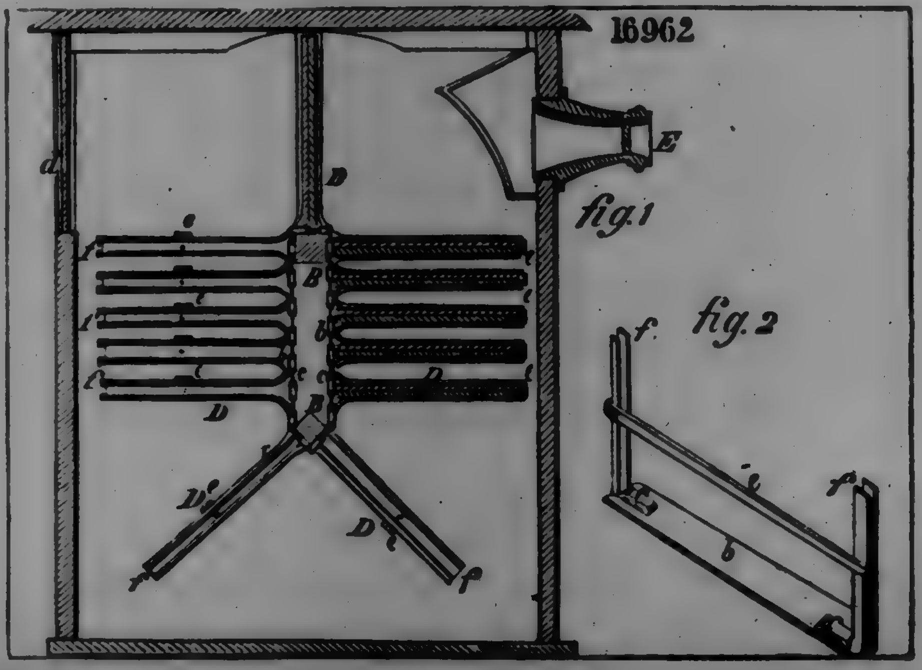

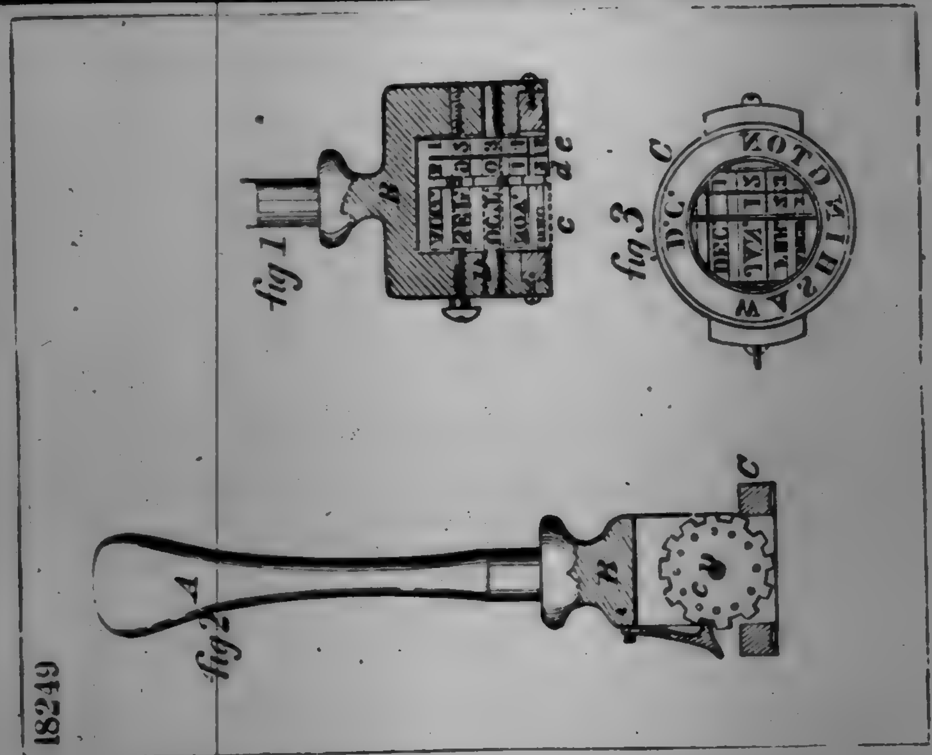
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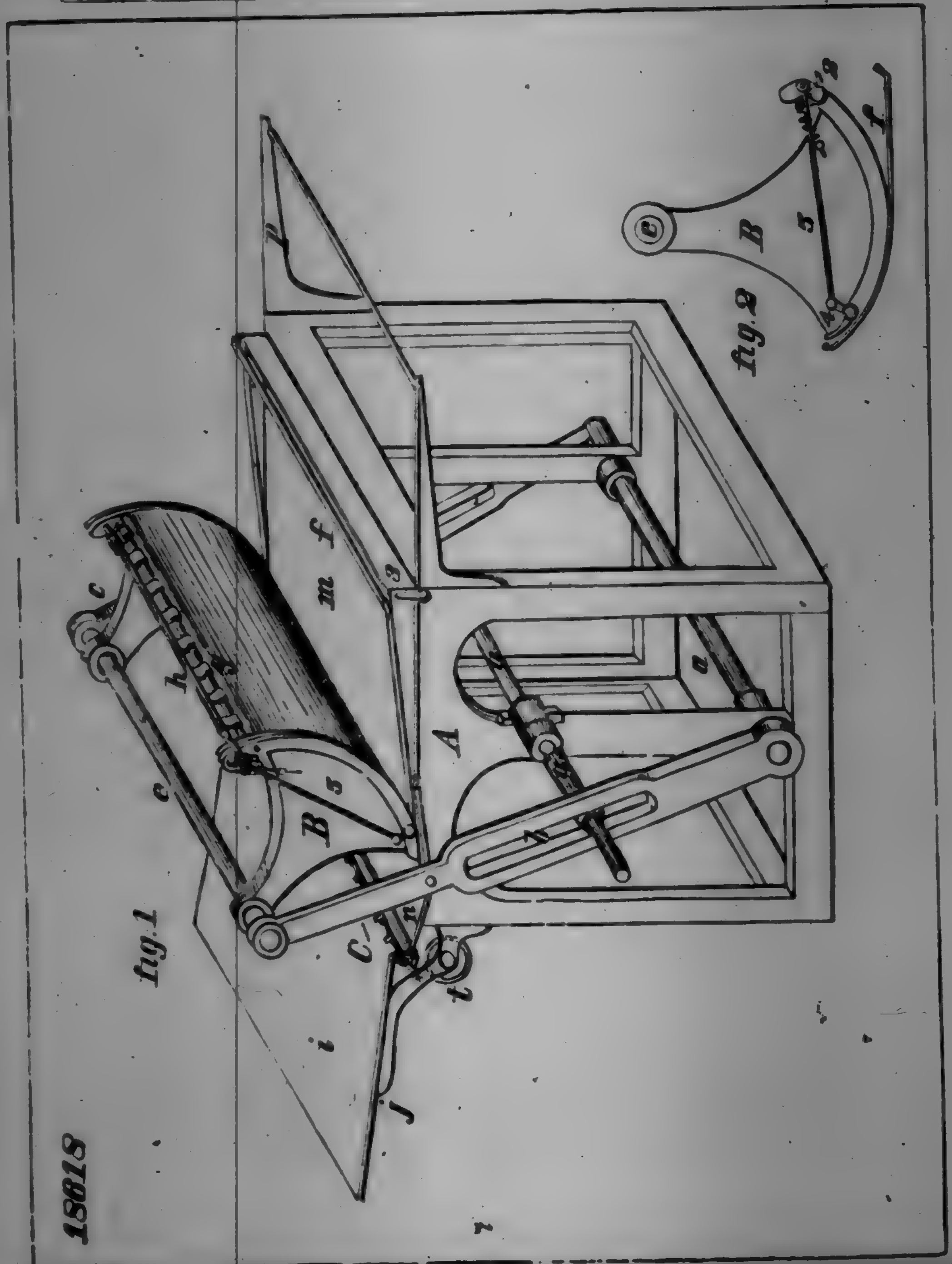
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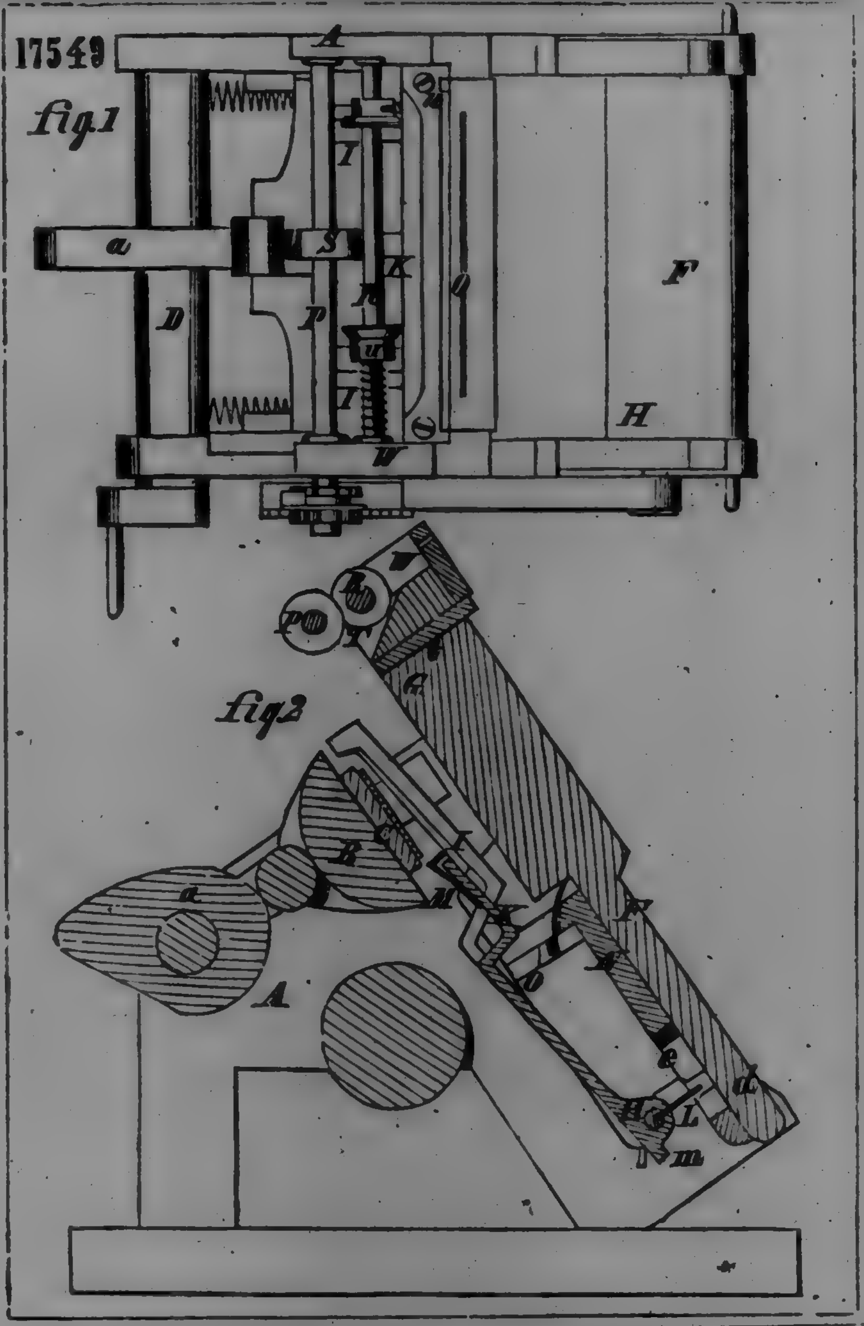
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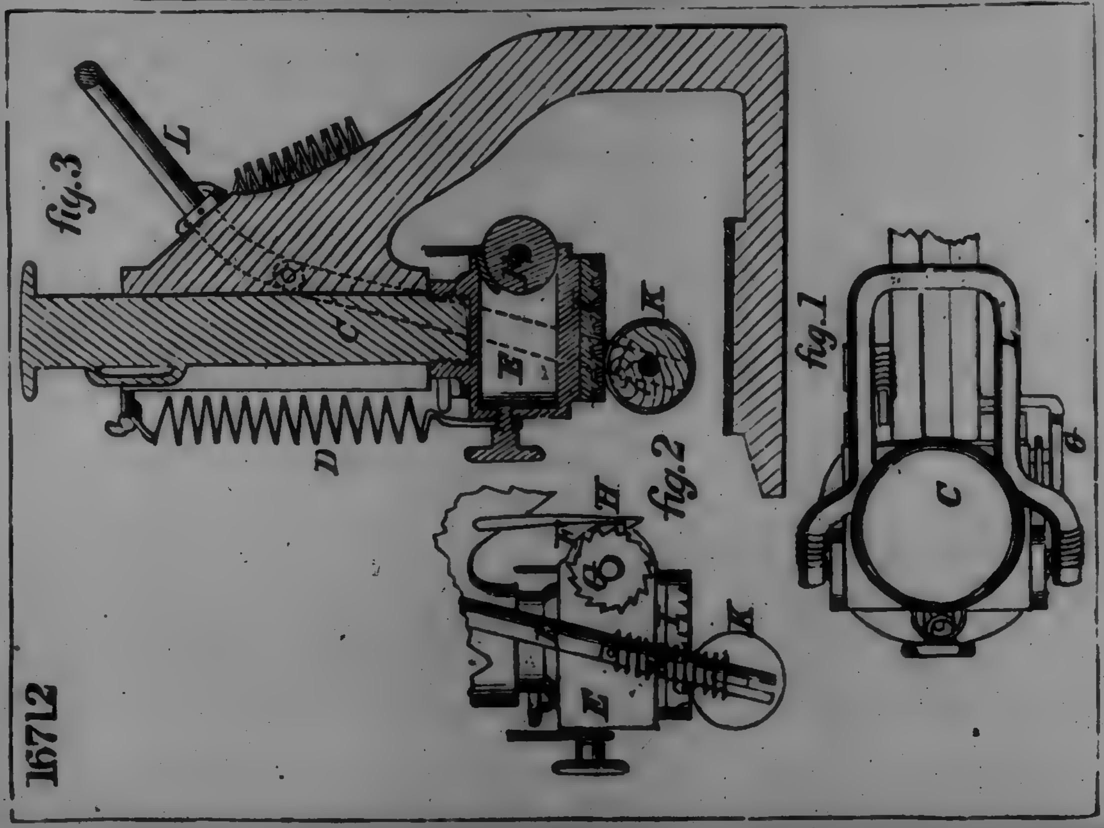
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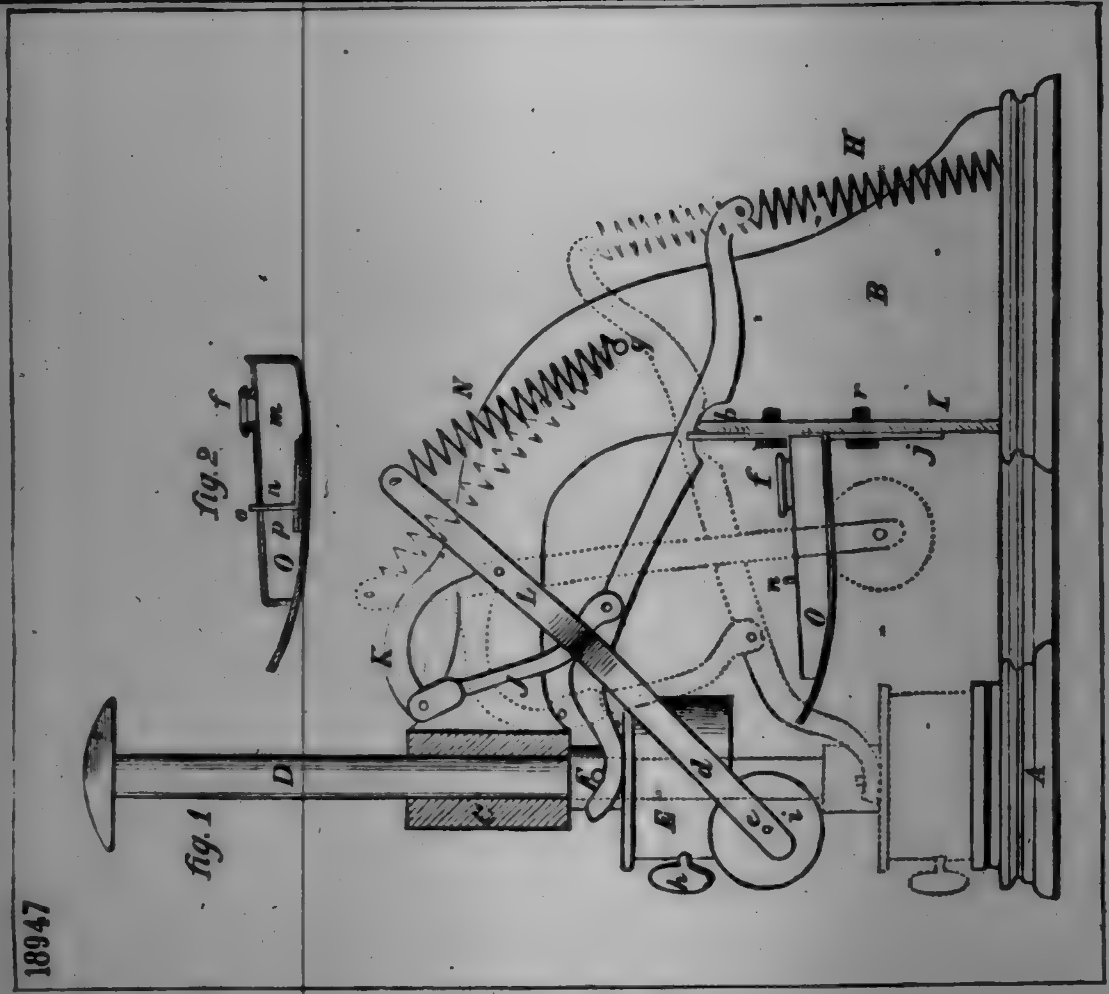

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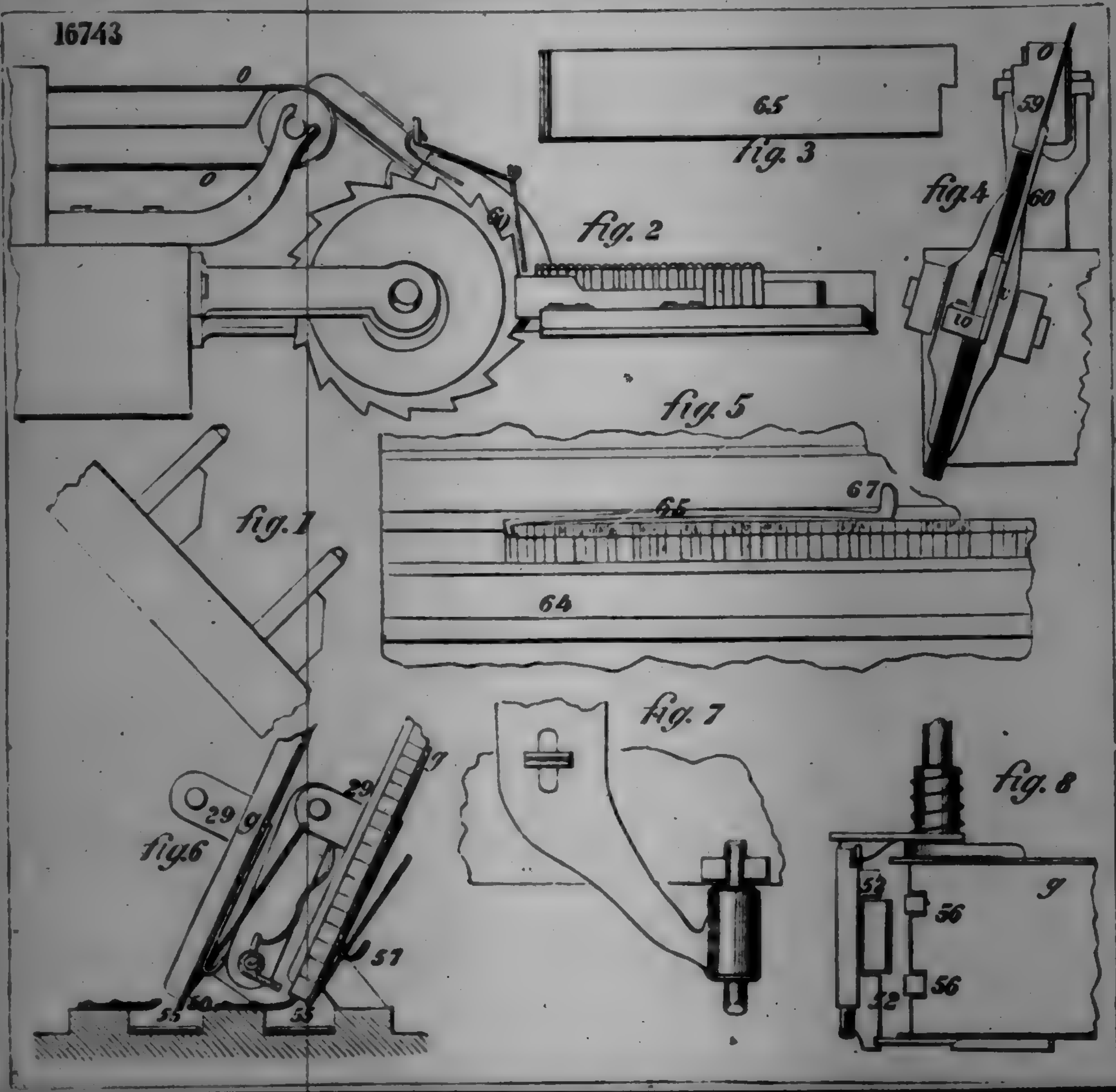

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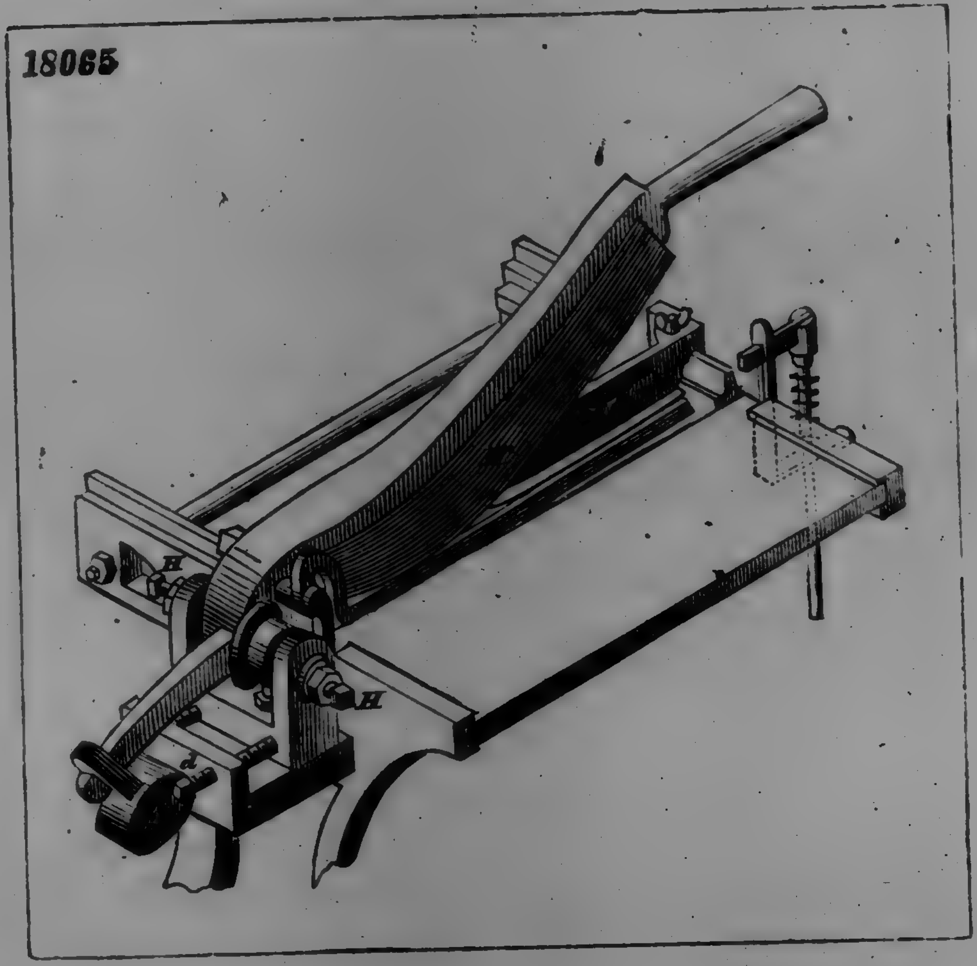

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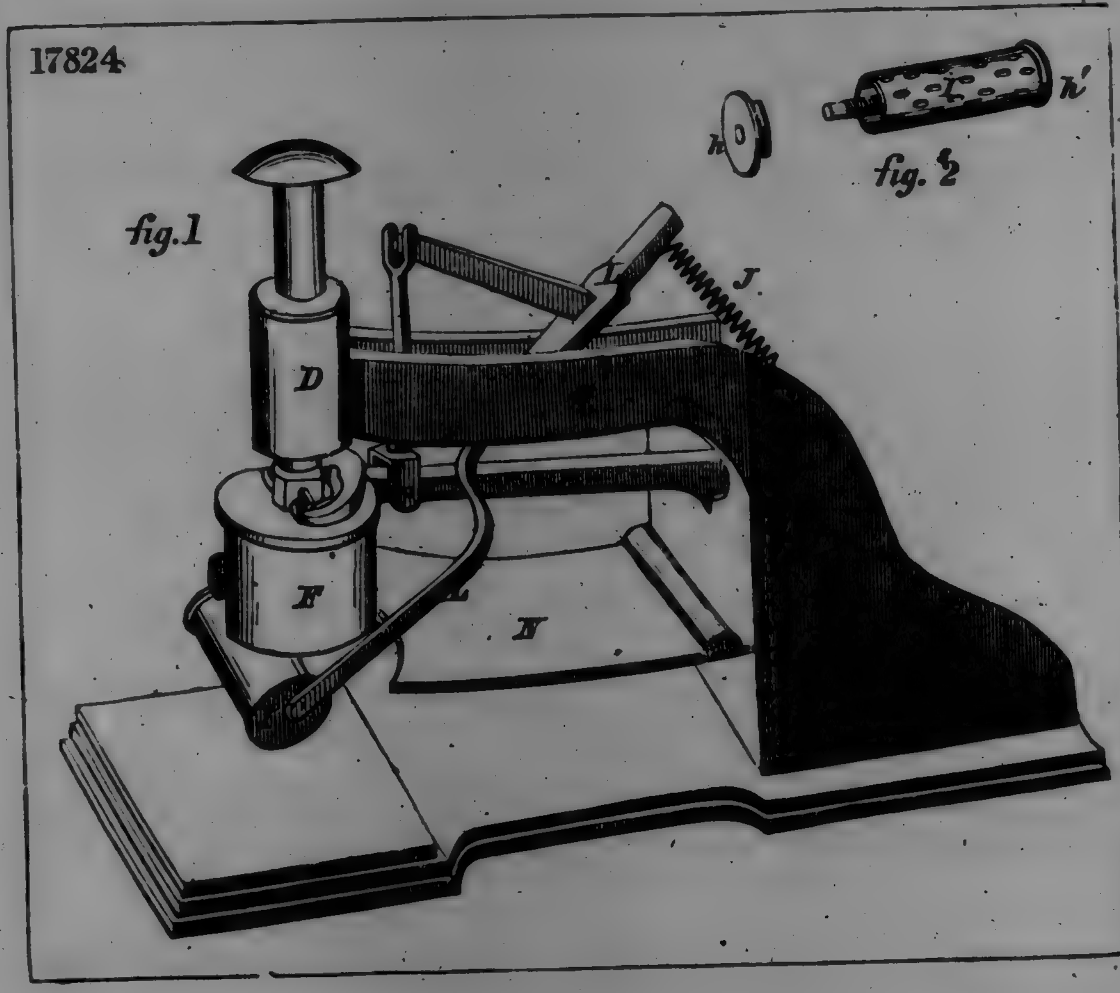

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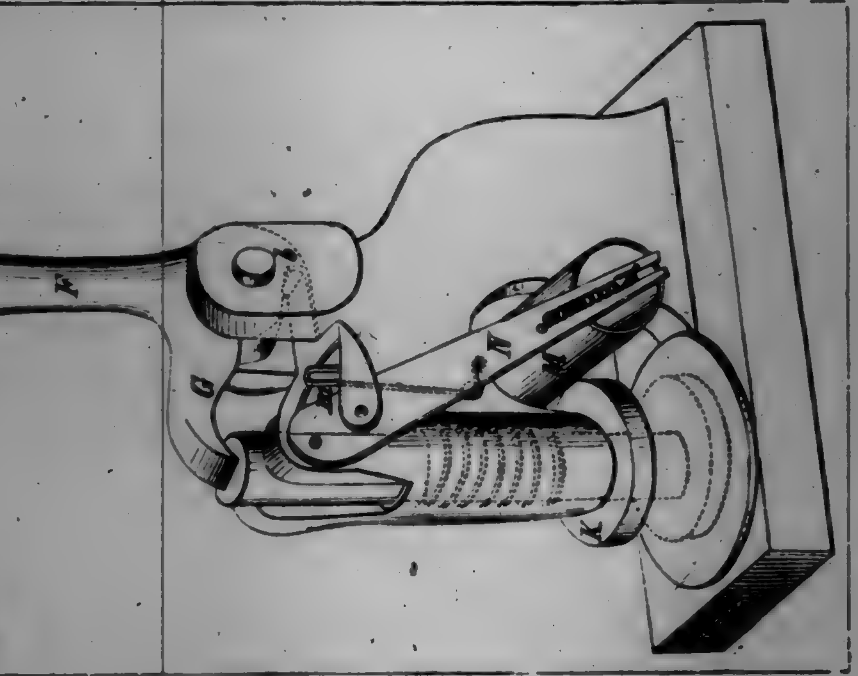

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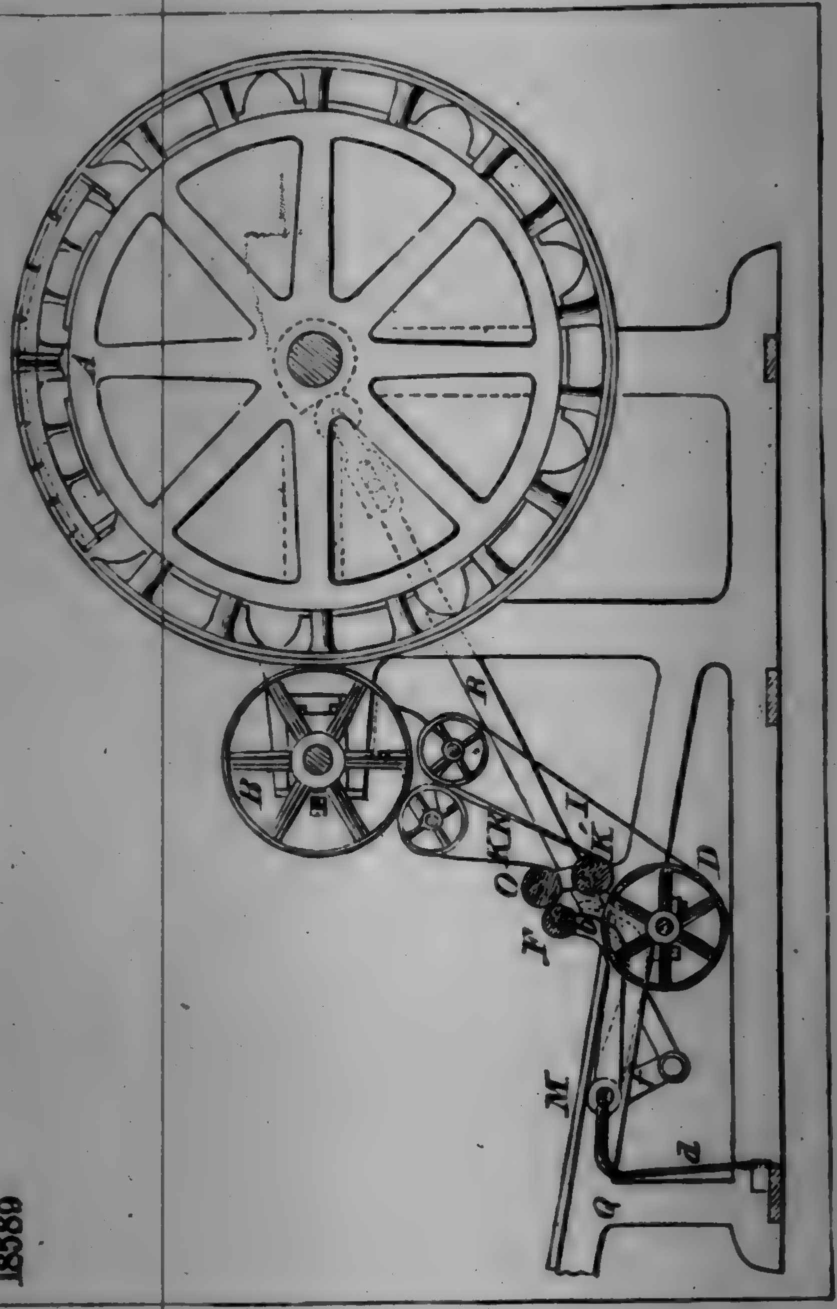

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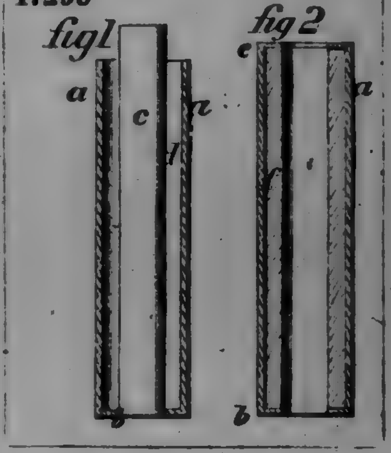

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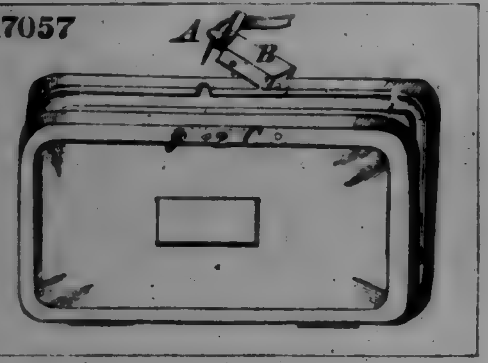

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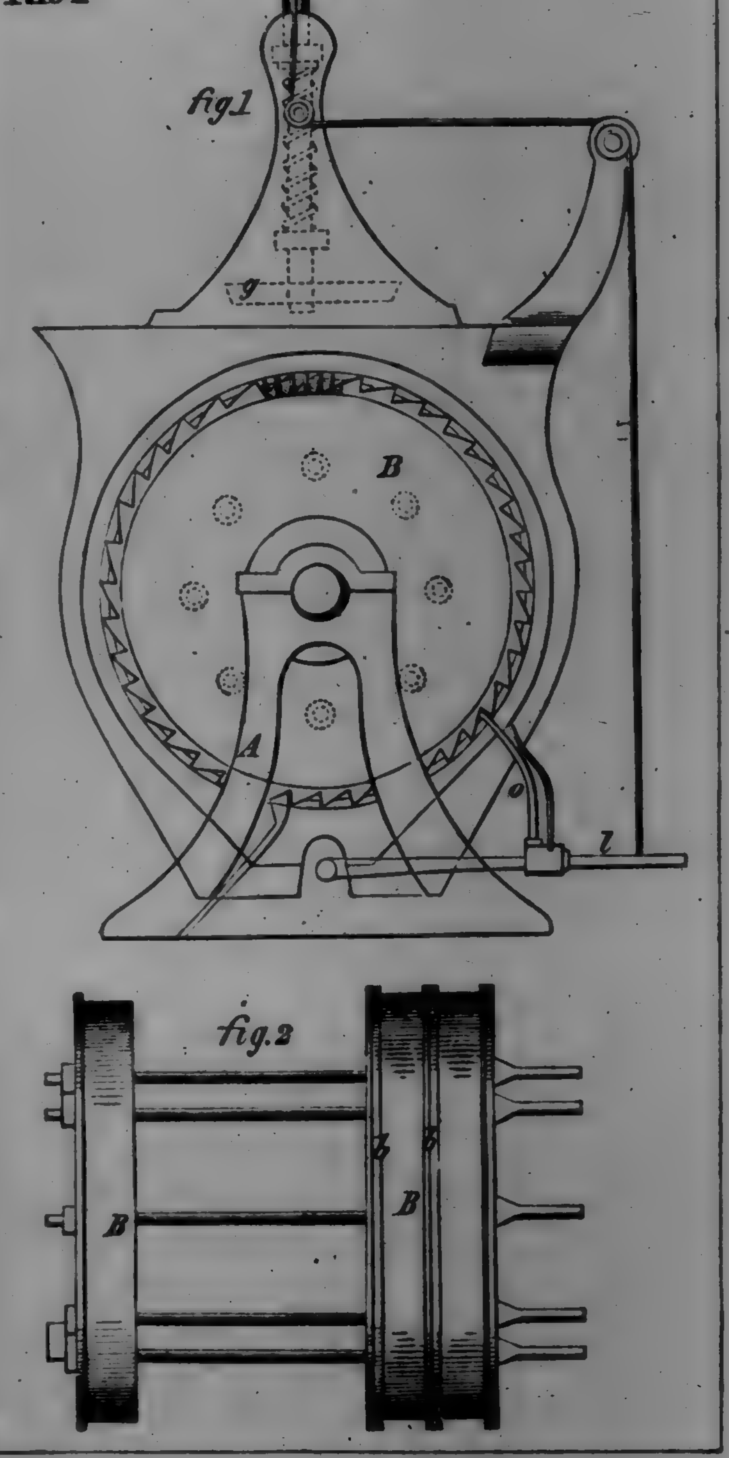

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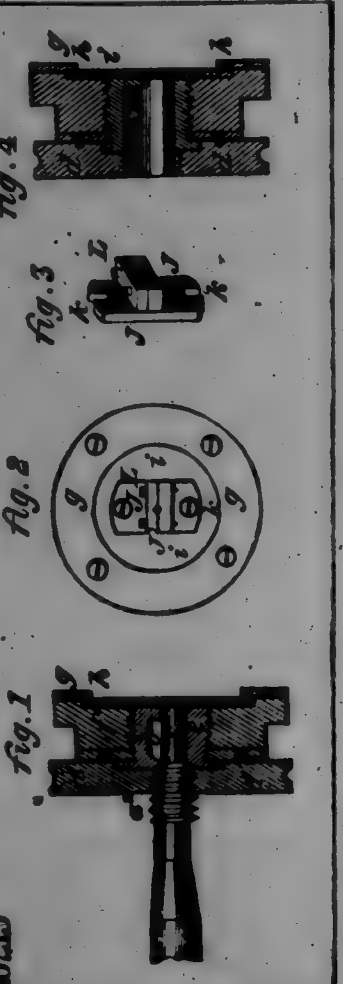

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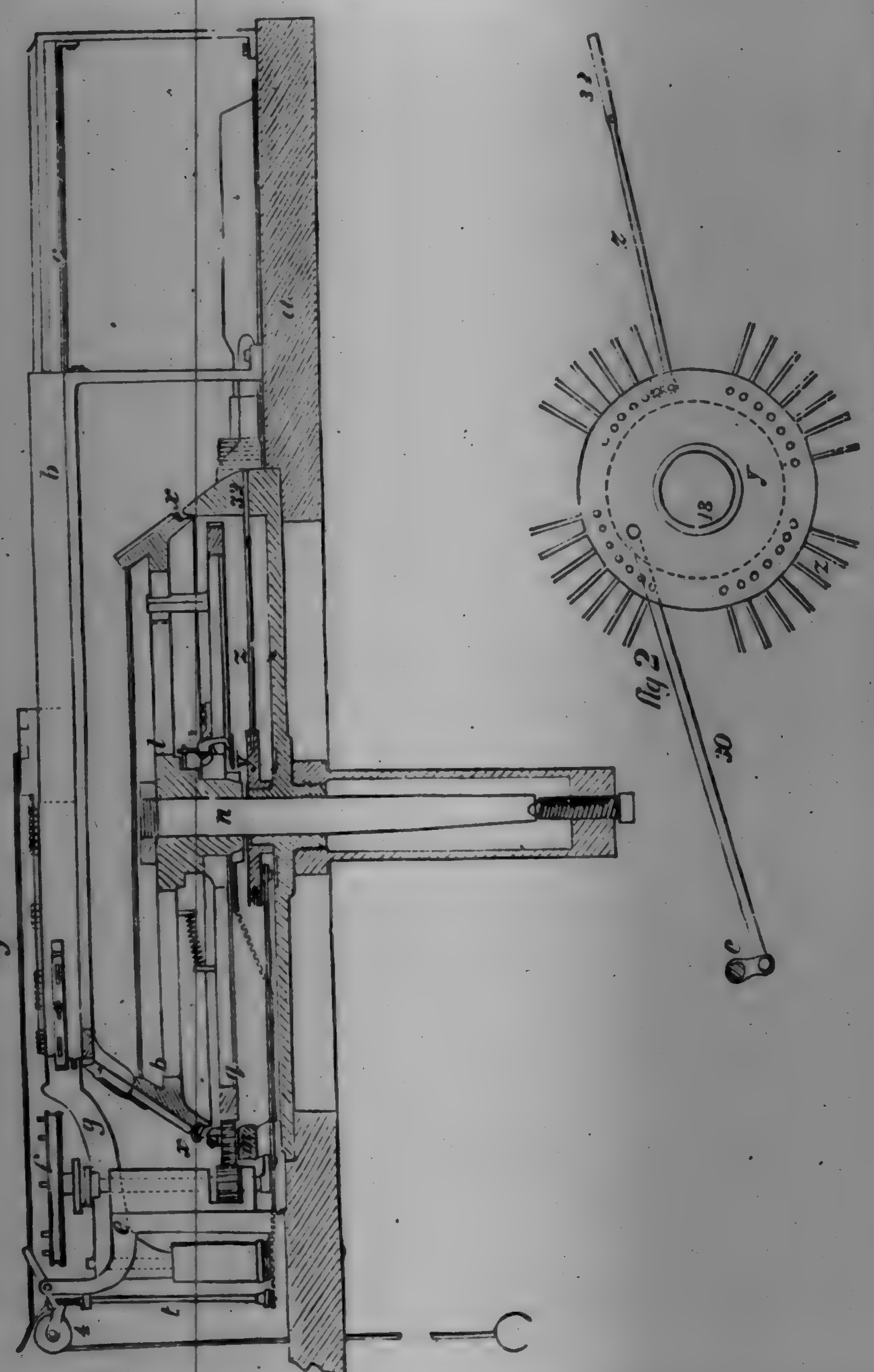

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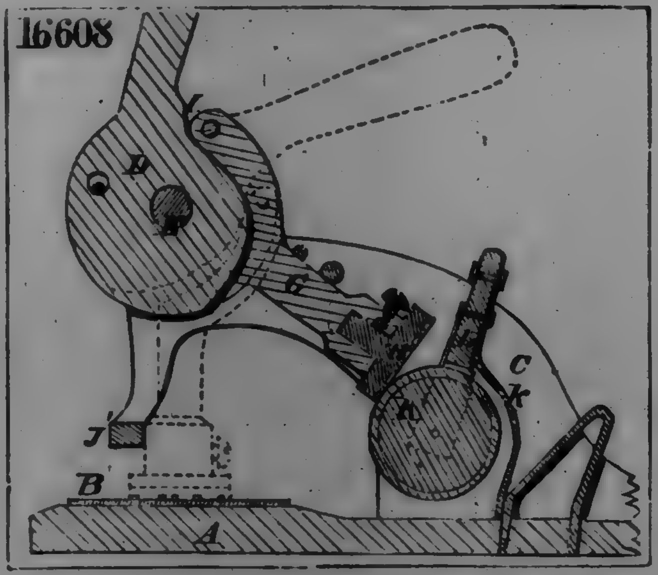

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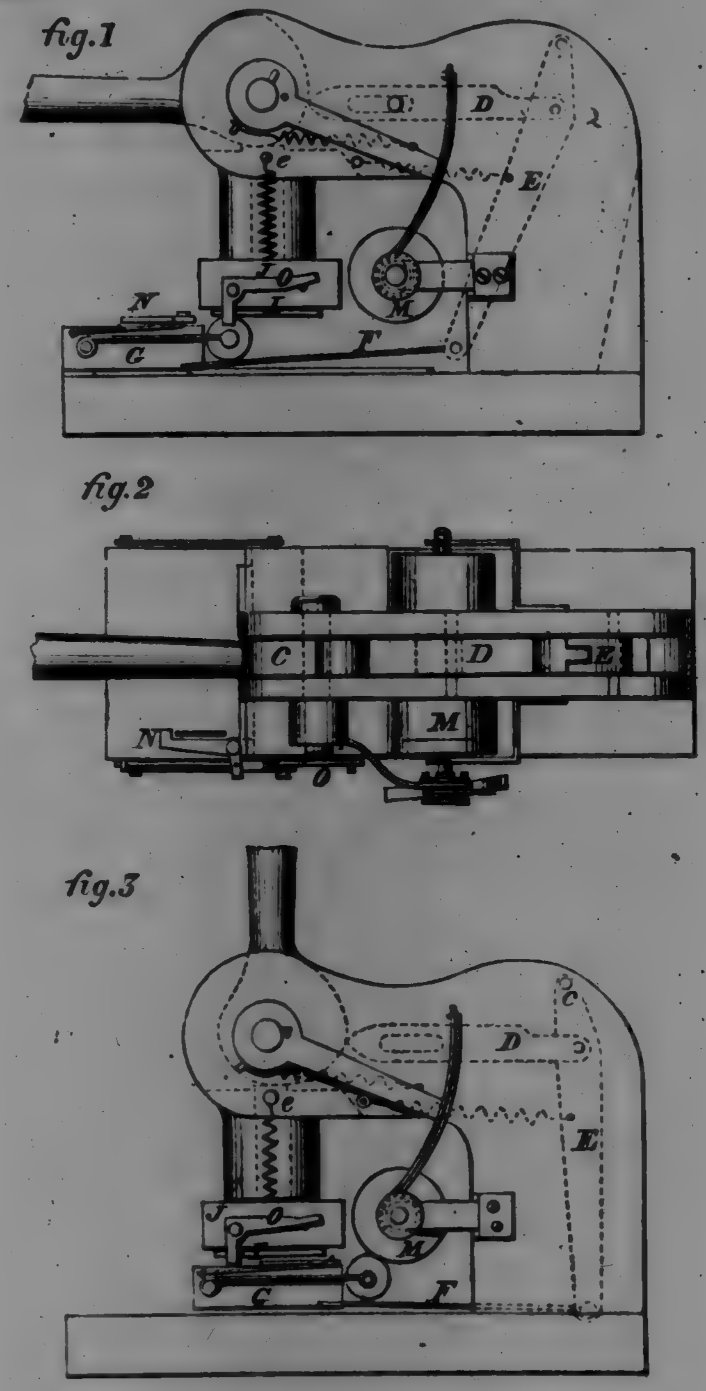

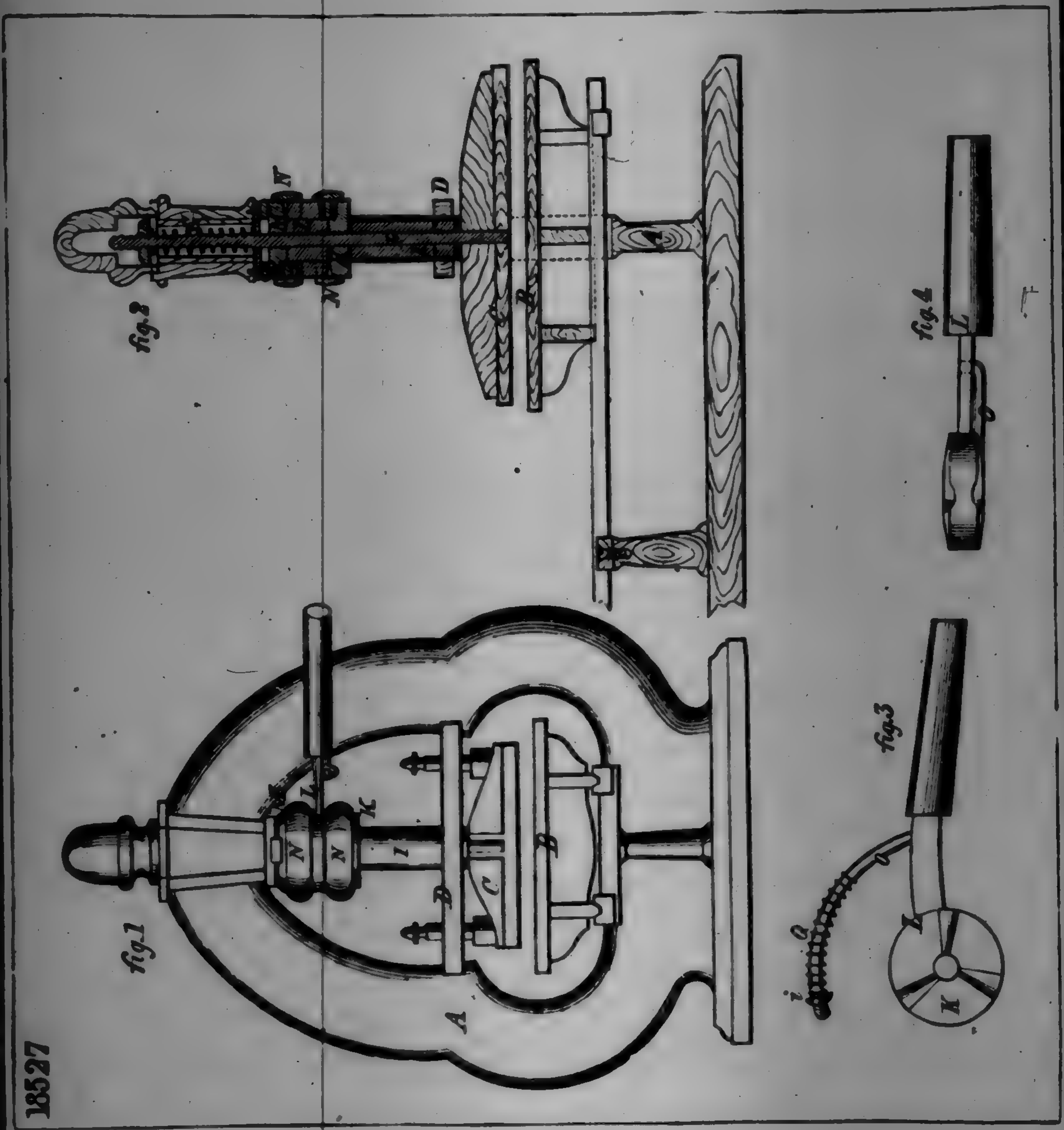
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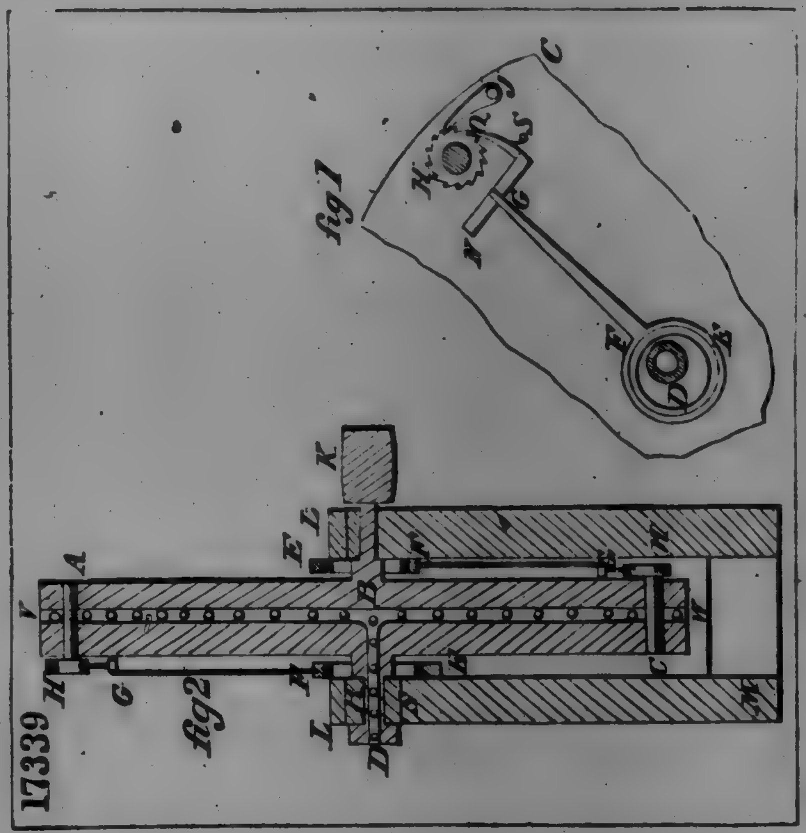
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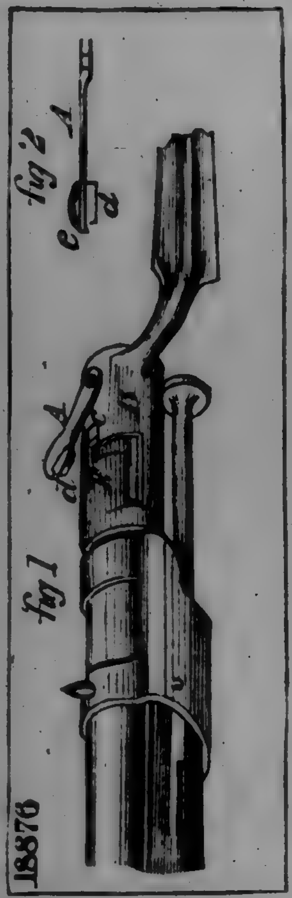
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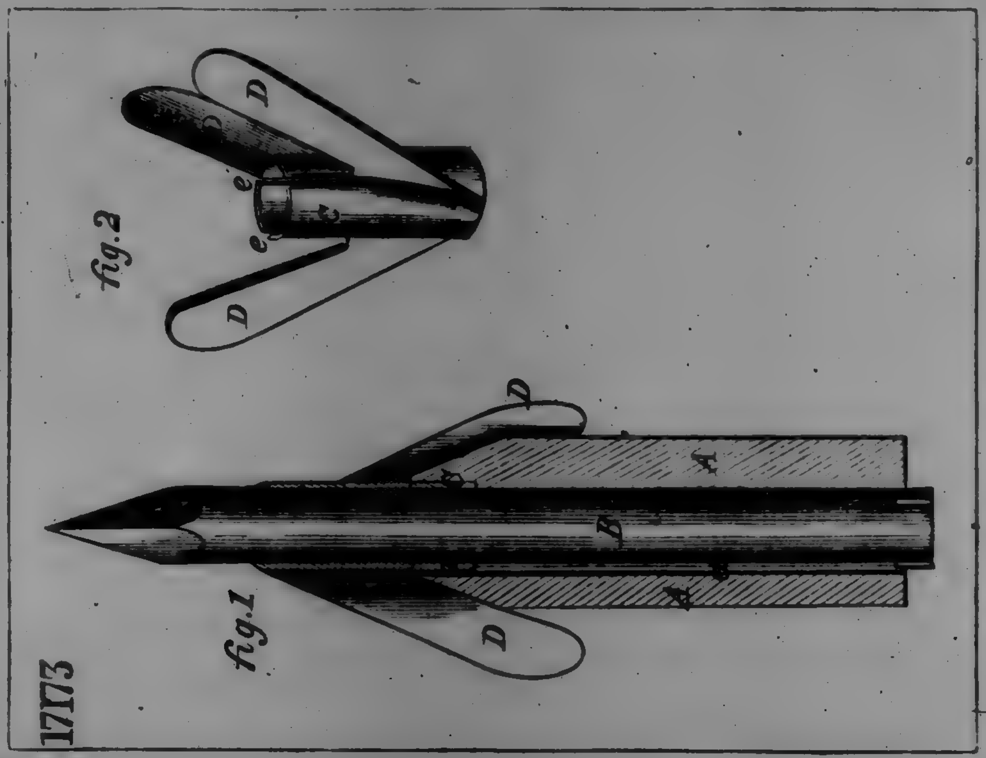
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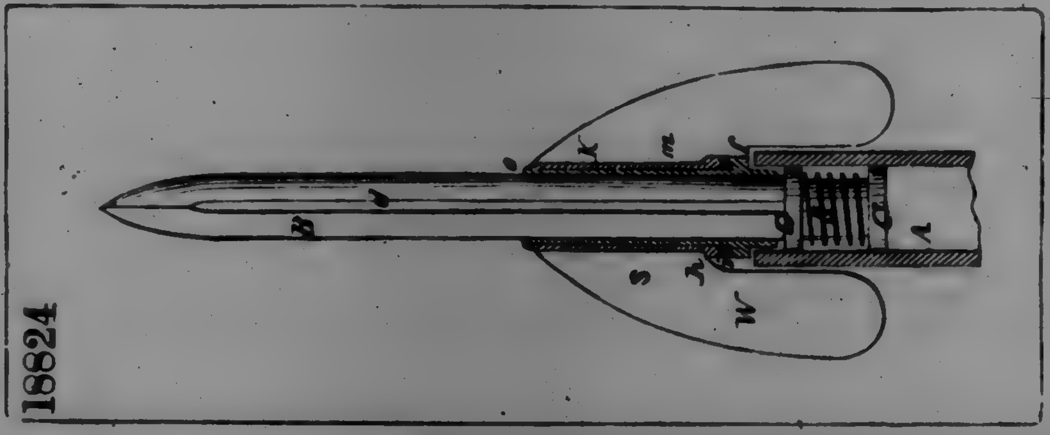
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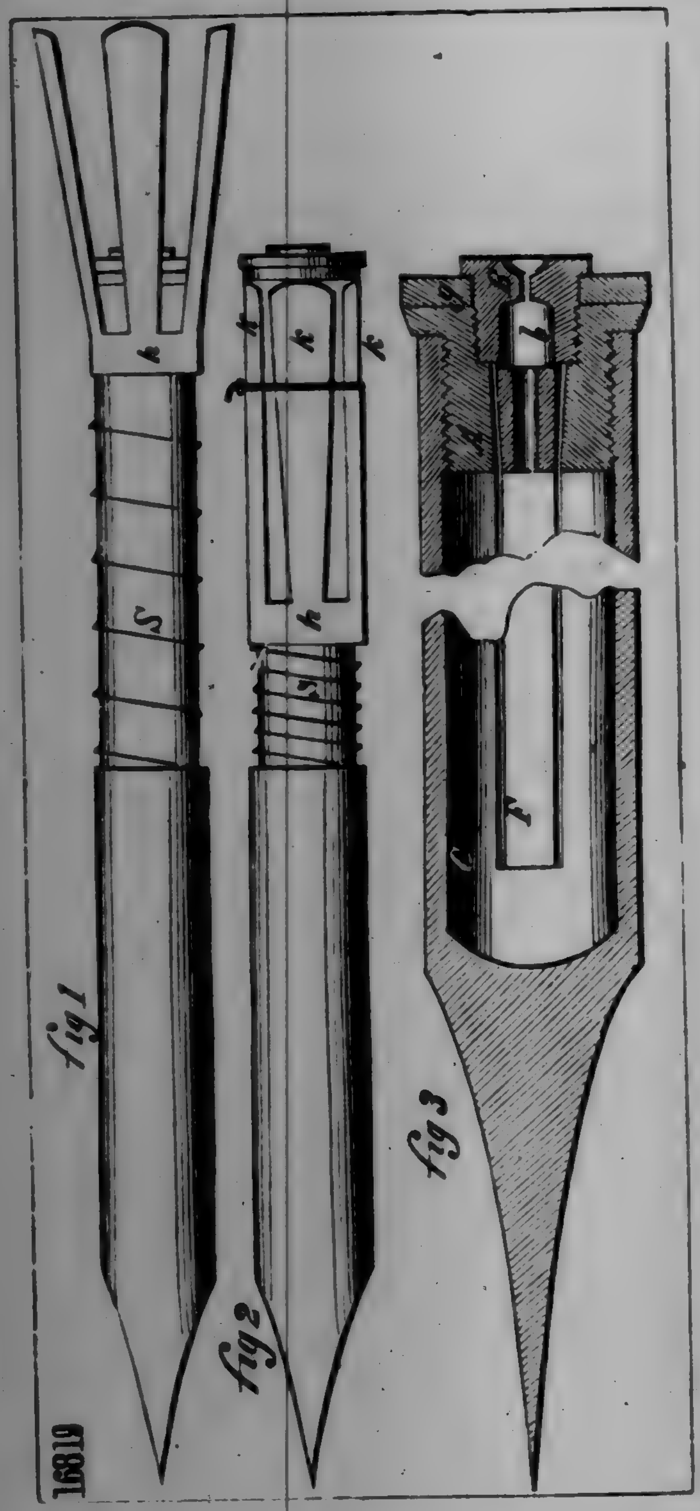
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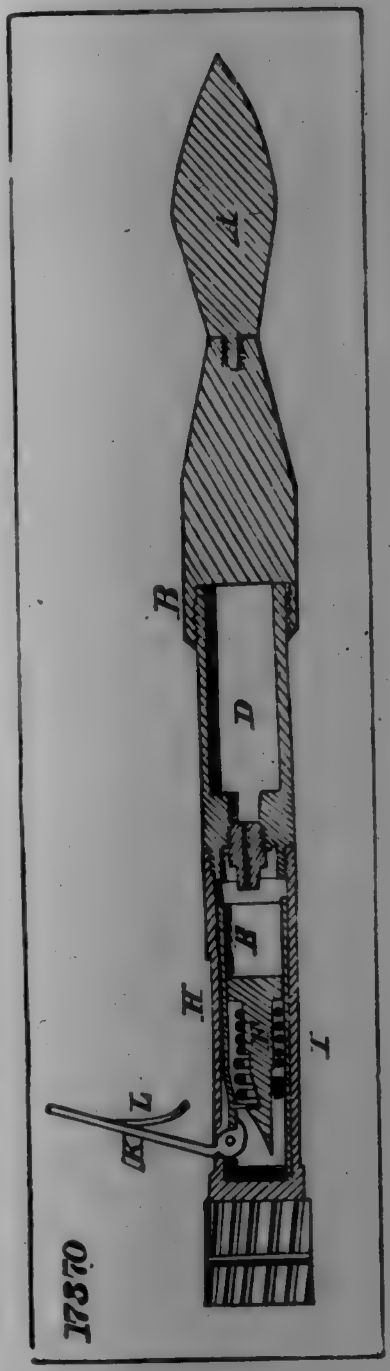
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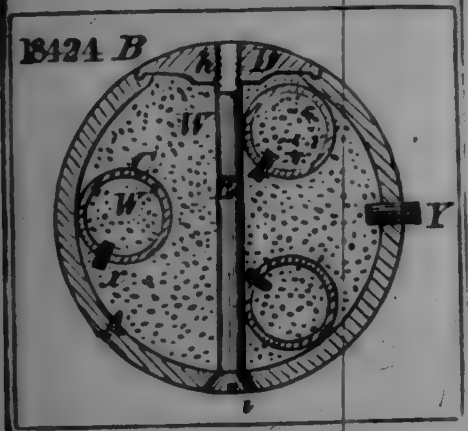
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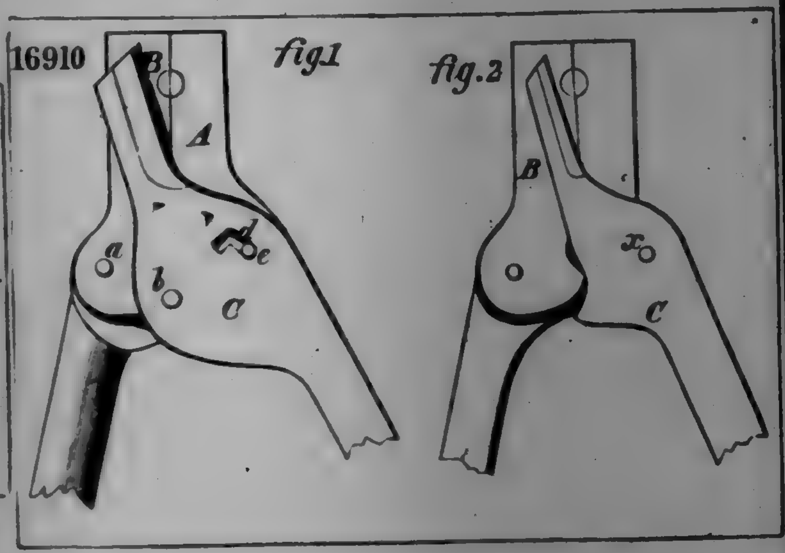
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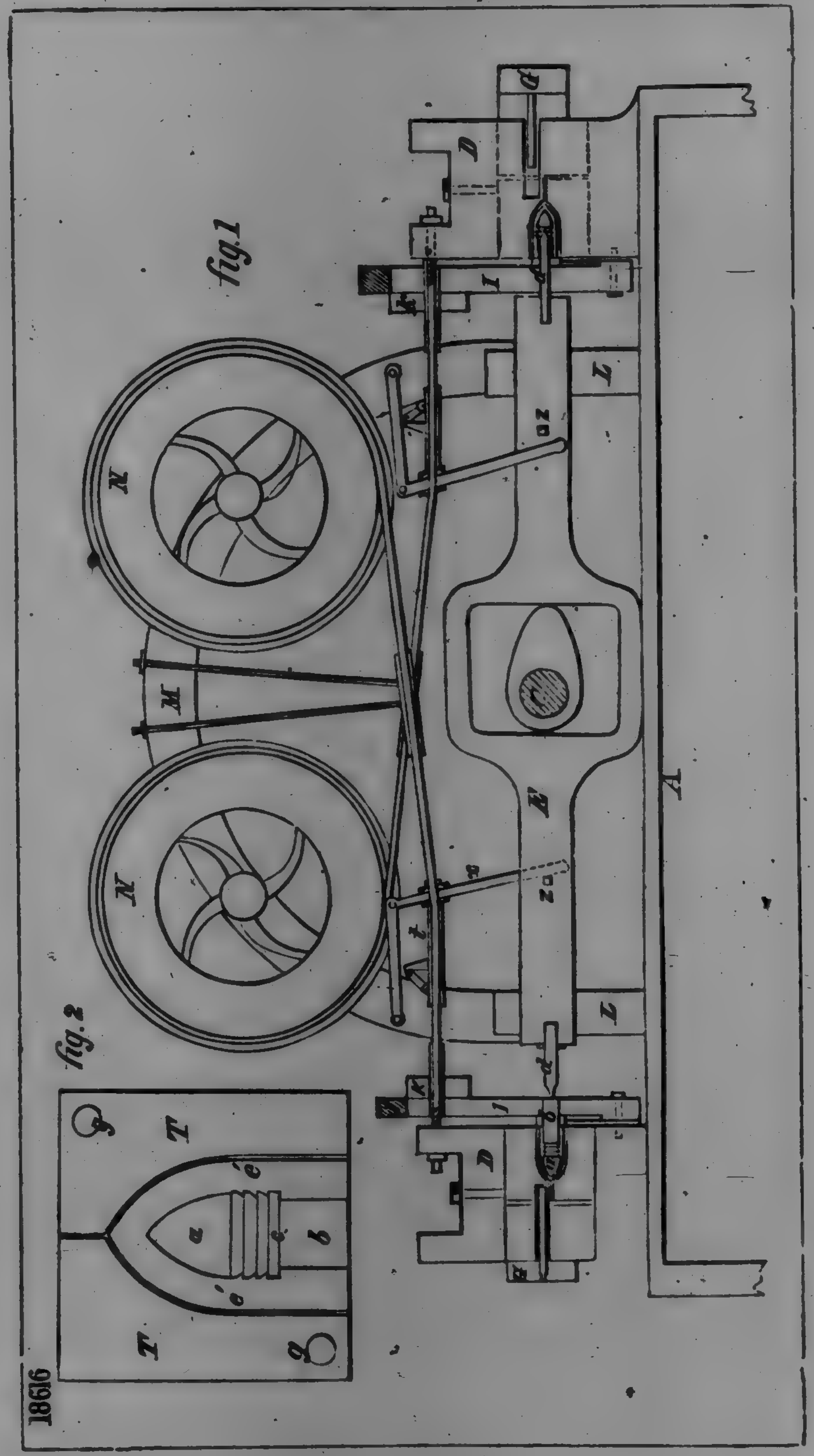
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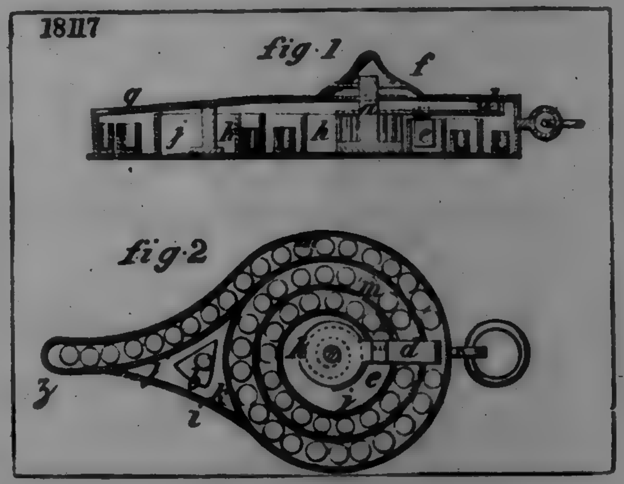
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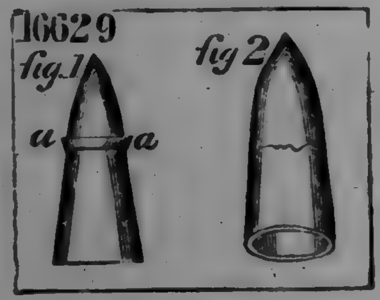
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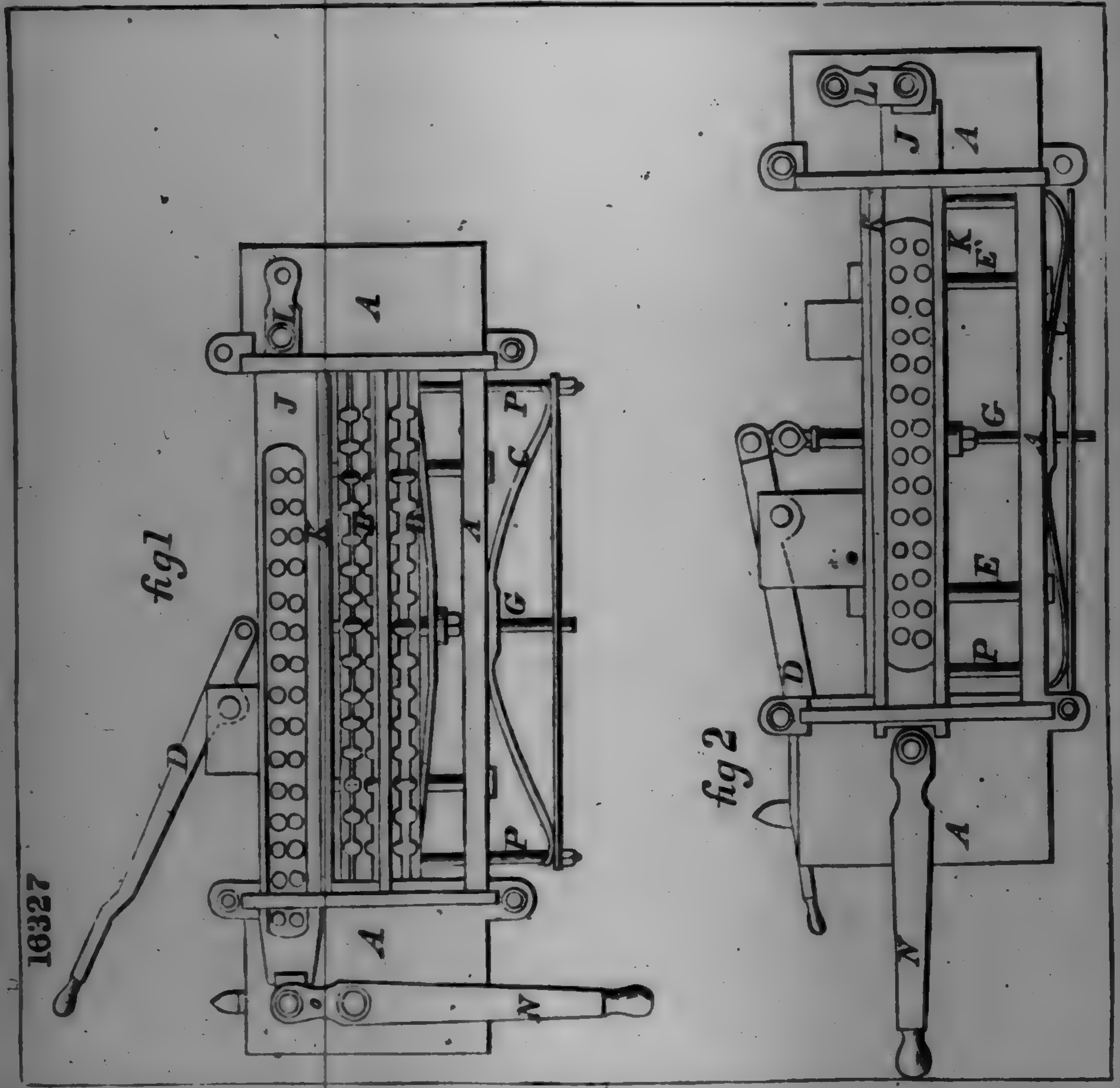

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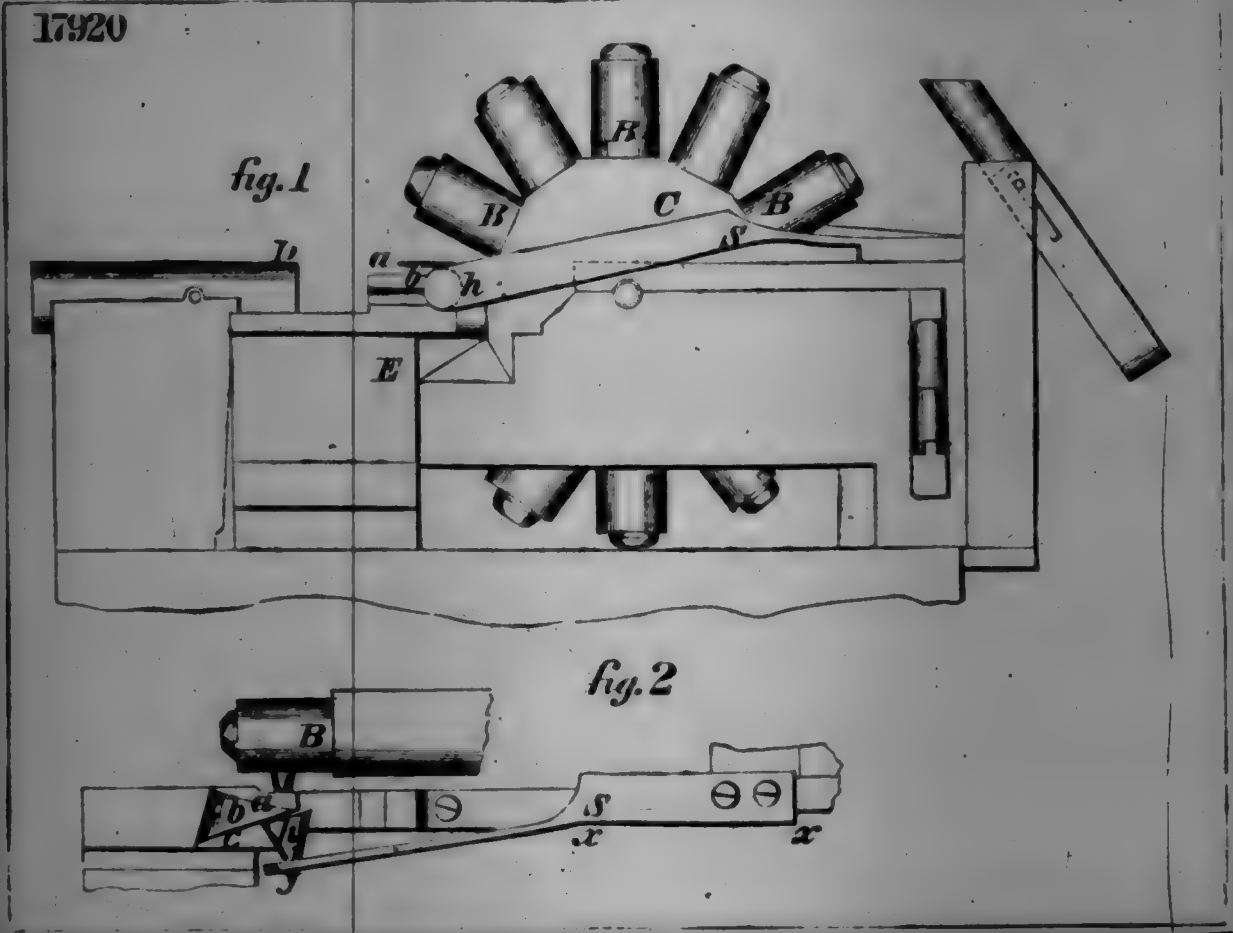

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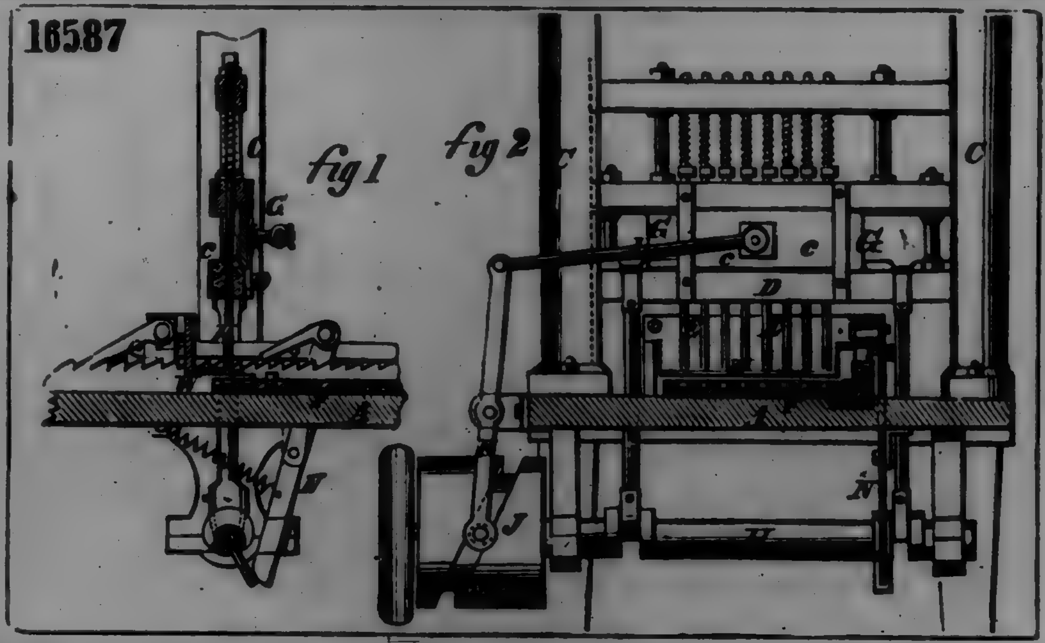

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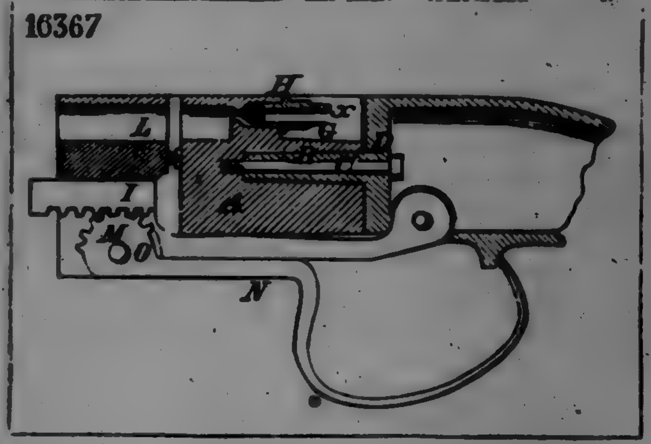

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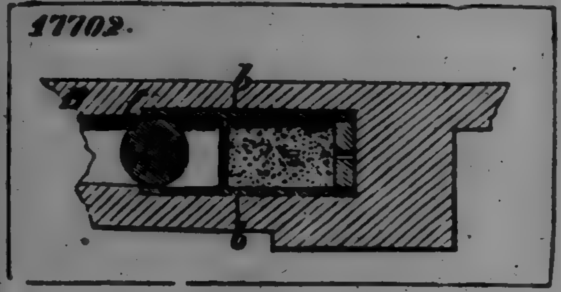

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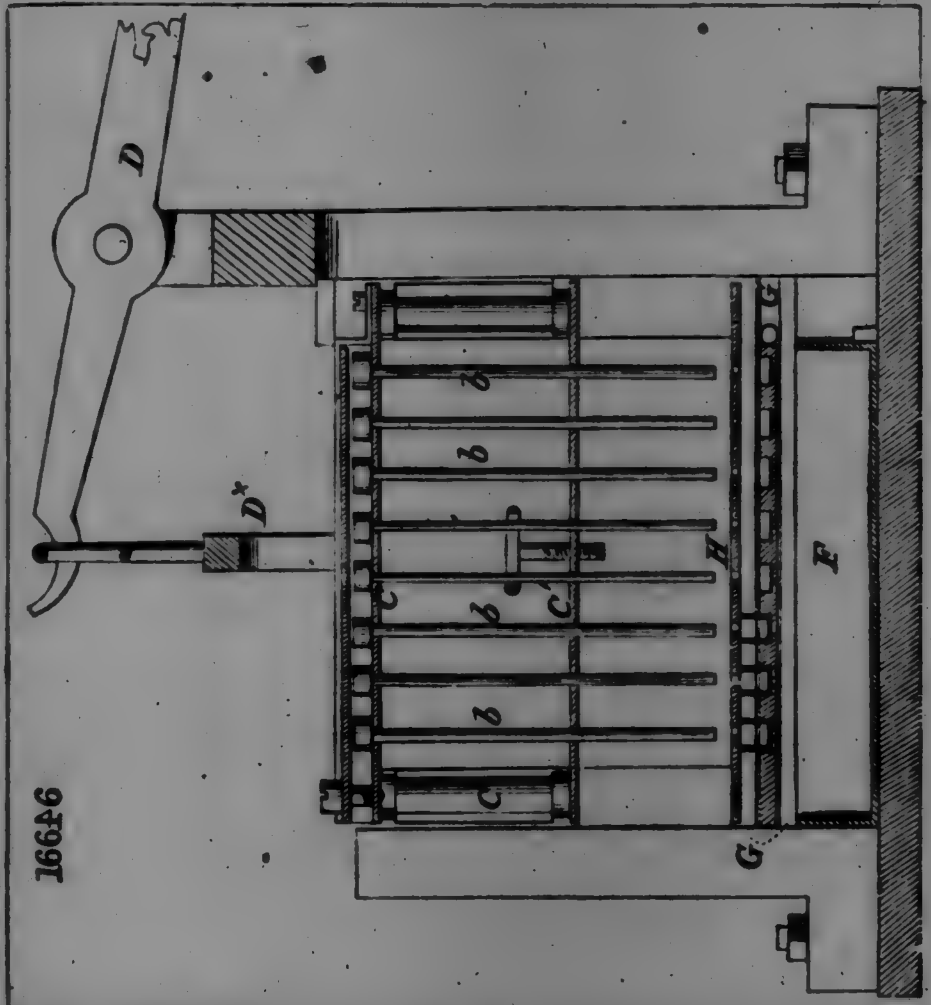

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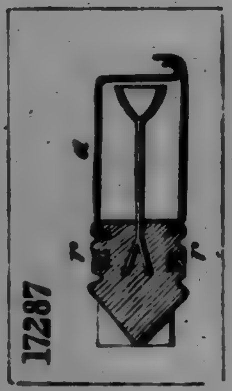

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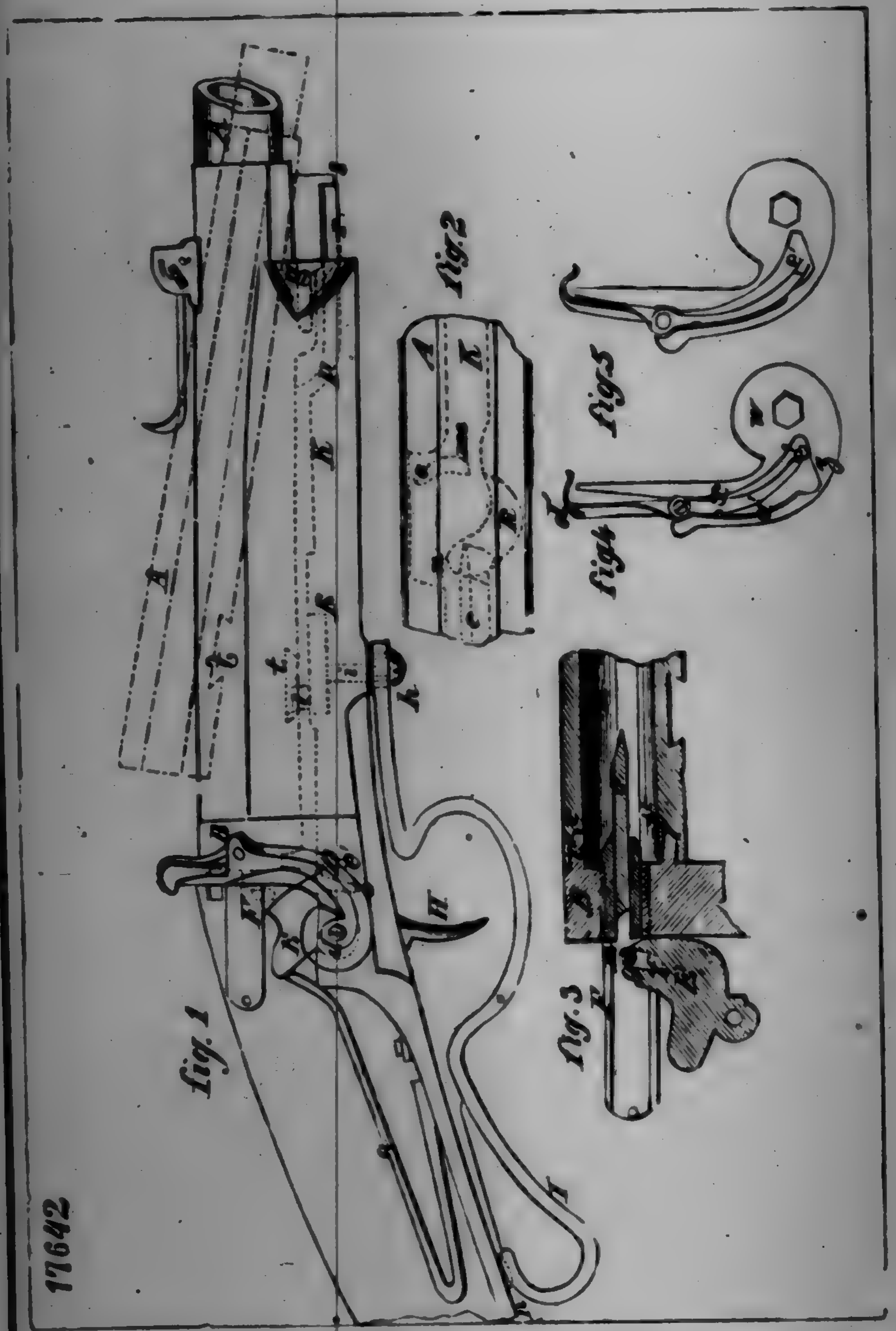
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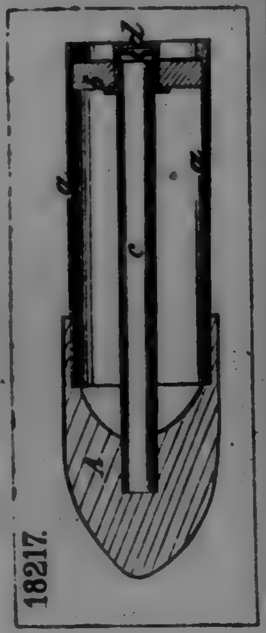
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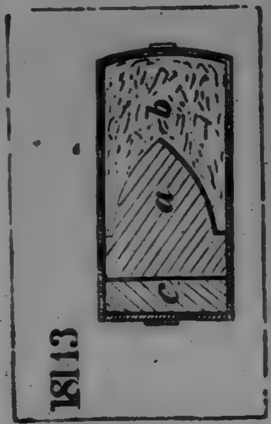
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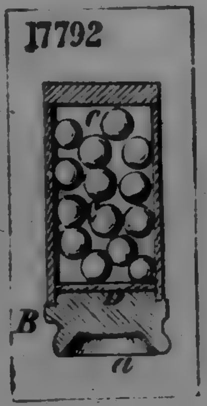
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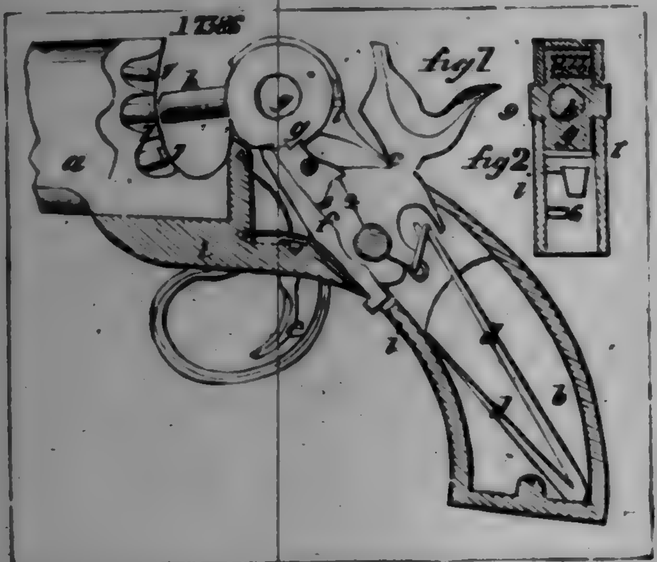
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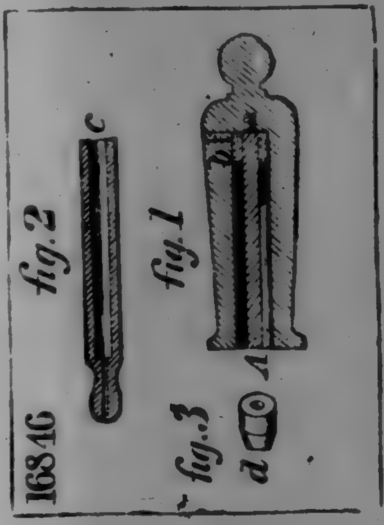
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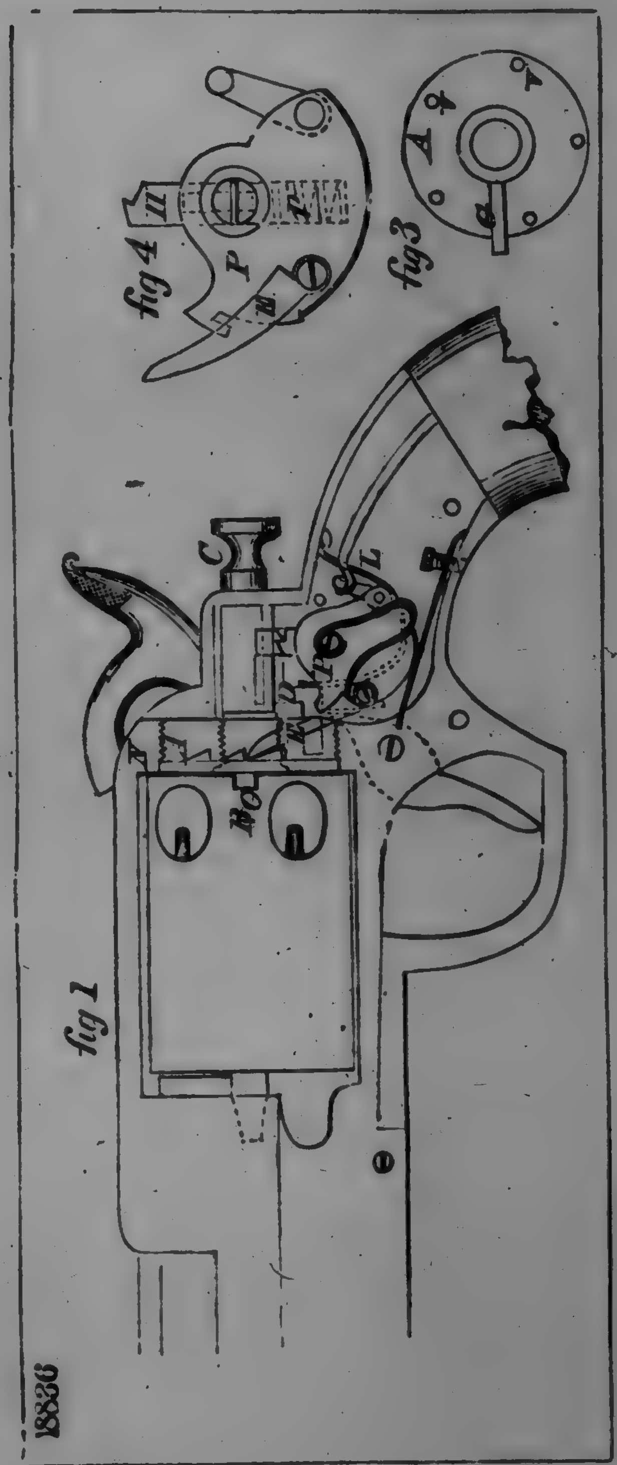
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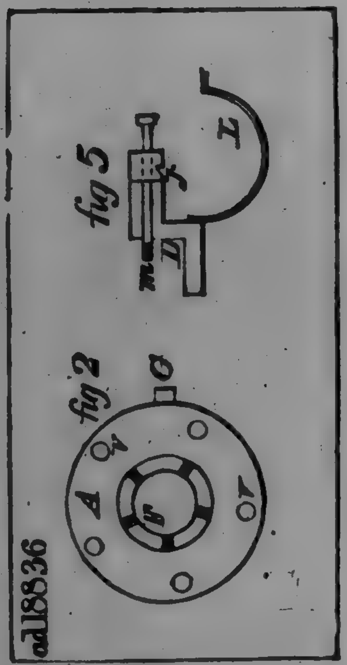
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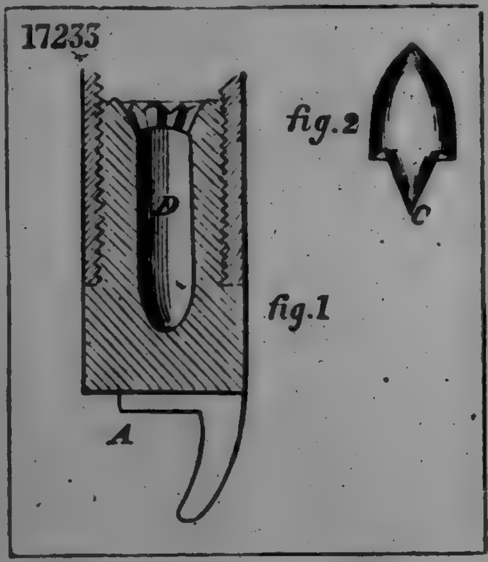
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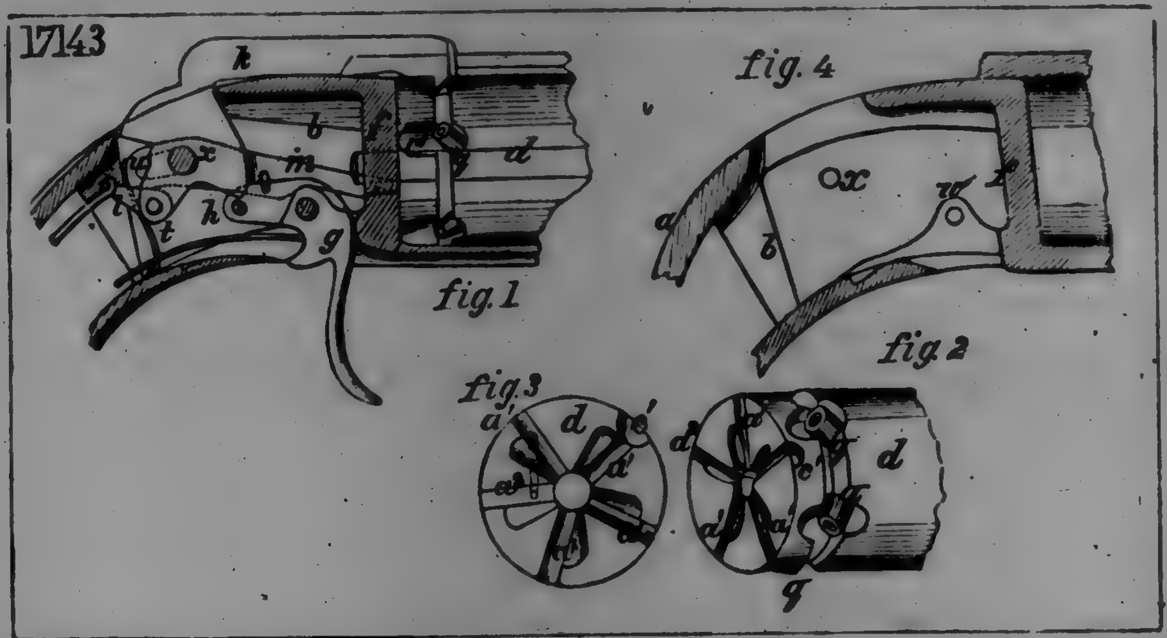
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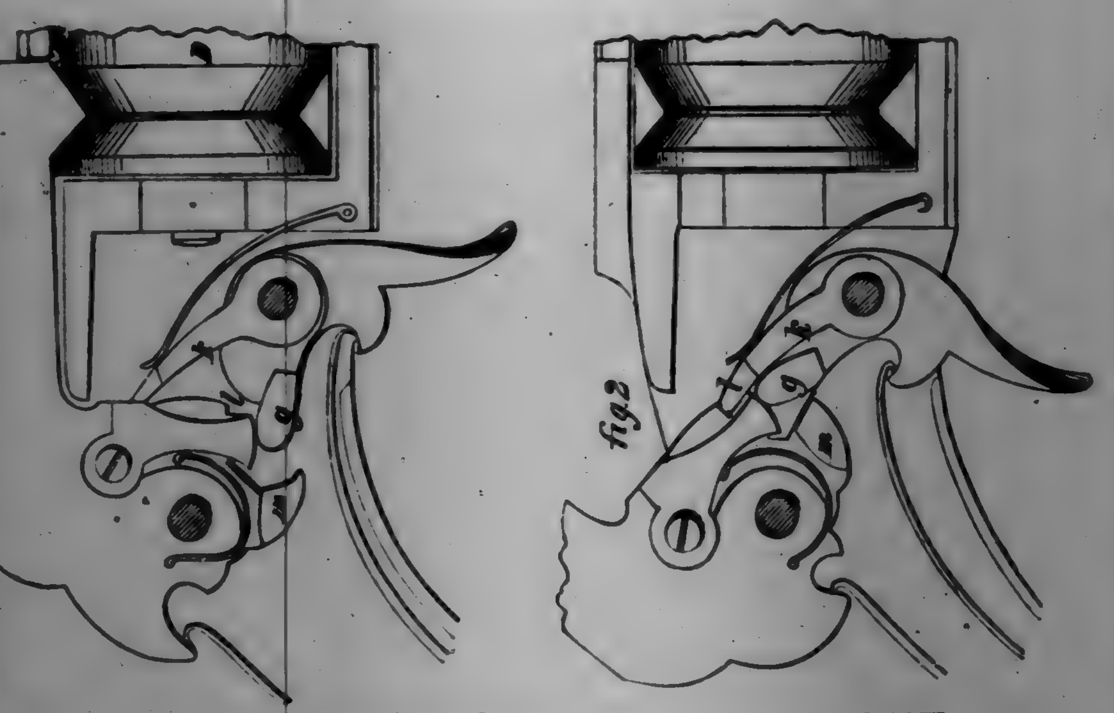

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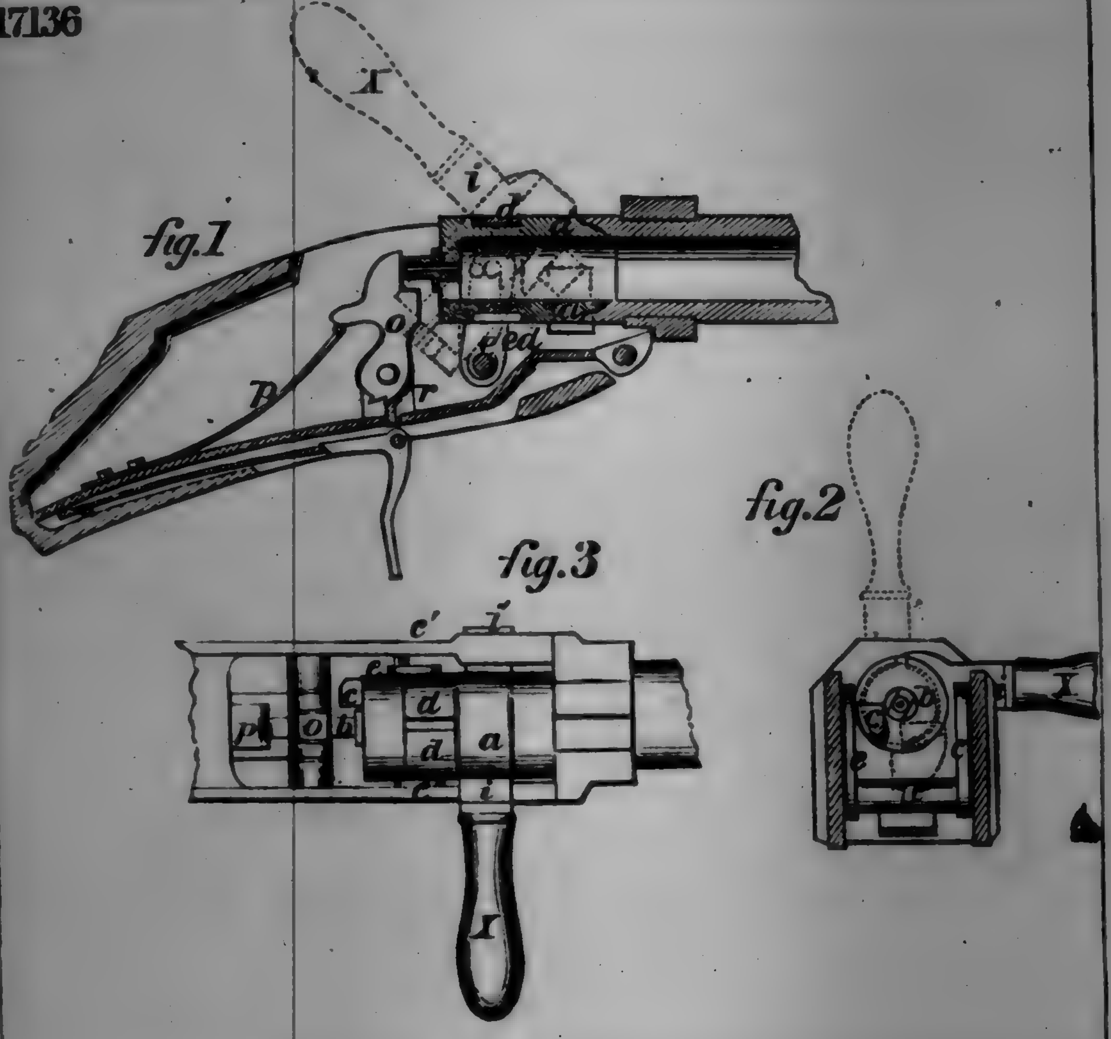

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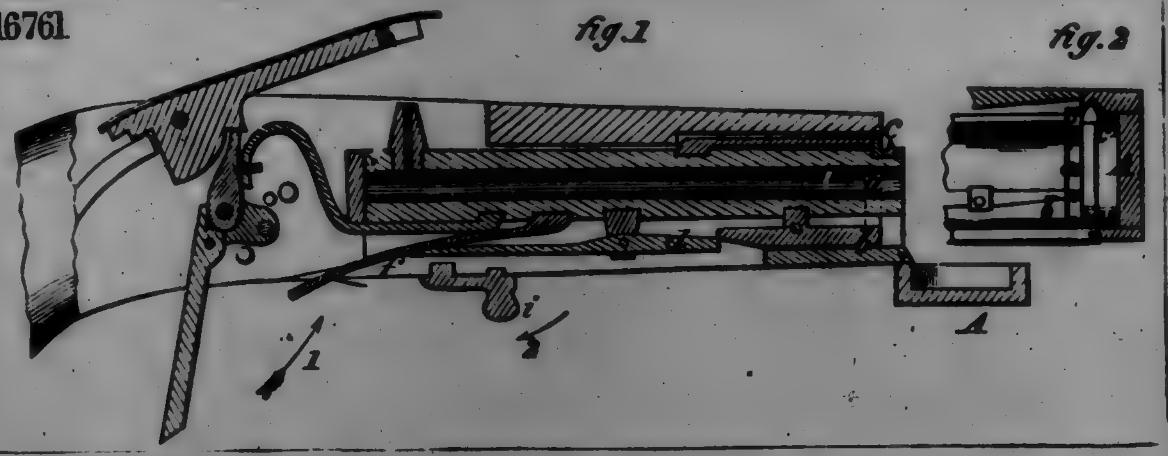

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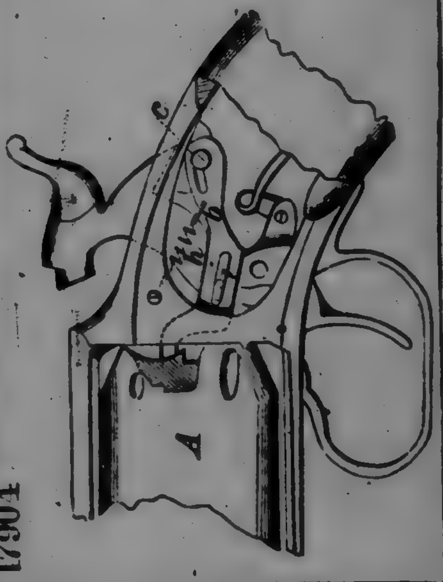

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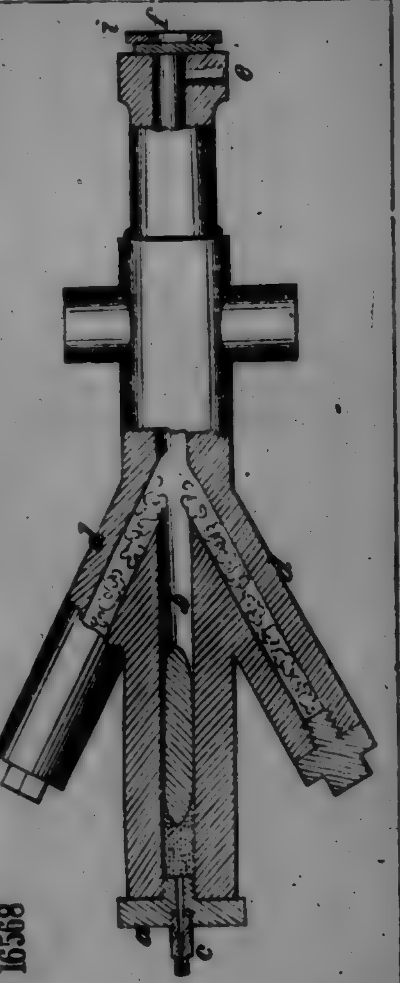

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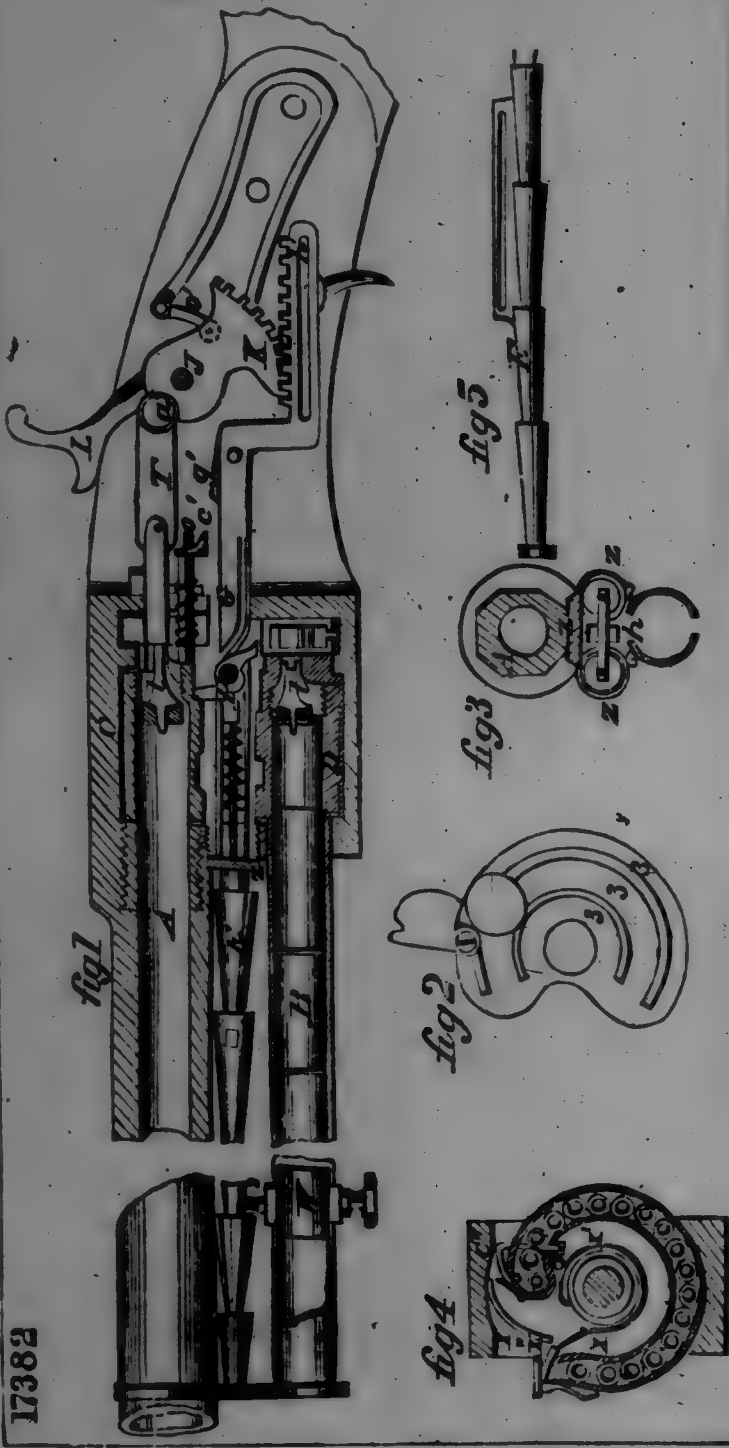

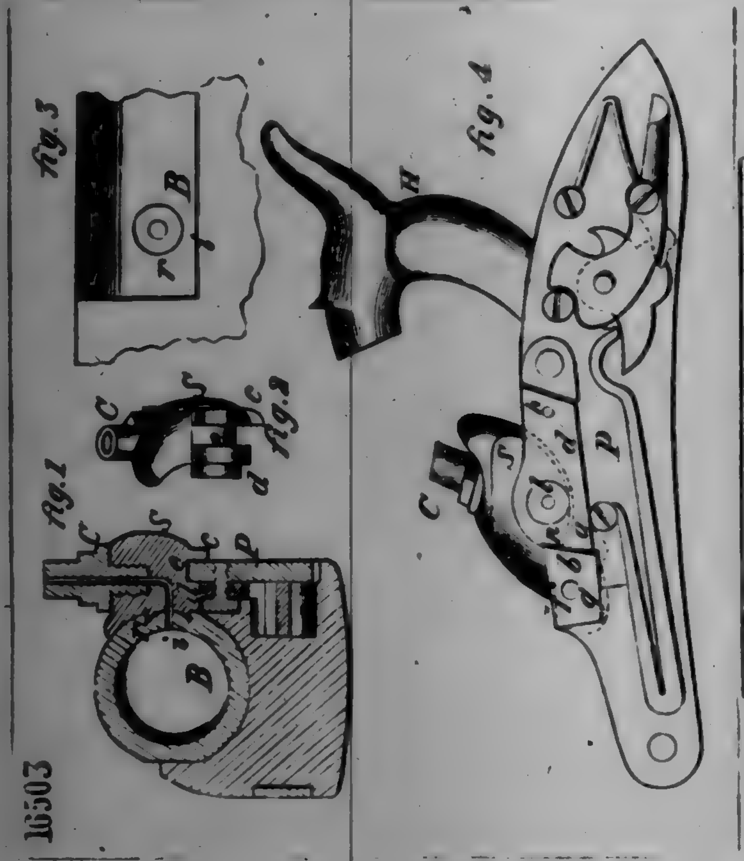
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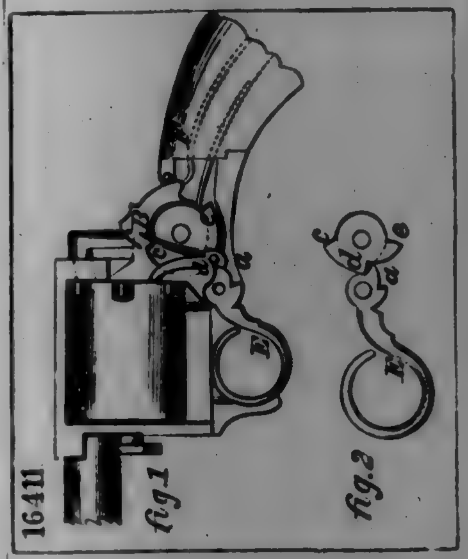
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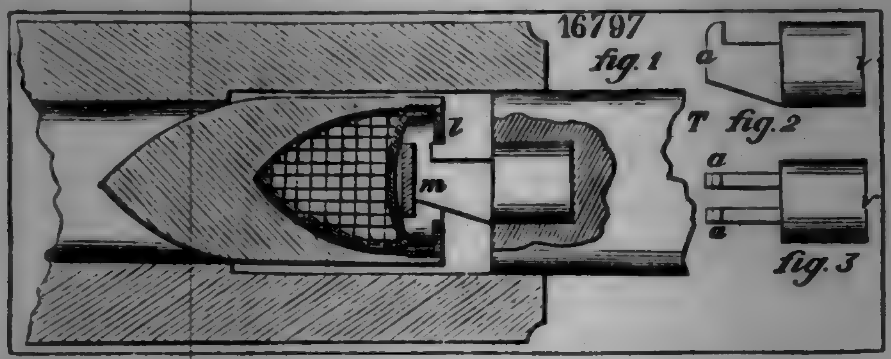
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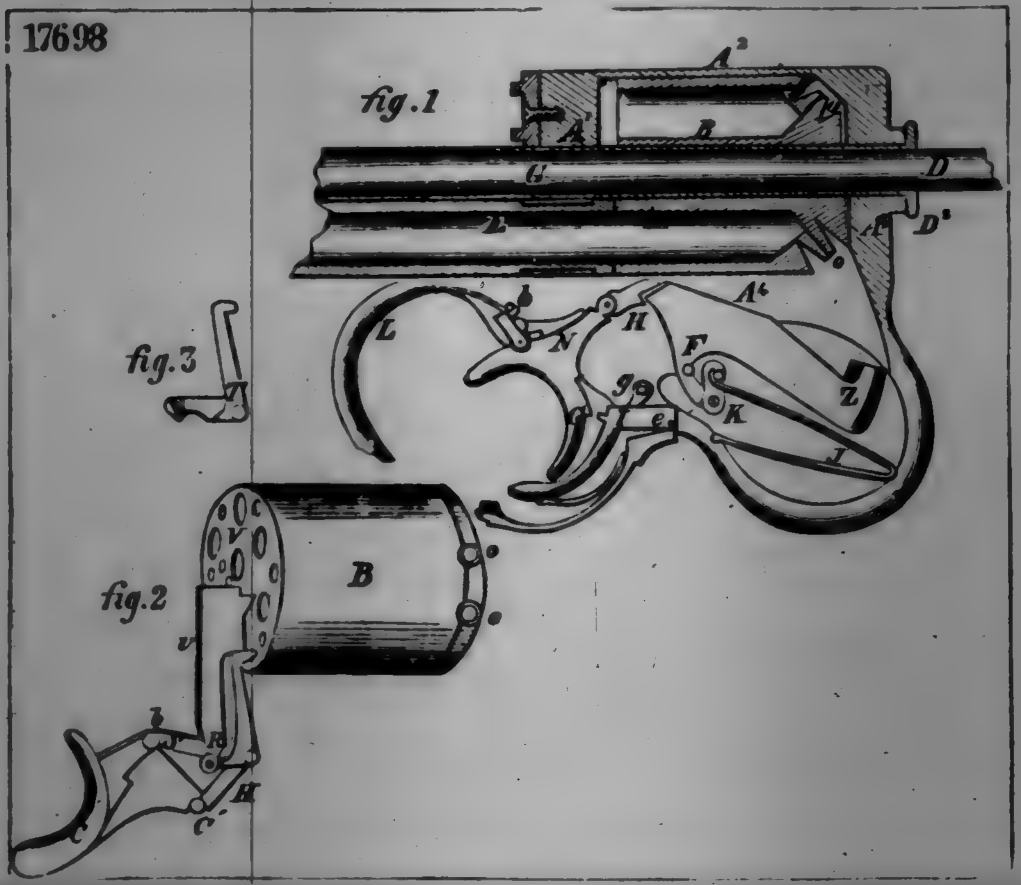
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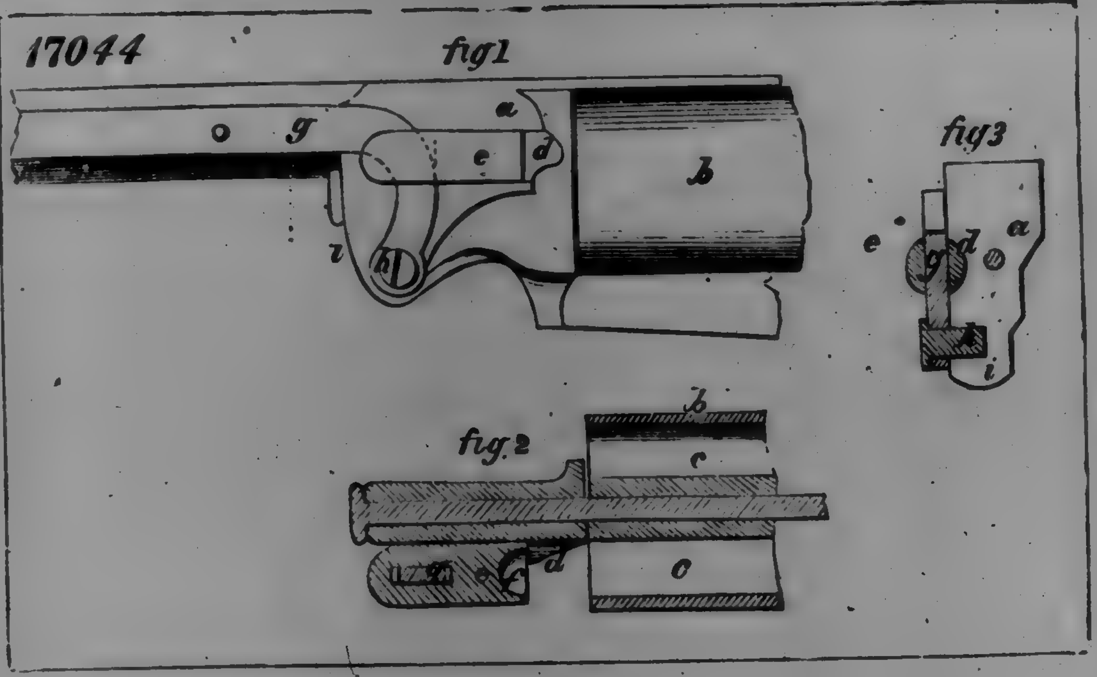
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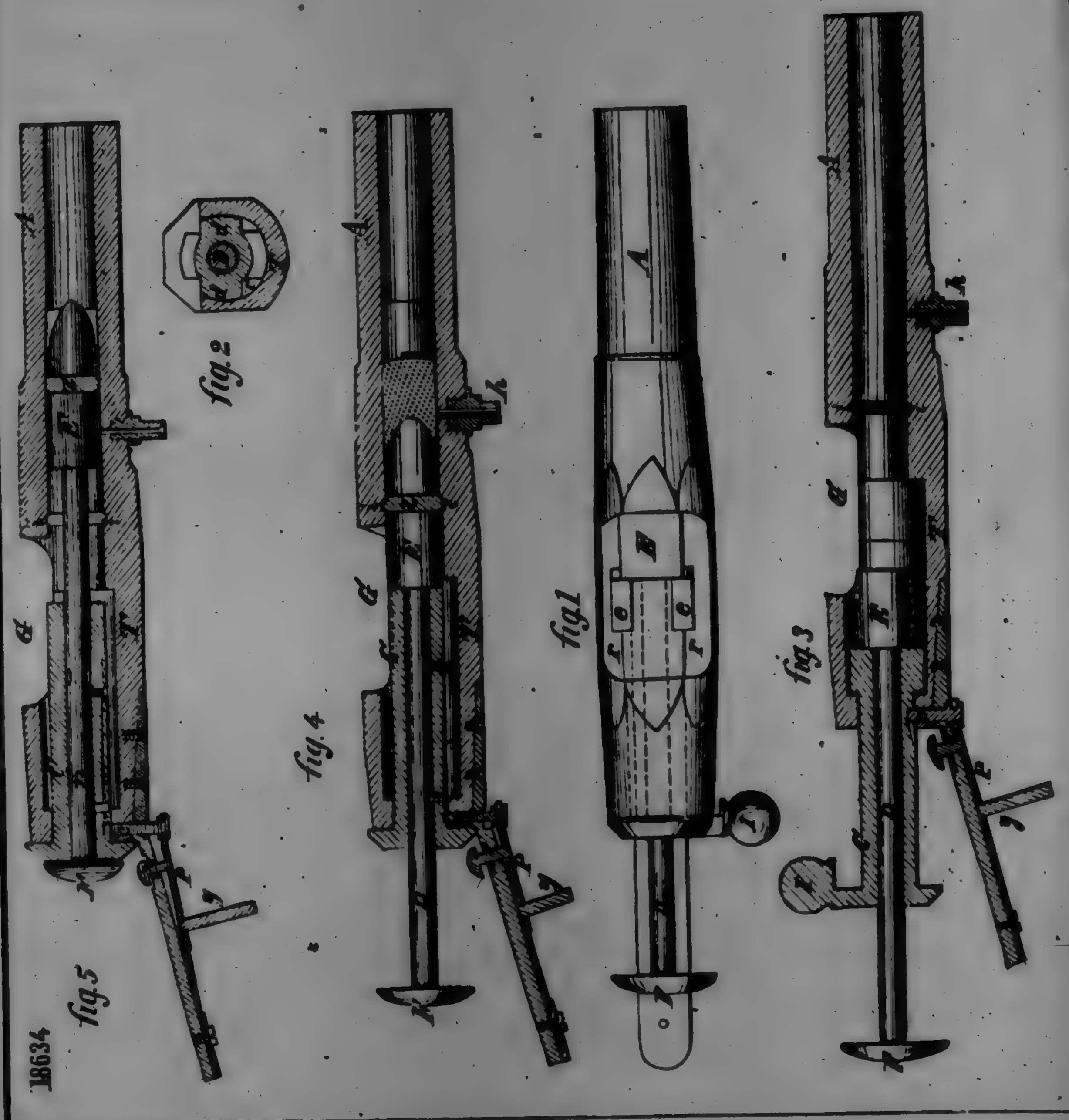
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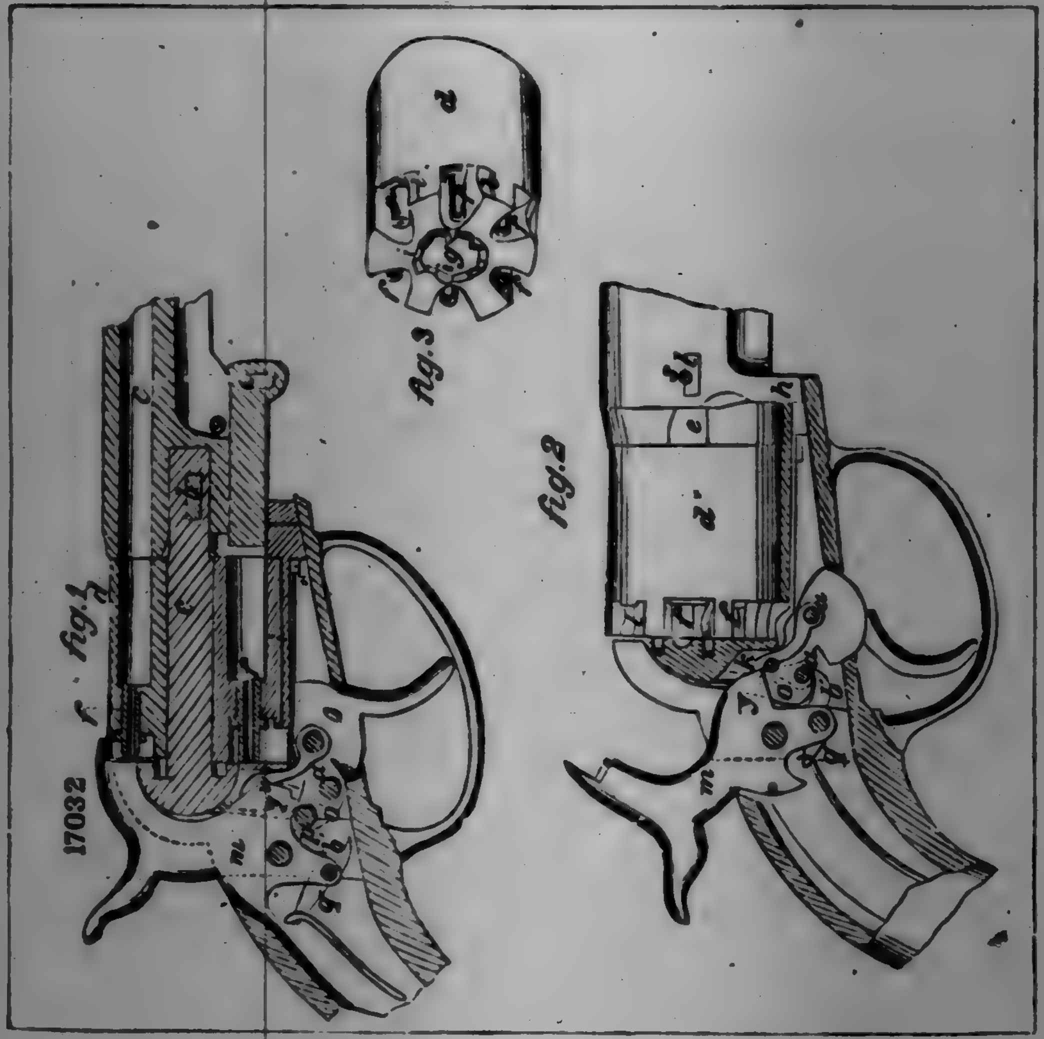
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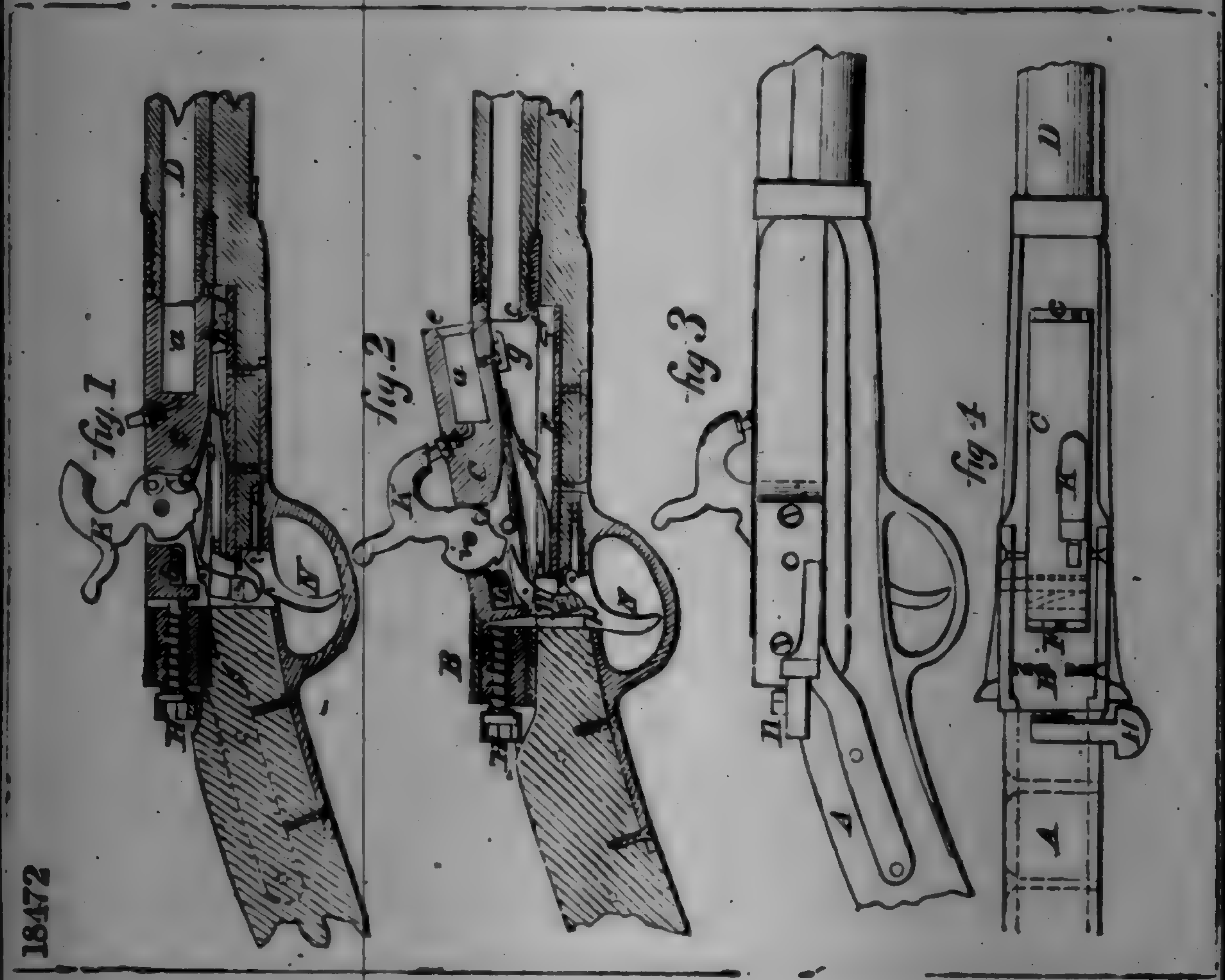
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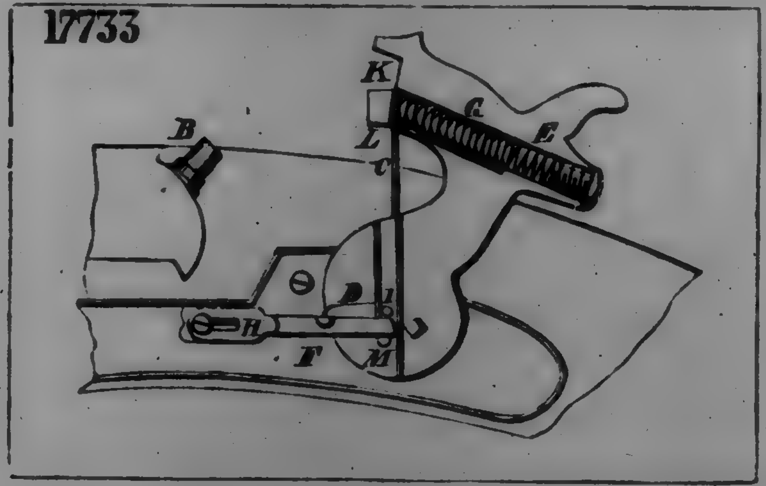
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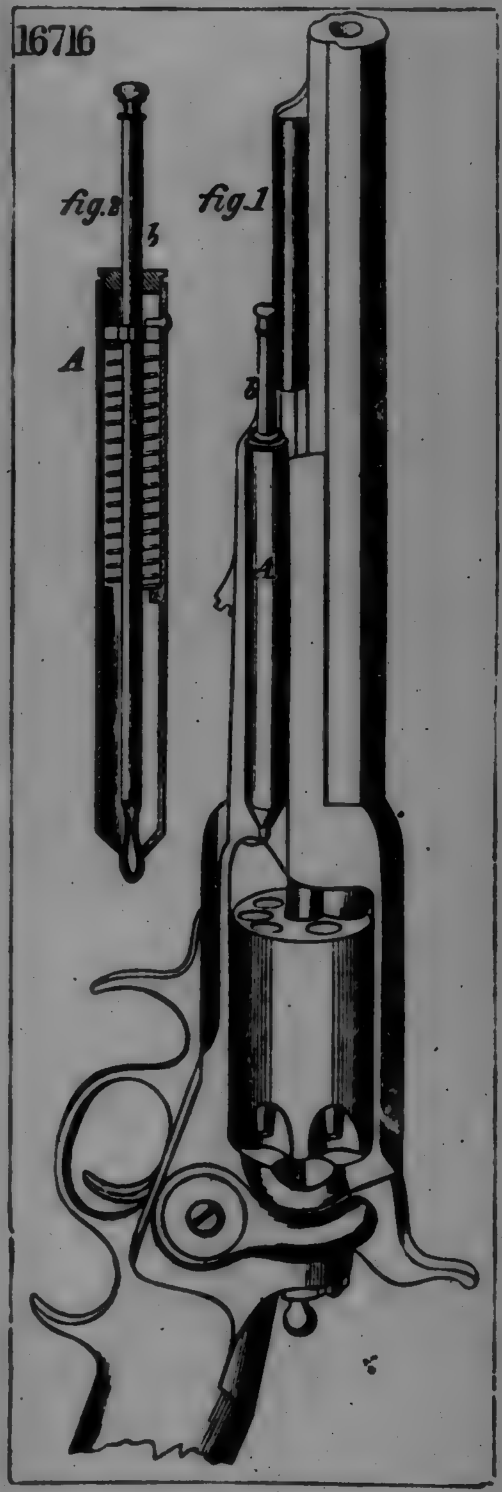
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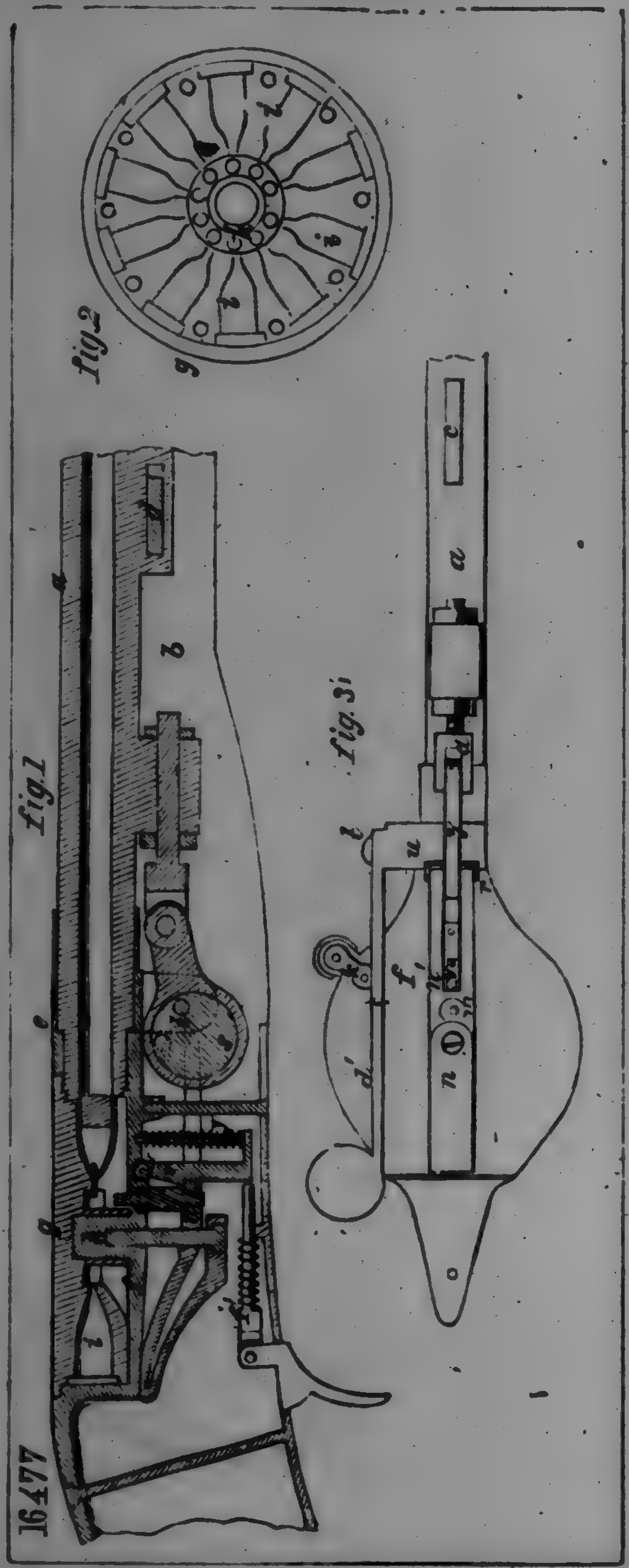
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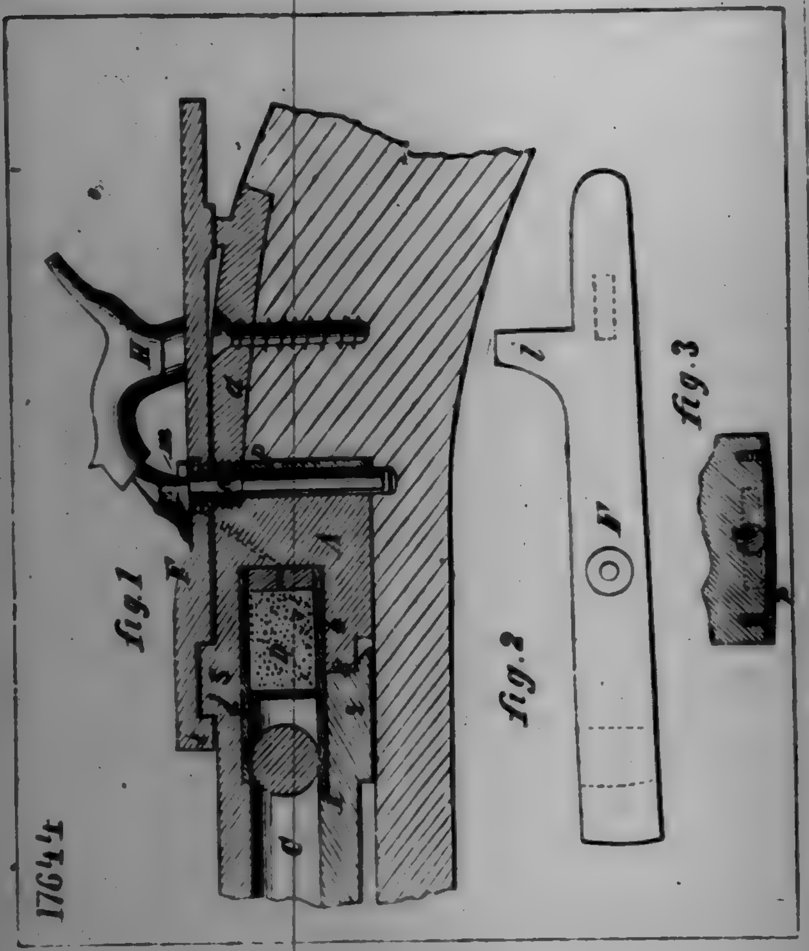
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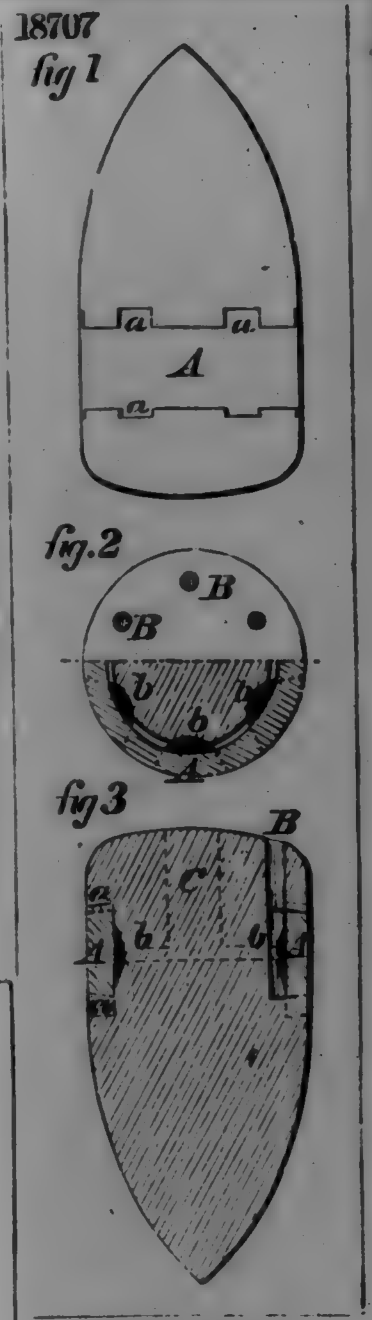
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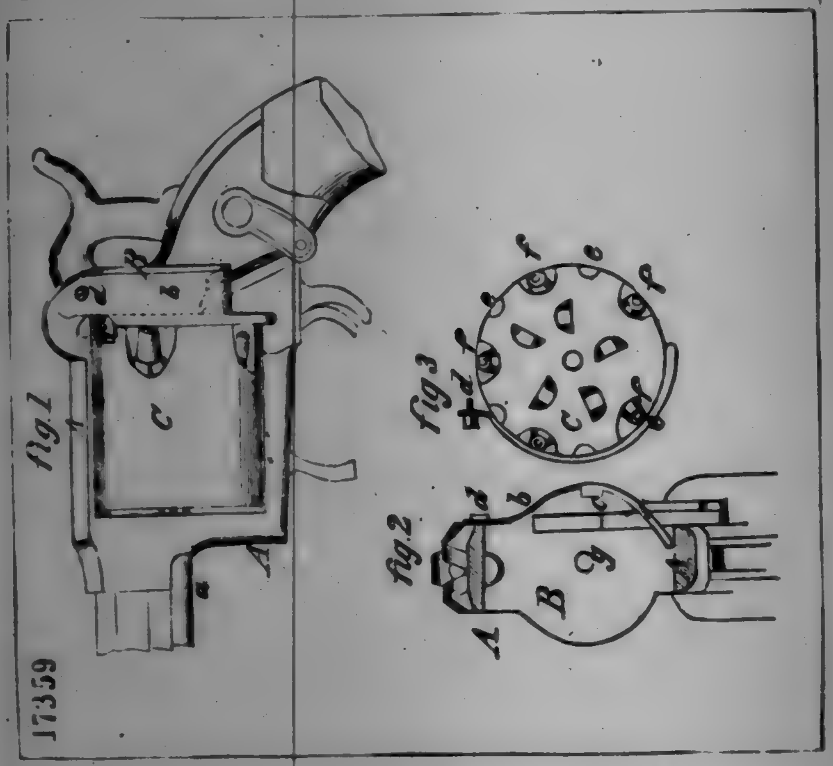
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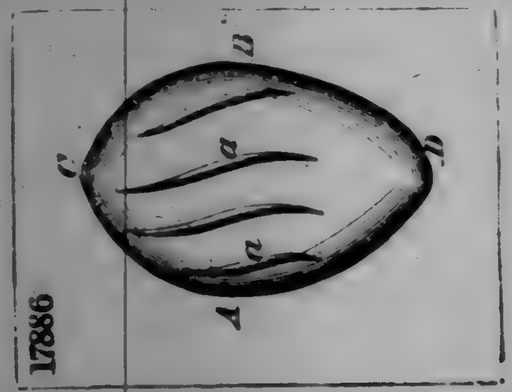
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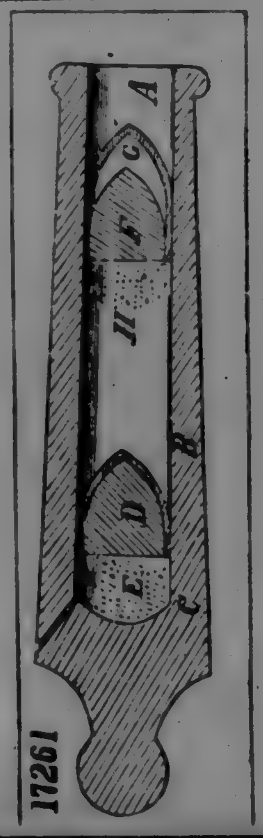
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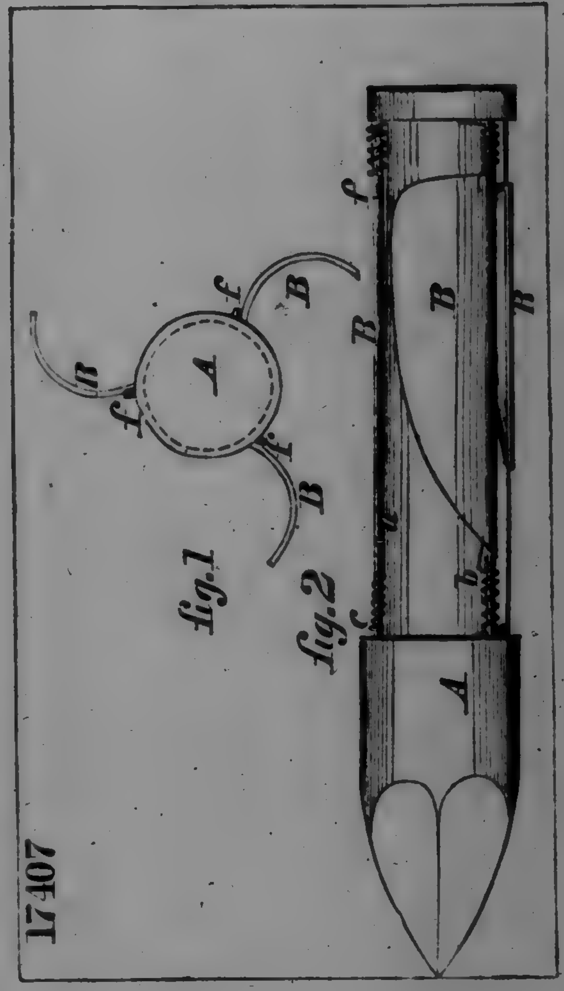
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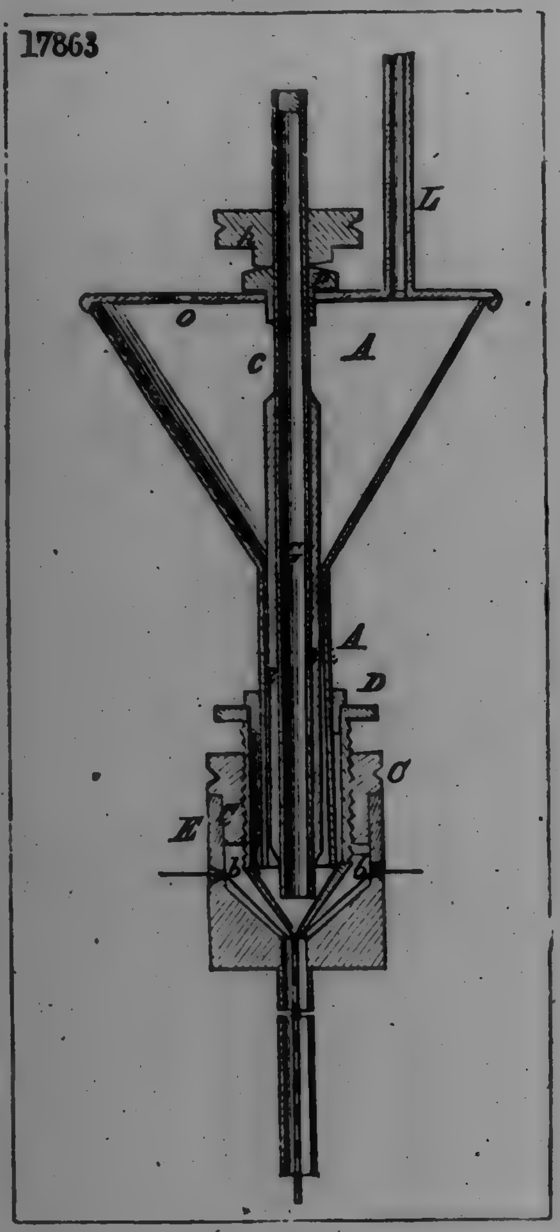
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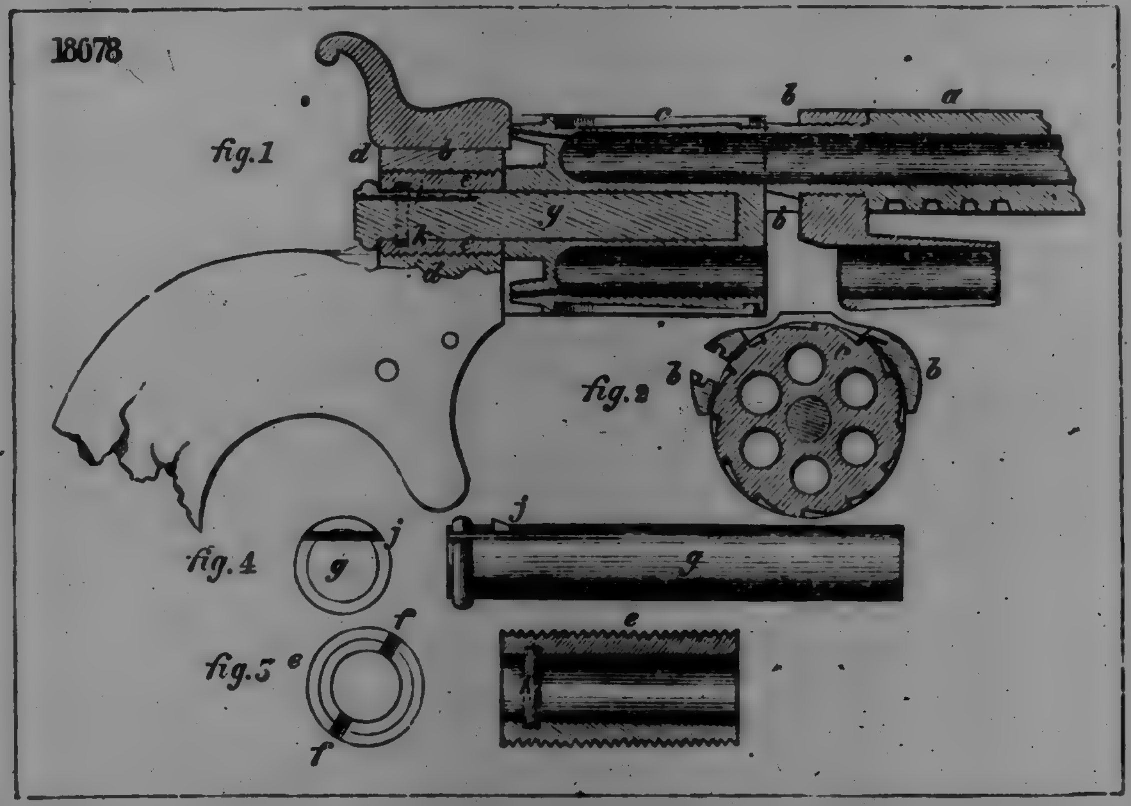
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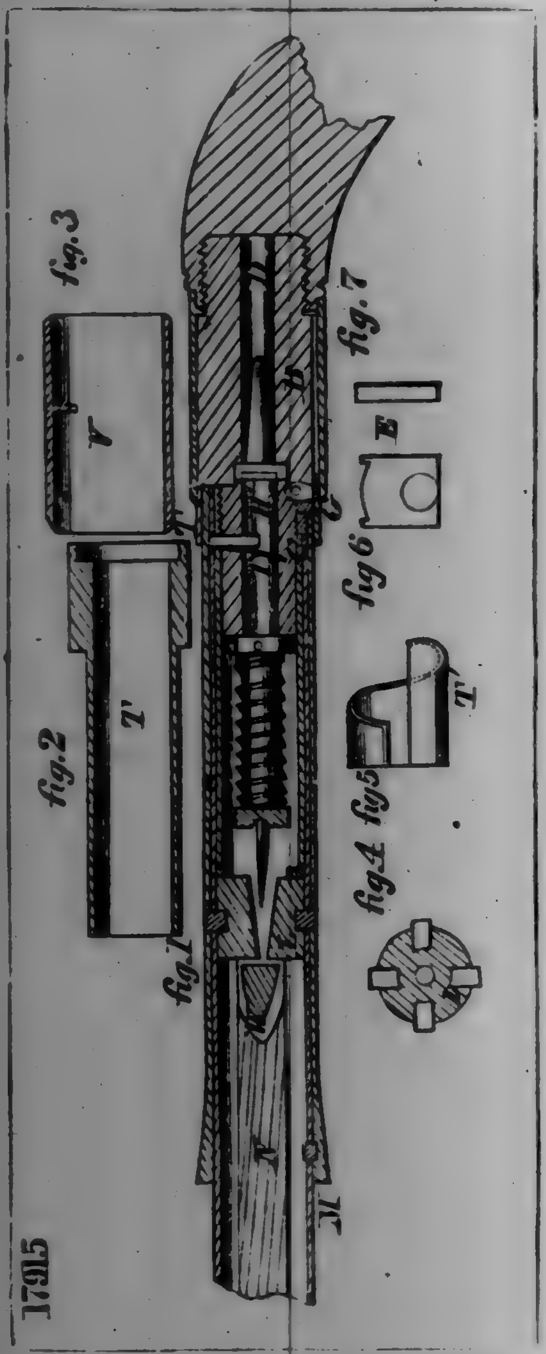
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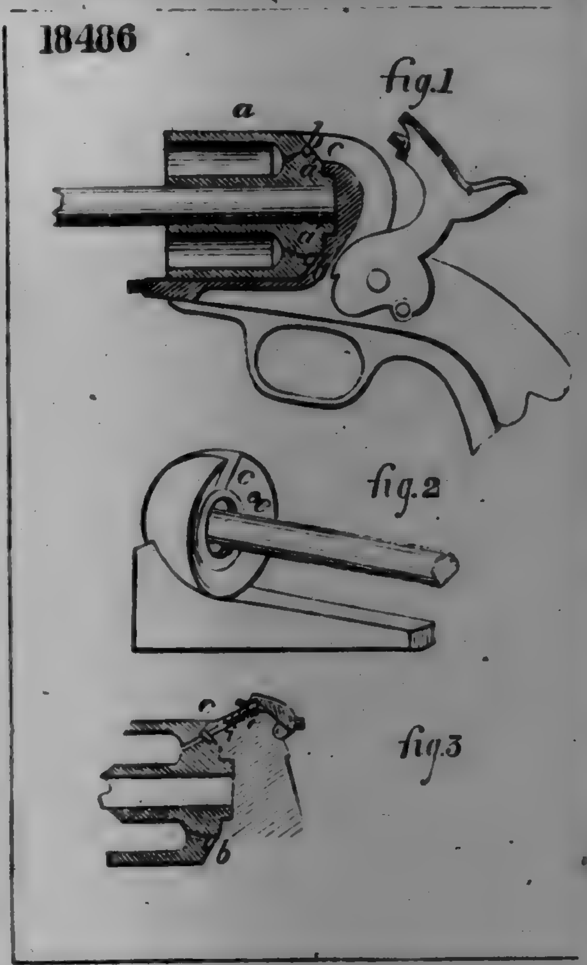
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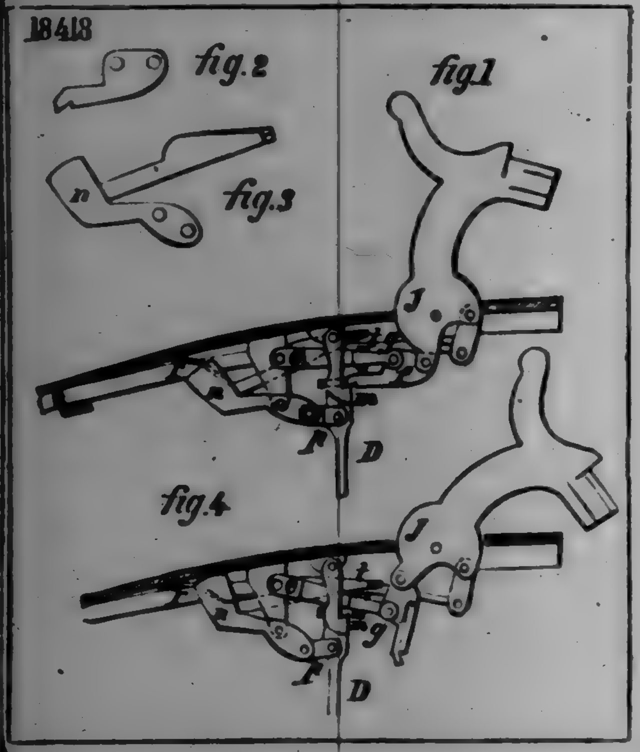
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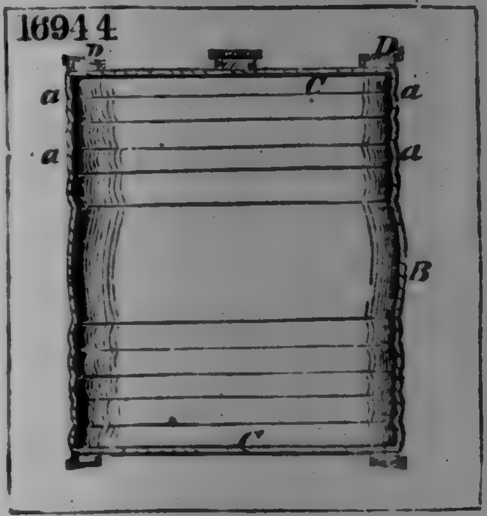
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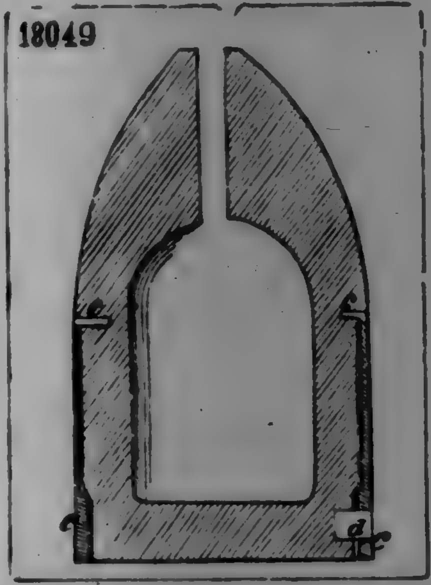
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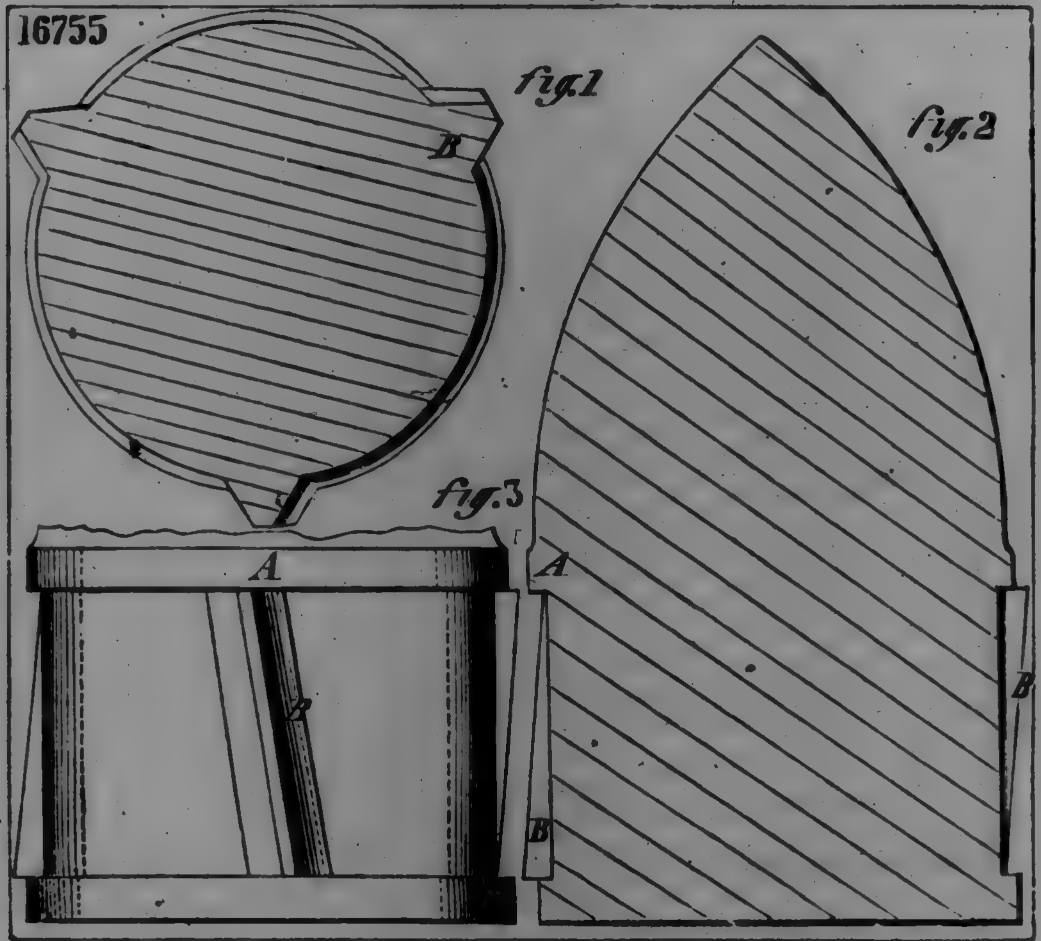
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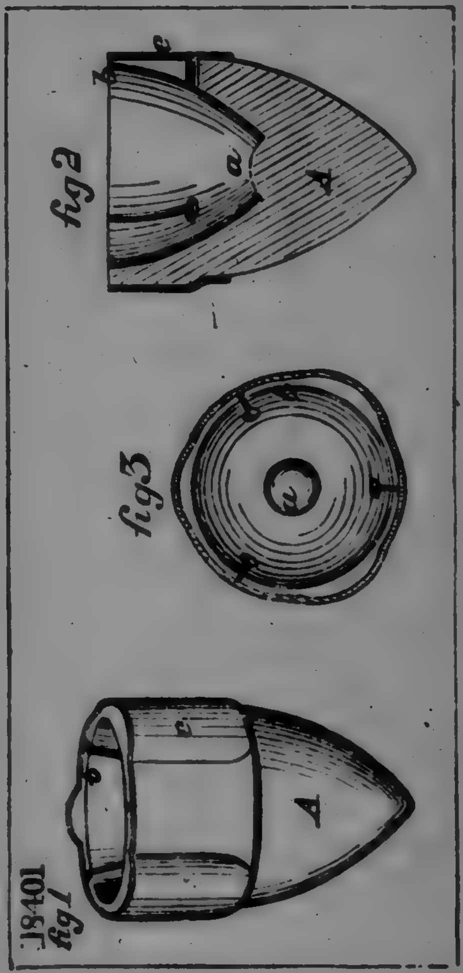
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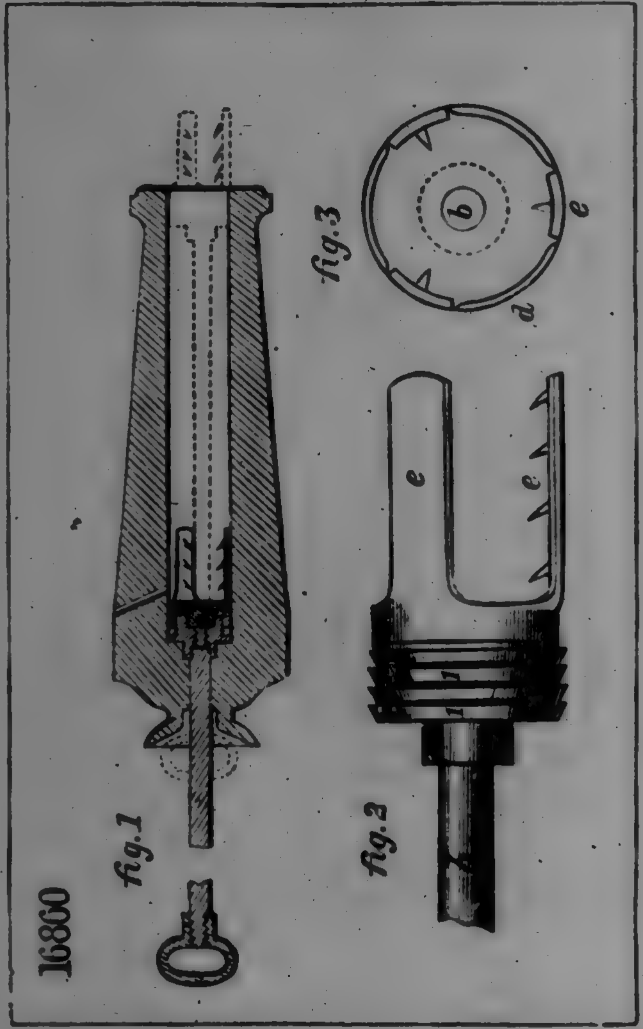
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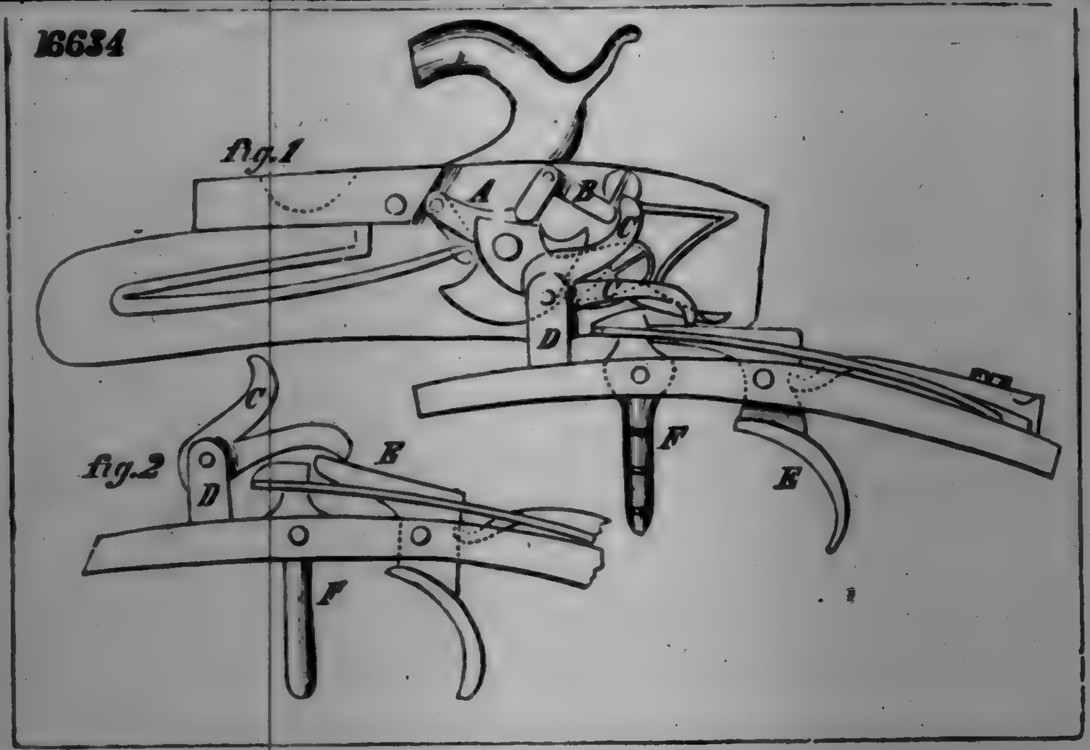
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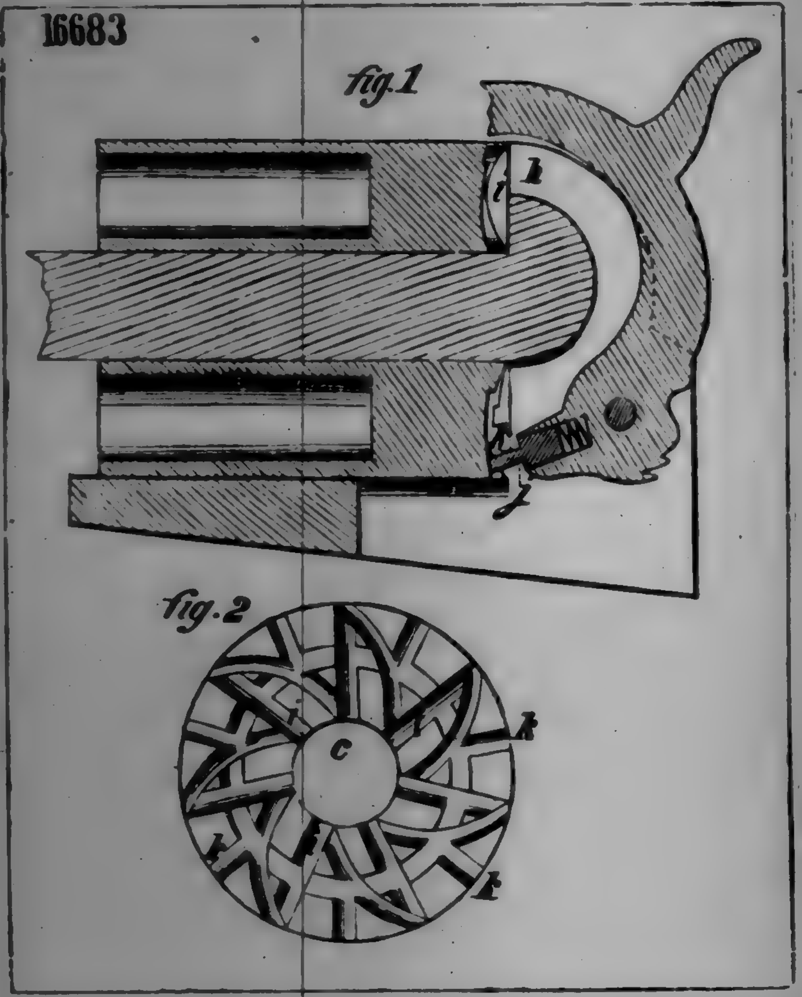
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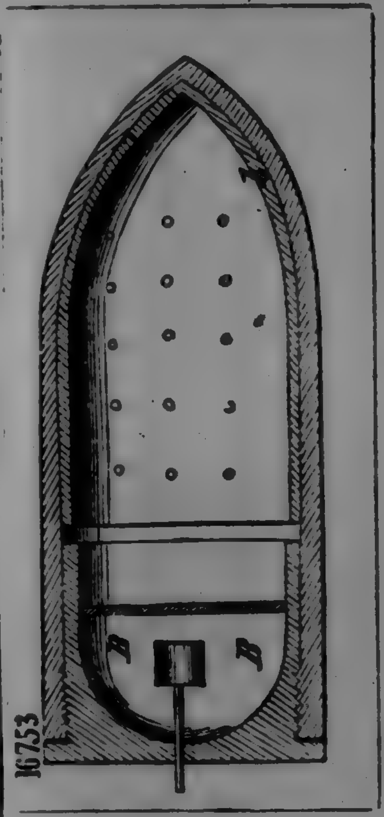
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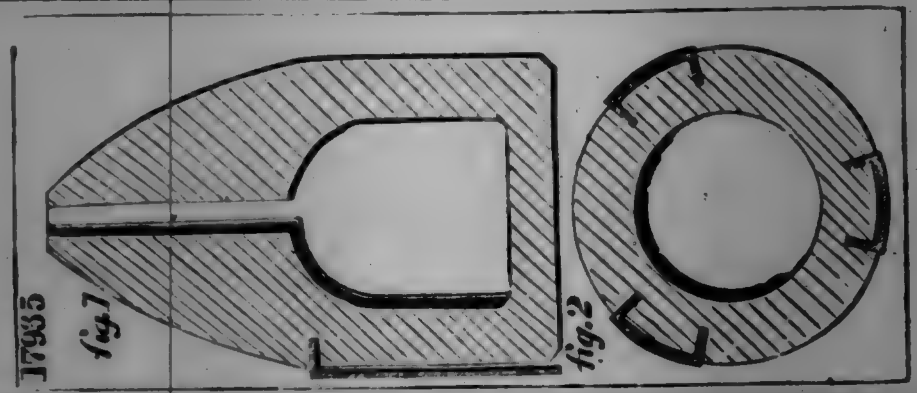
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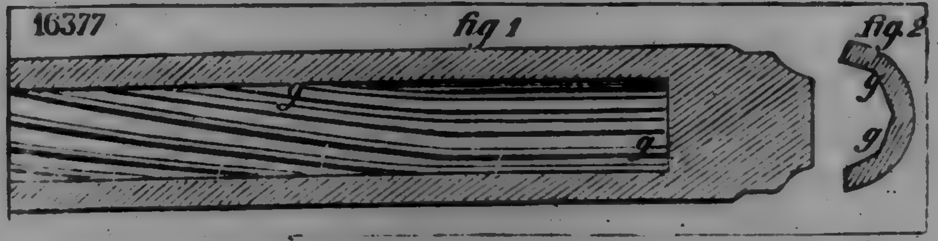
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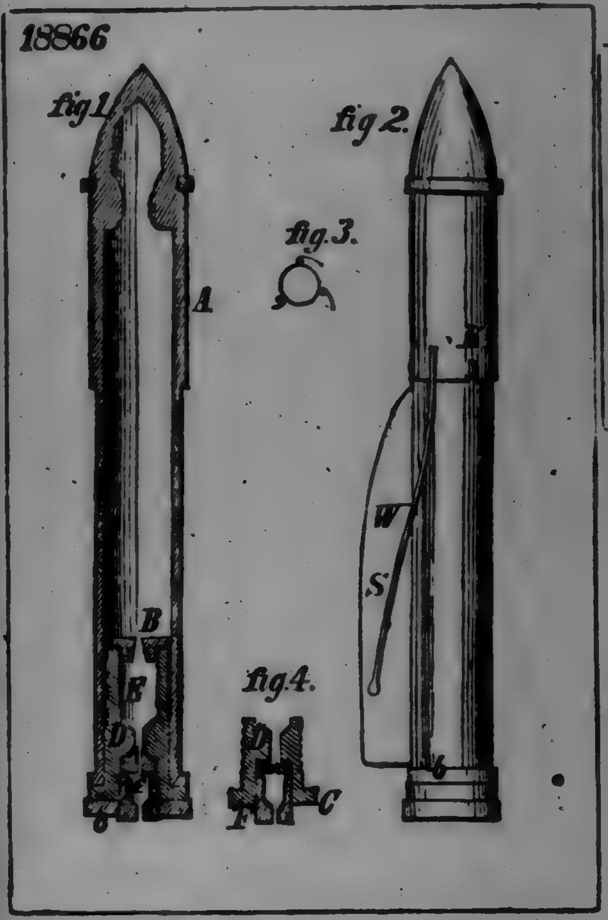
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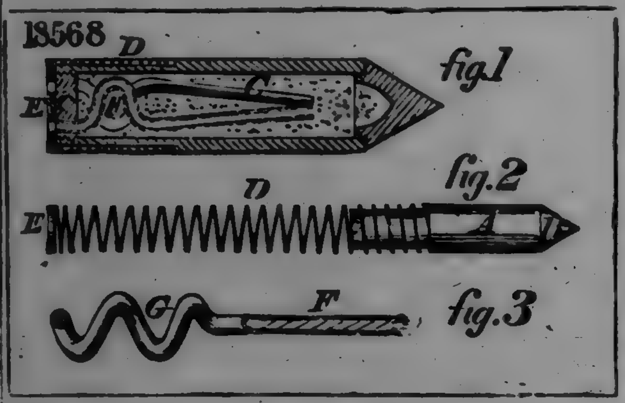
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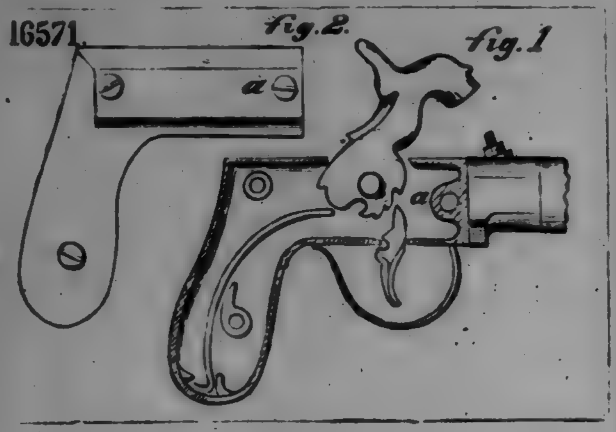
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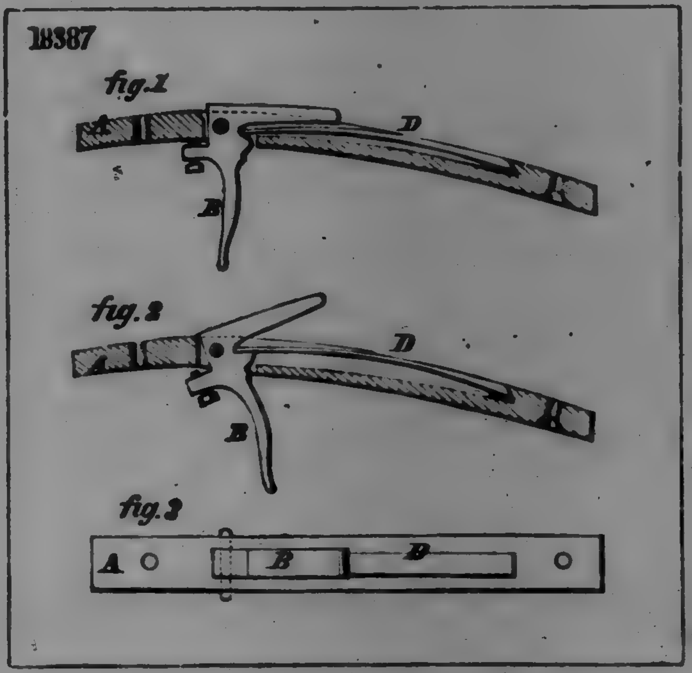
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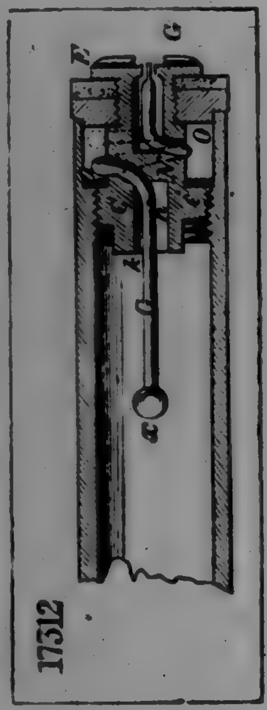
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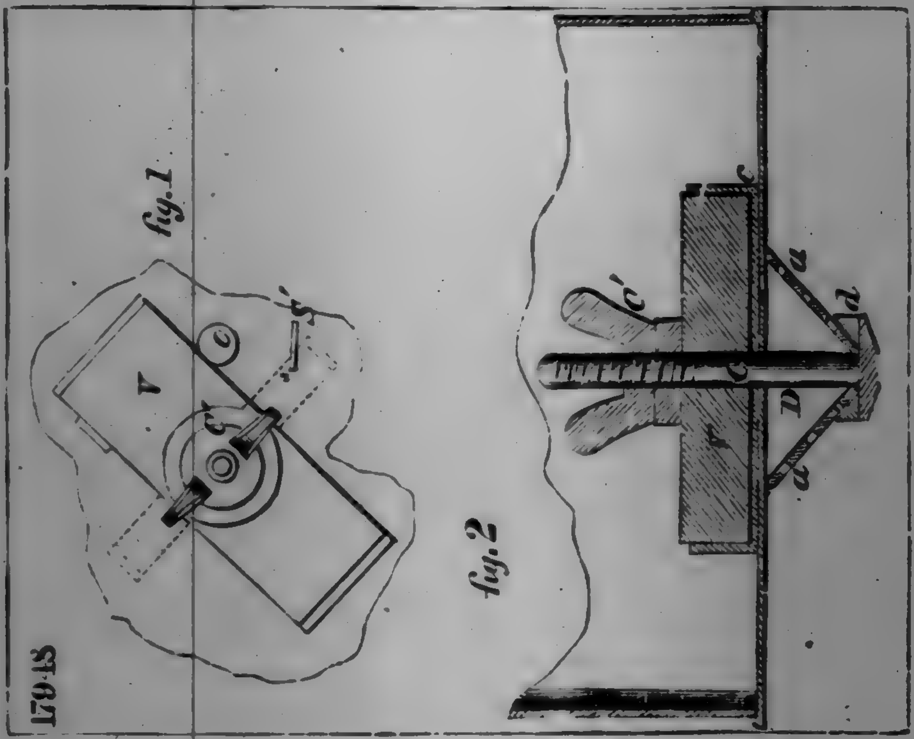
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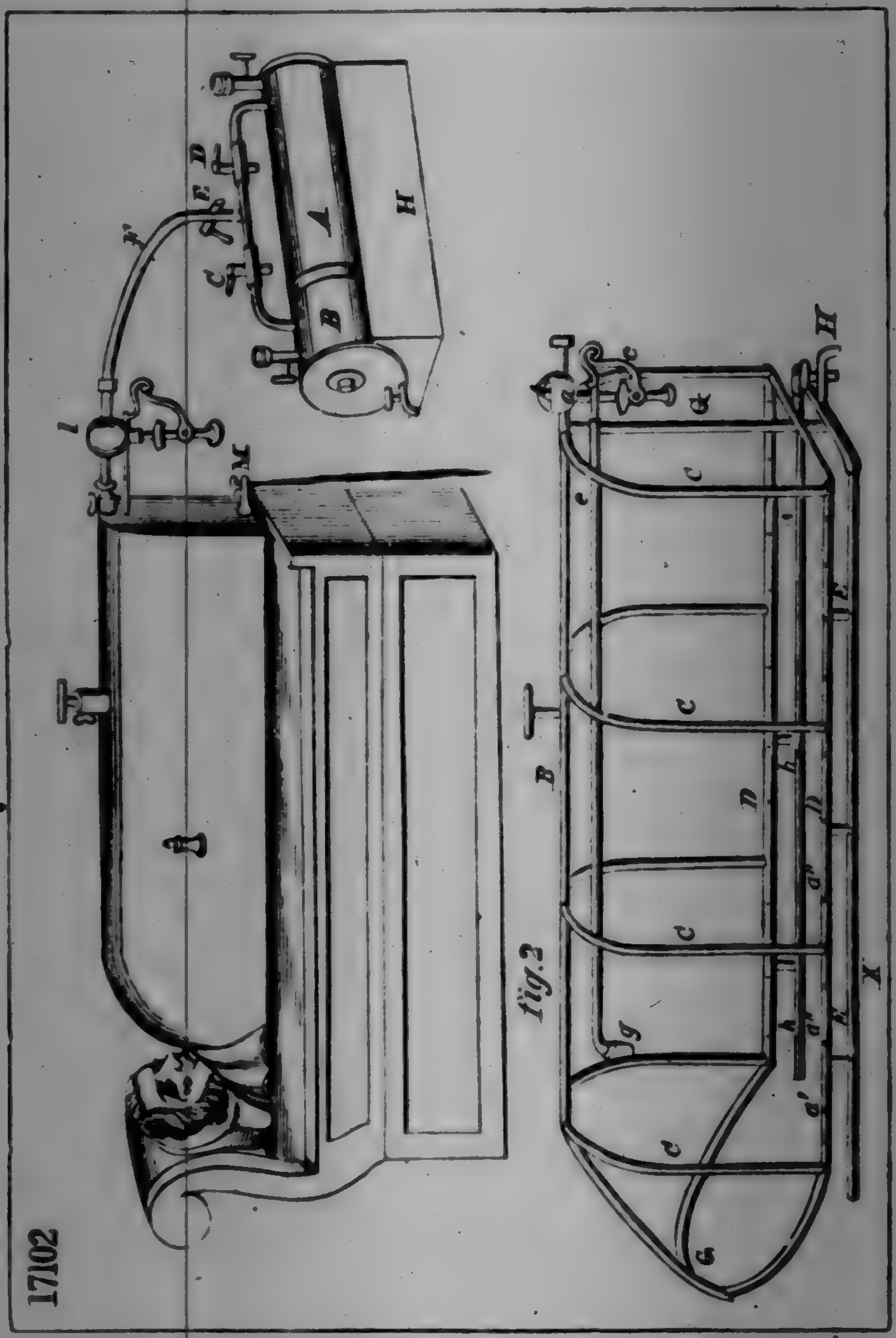
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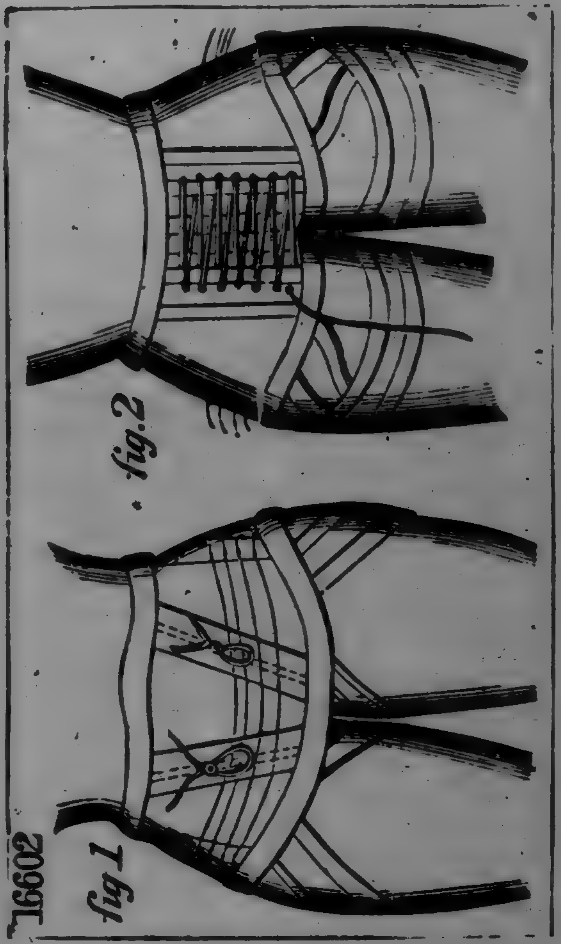
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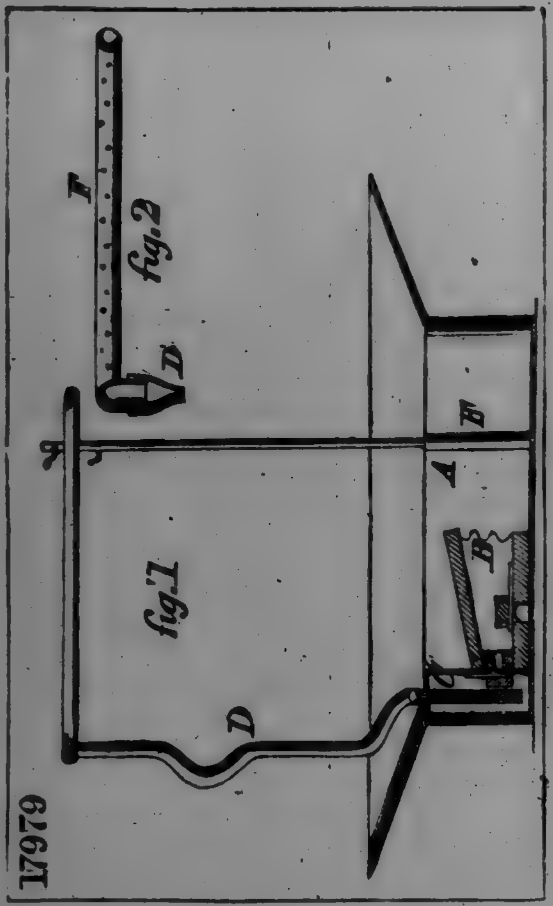
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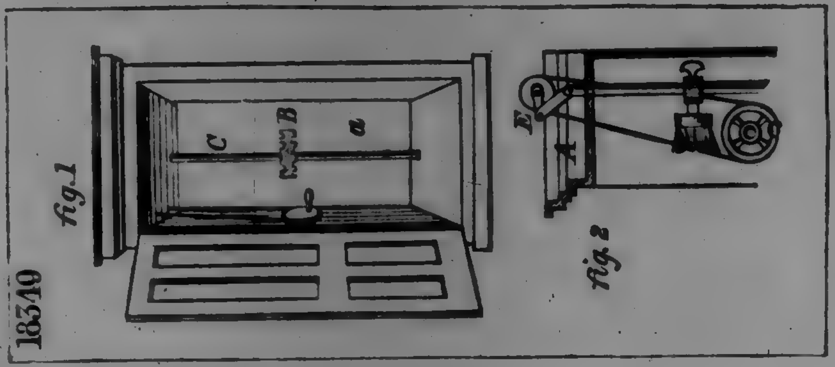
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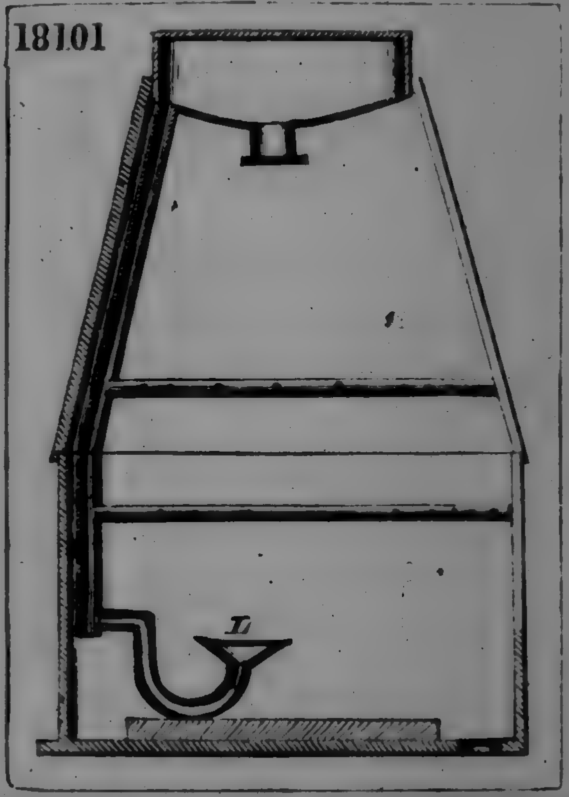
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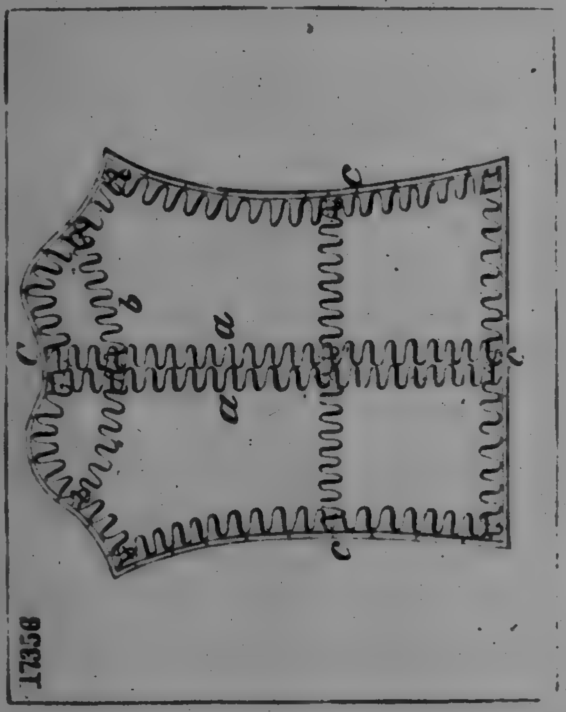
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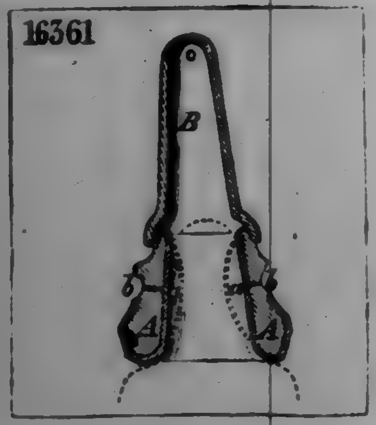

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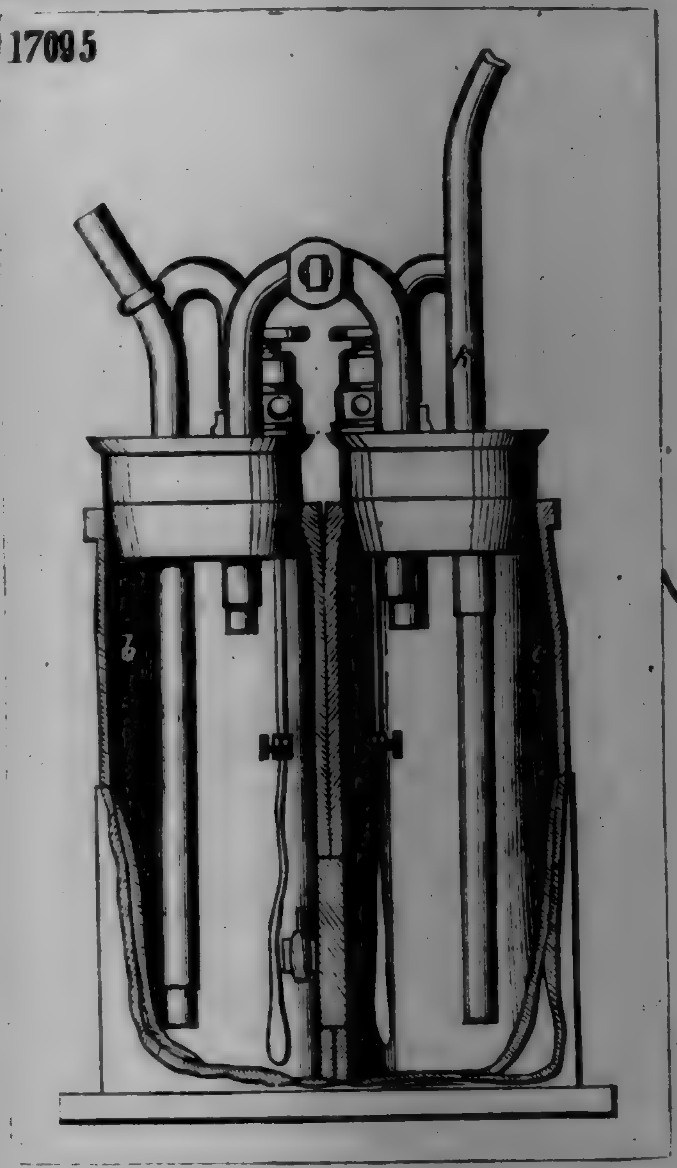

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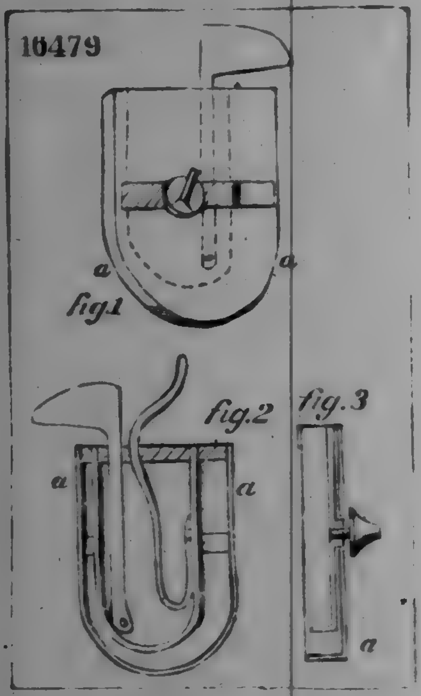

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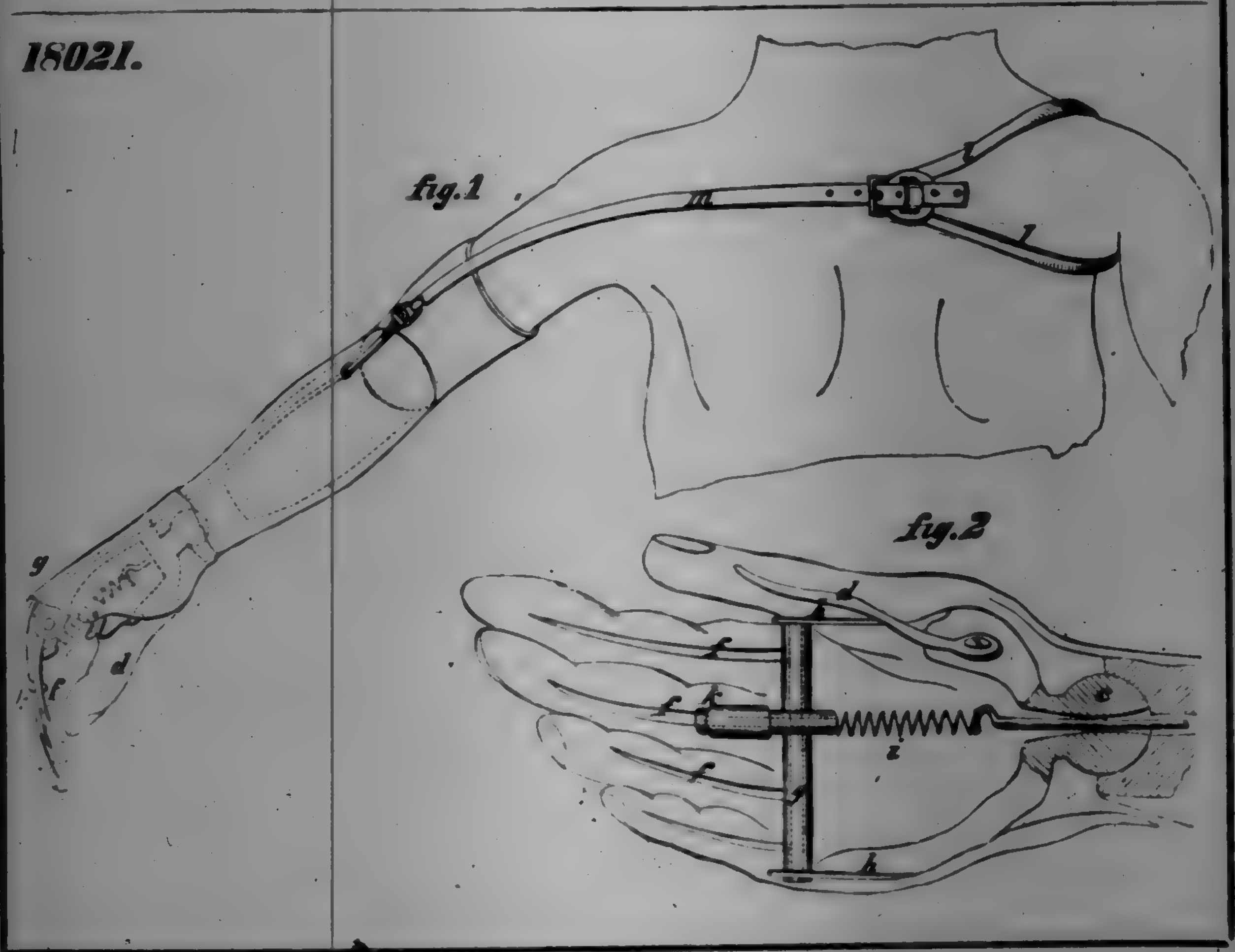

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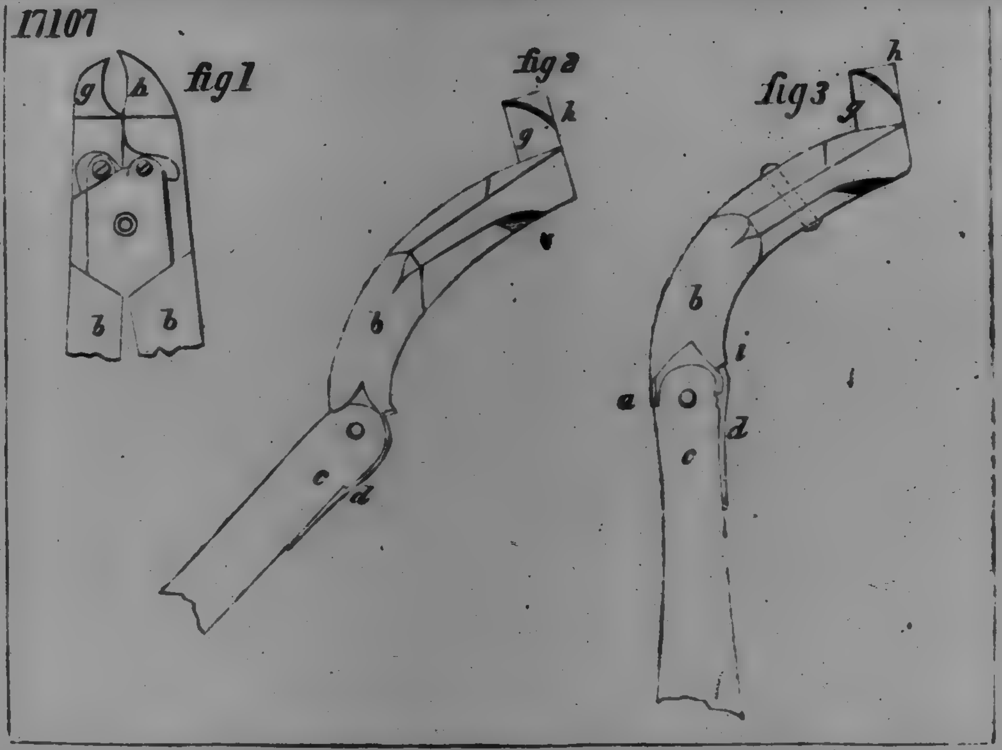

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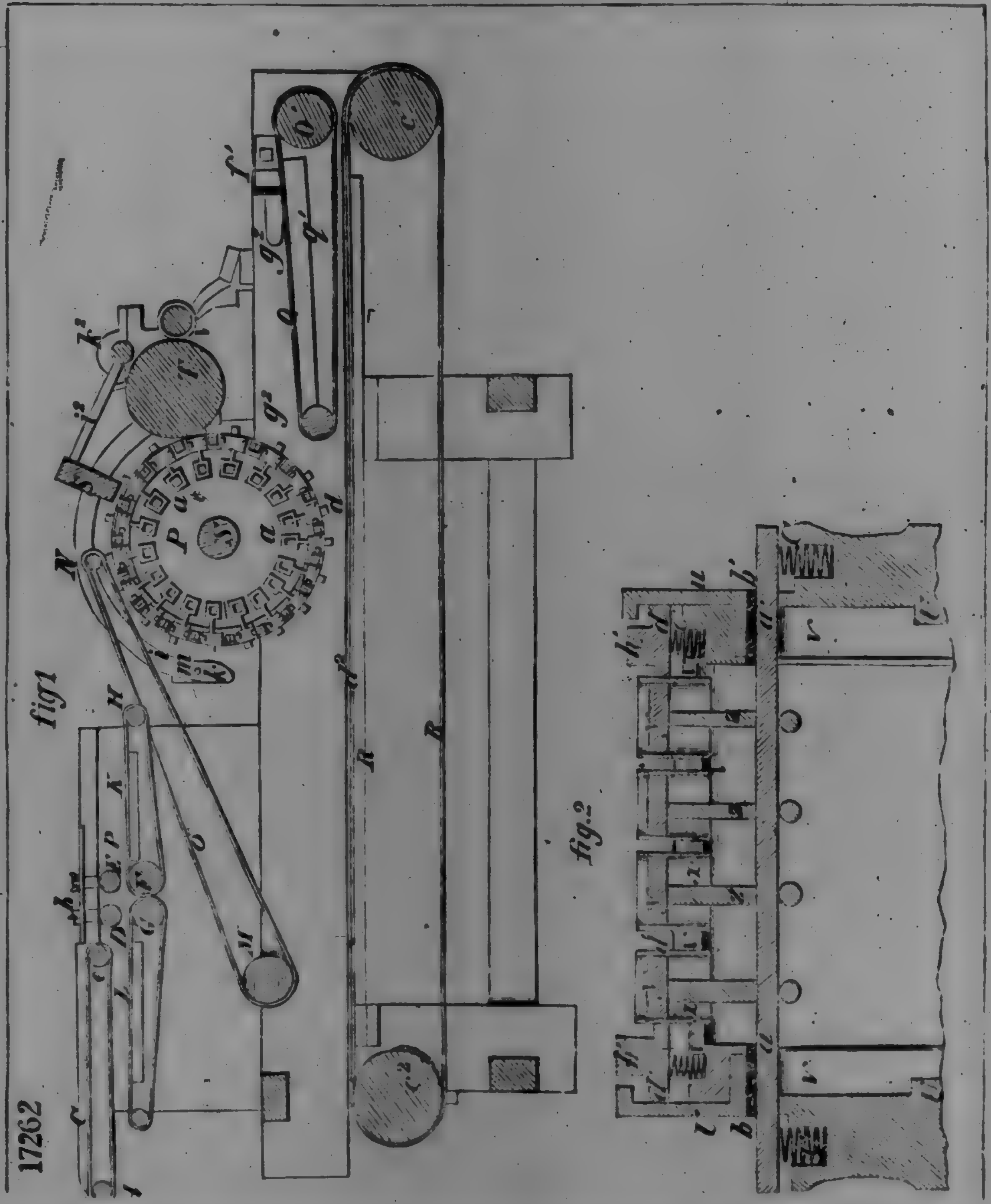

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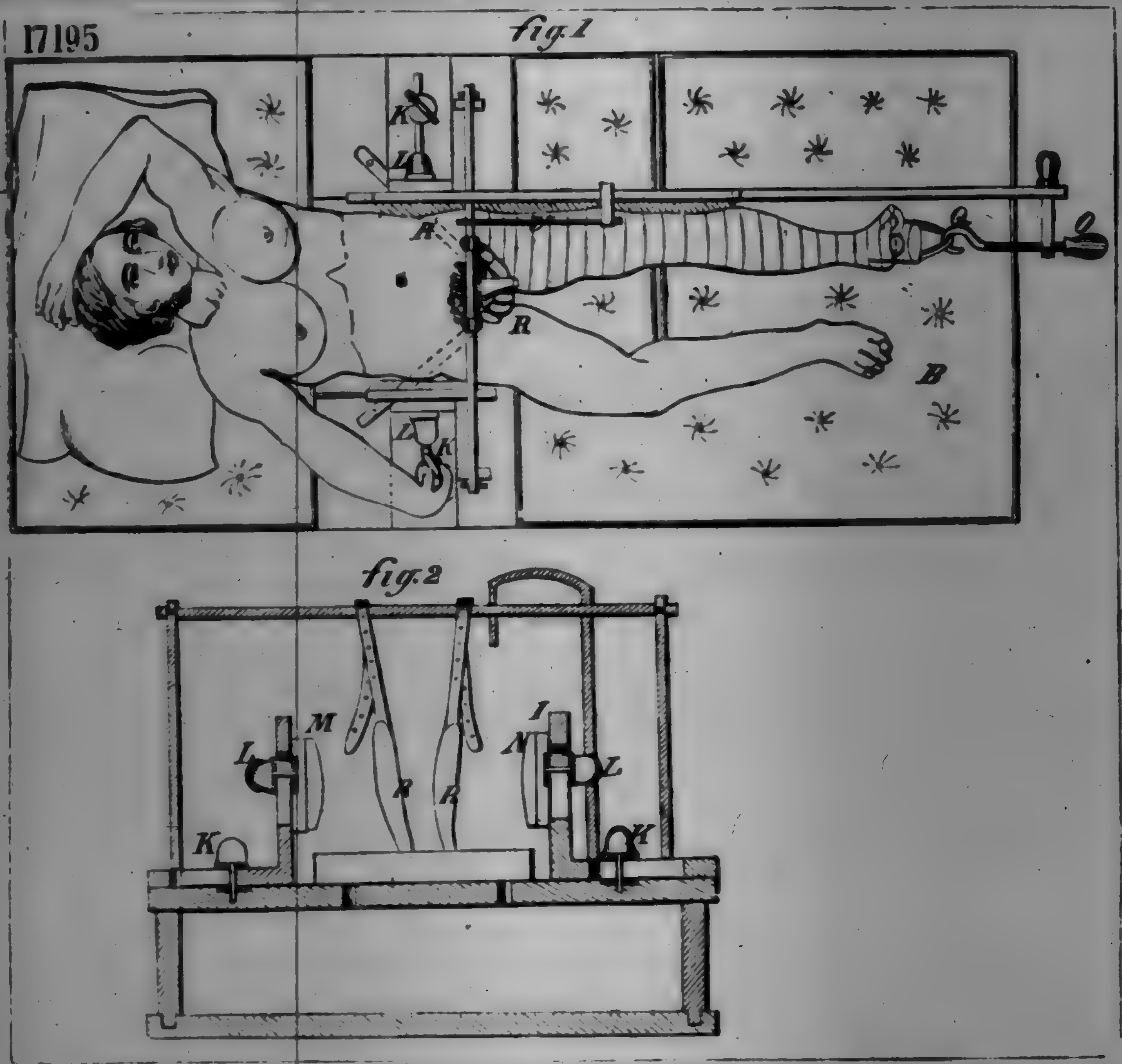

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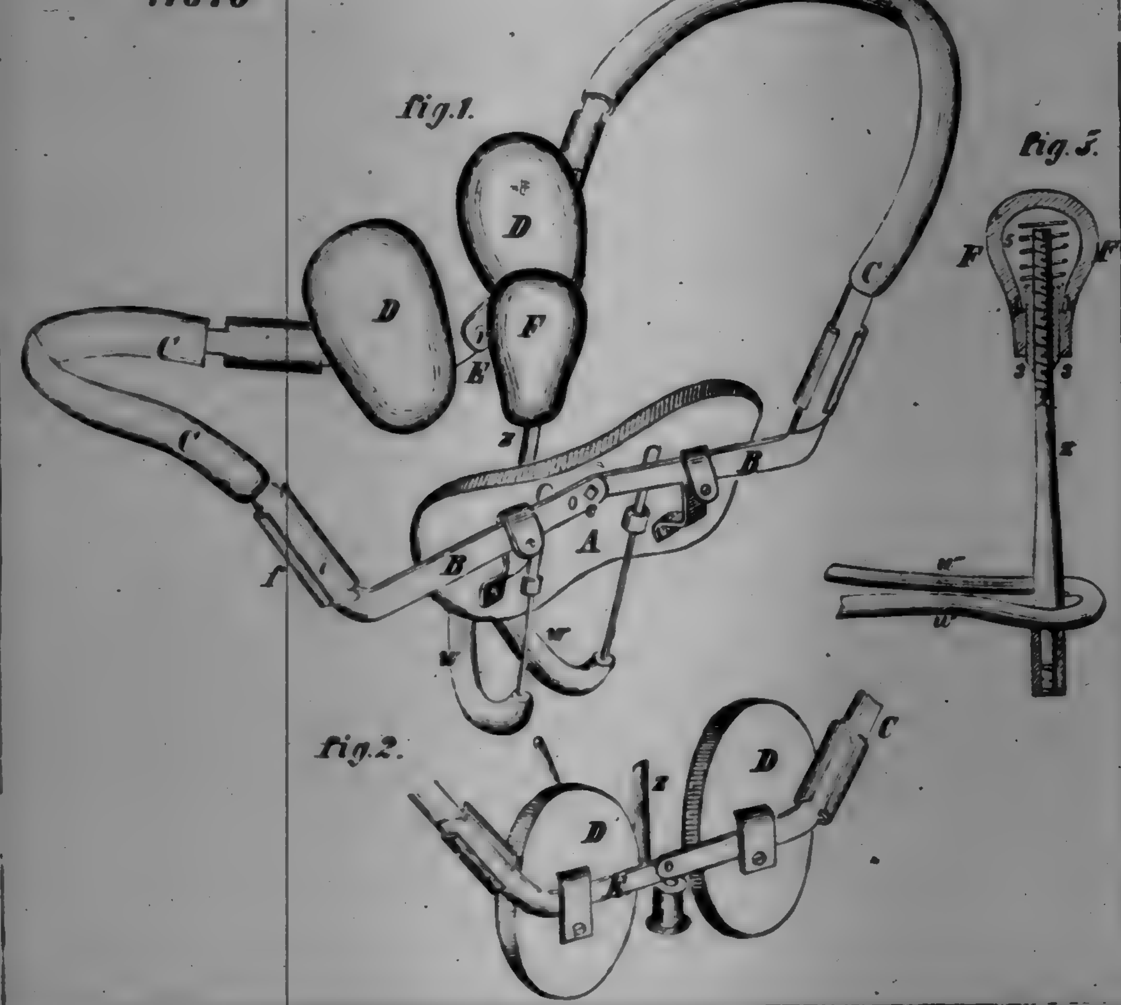

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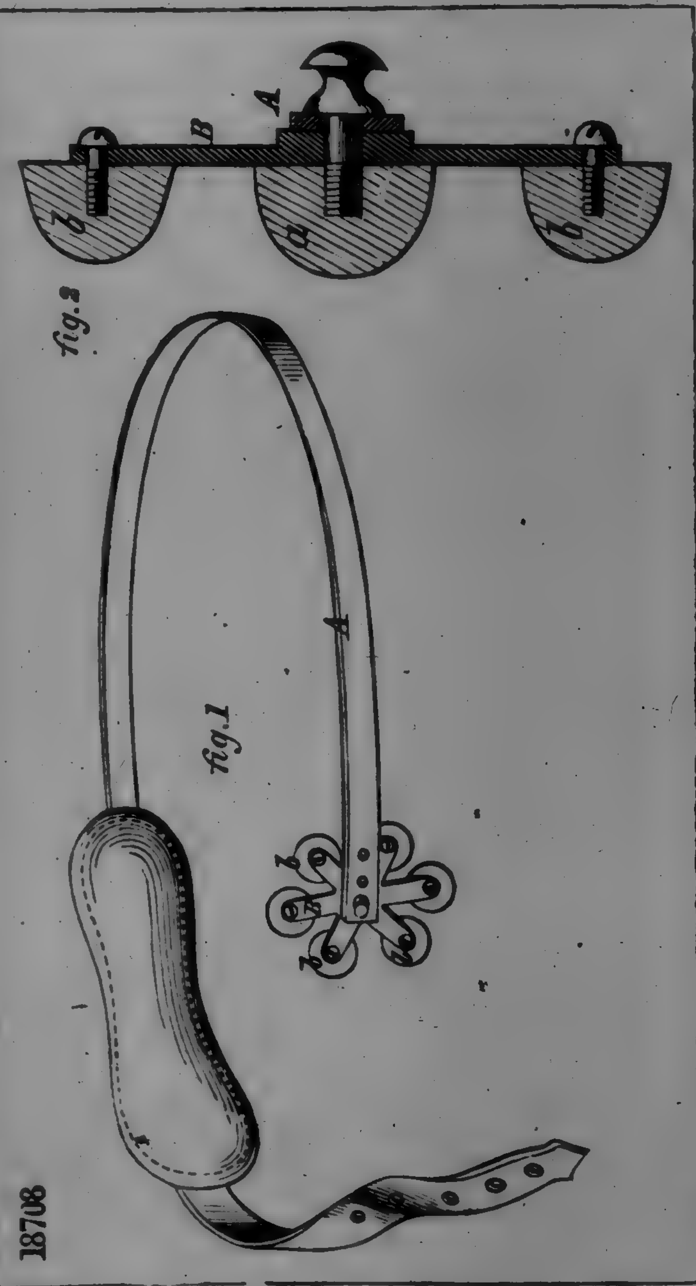

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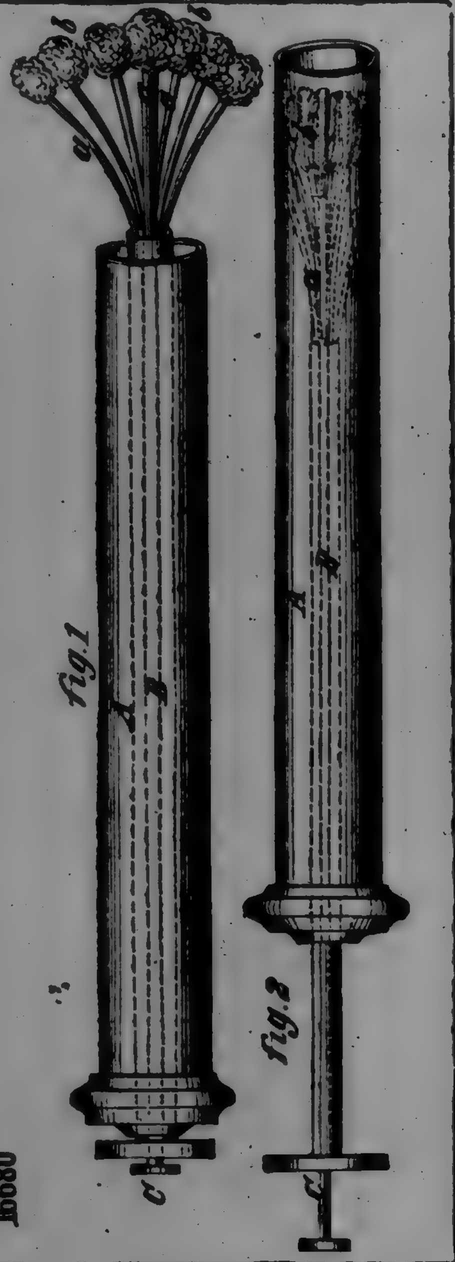

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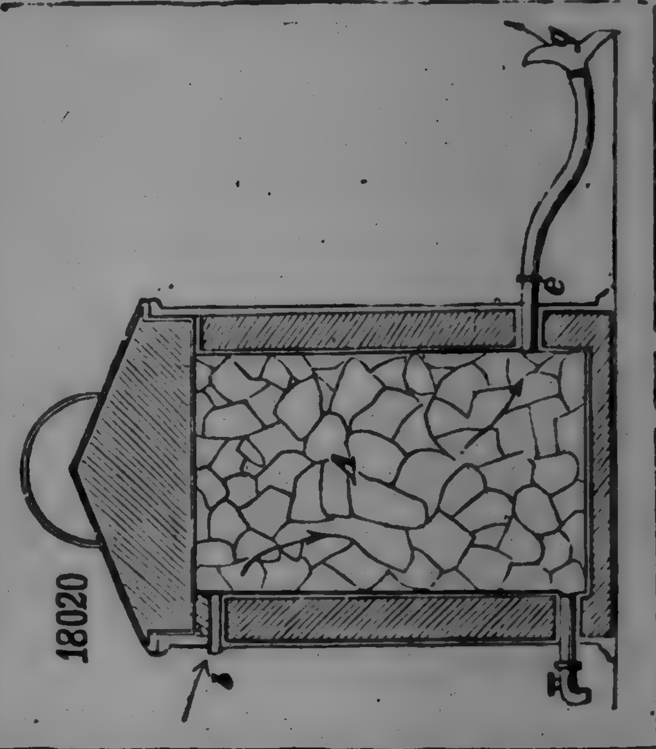

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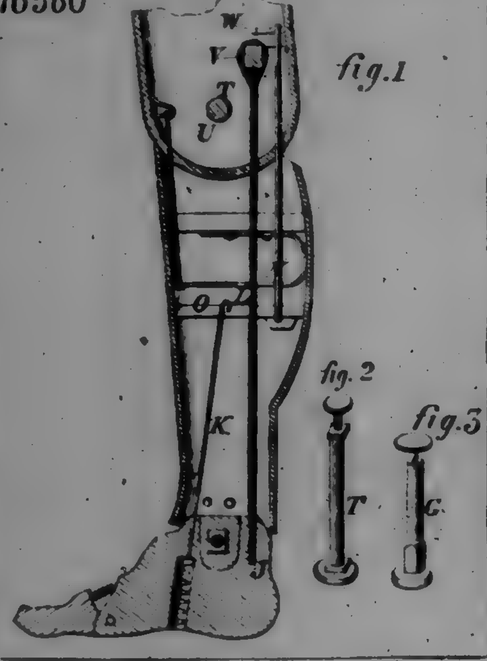

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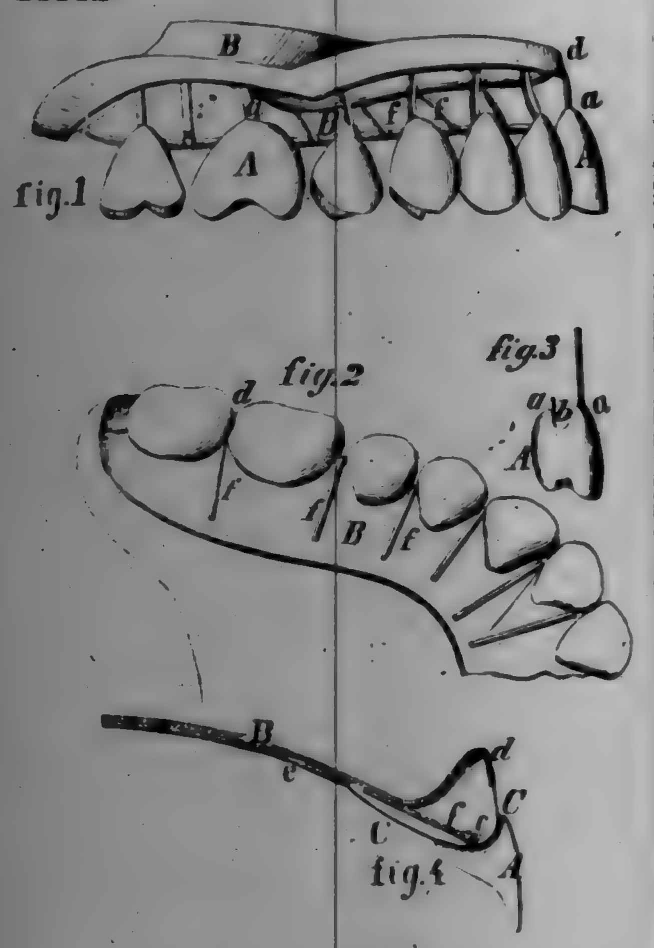

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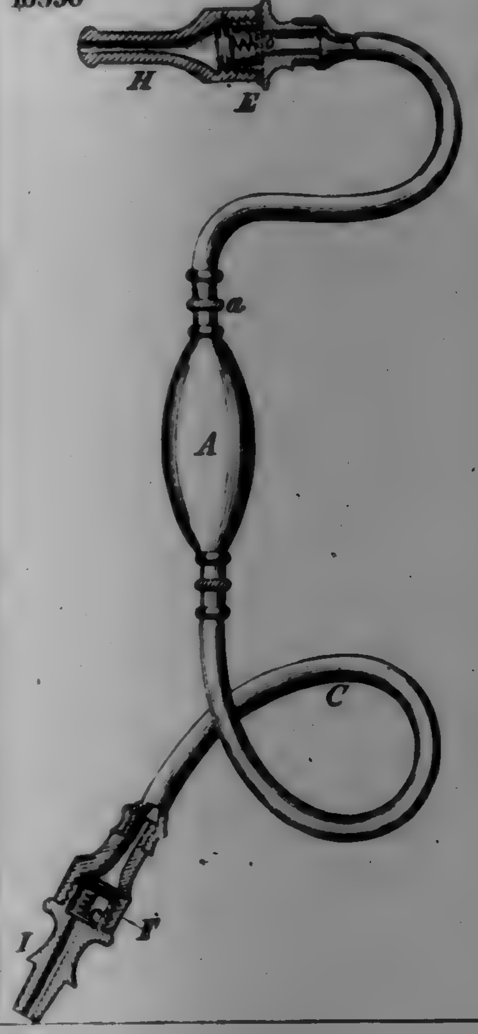

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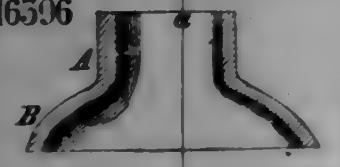

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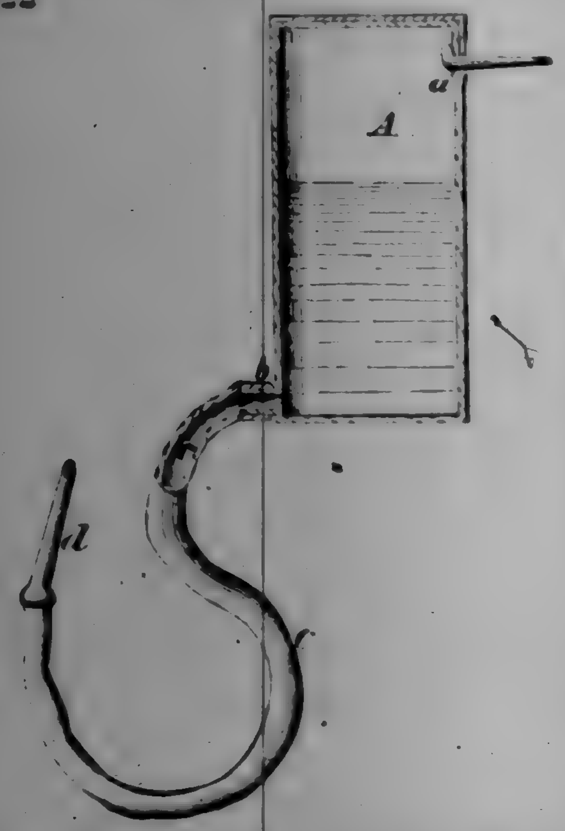

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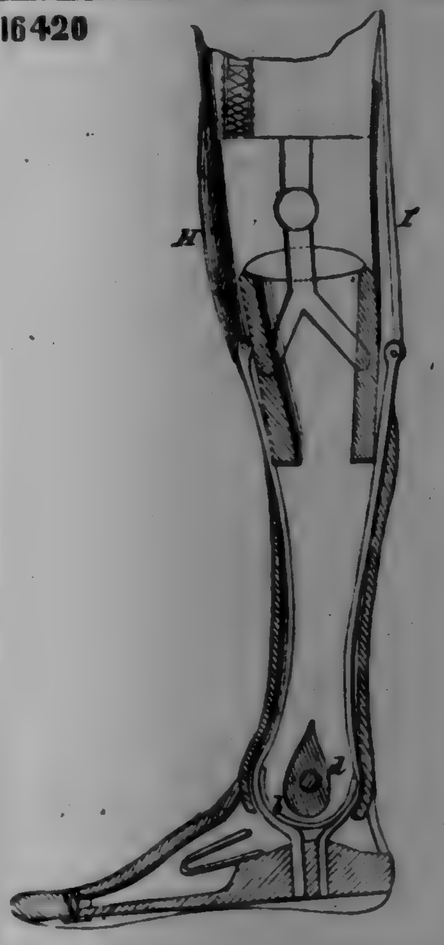

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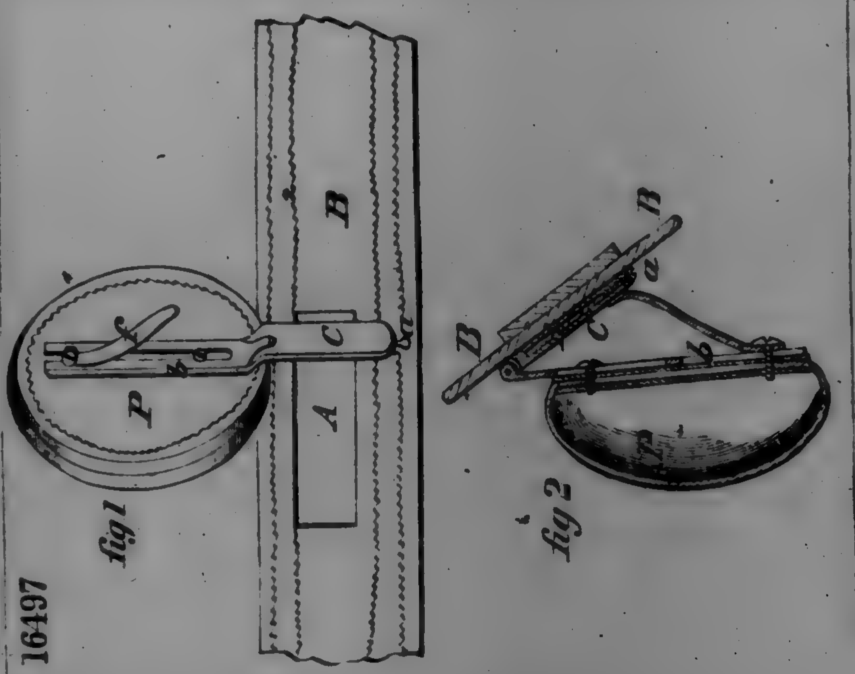

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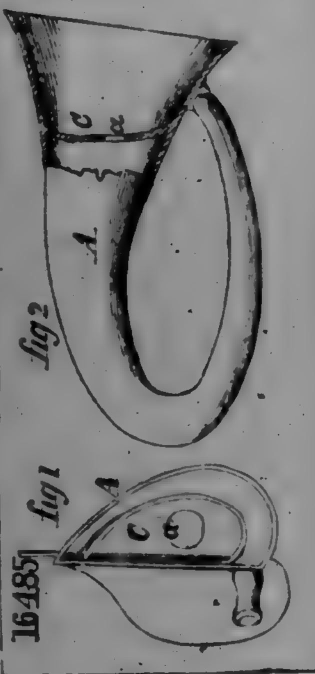

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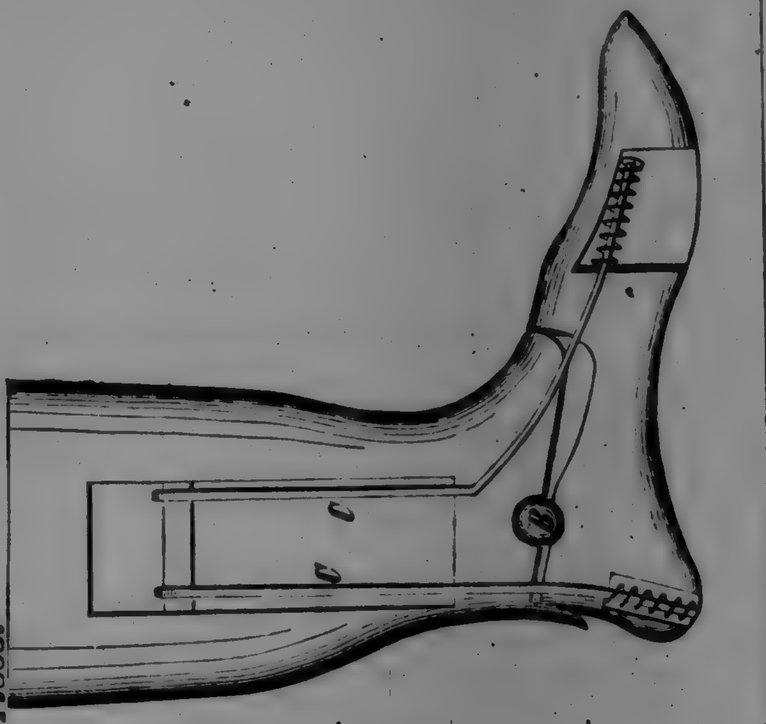

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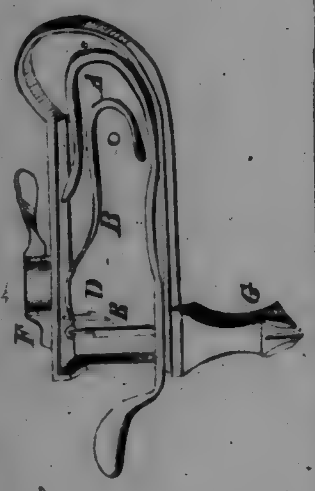

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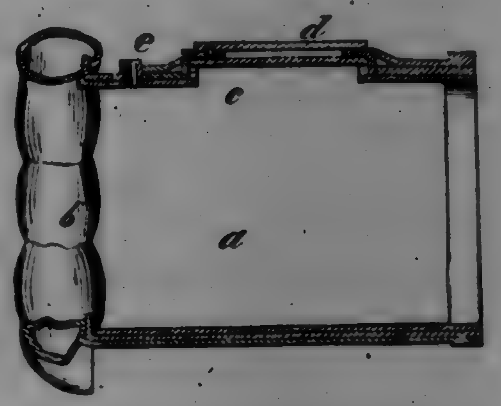

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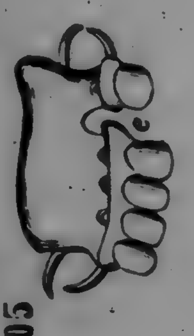

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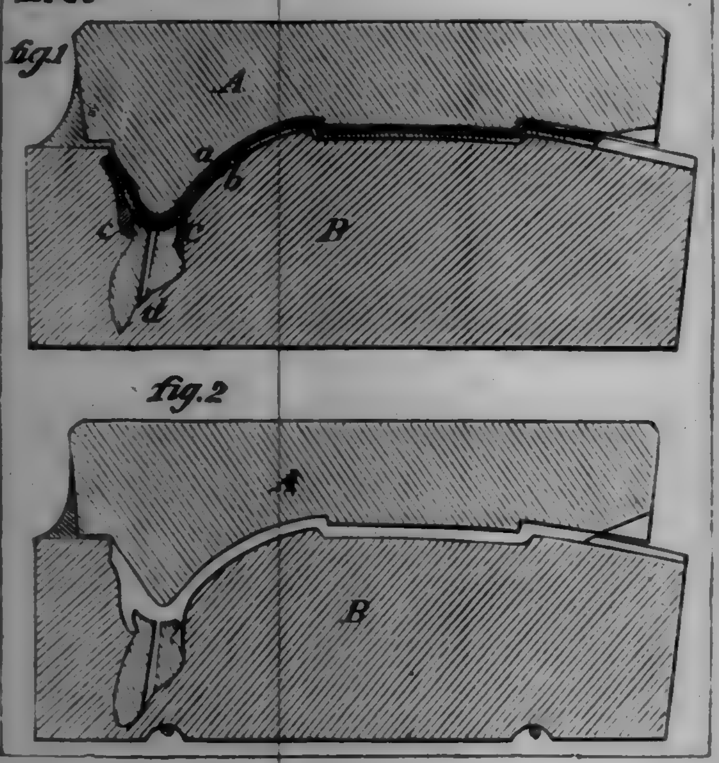

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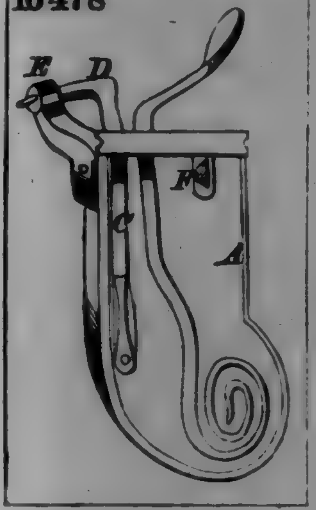

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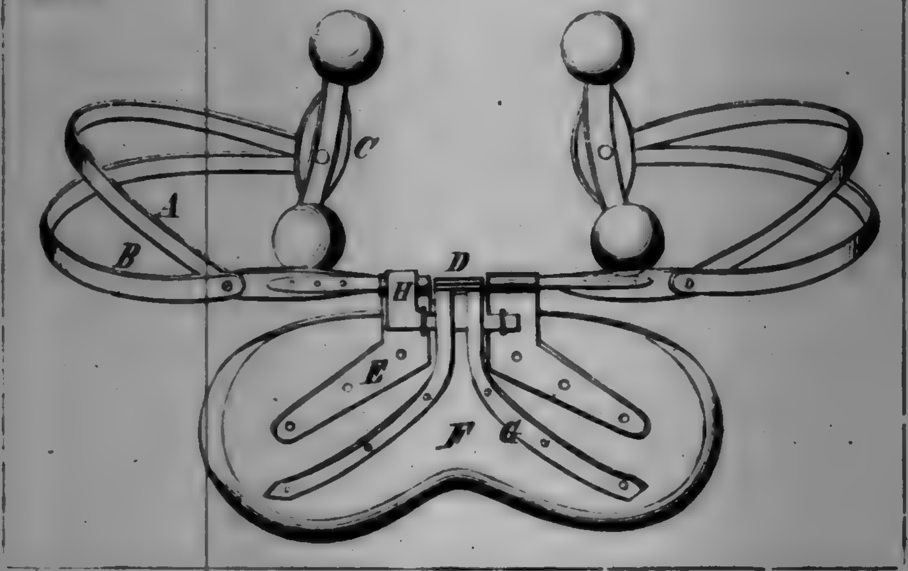

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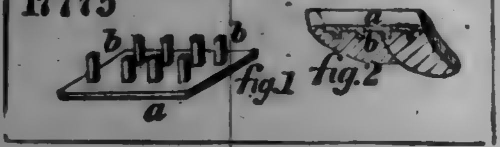

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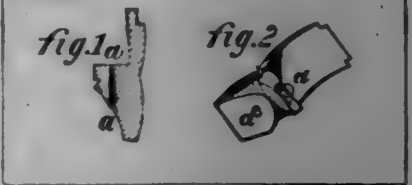

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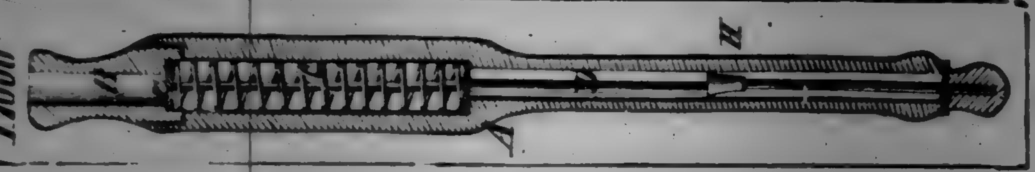

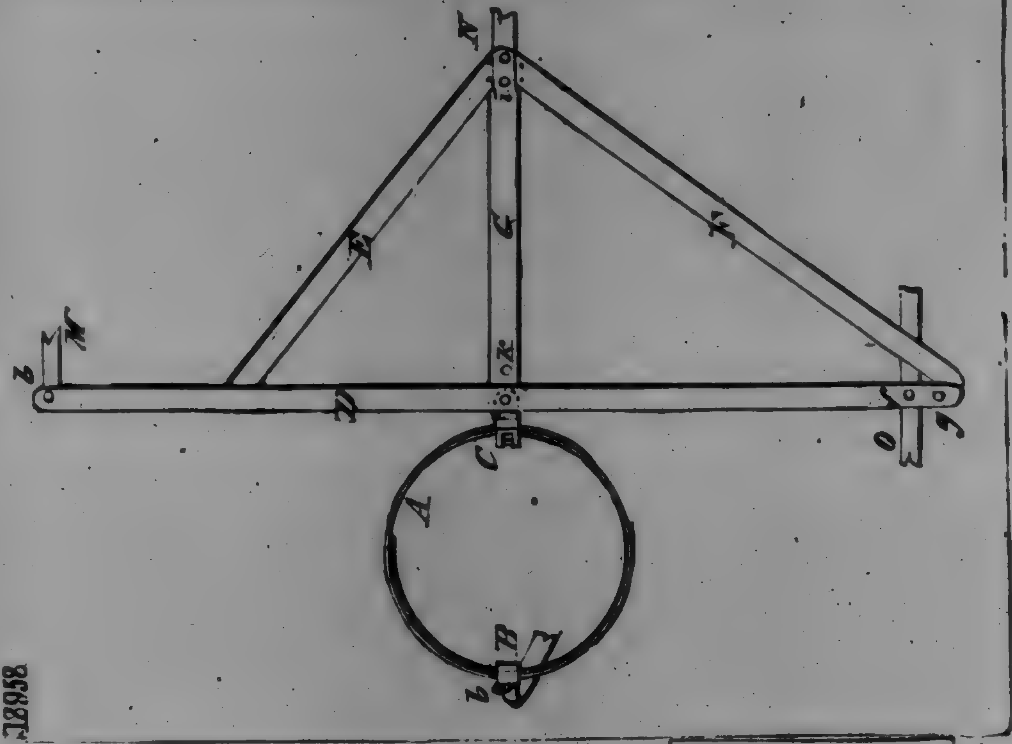

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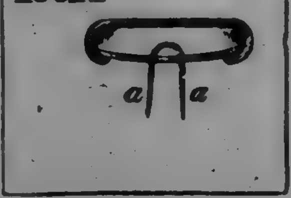

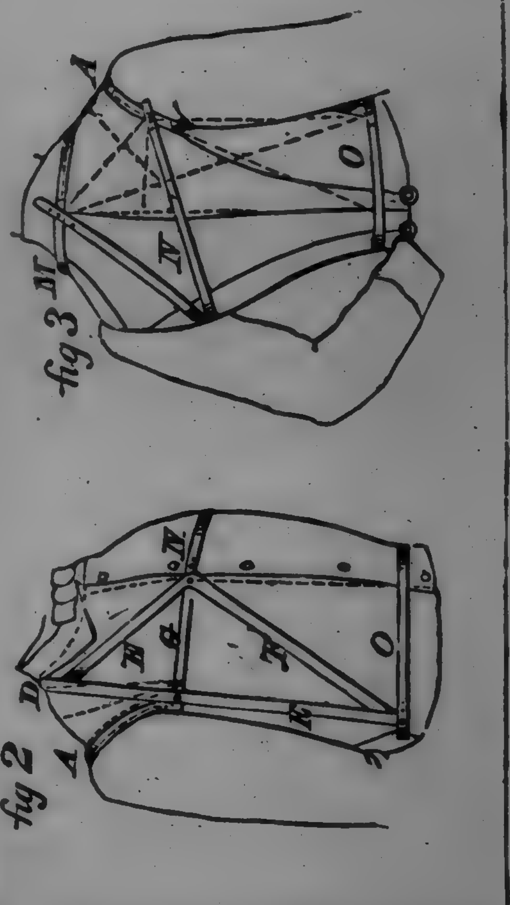

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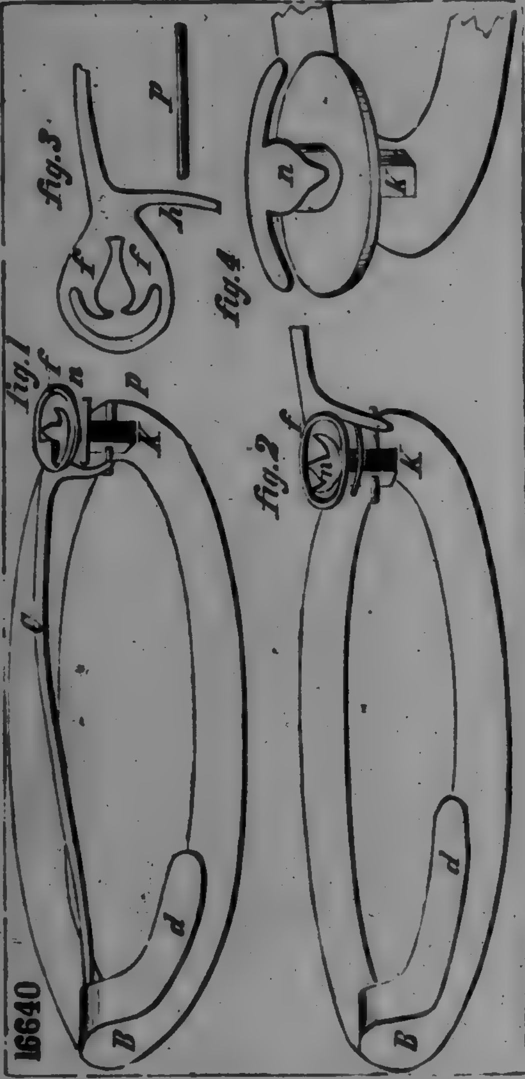

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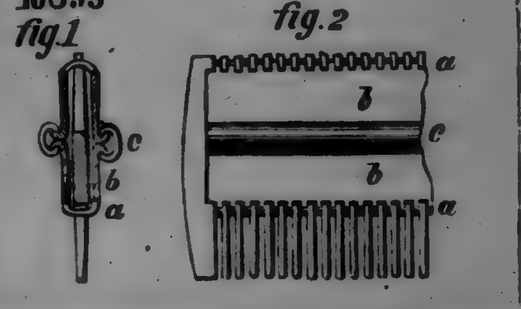

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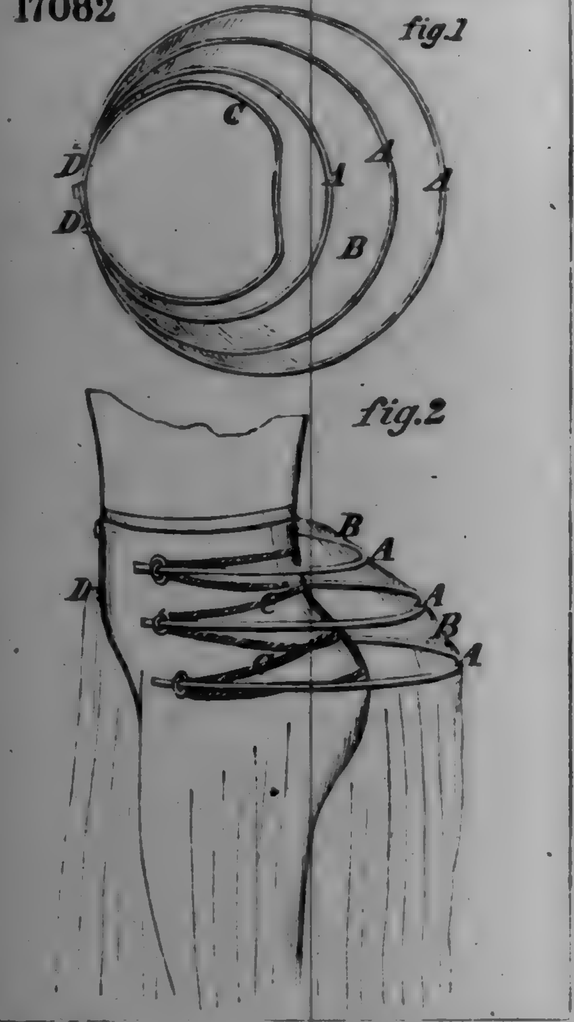

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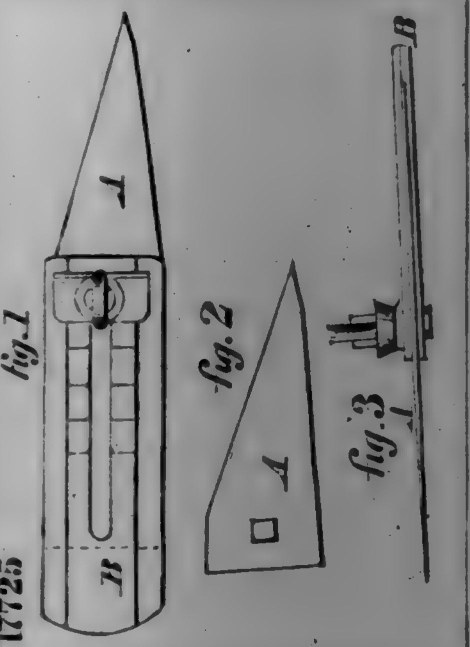

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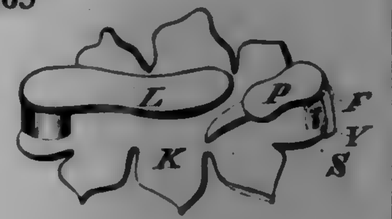

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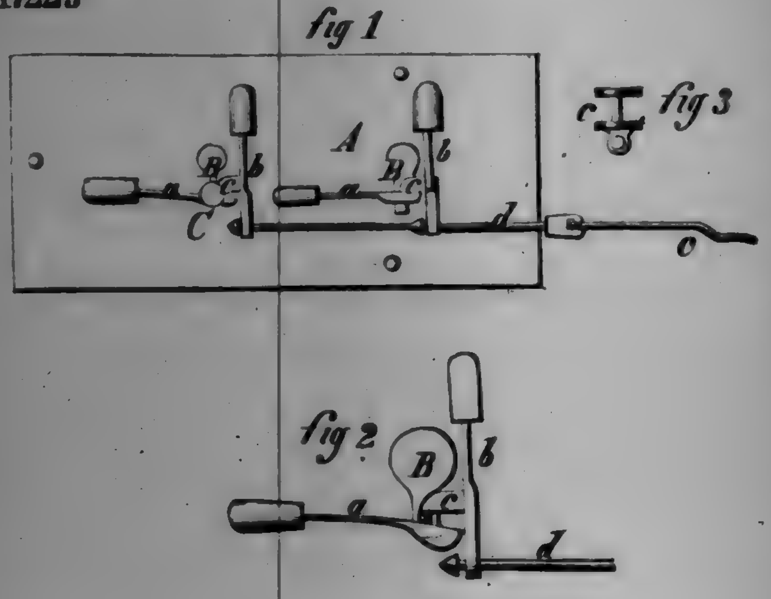

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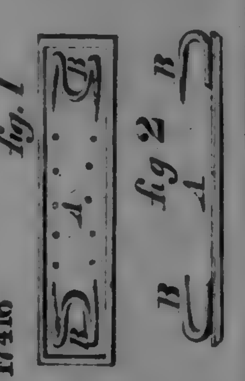

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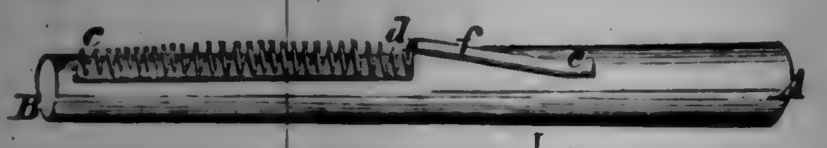

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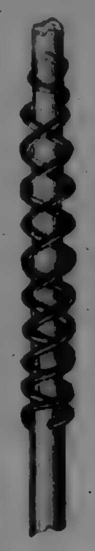

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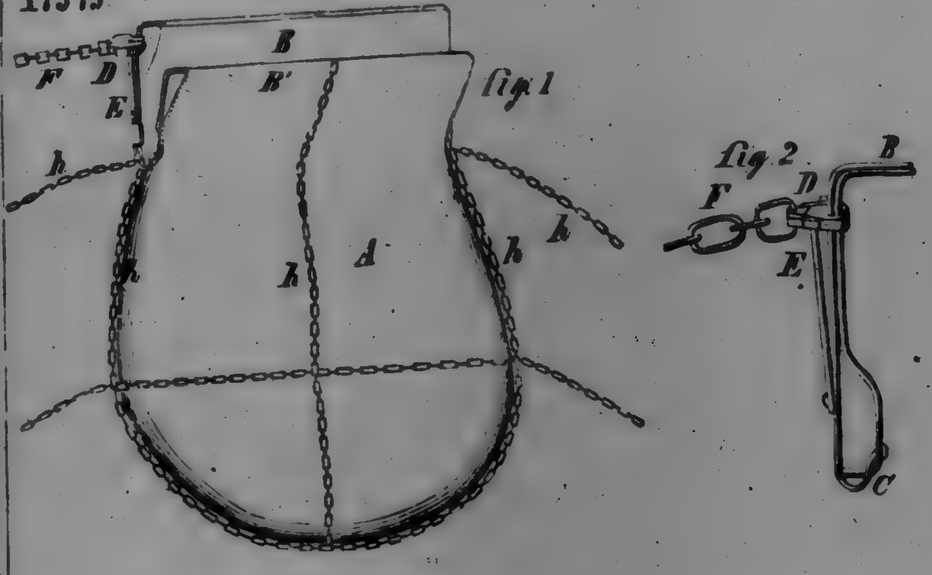

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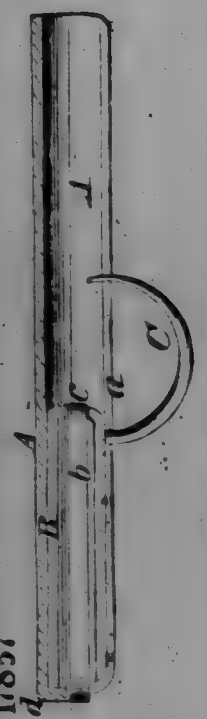

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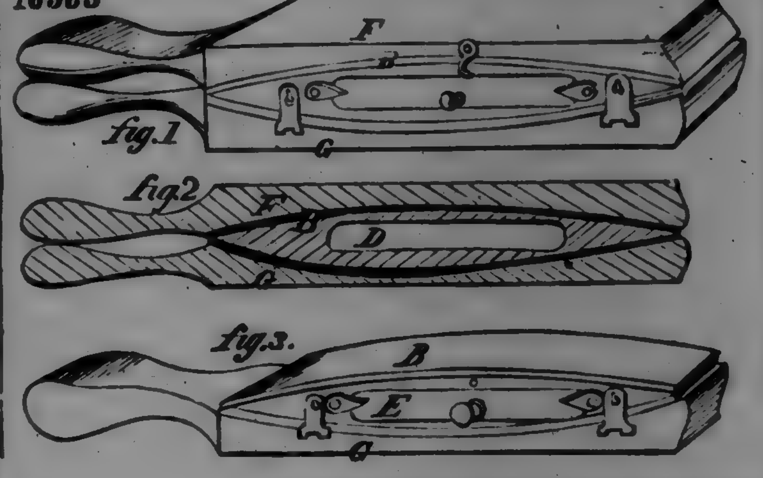

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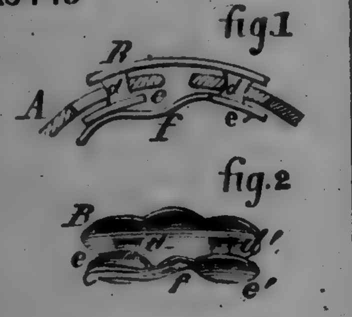

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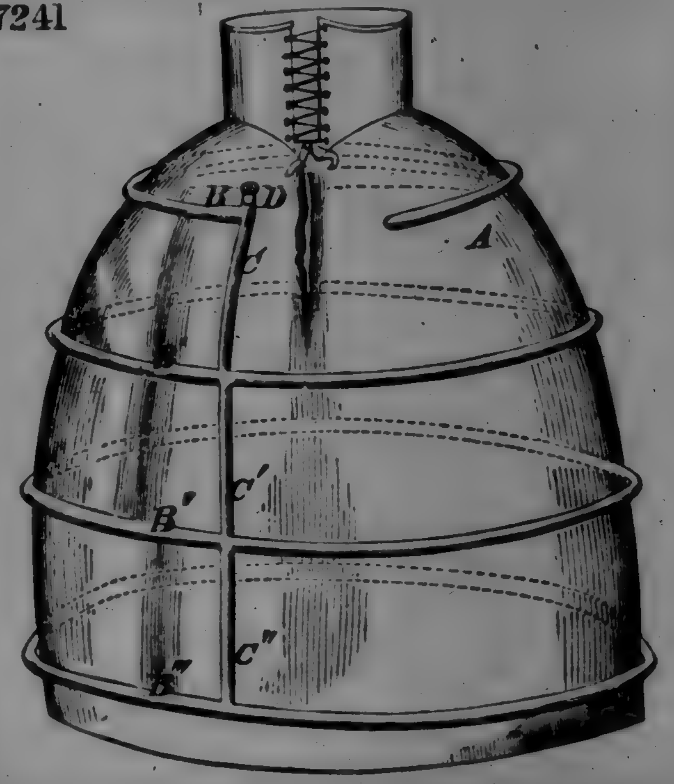

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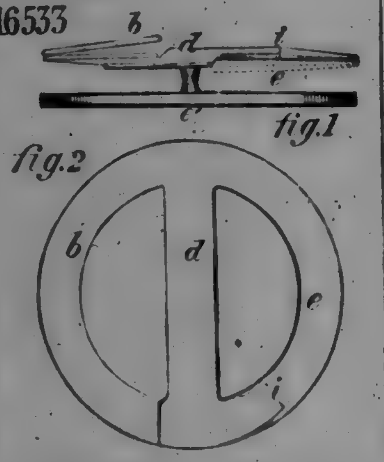

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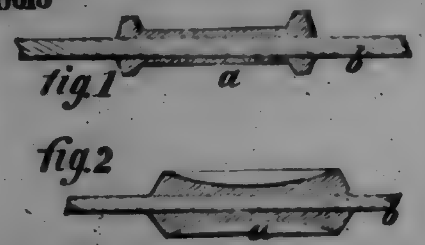

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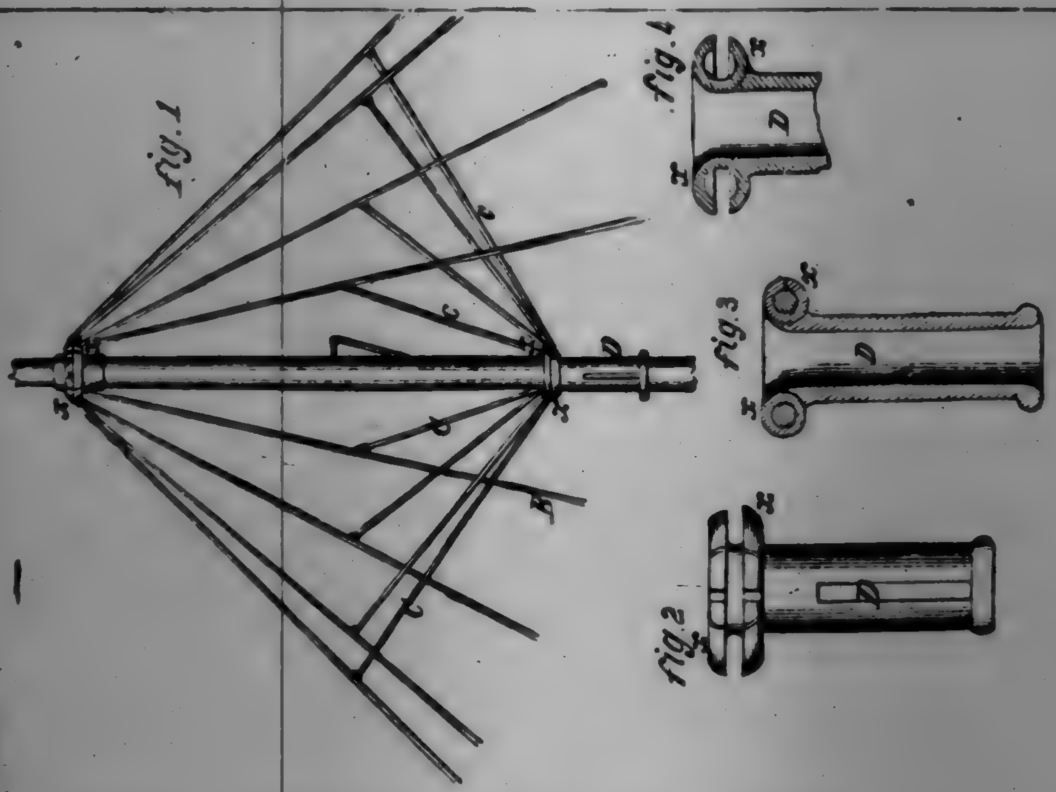

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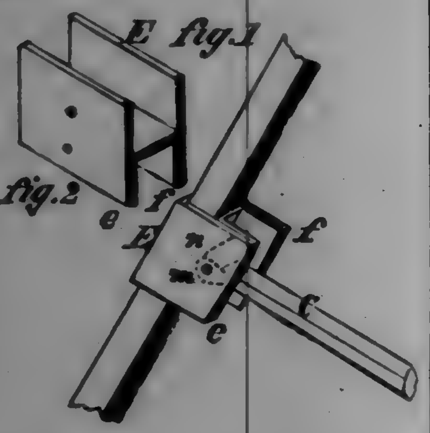

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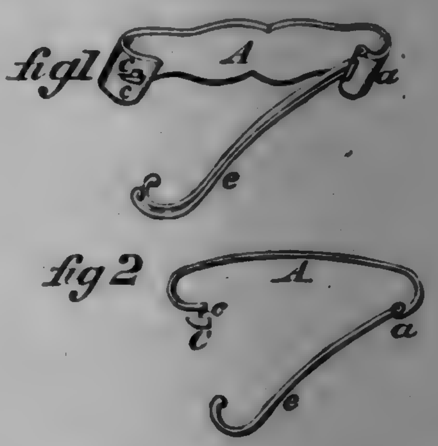

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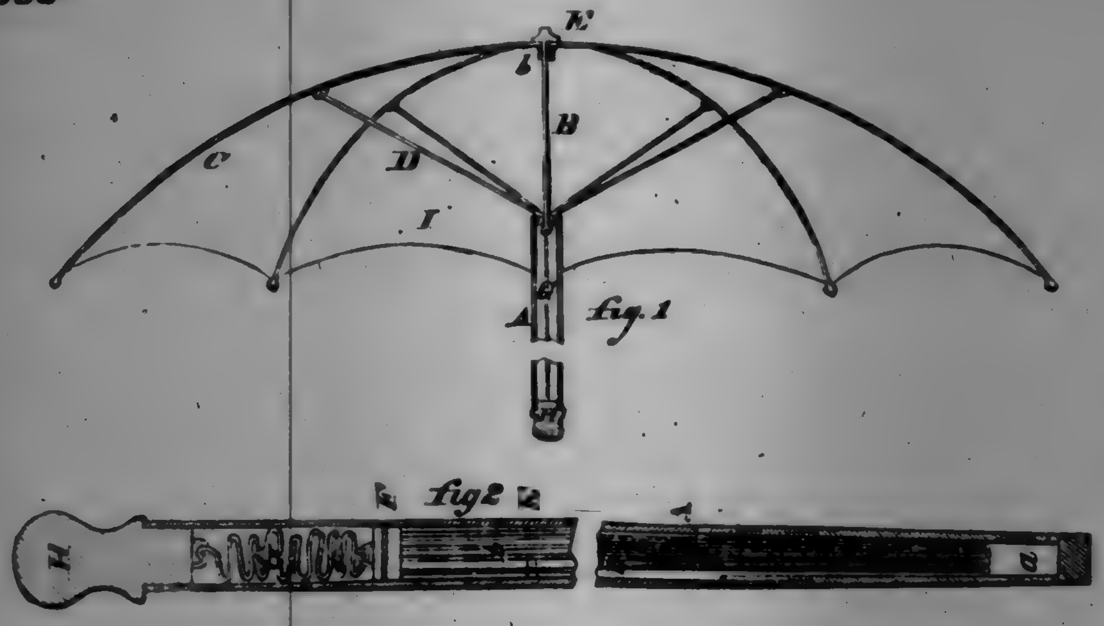

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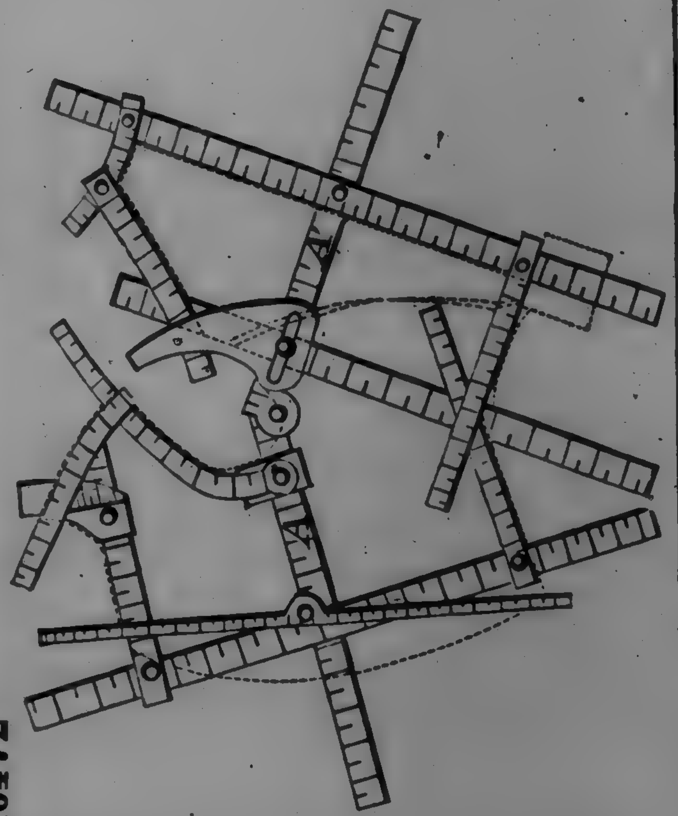

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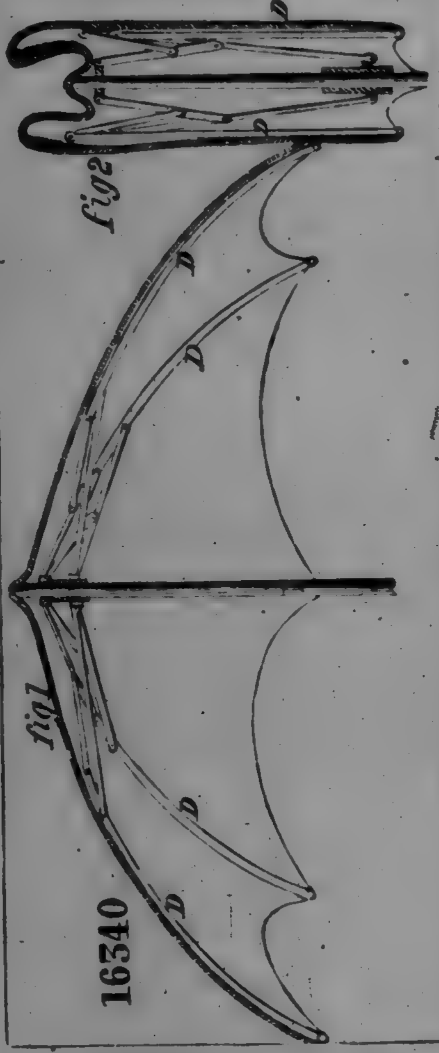

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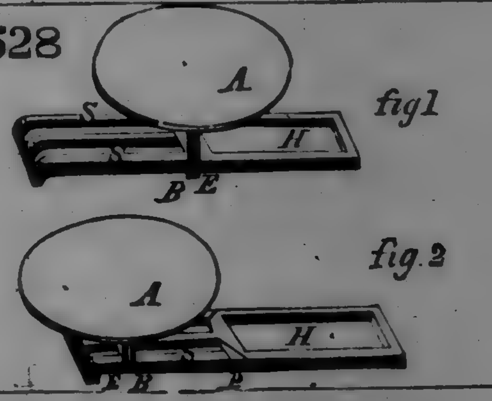

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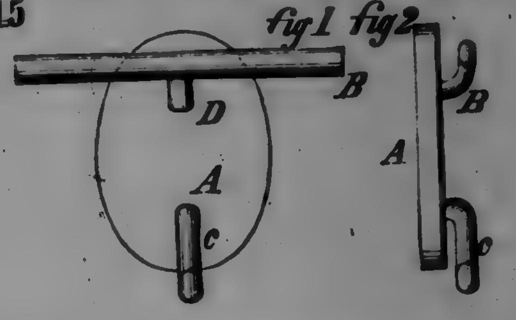

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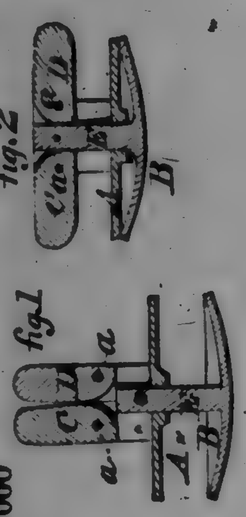

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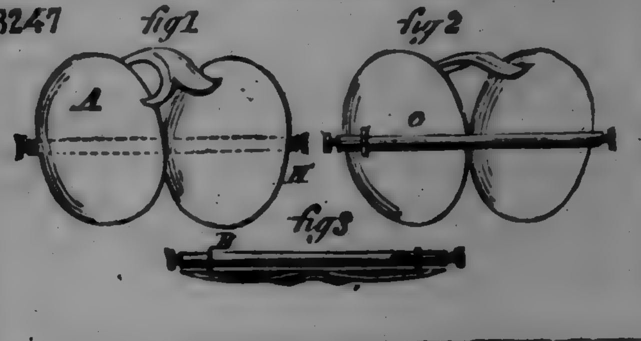

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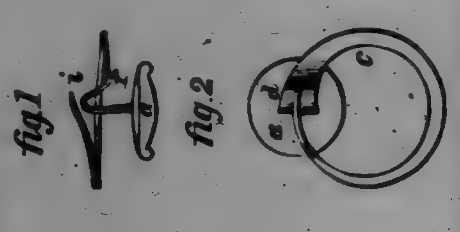

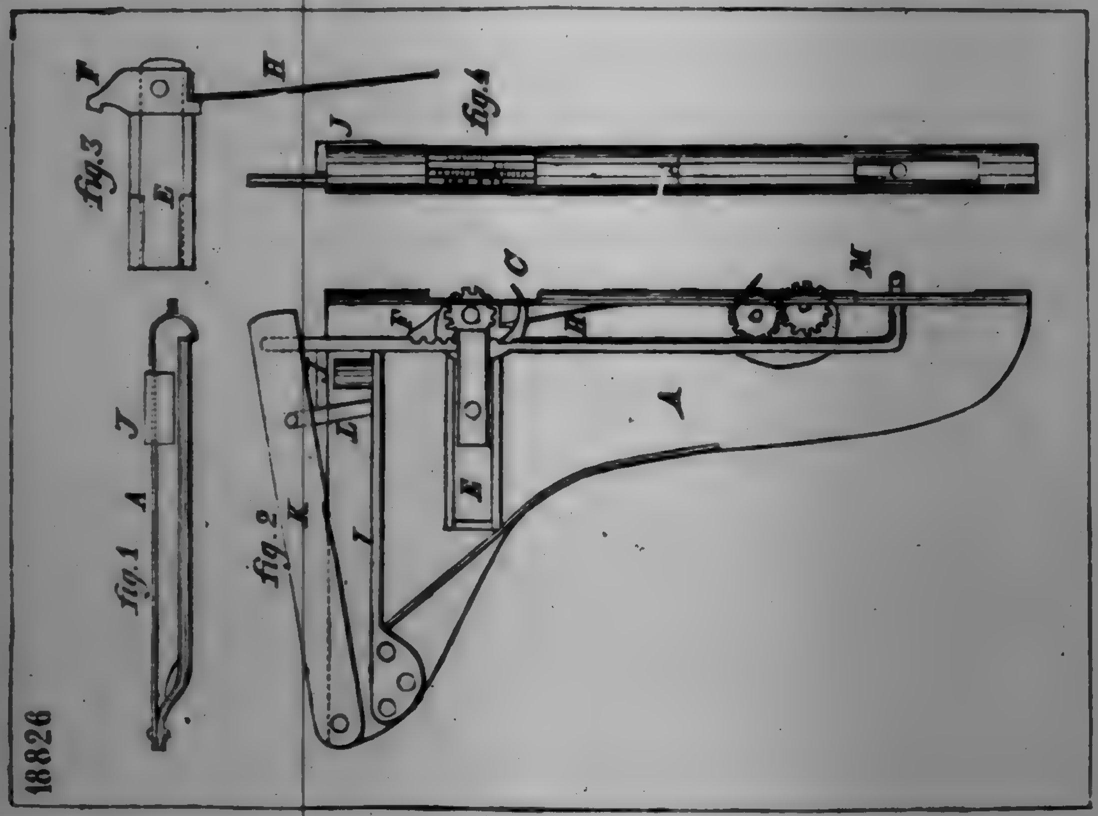
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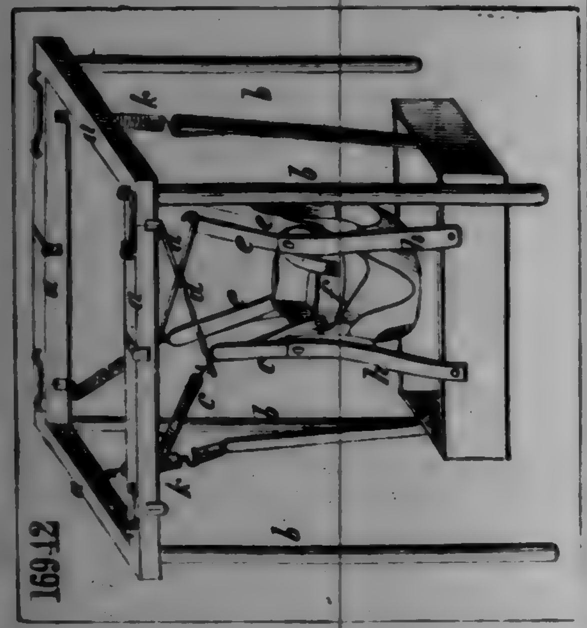
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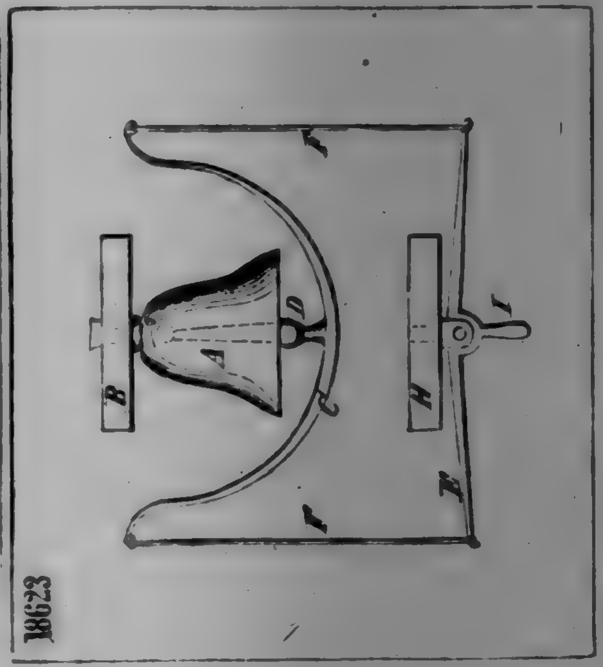
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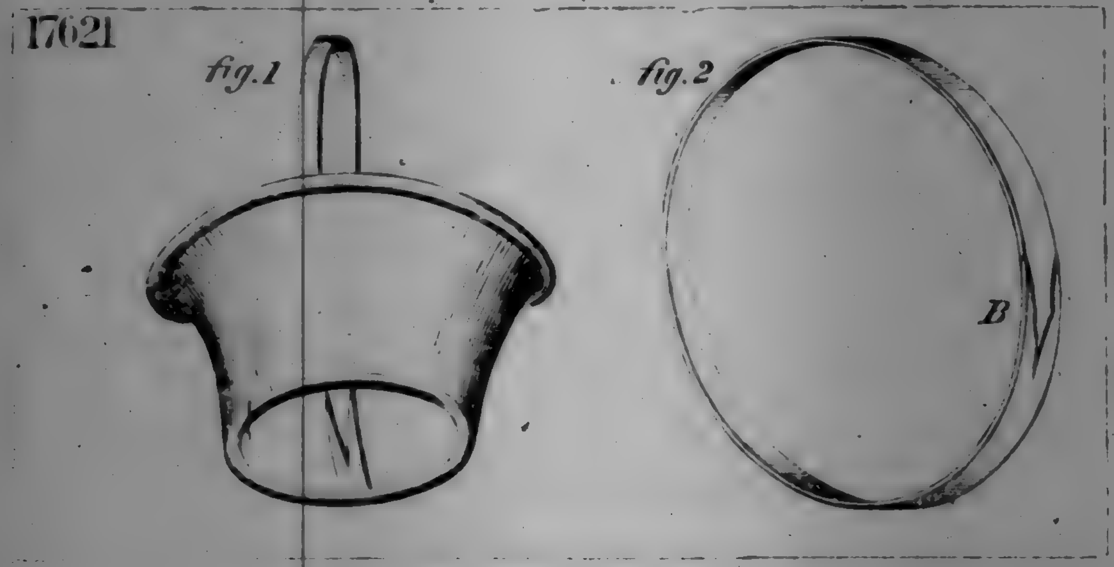
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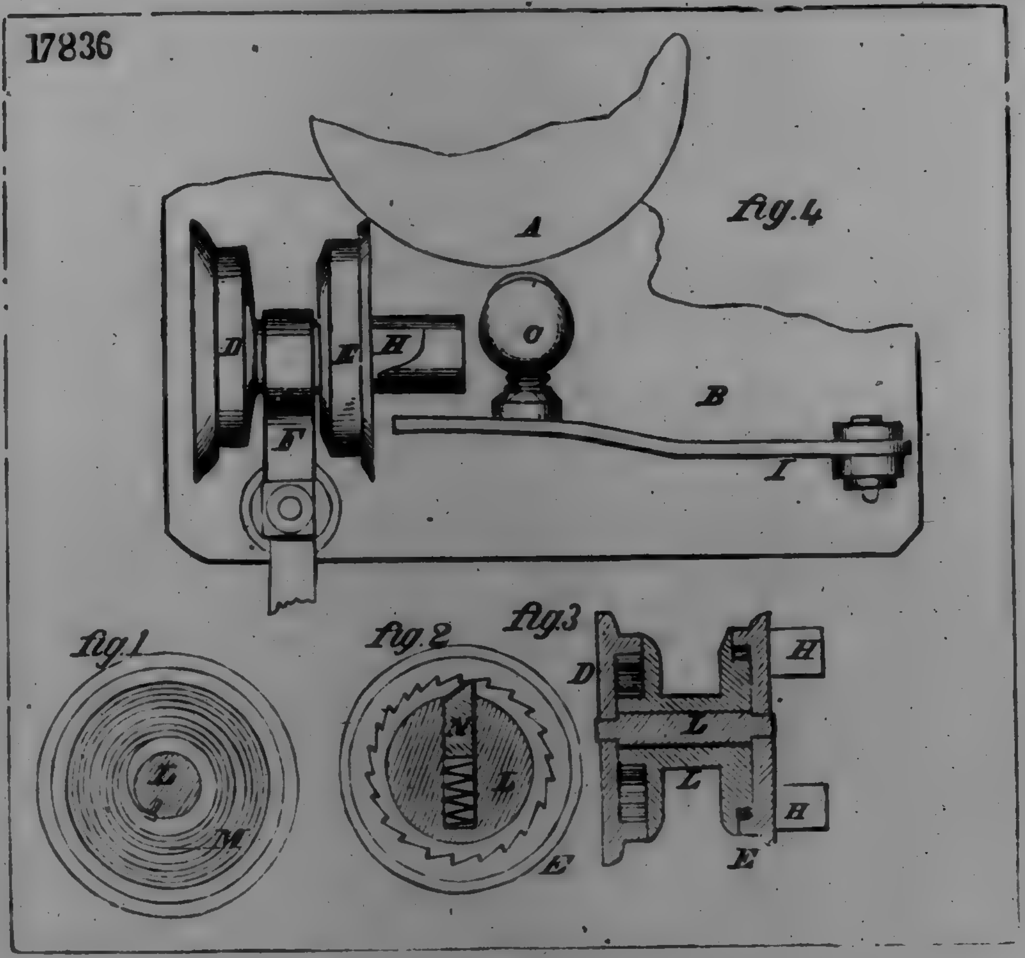
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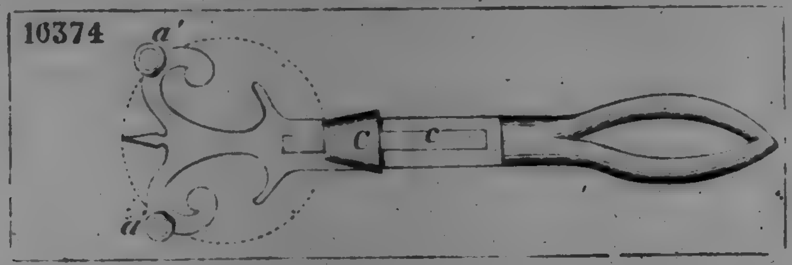
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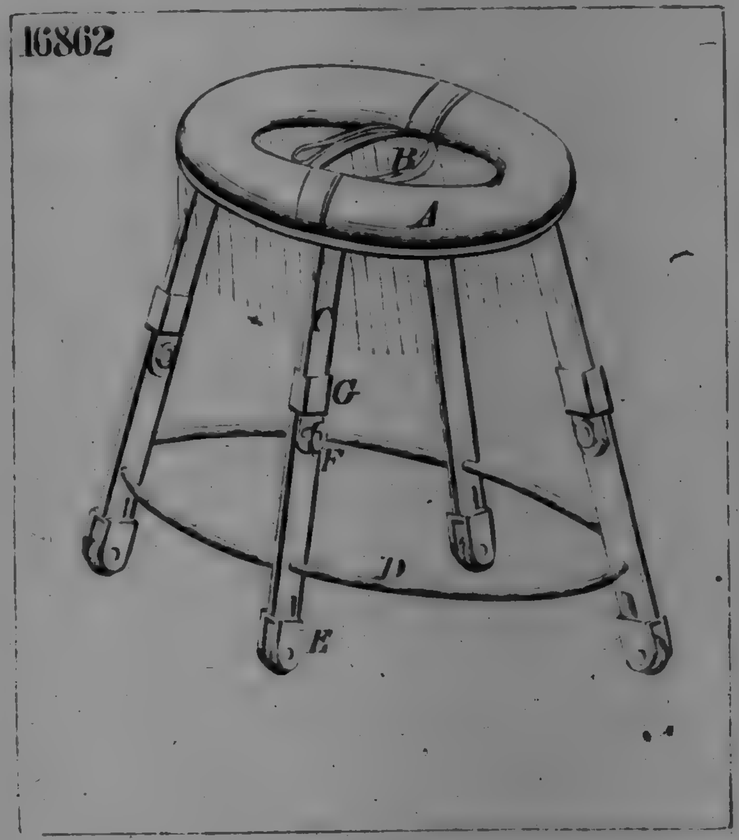
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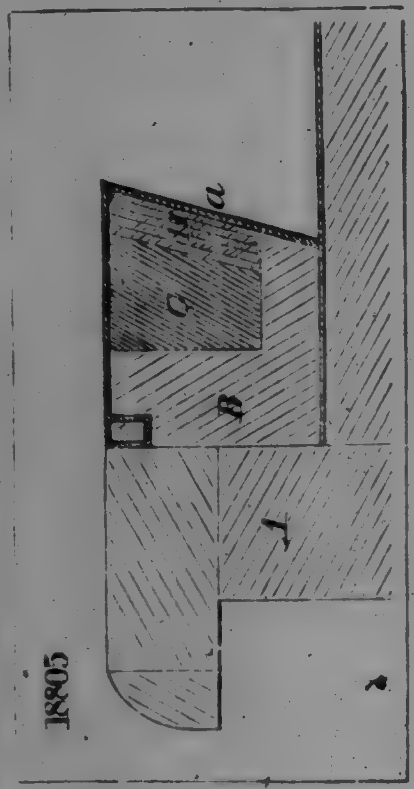
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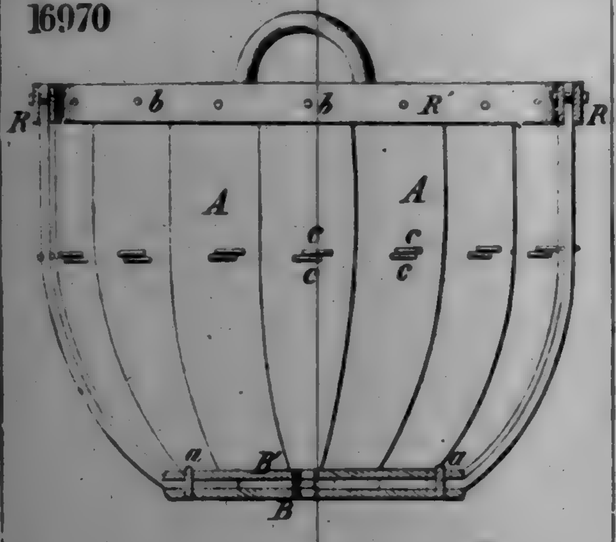

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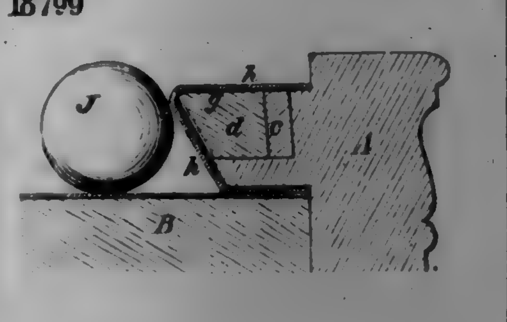

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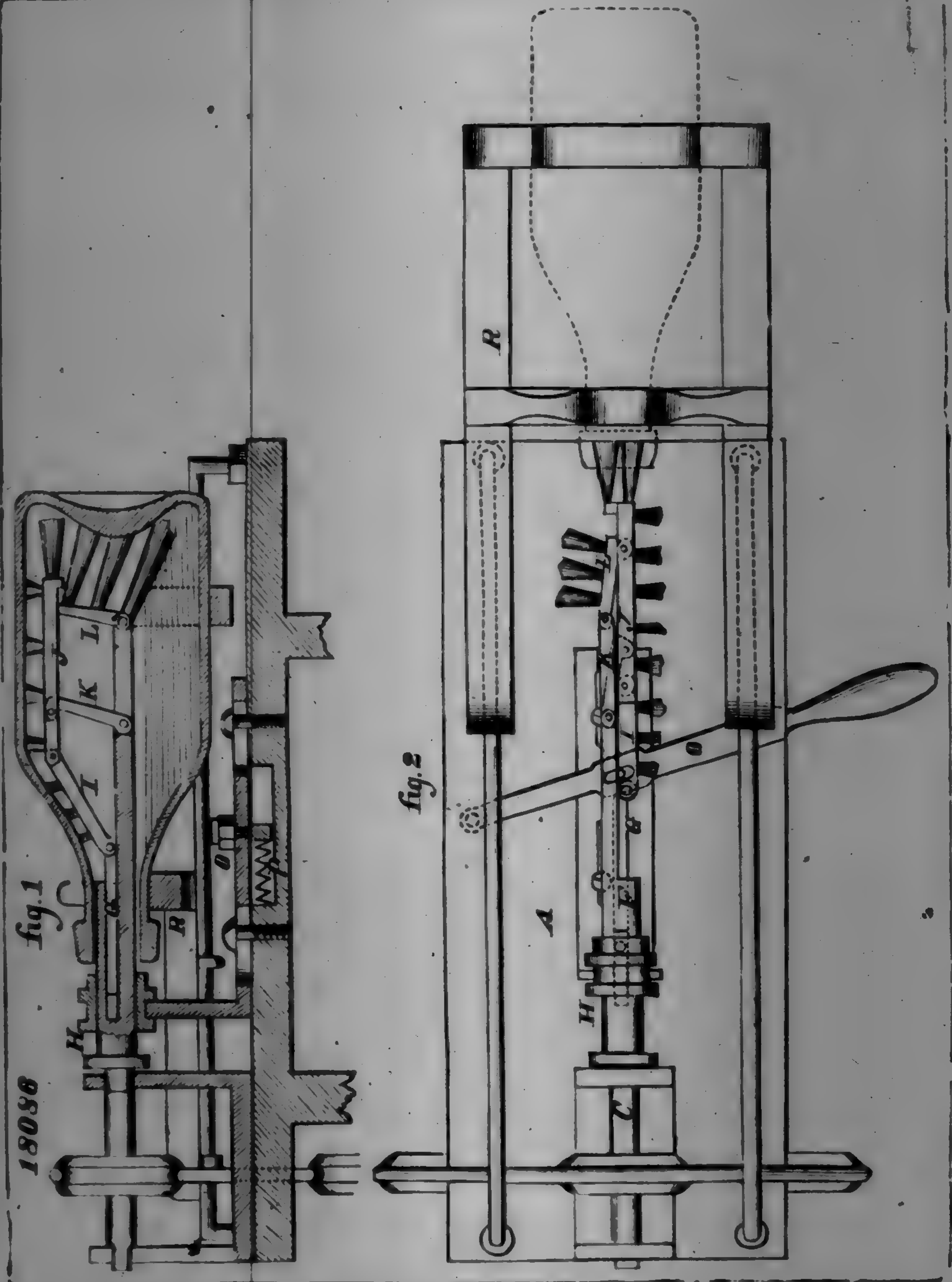

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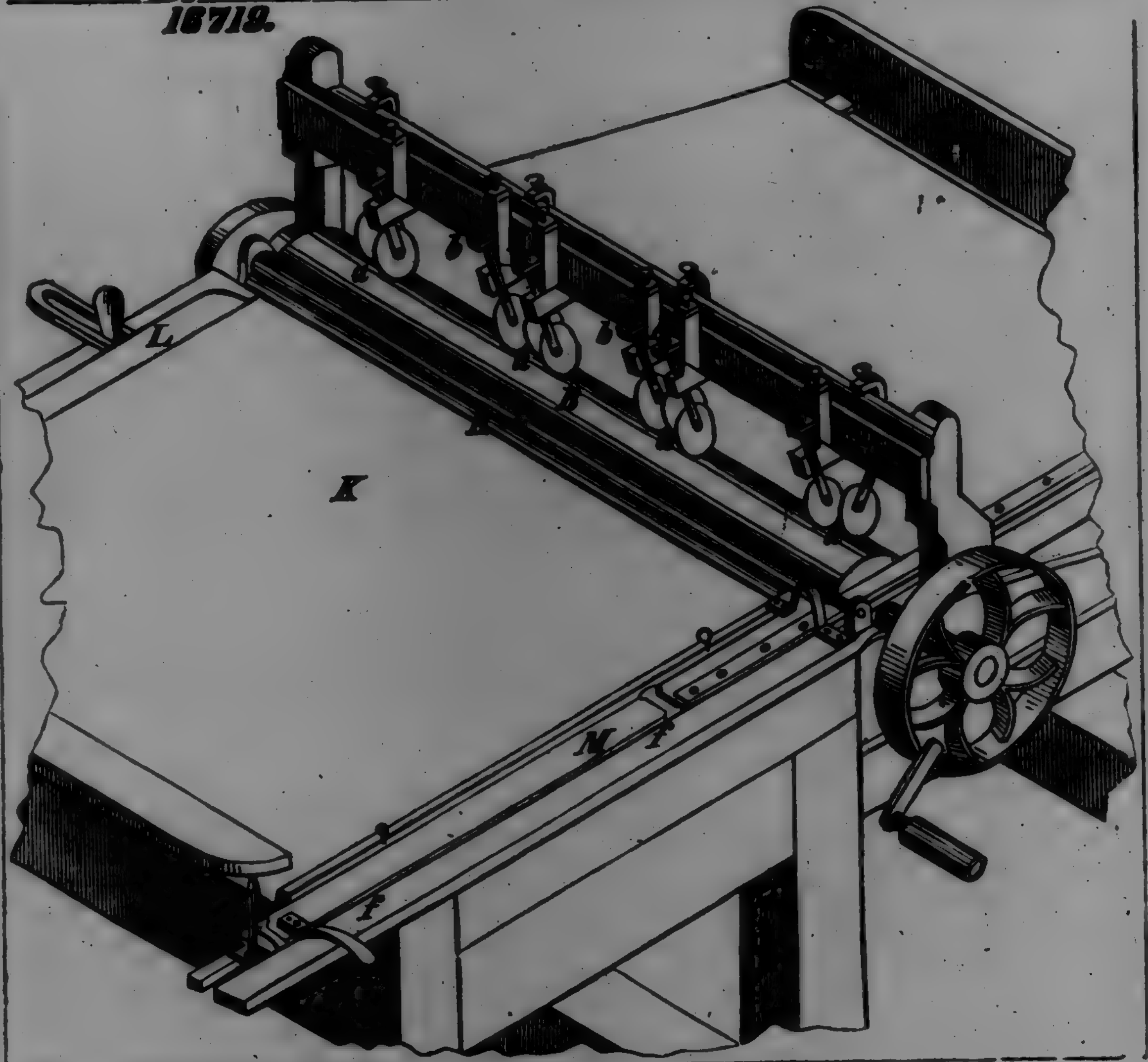

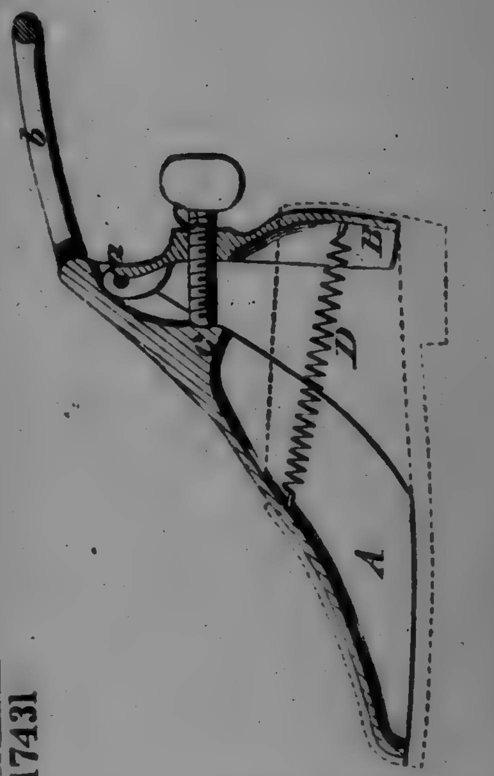

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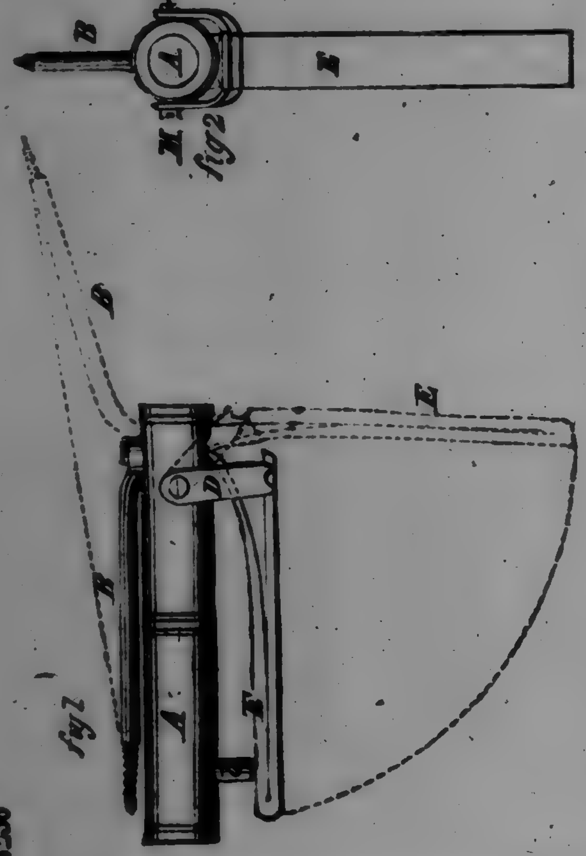

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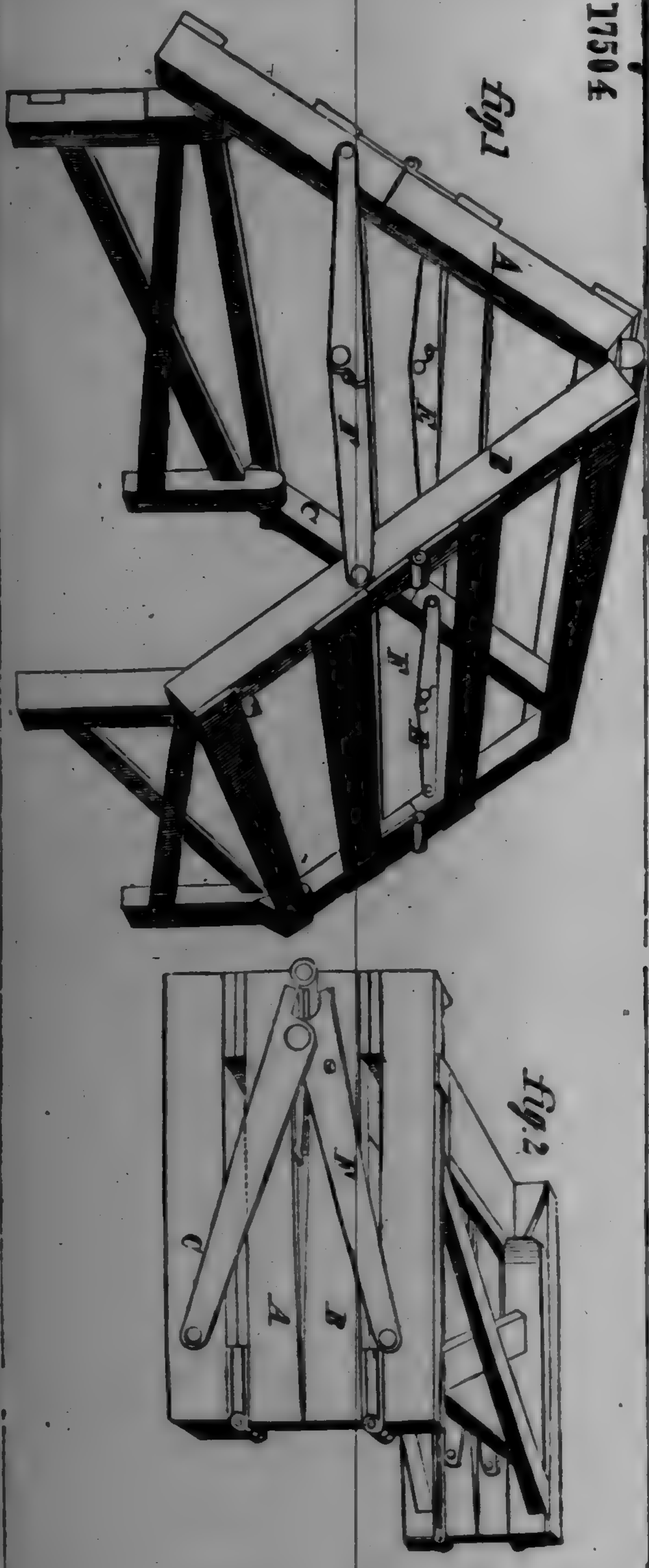

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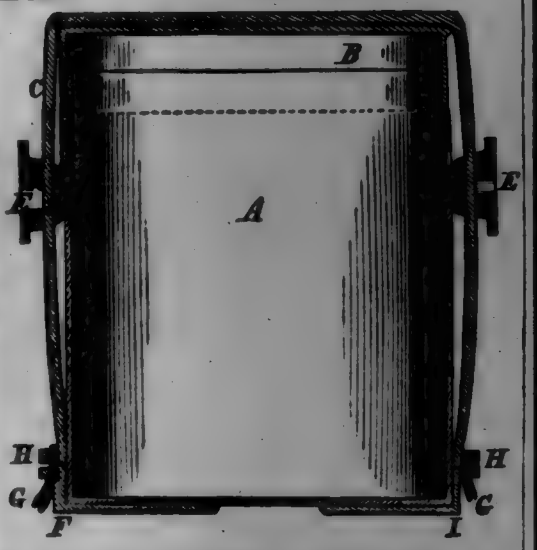

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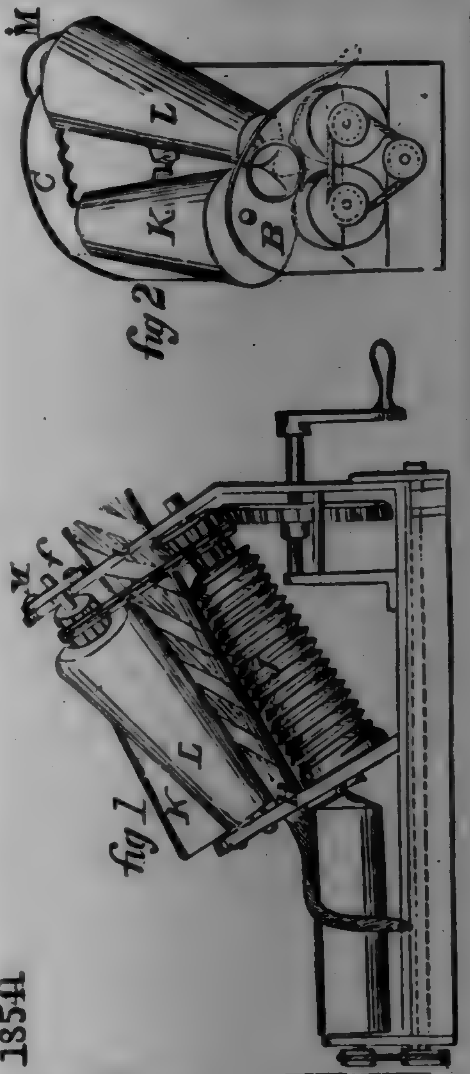

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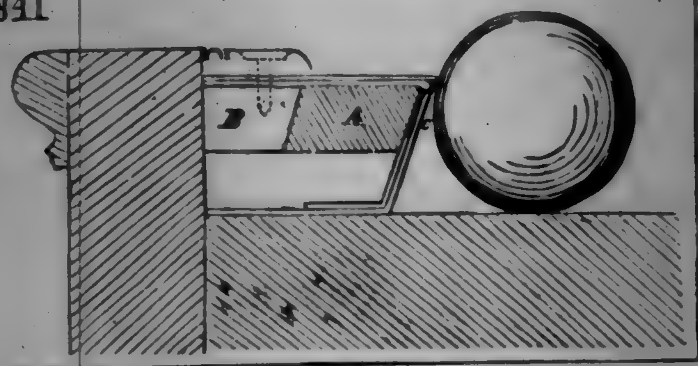

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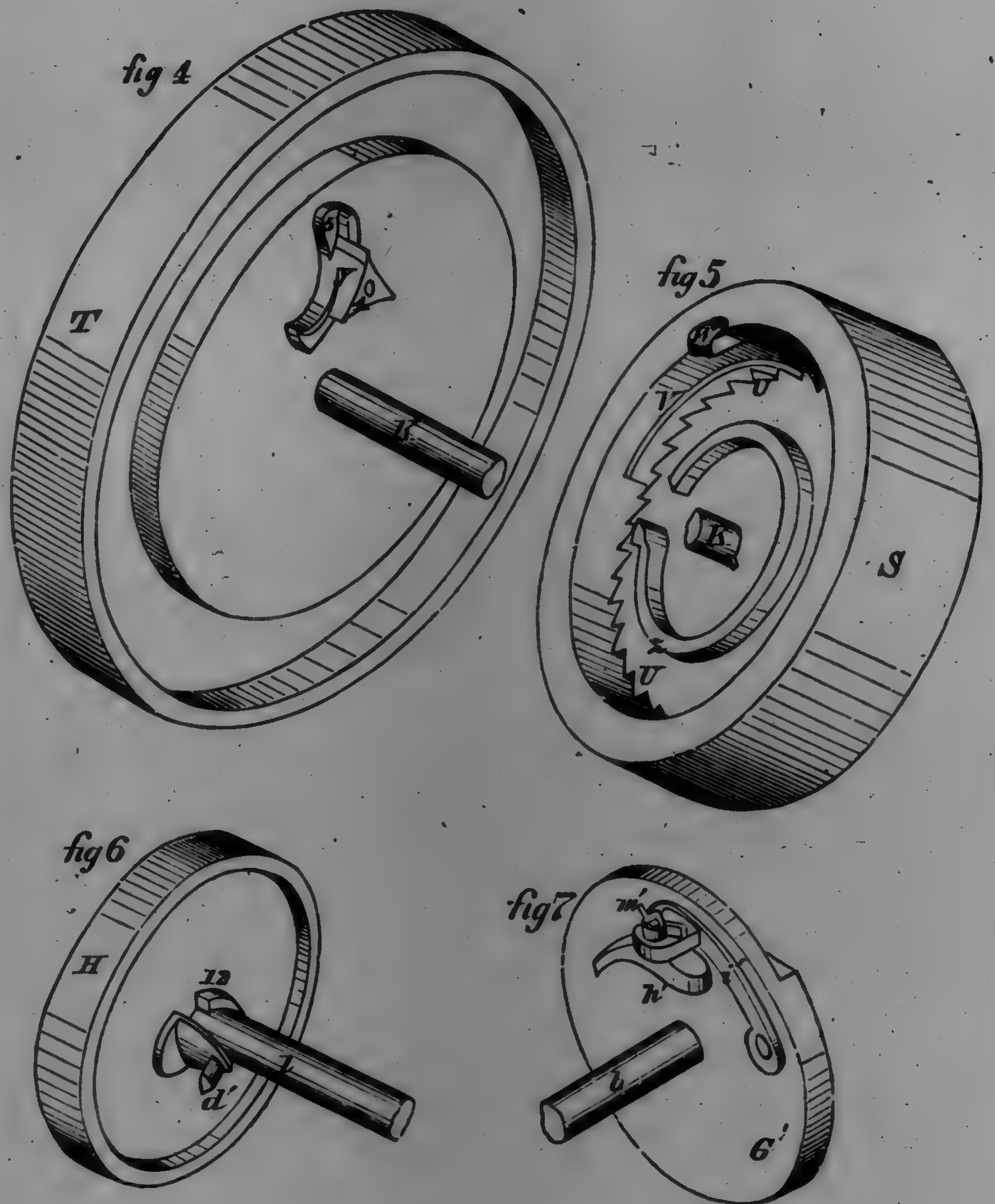

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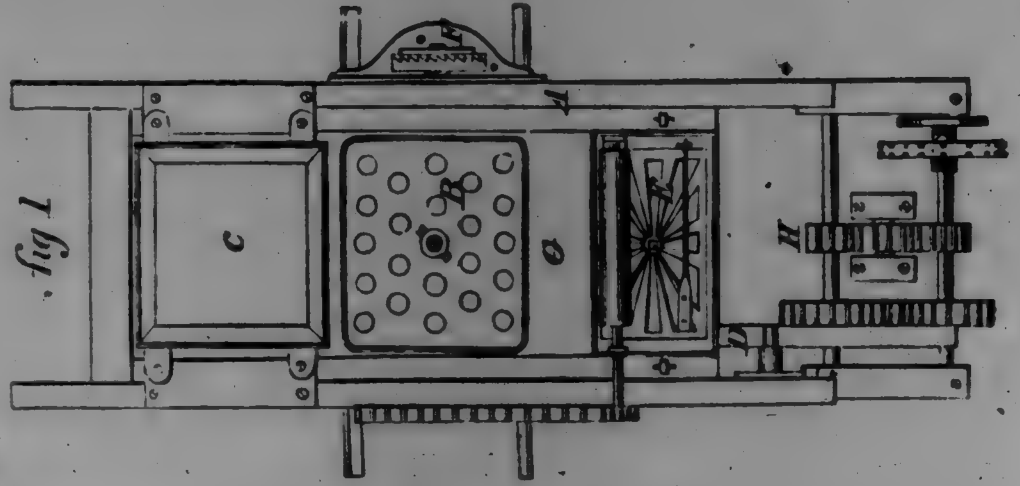

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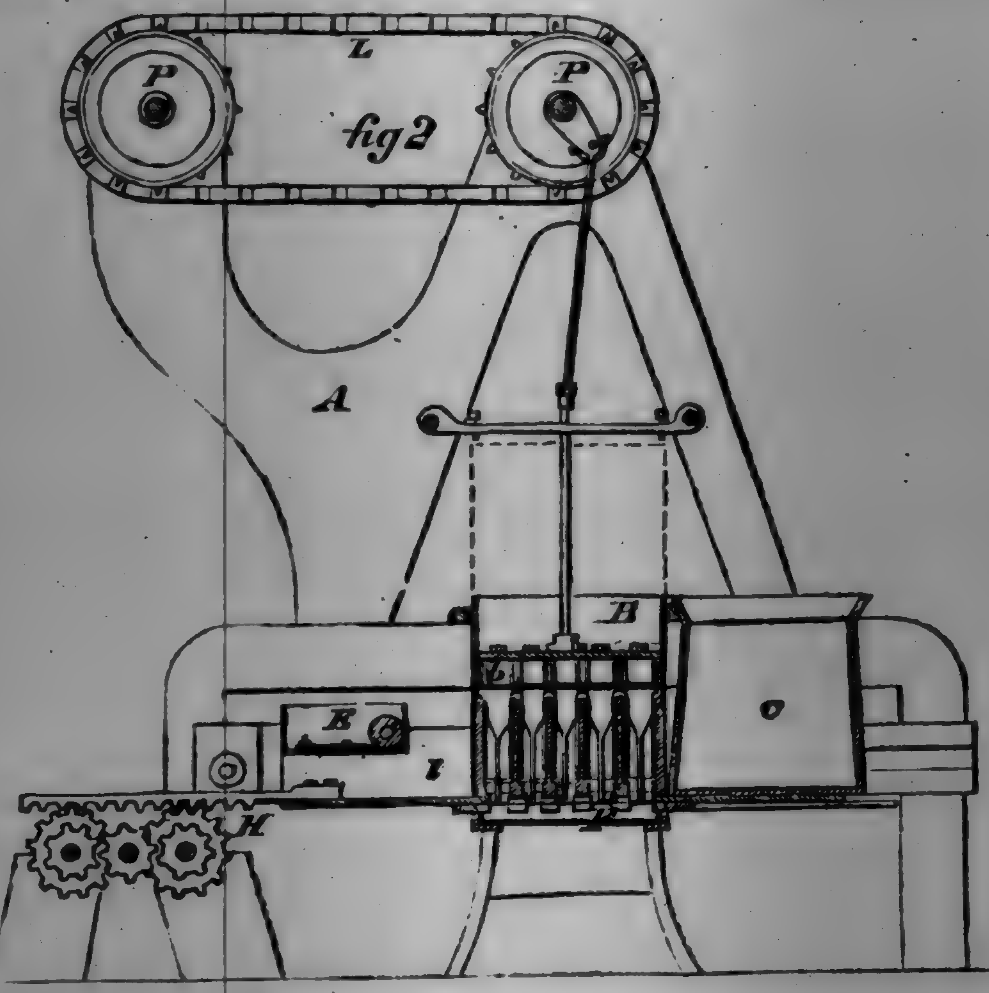

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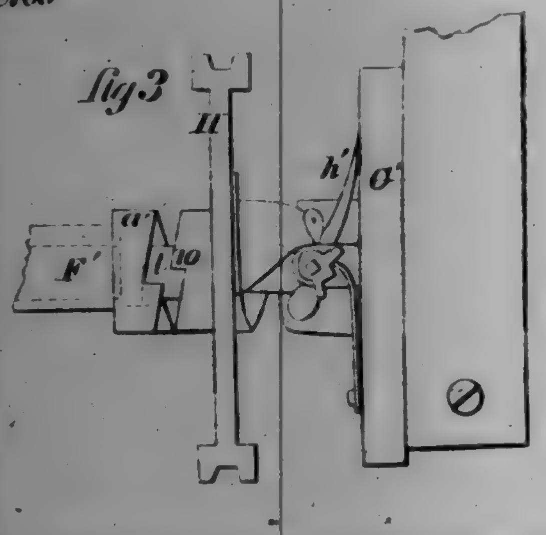

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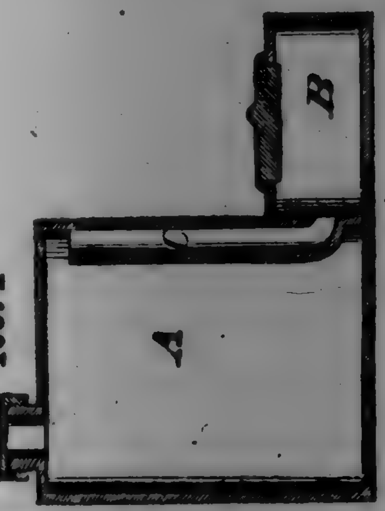

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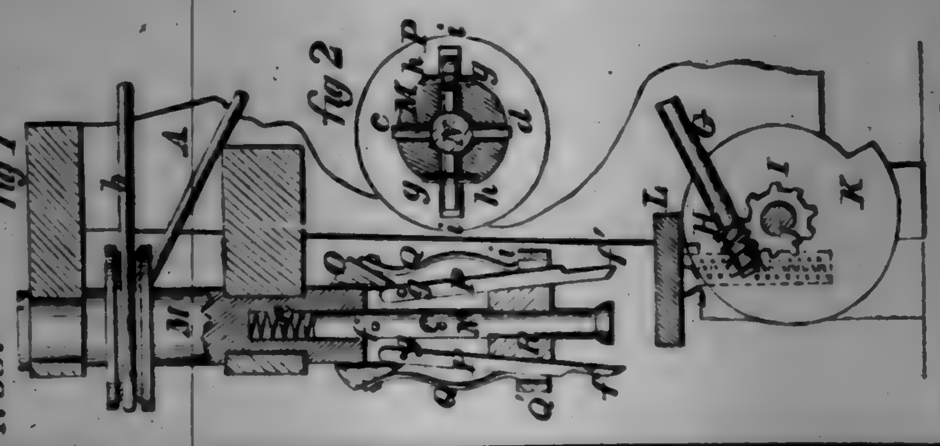

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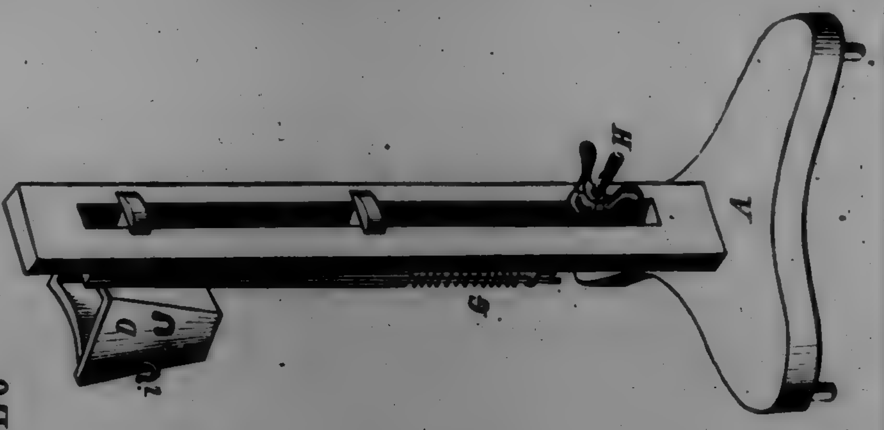

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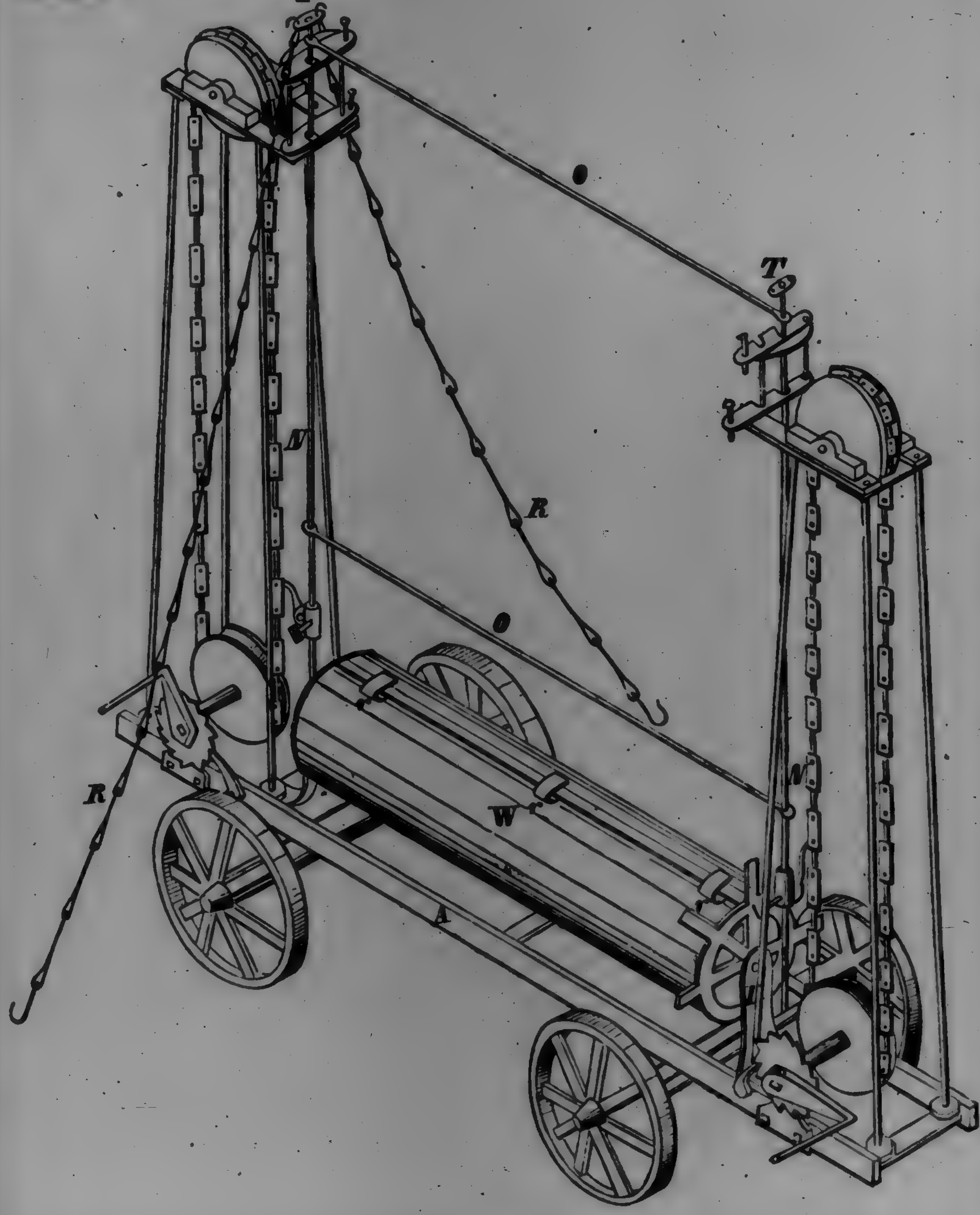

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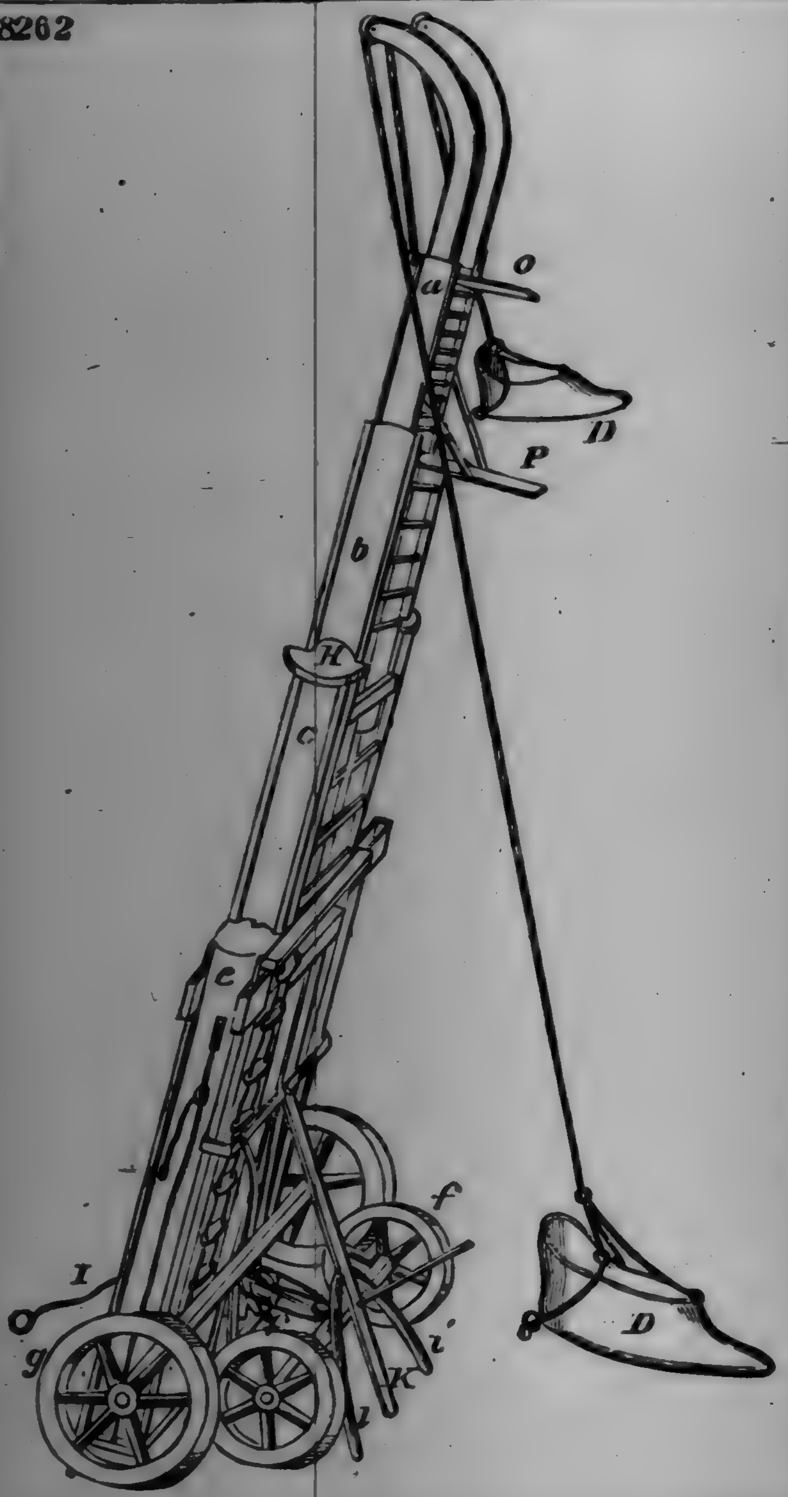

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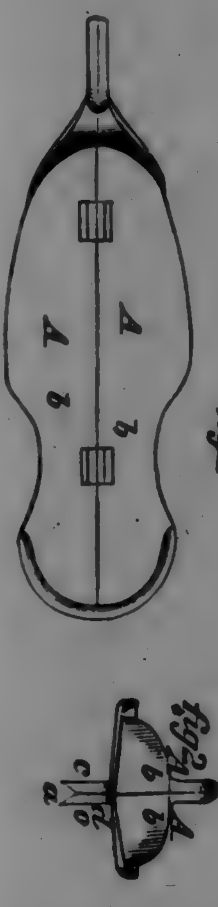

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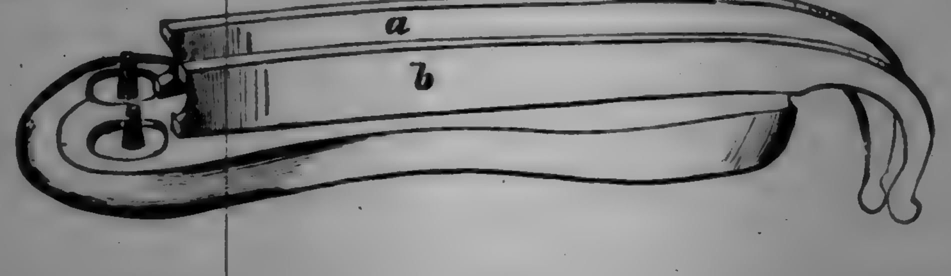

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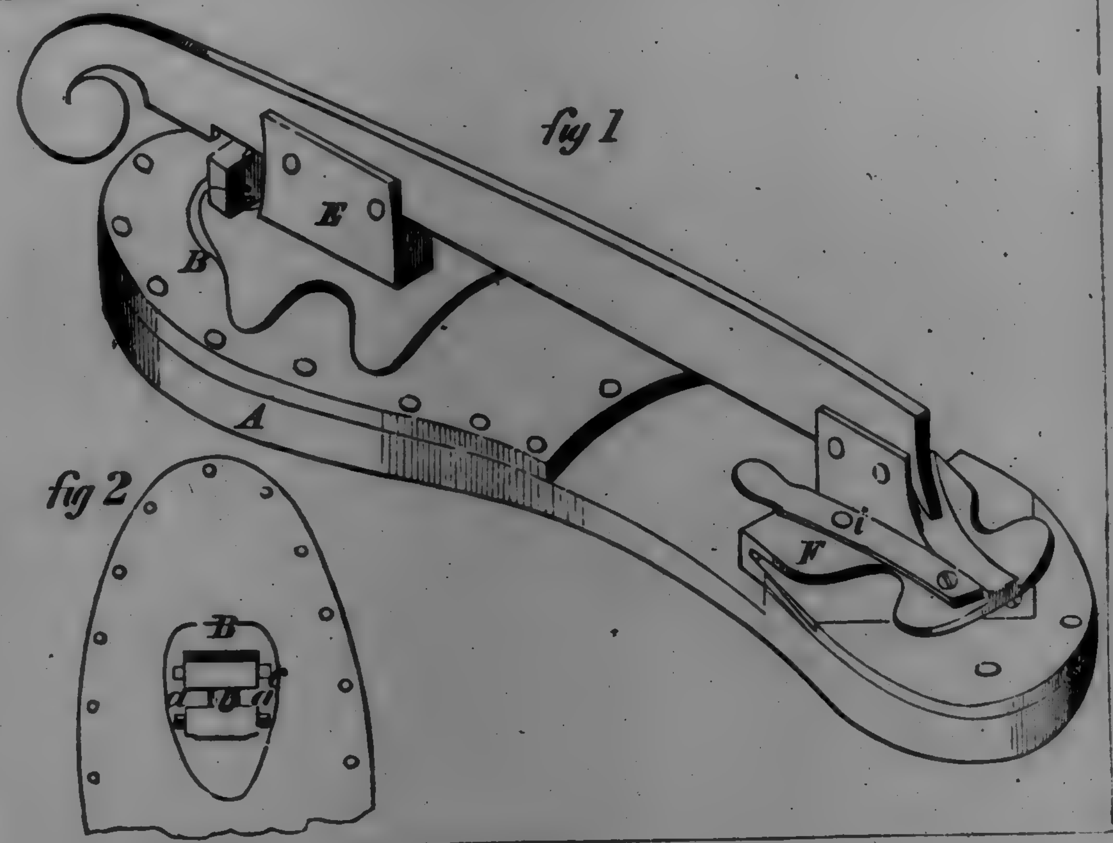

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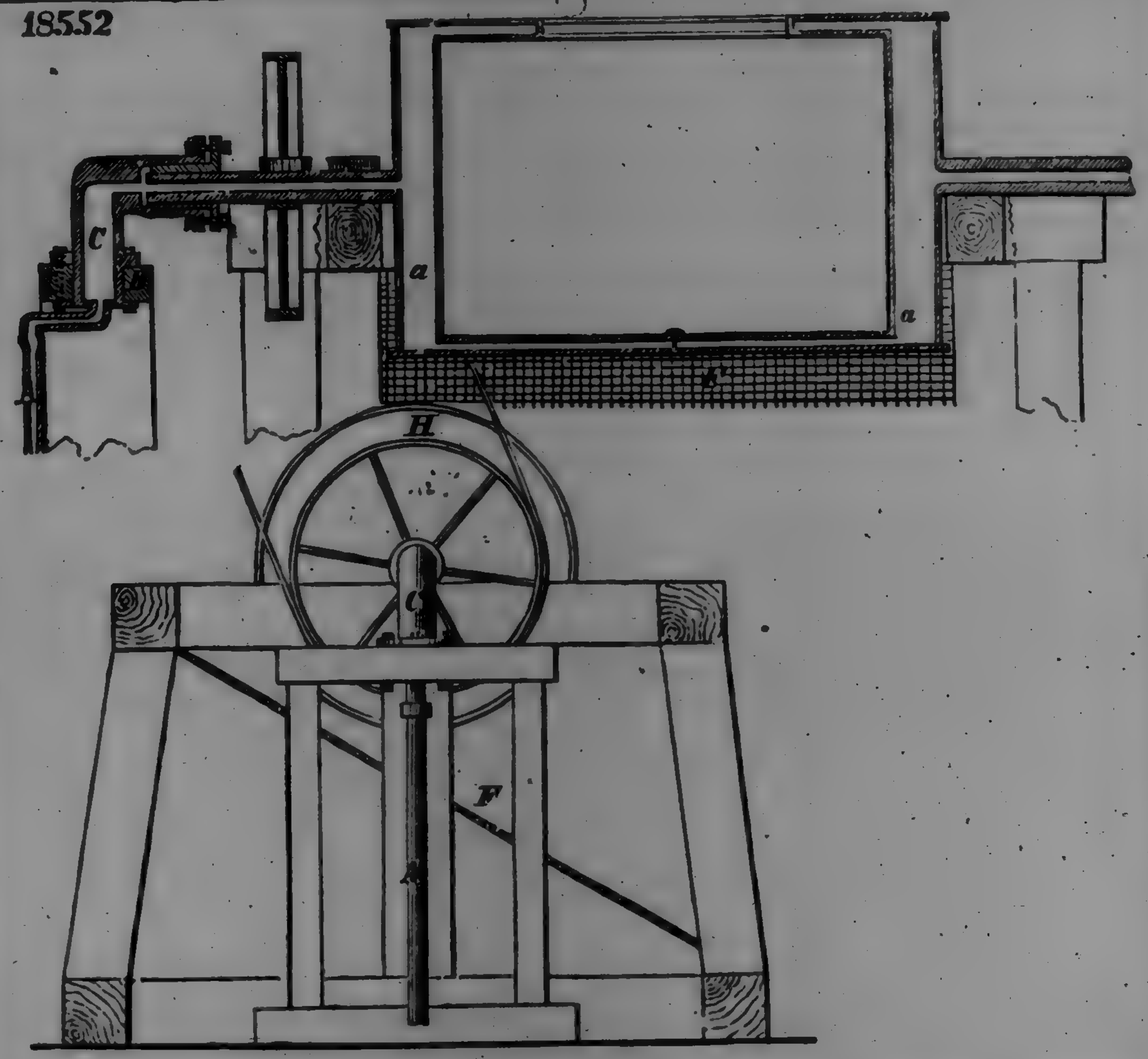

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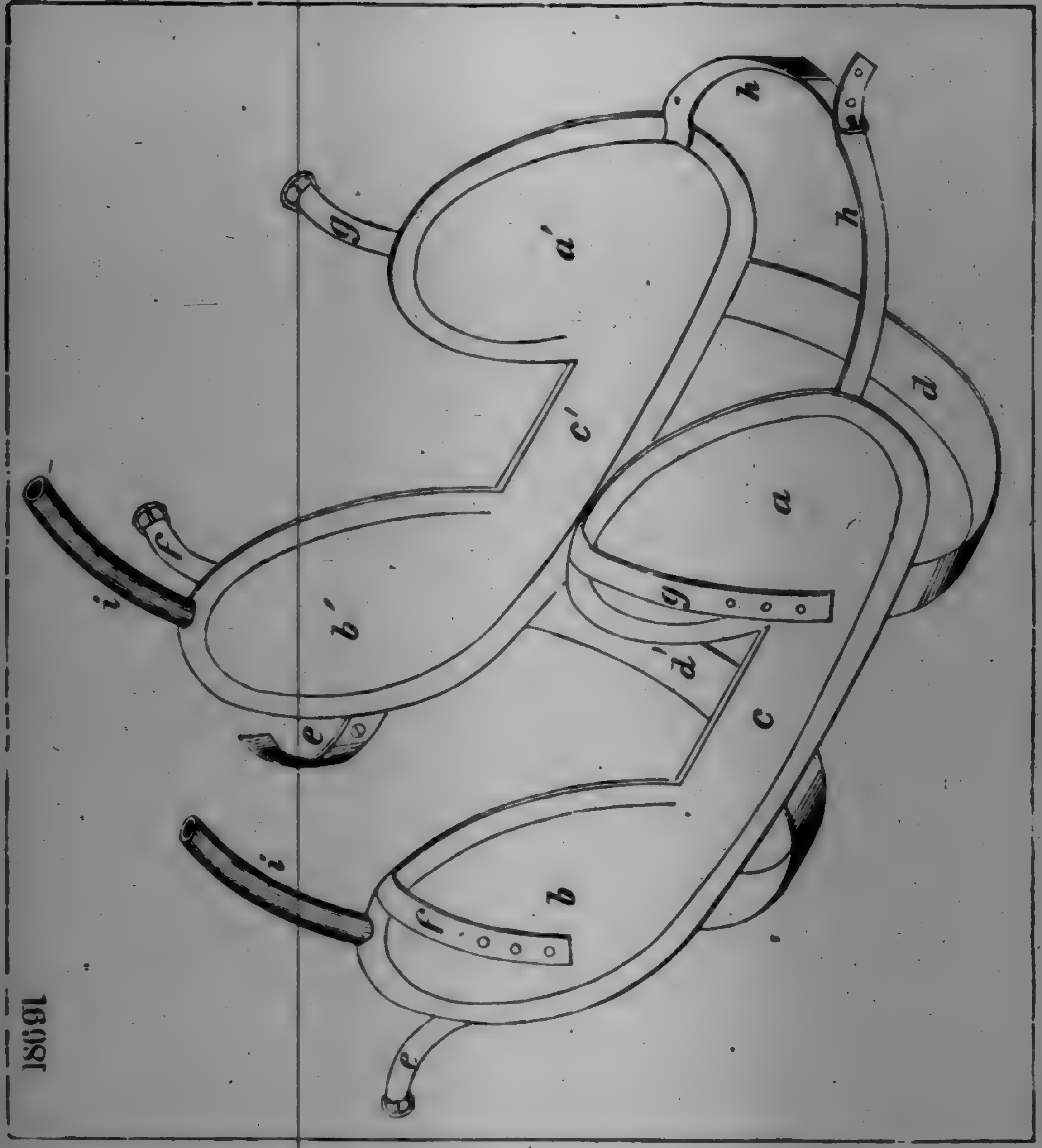

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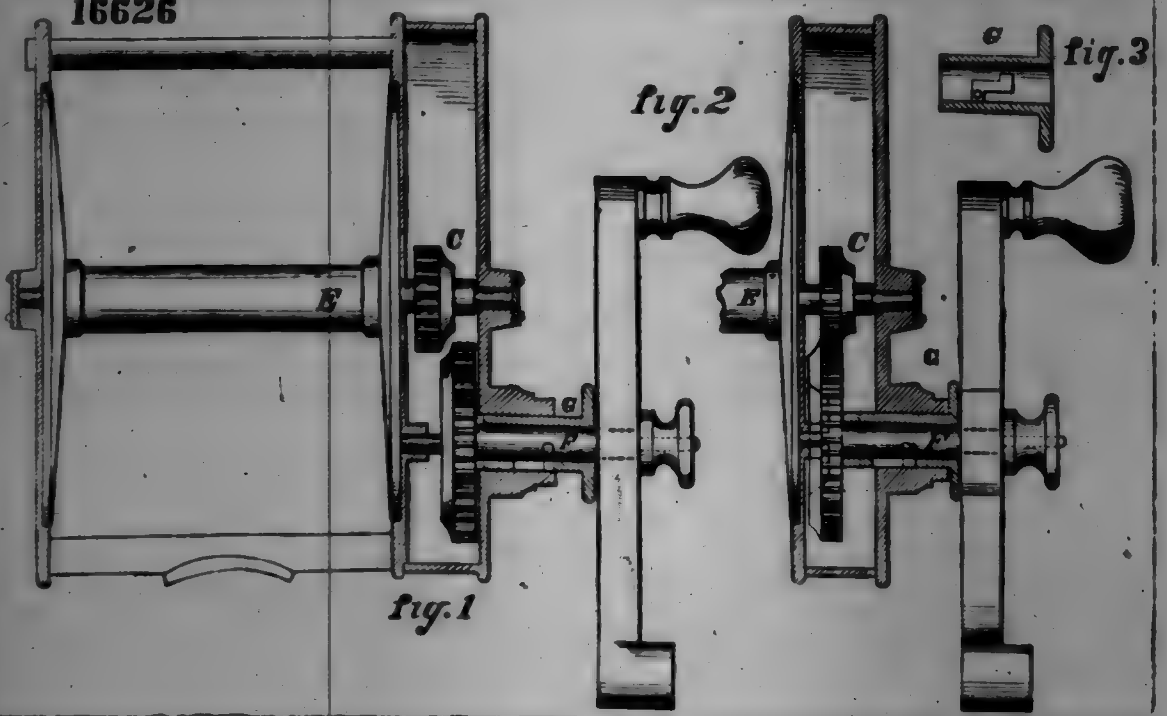

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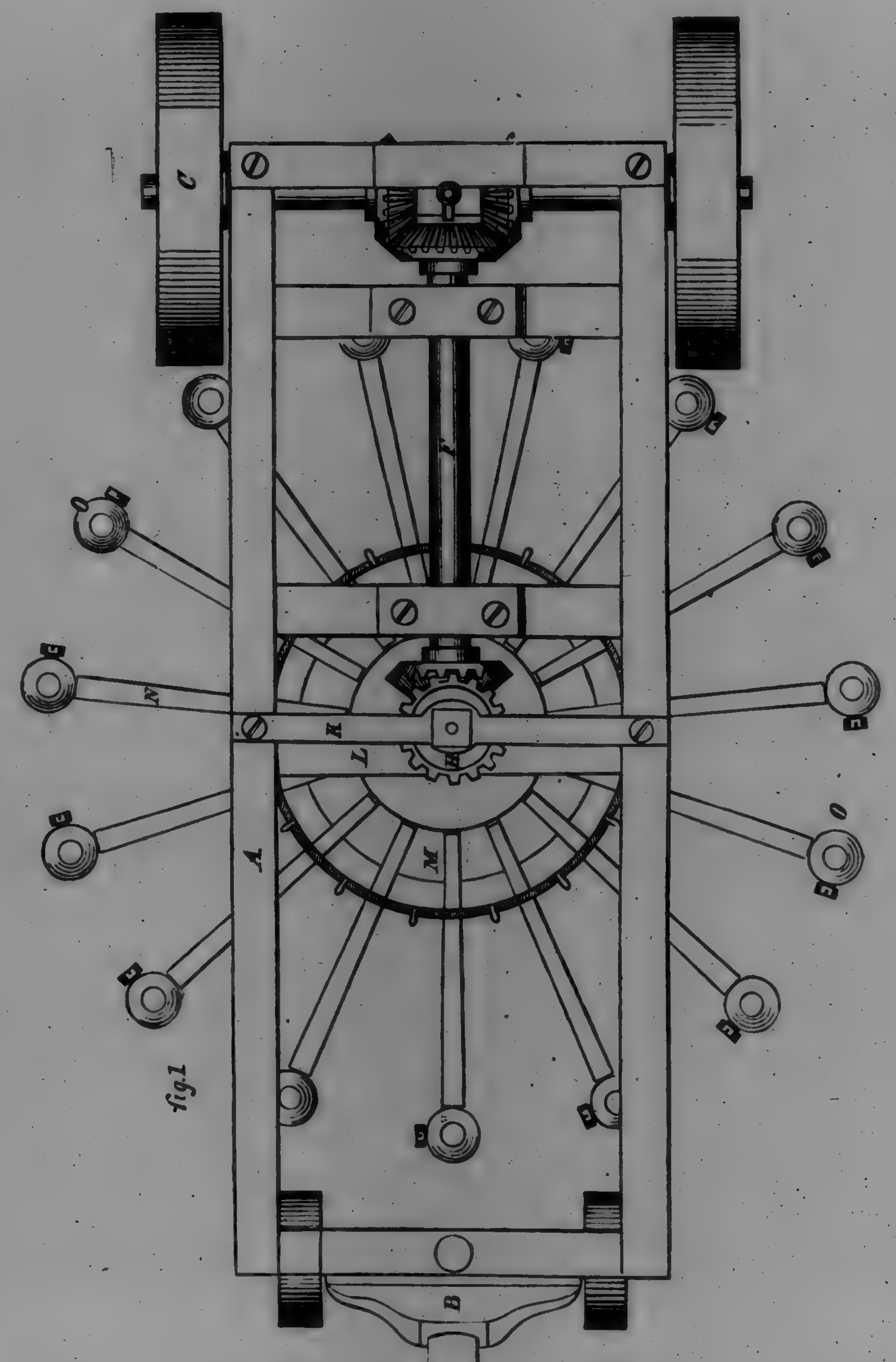

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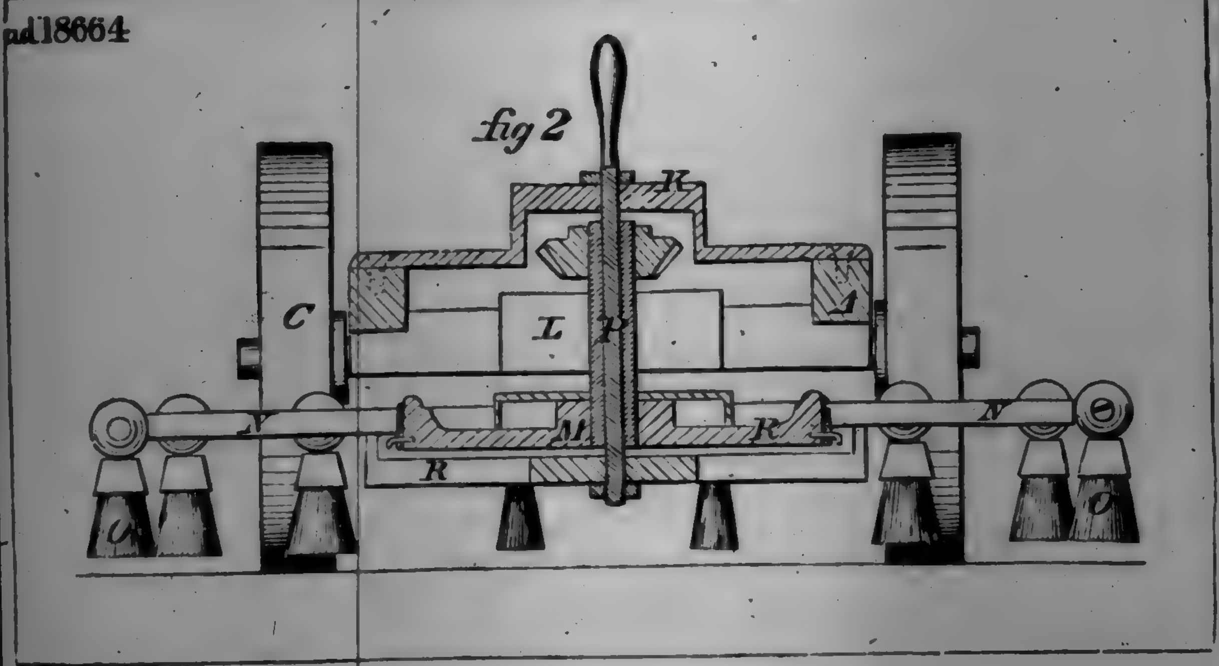

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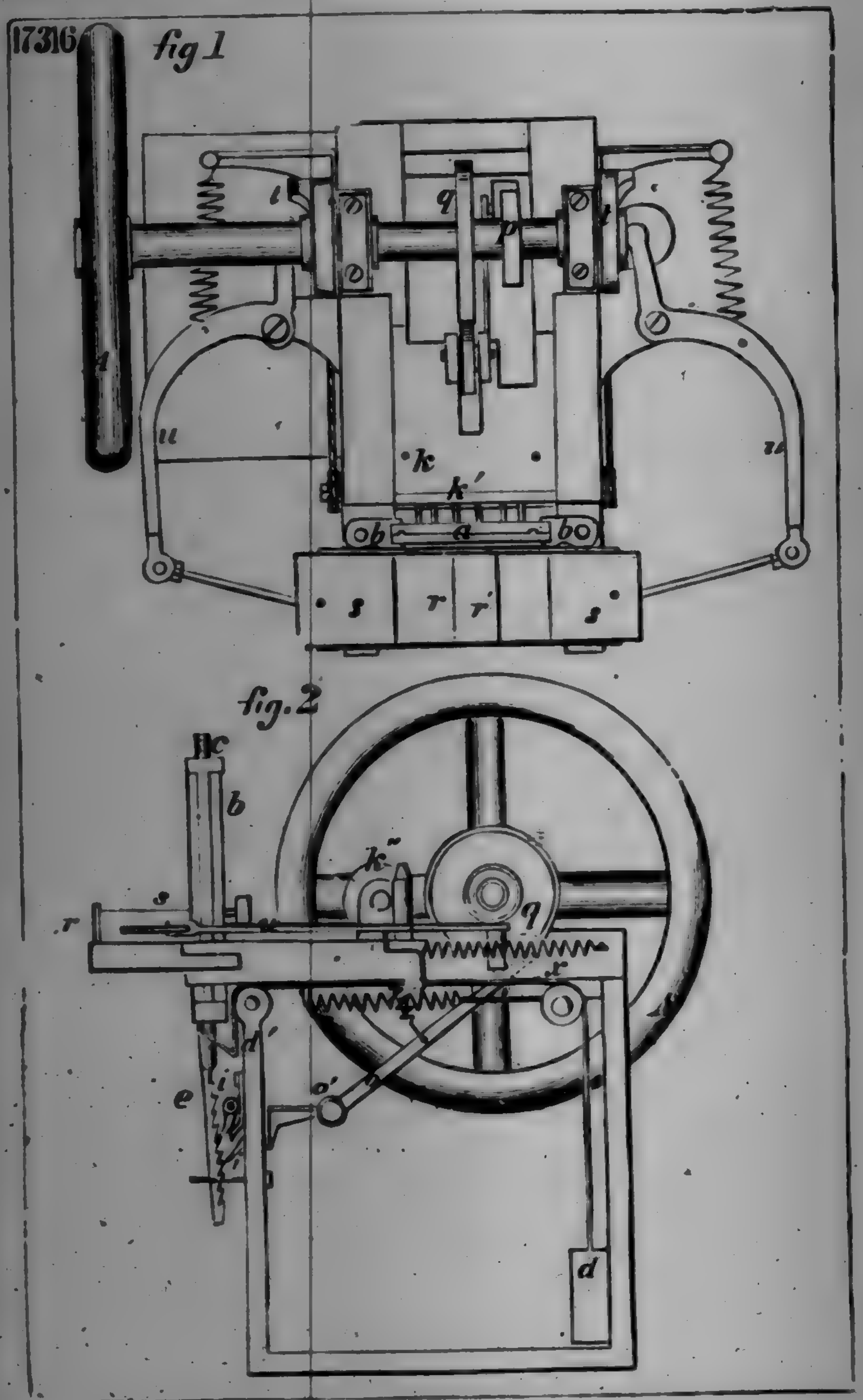

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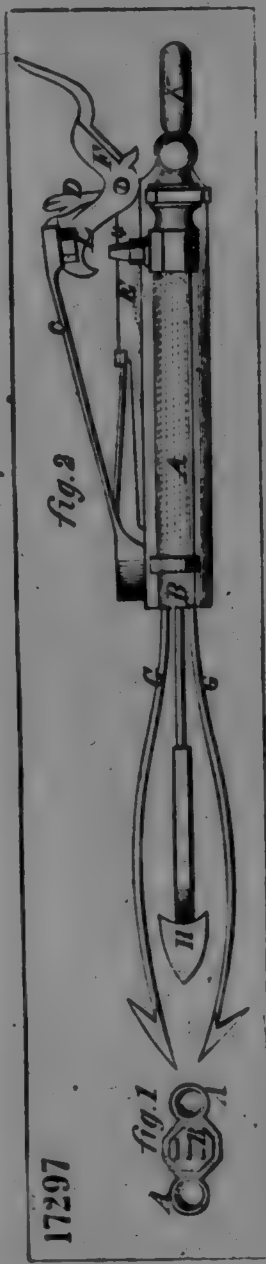

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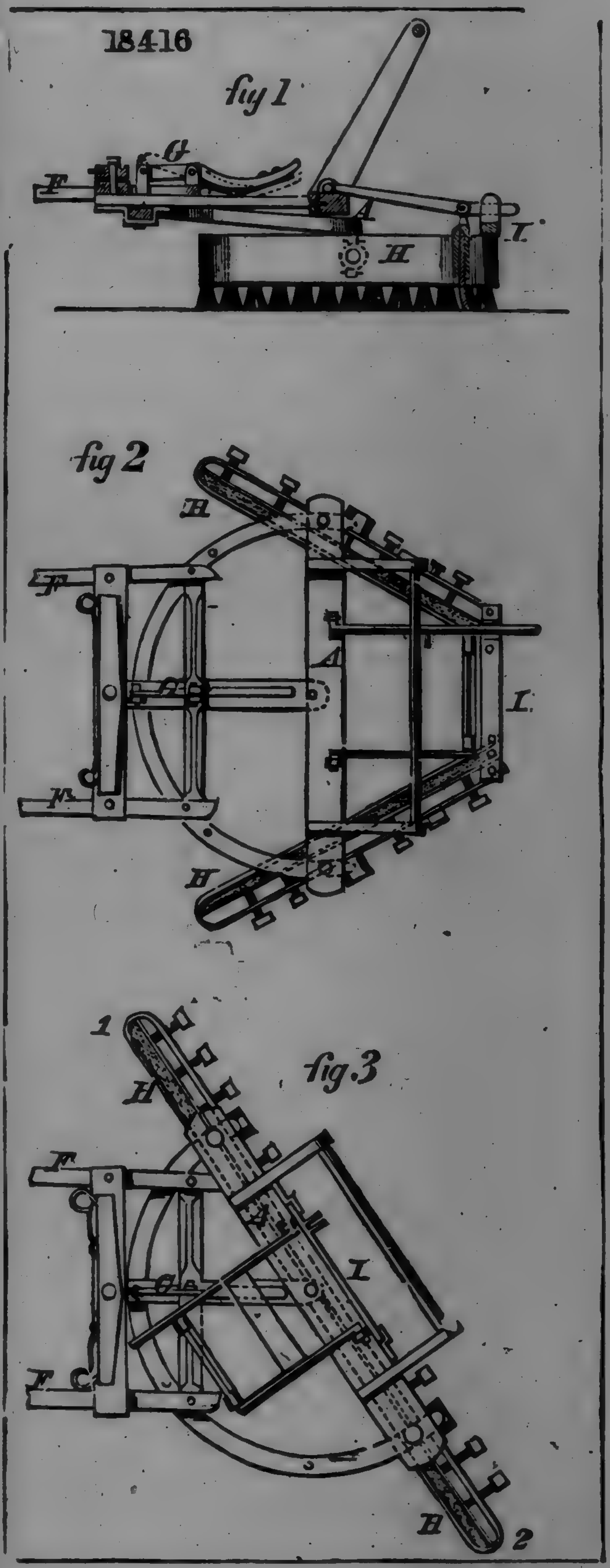

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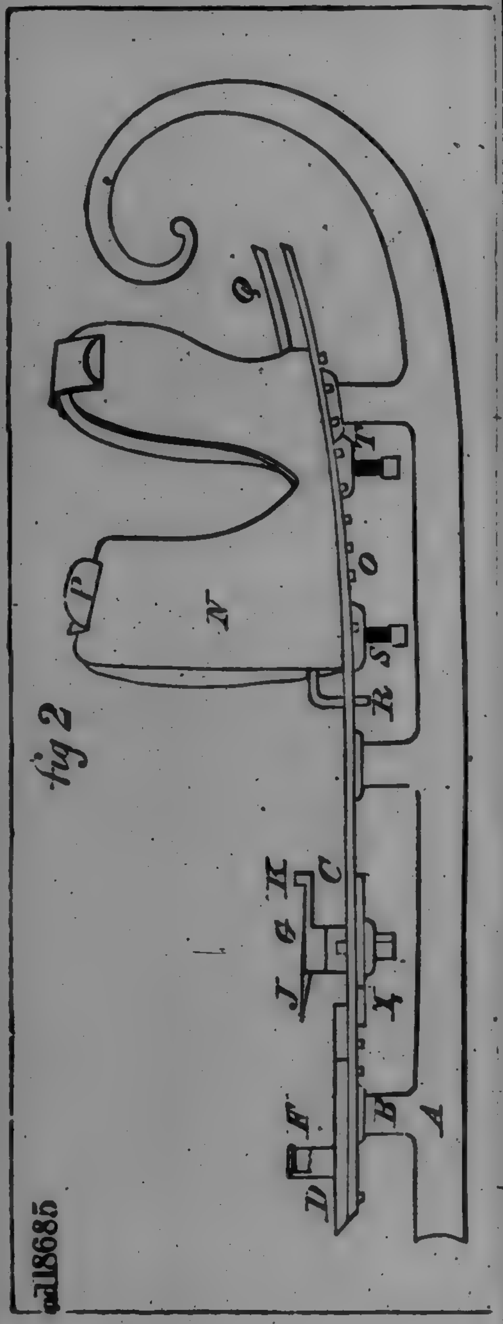

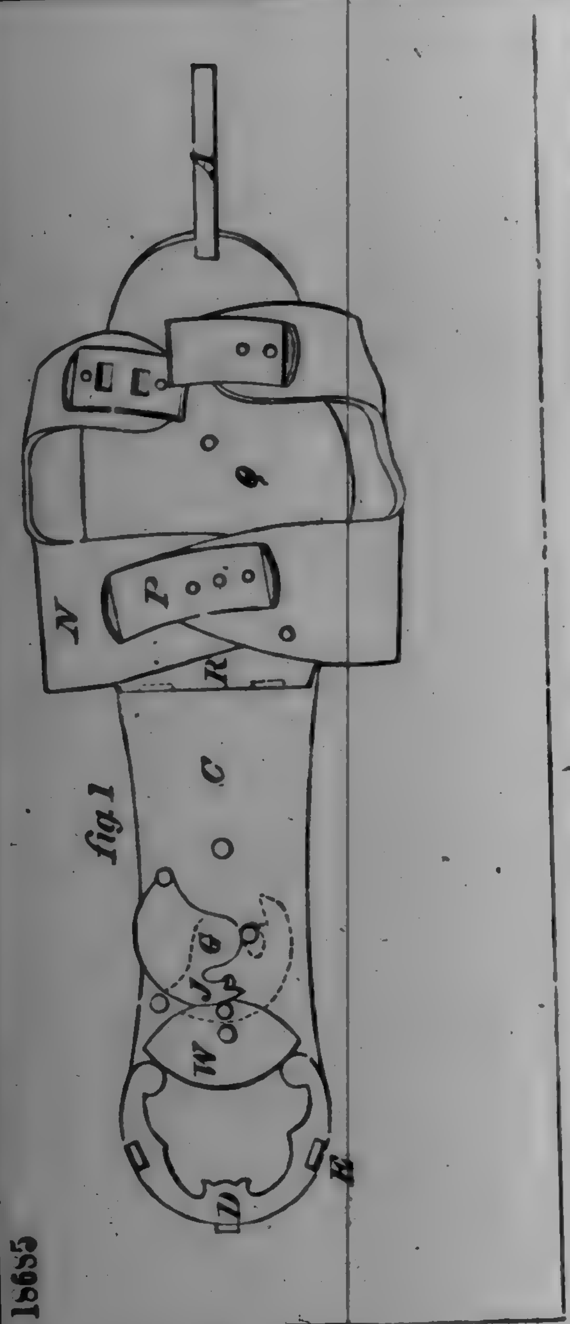
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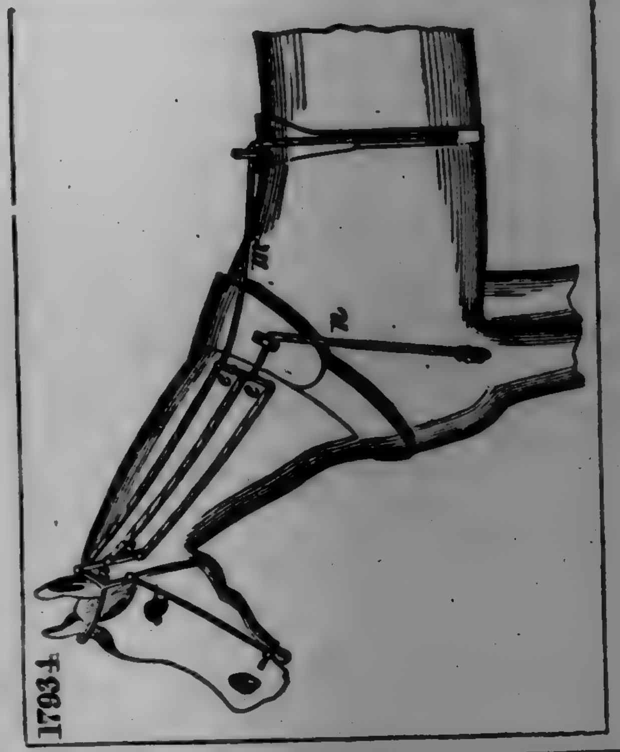
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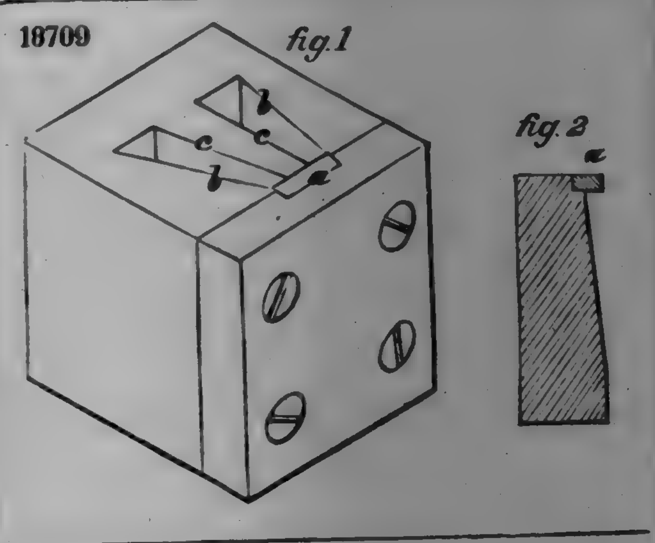
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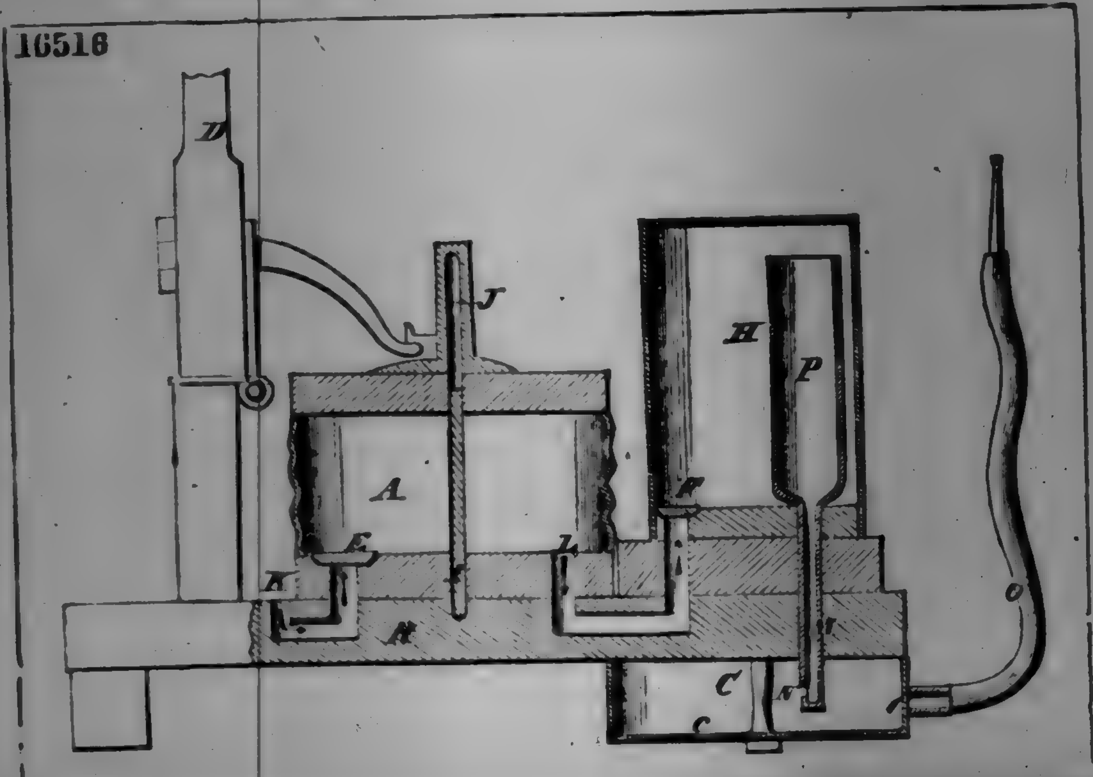
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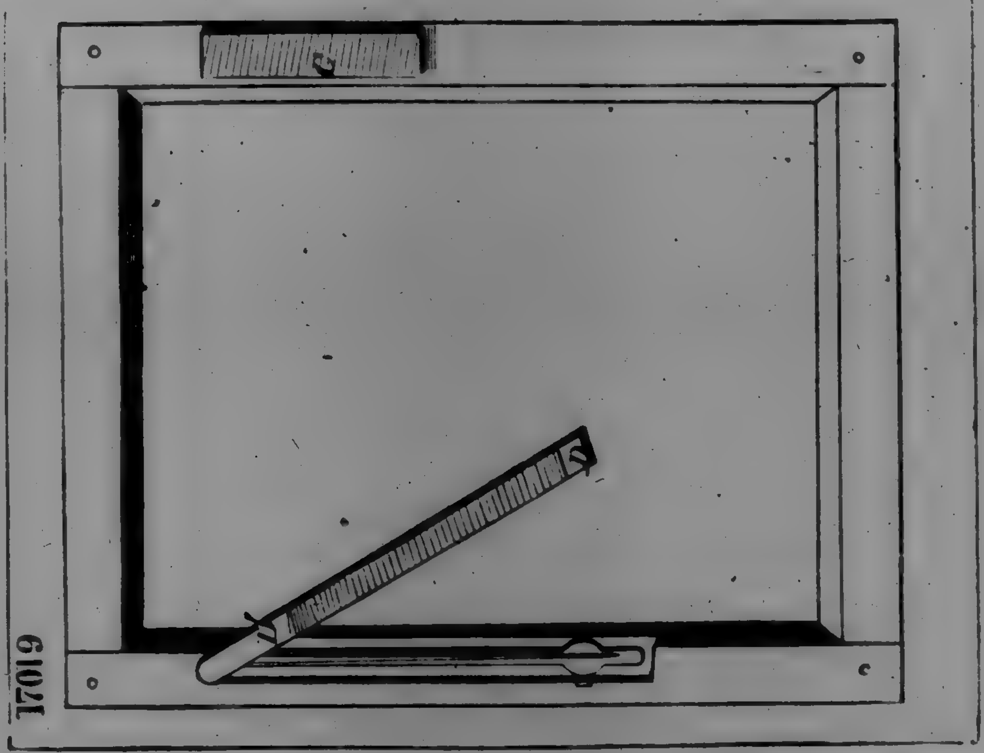
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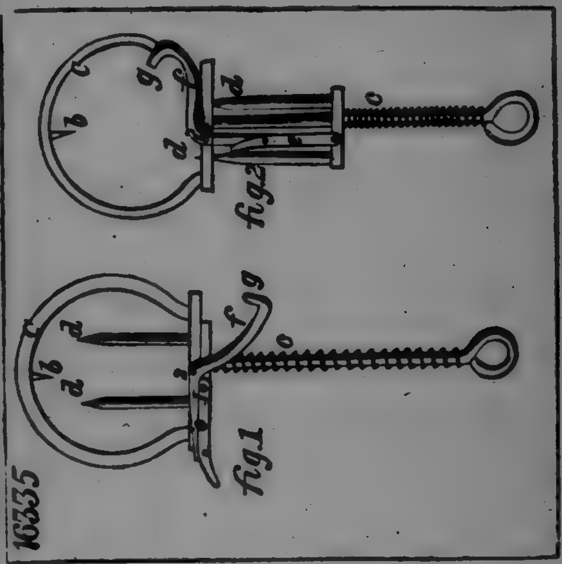
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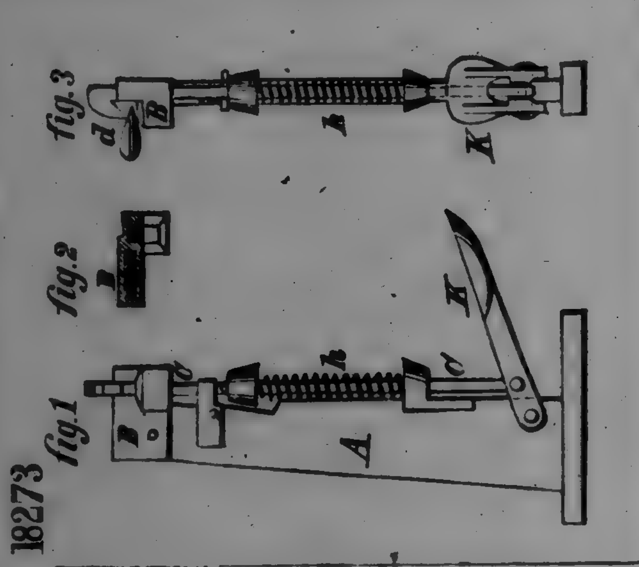
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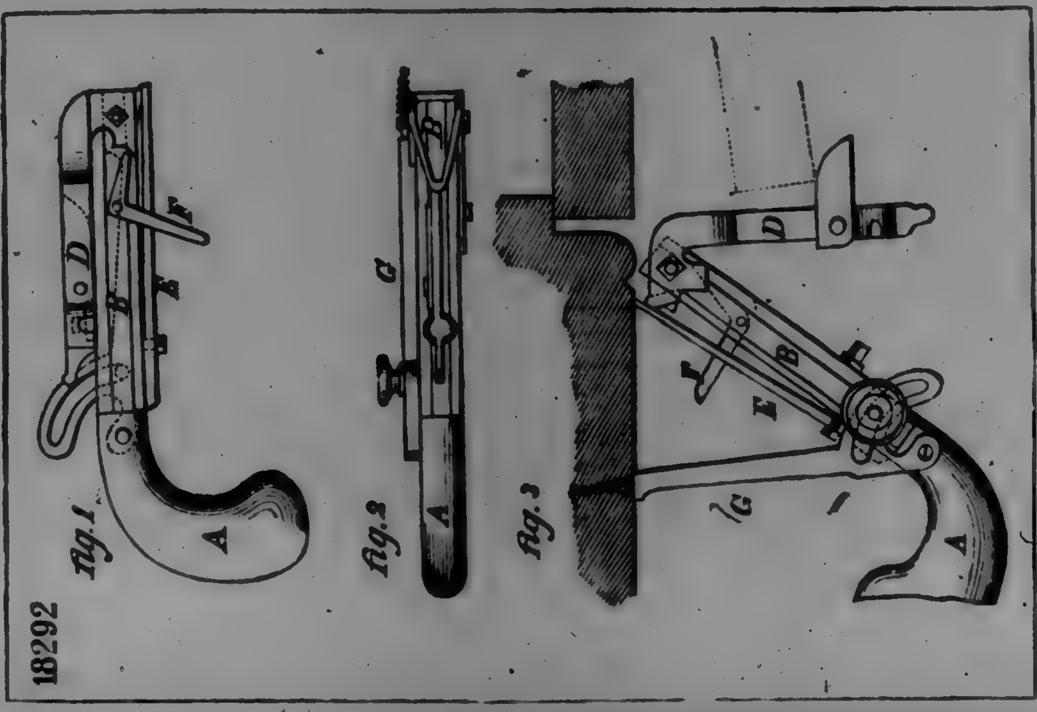
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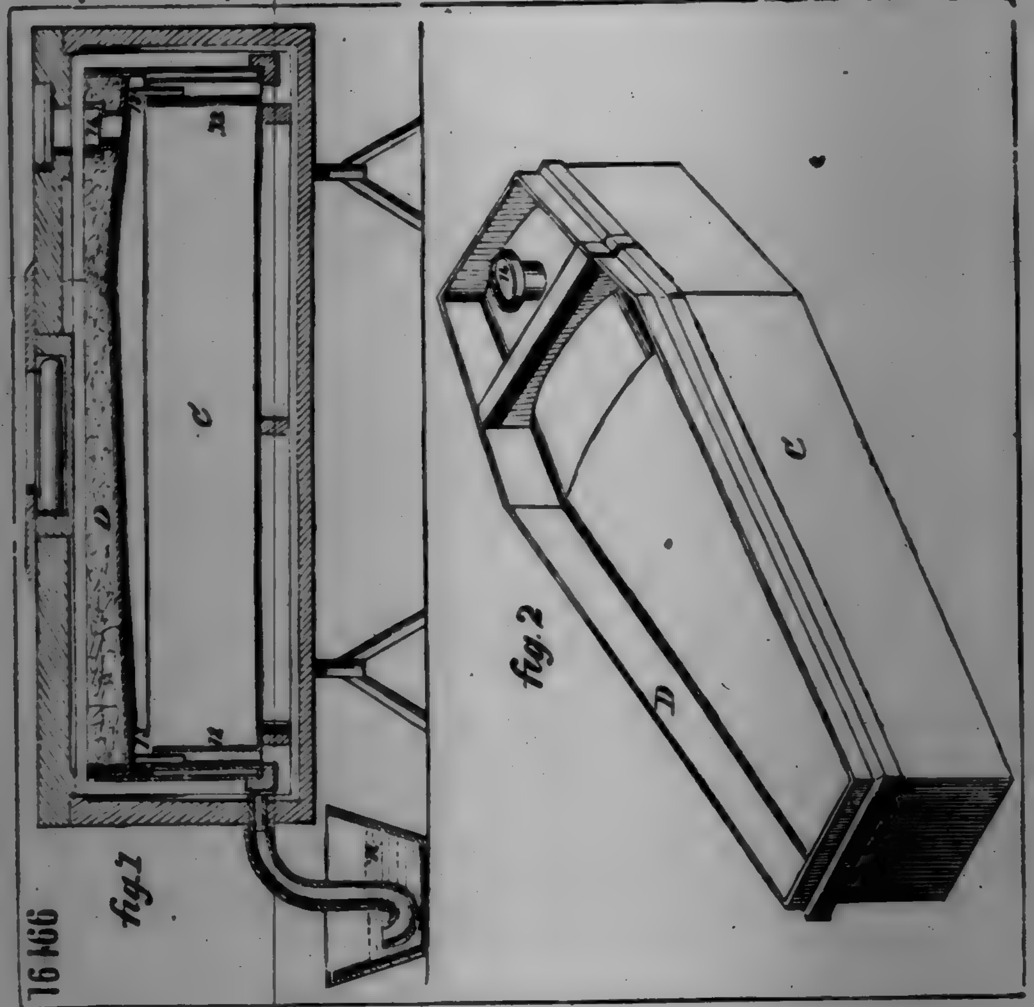

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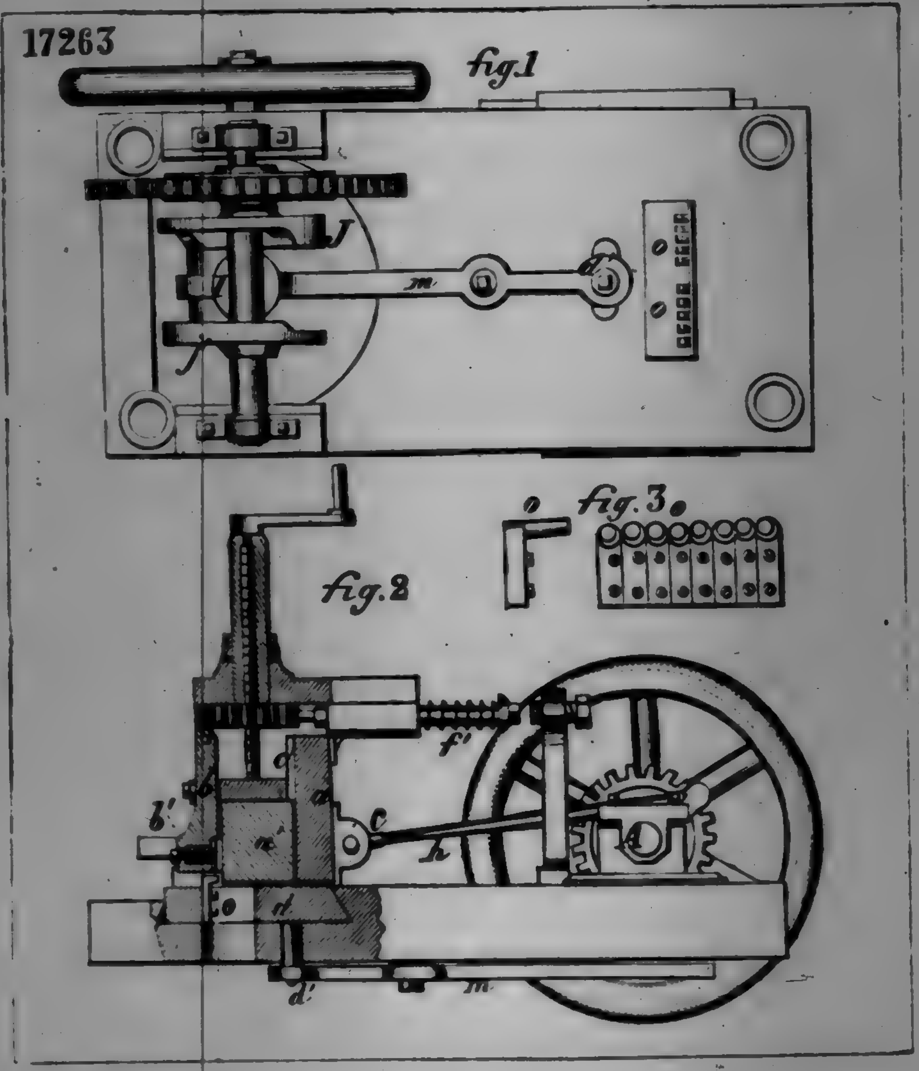

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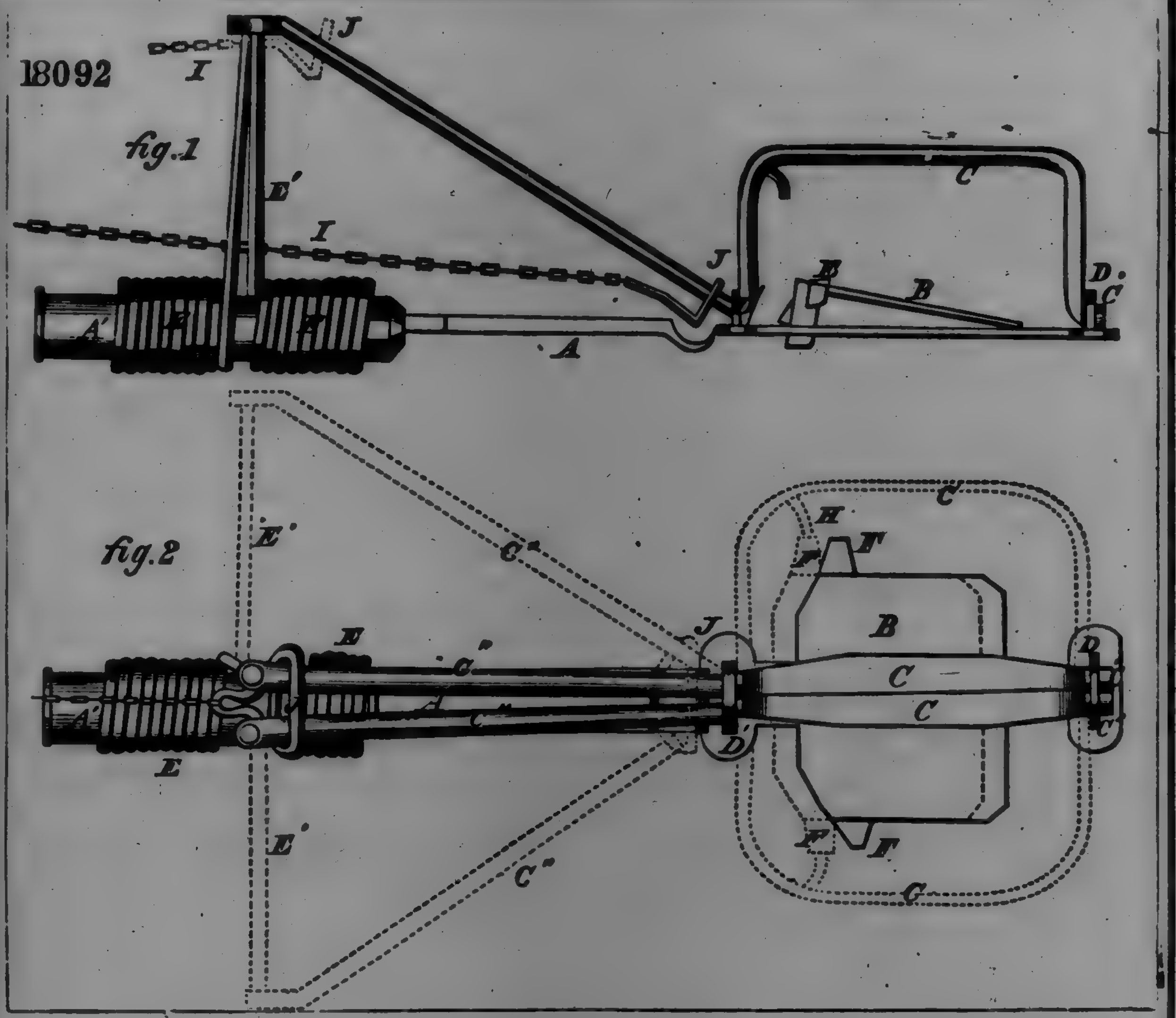

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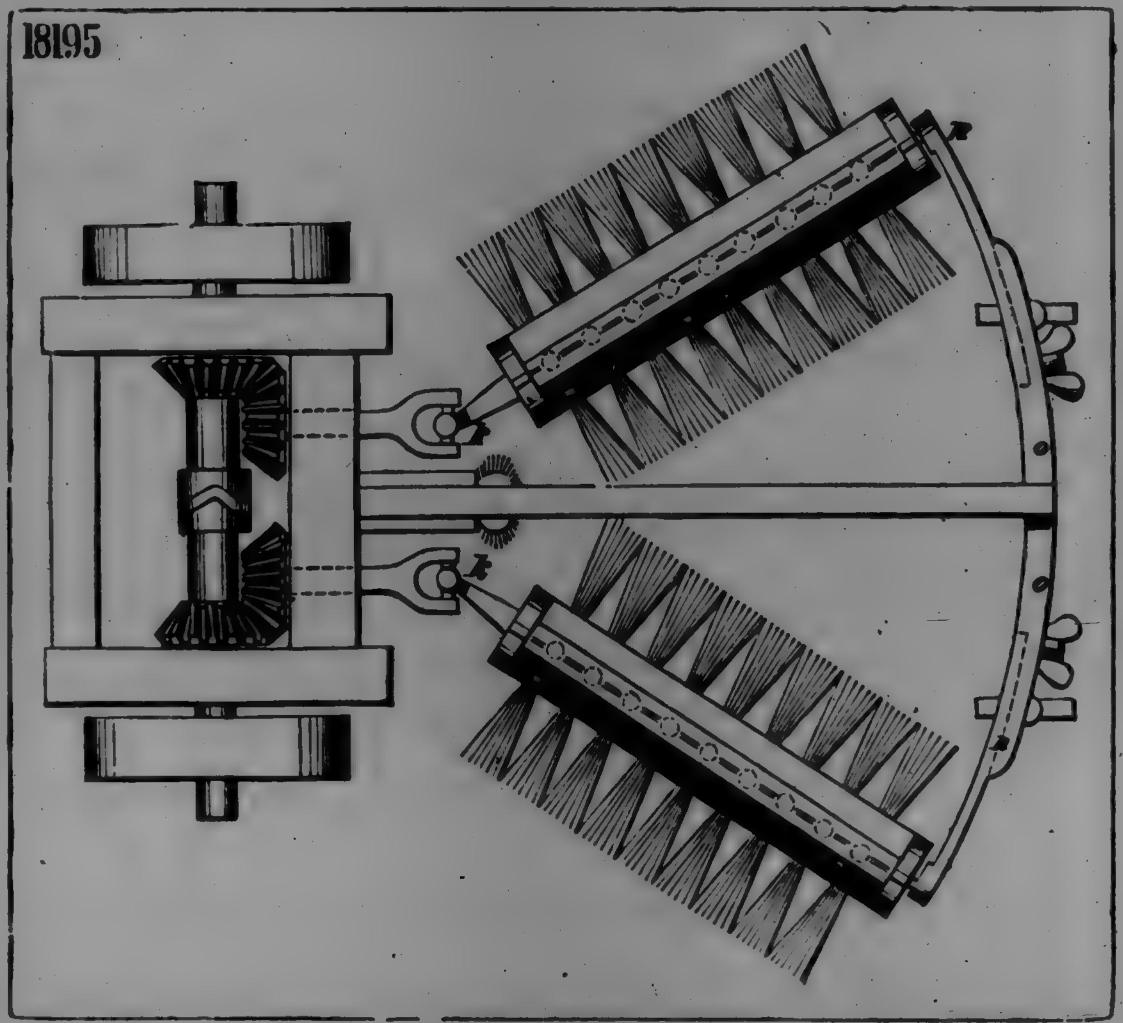

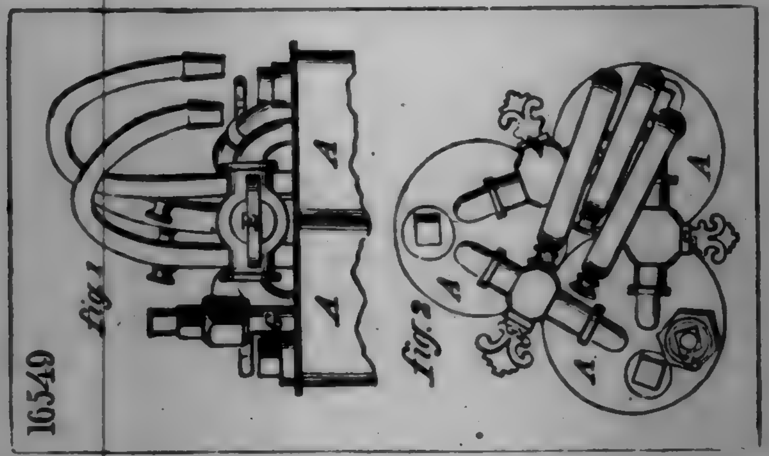
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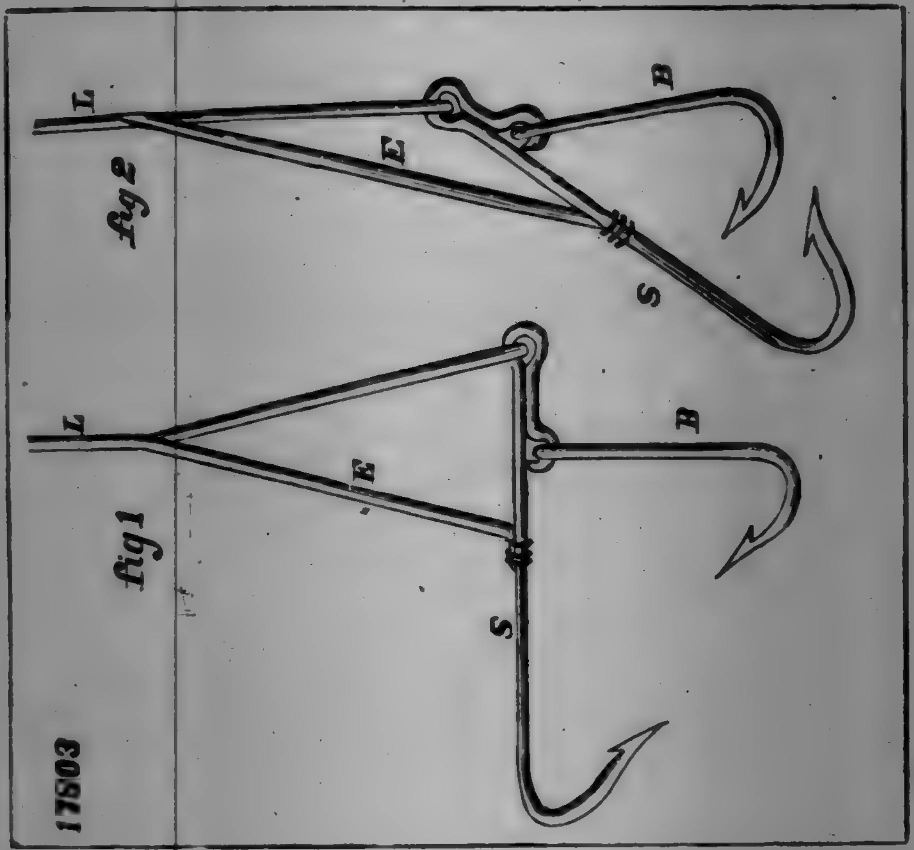
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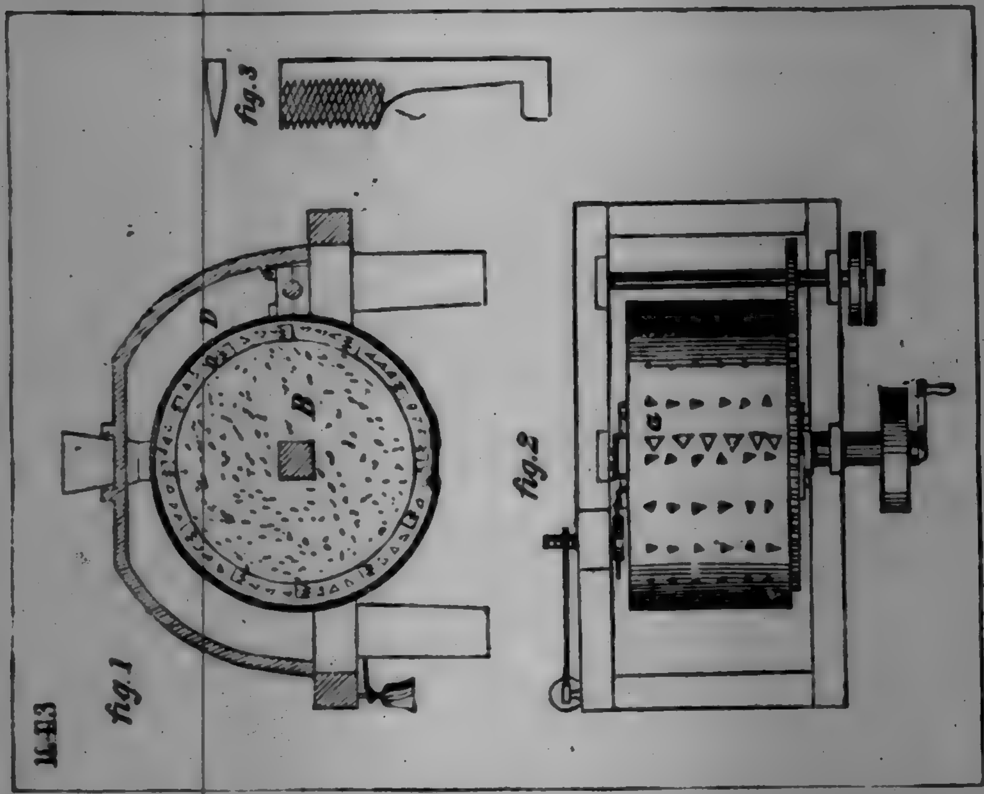
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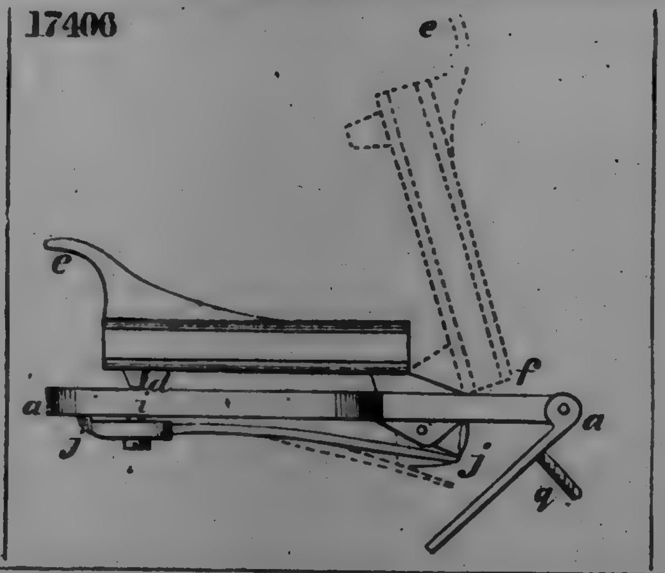
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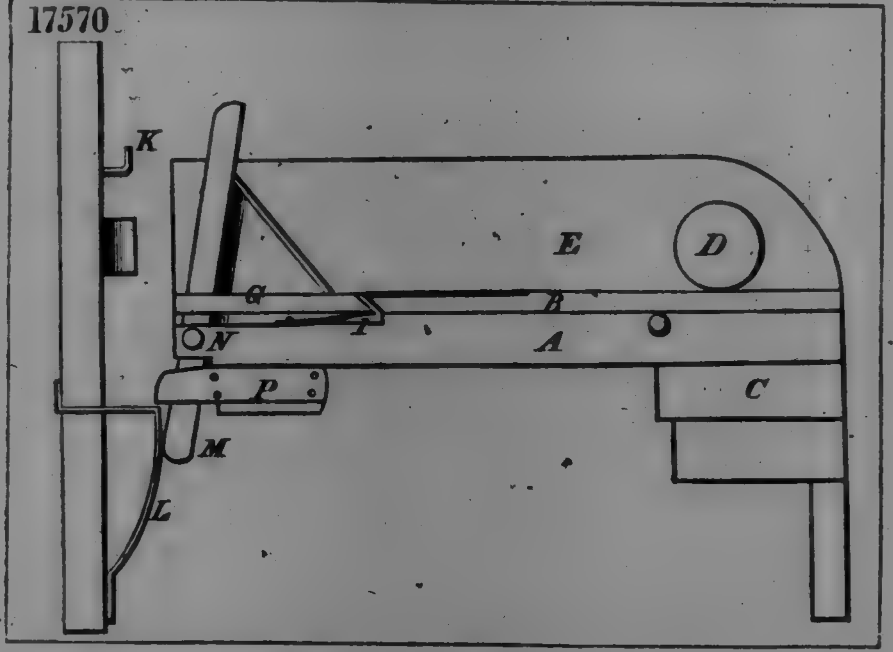
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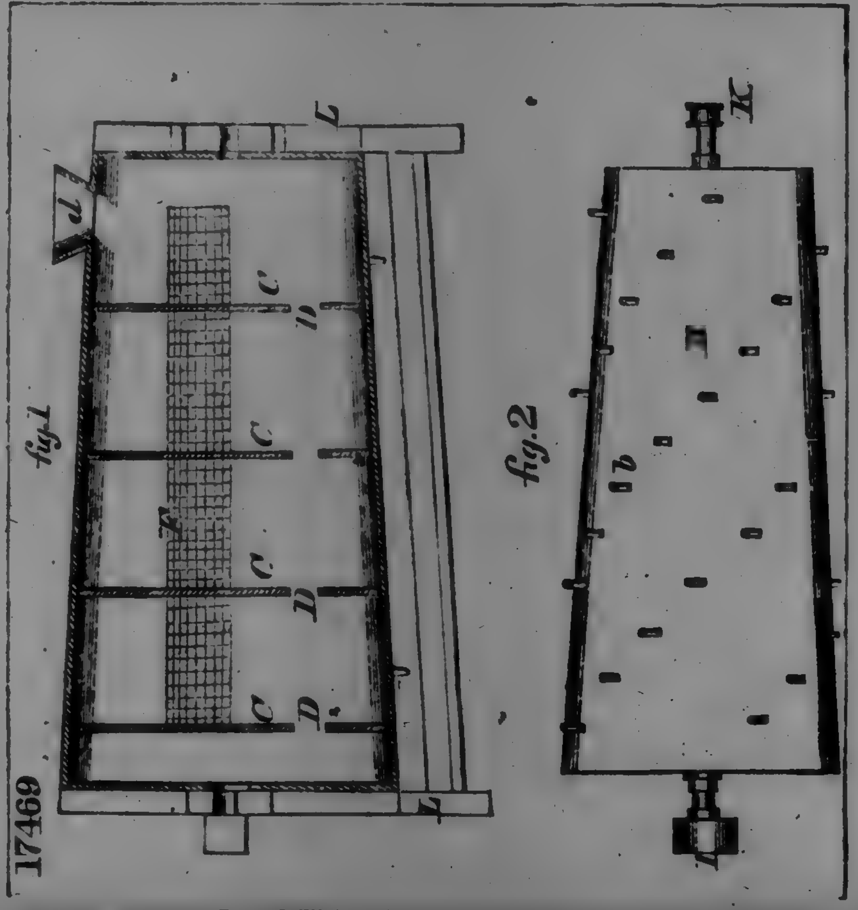
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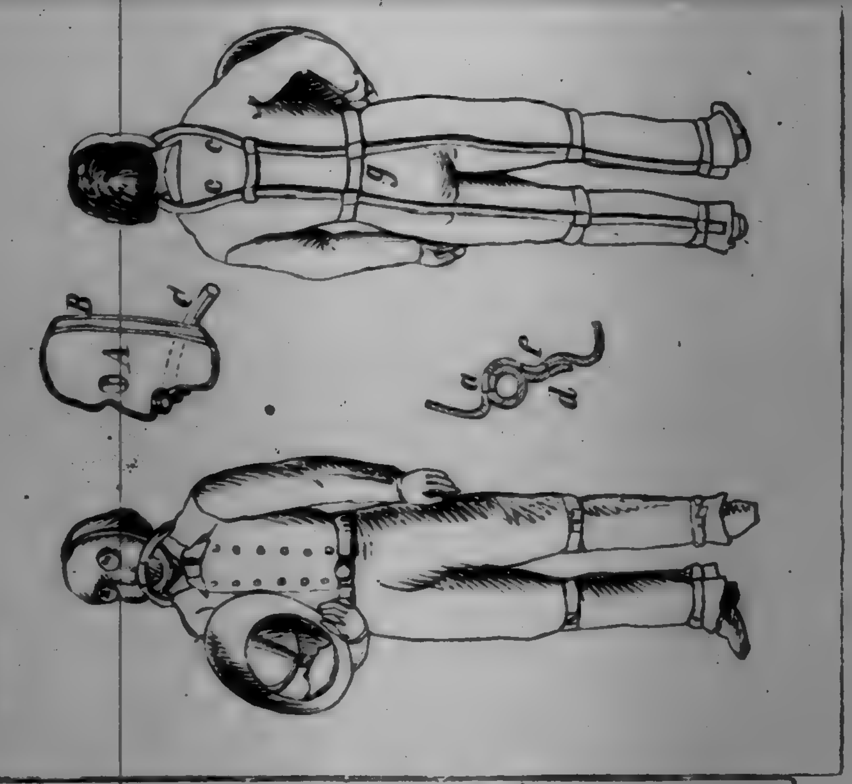

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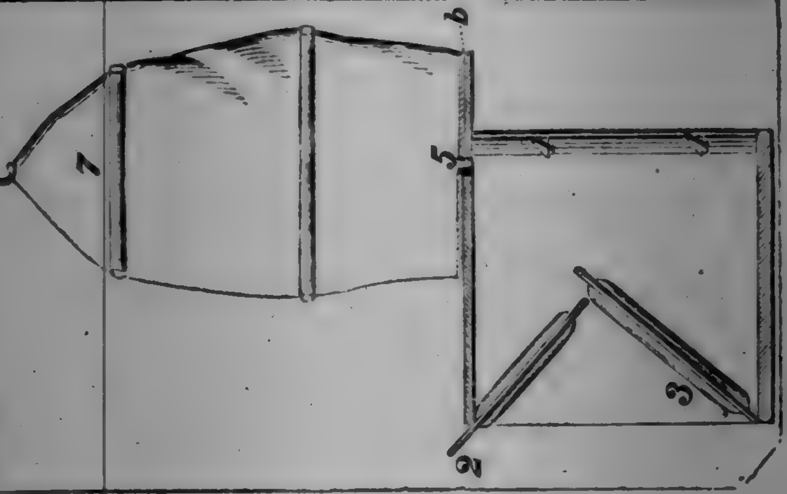

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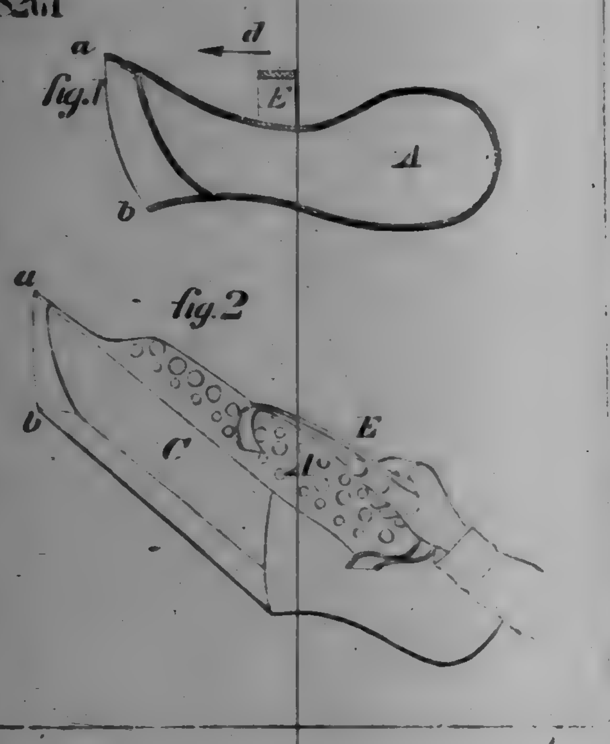

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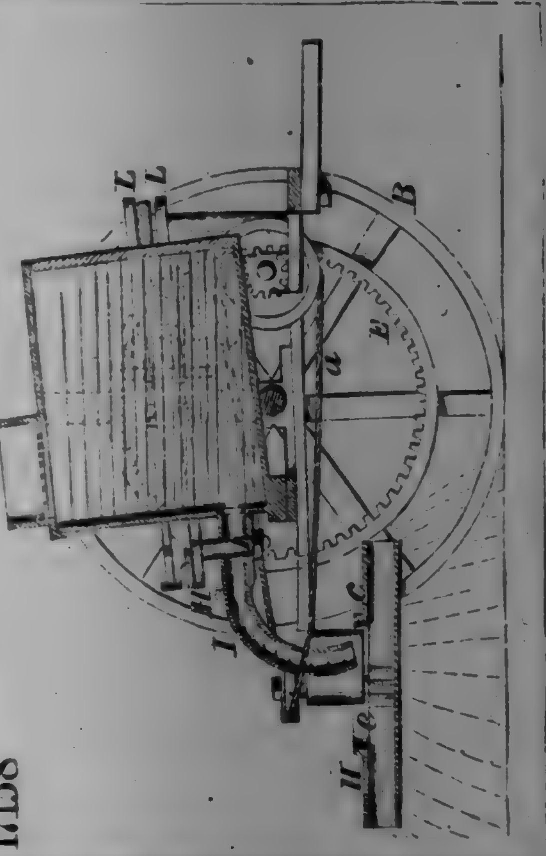

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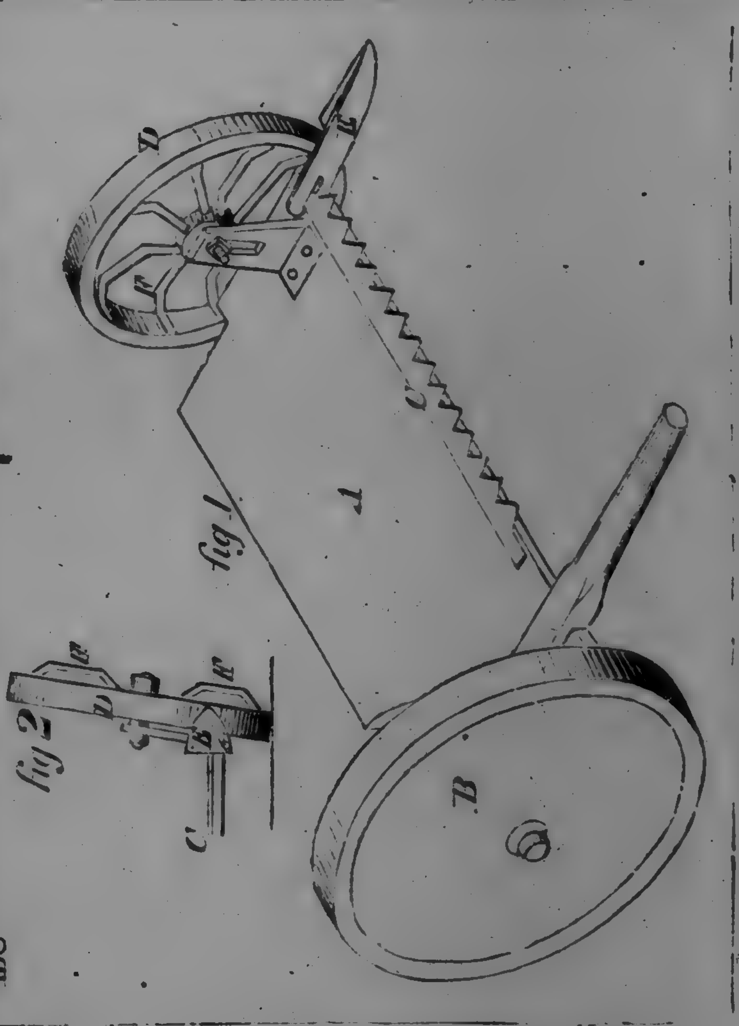

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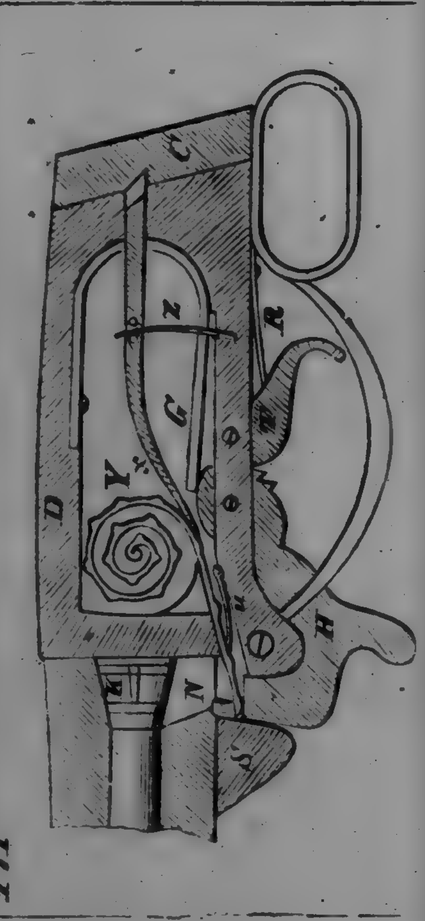

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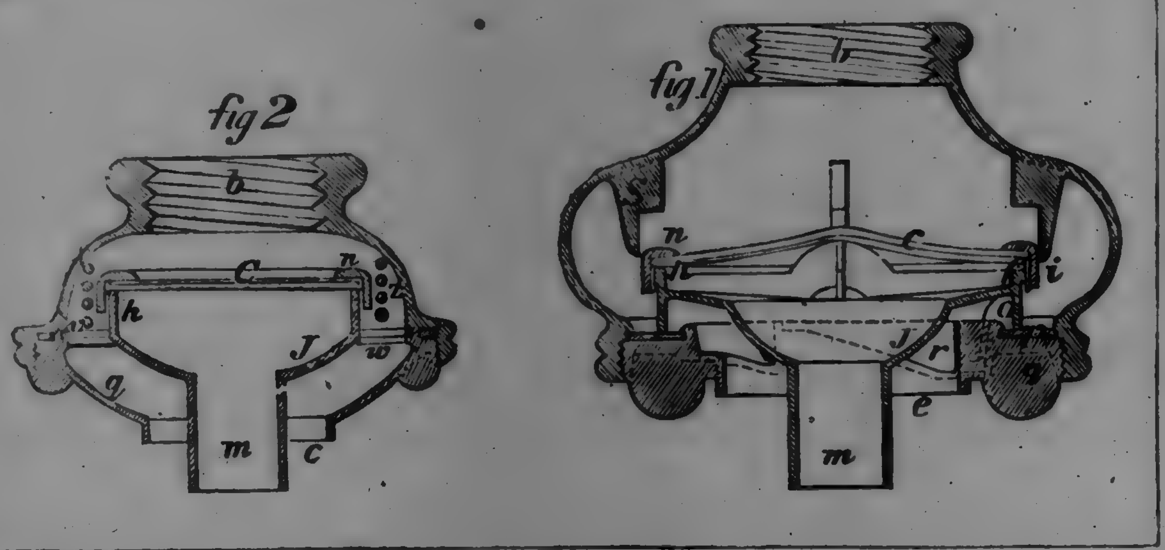

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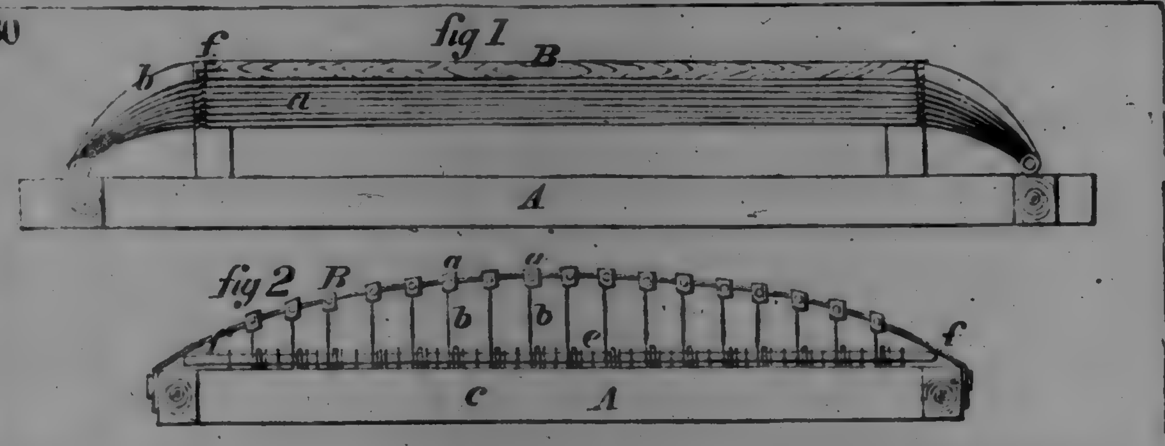

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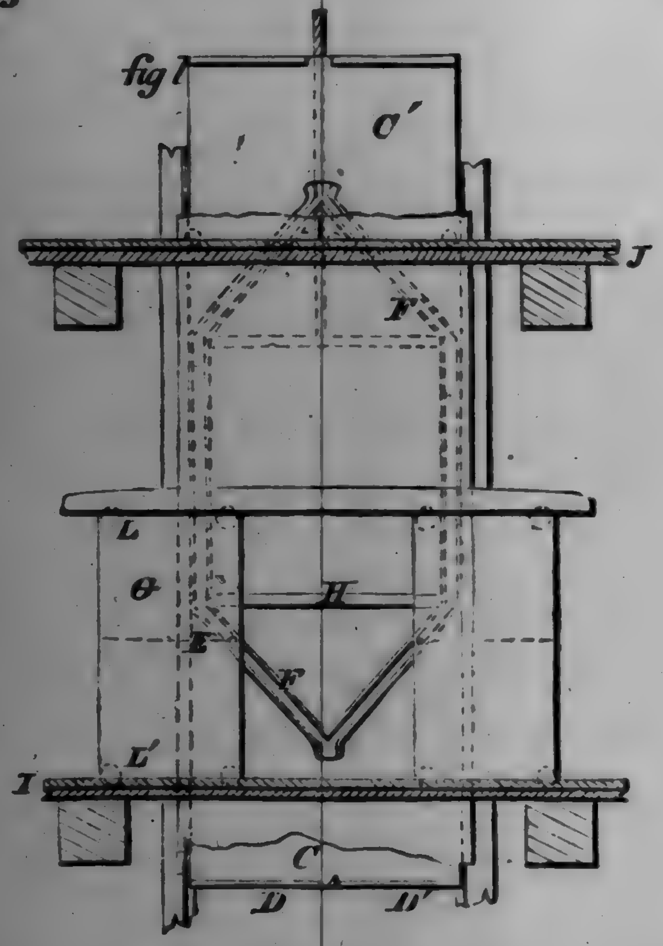

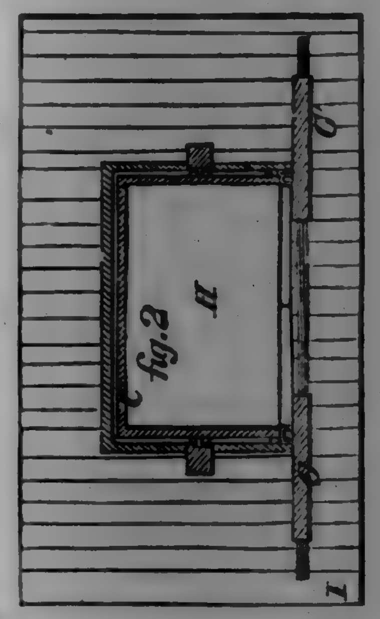

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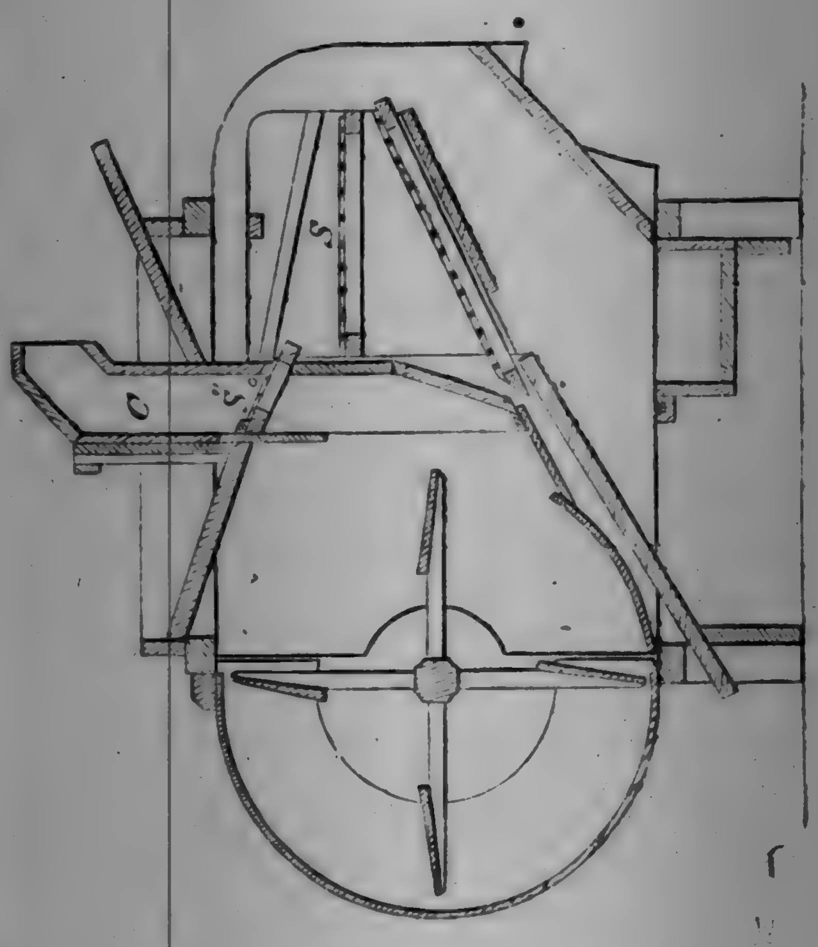

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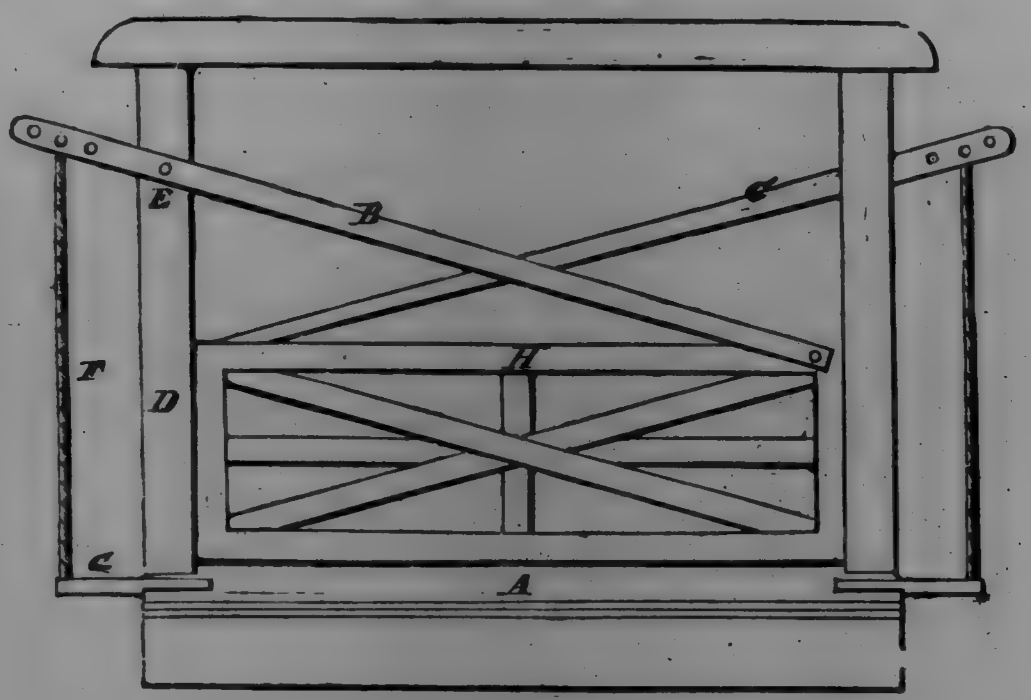

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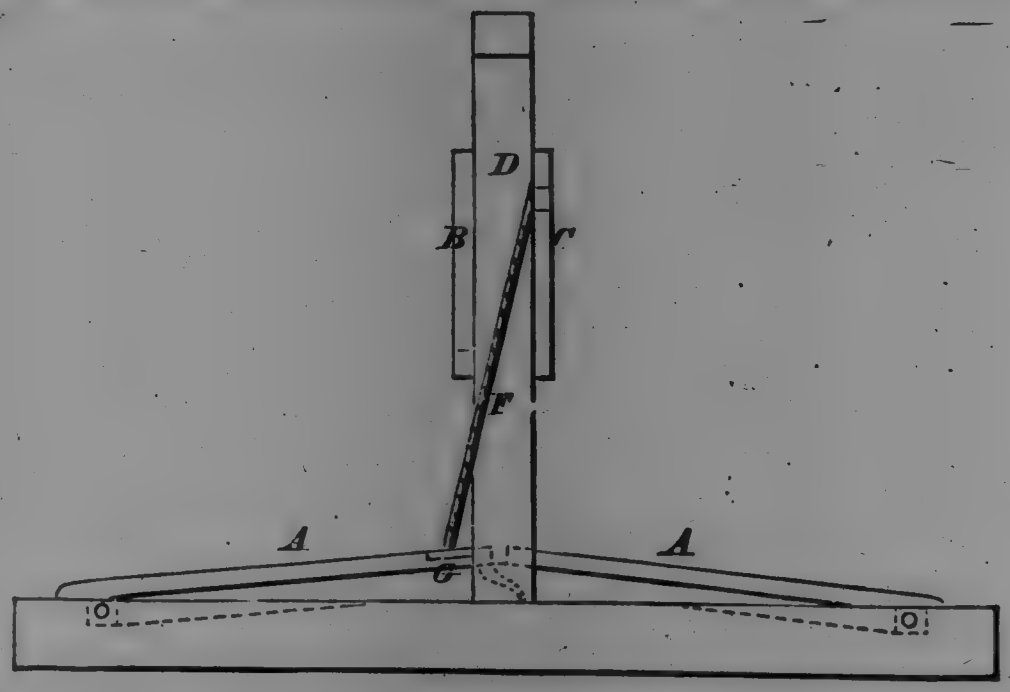

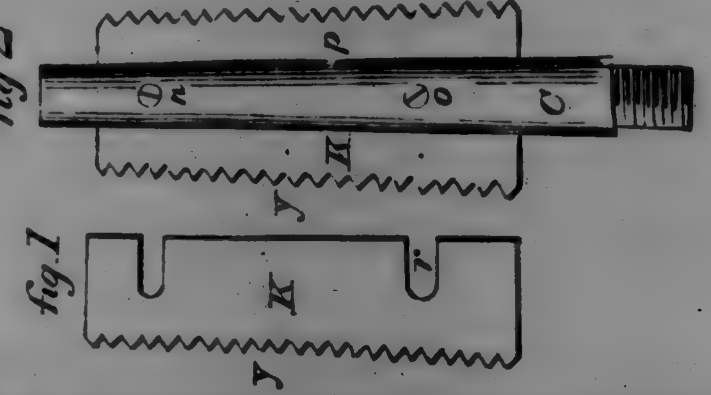

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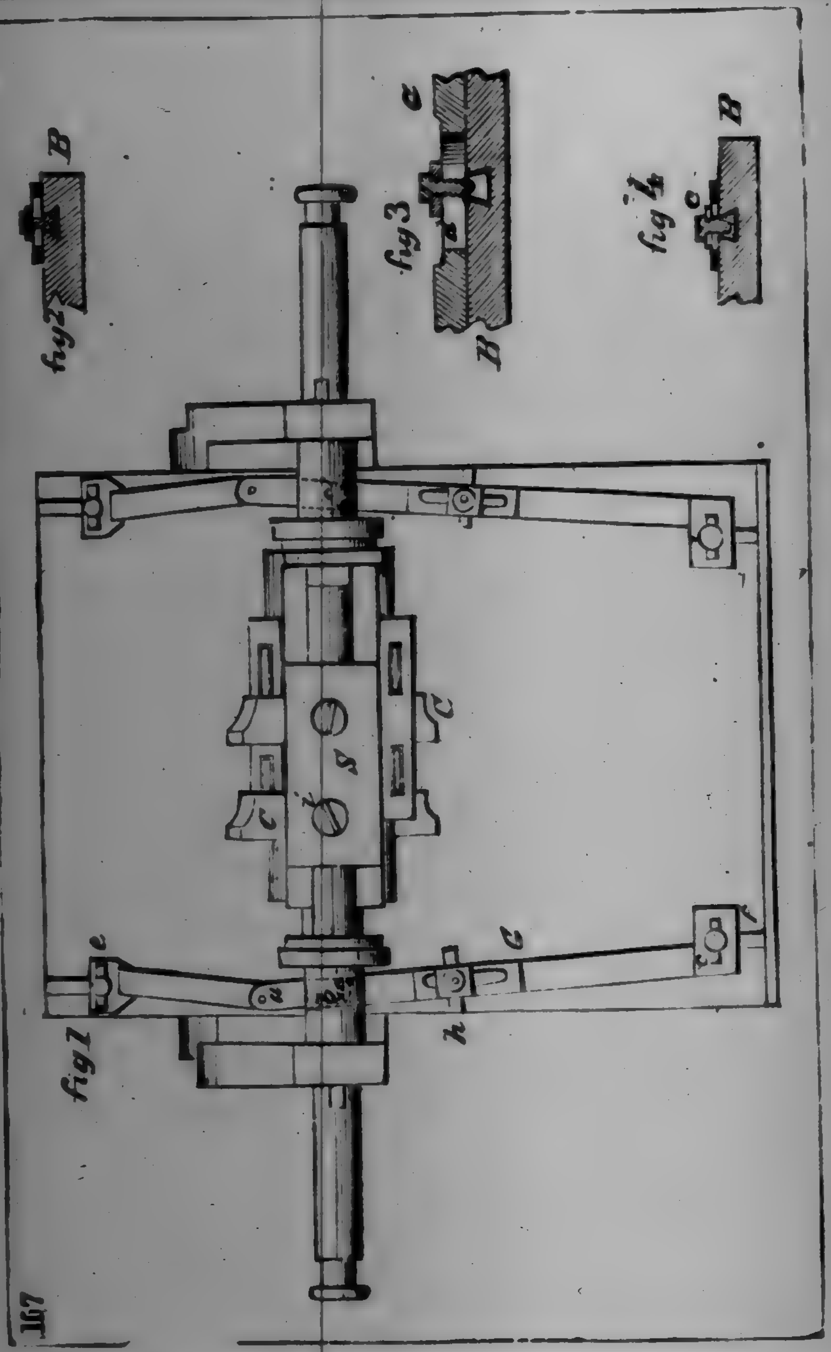

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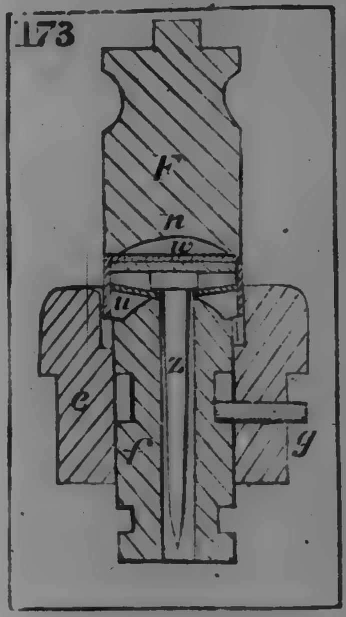

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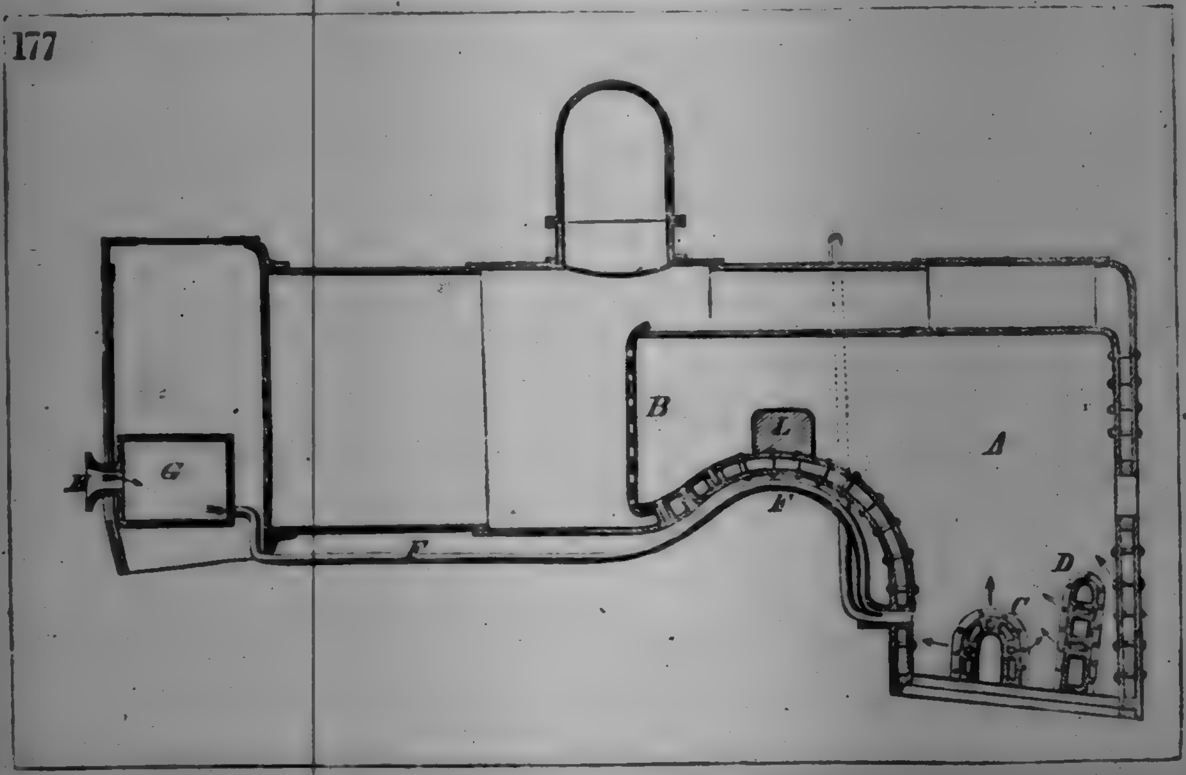

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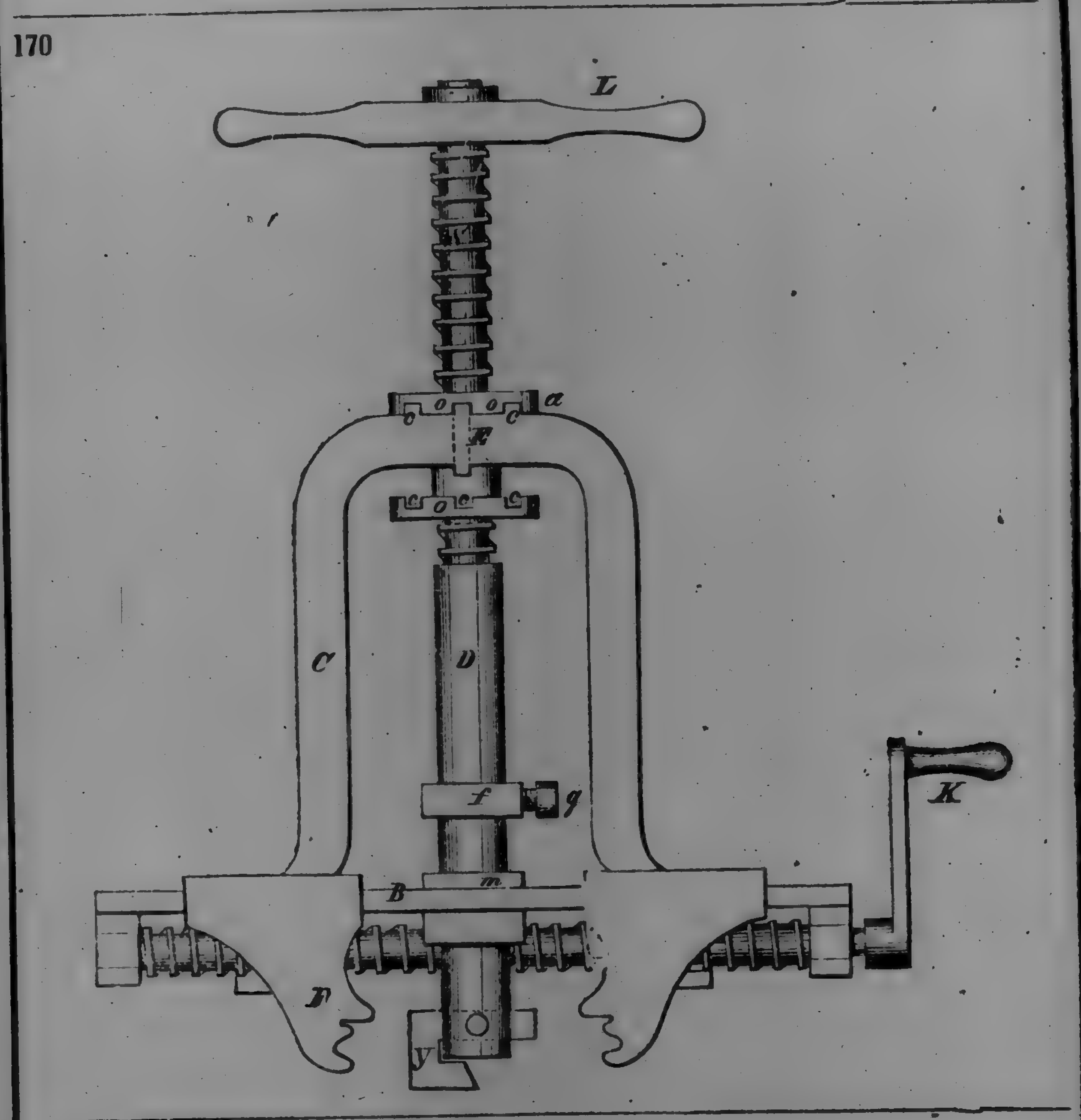

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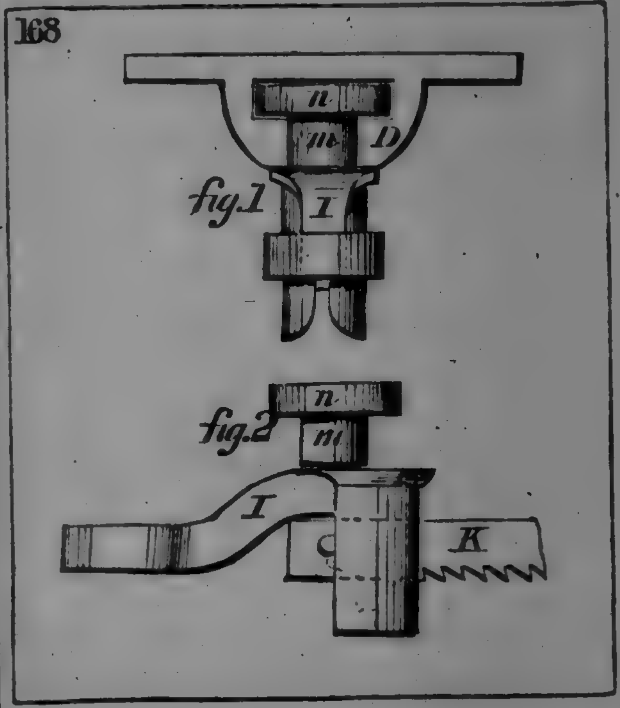

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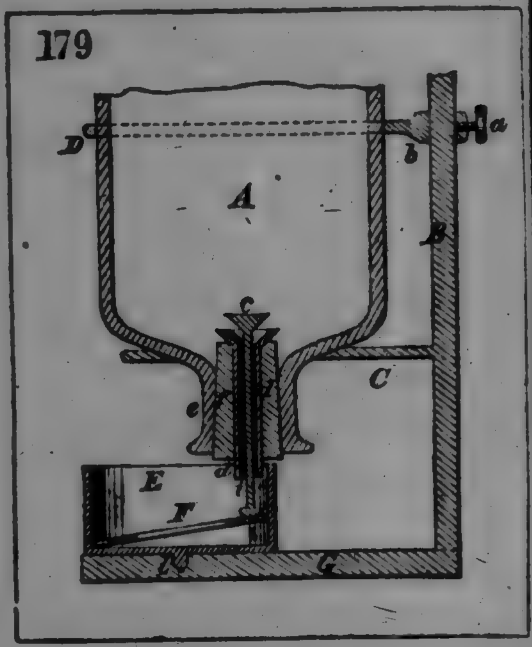

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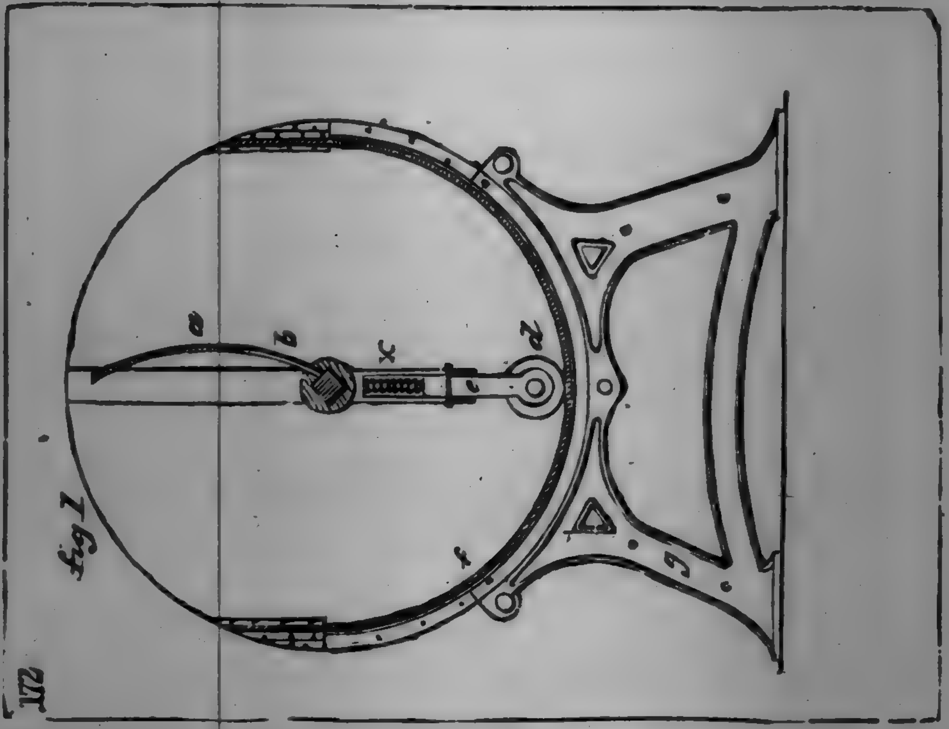
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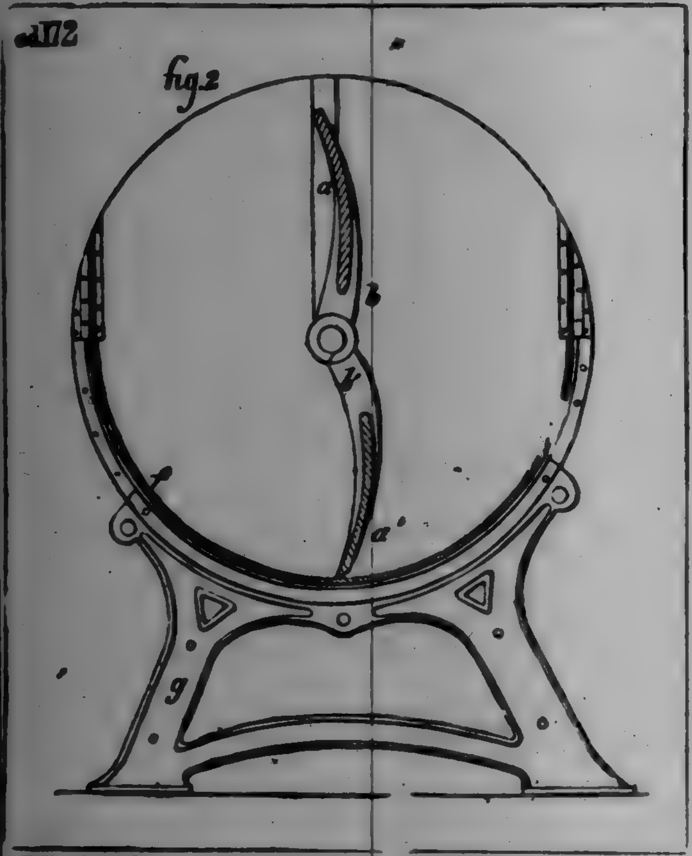
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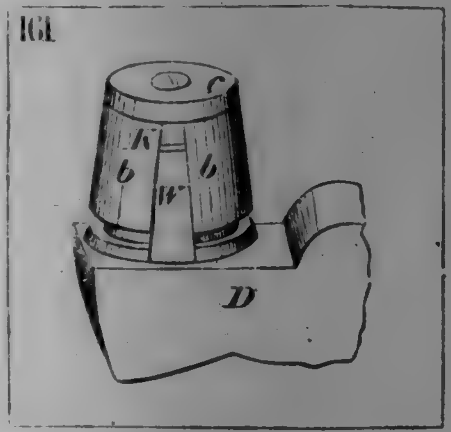
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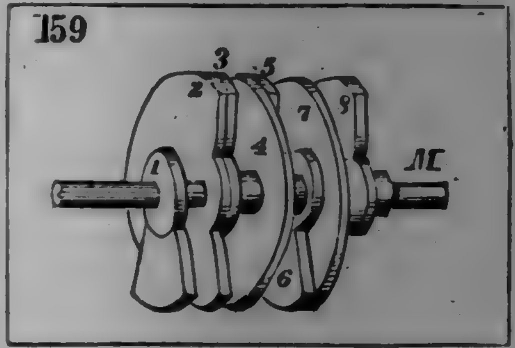
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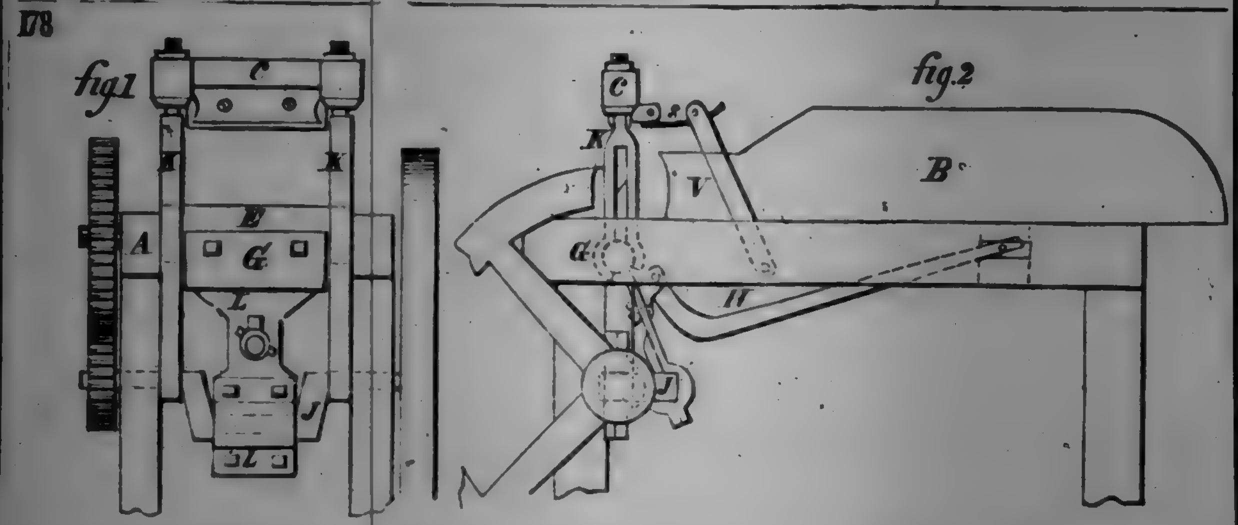
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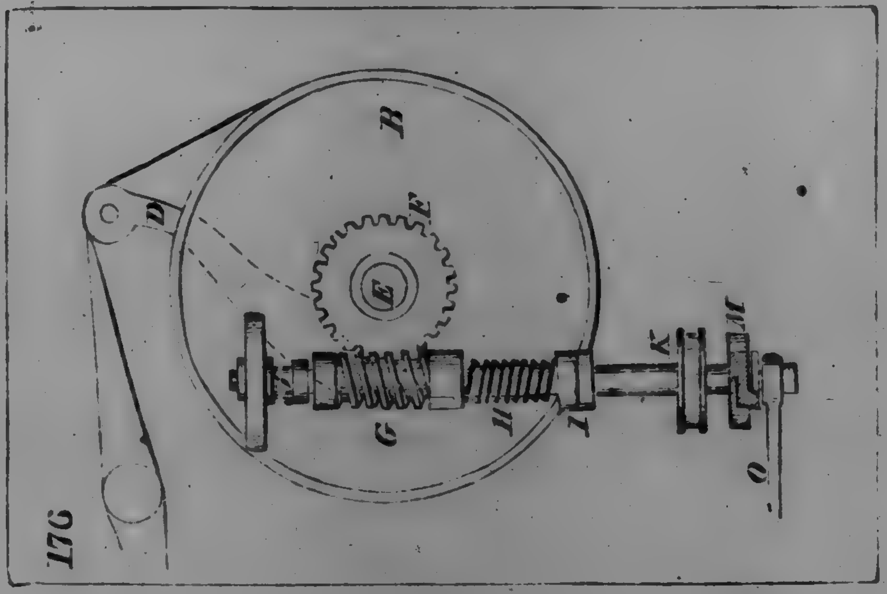
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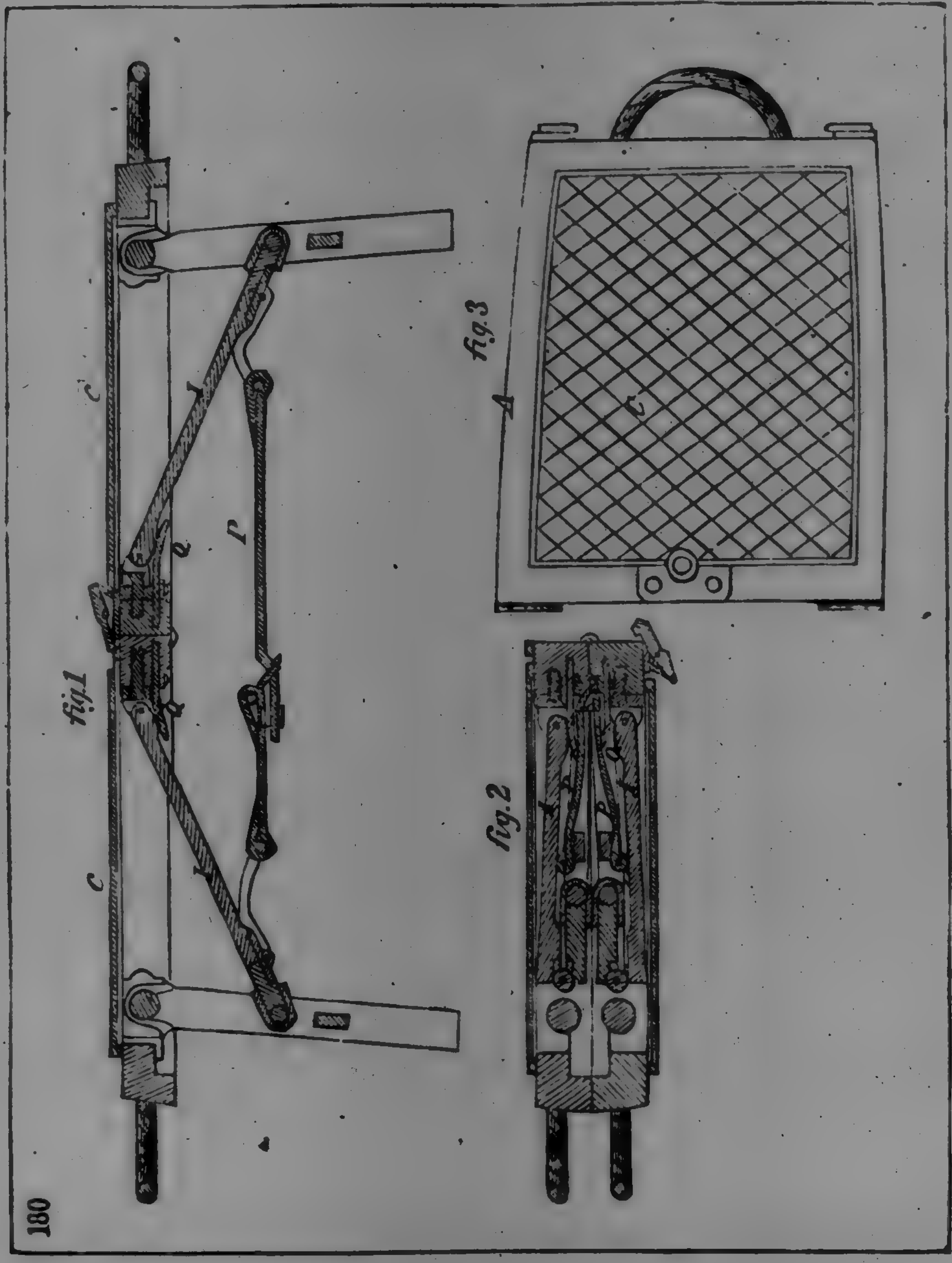
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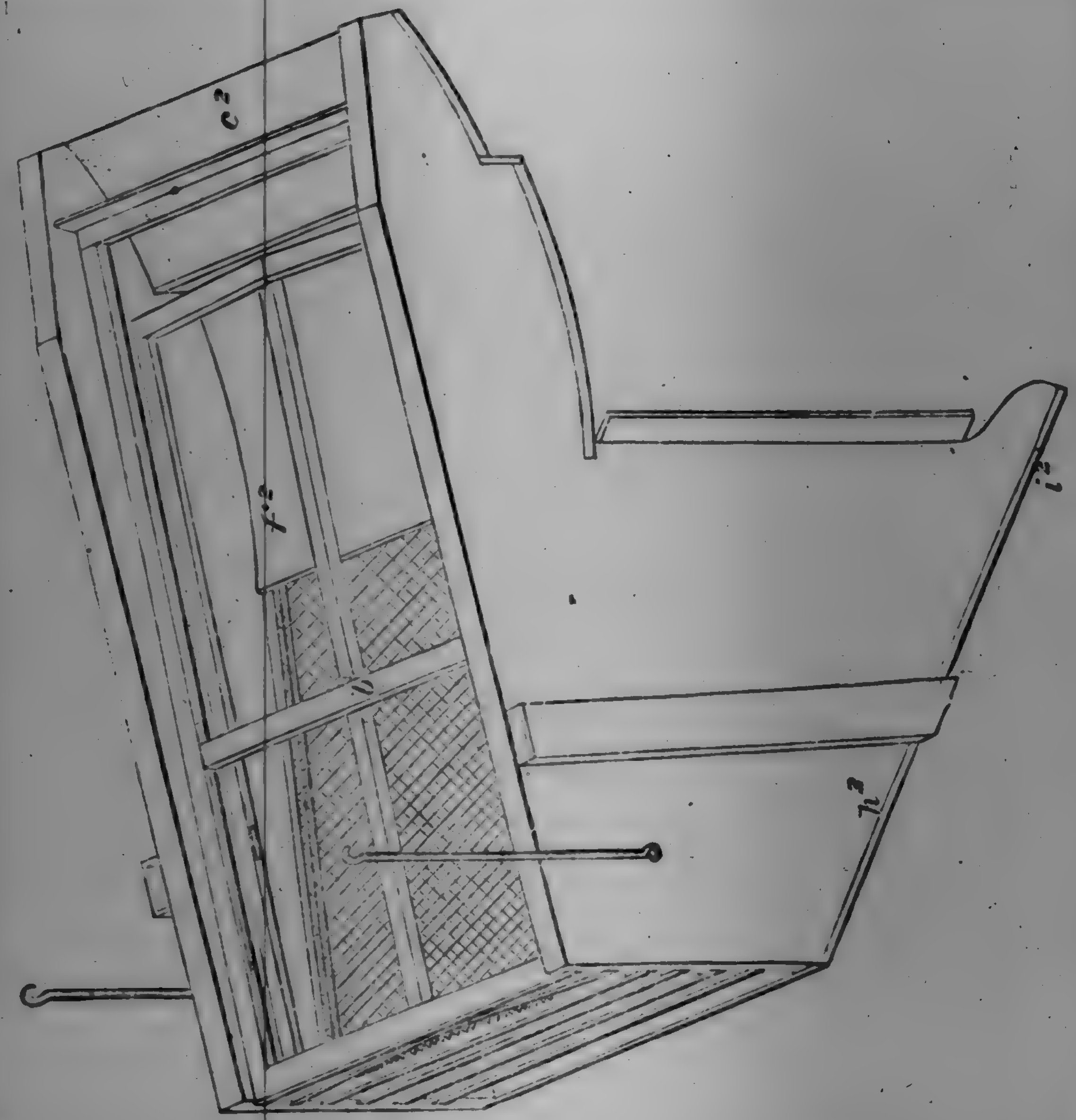

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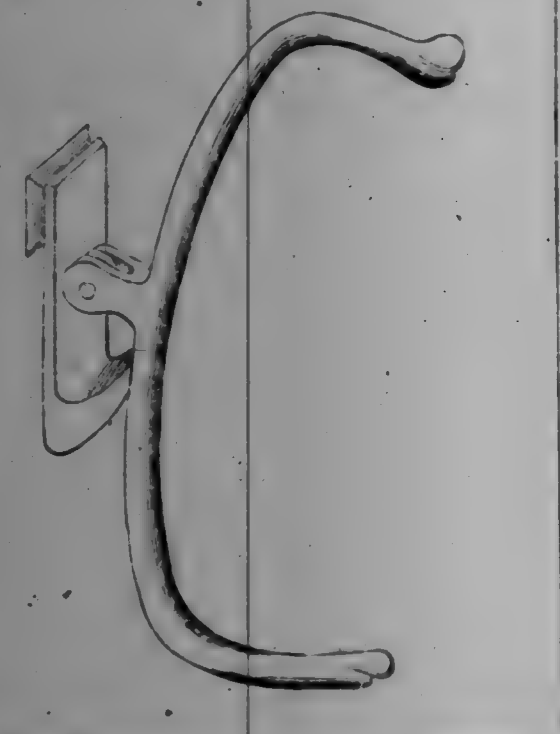

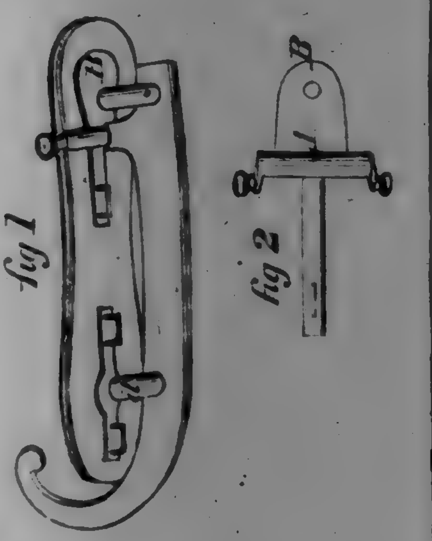

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ADDITIONS AND CORRECTIONS.

ADDITIONAL DESCRIPTIONS AND CLAIMS.

I.—AGRICULTURE.

No. 18,604.—**Philip C. Rowe**, of Boston, Mass.—*Improvement in Mode of Protecting Trees from Canker Worms, &c.*—Patent dated November 10, 1857.—The claim and engravings explain the nature of this invention.

Claim.—The inventor says: I am aware that for such purposes an encircling plate or roof has been applied around the trunk of a tree; also, that cotton batting or loose fibrous material has been wound around and fixed to the body of a tree; consequently, I do not claim such means of preventing the ascent of canker worms.

But I claim my improved tree protector, made as described, viz., with the encircling roof or cover of metal or other suitable material, and one or more circular or surrounding fringes suspended from the said roof and around the tree, substantially as described.

V.—CALORIFICS.

No. 18,883.—**George Griggs**, of Roxbury, Mass., assignor to himself and **William A. Bullard**, of Dedham, Mass.—*Improvement in Locomotive Furnaces.*—Patent dated December 15, 1857.—The claim and engravings explain the nature of this invention.

The inventor says: I do not claim placing a hollow or water space fire bridge within a locomotive or other furnace; as such bridge, in whatever position or under whatever arrangement it may be used, will not accomplish the end which I have in view.

Neither do I claim the use of fire bridges of fire-brick, either with or without perforations, except when such bridges are arranged substantially as set forth.

But I *claim* the described arrangement of a fire-brick arch or shelf attached to the rear of a furnace, and extending horizontally or nearly so beneath and in front of the tube sheet, and over the fire towards the fire door, in such a manner as to form a combustion chamber immediately in front of the tube sheet, in which the smoke and gases, after passing over the heated surface of the bridge, are consumed, as set forth.

VII.—NAVIGATION.

No. 16,965.—Joel Bryant, of Brooklyn, N. Y.—*Improvement in Hoisting Winches for Shipboard.*—Patent dated April 7, 1857.—This invention consists in constructing windlasses or winches with a sheave or pulley A on the axle *b*, and inside of the boss head C of said windlasses, and operating in connexion with other pulleys, 1, 2, 3, operated by said windlass or the tackle connected therewith, for forming a combination of mechanical forces, for a purchase for hoisting the sails of vessels or their cargo, and for all similar and such like purposes.

The inventor says: I do not claim the invention of windlasses or winches for hoisting the sails of vessels, or for any other purpose.

Neither do I claim any of the parts separately or disconnected from each other.

But I *claim* the construction and use of windlasses or winches having a sheave-pulley or wheel set on the axle of the said windlasses or winches back of their boss or head, and connecting and operating with other sheaves or pulleys, operated by the said windlasses or winches, or by the tackle connected therewith, for hoisting the sails of vessels, and for such like purposes, substantially as described and set forth.

No. 17,016.—Robert Griffiths, of London, England.—Patent dated April 7, 1857.—The shanks *c* of the propeller blades *d* are secured within the boss *a*, and the arms *e* of said shanks are fitted to an inner hub *f*, which slides on the propeller shaft *b* and acts against a collar *i*, which is connected to the governor spring *k* inside the vessel by means of a rod *l*. Thus the position of the propeller blades is regulated according to the resistance they encounter in the water.

Claim.—Making propellers with an enlarged boss on the shaft to which the blades are secured, extending, say, to about one-third of the entire diameter substantially as specified. And this I *claim* in contradistinction to the solid hub of a diameter merely sufficient for strength as heretofore employed; whereby I avoid the centrifugal or broken action of the water near the centre, which is known to be prejudicial to the propelling action of the blades; and by which, also, I avoid the resistance due to the action of the blades near the centre, where they otherwise would be in a plane nearly coincident with the plane of the axis of the shaft.

Also, in combination with an enlarged boss, substantially as discribed, the method of connecting the blades therewith by means of a shank or stem on the blades fitted to and capable of being turned in the said boss, to adjust the pitch of the blades subtantially as and for the purpose specified.

Also, the adjustment of the pitch of the propeller by the connexion of the propeller blades with the enlarged hollow boss or hub and the self-adjusting apparatus, substantially as specified.

Also, in combination with the enlarged hollow boss or hub, the blades narrowed towards their outer ends, and the round shank attachment to the hub as specified.

No. 17,085.—George Gilmour, of Chelsea, Mass.—*Improvement in Messenger Shackle Blocks.*—Patent dated April 21, 1857.—In applying this shackle block to a cable chain under water, the roller B is first removed from the parts c by withdrawing bolt E so as to enable the chain to enter the passage D; the roller B is then restored to its place, and the block is lowered down on the chain, the pressure of the chain against pawl *b* causing said pawl not only to slip freely on it, but to raise parts c so as to facilitate the passage of the block on the chain. As soon as the block has attained the required depth, the purchase rope may be operated so as to raise the block, causing pawl *b* to so pass between the links of the chain and rest against the roller B as to firmly clutch the block to the chain.

Claim.—The said messenger shackle block, or combination and arrangement of the sheaves or pulleys, the forked pawl, the rollers, and the chain space or passage, substantially as specified.

Also, hinging or jointing the parts *c c* and the pawl to the remainder of the frame, in order that the roller and pawl may be turned towards the sheaves of the pulley, as specified.

IX.—LAND CONVEYANCE.

No. 16,696.—John Seely, of Buffalo, N. Y.—*Improvement in Floating Sectional Dry Docks.*—Patent dated February 24, 1857.—As the water is discharged, the dock would be liable to sway to and fro, and rise unlevel. This is to be prevented by the use of the braces K, which turn upon centres which are in line with the centres of the tubular hinges *a a b*.

The inventor says: I do not intend to be limited to the particular dimensions given of the several parts of my improvements, as these dimensions and proportions may be varied as circumstances may demand. I do not intend to be limited to the use of a dip wheel for discharging the water from the docks, when circumstances shall render it more favorable to use pumps for the same purpose.

I do not claim the several parts described except the tubular hinges, when used independent of the several combinations described.

First. I *claim* the combination of the conducting pipe *e c d* with the tubular hinges *a a b*, and sectional dock D, substantially as set forth.

Second. I claim the combination of the parallel braces K K turning upon joints *t t*, with the floating docks D D and the wheel pit W, for the purposes set forth.

XXI.—WEARING APPAREL.

No. 17,573.—Horace Harris, of Newark, N. J.—*Improvement in Safety Pockets.*—Patent dated June 16 1857.—The chains *h* are secured within the lining of the garment, and are for the purpose of preventing the pocket from being cut out. The pocket can be opened by pulling chain F, which will withdraw clasp I from wire *c*; and the pocket is shut by the simple pressure on it, which will bring wire *c* within clasp D, the spring E serving to press said clasp on the two wires which constitute the mouth frame of the pocket.

The inventor says: I am aware that Joseph Patton has a patent for "spring bolt and catch" for fastening "plates" connected with pockets. I do not use or claim any of his devices.

I *claim* wire frame with the spring *c* for throwing it open, constructed in the manner described.

XXII.—MISCELLANEOUS.

No. 17,179.—John A. Winslow, of Roxbury, Mass.—*Improvement in Skates.*—Patent dated April 28, 1857.—The nature of this invention will be understood by reference to the claim and engraving.

Claim.—The application of a second metal runner to the skate, which being placed on the bottom, outside of the central line of axis, and the runner in the ordinary skate, which lies along that line, removed to a correspondent position on the other side, completes the improvement.

CORRECTIONS.

I, p. 194, insert: ***Trees, mode of protecting from worms.***—**Philip E. Rowe.—Boston, Mass.—November 10, 1857.**

Vol. I, p. 231, insert: *Dry dock, floating sectional.*—John Seely, Buffalo, N. Y.—February 24, 1857.

297, strike out description 18,497, which will be found in its proper place. And so of the rest.

302, strike out description 17,797.
303, strike out description 18,326.
314, transfer description 18,652 to p. 439.
329, for Aurora, N. Y., read Avon, N. Y.
345, strike out description 18,997.
353, strike out description 16,731.
358, strike out description 1 7,355.
367, strike out description 18,140.
370, strike out description 18,109.
374, for Silas T. Randall, read Silas G. Randall.
380, strike out description 18,525.
383, strike out description 18,594.
391, for Jaockson Grham, read Jackson Gorham.
398, for Hardenburg, read Hardenbergh.
398, for Henlings, read Heulings.
430, strike out description 16,864.
441, strike out description 18,458.
449, strike out description 17,642.
456, strike out description 17,792.
468, for Snead, read Smead.
469, strike out description 18,582.
479, for Page, read Paye.
482, for Browne, read Bourne.
498, for Snead, read Smead.
522, for Aperly, read Apperly.
528, for Cromwell, read Cornwall.
Vol. II, p. 51, strike out description 17,017.
55, strike out description 18,085.
56, strike out description 16,995.
300, for 16,665, read 16,655.
348, for 16,374, read 16,347.
357, for 16,566, read 16,556.
503, strike out description 17,553.
521, strike out description 17,147.

Note.—In instances other than those here noted, where a name is spelt differently in the Lists and in the Descriptions, the correct spelling will be found in the Descriptions.

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650	Attaching Extra Topsails to Vessels	II, 61	III, 329
651	Gas Retorts	I, 599	III, 197
652	Machinery for Excavating Rock	II, 98	III, 379
653	Fastening Skates	II, 522	III, 903
654	Self-Disengaging Car-Coupling	II, 140	III, 429
655	Device to allow Circular Saws end play	II, 300	III, 640
656	Boat Oar	II, 41	III, 306
657	Manufacturing Spinning Flyers	I, 576	III, 158
658	Machinery for Harvesting Grain and Grass	I, 341	II, 615
659	Machine for Splitting Shoe Pegs	II, 358	III, 721
660	Harness for Horses	II, 350	III, 728
661	Securing Hubs on Axles	II, 134	III, 422
662	Feed-Water Apparatus to Steam-Boilers	II, 6	III, 257
663	Machine for Fitting Gas-Pipe	I, 485	III, 85
664	Damper Regulators for Steam Boilers	II, 6	III, 258
665	Electric Telegraph	II, 81	III, 356
666	Machine for Paring Apples	II, 363	III, 744
667	Machine for Cutting Vegetables	II, 396	III, 778
668	Operating Valves of Steam-Engine	II, 36	III, 300
669	Method of Raising Water	II, 197	III, 502
670	Boot-Crimping Machine	II, 343	III, 739
16, 671	Sash-Fastener	I, 489	III, 77
16, 672	Tile-Machine	II, 341	III, 693
673	Curtain Fixtures	II, 379	III, 757
674	Varnish-Can	II, 514	III, 900
675	Securing Panels of Field Fences	II, 104	III, 388
676	Keeper for Right and Left Hand Door-Locks	I, 466	III, 53
677	Hand Seed-Planter	I, 371	II, 698
678	Hinge	I, 448	III, 36
679	Grinding Inner Surface of Cast-Iron Kettles	I, 454	III, 42
680	Cauterizing-Syringe	II, 496	III, 885
681	File-cutting Machine	I, 440	III, 27
682	Combining Hydrogen and Wood Gas	I, 595	III, 198
683	Many-Chambered Rotating Breech Fire-Arm	II, 478	III, 878
684	Elastic Cap for Sealing Cans and Bottles	II, 371	III, 753
685	Gig-Mills for Napping Cloth	I, 511	III, 114
686	Supplying Upper Stories of Houses with Water	II, 197	III, 502
687	Marking-Slates	II, 339	....
688	Casting Skeins for Wagons	I, 430	III, 5
689	Photographic Glass Holder	II, 425	III, 814
690	Manufacture of Iron and Steel	I, 453	III, 40
691	Calk for Horse Shoes	I, 451	III, 33
692	Iron Pavement	II, 112	III. 400
693	Steam-Boiler	II, 2	III, 252
694	Cordage-Machine	I, 513	III, 118
695	Saw-Filer	I, 489	III, 60
696	Floating Sectional Dry-Docks	III, 925	III, 371
697	Saw-Set	II, 283	III, 621
698	Grain-Separator and Straw-Carrier	I, 412	II, 759
699	Manufacturing Ribs for Cotton-Gins	I, 518	III, 116
700	Solar Camera	II, 408	III, 799
701	Hanging the Sieves of Grain Separators	I, 412	II, 758
702	Metallic Lathing	II, 110	III, 396
703	[Cancelled]	....	....
704	Shoving-Poles for Steamboats	II, 44	III, 311
705	Operating Mandrel-Cutters in Turning Tapering Sticks	II, 320	III, 681
706	Preparing Alkaline Silicates	I, 613	....
707	Sustaining Friction-Rollers in Ships' Blocks	II, 56	III, 318
708	Casting Plates for Artificial Teeth	II, 497	III, 888
709	Compositions for Shuttle-Drivers	I, 587	III 194
710	Sewing-Machine	I, 556	III, 166
711	Pen and Pencil Holder	II, [illegible]	III, 814
712	Hand-Stamp	II, 454	III, 853
713	Sewing-Machine	I, 556	III, 165
714	Trip-Hammers	I, 446	III, 33
715	Washing-Machine	II, 400	III, 783
716	Lubricating Fire-Arms	II, 477	III, 873
717	Churn	I, 300	II, 582
718	Hand Printing-Press	II, 434	III, 823
719	Machine for Cutting Pasteboard for Boxes	II, 512	III, 897
720	Sheep-Shears	I, 413	II, 760
721	Harvester	I, 322	II, 655
722	Potato-Digger	I, 397	II, 735
723	Wind-Wheels in Self-Revolving Adjusting Frames	II, 205	III, 512
724	Making Tire for Railway Car-Wheels	II, 146	III, 431
725	Circular Sawing-Mill	II, 297	III, 646
726	Machine for Harvesting Standing Corn	I, 344	II, 619
727	Chronometer Escapement	II, 68	III. 337
728	Bridge-Trusses	II, 86	III, 361
729	Seed-Planter	I, 375	II, 697
730	Harvester	I, 322	II, 616
731	Hand-Stamp	II, 454	III, 856
16, 732	Machine for making Axes	II, 530	III, 3

No.	Invention or Discovery.	Text.	Plates.
16,733	Screw-Wrench	I, 505	III, 108
734	Weavers' Shuttles	I, 575	III, 186
735	Raker for Reaping-Machines	I, 404	II, 741
736	Basin-Cock	II, 172	III, 468
737	Machine for Husking Corn	II, 528	II, 668
738	Photographic Plate-Holder	II, 426	III, 815
739	Mastic Roofing Compounds	II, 120	....
740	Machine for Husking Corn	I, 354	II, 669
741	Curtain-Rollers	II, 381	III, 764
742	Shingle-Machine	II, 307	III, 653
743	Machine for Composing Types	II, 457	III, 854
744	Machinery for Grinding Card-Cylinders	I, 507	III, 116
745	Sewing-Machine	I, 552	III, 160
746	Machine for Bevelling and Jointing Staves	II, 315	III, 672
747	Generating Steam	II, 27	III, 281
748	Centrifugal Friction Clutch	II, 228	III, 539
749	Lock	I, 461	III, 46
750	Soap Mixture	I, 614	....
751	Washing-Machine	II, 400	III, 786
752	Manufacture of Tin Pans	II, 394	III, 780
753	Projectile	II, 486	III, 878
754	Mould Candle Machine	I, 585	III, 194
755	Projectile for Rifled Cannon	II, 487	III, 877
756	Operating Valves of Hydraulic Engines	II, 182	III, 476
757	Cast-Iron Pavement	II, 112	III, 399
758	Machine for Husking Corn	I, 354	II. 656
759	Door-Spring	I, 438	III, 20
760	Melodeon	II, 414	III, 805
761	Portable Fire-Arm	II, 479	III, 869
762	Guide-Wheel for Railroad Cars	II, 156	III, 448
763	Harvester	I, 322	II, 623
764	Machine for Hulling and Scouring Wheat	I, 346	II, 665
765	Operating Valves for Steam Engines	II, 35	III, 298
766	Devices for Aging Liquors	I, 605	III, 207
767	Metallic Roof	II, 119	III, 406
768	Back Plates for Fireplaces and Grates	I, 624	III, 220
769	Reflectors for Locomotive and other Lamps	I, 639	III, 231
770	Mastic Roofing Materials	II, 121	....
7.	Fluxes for Treating Alloys	I, 582	....
772	Seeding-Machine	I, 406	II, 758
773	Ships' Steering Apparatus	II, 56	III, 325
774	Ships' Capstans	II, 45	III, 309
775	Machine for Swaging Iron	I, 455	III, 41
776	Nautical Alarm	II, 39	III, 304
777	Machine for Reducing Boards to Uniform Thickness	II, 255	III, 576
778	Pointing and Threading Screws	I, 493	III, 94
779	Stop-Motions for Steam Engines	II, 14	III, 272
780	[Suspended]	....	....
781	Cut-Offs of Steam Engines	II, 11	III, 261
782	Machine for Grinding Saws	II, 304	III, 656
783	Manufacture of Felt Cloth	I, 511	....
784	Casting Plates for Artificial Teeth of Alloys	II, 498	....
785	Converting a Lifting into a Suction and Forcing Pump	II, 184	III, 482
786	Melodeon	II, 415	III, 809
787	Rock Drill	II, 96	III, 375
788	Harvester	I, 322	II, 654
789	Machine for Harvesting Grain	I, 341	II, 655
790	Machinery for Making Wire-Rope	I, 502	III, 102
791	Devices for Raising or Lowering Farm Gates	II, 107	III, 393
792	Escutcheon for Key Holes	II, 532	III, 39
16,793	Machine for Coiling Steel Springs	I, 497	III, 104

No.	Invention or Discovery.	Text.	Plates.
16,794	Machine for Shearing Steel Plates	I, 497	III, 100
795	Operating Saw-Mill Dogs	II, 281	III, 616
796	Lubricators for Steam Engine Cylinders	II, 216	III, 521
797	Discharging Cartridges from Breech-Loading Fire-Arms	II, 475	III, 870
798	Enamelling Cast Iron	I, 454	....
799	Fire-Proof Stone	II, 340	....
800	Forming the Curved Surface of Wooden Chair Seats	II, 258	III, 580
801	Hydraulic Jack	II, 182	III, 477
802	Arrangement of Carriage Springs	II, 149	III, 439
803	Machine for Cutting Screws	I, 492	III, 81
804	Roller for Bending Sheet Metal	I, 471	III, 56
805	Carpenters' Plane	II, 271	III, 602
806	Preventing Dust, &c., from Entering Railroad Cars	II, 157	III, 449
807	Steam Spade	I, 416	II, 763
808	Guard for Breast Pins	II, 407	III, 796
809	Valve Gear of Direct Action Steam Engines	II, 32	III, 291
810	Fluid Gates or Faucets	II, 176	III, 471
811	Chuck for Watchmakers' Lathe	II, 461	III, 843
812	Table-Gauge for Circular Sawing Machines	II, 294	III, 639
813	Supporting the Tongues of Coaches	II, 162	III, 454
814	Circular Sawing Machine	II, 286	III, 622
815	Grain Cradle	I, 318	II, 611
816	Operating Splitting-Knife in Hoop-Pole Machines	II, 261	III, 587
817	Stamping Figures on Carpenters' Squares	II, 314	III, 671
818	Self-Regulating Wind-Wheel	II, 204	III, 509
819	Bomb for Killing Whales	II, 462	III, 862
820	Device for Lubricating the Spigot of Gas Cocks	I, 633	III, 229
821	Second Anchor Shackle	II, 40	III, 304
822	Enema-Giving Apparatus	II, 491	III, 886
823	Machinery for Felting Hat Bodies	I, 524	III, 132
824	Power Loom	I, 540	III, 151
825	Lard Lamp	I, 638	III, 223
826	Rotary Printing Press	II, 444	III, 835
827	Veneering the Walls of Buildings	II, 129	III, 415
828	Telegraphic Repeater	II, 80	III, 353
829	Bill-Holder	II, 404	III, 796
830	Gas Generator	I, 591	III, 207
831	Hinge	I, 447	III, 33
832	Piano-Forte Action	II, 429	III, 816
833	Machinery for Cleaning and Separating Cotton, Wool, Fur, and other Fibrous Materials	I, 518	III, 122
834	Machine for Stuffing Horse Collars	II, 349	III, 731
835	Hernial Truss	II, 499	III, 888
836	Harvester	I, 323	II, 646
837	Printing Press	II, 444	III, 859
838	Cleaning Fibrous Materials	I, 522	....
839	Brick-Machine	II, 328	III, 713
840	Harvester	I, 323	II, 676
841	Photographic Plate Vise	II, 427	III, 815
842	Rope Manufacture	I, 551	III, 158
843	Machine for Paring Apples	II, 364	III, 745
844	Screw Wrench	I, 505	III, 103
845	Compensating Local Attraction of Needle	II, 57	III, 324
846	Fire-Arm	II, 471	III, 866
847	Convertible Cider Mill	II, 235	III, 552-3
848	Construction of Gas-Burner	I, 633	III, 229
849	Machine for Planing Tapering Staves	II, 316	III, 676
850	Sewing-Machine	I, 557	III, 186
851	Cast Iron Car-Wheels for Railroads	II, 145	III, 431
852	Burner of Burning-Fluid Lamps	I, 637	III, 223
16,853	Cutting and Bending Sheet Metal	I, 470	III, 62

No.	Invention or Discovery.	Text.	Plates.
16, 854	Reciprocating Circular Sawing-Machines	II, 293	III, 637
855	Mowing-Machines	I, 358	II, 673
856	Metallic Seals	II, 453	III, 847
857	Machine for Graduating Carpenters' Squares	II, 313	III, 669
858	Machine for Making Rope or Cordage	I, 552	III, 161
859	Comb	II, 501	III, 889
860	Piston for Muzzle-Loading Gun	II, 483	III, 877
861	Hand Printing Press	II, 442	III, 838
862	Baby Walker	II, 508	III, 895
863	Fireman's Mask and Respirator	II, 517	III, 914
864	Machinery for Combing Wool	I, 578	III, 184–5
865	Machine for Combing Fibrous Materials	I, 522	III, 129
866	Harrow	I, 319	II, 612
867	Cordage-Machine	I, 513	III 119,123
868	Casting Railway Car-Wheels	II, 531	III, 10
860	Rotary Pump	II, 191	III, 491–2
870	Manufacturing Cotton-Flannel	I, 515	III, 115
871	Lubricating under Pressure	II, 214	III, 522
872	Shirt Studs	II, 505	III, 893
873	Harvesting-Machine	I, 343	II, 647
874	Weather-Strips for Doors, Windows, &c	II, 92	III, 369
875	Rotary Pump	II, 190	III, 489
876	Operating Double Carriages in Saw-Mills	II, 283	III, 616
877	Clamps for Brooms	II, 369	III, 764
878	Breaking Stone into Regular Forms	II, 340	III, 694
879	Apparatus for making Nitric Acid	I, 581	III, 192
880	Pocket Lantern	I, 643	III. 235
881	Water-Wheel	II, 198	III, 500
882	Preparing Fertilizers	I, 611	
883	Portable Cross-Cut Sawing-Machine	II, 290	III, 629
884	Steam-Brakes for Railroad-Cars	II, 159	III, 451
885	Operating Ships' Windlass	II, 59	III, 326
886	Grappling or Dredging Machine	II, 93	III, 370
877	Mangle	II, 388	III, 776
888	Saw-Mill Dogs	II, 282	III, 618
889	Carpenters' Plane	II, 271	III, 600
890	Rigging Vessels	II, 63	III, 331
891	Attaching Hubs to Axles	II, 135	III, 422
892	Lock	I, 461	III, 44
893	Regulating Velocity of Wind-Wheels	II, 205	III, 510
894	Circular Sawing-Machine	II, 289	III, 627
895	Regulating Velocity of Wind-Wheels	II, 206	III, 507
896	[Suspended]		
897	Smut-Machine	II, 249	III, 570
898	Railroads	II, 116	III, 403
899	[Suspended]		
900	Feeding Drill-Shaft	I, 439	III, 22
901	Plough	I, 384	II, 725
902	Grade Delineators	II, 70	
903	Manufacturing Yarns from Mixed Cotton and Wool	I, 581	III, 183
904	Portable Boat	II, 41	III, 305
905	Steam-Drying Cylinder	I, 623	III, 216
906	Corn-Cultivator	I, 311	II, 605
907	Brick-Machine	II, 328	III, 712
908	Lock	I, 458	III, 45
909	Sleeve Button	II, 500	III, 890
910	Bullet Mould	II, 465	III, 862
911	Rotary Shingle-Machine	II, 310	III, 662
912	Gang Plough	I, 392	II, 725
913	Prairie Plough	I, 394	II, 728
16, 914	Sewing-Machine	I, 557	III, 168

No.	Invention or Discovery.	Text.	Plates.
16, 915	Creasing Plates for Car-Springs	II, 144	III, 434
916	Disengaging Car-Springs from Mandrel	II, 144	III, 433
917	Machine for Manufacturing Shoe-Lasts	II, 358	III, 720
918	Composition for Floor-Cloths	I, 586	
919	Steam-Carriage	II, 149	III, 440
920	Hinge	I, 447	III, 33
921	Corn Harvester	I, 331	II, 645
922	Dry Gas Metres	I, 596	III, 200
923	Machine for Cutting Slots in Clothes-Pins	II, 377	III, 760
924	Machine for Husking Corn	I, 355	II, 666
925	Carriage Top	II, 150	III, 441
926	Bee-Hive	I, 295	II, 581
927	Machine for Making Pasteboard	I, 548	III, 156
928	Machinery for Pressing Water out of Pasteboard	I, 549	III, 154
929	Seed-Planter	I, 375	II, 694
930	Corn-Planter	I, 364	II, 680
931	Securing Bits in their Stocks	II, 254	III, 575
932	Centring and Holding Hubs while being Bored	II, 263	III, 587
933	Harrow	I, 319	II, 609
934	Preparing Yarn for Dyeing and Scouring	I, 580	III, 182
935	Steamboat Capstan	II, 47	III, 313
936	Lathe for Turning Irregular Forms	II, 261	III, 586
937	Steam Plough	I, 396	II, 729
938	Constructing Bit Stocks	II, 254	III, 575
939	Stoves for Railway Cars	I, 655	III, 248
940	Shaping Engines	II, 10	III, 255
941	Raking Apparatus for Harvesters	I, 337	II, 651
942	Baby Jumper	II, 508	III, 894
943	Feathering the Sails of Wind-Mills	II, 202	III, 511
944	Gunpowder Keg	II, 484	III, 876
945	Fluid Metre	II, 176	III, 472
946	Life-Preserving Bedsteads and Sofas	II, 367	III, 749
947	Type Composing and Distributing Machine	II, 456	III, 848–49
948	Machine for Washing Gold	I, 444	III, 29
949	Manufacture of Paper Pulp	I, 547	
950	Manufacture of Paint Brushes	II, 370	III, 753
951	Gas Regulator	I, 597	III, 200
952	Machine for Printing from Engraved Plates	II, 436	III, 825
953	Form for Making Wooden Slats, &c., into Baskets	II, 326	III, 671
954	Cutting the Throats of Carpenters' Planes	II, 273	III, 604
955	Table Knives	I, 457	III, 43
956	Enema Syringe	II, 496	III, 886
957	Harvester	I, 323	II, 632
958	Clinching Spikes	I, 496	III, 96
959	Steam Boiler	II, 2	III, 252
960	Window-Curtain Fixtures	II, 381	III, 762
961	Treating Moss for Mattresses	I, 612	
962	Apparatus for Exhibiting Stereoscopic Pictures	II, 455	III, 851
963	Road-Scraper	II, 118	III, 405
964	Shingle-Machine	II, 307	III, 657
965	Hoisting-Winches for Shipboard	III, 924	III, 318
966	Folding Window-Blinds	II, 131	III, 418
967	Machine for Making Rivets	I, 486	III, 87
968	Cutting Apparatus for Harvesters	I, 333	II, 622
969	Reefing Sails	II, 53	III, 320
970	Construction of Baskets	II, 509	III, 896
971	Reaping-Machine	I, 403	II, 741
972	Forming Spiral Springs for Chairs, Sofas, &c	II, 376	III, 762
973	Machine for Felting Hat-Bodies	I, 524	III, 136
974	Rotary Pump	II, 191	III, 492
16, 975	Current and Paddle Wheel	II, 200	III, 503

No.	Invention or Discovery.	Text.	Plates.
16,976	[Number altered to 18,969.]	....	....
977	Machine for Cutting Fringes	I, 523	III, 130
978	Gate-Post for Field Fence	II, 107	III, 394
979	Photographic Trays	II, 427	III, 818
980	Smut-Machine	II, 249	III, 569
981	Lamp-Burner	I, 635	III, 227
982	Arrangement of Staging Brackets	II, 124	III, 409
983	Liquid Metre	II, 183	III, 481
984	Harvester	I, 324	II, 641
985	Harvester	I, 324	II, 636
986	Arrangement of Carriage Springs	II, 149	III, 439
987	Securing Legs of Corn and Cob Mills	II, 244	III, 564
988	Corn and Cob Mill	II, 235	III, 554
989	Window Curtain Fixtures	II, 381	III, 760
990	Sound-Boards of Piano-fortes	II, 432	III, 824
991	Trimming Jack	I, 456	III, 43
992	Hawse-Holes for Vessels	II, 66	III, 329
993	Machine for Paring Apples	II, 364	III, 747
994	Paper-Ruling Machine	I, 547	III, 131
995	Strings for Musical Instruments	II, 418	III, 814
996	Field Fence	II, 102	III, 384
997	Wrench	I, 503	III, 104
998	Arranging and Operating Window-Shutters	II, 134	III, 420
999	Gold Separator	I, 444	III, 28
17,000	Veterinary Syringe	II, 496	III, 888
1	Machine for Manufacturing Cylindrical Boxes	II, 257	III, 582
2	Ships' Steering Apparatus	II, 58	III, 325
3	Road-Scraper	II, 118	III, 405
4	Railroad Car-Brakes	II, 138	III, 428
5	Machinery for making Rope	I, 550	III, 160
6	Fixtures for Curtain Rollers	II, 382	III, 764
7	Printer's Composing Stick	II, 435	III, 828
8	Invalid Chair	II, 374	III, 764
9	Working Pumps	II, 193	III, 495
10	Constructing Iron Fences	II, 104	III, 389
11	Construction of Retort	I, 612	III, 210
12	Mill for Cleaning Castings	I, 431	III, 13
13	Car Lock	I, 459	III, 52
14	Machine for Splitting Hoop-Poles	II, 262	III, 587
15	Hemp Brake	I, 529	III, 136
16	Propeller	III, 924	III, 318
17	Boring-Machine	II, 255	III, 576
18	Cooler for Wine, Beer, and other Liquids in Barrels	I, 623	III, 216
19	School Slate	II, 522	III, 909
20	Machinery for Crossing the Fibres of Wool	I, 519	III, 127
21	Preparation of Table Manna	I, 616	....
22	Hot-Air Furnace	I, 629	III, 224
23	Level or Inclinometer	II, 75	III, 349
24	Lifting-Jack	II, 212	III, 517
25	Raking Attachment for Harvesters	I, 339	II, 653
26	Machine for Sawing Shingles	II, 298	III, 645
27	Lifting-Jack	II, 212	III, 518
28	Apparatus for Filtering Liquids	II, 175	III, 470
29	Manufacturing India Rubber Hose	I, 602	III, 204
30	Washing Machine	II, 400	III, 780
31	Reefing Ships' Sails	II, 58	III, 323
32	Revolving Fire-Arm	II. 480	III, 872
33	Forming the Brims of Felt Hats	I, 527	III, 129
34	Hoisting-Bucket for Coal, &c	II, 208	III, 514
35	Gas-Burner	I, 631	III, 219
17.036	Engraved Plate Printing Press	II, 441	III, 833–34

No.	Invention or Discovery.	Text.	Plates.
17,037	Treating Gutta Percha	I, 603	....
38	Expansion Bit	II, 253	III, 574
39	Apparatus for Feeding Fuel to Furnaces	I, 628	III, 218
40	Coating Metals with Silver	I, 472	....
41	Attaching Adjustable Buckets of Water-Wheels	II, 199	III, 500
42	Steam Boiler	II, 3	III, 254
43	Composition for Tanning Hides	II, 359	III, 723
44	Rammer for Rotating-Breech Fire-Arms	II, 477	III, 871
45	Raking Attachment for Harvesters	I, 339	II, 620
46	Preventing Incrustations in Steam Boilers	II, 7	....
47	Wardrobe or Bureau Bedsteads	II, 368	III, 751
48	Molasses Cups	II, 379	III, 770
49	Sewing-Machine	I, 558	III, 169
50	Machine for Drying and Pressing Paper	I, 543	III, 159
51	Boot and Shoe Heels	II, 344	III, 738
52	Ice-breaking Boat	II, 42	III, 304
53	Self-Releasing Doors of Cotton Presses	II, 221	III, 534
54	Flute	II, 412	III, 804
55	Watch	II, 84	III, 348
56	Lime Kiln	II, 336	III, 694
57	Lock and Clasp for Porte-Monnaies	II, 433	III, 857
58	Railroad Car Brake	II, 137	III, 424
59	Curtain Fixtures	II, 380	III, 757
60	Shirt Studs	II, 506	III, 893
61	Machine for Splitting Wood	II, 325	III, 692
62	Machine for Threshing Grain	I, 421	II, 771
63	Attaching Hubs to Axles	II, 135	III, 421
64	Apparatus for Boring Artesian Wells	II, 85	III, 358
65	Winding Machinery for Mines	II, 111	III, 398
66	Baths for Photographic Purposes	II, 427	III, 816
67	Boot Tree	II, 344	III, 723
68	Closing Gas-Retorts	I, 601	III, 203
69	Traps for Relieving Steam Pipes of Water	II, 29	III, 286
70	Door-Spring	I, 437	III, 16
71	Ox Yokes	I, 422	II, 769
72	Knife for Cutting Veneers	II, 321	III, 686
73	Excluding Air from Liquors on Tap	II, 183	III, 479
74	Wasteway in Faucets	II, 174	III, 469
75	Clamping and Unclamping Panels of Field Fences	II, 104	III, 389
76	Cask-Heater	I, 634	III, 227
77	Chimney Damper	I, 620	III, 212
78	Awl-Haft	I, 424	III, 2
79	Gas Regulator	I, 598	III, 201
80	Hand Seed-Planter	I, 371	II, 691
81	Hand Seed-Planter	I, 371	II, 709
82	Bustle	II, 501	III, 890
83	Machine for Blocking Hat Bodies	I, 524	III, 130
84	Machine for Making Rope	I, 551	III, 158
85	Shackle-Block Messenger	III, 925	III, 322
86	Burners for Burning-Fluid Lamps	I, 636	III, 226
87	Tea Kettle	II, 394	III, 794
88	Automatic Rake for Harvesters	I, 343	II, 621
89	Hand Seed-Planter	I, 371	II, 691
90	Portable Apparatus for Illuminating-Gas	I, 595	III, 199
91	Cotton-Cultivator	I, 306	II, 595
92	Hemp-Brake	I, 529	III, 137
93	Hydrant	II, 179	III, 475
94	Carding-Machine	I, 509	III, 111
95	Means for Inhaling Medicinal Agents	II, 495	III, 882
96	Vault-Cover	II, 128	III, 414
17,097	Ventilating Vaults	II, 129	III, 415

No.	Invention or Discovery.	Text.	Plates.
17, 098	Lime-Kiln	II, 336	III, 713
99	Saw-Set	II, 284	III, 615
100	Cooking-Stove	I, 651	III, 247
101	Reefing Sails	II, [illegible]	III, 321
102	Bathing-Apparatus	II, 490	III, 880
103	Instrument for Curling Hair	II, 502	III, 890
104	Shingle-Machine	II, 307	III, 658
105	Smoothing-Iron	II, 387	III, 773
106	Combined-Square, Mitre-Square, and Bevel	II, 313	III, 669
107	Dental Forceps	II, 492	III, 883
108	Securing the Doors of Hay-Presses, &c	II, 223	III, 538
109	Moulds for Castings	I, 430	III, 10
110	Grinding-Saws	II, 303	III, 656
111	Holding the Knives of Spoke-Shaves	II, 312	III, 667
112	Sawing-Machine	II, 287	III, 623
113	Washing-Machine	II, 400	III, 783
114	Dumping Railroad Cars	II, 157	III, 450
115	Machine for Felting Hat-Bodies	I, 525	III, 132
116	Grinding-Mill	II, 243	III, 563
117	Harness-Saddles	II, 351	III, 727
118	Lubricator	II, 215	III, 519
119	Current Water-Wheel	II, 199	III, 499
120	Machinery for Winding Conical Bobbins	I, 506	III, 109
121	Harrow	I, 320	II, 614
122	Surge or Cable Spring	II, 61	III, 329
123	Harvester	I, 324	II, 634
124	Oil-Can	II, 209	III, 514
125	Machine for forming Clay Pipe	II, 338	III, 698
126	Attaching Bolting-Cloths to Reels	II, 228	III, 536
127	Fluid Metre	II, 177	III, 473
128	Blacksmiths' Batteries	I, 425	III, [illegible]
129	Potato-Digger	I, 397	II, 733
130	Stave-Machine	II, 314	III, 686
131	Brick-Machine	II, 329	III, 710
132	Argand Burner	I, 631	III, 219
133	Manufacturing Rawhide Whips	II, 361	III, 722
134	Harvesting-Machine	I, 343	II, 618
135	Apparatus for Binding Grain	I, 317	II, 614
136	Fire-Arm	II, 471	III, 868
137	Constructing Lockets, &c	II, 413	III, 802
138	Sidewalk-Pavement	II, 112	III, 398
139	Lock	I, 461	III, 47
140	Gilding and Ornamenting Metals	I, 498	....
141	Mortising the Stiles for Blind-Slats	II, 270	III, 598
142	Arrangement of Posts in Steam-Cylinders	II, 27	III, 291
143	Fire-Arm	II, 471	III, 867
144	Seed-Drill	I, 313	II, 606
145	Seed-Planter	I, 375	II, 697
146	Engraving Designs on Watch-Cases, &c	II, 410	III, 800
147	Inkstand	II, 412	III, 799
148	Action for Grand Pianos	II, 432	III, 821
149	Machine for Cutting Indexes to Blank-Books	II, 405	III, 813
150	Chronometric Locks	I, 466	III, 56
151	Harvester-Frame	I, 329	II, 614
152	Preparation of Photographic Pictures, Engravings, &c	II, 426	III, 814
153	Saw-Gummer	II, 280	III, 613
154	Atmospheric Pump	II, 196	III, 481
155	Brushes of Saw Cotton-Gins	I, 518	III, 126
156	Submerged Propelling-Wheels	II, 52	III, 320
157	Harvester	I, 324	II, 637
7, 158	Street-Sprinkler	II, 523	III, 914

No.	Invention or Discovery.	Text.	Plates.
17, 159	Churns	I, 300	II, 585
160	Revolving Last-Holder	II, 353	III, 726
161	Securing and Guiding the Boxes of Oil-Presses	II, 222	III, 529
162	Constructing Photographic Baths and Pans	II, 424	....
163	Metallic Canisters for Putting up Paints	II, 514	III, 898
164	Cop-Tubes	I, 512	III, 115
165	Sails and Rigging of Vessels	II, 64	III, 332
166	Washing-Machine	II, 401	III, 780
167	Constructing Letters for Signs, &c	II, 413	III, 806
168	Wind-Mill	II, 201	III, 506
169	Machine for Splitting Wood	II, 324	III, 688
170	Setting Brace-Blocks of Saw-Mills	II, 283	III, 619
171	Machine for Planing Hoops	II, 275	III, 606
172	Tempering Steel Plates	I, 497	III, 107
173	Bomb Lance	II, 463	III, 861
174	Excavator	II, 99	III, 380
175	Machine for Tenoning Blind Slats	II, 318	III, 670
176	Self-Adjusting Sack-Holder	II, 520	III, 901
177	Machinery for Winding Wadding	I, 577	III, 189
178	Railroad Chair Machine	II, 115	III, 401
179	Skates	III, 926	III, 902
180	Washing-Machine	II, 401	III, 795
181	Purifying Oils	I, 607	....
182	Anchor Tripper	II, 46	III, 304
183	Reversing the Chisels of Mortising Machines	II, 269	III, 601
184	Machine for Making Paper Bags	II, 418	III, 809
185	Gauges for Casks	II, 71	III, 343
186	Sewing-Machine	I, 553	III, 159
187	Screw-Cutting Machine	I, 491	III, 85
188	Stuffing-Box	II, 194	III, 496
189	Loom for Weaving Pile Fabrics	I, 538	III,146–49
190	Machine for Cutting Veneers	II, 321	III, 682
191	Adjustable Pole for Carriages	II, 153	III, 443
192	Boat for Duck Shooting	II, 42	III, 306
193	Picker Motion for Looms	I, 540	III, 151
194	Printing Subscribers' Names on Newspapers	I, 452	III, 857
195	Surgical Splint Apparatus	II, 495	III, 884
196	Swells for Melodeons	II, 417	III, 812
197	Nut-Machine	I, 479	III, 62
198	Vault Cover	II, 127	III, 413
199	Vault Cover	II, 128	III, 413
200	Metal-Packed Pistons for Steam Engines	II, 12	III, 262
201	Portable Field Fence	II, 103	III, 387
202	Opening and Closing Gates by Vehicles	II, 108	III, 392
203	Rotary Brick-Machine	II, 333	III, 699
204	Door-Bolt	I, 435	III, 12
205	Reaping and Mowing-Machine	I, 401	II, 680
206	Omnibus Coffer	II, 163	III, 455
207	Straw Cutter	I, 418	II, 766
208	Heating Feed-water Apparatus of Locomotives	II, 23	III, 288
209	Ice-cutting Attachment to Vessels	II, 61	III, 328
210	Uniting Panels of Portable Field Fences	II, 105	III, 388
211	Plough	I, 385	II, 730
212	Construction of Ploughs	I, 391	II, 724
213	Locomotive Engine	II, 9	III, 264
214	Purifying Gutta Percha	I, 601	....
215	Directing the Exhaust of Locomotives	II, 22	III, 268
216	Machine for Making India Rubber Belting	II, 226	III, 537
217	Chain Pump	II, 190	III, 484
218	Violin Attachment	II, 410	III, 841
17, 219	Bed and Gauge to Regulate Tenoning	II, 317	III, 683

No.	Invention or Discovery.	Text.	Plates.
17,220	Brick-Machine	II, 329	III, 702-3
221	Cotton Seed-Planter	I, 370	II, 687
222	Transmitting Motion	II, 245	III, 567
223	Machine for Cutting and Binding Grain	I, 318	II, 612
224	Machine for Turning the Edges of Cloth	I, 512	III, 117
225	Pocket Safes or Fastenings	II, 503	III, 890
226	Self-Reversing Feed Motion for Sawing Mills	II, 297	III, 644
227	Machinery for Napping Cloth	I, 511	III, 115
228	Ships' Hawse-Holes	II, 57	III, 328
229	Wrench	I, 506	III, 106
230	Buckets of Grain-Weighing Machines	II, 225	III, 534
231	Varnish for Photographic Grounds	II, 425	....
232	Sleighs and Cutters	II, 165	III, 460
233	Fire-Arm	II, 472	III, 867
234	Arrangement of Stairsteps	II, 124	III, 410
235	Close or Open Stove	I, 649	III, 243
236	Coupling for Shafting	II, 248	III, 567
237	Preparing Greensand Marl as a Fertilizer	I, 611	....
238	Piano-forte Action	II, 429	III, 817
239	Constructing Cylinders for Printing Fabrics	II, 436	III, 857
240	Clothes Pounder	II, 377	III, 757
241	Ladies' Skirts	II, 504	III, 891
242	Arrangement of Door-Sill and Door-Strip	II, 91	III, 368
243	Blind Fastenings	I, 426	III, 4
244	Machine for Combing Wool	I, 579	III, 189
245	Lock	I, 462	III, 49
246	Operating the Gate of Turbine Wheels	II, 200	III, 504
247	Securing Hubs to Axles	II, 135	III, 421
248	Brick Machine	II, 330	III, 709
249	Cutters for Turning Wooden Boxes	II, 326	III, 691
250	Wrought Iron Plate Railroad Car-Wheels	II, 146	III, 432
251	Apparatus for Heating and Cooking by Gas	I, 633	III, 225
252	Self-Indicating Balance	II, 207	III, 513
253	Signal Lamps	II, 76	III, 355
254	Rotary Shingle-Cutter	II, 306	III, 652
255	Stitch for Sewing-Machines	I, 573	III, 178
256	Portable Barrack	II, 81	III, 358
257	Bumper Railroad Car-Brake	II, 139	III, 424
258	Corn-Planter	I, 364	II, 685
259	Apparatus for Roasting Meat	I, 646	III, 238
260	Seed-Planter	I, 376	II, 707
261	Overcoming the Windage in Fire-Arms	II, 481	III, 874
262	Machine for Making Lozenges	II, 494	III, 883
263	Machine for Cutting Match-Splints	II, 519	III, 910
264	Artificial Honey	II, 518	....
265	Horse Shoes	I, 450	III, 36
266	[Suspended]	....	....
267	Hook-Temples for Looms	I, 539	III, 156
268	Connecting Check-Piece to Mouth-Piece of Bridle Bits	II, 348	III, 729
269	Corn-Husker	I, 351	II, 665
270	Constructing Portable Houses	II, 110	III, 398
271	Semi-Rotative Steam Engine	II, 14	III, 271
272	Needles for Sewing	I, 574	III, 178
273	Nail-Plate Feeder	I, 474	III, 74
274	Hemp Brake	I, 530	III, 135
275	Seed-Planter	I, 376	II, 711
276	Propeller Blades	II, 51	III, 318
277	Harvester	I, 325	II, 633
278	Press for Cotton	II, 222	III, 532
279	Treating Raw Cotton	I, 611	....
17,280	Harvester	I, 325	II, 649

No.	Invention or Discovery.	Text.	Plates.
17,281	Folding Bedsteads	II, 367	III, 750
282	Bed Bottoms	II, 364	III, 745
283	Coal Stove	I, 649	III, 243
284	Blacksmith's Striker	I, 426	III, 5
285	Mortising Chisel	II, 267	III, 593
286	Joiners' Plane	II, 272	III, 605
287	Cartridge	II, 467	III, 865
288	Machine for Boring Flue-Sheets of Boilers	II, 5	III, 259
289	Clearing Guard of Grain Elevators	II, 210	III, 515
290	Machine for Engraving Cylinders	II, 409	III, 803
291	Blasting Powder	I, 609	....
292	Joiners' Bench Strip	II, 252	III, 573
293	Lock	I, 462	III, 48
294	Coal Cracker	I, 621	III, 215
295	Devulcanizing India Rubber	I, 602	....
296	Piano-Forte Bridge	II, 430	III, 818
297	Trap for Animals	II, 525	III, 906
298	Fountain Pen	II, 424	III, 814
299	Binding Books	II, 405	III, 803
300	Machine for Planing Chair Seats	II, 274	III, 606
301	Heating Soldering Tools by Gas	I, 501	III, 94
302	Portable Field Fence	II, 103	III, 385
303	Soap Substitute for Scouring Woollens	I, 614	....
304	Rock Drill	II, 96	III, 371
305	Seed-Planter	I, 376	II, 706
306	Submarine Excavator	II, 100	III, 382
307	Copying-Press	II, 434	III, 823
308	Preparing Canvas for Printing, Painting, &c	II, 439	....
309	Gas Generator	I, 592	III, 194
310	Cordage-Machine	I, 513	III, 121
311	Portfolio	II, 433	III, 825
312	Projectile	II, 486	III, 879
313	Devices for Dressing Pieces of Lumber	II, 266	III, 596
314	Hand Truck	II, 165	III, 457
315	Devices for Dogging Lumber in Planing-Machines	II, 277	III, 609
316	Gathering and Depositing Dipped Matches	II, 520	III, 906
317	Gas Regulator	I, 598	III, 201
318	Treating Straw Braid for Hats	I, 528	II, 134
319	Printing in Colors	II, 437	III, 825
320	Piano-Forte Action	II, 430	III, 818
321	Gunpowder	II, 483	....
322	Blanket for Calico-Printing Machine	II, 438	III, 829
323	Shuttle-Motion for Looms	I, 543	III, 150
324	Violin	II, 460	III, 849
325	Machine for Cleaning Grain	II, 229	III, 540
326	Machine for Re-dressing Millstones	II, 241	III, 560
327	Pump	II, 187	III, 480
328	Grain and Grass Harvester	I, 335	II, 626
329	Machine for Making Washboards	II, 322	III, 684-5
330	Removing Photographs from Glass to Paper	II, 428	....
331	Fastening Sheet Metal on Roofs	II, 122	III, 405
332	Joiners' Plane	II, 273	III, 605
333	Friction Rollers for Journals of Shafts, Axles, &c	II, 234	III, 551
334	Machinery for Dressing Sewing Thread	I, 574	III, 183
335	Approach-Opening Gate	II, 106	III, 390
336	Apparatus for Reducing Zinc Ores	I, 484	III, 69
337	Running Gear of Carriages	II, 154	III, 444
338	Valves in Apparatus for Raising Water	II, 196	III, 501
339	Centrifugal Battery	II, 462	III, 861
340	Stencil-Plate Printing	II, 452	III, 840
17,341	Compressing the Ends of Blind Slats	II, 255	III, 575

No.	Invention or Discovery.	Text.	Plates.
17,342	Basin Faucet	II, 173	III, 469
343	Rotary Planing Cutter	II, 275	III, 606
344	Lifting-Jack	II, 212	III, 517
345	Shirt Stud or Button	II, 505	III, 893
346	Device for allowing Play to Arbors of Circular Saws	II, 299	III, 641
347	Shingle-Machine	II, 308	III, 659
348	Safety-Valves within Steam-Boilers	II, 38	III, 294
349	Indicating Speed of Vessels and Depth of Water	II, 65	III, 324
350	Mowing-Machine	II, 529	II, 746
351	Combined Lantern and Oil-Can	I, 642	III, 233
352	Machine for Folding Paper	I, 544	III, 154
353	Loom	I, 536	III, 143, 4, 5
354	Spring Hinge	I, 448	III, 34
355	Fire-Alarm Telegraph	II, 78	III, 348
356	Spinal Corset	II, 491	III, 881
357	Mowing and Reaping-Machine	I, 357	II, 679
358	Construction of Vehicles	II, 166	III, 461
359	Revolving Fire-Arm	II, 481	III, 874
360	Carriage Hub	II, 147	III, 438
361	Griddle	II, 386	III, 769
362	Hand Seed-Planter	I, 362	II, 687
363	Grain Scourers and Separators	II, 229	III, 541
364	Cutting and Bending Sheet Metal	I, 467	III, 57
365	Reefing Topsails	II, 55	III, 328
366	Sewing-Machine	I, 558	III, 168
367	Tongue and Castor Plate for Harvesters	I, 344	II, 619
368	Curtain Rollers	II, 381	III, 763
369	Wagon-Couplings	II, 167	III, 463
370	Bomb-Lance	II, 463	III, 862
371	Cooking-Stove	I, 652	III, 244
372	Sugar-Boiling Apparatus	II, 27	III, 281
373	Inkstand	II, 413	III, 799
374	Ore-Crushing Machine	I, 481	III, 66
375	Loom	I, 536	III, 141
376	Discharging Horse and Shafts from Carriage	II, 146	III, 437
377	Washing-Machine	II, 401	III, 792
378	Shingle-Machine	II, 308	III, 657
379	Reels for Yarn or Thread	I, 580	III, 191
380	Corn-Planter	I, 365	II, 694
381	Sizing Compositions for Yarns, Paper, &c	I, 587	....
382	Fire-Arm	II, 472	III, 869
383	Machine for Testing Strength of Materials	II, 182	III, 478
384	Wind-Wheel	II, 203	III, 512
385	Ore-Washer	I, 483	III, 67
386	Repeating Fire-Arm	II, 470	III, 866
387	Making Paper-Pulp	I, 547	III, 159
388	Registering Apparatus for Printing Presses	II, 451	III, 839
389	Manufacture of Iron and Steel	I, 453	....
390	Brick-Machine	II, 330	III, 712
391	Cotton-Cultivator	I, 311	II, 604
392	Fertilizing Compounds	I, 588	....
393	Machine for Making Stove-Pipe	I, 486	III, 86
394	Machinery for Compressing Gaseous Bodies	II, 178	III, 471
395	Bit for Cutting out Cylindrical Plugs of Wood	II, 253	III, 575
396	Apparatus for Examining Vessels' Keels	II, 61	III, 329
397	Corn-Planter	I, 364	II, 684
398	Machine for Cutting Grooves and Slots	I, 445	III, 29
399	Tanning-Apparatus	II, 358	III, 715
400	Sewing-Machine	I, 558	III, 169
401	Thermo-pneumatic Safety-Valve	II, 194	III, 496
17,402	Seed-Planter	I, 376	II, 696

No.	Invention or Discovery.	Text.	Plates.
17,403	Compound Gauge	II, 261	III, 586
404	Loom	I, 537	III, 148
405	Printing-Press	II, 444	III, 832
406	Burglars' Alarms	II, 512	III, 913
407	Projectile for Killing Whales	II, 485	III, 875
408	Cutting Boot and Shoe Soles of India-Rubber, &c	II, 342	III, 739
409	Tips for Sugar-Moulds	I, 616	III, 207
410	Securing Nuts on Axles	II, 135	III, 422
411	Drop-Press	II, 221	III, 535
412	Door-Lock	I, 459	III, 52
413	Sleeve-Fastener	II, 504	III, 892
414	Skates	II, 521	III, 902
415	Hydrant	II, 180	III, 481
416	Fastenings for Garments	II, 502	III, 890
417	Mowing-Machine	I, 359	II, 679
418	Printing-Press	II, 445	III, 837
419	Door-Hinge	I, 447	III, 34
420	Preparing the Fibre of Banana, &c	I, 521	III, 118
421	Method of Hanging Millstones	II, 241	III, 558
422	Packing Pistons of Steam-Engines	II, 13	III, 261
423	Steam Pumping-Apparatus	II, 185	III, 484
424	Lock	I, 458	III, 45
425	Scroll-Sawing Machine	II, 292	III, 631
426	Water-Wheel	II, 198	III, 501
427	Sewing-Machine	I, 559	III, 170
428	Potato-Digger	I, 397	II, 731
429	Machine for Sowing Seed Broadcast	I, 415	II, 751
430	Plough	I, 385	II, 731
431	Block for Blacking Boots and Shoes	II, 511	III, 897
432	Gauge-Attachment for Hand-Saws	II, 304	III, 650
433	Faucet	II, 173	III, 468
434	Life-Preserver	II, 49	III, 315
435	Feeding Gas Generators	I, 594	III, 198
436	Locomotive Boilers	II, 1	III, 251
437	Manufacturing Screws of Thin Metal	I, 493	III, 97
438	Machine for Harvesting Hemp	I, 341	II, 647
439	Atmospheric Churns	I, 302	II, 569
440	Machine for Sowing Seed Broadcast	I, 415	II, 758
441	Implement for Paring Horses' Hoofs	I, 453	III, 40
442	Cast-Iron Car-Wheels	II, 145	III, 432
443	Fluid-Metre	II, 177	III, 474
444	Churns	I, 300	II, 569
445	Manufacturing Leather Shoe-Binding	II, 355	III, 718
446	Feeding Grain to Millstones	II, 240	III, 553
447	Hydraulic Blast-Generator	II, 181	III, 480
448	Apparatus for Condensing Vapors and Gases	I, 617	III, 207
449	Oscillating Printing-Press	II, 449	III, 847
450	Seed-Planter	I, 377	II, 698
451	Harvester	I, 325	II, 622
452	Machine for making Shovels	I, 495	III, 79
453	Die-Stock	I, 434	III, 18
454	Portable Cross-cut Sawing Machine	II, 291	III, 629
455	Cutter for Heels of Boots and Shoes	II, 344	III, 717
456	Cooking Range	I, 645	III, 238
457	Printers' Composing Stick	II, 435	III, 824
458	Machine for Filing Saws for Cotton Gins	II, 531	III, 25
459	Uniting the Panels of Portable Fences	II, 105	III, 385
460	Folding Bedsteads	II, 367	III, 773
461	Hat-Stand	II, 386	III, 767
462	Plough Clevis	I, 383	II, 717
17 463	Printing-Press	II, 445	III, 839

No.	Invention or Discovery.	Text.	Plates.
17,464	Door-Bolt	I, 435	III, 17
465	Wood-Gas Generators	I, 595	III, 199
466	Severing the Butts and Husks from Corn	I, 303	II, 581
467	Machine for Dressing Water Furrows	I, 317	II, 608
468	Pickers for Looms	I, 540	III, 139
469	Hominy Machine	II, 518	III, 913
470	Detachable Handle for Smoothing-Irons	II, 387	III, 771
471	Splitting Leather and Hides	II, 254	III, 724
472	Water-Gauges for Steam-Boilers	II, 7	III, 258
473	Preventing Counterfeiting of Bank Notes, &c.	II, 404	....
474	Door-Bolt	I, 435	III, 10
475	Dies for Punching Fork Tines	I, 435	III, 17
476	Plough	I, 385	II, 712
477	Blotter	II, 405	III, 797
478	Machine for Repairing Railroad Cars	II, 114	III, 401
479	Devices for holding Bit in Brace	II, 254	III, 576
480	Machine for Rounding and Backing Books	II, 406	III, 798
481	Covering Insulated Wire with Lead, &c.	II, 72	III, 343
482	Machine for Grooving Stove-Pipe	I, 485	III, 75
483	Steam-Heating Stove	I, 648	III, 241
484	Machine for Paring and Quartering Apples	II, 361	III, 742
485	Metallic Band Fastening for Bales, &c.	II, 207	III, 514
486	Self-Loading Cart	II, 161	III, 453
487	Machinery for Manufacturing Felt Cloth	I, 520	III, 128
488	Carpet Fastening	II, 372	III, 748
489	Machine for Drying Pasteboard or Paper	I, 549	III, 152
490	Catch for Doors	I, 438	III, 20
491	Machine for Making Horse-Shoe Nails	I, 450	III, 36
492	Railroad-Switch Lock	II, 116	III, 403
493	Self-Acting Wagon-Brake	II, 167	III, 462
494	Mitre-Box	II, 267	III, 592
495	Bakers' Ovens	I, 644	III, 235
496	Rope-Machine	I, 550	III, 158
497	Roofing-Machine	II, 120	III, 408
498	Grain-Separator	II, 230	III, 542
499	Card Printing Press	II, 441	III, 829
500	Preparing Hub-Blocks for the Lathe	II, 262	III, 589
501	Melodeon	II, 415	III, 806
502	Machine for Making Wrought Nails	I, 476	III, 70
503	Guiding and Cushioning Puppet-Valves	II, 194	III, 495
504	Frame for Camp Tents	II, 513	III, 898
505	Clay-Pulverizers	II, 334	III, 706
506	Carriage-Brakes	II, 146	III, 436
507	Solar Lamp	I, 640	III, 230
508	Sewing-Machine	I, 560	III, 164
509	Wheelwrights' Machine	II, 170	III, 465
510	Coal Stove	I, 649	III, 244
511	Basin Faucet	II, 173	III, 468
512	Machine for Felling Trees by Hand	II, 126	III, 413
513	Hanging Doors	II, 91	III, 368
514	Portable Fence	II, 103	III, 384
515	Constructing Watch and Locket Rims	II, 460	III, 844
516	Rotary Pump	II, 184	III, 484
517	Automatic Fan	II, 384	III, 768
518	Shield and Guide for Circular Saws	II, 391	III, 630
519	Making Lampblack	I, 604	III, 208
520	Carriage Wheel	II, 152	III, 443
521	Adjusting Circular Saws obliquely	II, 300	III, 633
522	Hob for Cutting Screw-Chasers	I, 490	III, 88
523	Nail Machine	I, 473	III, 67
17,524	Manufacture of Boots	II, 348	III, 740

No.	Invention or Discovery.	Text.	Plates.
17,525	Steering Apparatus for Ships	II, 59	III, 325
526	Paper File	II, 419	III, 812
527	Mop Head	II, 389	III, 771
528	Stump Extractor	II, 126	III, 412
529	Road-Scraper	II, 118	III, 404
530	Gas-Burner	I, 631	III, 220
531	Wrench	I, 503	III, 108
532	Machine for Setting Tires on Wheels	II, 170	III, 463
533	Damper Regulators for Steam Boilers	II, 6	III, 258
534	Nut-Machine	I, 476	III, 71
535	Machine for Folding Paper	II, 420	....
536	Cheese Hoop	II, 211	III, 516
537	Automatic Saw-Mill Blocks	II, 281	III, 614
538	Incasing Hydrants	II, 181	III, 476
539	Valves for Basin, &c., Cocks	II, 172	III, 467
540	Fire-Grates or Linings of Fire-Pots	I, 634	III, 224
541	Tonguing and Grooving Hand-plane	II, 271	III, 599
542	Machine for Forging Horse-Shoe Nails	I, 449	III, 35
543	Power Printing-Press	II, 450	III, 846
544	Machine for Pegging Boots and Shoes	II, 345	III, 735
545	Carpet Bags	II, 349	III, 729
546	Brick Press	II, 333	III, 704
547	Mould-board for Reversible Ploughs	I, 395	II, 718
548	Basin Evaporators	I, 590	III, 196
549	Card Printing-Press	II, 447	III, 852
550	Laths for Building	II, 110	III, 397
551	Safety-Attachment for Hatchways	II, 109	III, 397
552	Hydrant	II, 180	III, 474
553	Stock for Bench Planes	II, 270	III, 601
554	Rigid Hoop-Knife for Splitting Leather	II, 355	III, 724
555	Harvester	I, 325	II, 616
556	Machine for making Axe-Poles	I, 424	III, 2
557	Cork Machine	II, 516	III, 900
558	Invalid-Bed Elevators	II, 365	III, 746
559	Roller Temple for Looms	I, 542	III, 132
560	Steam Pressure Gauges	II, 16	III, 276
561	Making Cast Iron Malleable	I, 454	....
562	Depilating Compound for Hides	I, 588	....
563	Screw Cutter	I, 491	III, 85
564	Butter Worker	I, 297	II, 582
565	Motion for Preserving Rolling Contact	II, 245	III, 564
566	Corn-Planter	I, 366	II, 706
567	Chairs for Invalids	II, 375	III, 758
568	Seed-Planter	I, 377	II, 712
569	Bedstead	II, 366	III, 749
570	Animal Traps	II, 525	III, 913
571	Sewing-Machine	I, 560	III, 170
572	Rudder	II, [illegible]	III, 319
573	Safety-Pocket	III, 925	III, 891
574	Construction of Gas-Generators	I, 594	III, 196
575	Cutting Apparatus for Harvesters	I, 334	II, 644
576	Scouring and Setting Leather	II, 354	III, 718
577	Plough	I, 385	II, 721
578	Foot Stove	I, 654	III, 249
579	Plough	I, 386	II, 714
580	Railroad Snow-Excavators	II, 115	III, 402
581	Machine for Sowing Grain in Drills	I, 414	II, 760
582	Corn-Planter	I, 365	II, 687
583	Valve Connexions for Steam-Engines	II, 31	III, 279
584	Corn-Planter	I, 365	II, 693
17,585	Valve-Gear of Steam-Engines	II, 33	III, 278

No.	Invention or Discovery.	Text.	Plates.
17,586	Condensing Apparatus for Salt and Gases	I, 588	III, 195
587	Postage-Stamp and Label Sticker	II, 454	III, 849
588	Refrigerator	II, 390	III, 773
589	Bending Sheet-Metal Pans	I, 468	III, 58
590	Wiring Tin Pans	I, 498	III, 105
591	Gang-Plough	I, 392	II, 723
592	Propeller Canal-Boat	II, 44	III, 313
593	Elevating Water by Compressed Air	II, 196	III, 498
594	Cultivator-Plough	II, 530	II, 726
595	Excavating-Machine	II, 98	III, 379
596	Smut-Machine	II, 248	III, 571
597	Mowing-Machine	I, 369	II, 674
598	Propelling Vessels in Shoal Water	II, 62	III, 328
599	Gas-Generator	I, 592	III, 197
600	Umbrellas and Parasols	II, 506	III, 892
601	Portable Steam-Sawing Apparatus	II, 290	III, 630
602	Ladies' Skirts	II, 504	III, 890
603	Machine for Skiving Boot-Counters	II, 343	III, 738
604	Faucet	II, 173	III, 468
605	Spring Bed-Bottoms	II, 365	III, 746
606	Machine for Graduating Lineal Measures	II, 73	III, 345
607	Steam-Pressure Gauge	II, 17	III, 273
608	Gas-Stove	I, 655	III, 249
609	Screw-Wrench	I, 505	III, 102
610	Preparing Liquid Rose-Pink	I, 609	....
611	Keeper for Locks and Latches	I, 466	III, 52
612	Knitted Fabrics	I, 519	III, 123
613	Ventilating Vault and Platform Light	II, 128	III, 414
614	Gas-Generator	I, 592	III, 197
615	Printing-Press	II, 445	III, 837
616	Reducing Topsails	II, [illegible]	III, 322
617	Machine for Polishing Raw-hide Whips	II, 360	III, 718
618	Adjusting Plane-Irons in their Stocks	II, 272	III, 603
619	Grinding-Mill	II, 236	III, 554
620	Saw-Set	II, 284	III, 617
621	Fastening Handles to Baskets	II, 509	III, 894
622	Vapor Burner	I, 6'	III, 211
623	Vane Governor for Steam Engines, &c	II, 16	III, 265
624	Valvular Arrangement for Faucets, &c	II, 194	III, 498
625	Pump	II. 187	III, 483
626	Picker Sawing-Machine	II, 295	III, 642
627	Constructing Stores	II, 125	III, 411
628	Manufacture of Iron	I, 455	III, 37
629	Sawing Mill	II, 295	III, 643
630	Limiting the Depth of Hole in Boring-Machines	II, 256	III, 577
631	Machine for Finishing Brush Handles	II, 369	III, 755
632	Hydrant	II, 180	III, 478
633	Ships' Windlasses	II, 60	III, 327
634	Machine for Straightening Knife-Blades	I, 457	III, 43
635	Enamelling Iron Pipes and Hollow-Ware	I, 590	....
636	Apparatus for Regulating Boiler Furnaces	II, 1	III, 250
637	Lantern for Lighting Street Gas	I, 641	III, 230
638	Central Draught Joint of Carriages	II, 154	III, 445
639	Hardening Axes	I, 424	III, 3
640	Candlestick	I, 619	III, 211
641	Boring-Mills	I, 428	III, 7
642	Breech-Loading Fire-Arm	II, 469	III, 866
643	Cylindrical Throttle-Valve for Steam Engines	II, 34	III, 297
644	Breech-Loading Fire-Arm	II, 469	III, 874
645	Adjusting Plane-Irons in their Stocks	II, 272	III, 604
17,646	Machine for Cleaning Rice	II, 246	III, 565

No.	Invention or Discovery.	Text.	Plates.
17,647	Caligraph	II, 407	III, 806
648	Steam Boiler	II, 3	III, 255
649	Preparing Elastic India-Rubber Cloth	I, 601	....
650	Machine for Excavating Tunnels	II, 98	III, 380–1
651	Back-Ground for Photographs on Glass	II, 428	....
652	[Suspended]	....	....
653	Attaching Air-Chambers to Pumps	II, 189	III, 485
654	Water-Metre	II, 195	III, 497
655	Taps and Dies for Cutting Screws	I, 493	III, 78
656	Steam Whistles	II, 30	III, 295
657	Bench Plane	II, 270	III, 601
658	Fountain Lamps	I, 638	III, 223
659	Smelting Furnace	I, 443	III, 27
660	Machine for Making Bolts and Rivets	I, 426	III, 7
661	Machine for Riveting Boilers	II, 2	III, 250
662	Iron Pavement for Streets	II, 113	III, 400
663	Machine for Making Paper	I, 544	III, 153
664	Blast-Blower	II, 172	III, 467
665	Machine for Making Horse-Shoes	I, 452	III, 38, 39
666	Portable Steam Radiator for Heating Apartments	I, 644	III, 236
667	Distributing Apparatus of Flouring Mills	II, 242	III, 549
668	Whiffletree Hook	II, 171	III, 464
669	Earth Excavator	II, 99	III, 384
670	Uterine Supporter	II, 499	III, 884
671	Gas Regulator	I, 599	III, 202
672	Horse-Shoe	II, 532	III, 32
673	Electric Telegraph	II, 82	III, 353
674	Gas-Burner	I, 631	III, 221
675	Separating the Oily Particles suspensed in Steam	II, 28	III, 274
676	Harvester	I, 325	II, 673
677	Adjustable Fender-Posts for Saw-Mills	II, 282	III, 618
678	Harvesting-Machine	I, 343	II, 618
679	Sewing-Machine	I, 562	III, 171
680	Carriage Top	II, 150	III, 441
681	Permutation Lock	I, 460	III, 56
682	[Suspended]	....	....
683	Metallic Packing for Steam Pistons	II, 28	III, 269
684	Iron Truss Frames for Bridges	II, 87	III, 362
685	Self-Acting Rakes for Harvesters	I, 340	II, 624
686	Sawing-Machine for Felling Trees	II, 290	III, 630
687	Automatic Rake for Harvesters	I, 330	II, 644
688	Printing Ink	II, 437	....
689	Valve-Gear for Steam Engines	II, 32	III, 279
690	Raking Attachment for Harvesters	I, 339	II, 650
691	Harvester	I, 326	II, 623
692	Fence	II, 101	III, 384
693	Frame for combined Mowers and Reapers	I, 357	II, 739
694	Chilling Plough-Shares	I, 432	III, 10
695	Elastic Loop for Suspending Bedstead Slats	II, 366	III, 747
696	Street Lanterns	I, 643	III, 234
697	Preserving Green Corn	II, 379	III, 757
698	Fire-Arm	II, 473	III, 870
699	Opening and Closing Farm Gates	II, 108	III, 394
700	Brake for Wagons	II, 168	III, 462
701	Mortising-Machine	II, 268	III, 595
702	Cartridge	II, 468	III, 865
703	Raking Apparatus for Harvesters	I, 338	II, 629
704	Gas Generator	I, 593	III, 197
705	Harvester	I, 326	II, 649
706	Manufacture of Journal Boxes for Shafting, &c	II, 234	III, 544
17,707	Die Stock	I, 434	III, 17

No.	Invention or Discovery.	Text.	Plates.
17,708	Coloring Yarn in the Bobbin	I, 586	III, 193
709	Resinous Compounds for Covering Hams	I, 588	....
710	Starch from Maize	I, 614	....
711	Condensing Liquids in Gas-Main Pipes	I, 589	III, 194
712	Slide Valves for Steam Engines	II, 38	III, 295
713	Defecating Cane Juice	I, 584	....
714	Lock	I, 463	III, 55
715	Ships' Capstans	II, 45	III, 308
716	Strap Pillow-Block for Shafting, &c	II, 248	III, 566
717	Sewing-Machine	I, 561	III, 171
718	Arrangement of Valves in Steam Cylinders	II, 34	III, 280
719	Cross-Cut Sawing Apparatus	II, 285	III, 618
720	Machine for Husking Corn	I, 355	II, 662
721	Metal Separator	I, 469	III, 59
722	Truss Bridge	II, 87	III, 362
723	Machine for Cutting Pasteboard	I, 549	III, 150
724	Steering Apparatus	II, 60	III, 327
725	Instrument for Cutting Button-Holes	II, 500	III, 890
726	Air Chamber to Produce Uniform Flow of Water	II, 200	III, 503
727	Alcohol Blow-Pipe	I, 617	III, 212
728	Grain Separator	II, 231	III, 543
729	Corn Harvester	I, 332	II, 628
730	Box Window-Frame	II, 132	III, 420
731	Machine for Husking Corn	II, 529	II, 673
732	Dry Sand Cores	I, 433	....
733	Self-Priming Gun-Lock	II, 482	III, 873
734	Machine for Tapping Nuts	I, 480	III, 68
735	Securing Stock to Guide-Rods of Joiners' Ploughs	II, 263	III, 589
736	Machine for Straightening Veneers	II, 322	III, 682
737	Wrench	I, 503	III, 108
738	Upsetting Tire	I, 499	III, 104
739	Cutting Apparatus for Harvesters	I, 334	II, 611
740	Lock	I, 463	III, 50
741	Backing Electrotype Plates	II, 409	III, 798
742	Connecting the Panels of Field Fences	II, 104	III, 387
743	Belt-Shifter for Machinery	II, 226	III, 538
744	Sewing-Machine	I, 562	III, 164
745	Cutting Apparatus for Harvesters	I, 333	II, 640
746	Paper Cop-Tubes	I, 543	III, 132
747	Sash-Lock	I, 460	III, 44
748	Cooking-Stove	I, 652	III, 241
749	Scroll-Wheel for Harvesters	I, 340	II, 613
750	Air-heating Stove	I, 646	III, 240
751	Shaft Coupling	II, 164	III, 458
752	Whiffletrees	II, 171	III, 464
753	Embossing and Printing Press	II, 434	III, 828
754	Covering for Drawing-Rolls	I, 549	....
755	Melodeon Attachment	II, 414	III, 806
756	Railroad-Car Stove	I, 648	III, 241
757	Lifting-Jack	II, 212	III, 518
758	Gold-Washer and Amalgamator	I, 444	III, 25
759	Brick-Machine	II, 331	III, 703
760	File-cutting Machine	I, 440	III, 23
761	Metallic Pen	II, 424	III, 815
762	Operating Radial Cutters in Lathes	II, 265	III, 593
763	Applying Railroad Car-Brakes	II, 139	III, 426
764	Machine for Trimming Hedges	I, 345	II, 672
765	Rock-Drilling Machine	II, 96	III, 373
766	Rock-Drilling Machine	II, 94	III, 371
767	Gas Stove	I, 647	III, 240
17,768	Pump	II, 187	III, 486

No.	Invention or Discovery.	Text.	Plates.
17,769	Bit-Brace	II, 252	III, 574
770	Bit or Drill Holder	II, 254	III, 574
771	Gas Stove	I, 656	III, 245
772	Hay Rake	I, 400	II, 744
773	Machine for making Railroad Chairs	II, 162	III, 454
774	Machine for Gauging and Filing Saws	II, 303	III, 653
775	Fastening Artificial Teeth to the Metallic Plate	II, 498	III, 888
776	Pen and Pencil Case	II, 421	III, 813
777	Cultivator Plough	I, 391	II, 723
778	Nail-Plate Holder	I, 474	III, 59
779	Harvester	I, 326	II, 631
780	Rigging of Ships	II, 58	III, 321
781	Churns	I, 301	II, 580
782	Automatic Lathe	II, 264	III, 595
783	Device for Sealing Bottles, Cans, &c	II, 372	III, 748
784	Washing-Machine	II, 401	III, 783
785	Mattress	II, 388	III, 776
786	Corn-Planter	I, 366	II, 684
787	Rope-Machine	I, 550	III, 157
788	Setting out the Packing of Pistons for Steam-Engines	II, 13	III, 272
789	Piano-forte	II, 430	III, 819
790	Churns	I, 301	II, 587
791	Use of Coal-Tar in Iron Furnaces	I, 630	III, 225
792	Shot-Cartridge	II, 467	III, 867
793	Applying Fly-Wheel to Hand-Cars	II, 156	III, 447
794	Railroad Car Seats	II, 142	III, 435
795	Hemp-Drawing Machine	I, 532	III, 141
796	Seal for Car Doors	II, 141	III, 430
797	Cultivator	I, 307	II, 593
798	Raking Apparatus for Harvesters	I, 338	II, 652
799	Feeding-Cutter in Mortise-Boring Machines	II, 256	III, 579
800	Spiral Catch for Breast-Pins	II, 407	III, 802
801	Seal for Railroad Freight-Cars, &c	II, 160	III, 452
802	Seal for Railroad Freight-Cars, &c	II, [illegible]	III, 452
803	Self-Setting Trap-Hook	II, [illegible]	III, 912
804	Lock	I, 464	III, 49
805	Constructing Carriages	II, 154	III, 445
806	Cotton-Gin	I, 517	III, 119
807	Lime-Kiln	II, 336	III, 700
808	Locking Cylindrical Door-Bolts	I, 436	III, 6
809	Draining-Machine	II, 93	III, 369
810	Oil-Can	II, 209	III, 514
811	Fly-Trap	II, 524	III, 914
812	Wrest-Pins for Pianos	II, 432	III, 822
813	Machine for Cutting Metal	I, 467	III, 54
814	Centring-Machine	I, 431	III, 13
815	Lock	I, 464	III, 51
816	Adjusting Round Tenon Cutter	II, 317	III, 678
817	Governors of Steam-Engines	II, 16	III, 274
818	Bureau-Bedsteads	II, 367	III, 749
819	Machine for Cleaning Cotton	I, 515	III, 124
820	Pump	II, 188	III, 493
821	Cultivator	I, 307	II, 596
822	Lubricator	II, 215	III, 520
823	Cutting Tenons by two Oblique Circular Saws	II, 305	III, 647
824	Inking-Rollers for Printing-Presses	II, 449	III, 855
825	Feed-Motion for Sewing-Machines	I, 572	III, 187
826	Camels for Raising Sunken Vessels	II, 63	III, 332
827	Machine for Planting Potatoes	I 399	II, 734
828	Machine for Manufacturing Felt Cloth	I, 519	III, 120
17,829	Sawing-Mill	II, 296	III, 645

No.	Invention or Discovery.	Text.	Plates.
17, 830	Apparatus for Making Acid Sulphate of Lime	I, 582	III, 193
831	Rotating Harrow	I, 320	II, 613
832	Corn-Harvester	I, 332	II, 625
833	Feed-Rollers of Planing-Machines, &c	II, 277	III, 608
834	Regulating the Fire of Coal-Burning Locomotives	II, 21	III, 284
835	Tension Apparatus for Sewing-Machines	I, 574	III, 166
836	Signal or Alarm Bell	II, 510	III, 895
837	Shovel, Spade, or Dung-Fork Handles	I, 413	II, 755
838	Metallic Bridge for Piano-fortes	II, 431	III, 821
839	Hog-Trough	I, 422	II, 764
840	Sawing-Mill	II, 296	III, 644
841	Corn-Planter	I, 366	II, 685
842	Bagasse Furnace	I, 627	III, 221
843	Cylindrical Door-Bolt	I, 436	III, 17
844	Hand Wrench	I, 504	III, 103
845	Railroad Car-Couplings	II, 141	III, 428
846	Turning Carriage-Hubs	II, 148	III, 438
847	Governor for Water, Steam, and other Power	II, 19	III, 290
848	Garden Hoe	I, 346	II, 660
849	Cotton and Cane Cultivator	I, 312	II, 601
850	Straw-Cutter	I, 418	II, 767
851	Roofing Compositions	II, 119	....
852	Stopping Shot-Holes in Vessels	II, 64	III, 333
853	Grain-Separator	II, 231	III, 542
854	Retort-Covers	I, 613	III, 209
855	Rendering Joints Steam-tight	II, 29	III, 270
856	Machine for Digging Potatoes	I, 398	II, 769
857	Diaper-Pin	II, 502	III, 891
858	Photography	II, 428	....
859	Spark-Arrester	II, 25	III, 283
860	Feeding Arrangement for Sawing-Machines	II, 294	III, 641
861	Driving Circular Saws	II, 301	III, 650
862	Governor for Wind-Mills, &c	II, 203	III, 508
863	Fu[illegible]-Making Machine	II, 482	III, 875
864	Segmental Truss for Bridges, &c	II, 83	III, 362
865	Pill-Machines	I, 608	III, 206
866	Lathe for Turning Irregular Forms	II, 264	III, 594
867	Tanning Compositions	I 588	....
868	Auger-Handle Fastening	II, 251	III, 574
869	Smut-Machine	II, 249	III, 568
870	Adjustment to Pendulum Levels	II, 75	III, 351
871	Sawing and Dressing Staves	II, 315	III, 674
872	Machine for Tempering Scythes	I, 494	III, 96
873	Shell Roller-Bed for Planing-Machines	II, 277	III, 609
874	Machine for Seaming Sheet Metal Roofs	II, 122	III, 406
875	Spark Arrester	II, 26	III, 284
876	Machine for Punching and Scraping Metals	I, 472	III, 64
877	Mop-Head	II, 389	III, 772
878	Mortising Chisel	II, 267	III, 594
879	Governor for Engines	II, 15	III, 273
880	Mortising and Boring Machine	II, 267	III, 599
881	Fastening Breast-Pins	II, 407	III, 796
882	Machine for Cleaning Rice	II, 246	III, 566
883	Mastic Roofing Compositions	II, 121	....
884	Spark Arrester	II, 25	III, 293
885	Lime-Kiln	II, 336	III, 699
886	Projectiles for Smooth-Bored Guns	II, 488	III, 874
887	Spindle for Door-Knobs	I, 436	III, 18
888	Artificial Leg	II, 494	III, 887
889	Lime-Kiln	II, 336	III, 706
17, 890	Fastenings for Carpets	II, 372	III, 752

No.	Invention or Discovery.	Text.	Plates.
17, 891	Bit-Brace for Boring Obliquely	II, 253	III, 574
892	Raising Sunken Vessels	II, 65	III, 324
893	Steam-Engine Valves and Passages	II, 39	III, 303
894	Guard-Fingers for Harvesters	I, 336	II, 612
895	Treating Paper-Stuff	I, 548	....
896	Machine for Drilling Rock	II, 95	III, 374
897	Fastenings for Carpets	II, 373	III, 773
898	Corn Planter	I, 367	II, 693
899	Receiving-Box for Passengers' Fares	II, 136	III, 423
900	Hemp Brake	I, 530	III, 138
901	Machine for Paring and Slicing Apples	II, 362	III, 743
902	Machine for Stuffing Horse Collars	II, 349	III, 734
903	Oscillating Steam Engine	II, 13	III, 260
904	Revolving Fire-Arm	II, 474	III, 869
905	Edge-Plane for Trimming Boot and Shoe Soles	II, 342	III, 715
906	Shingle-Machine	II, 309	III, 660
907	Feeding the Bolt in Shingle-Machines	II, 310	III, 670
908	Gate Latch	I, 458	III, 45
909	Cultivator	I, 307	II, 591
910	Sash-Fastener	I, 489	III, 77
911	Fixtures for Curtain Rollers	II, 382	III, 763
912	Power Loom	I, 540	III, 147
913	Truck for Locomotives	II, 24	III, 271
914	Nut-Machine	I, 479	III, 76
915	Walking-Stick Gun	II, 484	III, 876
916	Vapor Burner	I, 619	III, 212
917	Machine for Making Paper	I, 545	III, 157
918	Coupling of Thills to Vehicles	II, 166	III, 461
919	Coal Stove	I, 650	III, 246
920	Discharging Cannon	II, 466	III, 864
921	Stock for Smoothing-Planes	II, 274	III, 601
922	Opening and Closing Window-Blinds	II, 132	III, 419
923	Operating Slats of Window-Blinds	II, 132	III, 420
924	Steam-Boiler	II, 3	III, 253
925	Cultivator-Teeth	I, 306	II, 594
926	Let-Off Motion of Power Looms	I, 542	III, 153
927	Harvester	I, 327	II, 633
928	File-Cutting Machine	I, 441	III, 24
929	Bobbins for Roving and Slubbing	I, 507	III, 109
930	Sewing-Machine	I, 553	III, 163
931	Factitious Ivory	I, 604	....
932	Cutting Screws	I, 492	III, 93
933	Sugar-Boilers	I, 615	III, 208
934	Protecting Necks of Horses from Flies	II, 519	III, 908
935	Projectile for Rifled Cannon	II, 487	III, 878
936	Stop-Cock Regulator	I, 597	III, 202
937	Window-Blind Slat-Holder	II, 130	III, 416
938	Operating Window-Blinds	II, 131	III, 418
939	Key	I, 456	III, 42
940	Compound Capstans for Ships	II, 56	III, 318
941	Machine for Forging Nails	I, 475	III, 68
942	Harvester	I, 326	II, 639
943	Propeller-Blade	II, 50	III, 315
944	Self-Feeding Drill	I, 439	III, 21
945	Harvester	I, 327	II, 617
946	Machine for Bevelling Staves	II, 317	III, 677
947	Boot Tree	II, 344	III, 741
948	Shower-Bath Apparatus	II, 489	III, 880
949	Factitious Ivory	I, 604	....
950	Elastic Gore Cloth	I, 511	III, 109
17, 951	Joiners' Plane	II, 273	III, 605

No.	Invention or Discovery.	Text.	Plates.
17, 952	Machine for Grinding Knives	I, 457	III, 43
953	Pedestal for Railway Cars and Locomotives	II, 158	III, 449
954	Machine for Cleaning and Carding Moss	I, 510	III, 114
955	Tawing and Coloring Skins and Furs	I, 614	....
956	Mowing-Machines	I, 359	II, 675
957	Automatic Lubricator for Car Axles	II, 215	III, 521
958	Rotary Veneer-Machine	II, 320	III, 680
959	Dredging-Machine	II, 94	III, 370
960	Glassware Holders	II, 336	III, 694
961	Machine for Hulling Cotton Seed	I, 347	II, 657
962	Water Closet	II, 69	III, 365
963	Feed Rollers for Planing-Machines	II, 276	III, 609
964	Mowing-Machines	I, 359	II, 680
965	Machine for Whetting Plane Bits	II, 270	III, 602
966	Hominy Mill	II, 232	III, 545
967	Curtain Fixtures	II, 380	III, 757
968	Brewers' Steam Boiling Apparatus	I, 583	III, 192
969	Ships' Capstan	II, 46	III, 313
970	Apparatus of Steam Carriages	II, 155	III, 446
971	Ships' Capstan	II, 45	III, 312
972	Automatic Lubricator for Car Axles	II, 216	III, 519
973	Valvular Arrangement in Faucets	II, 174	III, 469
974	Silk-Dyeing Machines	I, 590	III, 195
975	Instrument to indicate the Depth of Water in Ships	II, 59	III, 326
976	Manufacture of Sulphuric Acid	I, 582	....
977	Reefing Topsails	II, 55	III, 323
978	Filtration Press for Expressing Liquids	II, 217	III, 524
979	Bathing Apparatus	II, 490	III, 881
980	Sausage Cutter	II, 391	III, 774
981	Gas Generator	I, 593	III, 197
982	Safety Tops for Railway Cars	II, 160	III, 451
983	Mechanism for Operating Car-Brakes	II, 139	III, 427
984	Mash-Cooling Machine	I, 606	III, 905
985	Millstone Dress	II, 243	III, 562
986	Lime Kiln	II, 337	III, 708
987	Filter	II, 174	III, 471
988	Steam Gauge	II, 17	III, 274
989	Tea Kettle	I, 635	III, 226
990	Finger-bar for Reaping-Machines	I, 403	III, 737
991	Adjustment for Try-Squares	II, 77	III, 347
992	Smoothing Planed Wooden Surfaces	II, 326	III, 673
993	Machine for Polishing Stone and Glass	II, 339	III, 696
994	Spring Lancet	II, 493	III, 887
995	Winnowing Mill	II, 244	III, 563
996	Press for Shearing and Punching	I, 494	III, 71
997	Marking Time of Attendance of Workmen	II, 83	III, 357
998	Machine for Pegging Boots	II, 345	III, 729
999	Machine for Moulding Bricks	II, 334	III, 705
18, 000	Sewing-Machine	I, 563	III, 172
1	Machine for Turning Spools	II, 320	III, 679
2	Hot-Air Furnace	I, 629	III, 225
3	Expanding Auger-Bit	II, 251	III, 572
4	Drop Press	II, 217	III, 524
5	Setting Porcelain Teeth	II, 498	III, 887
6	Tubular Shafting for Mills, &c	II, 245	III, 562
7	Rotary Planing Cutter	II, 275	III, 606
8	Gas Regulator	I, 599	III, 199
9	Raking Apparatus for Harvesters	I, 338	II, 653
10	Grate Bars of Furnaces	I, 628	III, 226
11	Machine for Bending Metal Plates	I, 469	III, 60
18 012	Cooking Stove	I, 652	III, 245

No.	Invention or Discovery.	Text.	Plates.
18, 013	Hoops for Ladies' Skirts	II, 504	III, 891
14	Manufacturing Metal Buttons	II, 500	III, 889
15	Eye-Shading Apparatus	II, 491	III, 887
16	Percussion Powder	II, 485	....
17	Machine for Dressing Saws	II, 302	III, 642
18	Railroad Car-Brake	II, 137	III, 427
19	Machine for Bending Metal Plates	I, 468	III, 59
20	Inhaling Apparatus	II, 492	III, 885
21	Construction of Artificial Hands	II, 492	III, 882
22	Telegraphic Repeater	II, 79	III, 352
23	Railroad Rail	II, 115	III, 401
24	Bakers for Cooking-Stoves	I, 653	III, 246
25	Shears for Cutting Metal	I, 494	III, 108
26	Hot-Air Register	I, 634	III, 229
27	Machine for Twisting Curb-Chains	I, 432	III, 15
28	Portable Horse-Powers	II, 234	III, 547
29	Self-Acting Mules for Spinning	I, 576	III, 188
30	Tanning Liquids	I, 616	....
31	Filter	II, 175	III, 470
32	Machine for Wetting and Cutting Paper	II, 451	III, 838
33	Combination of Watch-Keys and Finger-Rings	II, 461	III, 845
34	Machinery for Hardening Hat-Bodies	I, 527	III, 138
35	Hermetically Sealing Cans	II, 371	III, 753
36	Umbrellas and Parasols	II, 507	III, 892
37	Piercing Blind-Slats for the Staples	II, 85	III, 360
38	Separating Ore	I, 481	III, 66
39	Swage for Setting Saw Teeth	II, 285	III, 619
40	Brick-Machine	II, 331	III, 711
41	Washing-Machine	II, 402	III, 788
42	Self-Waiting Table	II, 394	III, 777
43	Pin-Sticking Machine	I, 484	III, 83
44	Ships' Berths	II, 41	III, 308
45	Washing-Machine	II, 402	III, 783
46	Rendering Mouths of Trunks, &c., Water-tight	II, 360	III, 725
47	Hay and Manure Fork	I, 316	II, 602
48	Steam-Pressure Regulators	II, 29	III, 274
49	Projectile for Rifled Cannon	II, 486	III, 876
50	Washing-Machine	II, 402	III, 790
51	Cupola Furnace	I, 443	III, 28
52	Cutting Apparatus of Harvesters	I, 334	II, 627
53	Ships' Capstan	II, 47	III, 314
54	Water Vessels for imparting Humidity to Hot Air	I, 630	III, 226
55	Cooking-Range	I, 646	III, 238
56	Photo-galvano graphic Process for Printing	II, 439	....
57	Boring-Machine	II, 256	III, 577
58	Bending-Machine	I, 425	III, 8
59	Glass-Furnace	II, 335	III, 705
60	Inkstand	II, 412	III, 799
61	Loom	I, 537	III, 147
62	Washing-Machine	II, 402	III, 787
63	Packing of Rotary Steam-Engines	II, 10	III, 259
64	Fence for Poultry-Yards	II, 103	III, 386
65	Vibrating Shears	II, 453	III, 855
66	Clamping Logs in Cross-cut Sawing-Machines	II, 294	III, 640
67	Washing-Machine	II, 403	III, 795
68	Sewing-Machine	I, 563	III, 173
69	Sewing-Machine	I, 564	III, 163
70	Automatic Rake for Harvesters	I, 331	II, 626
71	Sewing-Machine	I, 563	III, 172
72	Sewing-Machine	I, 564	III, 190
18, 073	Cultivator	I, 307	II, 596

No.	Invention or Discovery.	Text.	Plates.
18,074	Boot Crimp	II, 343	III, 740
75	Machine for Folding Paper	II, 420	III, 810
76	Machine for Cutting Corn-Stubble	I, 305	II, 595
77	Thills for Two-Wheeled Vehicles	II, 167	III, 461
78	Sealing Cans	II, 371	III, 748
79	Rake	I, 399	II, 768
80	Machine for Wiring Blind-Rods	I, 502	III, 107
81	Machine for Spooling Thread	I, 577	III, 186
82	Coal Sifter	I, 622	III, 215
83	Seeding-Machine	I, 407	II, 753
84	Straw Cutter	I, 418	II, 767
85	Ore Separater	I, 481	III, 79
86	Machine for Washing Bottles	II, 512	III, 896
87	Machine for Swedging Hatchet-Heads	I, 446	III, 34
88	Machine for Sawing Staves	II, 316	III, 675
89	Saw-Clamp	II, 278	III, 610
90	Life-Preserving Berths	II, 50	III, 312
91	Device for Locking Faucets	II, 174	III, 469
92	Animal Traps	II, 525	III, 911
93	Operating the Cutters of Harvesters	I, 344	II, 620
94	Spirit Still	I, 615	III, 208
95	Surf and Life Boat	II, 45	III, 310
96	Raking Device for Harvesters	I, 340	II, 651
97	Hub for Carriage Wheels	II, 152	III, 443
98	Feed Movement for Sawing Mills	II, 297	III, 647
99	Sack Fastener	II, 247	III, 567
100	Chimney Caps	I, 620	III, 213
101	Shower-Bath Apparatus	II, 490	III, 881
102	Sewing-Machine	I, 565	III, 166
103	Gas Regulator	I, 599	III, 202
104	Cotton-Seed Planter	II, 529	II, 704
105	Lantern	I, 642	III, 234
106	Adjusting Carriage-Tops	II, 151	III, 442
107	Attaching Whiffle-Trees to Tow-Lines	II, 41	III, 306
108	Smoothing-Irons	II, 387	III, 772
109	Portable Gas Generator	I, 595	III, 198
110	Drawing the Curve of Circular Stair Railings	II, 124	III, 410
111	Casting Bearings in Iron Wheels	I, 429	III, 9
112	Socket Coupling for Lathes	II, 266	III, 590
113	Apparatus for Suspending Eave-Troughs	II, 97	III, 376
114	Machine for Planing Saw-Teeth	II, 284	III, 619
115	Machine for Forging Metals	I, 472	III, 63
116	Pipe Coupling	I, 485	III, 83
117	Percussion-Cap Primers	II, 466	III, 863
118	Removing Stores, &c., in case of Fire	II, 125	III, 411
119	Attaching Scythes to Snaths	I, 405	II, 746
120	Sliding Rest for Lathes	II, 266	III, 590
121	Condenser for List-Speeder	I, 533	III, 136
122	Head-Rests for Railroad Car Seats	II, 143	III, 430
123	Crozing and Chamfering Staves	II, 315	III, 673
124	Carding Engine	I, 507	III, 110
125	Coal-Sifter	I, 622	III, 219
126	Seed-Planter	I, 377	II, 688
127	Corn-Planter	I, 367	II, 688
128	Corn-Planter	I, 367	II, 692
129	Tubes for Steam-Pressure Gauges	II, 19	III, 380
130	Cutting Figures out of Sheet Metal	I, 471	III, 61
131	Telegraphic Wires in Metallic Tubing	II, 81	III, 355
132	Reversible Railroad Car-Coupling	II, 140	III, 428
133	Manufacturing Verdigris	I, 617	....
18,134	Gas Retort	I, 600	III, 200

No.	Invention or Discovery.	Text.	Plates.
18,135	Wrench	I, 504	III, 91
136	Metallic Packing for Pistons of Steam Engines	II, 12	III, 264
137	Machine for Drying Grain	II, 232	III, 549
138	Tightening Tires of Carriage Wheels	II, 170	III, 462
139	Corn-Sheller	I, 304	II, 592
140	Seed-Planter	I, 377	II, 695
141	Mowing-Machine	I, 360	II, 682
142	Vapor Lamp	I, 641	III, 229
143	Cartridge for Breech-Loading Fire Arms	II, 468	III, 867
144	Ramming under the Cross-ties of Railroads	II, 116	III, 402
145	Hand Seed-Planter	I, 372	II, 683
146	Straw Cutter	I, 419	II, 770
147	Attaching Wires to Bell Telegraphs	II, 81	III, 350
148	Corn Planter	II, 529	II, 688
149	Punching Paper Fillets for Telegraphic Signals	II, 80	III, 354
150	Automatic Railroad Car-Brake	II, 138	III, 426
151	Sheep-Shearing Machine	I, 413	II, 762
152	Machine for Lasting Boots and Shoes	II, 345	III, 716
153	Wear-Iron for Carriages	II, 156	III, 447
154	Extension Gas Tubes	I, 601	III, 205
155	Sash-Lock	I, 460	III, 44
156	Machine for Forging Nuts	I, 479	III, 77
157	Bolts for Safes	I, 426	III, 4
158	Scythe Snaths	I, 405	II, 740
159	Signals for Steamboats	II, 77	III, 345
160	Wash Mixtures for Woollens, &c	I, 606	....
161	Mortising Chisel	II, 259	III, 580
162	Lock	I, 464	III, 50
163	Grinding-Mill	II, 243	III, 560
164	Door-Spring	I, 437	III, 19
165	Churns	I, 301	II, 588
166	Brick-Machine	II, 331	III, 704
167	Blast Furnace	I, 442	III, 26
168	Washing-Machine	II, 403	III, 789
169	Padlock	I, 459	III, 47
170	Machine for Pegging Boots and Shoes	II, 346	III, 736-37
171	Manufacturing Wooden Washboards	II, 323	III, 690
172	Saccharine Evaporators	I, 613	III, 209
173	Harvester	I, 327	II, 622
174	Culivator Teeth	II, 528	II, 601
175	Type Setting and Distributing Machine	II, 458	....
176	Machine for Hulling Rice	II, 247	III, 564
177	Machine for Cleaning Rice	II, 247	III, 566
178	Grinding Mill	II, 237	III, 555
179	Flour Bolt	II, 227	III, 548
180	Machine for Kneading Dough	II, 382	III, 774
181	Machine for Hardening Hat Bodies	I, 526	III, 133
182	Sustaining Window-Sash	II, 133	III, 417
183	India Rubber Paint	I, 607	....
184	Gas Generator	I, 593	III, 198
185	Excavator	I, 100	III, 383
186	Mastic Roofing	II, 120	....
187	Mowing Machines	I, 360	II, 677
188	Raking Attachment for Reapers	I, 404	II, 743
189	Invalid Bed	II, 365	III, 746
190	Making Paper Pulp from Ivory	I, 546	....
191	Hanging Mill-Stones	II, 241	III, 559
192	Ships' Pumps	II, 57	III, 324
193	Socket for Bolts	I, 427	III, 7
194	Machine for Expanding Spectacle-Bows	II, 77	III, 348
18,195	Street-Sweeping Machine	II, 523	III, 911

No.	Invention or Discovery.	Text.	Plates.
18, 196	Bridge	II, 87	III, 361
197	Operating Valves of Steam Engines	II, 37	III, 301
198	Painters' Easel	II, 409	III, 797
199	Safety-Fuse Compositions	I, 587	....
200	Operating Window-Sash	II, 133	III, 420
201	Coolers for Breweries	I, 583	III, 193
202	Feathering Paddle-Wheels	II, 50	III, 317
203	Treating Cotton and Linen Waste	I, 616	....
204	Treating Fibrous and Textile Substances	I, 521	III, 127
205	Machine for Pointing Wire	I, 502	III, 160
206	Belt Tool	I, 425	III, 1
207	Spoke-Machine	II, 311	III, 666
208	Harness for Looms	I, 539	III, 149
209	Composition for Tracing-Muslin	II, 455	....
210	Regulating Velocity of Wind-Wheels	II, 206	III, 507
211	Valve Gear for Oscillating Engines	II, 31	III, 301
212	Tenoning Machine	II, 318	III, 683
213	Watchmakers' Lathe	II, 461	III, 857
214	Boxes for Preserving Alkalies	I, 582	....
215	Drip-Pots for Sugar-Houses	I, 616	III, 197
216	Illuminating-Gas Apparatus	I, 591	III, 196
217	Ball Cartridge	II, 468	III, 867
218	Diaphragms for Photographic Cameras	II, 424	III, 814
219	Reefing and Furling Sails	II, 54	III, 321
220	Brewers' Coolers	I, 583	III, 194
221	Raking Attachment for Reapers	I, 404	II, 736
222	Manufacturing Shingles	II, 311	III, 664–5
223	Controlling Cog-Gear Sash Balance	II, 123	III, 408
224	Saw-Filer	I, 489	III, 74
225	Working Steam Valves by Direct Action	II, 39	III, 301
226	Brick-Machine	II, 331	III, 697
227	Boot and Shoe Sole-Cutter	II, 341	III, 715
228	Lock	I, 465	III, 51
229	Cutting Apparatus for Harvesters	I, 335	II, 643
230	Gas-Burner	I, 632	III, 225
231	Machine for Binding Grain	I, 317	II, 609
232	Horse Power	II, 233	III, 545
233	Life-Boat	II, 43	III, 307
234	Bearings for Mill-Stone Drivers	II, 239	III, 550
235	Metallic Packing-Rings for Steam Engines	II, 12	III, 267
236	Burglar's Alarm	II, 513	III, 897
237	Edge-Plane for Boot and Shoe Soles	II, 342	III, 728
238	Reaping and Mowing Machine	I, 402	II, 745
239	Portfolio or Music Stand	II, 433	III, 822
240	Harvester	I, 328	II, 627
241	Steam-Heating Apparatus	I, 646	III, 239
242	Apparatus for Loading Logs on Wagons	II, 169	III, 465
243	Lock	I, 465	III, 53
244	Making White-Lead	I, 610	III, 210
245	Safety-Clasp for Bracelets, &c	II, 406	III, 796
246	Stirrups for Riding-Saddles	II, 357	III, 723
247	Sleeve-Fastener	II, 504	III, 893
248	Journals of Axles with Friction-Rollers	II, 136	III, 421–2
249	Hand-Stamp	II, 454	III, 852
250	Machine for Filing and Setting Saws	II, 302	III, 651
251	Connecting and Disconnecting Pavement-Blocks	II, 113	III, 399
252	Railroad Car-Seats	II, 143	III, 435
253	Trussed Bridge	II, 86	III, 358–9
254	Carriage-Prop	II, 148	III, 438
255	Rotary Steam-Engine	II, 9	III, 265
18, 256	Rake for Harvesters	I, 337	II, 650

No.	Invention or Discovery.	Text.	Plates.
18, 257	Carding-Engines	I, 508	III, 111
258	Valve-Gear for Oscillating-Engines	II, 31	III, 295
259	Nut-Machine	I, 477	III, 72
260	Diving-Apparatus	II, 47	III, 314
261	Fly-Trap	II, 524	III, 914
262	Fire-Escape Ladder	II, 517	III, 902
263	Cooler	II, 378	III, 759
264	Machine for Distributing Type	II, 457	III, 858
265	Pencil-Sharpener	II, 423	III, 815
266	Wrench	I, 504	III, 105
267	Harvester	I, 327	II, 632
268	Lathes for making Clothes-Pins, &c	II, 265	III, 592
269	Holding the Log in Circular Sawing-Machines	II, 293	III, 634, 5, 6
270	Composition for Covering Meats	I, 586	....
271	Lard-Rendering Kettle	I, 604	III, 209
272	Steam-Pressure Gauge	II, 18	III, 275
273	Apparatus for Opening Oysters	II, 520	III, 909
274	Life-Preserver	II, 49	III, 316
275	Cribs of Horses' Stables	II, 124	III, 409
276	Boiler	II, 3	III, 252
277	Fastenings for Jewelry	II, 413	III, 800
278	Preparing Roofing Cements	II, 119	III, 405
279	Factitious Oils	I, 606	....
280	Hydraulic Engine	II, 181	III, 479
281	Coating Hose-Pipe	I, 585	III, 195
282	Bit-Holder	II, 254	III, 575
283	Approach-Opening Gate	II, 106	III, 391–2
284	Reed-Stops for Musical Instruments	II, 417	III, 812
285	Sewing-Machine	I, 565	III, 174
286	Cork-Sole Stuff	I, 589	....
287	Machine for Cutting Bungs	II, 258	III, 581–2
288	Setting Diamonds	II, 408	III, 797
289	Gas-Burner	I, 632	III, 219
290	Hame-Tug Fastening	II, 350	III, 719
291	Seamless Uppers of Boots and Shoes	II, 347	III, 733
292	Burglars' Alarms	II, 513	III, 909
293	Separating Oily Matters from Water	II, 196	III, 498
294	Spikes	I, 496	III, 106
295	Apparatus to Protect Buildings from Fire	II, 516	III, 901
296	Corn-Sheller	I, 304	II, 594
297	Apparatus for Roasting on Cooking-Stoves, &c	I, 653	III, 248
298	Machine for Manufacturing Pottery-Ware	II, 338	III, 693
299	Fastening Metal Bands of Cotton Bales, &c	II, 208	III, 514
300	Awning-Frames for Horses	II, 352	III, 720
301	Construction of Wire Fences	II, 105	III, 388
302	Stemming and Polishing Peanuts	I, 417	II, 765
303	Hemp Brake	I, 531	III, 138
304	Window for Locomotives	II, 24	III, 290
305	Drilling and Milling Machine	II, 260	III, 585
306	Attaching Elastic Soles to Horse-Shoes	I, 451	III, 34
307	Hydrocarbon Vapor Lamp	I, 636	III, 224
308	Opening and Closing Gates	II, 109	III, 393
309	Pump	II, 188	III, 486
310	Hollow Metallic Lasts	II, 354	III, 719
311	Variable Excentrics for Steam-Engine Valves	II, 37	III, 299
312	Attaching Adjustable Handles to Joiners' Planes	II, 273	III, 603
313	Machine for Measuring Cloth	II, 74	III, 336
314	Marine Propelling Apparatus	II, 51	III, 319
315	Tank for Locomotives	II, 24	III, 289
316	Forming and Hardening Hat Bodies	I, 525	III, 133
18, 317	Grain-Drill	I, 312	II, 604

No.	Invention or Discovery.	Text.	Plates.
18, 318	Brick Press	II, 332	III, 707
319	Steam Generator	II, 27	III, 278–9
320	Power Loom	I, 541	III, 152
321	Stove-Cover Stands	I, 647	III, 244
322	Machine for Packing Wool	II, 216	III, 522
323	Curtain-Rollers	II, 382	III, 763
324	Saw-Filing Machine	II, 280	III, 611–12
325	Corn-Sheller	II, 527	II, 591
326	Attaching Scythes to Snaths	I, 405	II, 746
327	Manufacture of Metallic Squares	II, 77	III, 347
328	Machine for Packing Wool	II, 217	III, 523
329	Reaping and Mowing Machine	I, 402	II, 737
330	Cultivator	I, 307	II, 600
331	Corn-Husker	I, 351	II, 660
332	Corn-Husker	I, 347	II, 670
333	Seed-Planter	I, 379	II, 703
334	Seed-Planter	I, 378	II, 713
335	Plough	I, 386	II, 716
336	Hill-Side Plough	I, 394	II, 727
337	Curry-Combs	I, 434	III, 21
338	Bronzing Liquids	I, 584	....
339	Rake	I, 399	II, 732
340	Guard-Finger for Reaping Machines	I, 403	II, 738
341	[Suspended.]	....	....
342	Machine for Shucking and Shelling Corn	I, 305	II, 592
343	Gang-Plough	I, 393	II, 727
344	Seed-Planter	I, 378	II, 709
345	Joiners' Bench	II, 252	III, 573
346	Seeding-Machine	I, 407	II, 745
347	Melting and Refining Iron	I, 455	....
348	Locomotive Cow-Catcher	II, 20	III, 289
349	Appendages to Shower-Baths	II, 490	III, 881
350	Sewing-Machine	I, 566	III, 176
351	Sod-Cutter	I, 414	II, 766
352	Rock Cutting and Drilling Machine	II, 94	III, 372
353	Extension-Elevator	II, 210	III, 516
354	Machine for Sawing Shingles	II, 298	III, 648
355	Plough	I, 386	II, 716
356	Hot-Air Register	I, 635	III, 227
357	Spring-Bed Bottoms	II, 365	III, 747
358	Corn-Husker	I, 348	II, 670
359	Sewing-Machine	I, 567	III, 175
360	Seed-Sowing Machine	I, 411	II, 759
361	Corn-Sheller	I, 304	II, 589
362	Coal-Stove	I, 650	III, 244
363	Machine for Picking Cotton in the Field	I, 368	II, 681
364	Lubricating Carriage-Axles	II, 414	III, 518
365	Fountain-Pen	II, 422	III, 813
366	Seed-Planter	I, 379	II, 705
367	Oil-Pressing Machinery	II, 223	III, 536
368	Wind-Wheel	II, 201	III, 504–5
369	Balancing Threshing Cylinders	I, 420	II, 757
370	Wood-Boring Machine	II, 257	III, 580
371	Sewing-Machine	I, 566	III, 177
372	Cutting Metal Caps for Nail-Heads	I, 466	III, 54
373	Rotary Exhaust-Regulator for Locomotives	II, 23	III, 292
374	Machine for Cleaning Rice	II, 246	III, 565
375	Railroad Car Seats	II, 143	III, 434
376	Sash-Supporter	II, 123	III, 409
377	Folding Chair for Pews	II, 374	III, 758
18, 378	Saw-Filer	II, 279	III, 612

No.	Invention or Discovery.	Text.	Plates.
18, 379	Machine for Bending Wood	II, 324	III, 687
380	Machine for Separating Slate, &c., from Coal	I, 621	III, 214
381	Preparing Fats for Candle-making	I, 584	....
382	Churn-Dashers	I, 300	II, 585
383	Arrangement of Self-Dumping Trucks	II, 127	III, 413
384	Churns	I, 302	II, 586
385	Corn-Husker	I, 352	II, 663
386	Wagon-Brake	II, 167	III, 462
387	Hair-Triggers for Fire-Arms	II, 476	III, 879
388	Ore-Separator	I, 482	III, 80, 81
389	Preparing Paper-Pulp from Beet Refuse	I, 546	....
390	Harvester	I, 328	II, 634
391	Twine-Reels	I, 577	III, 184
392	Manufacture of Artificial Hones	II, 335	III, 698
393	Seed-Planter	I, 379	II, 703
394	Saw-Mill	II, 281	III, 613
395	Apparatus for Rescuing Horses from Fire	II, 81	III, 359
396	Corn-Husker	I, 351	II, 667
397	Gang-Plough	I, 393	II, 729
398	Ditching-Machine	II, 90	III, 365
399	Melodeon	II, 416	III, 807
400	Implement for Sealing Railroad-Cars, &c	II, 160	III, 452
401	Projectiles for Rifled Ordnance	II, 488	III, 877
402	Guiding the Logs in Sawing Curvatures	II, 286	III, 621
403	Fastening Shafts and Poles to Carriages	II, 155	III, 444
404	Digging-Machine	II, 90	III, 366
405	Harvester	I, 328	II, 635
406	Ore-Washer	I, 483	III, 77
407	Washing-Machine	II, 403	III, 793
408	Machine for making Hammers	I, 446	III, 32
409	Coating Iron	I, 610	....
410	Cotton-Gin Feeder	I, 516	III, 116
411	Means for flooding Vessels	II, 62	III, 330
412	Elastic Coupling for Mill-Shafting	II, 238	III, 556
413	Hominy-Machine	II, 518	III, 912
414	Gas Generator	I, 594	III, 199
415	Saw-Filer	II, 279	III, 610
416	Street-Sweeper	II, 523	III, 907
417	Cellular Iron Pavements	II, 112	....
418	Lock for Fire-Arms	II, 476	III, 876
419	String Fastening for Sacks, &c	II, 247	III, 570
420	Water-Gauges for Steam-Boilers	II, 8	III, 253
421	Hose Carriage	II, 147	III, 436
422	Grater	II, 385	III, 764
423	Carding-Machine	I, 509	III, 112
424	Bomb-Shell	II, 464	III, 862
425	Water Indicators for Steam-Boilers	II, 8	III, 254
426	Detaching Horses from Vehicles	II, 166	III, 460
427	Lasting-Pincers	II, 353	III, 725
428	Polishing the Heads of Trunk Nails	I, 475	III, 69
429	Bakers' Ovens	I, 644	III, 236–7
430	Coal-Sifter	I, 622	III, 216
431	Constructing the Tires of Wagon-Wheels	II, 168	III, 462
432	Furnace	I, 625	III 218
433	Corn-Husker	I, 352	II, 658
434	Stove and Furnace Grates	I, 649	III, 242
435	Rubbers of Railroad Car-Brakes	II, 140	III, 424
436	Beating Peanuts from their Vines	I, 421	II, 773
437	Rake for Harvesters	I, 337	II, 642
438	Dumping Wagon	II, 168	III, 464
18, 439	Machine for Sowing Seed Broadcast	I, 415	II, 757

No.	Invention or Discovery.	Text.	Plates.
18,440	V ne for Wind-Wheels	II, 205	III, 511
441	Machine for Striping Leather, &c	II, 356	III, 716
442	Cotton Cultivator	I, 311	II, 602
443	Sawing-Machine	II, 288	III, 624
444	Screens for Grain-Separators	II, 232	III, 540
445	Wristband Fastener	II, 507	III, 891
446	Steam Plough	I, 396	II, 726
447	Corn-Husker	I, 348	II, 671
448	Wheelwright-Machine	II, 169	III, 466
449	Mode of Closing Farm Gates	II, 108	[illegible], 390
450	Seed-Planter	I, 380	II, 699
451	Carriage-Spring	II, 148	III, 439
452	Bending Flanges on Boiler-Heads	I, 425	III, 4
453	Piano-forte Action	II, 429	III, 817
454	Cotton-Cleaner	I, 514	III, 121
455	Endless Aprons of Threshing-Machines	I, 421	II, 768
456	Shades for Lamps	I, 640	III, 229
457	Nail-Machine	I, 474	III, 64
458	Harpoon	II, 48	III, 315
459	Plough	I, 388	II, 718
460	Steam Generator	II, 28	III, 282
461	Manufacture of Cotton Yarns	I, 518	III, 186
462	Swathing Apparatus for Harvesters	I, 341	II, 615
463	Plough	I, 387	II, 737
464	Grain Cradle	I, 318	II, 611
465	Air and Vapor Burner	I, 618	III, 211
466	Automatic Caster and Fan	II, 373	III, 755
467	Steam Boiler	II, 4	III, 254
468	Steam Plough	I, 396	II, 721
469	Coal Stove	I, 651	III, 245
470	Sewing-Machine	I, 567	III, 176
471	Cultivator Teeth	I, 306	II, 601
472	Breech-Loading Fire-Arm	II, 474	III, 872
473	Corn-Husking Machine	I, 356	II, 669
474	Reciprocating Mill Saw	II, 282	III, 614
475	Plough	I, 387	II, 713
476	Apple Slicer	II, 361	III, 742
477	Printing-Press	II, 439	III, 831
478	Cotton Cultivator	I, 312	II, 604
479	Machine for Spading Land	I, 416	II, 764
480	Plough	I, 387	II, 731
481	Core Spindle for Casting	I, 429	III, 11
482	Cotton-Seed Planter	I, 370	II, 708
483	Washing-Machine	II, 396	III, 781
484	Smut-Machine	II, 250	III, 569
485	Amalgamator	I, 423	III, 1
486	Priming Repeating Fire-Arms	II, 480	III, 876
487	Manufacturing Seamless Felt Garments	I, 520	III, 124
488	Rotary Pump	II, 191	III, 493
489	Washing-Machine	II, 396	III, 782
490	Chain-Machine	I, 431	III, 14
491	Furnace	I, 625	III, 217
492	Seeding-Machine	I, 407	II, 747
493	Feather-Dressing Machine	II, 385	III, 769
494	Construction of Railways	II, 117	III, 404
495	Machine for Sowing Seed Broadcast	I, 416	II, 762
496	Machine for Brushing Rice	II, 245	III, 565
497	Butter-Worker	II, 527	II, 581
498	Metallic Screw Cap for Jars, &c	II, 388	III, 770
499	Nut-Machine	I, 478	III,72,73
18,500	Cane Umbrella	II, 507	III, 892

No.	Invention or Discovery.	Text.	Plates.
18,501	Machine for Breaking Coal	I, 621	III, 214
502	Steam Cotton Press	II, 218	III, 526
503	Fruit Gatherer	I, 316	II, 604
504	Printing-Machine	II, 437	III, 826
505	Severing Ears of Corn from the Stalks	I, 302	II, 582
506	Rotary Shears	I, 495	III, 97
507	Water-Wheel	II, 198	III, 499
508	Corn Planter	I, 368	II, 686
509	Grinding and Polishing Machine	I, 445	II, 30
510	Mowing-Machine	I, 360	II,678,9
511	Sewing-Machine	I, 568	III, 177
512	Shingle-Machine	II, 309	III, 661
513	Iron Spoons	II, 392	III, 778
514	Fastening Metal Bands for Cotton Bales, &c	II, 208	III, 513
515	Railroad Car-Spring	II, 144	III, 435
516	Operating Railroad Brakes	II, 137	III, 425
517	Iron Spoon	II, 392	III, 776
518	Washing-Machine	II, 397	III, 781
519	Railroad Chair	II, 162	III, 454
520	Cultivator	I, 308	II, 598
521	Reversing the Chisel in Mortising-Machines	II, 268	III, 597
522	Sewing-Machine	I, 568	III, 167
523	Bee-Hive	I, 295	II, 579
524	Seed-Planter	II, 530	....
525	Cotton Scraper	I, 405	II, 701
526	Steam-Pressure Gauge	II, 18	III, 276
527	Hand Printing-Press	II, 449	III 860
528	Machine for Making Brushes	II, 370	III, 753
529	Machinery for Spinning Flax and Hemp	I, 576	III, 187
530	Cultivator	I, 308	II, 598
531	Lime Kiln	II, 337	III, 701
532	Feed-Water Pipe in Bed of Steam Engine	II, 9	III, 261
533	Machine for Folding Paper	II, 421	III, 811
534	Machine for Making Bolts	I, 427	III, 6
535	Reversing the Chisel in Mortising Machines	II, 269	III, 600
536	Curtain Fixtures	II, 380	III, 759
537	Rose for Door-Knobs	I, 436	III, 18
538	Mixing and Grinding Oil Paints	I, 608	III, 210
539	Apparatus for Unloading Vessels	II, 65	III, 335
540	Hoisting Bucket	II, 211	III, 519
541	Candy Twisting Machine	II, 514	III, 898
542	Machine for Bending Metal Plates	II, 532	III, 56
543	Smoothing-Iron	II, 386	III, 771
544	Violin Attachment	II, 460	III, 842
545	Printing-Press	II, 446	III, 843-44
546	Water-Cooling Pitcher	II, 390	III, 773
547	Operating Scroll Saws	II, 305	III, 665
548	Iron Truss Frames for Bridges, &c	II, 88	III, 363
549	Chamfering and Crozing Barrels	II, 251	III, 572
550	Water Closet	II, 89	III, 364
551	Rotary Excavator	II, 101	III, 382
552	Cleaning and Polishing Coffee	II, 515	III, 903
553	Expanding Tires	I, 500	III, 93
554	Iron Shutters for Doors, Windows, &c	II, 92	III, 368
555	Canal-Lock Gates	II, 111	III, 396-97
556	Tightening Tires on Carriage Wheels	II, 153	III, 443
557	Hand Printing-Press	II, 443	III, 836
558	Joints of Carriage Tops	II, 151	III, 449
559	Pump	II, 188	III, 491
560	Barometer	II, 68	III, 339
18,561	Rock Drill	II, 96	III, 373-4

No.	Invention or Discovery.	Text.	Plates.
18,562	Harvester	I, 329	II, 637
563	Vane Governor for Steam Engines	II, 16	III, 275
564	Machine for Burring Wool on the Pelt	I, 579	III, 188
565	Folding Iron Bedsteads	II, 368	III, 750
566	Sewing-Machine	I, 568	III, 180
567	Printing-Press	II, 446	III, 840-41-42
568	Projectile	II, 487	III, 879
569	Forming Round Tenons on Blind Slats	II, 130	III, 416
570	Sewing-Machine	II, 288	III, 625–26
571	Corn-Husker	I, 349	II, 656 and 663–4
572	Determining Approximate Latitude at Sea	II, 73	III, 351
573	Earth-Moving Machine	II, 97	III, 377
574	Distributing Apparatus in Flouring Mills	II, 235	III, 551
575	Hoisting Apparatus for Bricks, &c	II, 211	III, 520
576	Machine for Pulling Beans	I, 295	II, 580
577	Rails for Railways	II, 118	II, 404
578	Attaching Steam Gauges to Locomotive Boilers	II, 20	III, 267
579	Seeding-Machine	I, 408	II, 750
580	Stove for Burning Tan, Sawdust, &c	I, 654	III, 247
581	Apparatus for Holding Music, &c	II, 417	III, 814
582	Fruit Gatherer	I, 316	II, 611
583	Water-proof Soles and Heels for Boots and Shoes	II, 347	III, 738
584	Corn-Husker	I, 349	II, 666
585	Springs for Mattresses, Chairs, &c	II, 389	III, 771
586	Cooking Stove	I, 652	III, 246
587	Cultivator	I, 308	II, 599
588	Machine for Turning Spiral Forms	II, 319	III, 679
589	Feeding Paper to Printing-Presses	II, 448	III, 856
590	Grain Drill	I, 312	II, 606
591	[Suspended]	....	....
592	Lifting-Jack	II, 213	III, 519
593	Spring Hinge	I, 448	III, 34
594	Patterns for Boots and Shoes	II, 345	III, 734
595	Fire Plugs	II, 176	III, 472
596	Ploughing-Machine	I, 384	II, 714
597	Cutting Bread	II, 369	III, 751
598	Protecting Trees from Canker Worms	I, 422	II, 753
599	Lateral Feed Motion for Sawing Mills	II, 359	III, 730
600	Digging Plough	I, 392	II, 724
601	Harness Buckle	II, 350	III, 723
602	Signal Lantern	I, 642	III, 232
603	Seeding-Machine	I, 408	II, 761
604	Tree Protector	III, 923	II, 755
605	Sewing-Machine	I, 569	III, 177
606	Candlestick	I, 620	III, 213
607	Husking Palm	I, 356	II, 669
608	Instrument for Surveying and Calculating Areas	II, 78	III, 349
609	Plough	I, 388	II, 722
610	Grinding Mill	II, 237	III, 556
611	Window-Sash	II, 133	III, 417
612	Clamp for Centring Hubs for Boring	II, 263	III, 590
613	Generating Anhydrous Steam	II, 26	III, 277-80
614	Last Holder	II, 353	III, 719
615	Revolving Snow-Excavators for Railroads	II, 164	III, 456–7
616	Bullet-Machine	II, 464	III, 863
617	Horse-Shoe Nail Machine	I, 473	III, 66
618	Printing-Press	II, 447	III, 852
619	Sub-soil Plough	I, 397	II, 720
18,620	Machinery for Dressing Warps	I, 578	III, 185

No.	Invention or Discovery.	Text.	Plates.
18,621	Quilting Frame	II, 390	III, 782
622	Lard-Rendering Kettle	I, 605	III, 206
623	Apparatus for Ringing Bells	II, 509	III, 894
624	Straw-Cutter	I, 419	II, 772
625	Device for Husking Corn	I, 353	II, 657
626	Device in Telegraphic Fire-Alarm Apparatus	II, 79	III, 350–51
627	Elastic Door-Guard	II, 91	III, 369
628	Harvesting-Machine	I, 342	II, 630
629	Brick Machine	II, 327	III, 714
630	India-rubber Springs for Upholstering	II, 395	III, 794
631	Carpet Fastener	II, 372	III, 752
632	Clothes Clamp	II, 377	III, 756
633	Washing-Machine	II, 397	III, 785
634	Breech-Loading Fire-Arm	II, 475	III, 871
635	Lime-Kiln	II, 337	III, 708
636	Extension Table	II, 393	III, 777
637	Flour-Distributing Bolt for Grinding Mill	II, 238	III, 557
638	Hemp-Cutter	I, 531	III, 140
639	Sewing-Machine	I, 569	III, 178
640	Operating Fly-Frames of Printing-Presses	II, 448	III, 850
641	Mechanism for Operating Pilot-Bells	II, 30	III, 293–4
642	Washing-Machine	II, 397	III, 780
643	Portable Forge	I, 441	III, 26
644	Corn-Husker	I, 350	II, 667–8
645	Pitcher for Molasses	II, 390	III, 772
646	Machine for Turning Wooden Boxes	II, 326	III, 689–90
647	Cake-Cutter	II, 371	III, 754
648	Gas-Meter Indicator	I, 596	III, 198
649	Butter Worker	I, 297	II, 583
650	Fastening for Machine Belting	II, 227	III, 537
651	Adjusting Band-Saws to Circular Stocks	II, 304	III, 654
652	Self-Feeding Drill	I, 314	III, 22
653	Tooth Brush	II, 394	III, 778
654	Key for Door-Locks	I, 456	III, 41
655	Steam-Pressure Gauge	II, 18	III, 282
656	Machine for Husking Corn	I, 356	II, 661
657	Hemp Brake	I, 531	III, 139
658	Corn-Husker	I, 349	II 665
659	Apparatus for Harvesters	I, 334	II, 642
660	Ventilating Attachment to Pumps	II, 193	III, 496
661	Machine for Turning Pillars for Clocks	II, 68	III, 340
662	Corn-Husker	I, 350	II, 664
663	Steering-Apparatus	II, 60	III, 326
664	Street-Sweeping Machine	II, 523	III, 905–6
665	Calendar Clock	II, 70	III, 341–42
666	Machine for Covering Sugar-Cane	I, 298	II, 584
667	Slide Valves for Steam-Engines	II, 38	III, 303
668	Preparing Engraved Plates for Printing	II, 435	....
669	Screwing Tubes into Vacuum Pans	I, 492	III, 96
670	Hay and Manure Fork	I, 316	II, 607
671	Churn	I, 298	II, 584
672	Ore Separator	I, 482	III, 82
673	Piano-forte	II, 431	III, 820
674	Applying Hot Water to Journals of Rolling Mills	I, 488	III, 89
675	Arithmometer for Adding	II, 67	III, 337,8,9
676	Couplings for Melodeons	II, 416	III, 808
677	Metallic Roofing for Subterranean Vaults	II, 121	III, 407
678	Many-Chambered Rotating Breech Fire-Arm	II, 479	III, 875
679	Machine for Cutting Shingles	II, 311	III, 663
680	Spoke-Machine	II, 312	III, 668
18,681	Shingle-Machine	II, 310	III, 662

No.	Invention or Discovery.	Text.	Plates.
18,682	Plough	I, 389	II, 715
683	Stopping and Starting Ferry-boats	II, 42	III, 307
684	Machine for Filing Saws	I, 490	III, 90, 91
685	Skates	II, 521	III, 907–8
686	Harvester Rake	I, 320	II, 624
687	Machine for Slating Coal	I, 622	III, 216
688	Measuring Apparatus of Seed-Drills	I, 314	II, 608
689	Levelling Instrument for Ditching	II, 90	III, 367
690	Seed-Drill	I, 313	II, 605
691	Floating Horses, &c., across Rivers	II, 519	III, 904
692	Arithmometer	II, 67	III, 336
693	Boilers for Heating Buildings	I, 618	III, 211
694	Attaching Paddle-Wheels to Canal-Boats	II, 41	III, 305
695	Washing-Machine	II, 398	III, 788
696	Ventilating Rocking-Chair	II, 375	III, 756
697	Bean-Harvester	I, 331	II, 625
698	Gang-Plough	I, 393	II, 732
699	Painters' Striping Instrument	II, 418	III, 808
700	Corn-Sheller	I, 304	II, 590
701	Pendulum Quadrant	II, 76	III, 354
702	Shelving for Curing and Storing Cheese	I, 298	II, 583
703	Arrangement in Sash-Balance	II, 123	III, 409
704	Safety-Lamp	I, 639	III, 230
705	Pump-Packing	II, 184	III, 483
706	Machine for Making Cigar-Lighters	II, 514	III, 899, 900
707	Projectile for Fire-Arms	II, 485	III, 874
708	Truss	II, 499	III, 885
709	Scissors-Sharpener	II, 521	III, 906
710	Coffee-Roaster	II, 378	III, 763
711	Machine for Multiplying Numbers	II, 75	III, 346
712	Arrangement of Cylinders for Locomotives	II, 21	III, 266–7
713	Candle-Snuffers	II, 392	III, 776
714	Cultivator	I, 309	II, 603
715	Automatic Railroad Brake	II, 136	III, 423–4
716	Seed-Planter	I, 381	II, 701
717	Seed-Planter	I, 381	II, 702
718	Steam Pumping Engine	II, 185	III, 485, 6, 7
719	Vapor-Burning Lamps	I, 641	III, 231
720	Washing-Machine	II, 398	III, 791
721	Washing-Machine	II, 398	III, 789–90
722	Rotary-Chair	II, 376	III, 756
723	Machine for Making Dough	II, 383	III, 765, 6, 7
724	Preparing Glue Stock	I, 609	....
725	Knitting-Machine	I, 532	III, 142
726	Plough	I, 390	II, 719
727	Speed-Indicator	II, 250	III, 571
728	Surveying Level	II, 78	III, 347
729	Composition Fuel	I, 624	....
730	Seeding-Machine	I, 408	II, 751
731	Hay-Rake	I, 400	II, 739
732	Sewing-Machine	I, 569	III, 180
733	Extension-Table	II, 393	III, 795
734	Regulating Action of Fly-Wheel	II, 234	III, 550
735	Seeding-Machine	I, 408	II, 747–8
736	Rake for Harvesters	I, 336	II, 643
737	Cooking Stove	I, 653	III, 247
738	Pile for Rolling Beams	I, 487	III, 83
739	Cultivator	I, 309	II, 599
740	Revolving Bottle-Casters	II, 373	III, 754
741	Balance Iron for Mill-Stones	II, 239	III, 552
18,742	Long Trunks for Cleaning Cotton	I, 515	III, 122

No.	Invention or Discovery.	Text.	Plates.
18,743	Dumping-Car	II, 141	III, 431–2
744	Printing-Press	II, 440	III, 830
745	Machine for Sawing Bevelled Curves	II, 285	III, 620–1
746	[Suspended]	....	....
747	Corn-Harvester	I, 332	II, 646
748	Standard for Seats	II, 392	III, 775
749	Gang-Plough	I, 394	II, 730
750	Plough	I, 389	II, 715
751	Pedal Base for Melodeons	II, 416	III, 815
752	Railroad Car Wheels	II, 145	III, 433
753	Machine Banding	II, 225	....
754	Finger-Bars for Harvesters	I, 335	II, 649
755	[Suspended]	....	....
756	Cane-Planter	I, 363	II, 682–3
757	Bee-Hive	I, 296	II, 579
758	Machine for Rolling Dough	II, 383	III, 770
759	Egg-Beater	II, 384	III, 768
760	Lifting-Jack	II, 213	III, 517
761	Grain-Separator	II, 231	III, 253–4
762	Seed-Planter	I, 382	II, 710–11
763	Rock-Drill	II, 96	III, 376
764	Lime-Kiln	II, 338	III, 700–1
765	Seeding-Machine	I, 409	II, 760
766	Cotton and Hay Presses	II, 221	III, 530
767	Railroad Car Wheels	II, 145	III, 433
768	Corn-Planter	I, 368	II, 689
769	Corn-Harvester	I, 332	II, 640
770	Machine for Making Brooms	II, 369	III, 752
771	Riding Saddle	II, 357	III, 722
772	Seed-Planter	I, 381	II, 700
773	Work-Box	II, 404	III, 784–5
774	Machine for Spreading Lime and other Fertilizers	I, 357	II, 659
775	Machine for Threading Bolts	I, 428	III, 8–9
776	Plough	I, 389	II, 716–7
777	Clothes-Wringer	II, 378	III, 761
778	Sausage-Machine	II, 391	III, 775
779	Clasps for Metallic Hoops	II, 211	III, 516
780	Photographic Plate-Holder	II, 426	III, 819
781	Propelling Cars and Carriages by Horse-Power	II, 156	III, 448
782	Machine for Moulding Shells	I, 473	III, 65
783	Plough	I, 390	II, 719
784	Gas-Lighting Lanterns	I, 643	III, 232
785	Cultivator	I, 309	II, 597
786	Driving Box for Locomotives	II, 22	III, 283
787	Cleaning the Top Cards of Carding Machines	I, 510	III, 112–3
788	Mowing-Machine	I, 360	II, 676
789	Treatment of Ores of Gold and Silver	I, 484	....
790	Device for Fastening Harness Traces	II, 352	III, 725
791	Cleaning Gas Retorts	I, 600	III, 203
792	Knitting Machine	I, 533	III, 143
793	Sewing Machine	I, 570	III, 182
794	Paint Vehicle	I, 607	....
795	Card Printing Machine	II, 438	III, 832
796	Machine for Shearing Cloth	I, 512	III, 116
797	Churn	II, 527	II, 586
798	Corn-Planter	I, 368	II, 690
799	Billiard-Table Cushions	II, 510	III, 896
800	Cutting Apparatus of Mowing-Machines	I, 361	II, 680
801	Treating Flax, Hemp, &c	I, 523	III, 131
802	Seed-Planter	I, 382	II, 707
18,803	Plough	I, 391	II, 719–22

No.	Invention or Discovery.	Text.	Plates.
18,804	Agricultural Fork	I, 315	II, 607
805	Billiard-Table Cushions	II, 510	III, 895
806	Planing-Machine	II, 276	III, 608
807	Sewing-Thimble	I, 574	III, 182
808	Machine for Boring Hubs	II, 263	III, 588
809	Life-Preserver	II, 49	III, 316
810	Piano-forte	II, 431	III, 820
811	Machine for Cutting Metallic Bars	I, 471	III, 63
812	Printing-Press	II, 440	III, 827–8
813	Harvester	I, 329	II, 638
814	Propeller	II, 51	III, 323
815	Bee-Hive	I, 296	II, 579
816	Securing Hatches of Vessels	II, 64	III, 331
817	Sewing-Machine	I, 570	III, 181
818	Lamp	I, 636	III, 231
819	Life and Treasure Buoy for Vessels	II, 62	III, 331
820	Plough	I, 390	II, 718
821	Seed-Planter	I, 382	II, 706
822	Steam Boiler	II, 4	III, 264
823	Sewing-Machine	I, 571	III, 183
824	Cushion for Wings of Bomb-Lance	II, 463	III, 861
825	Plough	I, 391	II, 728
826	Pocket-Book Alarm	II, 508	III, 894
827	Potato Planter	II, 372	II, 696
828	Shingle	II, 306	III, 651
829	Reaping and Mowing Machine	I, 402	II, 744
830	Construction of Salt Pans	I, 613	III, 206
831	Machine for Sticking Pins on Paper	I, 485	III, 84
832	Ice-Breaking Boat	II, 43	III, 309–10
833	Reaping and Mowing Machine	I, 403	II, 742
834	Sewing-Machine	I, 570	III, 174
835	Steering Apparatus for Vessels	II, 65	III, 334
836	Revolving Fire-Arm	II, 470	III, 867
837	Cut-Off Valve-Gear of Steam Engines	II, 33	III, 296
838	Adjustable Gauge for Dovetails	II, 259	III, 583
839	Casters for Furniture	II, 373	III, 754
840	Cultivator	I, 310	II, 600
841	Billiard-Table Cushions	II, 511	III, 898
842	Machinery for Lifting Water	II, 195	III, 497
843	Tube for Seed-Planters	I, 383	II, 707
844	Corn and Cob Mill	II, 235	III, 548–9
845	Mechanical Movement for Sewing-Machines	I, 552	III, 161
846	Corn-Planter	I, 369	II, 705
847	Spring-Valve Cock	II, 30	III, 289
848	Dress of Mill-Stones	II, 240	III, 550
849	Egg-Beater	II, 384	III, 766
850	Horse-Rake	I, 400	II, 738
851	Vault-Light Covers	II, 128	III, 414
852	Seeding-Machine	I, 410	II, 753
853	Seeding-Machine	I, 409	II, 749–55
854	Cotton and Hay Presses	II, 221	III, 532–3
855	Hubs of Carriage Wheels	II, 152	III, 443
856	Seeding-Machine	I, 409	II, 749–50
857	Flexomanus	II, 411	III, 804
858	Portable Field-Fence	II, 102	III, 385
859	Cooking-Stove	I, 653	III, 242
860	Portable Saw Mill	II, 282	III, 615
861	Surface Condensers	II, 8	III, 259–60
862	Cheese Press	II, 220	III, 528
863	Lubricating Oil Cups	II, 214	III, 521
18,864	Steam Cotton-Press	II, 219	III, 525

No.	Invention or Discovery.	Text.	Plates.
18,865	Bracing Springs for Vehicles	II, 165	III, 460
866	Fuses of Shells and other Projectiles	II, 488	III, 879
867	Windowing-Machine	I, 422	II, 770
868	Feet Warmer	I, 656	III, 249
869	Life-Preserver	II, 49	III, 316
870	Pump	II, 188	III, 490
871	Supporting Reels for Harvesters	I, 336	II, 639
872	Boring-Machine	II, 256	III, 577–78
873	Infantine Exercising Chair	II, 374	III, 758
874	Bagasse Furnace	I, 627	III, 222–23
875	Steam Boiler	II, 5	III, 256
876	Bayonet Fastening	II, 462	III, 861
877	Drawing-Knife	II, 260	III, 583
878	Curtain Fixtures	II, 380	III, 762
879	Machine for Pegging Boots and Shoes	II, 347	III, 732
880	Sewing-Machine	I, 571	III, 179–80
881	Seeding-Machine	I, 410	II, 756
882	Snow-Plough	II, 165	III, 458
883	Furnace for Coal-Burning Locomotives	III, 923	III, 228
884	Journal-Box for Railroad Cars	II, 157	III, 449
885	Grate Damper	I, 623	III, 217
886	Ventilating Mattresses	II, 389	III, 777
887	Straw Cutter	I, 420	II, 771
888	Preparing Fibrous Substances for Spinning	I, 522	III, 123–4–5
889	Washing-Machine	II, 399	III, 792
890	Clock	II, 69	III, 342
891	Extension Table	II, 393	III, 778
892	Nut-Machine	I, 478	III, 75
893	Turning the Band Portions of Carriage Hubs	II, 148	III, 438
894	Shovel Plough	I, 395	II, 720
895	Wine and Cider Press	II, 219	III, 526–7
896	Casting Hinges	I, 448	III, 31–35
897	Air-Tubes in Fire-Boxes of Steam Boilers	II, 5	III, 257
898	Washing-Machine	II, 399	III, 786
899	Potato-Digger	I, 398	II, 740
900	Cultivator	I, 310	II, 602
901	Treating Photographic and other Pictures	II, 428	....
902	Bedstead Slats	II, 366	III, 750
903	Railroad Snow-Plough	II, 165	III, 459
904	Sewing-Machine	I, 572	III, 181
905	Machine for Cutting and Grinding Corn-Stalks	I, 305	II, 593
906	Machine for Rolling Cornice	I, 487	III, 88
907	Hand Printing-Press	II, 443	III, 834–35
908	Dynamometer	II, 71	III, 344
909	Screw-Cutting Machine	I, 491	III, 92
910	Refining Iron	I, 455	III, 44
911	Glass Knobs for Doors	I, 439	III, 19
912	Hydraulic Valve	II, 182	III, 477
913	Cotton-Seed Planter	I, 370	II, 693
914	Furnace for Tempering Scythes	I, 493	III, 95
915	Sewing-Machine	I, 572	III, 164
916	Pump	II, 189	III, 489
917	Machine for Carving Wood	II, 324	III, 691
918	Implement for Cutting Metal Tubes	I, 471	III, 59
919	Feed-Water Attachments for Steam Engines	II, 11	III, 266–67
920	Artificial Fuel	I, 624	....
921	Saw-Set	II, 284	III, 616
922	Corn-Husker	I, 352	II, 662
923	Grinding Mill	II, 237	III, 555
924	Casting Car-Wheels	I, 429	III, 11
18,925	Giving Motion to Valves of Steam Engines	II, 36	III, 298–99

No.	Invention or Discovery.	Text.	Plates.
18,926	Casting Gas Retorts	I, 600	III, 202
927	Governor for Machinery	II, 228	III, 538
928	Cultivator	I, 310	II, 603
929	Vegetable Cutter	II, 395	III, 779
930	Clothes Rack	II, 378	III, 760
931	Apparatus for Illustrating Conic Sections, &c	II, 72	III, 348
932	Approach-Opening Farm Gate	II, 106	III, 394–95
933	Oscillating Engine and Pumps	II, 9	III, 262–63
934	Portable Field Fence	II, 102	III, 986
935	Turning the Leaves of Books	II, 405	III, 796–97
936	Churn	I, 299	II, 590
937	Churn	I, 299	II, 587–88
938	Harvester	I, 329	II, 636
939	Cultivator	I, 310	II, 596
940	Machine for Bending Horse-Shoes	I, 451	III, 37
941	Mode of Belting	II, 227	III, 536
942	Governing the Cut of Circular Sawing Machinery	II, 292	III, 632
943	Cross-cut Sawing Machine	II, 290	III, 628
944	Cutting Zigzag Grooves in the Stiles of Washboards	II, 323	III, 668
945	Lighting Gas by Electricity	I, 634	III, 233
946	Straw Cutter	I, 420	II, 773
947	Hand Stamp	II, 455	III, 854
948	Gearing for Feed-Rollers in Re-sawing Machines	II, 295	III, 638–39
949	Oil Can	II, 210	III, 515
950	Springs for Railroad Cars	II, 159	III, 450
951	Furnace	I, 626	III, 219
952	Connecting the Panels of Portable Field Fences	II, 104	III, 389
953	Deflecting Plates and Spark Receivers in Locomotives	II, 22	III, 292
954	Potato Digger	I, 398	II, 733
955	Lifting Jack	II, 213	III, 518
956	Washing-Machine	II, 399	III, 793
957	Clamp for Setting Saws	II, 302	III, 652
958	Instrument for Draughting Coats	II, 501	III, 889
959	Seeding-Machine	I, 411	II, 754
960	Machine for Sawing Hand Rails	II, 286	III, 623
961	Railroad Car or Carriage Spring	II, 142	III, 430
962	Burglar-Proof Safes	I, 488	III, 86
963	Attaching Lightning Rods	II, 73	III, 344
964	Dry Sand Cores	I, 433	....
965	Washboard	II, 396	III, 779
966	Locomotive Engine Wheel	II, 20	III, 288
967	Machine for Sawing Shingles	II, 299	III, 648–9
968	Spring-Bottom Bedsteads	II, 368	III, 752
969	Mooring Vessels	II, 63	III, 330
970	Tool for Turning Journals	I, 500	III, 106
971	Blacksmiths' Tongs	I, 500	III, 96
972	Water-Closet	II, 89	III, 364
973	Balance for Detecting Counterfeit Money	II, 207	III, 513
974	Guide-Gauge for Sawing Timber	II, 319	III, 677
975	Mowing-Machine	I, 361	II, 675
976	Mowing-Machine	I, 361	II, 677
977	Throwing into and out of Gear the Tool of Mortising Machines	II, 269	III, 597–8
978	Seeding-Machine	I, 411	II, 752
979	Hoe	II, 528	II, 660
980	Preparing Plastic Cotton for Moulding Purposes	I, 589	....
981	Harvester	I, 330	II, 648
982	Seed-Drill	I, 406	II, 752
983	Track-Clearers for Mowing-Machines	I, 362	II, 678
984	Journal-Box for Railroad-Cars	II, 162	III, 452
18,985	Grinding-Mill	II, 244	III, 564

No.	Invention or Discovery.	Text.	Plates.
18,986	Rotary-Pump	II, 192	III, 494
987	Door-Spring	I, 438	III, 19
988	Machine for Binding Grain	I, 318	II, 610
989	Rotary Steam-Engine	II, 14	III, 270
990	Railroad Car-Coupling	II, 140	III, 429
991	Machine for making Volute Springs	I, 496	III, 98
992	Joints for Carriage Tops	II, 151	III, 442
993	Cider-Mill	II, 248	III, 558
994	Portfolio	II, 433	III, 821
995	Cotton-Press	II, 220	III, 529
996	Harness-Saddles	II, 351	III, 726
997	Governor for Steam-Engines	II, 11	III, 268
998	Head-Rest	II, 163	III, 455
999	Seed-Planter	I, 383	II, 704
19,000	Producing Increased Adhesion of Locomotive to Rail	II, 21	III, 285
1	Harvester	I, 329	II, 622, 645
2	Harvester	I, 330	II, 652
3	Pump	II, 189	III, 490
4	Rotary Pump	II, 192	III, 495
5	Circular Sawing-Machine	II, 289	III, 626
6	Paint Compound	I, 607	....
7	Covering the Heads of Nails	I, 475	III, 55
8	Steam Spring-Bedstead	II, 366	III, 748
19,009	Potato-Digger	I, 398	II, 734

ADDITIONAL IMPROVEMENTS.

No.	Invention or Discovery.	Text.	Plates.
158	Harvesting Machine, [16,244]	II, 555	III, 915
159	Looms, [13,724]	II, 555	III, 920
160	[Number altered to 165]	....	....
161	Fire-Arm, [15,521]	II, 556	III, 920
162	Filter, [15,646]	II, 556	III, 915
163	Safety Hatches for Warehouses, [15,201]	II, 556	III, 916
164	Farm Gate, [14,851]	II, 556	III, 917
165	Spring Bed-Bottoms, [13,188]	II, 556	III, 915
166	Cutter for Boring Wheel Hubs, [10,087]	II, 557	III, 917
167	Spoke and Axe-helve Machine, [13,731]	II, 557	III, 918
168	Sawing-Machine, [14,339]	II, 557	III, 919
169	Winnowing-Machine, [11,069]	II, 557	III, 916
170	Box Fitting Apparatus, [16,402]	II, 557	III, 919
171	Fire-Arm, [15,521]	II, 557	III, 915
172	Machine for Kneading Dough, [12,217]	II, 557	III, 920
173	Packing Pistons and Stuffing Boxes of Steam Engines, [17,422]	II, 558	III, 918
174	Gutta Percha Stereotype Compositions, [9,870]	II, 558	....
175	Hoisting Winches for Ship-Board, [16,965]	II, 558	....
176	Mechanism in Looms for Weaving Cloth, [16,405]	II, 558	III, 921
177	Consumption of Smoke in Locomotive Engines, [17,436]	II, 558	III, 918
178	Straw Cutting Machine, [13,807]	II, 558	III, 920
179	Inkstands, [17,147]	II, 559	III, 919
180	Portable Chair, [14,877]	II, 559	III, 921
181	Winnower, [8,884]	II, 559	III, 922
182	Skates, [14,586]	II, 559	III, 922
183	Bag or Sack Holder, [17,176]	II, 559	III, 922

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